

AIR FORCE NEWS

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P-8A Poseidon Arrives

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First Words

B | CHIEF OF AIR FORCE
Y | AIR VICE-MARSHAL ANDREW CLARK

Welcome to this special P-8A Poseidon edition of *Air Force News*. There's been rather a lot of talk about the new Poseidons recently – you won't have escaped the flurry of reporting when our first aircraft arrived in December. And while the future of the RNZAF is not all about the P-8A, the future tends to arrive in steps, as it did with the T-6 and the NH90. There are more steps coming too.

This step forward is a once-in-a-generation stride. As a maritime nation, our maritime security is central to our survival and our success. And for the past 81 years, a small number of long range maritime patrol aircraft have done their bit, keeping watch from the air. The Catalina, the Sunderland, and for the past 57 years the Orion. That's an incredible period of service, and it's the continuity of that lineage and service that the P-8A represents.

Whether it's saving lives at sea, securing our vast maritime resources, preventing transnational crime, building regional resilience, or defending our region against military threats, the Poseidon has the breadth of versatility and the depth of capability to take the job on.

Delivery of this new capability is being achieved because of years of effort from a large number of people. From government ministers, to Rob Whight's Integrated Project Team, to WGCDR Mark Whiteside's Poseidon Transition Unit. From the US Navy, to the Royal Australian Air Force, and to Boeing. And to many others of you within the RNZAF and broader NZDF who are bringing the whole system to life. There are many who deserve recognition.

When No. 5 Squadron was first formed 81 years ago, it was – very appropriately – formed in the middle of the South Pacific. And so unlike our other squadrons, its motto is in Fijian. That motto will now hold true for the next generation of No. 5 Squadron aviators as it has for the last:

Keitou kalawaca na wasaliwa –
We span the oceans.



B | POSEIDON TRANSITION UNIT COMMANDING OFFICER
Y | WING COMMANDER MARK WHITESIDE

As I write this First Word we have just successfully completed our very first New Zealand-operated P-8A flight. While we still have a long way to go before we are a national response option, this is a fitting reflection point to take a look at just how far we have come and celebrate how we have got here.

As the Chief of Air Force has alluded to, getting here is the culmination of years of hard work from a wide range of people, and it is this aspect that I wish to emphasise the most.

Several years ago when we first started the detailed planning on how to integrate the P-8A capability we knew that our people would have to be at the heart of the plan and we had faith that they would unlock the potential of the capability in a manner that only they could.

That planning and investment in personnel ultimately led to us sending some exceptionally motivated and determined aviators overseas to embed with our key partners to gain valuable experience and insights into all aspects of the capability.

Back home, both the Poseidon Transition Unit and P-8A Capability Support Team were established well in advance of the first airframe arrival, working towards the first flight milestone.

Without getting ahead of ourselves we are also well placed for future success although there is plenty of mahi still to be done before the release of operational capability.

This edition of *Air Force News* focusses on the experiences of some of these people – they are the ones who have brought New Zealand's P-8A capability to life and will continue to do so. I hope you enjoy their stories.

“It hasn’t been an easy journey by any means with many challenges and sacrifices needed to get where we are today. Most of these people are now here at our new home in Ohakea and they have delivered in spades as evidenced by the timely achievement of our first flight.”

- Wing Commander Mark Whiteside



A commanding eye



As the first of the P-8A Poseidons touch down at Base Ohakea, the Flight Commanders settle in to ensure operations, maintenance and training runs according to plan.

Operations Flight Commander Squadron Leader (SQNLDR) Deborah Haines is part of the team that coordinates between the maintenance flight, the operations flight and the mission support flight (the Poseidon Operations Centre) to ensure everything needed for an operation runs to schedule.

"It's a really big job and it's one that I'm really excited for," she said.

As the P-8As start arriving on base SQNLDR Haines' initial focus is working alongside the squadron's maintenance and mission support flights to get the first flights up and fully tested.

"That's the key milestone that we need to achieve before the middle of the year."

The aircraft need to be ready for search and rescue missions as well as humanitarian aid and disaster relief responses.

"That's our big milestone and we're working towards that. There will need to be some training for our aircrew coming back from Jacksonville, in the United States, because we do things a little bit differently, so we just want to make sure that they're all good to go in the New Zealand system in terms of how we operate."

Following the training, aircrews will move into trials and development, ensuring that procedures are developed to suit the squadron's requirements, before the capability is released, SQNLDR Haines said.

"I must be one of the people most looking forward to working with the aircraft. I joined the project in January 2018, so it's taken over five years of my lifetime."

During the year the crews will start to undertake longer range operations in terms of deploying for a month or longer. This will mean bringing in extra equipment to take to regions such as Pacific Islands or South East Asia, SQNLDR Haines said.

"Then we'll be getting into more complex warfighting roles such as anti-surface warfare type missions. We have lots of exciting things on the horizon.

"The P-8As are doing a lot of stuff around the world and having the aircraft is really opening us to a whole new community. We've been part of the maritime community for a long time, but the good thing about the P-8A is we will be the same as everyone else, so it's a lot easier to join those task groups globally."



Leading up to the aircraft's arrival, Maintenance Flight Commander SQNLDR Jonathan Beetham's team has been sorting out procedures, processes and authorisations for the maintenance workforce and anything that needs to be done to ensure they are capable of maintaining a P-8A.

"The P-8A is significantly more advanced than the P-3K2. The airframe is designed with modern perspectives in mind, it's a modern airframe with military components. So it's very smart and intuitive."

The training of the personnel working on the aircraft was world class, SQNLDR Beetham said.

"We've got some great people who are incredibly smart. The people who are training overseas are probably the best trained technicians of an aircraft type that we have ever seen in the Air Force."

SQNLDR Beetham is counting the days until the full fleet arrives.

"You spend a lot of time prepping to do a job and it's a lot easier to focus and manage people when they're producing what they signed up to do. We're just starting to do that now."



Training Flight Commander SQNLDR Ben Woodhouse spent two and a half years in Florida's Jacksonville, with seven colleagues, learning how to operate the P-8As and then how to teach new US Navy crews to operate them. The group was part of the US Navy's VP-30 Squadron.

Now, his attention is on ensuring crews here maintain their currency until more regular flying with the fleet.

This month crews will be doing some refresher currency training, SQNLDR Woodhouse said.

"Once that's done we'll sign them out as aircrew and we'll start doing our test and evaluation programme. I think everyone's looking forward to getting back in the aircraft.

"I think the thing that excites everyone as well is the first overseas trip – going to the Pacific, taking the aircraft away, working as a crew. It's like a sports team where we've got the team, but they haven't been able to play for a while until the season gets going again," he said.

It was incredibly helpful that the Australians and Americans used the same aircraft because crews could take advantage of training opportunities those countries could offer until all the training equipment is set up at Ohakea, he said.

