

# A Short History by Kim Dunstan v3.0

In the early 1950s the Royal Australian Navy (RAN) set about replacing its ageing Fairey Firefly and Hawker Sea Fury piston-engine aircraft, by re-equipping the Fleet Air Arm with De Havilland Sea Venom all-weather fighter jets and Fairey Gannett AS1 turboprop aircraft. Both would serve on the 'Majestic class' light-fleet carrier HMAS *Melbourne*, which was undergoing modernisation in the UK.

With Australia's post Korean War, Far East Strategic Reserve and SEATO commitments very much to the fore, and a communist insurgency occurring in S.E. Asia, an up-todate aircraft carrier with modern aircraft was considered vital to Australia's defence interests, as there were serious concerns about regional security. Such a vessel would add flexibility and strength to the Australian fleet.

## A Modern Aircraft Carrier

The existing aircraft carrier HMAS *Sydney*, which had served in the Korean War was soon to be reduced to a training ship. HMAS *Vengeance* (that had been on loan during the modernisation of HMAS *Melbourne*) was returned to the Royal Navy, arriving at Plymouth on 25 October 1955.

On 28 October 1955 *Melbourne* – now fitted with an angle deck, a mirror assisted landing system, upgraded arrester wires and a steam catapult – was commissioned into the RAN at Barrow-in-Furness in the UK. She then began five months of acceptance trials in British waters before loading the cocooned Sea Venom and Gannet aircraft at Glasgow over the period 8-11 March 1956. The following day she sailed for Australia.

The RAN now had a state-of-the-art light-fleet carrier and a formidable weapons system, unrivalled by other nations in the region – quickly gain-



# CONTENTS

Main Article	1
Flying the Venom Pt.1	
Flying the Venom Pt. 2	10
Photo Gallery	13
Airframe Histories	

ing the respect of allied navies. At the time *Melbourne* was only the third aircraft carrier to be equipped with an angled deck, together with HMS *Ark Royal* and USS *Forrestal*.

# **Licence Production**

The Australian subsidiary of the de Havilland aircraft company approached the Australian Government in early 1953 with a proposal to build the Sea Venom at its Bankstown facility. The company had built over 200 Mosquitos during the latter years of WW2 and more recently had manufactured Vampires, but the work was running out and they were keen to secure an order. This never eventuated, but de Havilland (later Hawker de Havilland) received a further order for Vampire trainers for the RAAF instead. All of the Navy's Sea Venoms were therefore built in the UK.

# **Aircrew Training**

To prepare aircrew for the Sea Venoms the RAN ordered several De Havilland Vampire trainers, the first of which were delivered in June 1954. The Vampire had side-by-side seating for pilot and trainee; six were Mk-T34As, with four ex-RN Mk-T22s arriving in 1959. Because the Vampire

# **De Havilland Sea Venom FAW 53**

Performance subject to conditions

Manufacturer:	De Havilland
Type:	Two seat All Weather Fighter
Number:	39
Crew:	1 pilot and 1 observer
First delivery:	May 1956 (to NAS Nowra)
Wingspan:	42 ft 10 inches
Height:	7 ft 6 inches
Length:	36 ft 7.25 inches
Power:	One 4,950 lb thrust De Havilland Ghost Mk 104 turbojet.
Patrol speed:	About 295 knots.
Max speed:	489 knots
Range:	870 nm
Ceiling:	40,000 ft
Weapons:	4 x 20mm canon; 8 x 60lb rockets

\*Note: the beam of the FFG was 14.3m (46.9 ft); FFH 14.8m (48.5 ft). +

## Why the Sea Venom?

In the early 50s, the RAN continued to mimic the Royal Navy and when the time came to replace the Sea Fury and Firefly (both common to the RN Fleet Air Arm), the same philosophy was followed. The choice of aircraft therefore boiled down to either the Hawker Sea Hawk or the de Havilland Sea Venom.

The single seat Sea Hawk, although offering similar performance to the Venom at lower cost, was designed as a day fighter with no radar. The Venom, on the other hand, was designed from the start as an all-weather fighter with a secondary ground attack role.

Unlike Britain, Australia could not afford two aircraft types to cover both roles, so the more versatile Venom was purchased. The logic was that in our theatre of operations the aircraft was more likely to meet long-range enemy aircraft rather than fighters, and its capacity to find and destroy at night as well as day was a powerful incentive.

The Minister for Navy, Mr William McMahon, made the announcement on 23 July 1951 that 39 Sea Venoms would be purchased. The order was placed in December that year by the British Air Ministry on behalf of the RAN, together with eight spare Ghost engines. The Fairey Gannet was chosen as the RAN's new anti-submarine aircraft the following year. The timing was important as it meant that HMAS Melbourne and her new aircraft would become operational at the same time.  $\rightarrow$ 

had similar handling characteristics to the Sea Venom they were an ideal trainer, although there were some inexplicable differences between them: for example, the HP cock and speed brake lever were transposed in the two aircraft!

The bulk of the training occurred in the UK between June 1955 and February 1956, however. Night-flying training took place at the RAF 228 Conversion Unit flying Meteor NF11s, while Observers did a special radar navigation course. Then at RNAS Yeovilton (HMS Heron) type conversion began, flying Sea Venom FAW 20s on loan from the Royal Navy's 891 Squadron.

Maintenance crew training for the Sea Venoms took place at RNAS Yeovilton, and Fairey Gannet training at RNAS Culdrose in Cornwall. Additional Air Engineering training took place at RNAS Arbroath, in Scotland.

