Te Matataua

The Scouting Party of Air Power

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Floatplanes, Flying Boats and Amphibians

Back to the future, seaplane style?

Less than seven years after the Wright brothers achieved powered flight in 1903, the first seaplane[1] was operating. It was not long before the seaplane gained acceptance and use the world over. In New Zealand, the seaplane was first used by the Walsh brothers, who employed two-seat flying boats at Kohimarama, Auckland, to train aviators for the Royal Flying Corps from October 1915.

During both World Wars, seaplanes were used in a variety of roles, including: surveillance, reconnaissance, maritime attack (anti-submarine in particular), and supply. World War Two saw seaplanes being increasingly utilised for air/sea rescue, saving the lives of many downed aviators during not only WW2, but also the Korean and Vietnam conflicts. By the late 60's seaplanes had declined in popularity and were rapidly being phased out of military inventories.

ShinMaywa US-2 amphibian seaplane

The introduction of specialist land-based maritime patrol aircraft such as the P-3 Orion, and the usefulness of utility helicopters for coastal flying tasks and rescues contributed to the decline of seaplanes. Other reasons for the decrease in numbers were the cost of development and production, a reduction in suitable shore facilities, cumbersome handling when manoeuvring on the water, increased maintenance compared with land planes, and restrictive limitations regarding operations in high wind and sea states.

Subsequent advances in design and technology has enabled increased performance and capability. This has led to a resurgence of military interest in seaplanes in recent times, with large amphibious aircraft such as the Russian Beriev Be-200, Chinese AG600, and Japanese US-2 currently being developed for use by armed forces.

These new seaplanes are designed for wide utility. For example, the Chinese AG600 can variously carry up to 50 passengers, 12 tonnes of scooped water, or equivalent in freight. It can also carry out sea rescues and undertake maritime patrols. The slightly smaller ShinMaywa US-2 has a 1000 mile operating range at 260kt (≈480 km/h) cruising speed, is designed to support the security and management of remote

[1] Seaplanes are fixed-wing aircraft that land and take-off from water. Seaplane types are either floatplanes or flying boats. A floatplane is an aircraft supported on water by separate floats whereas a flying boat sits in the water on a boat-like hull. An amphibian is a floatplane or a flying boat that also has wheels which allow it to operate from land or water.

islands, and can scoop up to 15 tonnes of water. From its introduction in 2008, the US-2 has been used to carry out over 1000 sea rescue missions. Its design allows for short take-offs and landings in high sea states with waves up to three metres high.

Even the esoteric 1970's Russian Ekranoplan (ground-effect vehicle) concept of flying boat, designed to fly at aircraft speeds just metres above the water surface, is being revisited.

Ekranoplan

The military use of seaplanes in New Zealand stretches back to 1929 when the New Zealand Permanent Air Force took delivery of a de Havilland DH60 fitted with floats for naval co-operation tasks from Hobsonville Station. This floatplane later embarked on the Cruiser HMS Dunedin for operations in Samoa in 1930 *(as described in Te Matataua edition 18)*. The only amphibian type of seaplane operated by the New Zealand military was the Supermarine Walrus, which was first introduced in 1936 as reconnaissance aircraft aboard HMS Achilles and Leander before being transferred during WW2 to the RNZAF as a flying boat trainer.

The most numerous type of seaplane that saw military use by New Zealand was the flying boat. Beginning with a single Saro Cutty Sark in 1930, by the time the last flying boat was phased out of RNZAF service in 1967, 80 of various types had flown in New Zealand colours, including 56 Consolidated Catalinas.

In service from 1943-1954, the Catalinas were used extensively around the South Pacific by No. 6 Squadron, No. 3 Operational Training Unit and later by No. 5 Squadron. Their roles during WW2 included: long-range maritime patrol, shipping escort, air sea rescue and transport. Post-war a much smaller fleet was maintained in service to conduct maritime surveillance and search and rescue missions, including a number of "mercy missions" to isolated Pacific islands including cyclone relief and medical emergencies.

A small number of Short Sunderlands saw limited RNZAF service during WW2 as transport aircraft, but in 1951 the New Zealand Government purchased 16 reconditioned aircraft to replace the now obsolete Catalinas. Divided between No. 5 Squadron in Lauthala Bay in Fiji, and No. 6 (Maritime) Squadron TAF at Hobsonville, the roles of the large flying boat included rescue missions and medical flights throughout the South Pacific, and detection of submarines. By the early 1960s the RNZAF Sunderlands were obsolescent; however, in 1964 a Sunderland crew won the prestigious 'Fincastle Trophy', competing against Commonwealth air forces. It was in this same year that the decision was made to replace the Sunderland with the Lockheed P-3 Orion.

RNZAF Short Sunderland

New Zealand is a maritime nation with responsibilities in the south west Pacific, including being able to respond to the effects of climate change. Effects such as more intense forest fires over larger areas; greater frequency and intensity of tropical cyclones; and possibly the loss of airstrips as the sea level rises. The ever present need to provide surveillance, security and partnership in the Pacific islands will remain well into the future. Also, as land and littoral resources become exhausted, nations may increasingly engage in deep water mining and drilling in areas outside of the range of helicopter support. Preparing for these types of events might justify the re-introduction of a small fleet of seaplanes for civil and/or military use.

The day of the seaplane is far from over, and they could possibly have utility in New Zealand and the south west Pacific. Even though Pacific Ocean waters may be too challenging for all-weather operations, modern amphibian aircraft are almost meeting the performance of land-based aircraft, and they improve the accessibility of remote islands. The new designs are capable of carrying heavy loads on long-range missions, can operate from relatively high sea states, and are just as comfortable operating from land bases.

Key Points

- New Zealand has a rich history of seaplanes.
- Development and production of large amphibians continues today.
- Seaplanes have utility in sea rescue, fire fighting, maritime surveillance, and transport roles, and they offer wider accessibility to remote islands.

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