"One thing I took for granted until I came back from New Zealand is the value of our relationships with those other countries. With the US we went there to learn to fly the aircraft and consolidate, but we are now picking up the phone and talking with counterparts and getting information."

LEFT

SQNLDR Ben Woodhouse

MIDDLE

SQNLDR Jonathan Beetham

RIGHT

SQNLDR Deborah Haines

Journey to be mission ready

DEC

December 12
First P-8A Poseidon lands at Base Ohakea

December 25
By now New Zealand-specific equipment has been fitted and electronic information has been loaded onto the equipment

JAN

More software testing on the aircraft

January 25
First flight for the first aircraft

FEB

Three crews trained to operate the aircraft safely



The first P-8A Poseidon landed in Aotearoa New Zealand on December 12, last year. The rest of the fleet will arrive at its home at Base Ohakea in the coming months. However, there are a number of things that need to be ticked off before any of the fleet can take off to fly an operational mission.

Poseidon Transition Unit Executive Officer Squadron Leader (SQNLDR) Stephen Graham takes us through the timeline.

“There are a lot of things that have to happen between the aircrafts’ arrival and the first flight.”

Once the aircraft was received by the Defence Force, inspections started taking place. As the aircraft wasn’t custom-built, but almost straight off the production line, this didn’t take too long, he said.

“The aircraft was always going to work, but there were a number of check lists that we needed to run through. Then some New Zealand-specific equipment was required to be fitted, including safety equipment like life vests and First Aid kits.

“Then there were codes for secure radios and military GPS, which all were loaded straight away.”

At the start of the year there was a great deal of testing around communications, software, and how the aircraft interfaced with Defence Force systems as opposed to US Navy ones it came factory configured for.

“For example it’s really critical that satellite communications are up and running as soon as possible so we can talk with the aircraft,” SQNLDR Graham said.

“We’ll start with three training flights around the country for the crew of instructors who had been training in the United States for the past two and a half years,” SQNLDR Graham said.

The next phase is for those instructors to qualify the other two crews who spent a much shorter time in the United States.

MAR

Developmental missions
in Australia and Aotearoa
New Zealand

APR

Training over the
Pacific Ocean

MAY

An external
evaluator assesses
flight procedures

JUN

June 30
All aircraft have arrived
on base and the
capability is released



After that it's on to development of search and rescue tactics and procedures with 92WG Royal Australian Air Force at Base Edinburgh, Adelaide, Australia.

"The aircrew come back very well trained in warfare by the US Navy, but as the US Coastguard generally looks after search and rescue, this aspect is not specifically covered during Navy transition training," he said.

"Australia, on the other hand, has an operating model that's much closer to ours and like us they do use their maritime patrol fleet for search and rescue. The Australians have put a lot of effort into making the P-8A a capable search and rescue platform and we're very lucky they are willing to share this experience with us

– just one example of the trans-Tasman cooperation that's been a big part of bringing this capability online."

Aircrew, maintenance and operations staff will then implement everything they've learned during trials around Aotearoa New Zealand and over the Pacific Ocean, where they are often called for search and rescue or fisheries operations, he said.

"We've been thinking about these tactics for the past two and a half years, but we haven't been able to prove them on our aircraft, and in our local environment, so March and April are our chance to give them a go in a controlled setting and with the opportunity to further improve them before we're called upon for a live mission."

The following month, in May once development is complete, an external evaluator, the Directorate of Evaluation and Airworthiness (Operating) will assess the entire system under operational conditions, SGNLDR Graham said.

"Then, once we've proven our ability to safely conduct our mission, we are able to release the capability at the end of June with confidence it will perform to the standard New Zealanders will demand."



Kia ora from the flight deck

The first crews to take the new P-8A on its first flights are excited to continue No. 5 Squadron's work in a more advanced aircraft.





P-8A pilot Flight Lieutenant (FLTLT) Stuart Glendinning said it was “incredibly exciting” to finally be able to enact plans that had been in the making for the past four years.

“We’ve got quite a rigorous introduction to service planned, so we need to make sure we do everything the right way. I think we’ve learned a lot of lessons from previous projects and introduction of aircraft. The structure we’ve chosen is good and it’s set up to succeed – we’ve allowed for issues to inevitably come up in the timeline so we actually fix things as they occur.”

The two-engined aircraft has some obvious differences from its four-engined predecessor, but the differences between the two aircraft were not as big as you might think, FLTLT Glendinning said.

“It’s got a swept wing that some think might not be manoeuvrable, but it’s actually a very agile aircraft. We’re privileged to take all the lessons that other partners have learnt over the past 10 years as they’ve introduced them, so we’re probably in the best-informed position to get out there and get straight into flying it.”

Air warfare specialist Corporal (CPL) Nikita Crookbain worked on the P-3K2 for 12 months before leaving for Jacksonville Florida to train on the P-8As.

“It’s pretty exciting, thinking about how long the P-3K2 has been around for and potentially how long the P-8A could be around for. It’s probably going to be used for a really long time, so looking back when I’m old, I’ll be able to say I was one of the first.”

It was a privilege to have flown on the P-3K2 before its retirement, she said.

However, she was looking forward to moving to the upgraded P-8A.

“Being one of the first crews to fly, we’ll be doing a lot of testing and adjusting for the way we will work in the future, so being involved in the testing process as well is pretty cool.

“It will be great to see in the future how initial testing and adjustments go and what we can do on the P-8A overseas and into international exercises and operations,” CPL Crookbain said.

Air warfare officer (AWO) FLTLT Hemi Fries said there were some “reasonably significant changes” to the AWO role compared with the P-3K2.

“On the P-3K2 we were responsible for tactical navigation and fuel management. The new aircraft manages that a bit differently – we still keep an eye on it but the pilots are primarily responsible and the flight management computer will look after the fuel management – it’s clever enough to know how the engines perform in different conditions so we don’t need to do maths in the back of the plane because the computer will do it for us, which is nice.”



“We’ll still be doing the things that No. 5 Squadron has been doing for the past 80 years, but we’ll be doing it faster. We’ll be getting to search and rescues quicker and we’ll be getting to the islands faster, which will mean less time transiting and more time doing the job.”

**- Flight Lieutenant
Stuart Glendinning**

The changing crew composition means that while those two duties have been shed some additional jobs from a disestablished AWO position on the aircraft are picked up, FLTLT Frires said.

“We retain responsibility for aircraft communications across all its radios and datalinks and we also manage what we call ‘the plot’, being our tactical picture of everything of interest in the area – so if we detect something on the radar we need to work out who it is and if they are friendly, neutral, hostile or suspect. We maintain that picture.”

The whole team is “looking down the barrel” of a lot of work coming their way as they learn about the new aircraft, how they are going to make it fit with their systems and how to achieve jobs, he said.

“I think we’ll have a really rewarding time over the next two years in just achieving stuff. The first six months will be focussed on New Zealand operations and search and rescue, which is a really important job for us.