808 Squadron was commissioned on 8 August 1955 and over the following months aircrews continued to exercise at RNAS Yeovilton. The highly intensive training included tactical interceptions, ADDLs, weapons firing and participating in flying trials during Melbourne's work-up period. In early 1956 the Australian aircraft were delivered to the Royal Naval Aircraft Yard at Abbotsinch where they were stored in protective cocoons for shipment. They were then transported to Glasgow for embarkation aboard Melbourne.

Melbourne sailed for Australia on 12 March 1956 with no less than 64 aircraft aboard: 22 Fairey Gannets for 816 and 817 Squadrons, 39 Sea Venoms, two Bristol Sycamore helicopters and a single Avro 707A experimental aircraft. The voyage took nine weeks at an average speed of 11 knots.

During a national broadcast on 20 May, Captain G.C. Gatacre described the workup period in the UK and her voyage to Australia:

"After commissioning, Melbourne spent the next five months in English waters based on Plymouth or Portsmouth carrying out the large number of trials normally undertaken by a new ship, to test her machinery, equipment and performance. The trials in fact proved her as a ship and then proved her as an aerodrome.

All ship's trials and flying trials were highly satisfactory, and although undertaken in the northern winter which brings a succession of gales, we completed a comprehensive programme without delay. When we needed reasonable weather for any particular trial, we were favoured by reasonable weather; when bad weather was of no consequence, a gale would come and go.





Top. Precious cargo! Sea Venoms stowed on the Flight Deck of HMAS Melbourne for their transit to Australia, cocooned for protection agains the weather Above: One of the new aircraft is carefully lowered to a barge in Jervis Bay for transportation to RANAS Nowra (Jeff Chartier collection).+

At this stage our three air squadrons had formed ashore and were practising their airmanship and developing their skills with the new jet aircraft.

During February [1956] we were honoured by a visit at Portsmouth by His Royal Highness the Duke of Edinburgh, who landed his helicopter on our flight deck and spent three and a half hours aboard. After inspecting the ship's company walked around the ship displaying a keen interest in everything and, of course, a sound professional knowledge.

Before leaving the ship by helicopter, His Royal Highness expressed to me his congratulations on the appearance and cleanliness of the ship, and the smartness of her company.

In March the ship embarked her air squadron personnel and at Glasgow loaded fully with aircraft and freight. We then sailed for Australia. Our loading of aircraft on the flight deck and in the hangars filled all spaces in which any numbers could have recreation, so that it was necessary to plan in our voyage to make a brief stay at several ports so we could stretch our legs ashore. And thus it was we made short visits to Gibraltar, Naples, Malta, Aden and Colombo.

After leaving Colombo the ship began to be cooled by the Trade Winds. We passed the Cocos Islands one afternoon and at the request of the Australian Administrator, steamed close alongside so the Australian community could see their new ship. Being beyond 'coo-ee' range, they greeted us by firing several coloured Very lights."

### **Arrival in Australia**

He then had lunch in the Wardroom with a full sitting of officers. Melbourne arrived in Jervis Bay on 7 May 1956, where she unloaded Sea Venoms and Fairey Gannets by barge. The aircraft were transported by road to RANAS Nowra to be unpacked and prepared for flying operations. The ship then sailed for Sydney where she arrived two days later to a tumultuous welcome.

The first Venom to be delivered at NAS Nowra, 7th May 1956. As can be imagined, the arrival of the new aircraft caused a great deal of excitement for those present. (Jeff Chartier collection). $\rightarrow$ 

The 39 new Sea Venoms disembarked in Jervis Bay were carefully prepared for flying and throughout July were involved in an intensive work-up program, flying from Nowra to rendezvous with *Melbourne* at sea; practising day and night touch-and-goes, mirror-assisted deck landings and catapult take offs – all in readiness for 808 Squadron's re-embarkation on 6 August 1956. The training and delivery phase was now over, and the aircraft had to earn their keep.

## A Walk Around a Sea Venom FAW 53

The Sea Venoms were an all-weather, radar equipped, interceptor/strike aircraft, capable of day and night operations and powered by a 5,300lb thrust De Havilland Ghost 105 engine [cartridge starter] giving a speed of 575mph and range 705 miles. The pilot and observer were seated side-by-side, with the latter positioned slightly aft to accommodate the radar viewer. Weapons included 8 x 3-inch unguided air-to-surface rockets (which could be fitted with 25lb steel heads, 60lb H.E. or 60lb hollow-charge heads) and 4 x 20mm cannons mounted under the nose – each with 150 rounds. These weapons gave the Sea Venom considerable strike ability on land or sea, although the aircraft could not carry bombs.

In terms of size and performance, the aircraft was ideal for a light-fleet carrier such as *Melbourne*. Developed for the Royal Navy in the early 1950s and based on the RAF's Venom NF2 two-seat night fighter, the Sea Venom featured a strengthened undercarriage, catapult attachments, arrester hook and folding wings. The Royal Navy's experience with the Sea Venom in the Suez, Cyprus and Middle East conflicts demonstrated they were a capable and effective fighter.

The Sea Venoms were the RAN's first jet-propelled, front-line aircraft. They remained in service from 1956 until 1970, serving variously with 808, 805 and 816 Squadrons at sea on *Melbourne*, and at RANAS Nowra when disembarked. 724 Squadron was the training unit stationed at Nowra (HMAS *Albatross*). The Sea Venom's low profile meant it handled well in a crosswind; its camouflage paint, rounded wing roots and wood and metal construction gave it some 'stealth' qualities. With its night-flying ability unmatched by regional forces for many years, the Sea Venoms gave the RAN an important tactical edge.