“Going beyond that, we’re going to be focussed on getting into the Southern Ocean again, getting into the Pacific for longer duration trips on different tasks and eventually getting a full deployment somewhere. This will reach a point where, at Final Operational Release, we’ll be able to operate independently for an extended length of time,” FLTLT Frires said.

“But we are breaking it down into little hurdles and the first little hurdle is getting the plane in the air, and then doing search and rescue by the middle of the year and that’s a fair bit of work to get done.”

LEFT

L-R FLTLT Hemi Frires, FLTLT Stuart Glendinning, CPL Nikita Crookbain

RIGHT

The P-8A takes off from the United States to Aotearoa New Zealand

FROM LEFT TO RIGHT
 CPL Scott Legg, LAC Nick Sawyer,
 FLTLT Blake De Raat, LAC Logan
 Reynolds, CPL Jane Glendinning



View from the tarmac

Before the first P-8A Poseidon touched down in mid-December, maintenance crews made sure all standard operating procedures, equipment and facilities were prepared so they could hit the ground running when the aircraft arrived.

Deputy Maintenance Flight Commander Flight Lieutenant (FLTLT) Blake De Raat said once that happened the team would be focussed on supporting the aircraft's introduction into service and the incremental release of capability.

"So at the moment there is more focus on certain roles and aspects of our maintenance support functions and getting those up to speed and signed off, before we start with business as usual.

"Having been involved in the acquisition of the aircraft on the Integrated Project Team, I'm now looking forward to my new role and operating on the squadron – there will be some interesting deployments down the line with the fleet."

Avionics technician Corporal (CPL) Jane Glendinning trained in Adelaide for six months in the lead-up to the fleet's arrival.

"The training facility is world class. It was quite awesome to see when we got there, a scale that we probably won't ever see in New Zealand. They had entire mock-up P-8A aircraft that we were allowed to practise maintenance on – to be able to play with them and get an appreciation was wicked."

The training included using a virtual maintenance trainer (VMT) to practise the work. This was beneficial in terms of making mistakes and learning from them without compromising a real aircraft, she said.

The same technology will be coming to Aotearoa New Zealand as part of the P-8A training package.

"Pilots have been training with the aid of simulators for years, now we can too. To be able to train and practise specific tasks as many times as we like on the VMT, then go out and fix the aircraft for real - it will be great when the virtual maintenance trainer arrives."



“The P-8A shares many similarities to the P-3K2, but it’s a far more modern aircraft and will be a different aircraft to maintain. I think everyone’s looking forward to working on a modern airframe and eventually down the line in a modern facility as well.”

- Flight Lieutenant Blake De Raat

Also in the prelude to the P-8As’ arrival, CPL Glendinning has been increasing her skill set by gaining licences to drive trucks and forklifts, which were unnecessary before.

“It’s just a larger scale aircraft, so we will need to operate larger machinery when it comes to daily tasks. Upskilling to use these just comes as part of being ready to transition to work with the P-8A.”

CPL Glendinning’s brother is part of the P-8A aircrew and has been training on the aircraft in the United States. She has worked with him on the P-3K2 and is looking forward to doing the same in the next aircraft.

“We’ve basically followed the path together, which is awesome. He flies the planes and Mum’s happy because I fix the planes and she knows that he will come back because I look after his aircraft.”

Aircraft technician CPL Scott Legg also trained in Adelaide in the run-up to the fleet’s arrival and the simulation work prepared him for the type of modern training that will be offered at the squadron.

He said the training emphasised how the P-3K2 and the P-8A were “worlds apart”.

“Frame-wise they are completely different and are based on the Boeing 737. There are two engines instead of four and they are designed to go faster at a higher level of performance.”

There would also be opportunities to deploy on the P-8A pretty quickly, he said.

“We will be taking the aircraft to Australia for training and we’ll be taking all aspects of aircrew maintenance and mission support. That training will ensure we are ready to begin operating in the Pacific and South East Asia areas.”

The facility and hangar that will house the squadron have been specifically designed for the P-8As – even down to the birdbath on the taxiway, which is a system that washes the salt off the aircraft after a low-level flight over the ocean. It has a program that is specifically set up for the aircraft.

Executive Officer Poseidon Transition Unit Squadron Leader Stephen Graham said one of the great things about the maintenance crews preparing for the P-8As’ arrival in Australia was that the crews from both countries had the same training and experience.

“It’s a key part of interoperability and being able to support Australian aircraft when they visit and vice-versa when we visit them, and in the future operating alongside them in a deployed environment. It’s a really, really valuable part of this whole project of bringing in the P-8A.”

Enhanced communications and intelligence

The Poseidon Operations Centre is a conglomeration of teams providing mission support on the ground, Poseidon Operations Centre Flight Commander Squadron Leader Matt Lemmens says.



“**C**ommunications technicians and intelligence specialists make up the majority of the unit. We’ve got responsibilities for the unit communications support and tail end support, but also the specific parts that come with the P-8A’s capability,” Squadron Leader (SQNLDR) Lemmens said.

The P-8A’s drives are loaded with data for navigation as well as its sensors, which link with the equipment in the Poseidon Operations Centre (POC).

“The aircraft comes with equipment that is P-8A-specific on the ground. We manage that and look after it all because there is a fair bit of extra rigour that we need to apply for this aircraft.”

That extra rigour includes uploading and downloading data. Additional to that is that while the aircraft is flying there will be a watch team supporting and communicating with them helping with information that can be provided, he said.

“The hardware provides processing power that we haven’t seen for the P-3K2 – so things like the ability to correlate additional types of information to be put in front of the crew so they can take action on it, is something the P-8A brings that the P-3K2 didn’t have.

“For example on fisheries patrols looking at the information we have on certain ships, our information will tell us if we have a clear location on where that ship was last seen. If we have information to suggest that the ship is a particular risk in some areas, we provide the crew with as much information about what it should be doing and what the crew needs to be aware of,” SQNLDR Lemmens said.

There were three areas of communications support available to the aircraft and crews.

“One is the radio high frequency support. Another is through satellites – using a local ground station, or commercial satellites. The third area is tactical data links, which are a different aspect for the team to support.

“The data links include Link 16, which is a type of tactical military communication channel designed to make the flow of information, like the positions of ships, easy to pass between different stations, whether that station is an aircraft, a ship, or a ground station like the operation centre.”

In terms of intelligence, the aircraft relies on mission data to enable its sensors to work well. That includes mapping data and different types of underwater data for the acoustics intelligence. The aircraft will also be enabled by a range of electronic warfare data to support its self-protection suite, SQNLDR Lemmens said.

**LEFT**

Some of the POC team on site

RIGHT

Aircraft on board the P-8A, who communicate with the POC team

“If you think of a mobile phone with no apps, that’s what comes off the Boeing 737 production line with some screens down the back. What turns it into a P-8A is the addition of apps and the data to fill the apps, this is one of the jobs the POC does – and they get updated all the time.”

-Warrant Officer Rod Wingate

“We will be processing that in a more automated fashion and integrating more of the different streams of information that it’s dealing with, as well. So that represents some good opportunities for the POC team to have a better understanding of the mission and when they are reporting on different things they will be able to provide more context. That means that we should be able to corroborate it with other information around what is happening out there in the area as well.

“So that’s one thing that the team is really enthusiastic about and looking forward to. It’s a big change in many ways.”

POC Warrant Officer, Warrant Officer (W/O) Rod Wingate said when the aircraft arrived it was essentially be a civilian Boeing 737.

“What transforms that into a Poseidon aircraft is all the applications that will be loaded onto it.

“That goes along with a number of different things we do in the POC that we couldn’t do before, we are now able to update intelligence in real time. On the P-3K2 we might be flying with data that was old and out of date at times. Not only can we update data before each flight, we have the ability to change data while it’s in-flight.

“That allows the aircraft taskers and crew to be able to fly the aircraft a lot more efficiently and a lot more directed – it’s intelligence-driven.”

Twenty-four hours before a mission the intelligence team gathers the most up-to-date information available and loads it on the hard drive, which is loaded onto the flight before take-off, W/O Wingate said.

“We’re then able to communicate with the aircrew in real-time in a similar way to people sending a message on Messenger.

“We can keep an eye on all aspects of the plane, including its location and for example how much fuel it has on board – that makes a difference if the team on the ground spots something more interesting for it to investigate or a SAR event, we know if they have the fuel to get there or if they need to refuel first.

“With warfare it’s all about timing, the quicker you can get information to the aircraft the quicker they can make decisions, it changes everything.”

It also requires a lot of CIS personnel to keep all the support servers running and maintain communication with the aircraft all the time that it is airborne. This is vital to the capability being available 24/7.

The team of 24 people on the ground can now provide enhanced intelligence to the aircraft either pre-flight, during the flight and when the aircraft lands and the data can be assessed and distributed quickly to those who need it, he said.

P-8A POSEIDON SPECIFICATIONS

WINGSPAN

123.6ft (37.64m)

HEIGHT

42.1ft (12.83m)

LENGTH

129.5ft (39.47m)

PROPULSION

Two CFM56-7B engines
27,300lbs thrust

SPEED

490kts (903km/h)

RANGE

1,200nm
with four hours on station

CEILING

41,000ft (12,496m)

CREW

Nine

MAX TAKE-OFF

189,200lbs
(85,820kg) gross weight

Supporting the community, nation, world

- Search and rescue of Aotearoa New Zealand's coastline, throughout the Pacific and south to Antarctica
- Disaster response in Aotearoa New Zealand and the Pacific
- Protecting our borders from trans-national criminal activity including drug and people smuggling
- Protecting fishing resources in Aotearoa New Zealand's exclusive economic zone and in remote places like the Southern Ocean and around Pacific Island countries
- Helping Pacific Islands countries to protect their borders and resources
- Contributing military surveillance activities (including surface and sub-surface operations) to multi-national global peace and security initiatives







Aircraft Timeline

1941



VICKERS VINCENT

Line-up of 13 Vincents at RNZAF Station Omaka

1944



SHORT SINGAPORE

Short Singapore taking off

1953



CATALINA

Air to air view of No. 5 Squadron Catalina over reefs in the Pacific



SHORT SUNDERLAND

Short Sunderland taking off. Believed to be Evans Bay, Wellington



1966



P-3B ORION

Air to air view of No. 5 Squadron P-3B Orion in flight over the Auckland Harbour Bridge

1984



P-3K ORION

Air to air view of A P-3K Orion with the bomb doors open

2005



P-3K2 ORION

P-3K2 Orion low-level live firing of MK46 torpedoes

2022



P-8A POSEIDON

On its way to Aotearoa New Zealand

The legacy of No. 5 Squadron

As the Air Force welcomes the first of its P-8A Poseidon fleet, we take a look at No. 5 Squadron's history and the aircraft it built its legacy on.

A looming war in the Pacific was the backdrop to the formation of the squadron in November 1941. Flying from an air base in Fiji, Vickers Vincents and Short Singapore flying boats provided a long-range maritime patrol and anti-submarine force in the region.

The effective mission saw the rescue of 50 survivors of downed aircraft and the successful attack of a Japanese submarine.

The following year the squadron was disbanded, but reformed in 1944 with Catalina flying boats. Late that year it moved to the operational area of the South West Pacific, operating from Espiritu Santo to the Admiralty Islands, according to the No. 5 Squadron RNZAF Association.

During this time renowned explorer and mountaineer Sir Edmund Hillary was conscripted and joined the squadron as a navigator. In 1945 he was deployed to Fiji and the Solomon Islands, where he was badly burned in an accident.

In the aftermath of World War II, the squadron relocated to Fiji's Lauthala Bay and in 1953 they replaced the Catalinas with Short Sunderland flying boats. Its missions were maritime surveillance over the vast South Pacific Ocean, medical evacuation flights and communications flights for the colonial administrators, the association said.

By 1966 the bulk of No. 5 Squadron had left Fiji and taken up residence at Base Auckland ready for delivery of five new Lockheed P-3B Orions. The base at Lauthala Bay closed and the Sunderlands were withdrawn in 1967.

The P-3B fleet was upgraded in the mid-1980s (Project Rigel) with a more modern radar, an IRDS camera, a digital computing bus, and electronic displays/information management system. They were re-designated P-3K, with a sixth aircraft joining the fleet during the project.

The aircraft conducted a range of tasks, including aerial surveillance of Aotearoa New Zealand's areas of interest, including the Exclusive Economic Zone, the South Pacific and the Southern Ocean.

They support Government agencies including Ministry for Primary Industries, New Zealand Customs, New Zealand Police and the Department of Conservation.

In 2003 to 2004, a P-3K detachment operated in support of Operation Enduring Freedom by patrolling the Arabian Sea and Gulf of Oman.

In 2005, the first of the fleet began an upgrading programme to the new P-3K2 standard, modernising the avionics and mission systems. This was finished for all the fleet by March 2015.

The aircraft have been involved in a number of maritime missions including policing illegal fishing in the Southern Oceans and taking part in the search for missing Malaysian Airlines flight MH-370 alongside other international aircraft and crews.

In 2006, an Orion was used to photograph Raoul Island after a small volcanic eruption killed a Department of Conservation worker.

Late in December 2015 the final aircraft and crew rotation returned from a 16-month operation deployed to the Middle East. The deployment supported Combined Maritime Forces in maritime security, anti-terrorism, anti-narcotics, and anti-piracy operations. The detachment completed over 170 missions and flew over 1400 hours.

Over the years tropical cyclones, tsunamis and volcanoes have caused devastation in a number of Pacific Islands. Imagery captured by a P-3K2 of widespread damage caused by category five Tropical Cyclone Winston to Fiji in 2016 was published widely to raise international awareness of the humanitarian situation.