Shortly after landing, a Sea Venom taxies to its parking bay whilst simultaneously folding its wings. A Sycamore, probably the duty SAR helicopter, lands astern (Image: Kim Dunstan).

a fixed direction when searching for surface or airborne targets. The radar image could also be beamed onto the gyro gunsight; a great advantage at night or low visibility. Originally without ejection seats, this was rectified from 1957 with Martin Baker Mk4A seats being installed by De Havilland, at Bankstown NSW, with a canopy release gun for emergency use. The Sea Venom also had power ailerons with short, wing-tip slats and non-skid wheel brakes vital on slippery flight decks and runways.

## **Patrols and Preparations**

An important part of HMAS Melbourne's duties included regular SEATO exercises with other navies and patrolling in the South-East Asia region and Pacific Ocean as part of the Far East Strategic Reserve. During the 1950s and 60s with on-going tensions in Malaya, there were times when the Sea Venoms would land at Singapore's Seletar aerodrome to be on standby while 'Melbourne' was in dock. Likewise, in Hong Kong, the Sea Venoms would use (old) Kai Tak airport as a base while 'Melbourne' replenished fuel and stores. Manila and Subic Bay were ports of call when visiting the Philippines.

The nose-mounted A1 Mk17 radar enabled the observer to scan or aim in

**Below**: A synchronised start, with smoke from the ROTAX cartridges giving a dramatic image (Jeff Chartier collection).





The Sea Venoms were well equipped for day and night reconnaissance patrols. Working with the Fairey Gannets on anti-submarine patrols they formed an effective team. During exercises at sea with allied navies, opposing forces would engage in war games with mock attacks and counter attacks, including amphibious assaults and other tactical exercises. In these situations the Sea Venoms always gave a good account of themselves. At RANAS Nowra, where much of the training took place, the Sea Venoms made good use of the rugged coastline nearby and the deep gorges inland in simulated terrain-hugging 'sneak attacks,' all testing and building pilot and navigator skills.

In the early 60s with Indonesia's President Sukarno's bellicose, anti-colonial rhetoric about the proposed Malaysian Federation, tensions escalated and threats were made that foreign war ships should keep clear. But 'Melbourne' continued to sail through the islands with the ship on alert and the Sea Venoms ready for action. To calm matters 'Melbourne' made a 'goodwill' visit to Jakarta in 1960, where units of the Indonesian Navy showed great interest in the Sea Venoms during an inspection tour of the ship. However, tensions continued and erupted into the 1963-65 Indonesian 'Confrontation' with Malaysia, which ceased after Sukarno was deposed.

# **Air-to-Air Firing**

At Nowra from 1958, 724 Squadron Sea Venoms towed large bannerstyle targets used for 20mm air-to-air live-firing exercises. A sonic recorder registered hits and colour coded ammunition indicating which aircraft scored hits. In 1964 the Delmar target system was adopted. The Sea Ven-

**Top**. Captured at the moment of launch, probably by a photographer in the Planeguard helicopter, this venom lifts from the deck.

*Centre*. Manhandling past a Fairey Gannet shows just how little room there was on HMAS Melbourne's deck

*Lower*. Photographed during a wave-off, this image gives a good view of the arrester hook and the four Hispano cannon ports immediately under the nose (Jeff Chartier collection). +

oms were also used for fleet gunnery exercises at sea

The Sea Venom's four 20mm Mk V Hispano cannons were adjusted to concentrate fire on a small 'beaten area.' The Hispano muzzle velocity is around 2,750 ft./sec., firing some 850 rounds a minute. The 150 rounds the Sea Venom had for each gun [total 600] gave the pilot approximately 11 seconds' firing time. This may not seem much, but the 20mm has a devastating impact and with short bursts an experienced pilot could make the most of the ammunition. Test firing the Hispano on the ground showed that a 130 gram, 20mm projectile could easily pierce four inches of reinforced concrete at 100 yards.

The 20mm ammunition, depending on the target, would usually be a mixture of ball (solid metal), high explosive and semi-armour-piercing incendiary shells with tracer. For practice at sea the Sea Venoms would fire RP3 rockets and 20mm at a 'splash target' towed behind a ship, simulating the wake of a submarine periscope.



## **Sea Venom Aerobatics**

In 1956, following in the footsteps of the earlier Sea Fury aerobatic teams, 808 Squadron fielded a Sea Venom aerobatic team, winning praise from the President of the Philippines. In 1959, 805 Squadron took the honours with a number of polished performances. In 1959 the Sea Venoms of 724 Squadron formed an aerobatic team called the "Ramjets" sponsored by the Golden Fleece fuel company H.C. Sleigh, who used a Merino ram as their emblem.

These precision aerobatic displays were popular events at air shows around the country, at family days, Navy Week events and 'Shop Window' displays. The amazing 'threading the needle' act was a truly breathtaking performance. Movietone made a six-minute film of the 724 Squadron formation flying. 805 Squadron formed the "Checkmates" – featuring red and white checks on their wingtip tanks. In April 1961 they gave a magnificent aerobatic display at the Singapore International Air Show. Another important occasion was when 725 Squadron sent an aerobatic team to the International Air



Convention, held at Avalon, Victoria.

In 1962 a remarkable demonstration of formation aerobatics was witnessed by thousands of onlookers as the "Checkmates" team performed over Sydney Harbour. Suddenly two Sea Venoms in the formation of four collided in mid-air. One damaged aircraft limped back to RANAS Nowra, followed by two undamaged aircraft. But the fourth aircraft did not recover and the pilot ejected moments before the aircraft plunged into the harbour. Fortunately, he was rescued unharmed. (See Norman Lee's story later in this document).

# The Ikara Trials

A little-known (at the time secret) role of the Sea Venoms was their involvement in the development and testing of the Ikara anti-submarine homing torpedo missile system during the 1960s.