A P-3K2 was also deployed to the Pacific in early 2018 following the sinking of the Kiribati ferry MV Butiraoi, carrying over fifty passengers. Seven survivors were found drifting in a dinghy, and their rescue was coordinated by the P-3K2 crew.

Since 2018, P-3K2 crews and aircraft have been deployed to Japan to help implement United Nations Security Council resolutions against North Korea. The aircraft flew alongside international partners to detect maritime activity that contravened UN sanctions, in particular, ship-to-ship transfers.

This year the fleet has made its final flight and has retired to Base Woodbourne.



No ordinary ordnance

Ordnance on board the P-8A will be more updated and with more modern weapons and search system than its predecessor.

“We consider anything we send out of the plane for a specific purpose ordnance. The majority of things are not explosive, but they all use the ordnance system,” Squadron Leader (SQNLDR) Ben Smith said.

The ordnance carried by the P-8A ranges from search and rescue equipment, to sonobuoys that track submarines, to torpedoes.

The personnel with the expertise to use the ordnance system are spread amongst the aircrew after the ordnance trade was disbanded with the retiring of the P-3K2, SQNLDR Smith said.

“The tactical coordinators will be the primary operators then all of the air warfare specialists will be handling the equipment depending on what it is.

“I’m really excited to get into the aircraft and start using the system. It’s a similar maritime patrol and reconnaissance aircraft to what we’re used to, but it’s more modern and there are a lot of improvements.”

For nearly three years in the lead-up to the P-8A arrival to Aotearoa New Zealand, SQNLDR Smith was training on US Navy P-8As in Jacksonville, Florida, in the United States.

“So now coming back here and using our own gear is going to be fantastic.”

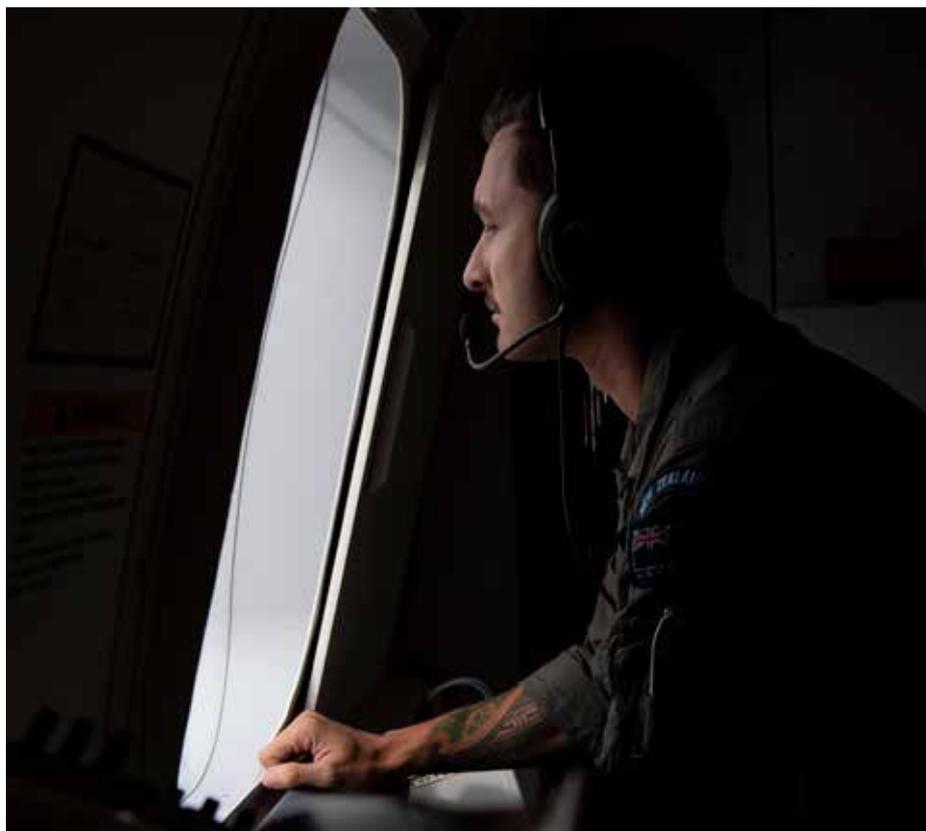
While in the US, the team focussed on high-end coordinated warfare operations.

“While we didn’t go out and do them because we were a training squadron, we spent a lot of time in the simulator practising the training from start to finish.



“When we were flying it was all about maritime patrol looking for warships and using sonobuoys and collecting intelligence.

“We used recoverable exercise torpedoes down there and went to an anti-submarine range in the Bahamas to practise with a synthetic target and tested a weapon drop. At the range the torpedo is tracked in relation to the target and can be retrieved and sent back to the aircraft to be used again,” SGNLDR Smith said.



P-8A POSEIDON ORDNANCE

SEARCH & RESCUE

- Locator beacons to drop to survivors.
- Marine Locator Markers, which are smoke signals to give an indication of the surface wind and to re-locate survivors or items in the water.
- A Uni-Pac III life raft, which is a newer version of the life raft used on the P-3K2.

TRACKING

- Passive and active sonobuoys for locating and tracking submarines. Active sonobuoys emit pings into the water and listen for the returning echo before transmitting information via UHF/VHF radio to a ship or aircraft. Passive sonobuoys listen, waiting for sound waves and noises from ships or submarines, or other acoustic signals of interest such as an aircraft's black box pinger, to reach the hydrophone. The sound is then transmitted via UHF/VHF radio to a ship or aircraft.

- MAC – multi-static active coherent sonobuoy system, used for searching large areas of water and tracking submarines.
- Bathythermographic buoys made for measuring the temperature of the water column and are used to understand the environment to track a submarine. If the water is warmer than normal that changes the sound-ray path in the water. There are layers of temperatures in the water that adversary submarines can use to evade tracking. So the equipment is used to understand the tactical local area water column to defeat those submarines.

WEAPONS

- Mark 54 torpedo, used to destroy its target. This is an upgrade from the P-3K2s Mark 46 torpedo and the version that rest of the world's P-8A fleets use.

Doing the mahi

No. 5 Squadron operations will look the same as always – fisheries patrols will continue, lost people and land devastated by natural disasters will be assessed.

Alongside these outputs, No. 5 Squadron will continue to maintain its maritime warfare capability and contribute to peace, security and international rules-based order, in our region and worldwide. However, the new P-8A Poseidon will give the crews and support staff a new way to achieve their outputs.

“We’re still going to be providing the same effect, going out to the New Zealand EEZ (Exclusive Economic Zone), the South Pacific and in the Southern Ocean,” Squadron Leader (SQNLDR) Karina Chipman said.

“But we’ll approach the operations differently due to a combination of more modern technology, and the distance and faster speed the aircraft can fly.”

There are some similarities of the sensors and capabilities with the P-3K2, but there are also significant improvements, she said.

Operation Tapestry covers Aotearoa New Zealand’s EEZ, which encompasses at least four million square kilometres, performing surveillance tasks and maritime domain awareness.

“We support Customs, Ministry for Primary Industries (MPI) and sometimes the Department of Conservation. But predominantly the operation monitors fishing fleets.

“On the fisheries patrols crews do a lot of compliance checks. They look at whether fishing boats have the appropriate licences, if they are fishing in the correct areas, if they have bird mitigating devices, if they are using the correct fishing techniques, and if there are correct markings on the side of the boat clearly visible,” SQNLDR Chipman said.

“It’s an opportunity to provide those eyes at sea for the MPI officers, who wouldn’t necessarily have access to that information.”

A lot of the information comes from images from the electro-optic camera, which is trained on the boat and provides real-time high resolution video feedback of what’s going on. As the P-8A flies past the boat, they can get close visuals of the vessel.

“The cameras can also pick out infra-red images, which can pick up fishing activity such as machinery working on the boat and can also see fishers preparing nets on the vessel’s decks.”

Norpats, or Northern Patrols, are regular operations undertaken in the Pacific as part of the Defence Force’s commitment to supporting our Pacific neighbours.

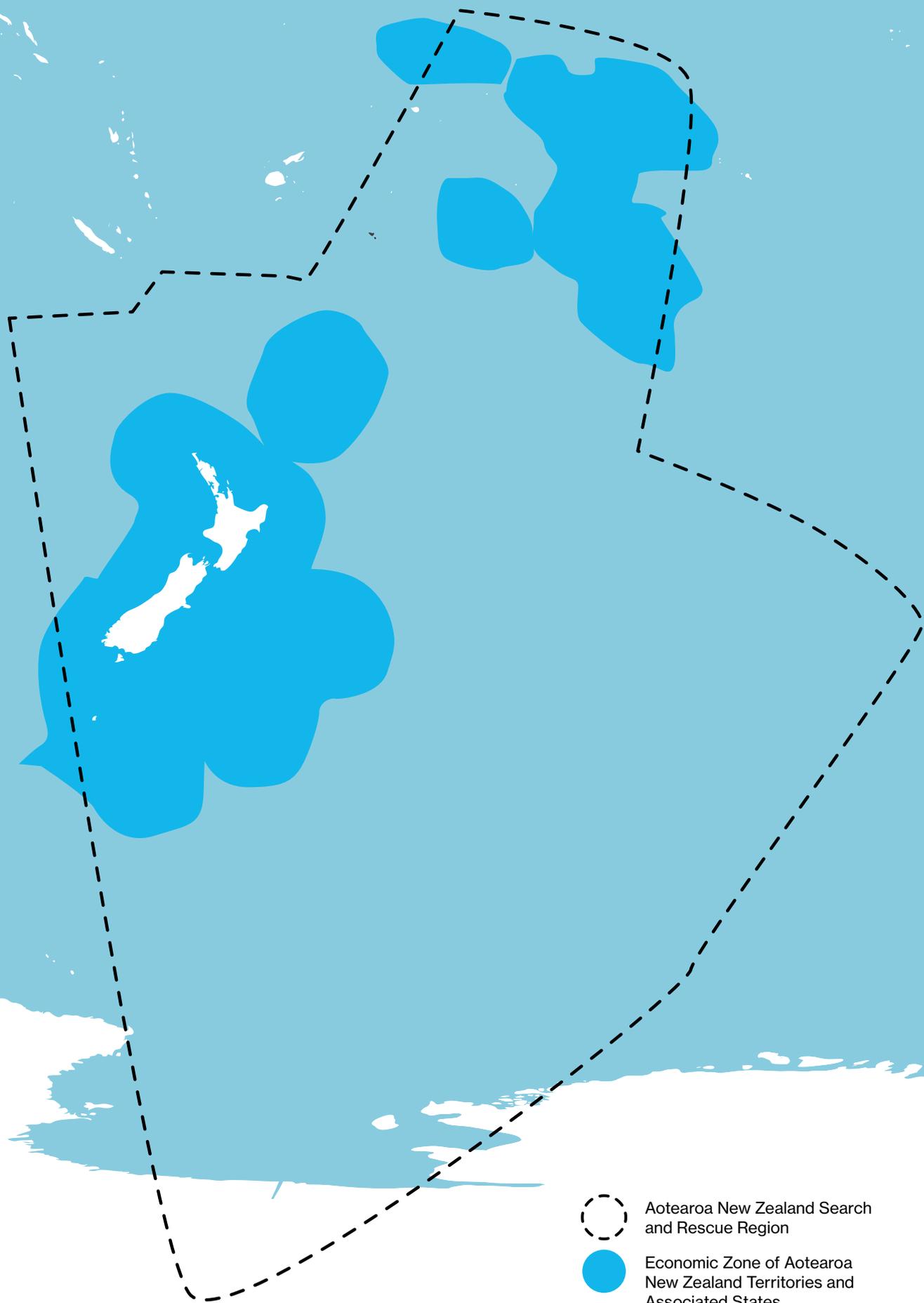
Sometimes the operations are in support of the FFA (Foreign Fisheries Agency), which are coordinated operations with partner nations including Australia, France and the United States.

The coordinated fishing operation would use patrol boats as well as aircraft looking at fisheries compliances, she said.

Search and rescues are another major aspect in No. 5 Squadron’s operational input and will be one of the first capabilities to be up and running by the middle of the year. The P-8A is a faster aircraft than the P-3K2 and the advantage during those crucial hours and days that a person or vessel is lost at sea means the crews will get to the search area quickly and will be able to cover more search area.

The other crucial capability to be operational by July is the humanitarian aid and disaster relief work done by the aircraft. The communication equipment used in those situations between the aircraft and the Poseidon Operations Centre at Base Ohakea is a vast improvement on the P-3K2.

“That’s probably the biggest leap between the two aircraft - how connected the crews will be to base and how quickly they can get information to Joint Forces, the Defence Force’s operational headquarters, and local authorities,” SQNLDR Chipman said.



-  Aotearoa New Zealand Search and Rescue Region
-  Economic Zone of Aotearoa New Zealand Territories and Associated States

A dog's world

The arrival of the P-8As at Base Ohakea has sped up the establishment of Security Forces Military Working Dog (MWD) teams to enhance the security at the military air base and provide increased force protection capability for Air Force and Defence Force assets.

The dogs have settled in their temporary home on the base while their permanent accommodation is completed for them and their handlers.

Once built, the working canines will be kept in a purpose-built facility with 12 kennels, enough to house eight working dogs and an isolation block, near the Biggin Hill Hangar, Military Working Dog Co-ordinator Sergeant (SGT) Gareth Havill said.