As the RAN fleet was strengthening its anti-submarine capability the lkara missile was an important part of that plan. With the Sea Venom able to fly at suitably high speeds they proved to be an ideal test platform. A Sea Venom during Ikara trials, conducted at Woomera and Port Wakefield from about February 1961. The weapon being tested is under the port wing, with 3 inch rockets under the starboard wing. (Phil Thompson collection). See a short video of the Ikara test <u>here</u>.

Two Sea Venoms from 724 Squadron were modified to carry the Ikara missile attached to an underwing hard-point. To enable engineers to check for aerodynamic and vibration problems, one Sea Venom had a movie camera in the gun bay, filming through a Perspex screen. Both Sea Venoms were used extensively at the Woomera Rocket Range flying under varying conditions, also test dropping dummy Mk44 torpedoes to evaluate performance standards.







# New Aircraft

By 1960 with the advances in naval aviation it was clear the Sea Venoms needed to be replaced. By then fighter aircraft in the RN and US Navy were equipped with air-to-air and anti-shipping missiles and other technical systems. This meant acquiring a new aircraft-carrier capable of carrying the larger, modern aircraft. But the government was reluctant to accept the huge cost involved, so the decision was made to cease fixed-wing flying and equip *Melbourne* as an ASW helicopter carrier only. Meanwhile, the Sea Venoms continued to exercise at sea and perform other second-line duties such as radar calibrating and target towing for the fleet.

After some government re-thinking about the need for a Fleet Air Arm, a decision was made to refit *Melbourne* and replace the Sea Venoms with the McDonnell Douglas A4 Skyhawk, and the Fairey Gannets with the Grumman S2EG Tracker – both of which were delivered in 1967 to assume front-line duties. The last Sea Venom flight occurred in December 1970 by SBLT Peter Cox, and the aircraft were retired to go to their individual fates.

# **A Proud Service Record**

The De Havilland Sea Venom FAW 53 was the final model in a distinguished line in a period of rapid advances in aviation. But it was a good solid aircraft that was easy to fly, and it served the RAN well from 1956 to 1971. The Sea Venom also served with the Royal Navy and French Navy. Although small and ungainly in appearance with its twin boom tail, a comment from a US Navy officer at the time makes a telling point saying: 'They look cute and sporty – but don't underestimate them.'

Operating high-performance aircraft at sea is hazardous, especially from a small Fleet Carrier like Melbourne, but there were surprisingly few serious accidents. In this one the aircraft suffered a brake failure whilst taxying on deck. One wheel locked up, causing it to veer into a 40mm Bofors sponson at deck level forward of the island. Photo: Kim Dunstan.



NAWY

A number of FAW 53s have survived and are on display at several locations in Australia, including Moorabbin Air Museum, near Melbourne and the Fleet Air Arm Museum at Nowra, NSW.  $\rightarrow$ 

# To Eject or Not...

Tragically, both the lack of ejection seats in the Venom and their subsequent inclusion was to result in the loss of young Australian lives.

Commander George Brown and Lieutenant Peter Wyatt were killed in a Royal Navy Venom in the UK, where 808 Squadron had just been formed as part of the RAN training process. Wyatt had been tasked to fly one of the loan aircraft from Yeovilton to Culdrose with Brown, who was his passenger. There were no ejection seats aboard.

The aircraft entered a very low cloud base on take off, but did not climb at a sufficient rate and struck a tree not far from the airfield. It then hit a chimney of a house before crashing into a caravan park being used as Married Quarters for sailors serving at the air station. Both Brown and Wyatt lost their lives, together with a young mum and her infant who were on the ground.

Just over six months later Lieutenants Barry Thompson and Keith Potts died when their Venom dropped its starboard wing on launching from HMAS *Melbourne*, to crash into the sea. It was not possible to recover the aircraft so the cause of the accident was not determined. It is possible the crew might have been able to eject had seats been fitted.

From 1957 Martin Baker seats were progressively fitted to the RAN's Venoms, although they had speed and altitude limitations. This did not help Lieutenant Stanley Charmichael or Acting Sub-Lieutenant Mike Williams, who died in May of 1959 when their Venom was observed to crash into the sea whilst on a photographic sortie off Ulladulla, NSW. The aircraft was never recovered and no reason for the accident could be established.

Ironically, the ejection seats fitted to Venom WZ941 were to claim the lives of Sub-Lieutenant Frank Hodgson and EMAW2 Malcolm Holloway in May of 1960 when the aircraft undershot runway 26 at Naval Air Station Nowra. The crash caused the unintended activation of both seats outside their safe operating envelope, and both men were killed. The accident prompted the approach to 26 to be upgraded, and later generation seats to be fitted with additional safety features and a wider envelope.



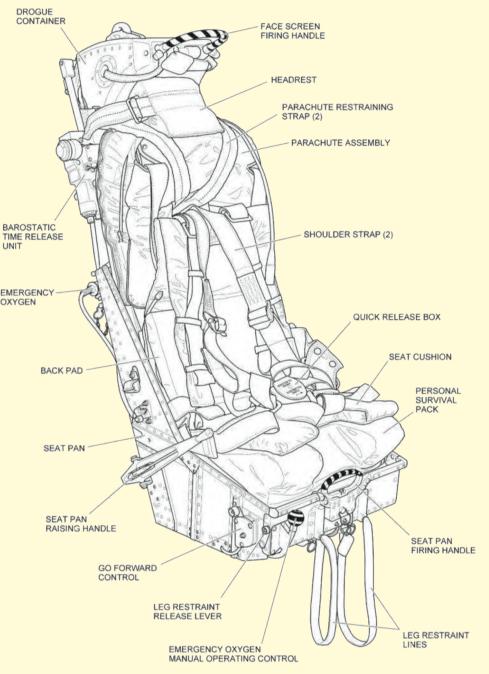
There is no doubt that ejection seats saved the lives of Acting Sub Lieutenant Brian Dutch and Lieutenant Sandy Sandberg on the night of 15 June 1960, when the aircraft struck a tree during approach for a night landing at Nowra. You can read a fascinating account of the ejection <u>here</u>.