It will feature large equipment storage areas, exercise yards and CCTV along the kennel lines to monitor canine activity. The new facility is expected to end up with eight working dogs and their handlers, plus senior supervisors, SGT Havill said.

The working dog teams will be providing security for the military air base, but will also get opportunities to be deployed with Air Force assets to provide force protection on exercises and missions overseas, SGT Havill said.

The next MWD handler course will be graduating early this year. Graduates of that course will be based at Ohakea, SGT Havill said.

During the 12-week course the handlers learn about canine psychology, training techniques, kennel and animal welfare. The dogs will also go through intensive training to reach operational readiness as patrol dogs.

“So that will be ideally four more handlers and four dogs to join the team already on the base.”



One of the handlers already based at Ohakea, Aircraftman (AC) Rommanee Scully works with MWD Alita.

After recently graduating from recruit course, AC Scully was attracted to the trade because of the amount of work that goes into working with the dogs.

"It's a lot of work, but it pays off at the end of the day."

The military working dogs are obedient, with high drive levels for different aspects of the job, she said.

"My MWD Alita is very energetic and always keen to work – she's almost always in work mode. I take her out for a walk and she's constantly alert. It's one of the ideal traits we want in our dogs, that they have a high work drive and focus."

The working dogs were able to switch from working mode, where they have a level of controlled aggression and alertness, to being calm and friendly when they were off-duty, AC Scully said.

The new Dog Section hasn't long been at Ohakea and the teams were still settling in, with the dogs continuing with operational readiness training.

"We've still got to keep that standard we reached on course, so still having to train them on their bite work or obedience. Just anything we can – any small thing that needs to be worked on, we do that.

"It's different every day. I'm looking forward to continuing to work with Alita. She's very keen to work so it would be good once all the P-8As arrive. I look forward to experiencing that with her," AC Scully said.

"It's also going to have a hydrotherapy pool for the dogs – like a conditioning and habilitation facility for them to swim in that will be easier on their joints."

– Sergeant Gareth Havill





A base impact

Base Ohakea is no stranger to squadrons making their home on the base and the latest arrival, No. 5 Squadron with four P-8A Poseidons in tow are a welcome addition, the base's Commander, Group Captain Rob Shearer says.

“We were home to No. 75 Squadron with the A-4 Skyhawks, so in many ways this is almost restoring the balance of force elements across Auckland and Ohakea. So we welcome them of course.”

A lot of work has had to happen to accommodate the squadron, including the purpose-built hangar next to the new No. 3 Squadron hangar. The work is taking longer to finish than planned, but the former No. 3 Squadron hangar and office space is serving as an interim home for the Poseidon Transition Unit in the meantime, Group Captain (GPCAPT) Shearer said.

“That’s worked out really well in terms of being able to accommodate them until they move over into the finished building,” he said.

“The other thing we’ve had to think about is that upwards of 170 people, plus mission support, logistic support and all their whānau are arriving in the community – what does that mean for housing and services?”

“So we’ve done quite a bit of work trying to understand what the accommodation and welfare requirements are including barrack accommodation, or if they need to move into married quarters or if they will go into communities like Bulls, Feilding, Palmerston North or elsewhere in the Manawātū.”

Those considerations meant working with the local district and city councils to understand if these requirements can be supported.

“We have worked with the Manawātū Central Economic Development Agency to facilitate the sharing of information with new arrivals including organising a road show of the district mayors to Auckland to talk with our people about what options and services there are.”

There also needed to be an understanding around what impact an extra squadron would have on catering, administrative, medical, dental, technical services and sports groups, GPCAPT Shearer said.

“The new P-8As will also need fuel, so what does that mean for our aviation fuel team. We also needed to review our security procedures now there is a highly capable platform with sophisticated and classified sensors on the base. We’ve had the US Navy here inspecting our protective security measures and advising us on requirements.”

In the race to the arrival of the first P-8A there was also a multitude of activities to ensure all the introduction into service requirements were met, the airfield construction work was finished, the airworthiness requirements were met for certification, and the welcome ceremony was organised.

“It’s great that we’ll have another unit here to work and banter with as we go about the serious business of delivering outputs in New Zealand’s interests.”

Boom for the community



With the arrival of No. 5 Squadron to Base Ohakea from Auckland the Manawātū and Rangitikei districts' populations have swelled by about 1,000 extra people. Air Force News spoke with Manawātū District Mayor Helen Worboys about how that will impact the area.

“It's really, really exciting and has huge advantages for our region,” she said.

A couple of years ago the mayors from the surrounding districts visited Base Auckland to sell the region to the personnel and families moving there.

“We did presentations to different personnel and their families, which was great. It's okay for the personnel who have a job here, but their partners have to think about jobs, maybe what schools are around.

“It's a very different area and maybe their perception of the Manawātū is a little off the mark. So I think that visit paid off because Defence has found that it has been reasonably seamless for people moving down here.”

Ms Worboys said the personnel and their families slot “perfectly” into the community and are very community-minded.

“They are on our school boards, they participate and they volunteer and they are a great asset to our region.”

The schools were given notice about the likely increase in their rolls, she said.

“When we went to Whenuapai we showed the broad range of schools from private to public, and rural to city schools from Whanganui through to Palmerston North. When you put it all out there, this region has a lot to offer.”

And she wasn't worried that teenagers would find the culture shock too much.

“It's a little bit different to Auckland – entertainment isn't laid on as much and they have to go and find it. But I think that's good to give young people an insight to how outside the city works.

“Even from Bulls to the city, it's not far, there's good public transport so there is plenty to do here – there's beaches to the ranges. So if we can encourage the young people to get outdoors and experience something they might not have done in Auckland, I think they will have a great time.”

The large P-8A aircraft will be a common sight in the skies in the region and Ms Worboys said that for those who had lived in the area for a long time that will bring back fond memories of the Skyhawks.

“We're very proud of the Defence Force and Ohakea and it's going to be great to see that expansion and I think it's good for the whole region,” Ms Worboys said.



Future force

In the lead-up to the P-8A Poseidon arriving in Aotearoa New Zealand the aircraft's future users have been learning to operate the fleet. Air Force News caught up with a trainee air warfare officer and pilot about what they thought about the new plane.

Before taking the reins in the P-8A, aircrew learn the intricacies of their trades in No. 42 Squadron's King Airs.

Pilot Officer (PLTOFF) Jamie Hing will finish his air warfare officer (AWO) course with the squadron about the middle of the year.

"I've had a general interest in aviation since I was young and was keen to be a pilot."

That trade didn't work out, but he was given the opportunity to become an AWO – a trade he has since found to be engaging.

"There's always something to think about, which I find quite satisfying," he said.

In the build-up to the arrival of the first P-8A to Base Ohakea, PLTOFF Hing was given the opportunity to be part of a flight in a visiting United States Navy P-8A Poseidon to Base Ohakea.