Ejection also saved the life of Lieutenant Riley two years later, when he was involved in a collision with another Venom during an aerobatic display over Sydney harbour. He departed the aircraft at a reported height of 500 feet and his parachute opened just before he entered the water.

The final ejection from a Venom occurred in April of 1966 when an arrester wire on HMAS *Melbourne* failed and the aircraft trickled over the edge of the deck. The pilot was recovered but the Observer, Lieutenant Edward (ted) Kennell was lost and no trace of his body was found.

The early Venoms were not supplied with ejection seats, but they were gradually fitted although the ejection parameters precluded slow and/or low events. Following a fatal crash on the approach to runway 26 at Nowra in 1960, the Sea Venom's Martin Baker seats were modified to ground-level ejection standard. While the aircraft needed a speed of 90 knots for an effective ground-level ejection, it added a real safety margin that was especially useful in the event of a failed catapult launch at sea. The ejection seat sequence for the Martin Baker Mk-4A seat follows.

In an emergency when the crew ejects, the cockpit canopy is jettisoned first. Then, by pulling down on the 'D-shaped' handle positioned above the head, a protective blind is released covering the face. Simultaneously the primary ejection seat cartridge is fired and the occupant is thrust out of the aircraft. If 'G' forces prevent the crew's hand reaching the upper handle, an alternative firing handle on the seat pan, between the knees, was available – but without the benefit of the protective face screen – although a lowered helmet visor would give limited protection when ejecting.



TYPE 4P

When the ejection seat fires it moves on its rails at 80ft/sec, secondary cartridges quickly fire, and the leg restraining straps tension. After half a second a drogue-gun fires, releasing a 22-inch drogue from the top of the seat.

As the seat clears the aircraft the small drogue deploys a larger 5ft diameter drogue, which stabilises the seat in an upright position, allowing it to descend swiftly to a safe altitude where the main parachute canopy is deployed. During this time emergency oxygen is fed to the occupant's face-mask. Once fired the ejection sequence operates even if the occupant is unconscious.



As the seat leaves the aircraft a barometric seatbelt release is activated, which triggers after 1.5 seconds (at 10,000 ft. or under) opening the seat belt harness, allowing the occupant to separate from the ejection seat. At the same time the large stabilising drogue disconnects from the seat and deploys the main parachute.

Free of the seat and with the main parachute open the occupant makes a normal descent, with a survival pack and inflatable dinghy attached.

Read about Martin-Baker seat development here. +

# THE SEA VENOM

Part 1 - by Norman Lee

When it came time for the RAN to replace the Sea Fury, a number of aircraft were considered but the obvious choice, considering the size of HMAS Melbourne, was the De Havilland Sea Venom, a two seater all-weather jet fighter.

10 011

The aircraft entered service at the same time as the Gannet, the pair forming the second generation of fixed wing aircraft in the RAN. The Sea Venom was powered by a De Havilland Ghost centrifugal gas turbine and its twin boom configuration made it obvious that it was developed from the Vampire.

The aircraft was not initially fitted with ejection seats, which made the cockpit a little cramped when they were eventually installed as a mod. The pilot and observer sat side by side with the latter staggered slightly aft. The ailerons were hydraulically powered with the stick to aileron throw adjustable through a gearing control in the cockpit. This gave a range of half aileron for full stick to full aileron to full stick.

Four 20mm cannon were mounted in the nose and rockets could be carried under the wings. Surprisingly, the aircraft was not capable of carrying bombs.

The view from the cockpit was adequate, the the canopy coming intruded particularly to starboard. The large flat windscreen was not the best in heavy rain, but there was a removable clear view side panel if things became too fraught. Trim control was in time honoured tradition by trim wheels in a trim box below the pilot's left hand. Cockpit layout was the usual compromise but one soon got used to it, however, cared needed to be exercised with the HP cock and speed brake lever if one was flying Vampires concurrently as the were transposed in the two aircraft. Starting was by cartridge and straight forward.

producing above specification thrust. The Ghost for some reason ran well below the maximum permissible JPH hence it is understandable that no one had queried it before. I snagged the aircraft and we had no more troubles, but I must admit that I wasn't popular in certain quarters!

I then had a break of two years with the RN and on return to command



the All Weather Fighter training Squadron, was informed that our task for the next three months was to form and work up and aerobatic team for a display at an international air convention at Avalon.

This was at the time of yet another run down of the FAA and the Squadron only had four Venoms on strength. I managed to win a fifth but it is not easy to run a four plane team with only five aircraft!

I had not flown formation aerobatics before, except for the odd play in Fireflies, but three of my pilots had formed part of an earlier team. Under the circumstances I decided the safest thing for all of us would be if I led the team myself. The RN Squadron with which I had been serving had flown a four plane team of Seahawks, so I was familiar with the various routines that had been developed overseas.

I discussed with my team members the speeds previously flown in looping and rolling manoeuvres, and then flew a proposed routine solo. It was immediately apparent they had been flying too fast, taking up too much airspace. After a few sorties we managed to knock 50 knots off all speeds and it was generally agreed it was much more comfortable, with much less loading in the vertical plane. The final routine consisted of a fourplane takeoff, followed by a double loop, two barrel rolls, a half loop and bomb burst, followed by a thread-the-needle and a reform, and four-plane formation landing. It was not a long routine, but then we hadn't been allocated very much display time.

The Sea Venom sat very solidly on the ground and was the least crosswind affected aircraft I have ever flown. Takeoff and climb were straight forward with the aircraft accelerating very rapidly to climb speed.

In my first battle drill climb in the aircraft I found that none of us could keep up with the Squadron CO. He was constantly badgering us to keep up but we found it impossible. The same thing happened on the next occasion and I became suspicious that perhaps we weren't at fault, as I discovered he was always at pains to fly the same aircraft. My primary task in the Squadron was as the QFI but I also happened to be the Senior Pilot, responsible for the overall squadron programming. I tasked myself for a solo sortie in the suspect and aircraft and timed it in the climb, discovering, not to my surprise, that its performance far exceeded the standard Venom. Now the method of trimming the Ghost for power was by varying the tailpipe diameter. When the engine came off test it would be noted as requiring a certain size tail pipe. A quick check of the aircraft log book soon showed that it had been fitted with the wrong size pipe and hence was

Because of the lack of aircraft it was rare that we managed to practise with all four team members together, which meant that I had to do a lot more flying than the others. This was no problem as I am a self-confessed hour hog and really enjoyed the challenge of working the team up under somewhat trying circumstances.

The formation take off was made in a box configuration with a positive lift-off and the boxman calling airborne. We then climbed through a full circle to a height from which we could do a double loop along the full length of the runway. Here we struck an unexpected problem: my loops weren't quite vertical and we were stepping aside several runway widths by the time we had finished the second loop. The cause was obvious: the Sea Venom had the stick cranked to the right so you could see the instrument panel and I was instinctively pulling it straight back, feeding in a small amount of aileron. The problem was soon sorted out and we managed to do straight loops from thereon in.

The next manoeuvre was a barrel roll off the deck, following by another returning back across the airfield. It was several years later that the RAAF suffered the loss of a Vampire aerobatic team at East Sale in, I believe, a barrel roll. I always made certain that I pulled up a least 30 degrees above the horizontal before initiating the roll, and that we were rolling with positive rudder. Aileron alone could leave the wingman "hung up" at the top with the roll tending to fade out.

I will be corrected I know, but I believe I can lay claim to introducing the vertically downwards bomb burst to the Australian scene. We would climb to looping height following the second barrel roll and enter a loop along the axis of the main runway. I would call the burst just before we were pointing straight down. I would continue on straight ahead completing the loop, with the wingmen turning 90 degrees and the boxman 180 degrees, and then completing the loop. I would call the second loop and half-roll to initiate the thread-the-needle. This is always a crown pleaser as it looks dangerous whereas it is perfectly safe provided you stick to the rules. Our rules were that the leader and boxman returned down the runway keeping to the right, and on the deck. The two wingmen kept to the right of

the tower and flew at mid-tower height. We occasionally achieved the perfect crossing but there were too many factors involved to guarantee it every time.

Should we be landing on completion of the display we would form up and do a box landing with the boxman calling the cut.

Never having qualified in the all weather role I thought I'd better do so as the CO of the all weather training Squadron! As this entailed mostly night flying it didn't interfere with the work up of the aerobatic team. It was a fairly condensed course as I was the only pupil, and we used a Vampire as the target aircraft to save the Venoms. Having just spent two years in day fighters I found the change a bit difficult to get used to - one had to trust the Observer, particularly close in.

Towards the end of our work up, the wing men were tending to get a little close to the extent that I could feel the aerodynamic interference on my aircraft. The Commander (Air) at the time became concerned at the tightness of the formation and indicated I should direct them to move out. On that very day, upside-down over the married quarters, half way through a barrel roll, I felt and almighty thump through the rudders. My immediate thought was that I'd snapped a rudder cable. My Observer said a rude work and the formation became a little ragged as we rolled out.

A check of all the aircraft could find nothing wrong, but I called it off nevertheless. Back in dispersal it became immediately obvious what had happened from the blue and gold tip-tank marking that had been transferred to the bullet fairing around my fin and rudder. My No. 3 wingman had got too close and his tip tank had grazed my bullet fairing, sucking my rudder across due to the Venturi effect. There was absolutely no damage to the bullet fairing and it was only necessary to wipe the paint with thinners to remove all trace of the incident. I then agonised over whether I should inform Commander (Air), finally deciding to do so the following day as we flew down to Avalon together in a Vampire; there was not much he could do at 30,000 feet!



Our great day came and with it turbulence and a low cloud base. We flew our number two sequence which deleted looping manoeuvres, but is was a terrible let-down after all our practising.

This was the early '60s and outside broadcasts on TV had not yet been developed. Film would be rushed to the TV station to be broadcast an hour or so later. As a result we had time to land at Laverton, our base for the display, and then see ourselves performing on the mess TV!

Shortly after our return to Nowra, we were scheduled to put on a display for a visiting parliamentary committee. Once again the weather upset our plans, to the extent that I could only safely fly the boxman for a few rolling manoeuvres. We finished off with a pairs run close by the tower with everything down. The committee was standing on the tower balcony so in time honoured naval tradition I gave them a salute. That evening in the mess we met the committee and one of their number in conversation admitted he had watched our performance very keenly because he had not wanted to miss the prang should it occur.

In due course I left the Squadron to do some 'fish heading' (general service sea time) and the team reformed with a new boxman and one of my old wingmen leading. If you are old enough you may recall a Sea Venom spearing into Sydney Harbour with the pilot ejecting in the nick of time. This happened when the team was putting on a display over the Harbour and the new boxman clipped one of the wingmen as they split in the bomb burst. The wingman got back to NAS Nowra minus a large section of his tail and that was the end of aerobatics over the city!

In summary the Sea Venom was a good, solid aircraft with no vices. It was pleasant and easy to fly and had a relatively good safety record. I can only recall being embarrassed once in a Sea Venom and that was on a land-away to Amberley when I forgot to close the jettison valves in the tip tanks and on refuelling, the aircraft poured fuel all over the tarmac. I had obviously earning nothing from my Oxford experience thirteen years previously.