"We did a fisheries patrol out by Fiji. It was cool to see how they operate. I'm sure they operate it a bit differently to how we will, but it was still beneficial to see how they worked in that type of mission."

The flight increased PLTOFF Hing's appetite to work on the Air Force's fleet.

"It will be exciting to be one of the first teams to work in the new P-8As. They are a really capable aircraft so it will be good to get really stuck in.

"I'm looking forward to the versatile nature of swapping between the different missions – like the search and rescue and the fisheries patrols," he said.

"I'd really like to get involved in some search and rescue flights. It's what made me interested in the Air Force in the first place, doing those sorts of tangible roles where you can very clearly help someone."



The P-8As will also pick up where the P-3K2s left off with helping maintain United Nations sanctions against North Korea, which would also be an interesting aspect of the role, PLTOFF Hing said.

“It will be interesting to see the role the aircraft plays in the Pacific and South East Asia in the future.”

After pilot training with No. 14 Squadron’s T-6C Texans, pilots move to hone their skills in No. 42 Squadron for fixed wing flying or No. 3 Squadron for the rotary section.

Flight Lieutenant (FLTLT) Dan Garnett has been flying the King Airs on various tasks since graduating from the training programme in preparation to moving to the P-8As.

“I’ve got a posting notice to the Poseidon Transition Unit about mid-this year, so I will need to go to Jacksonville in Florida to join the US Navy course and convert to the P-8A there.

“Once the course kicks off it’s a pretty high-paced for six months.”

FLTLT Garnett will then return and join No. 5 Squadron as it “starts to find its feet” at Ohakea.

“It’s definitely exciting to be at the forefront of it – I think there’s going to be a lot of attention on the jet, especially as we get used to it in the Ohakea skies and it starts to establish itself in the Pacific.

“As New Zealand continues its presence in the Pacific in particular, maritime awareness is going to become more and more important and the P-8A is going to be at the front of that.”

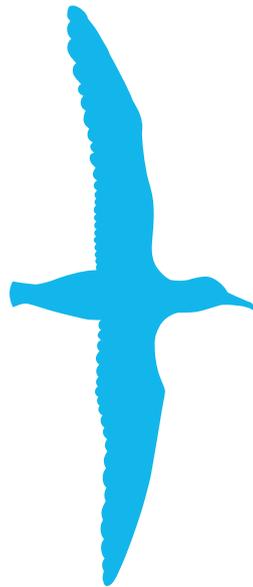
Maritime patrol had always been an interest of FLTLT Garnett’s and, while he was disappointed to not get an opportunity to fly the P-3K2, he was looking forward to be part of the introduction of the new fleet.

The P-8A was often the “first out the door” when it comes to emergencies, such as humanitarian aid and disaster relief missions as well as search and rescues, and it was great to be able to be part of those mission-focussed flights, he said.

LEFT
PLTOFF Jamie Hing

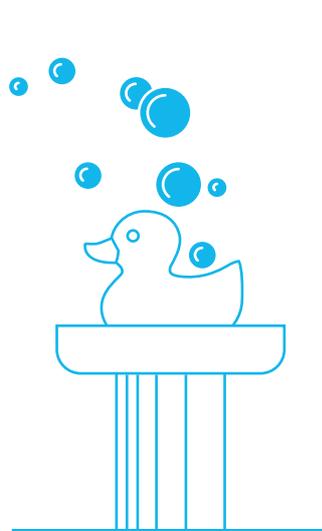
RIGHT
FLTLT Dan Garnett

P-8A Poseidon Fun Facts



Why is there a symbol of a toroa (albatross) on the tail?

The toroa holds a special place in No. 5 Squadron. The noble toroa is the biggest of all seabirds. It flies as far as 190,000km in a year, spending 85% of its time at sea. No. 5 Squadron, like the toroa, spends a considerable time away from home, on solitary missions over the sea and the image is also on the squadron's crest. The toroa, perhaps more than any other bird, characterises the role of airborne maritime surveillance.



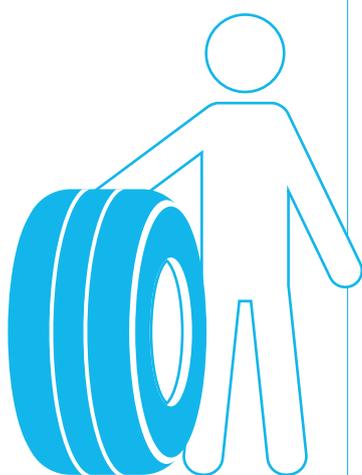
What's a bird bath?

Found on the taxiway, the bird bath is a system that washes the salt off the aircraft after a low-level flight over the ocean. The one at Base Ohakea has been built to specifically wash parts of the airframe where salt is likely to have built up. The environmentally-friendly system catches, filters and recycles 80% of the water for reuse on subsequent cycles.



How many other nations operate the P-8A?

Seven other nations: Royal Australian Air Force, the German Navy, the Indian Navy, the Republic of Korea Navy, the Royal Norwegian Air Force, the United Kingdom's Royal Air Force, and the United States Navy.



How big are the tyres?

The main tyre size is 44.5x16.5xR21. This means it is 44.5 inches in diameter, 16.5 inches wide and wrapped around a 21-inch wheel. Overall this is roughly 1.5x the size of a large 4x4/SUV tyre.

The nose tyre size is 27x7.75xR15 – about the size of a 4x4/SUV tyre.

Bonus tyre fact

Aircraft tyres are structurally stronger and run at much higher pressure, roughly six times that of a car, to handle the weight of the aircraft and speed of a landing.



What size is the aircraft's fuel tank?

It is 71,040lbs or just over 40,000 litres. It would take just over 62 fully fuelled P-8As to fill up an Olympic swimming pool.

Does the crew have, umm, creature comforts?

Yes! And much better than the P-3K2, which had a bucket for ablutions. The P-8A has a proper flushing toilet.



On long flights, how do the crew eat?

The plane is fitted with a pretty comprehensive kitchen, or galley, that holds an oven, fridge and coffee maker. Like commercial aircraft it's designed for heating frozen meals, but the creative No. 5 Squadron team have successfully roasted a chicken with all the trimmings, baked a loaf of bread, made pies from scratch and celebrated Cinco de Mayo with tacos. The aircrews can be in the air working hard for up to 12 hours, so being able to eat good meals is an important way to keep the team effective throughout the flight, as well as keeping up morale.





B | SENIOR VIDEO PRODUCER
Y | ELLIOT LIM

Luckily the sun showed up and the winds were calm for this morning shoot with the P-3K2 and P-8A! With Ohakea being an active airfield we were given a firm window of time and space to operate the drone, so I'm stoked to have squeezed in this bird's-eye view. My favourite part of shooting with drones is the unique perspectives and shapes you only get to see once you're in the air. Here we can see some amusing contrast between the sharp and sleek lines of the P-8A, and the rather endearingly chonky shadow it casts!