# THE SEA VENOM

Part 2 - by Clive Blennerhassett

n 02 November 1964 three fresh faced Acting Sub Lieutenants arrived at HMAS ALBATROSS straight off No. 51 Pilots Course at RAAF Pearce posted HMAS ALBATROSS (Additional) for No.5 Sea Venom OFS.

Unremarkable, you might say. But there was a bit more to it than that. Nearly two years previously, they had responded to a recruiting drive seeking Helicopter Aircrew to man the newly purchased Wessex. This was a consequence of a decision to cease fixed wing operations (this was the Mark 1 Version; Mark 2 was to come some 20 years later) . All through their BATC training and up to about half way through their 1 BFTS course they were destined for helicopters. At the time Australian forces were involved with the Indonesian Confrontation and the powers that be decided HMAS Melbourne and the Fleet could not operate without dedicated air defence cover which could not be met from RAAF assets. So, fixed wing was back on the cooktop, but Navy was suffering from a serious lack of Sea Venom aircrew. Answer: change plans for some of the trainees on 51 Pilots' Course and send them on to RAAF Pearce for jet training and then to Nowra for Sea Venoms. Only four Navy trainees were remaining on course at that time so three were tapped on the shoulder for Pearce (Barrie Daly, Garrett Geerlings and myself) and one (John Wilkie) would continue as planned for helicopter training.

Before I start rabbitting on about my chosen subject I first need to mention a couple of things that always baffled me about RAN Sea Venom operations. The first is the apparent lack of available Sea Venoms available for flying duties. The RAN purchased 39 aircraft in 1955. My calculations show there were still about 27 left in the inventory near the end of 1964. Yet, it was always the case that we had difficulty in mustering more than about six fit for flying on a regular basis. I really had no idea where the remaining aircraft were and why they were not available.

The second mystery is the apparent lack of training of Sea Venom crews preceding our arrival. My research shows that No.2 OFS was in 1955. Presumably No.1 was in early 1955. I could not find course dates for 3 and 4 OFS but, having only two courses in the years 1956 to 1963 showed a marked lack of forward planning and explains the lack of crews when we came on the scene. I would also venture to say that the total number of crews trained over the entire Sea Venom operating years would be close to the number of Sea Venoms purchased in the first place. Compare this with the Skyhawk years where the number of crews far exceeded the number of aircraft available (except in the first year of course). I put this disparity down to the historical loss rate of aircraft in the straight deck era and therefore the system allowed for a lot of spare aircraft. The Sea Venom purchase and subsequent crew training reflects this attitude but the loss rate was far less than expected (angled deck, you see) but crew training did not reflect this.

upon was simply encyclopaedic. We walked away from that instruction with a new-found knowledge that would stand us in good stead for the future.

My first Sea Venom flight was on 24 November 1964 and it was an embarrassing start. The only thing that Limpy had forgotten to mention was the location of the Starter Button. Obviously, it had to be located in a position that would preclude accidental actuation and in this case the designer exceeded the brief. I could not find it so I asked the maintainer looking after me whether he could advise me. No luck! Eventually a PO was found that was qualified for engine runs who gave me the hot word. The button was located behind the instrument panel and you had to reach under the panel, lift up the safety panel with the index finger and then press the button towards you. Jesus wept!!

Less than two weeks later, Sub Lieutenant Gerrit Geerlings was tragically killed when he was caught in the dreaded Runway 26 downdraught while doing circuits. We were both in the circuit at the time and we had been briefed to do a couple of practice hydraulic failure landings.

The Venom had hydraulic ailerons and these could be disconnected in the event of a hydraulic problem. The aileron control became very heavy in manual mode and there was a special screw located on the stick below the trigger which increased the mechanical advantage by adjusting a lever but the range of aileron movement was correspondingly reduced.

A practice hydraulic failure landing involved a no flaps, manual aileron, no speed brakes and a long approach. While on the ground during the touch and go, the aileron could be set back to normal and the sortie could continue as required. There was a strong gusty westerly blowing at the time (not unusual at ALBATROSS) and unfortunately Gerrit was caught in the downdraft late in his flapless landing. I witnessed the whole event and it was a bit traumatic to have to land over the still burning site afterwards. No counselling in those days!! Even less for his family I might add.



Anyway, back to my stories. It was interesting to note that, while we were on course at Pearce, Navy had posted three Wessex observers to 724 Squadron (Max Speedy, David Cronin and Guy Cooper) for Sea Venom AI 17 radar training in preparation for our arrival but they were never posted to No.5 OFS. Presumably, an OFS consisted purely of a Sea Venom conversion and not the more important air intercept training that followed. Or it was a Posting oversight (more likely).

On arrival at 724 Squadron, LEUT Bob Muffet was assigned as our course officer and he arranged for instructors to teach us the appropriate stuff. LEUT Neil (Limpy) Louer was assigned to aircraft systems and boy, was he thorough! His own knowledge and that of the maintainers he called



The number of serious accidents arising from the RW26 downdraft eventually prompted Navy to fill in the gully short of the threshold using material from the hill at the other end of the runway. I am sure there are many of us remember those months and months of trucks carting fill on a purposebuilt road south of RW26. Truckies heaven! The remnants of that road can still be faintly seen on Google Earth.

I must mention that the Skyhawk had a similar aileron system to the Venom. The difference was that once the ailerons had been disconnected there was no turning back. Reconnection had to be done on the ground by maintenance. Another drawback to the Skyhawk system was there was no aileron trim when in the manual mode. Consequently, if the aileron was badly rigged, for example, and a hydraulic failure occurred, the pilot had to fight both the load of handraulic ailerons and an out-of-trim condition.

To counter this, a post-Progressive Aircraft Rework (PAR) test flight, normally done out of QANTAS in Sydney, called for the test after completing the flight test, to disconnect the ailerons with hands off the pole and time how long it took for the aircraft to roll left or right through 30° (I think). The aircraft would recover back to QANTAS which caused a complete embuggerance to Sydney ATC as the long approach required for a manual hydraulic landing caused delays in the system. Once the aircraft was on the ground and if the timed roll period was out of specs, the maintainers would use some magic formula to adjust the fixed tab on the right (?) aileron. Another quick test flight was required and if the roll was within specs, the pilot would proceed to ALBATROSS. If out of spec, it was back to QAN-TAS to do it all again. Sydney ATC did not like Skyhawk test flights.

Back to the Venom. I felt very comfortable flying this aircraft. It felt right and it had, in retrospect, some endearing qualities not present in the far more capable A4G. The brakes, for instance. A4G brakes were an abomination. They were foot powered (no hydraulic power to help here), so A4G pilots had the strongest toes and calf muscles in the aviation world. There was no park brake, making long delays during taxi a nightmare. No wonder they fitted later models (including the A4G) with nosewheel steering which alleviated the problem quite a bit.

The Venom, however, had magnificent brakes. They were powered and had the maxaret anti-skid system. And...the Venom had a park brake! The brakes were hand controlled, using a lever just like a bicycle brake, mounted vertically on the upper left side of the pole. Differential braking was achieved by using rudder. Landing ashore, if one desired a short landing in a hurry to get to the bar, you simply squeezed the handle as hard as you could until the aircraft slowed to the desired speed. No blown tyres, no black rubber, just a smooth, but quick, stop. Looovely! decree did not last long as the first post-decree offender was the CO himself! I vaguely recall a similar decree applying to Skyhawks, with shutting down the engine by retarding the throttle past the idle detent on landing being the designated crime.

The Venom had a self contained starting system, using a large cartridge for engine windup and a battery for the electric side of things. This was a godsend on land-aways, not that we did many of those. The A4G did not have a self-start capability which in my opinion was a serious design lapse. I understand that some Skyhawks currently in use as civilian defence support aircraft in the USA have been converted to internal start. Despite guidance that Venoms should be faced into wind for starting, this practice was never followed and I do not recall ever having to use a second cartridge to get started. Two cartridges in the starter and spares stored in racks in the flap bays was more than enough.

Another quirk of the Venom was its propensity to leak fuel into the tailpipe when left for any length of time without turning off the low pressure fuel cock. Ignition of this fuel on start and raw burning fuel dripping out the tailpipe was the norm and to prevent any "accidents" an asbestos blanket was slung over the horizontal stabiliser during starts. This could (and was) a problem when starting on a land-away where no

security blanket was available.

The solution was to casually taxi out of the affected area and leave the fire problem to the hosts. The LP fuel cock was

always turned off at sea, but leaving it on was the norm ashore. I don't know why (laziness?).

One feature of the Sea Venom that is never mentioned in articles and stories about the aircraft is that intentional spins were permitted. It may come as a surprise to many that the first time Navy pilots experienced a deliberate spin in a jet aircraft was solo, in a Sea Venom. Spinning was not permitted in Vampires. Needless to say, we read up on spin recoveries prior to the first authorised spin flight. Recovery was straight forward and immediate with no nasty trends. Test flights after major servicing required a spin in both directions. I am willing to bet that no other front line jet aircraft serving with the Australian Defence Forces was authorised for spinning. Back then, and now. Being spin–capable is an important capability for a fighter. As many Air Combat Manoeuvres (ACM) end up in slow and low situation, the capability for pilots to recognise and be comfortable at such low high AoA situations is an asset. Macchi spinning provided a later capability for the Skyhawk (and the RAAF)

I was talking about Sea Venom test flights earlier. One of the tests carried out would horrify the purists amongst us today. This involved voluntarily shutting down the (only) engine in flight and effecting an air start. At the end of the test flight one would climb to a suitable altitude and position the aircraft within "easy reach" of the airfield. "Easy reach" normally meant "overhead" and a suitable altitude normally meant "well above High Key". The engine was shut down using the HP Cock, and a relight carried out out using the specified speed and procedures.

Relight was pretty much instantaneous and a normal recovery made to base, after, of course, ticking the relight entry as "Successful" in the test report. To my knowledge no other entry other than "Successful" was ever used!

Continuing discussing the comparisons between the Venom and A4G I come to the issues of gunsights. Now, I understand the two aircraft were initially designed for vastly different roles and that fact explains the gunsight difference. The Venom was a fighter from the start and the Poms had gyro gunsights down to a fine art. The A4G had a fixed, but adjustable, gunsight that

The Navy Vampire, however, was a different matter. Unlike it's RAAF counterpart (and what we had been trained on) Navy's Vampire had air operated brakes using a similar control system to the Venom. Unfortunately, these brakes were very sensitive and there was no anti-skid. Consequently, blow-outs were not uncommon, and early in our AL-BATROSS days the CO (Alex Ignatief) issued a decree to the effect that anyone blowing a tyre would have to walk back to the hangar and accompany the maintainers back to the aircraft to assist in replacing the blown tyre. This



was next to useless for anything air to air. However, the aircraft was purchased as a Fleet defence fighter and I would have thought the retrofitting of a suitable gunsight to reflect this role would not have been an undue expense. After all, the Kiwis did it!

The Venom gunsight, by comparison, was a work of art for its age. Not only did it have ranging through a twist throttle arrangement it also had radar ranging when the observer had a radar lock on and the collimator was swung into place in from of the gunsight. This not only gave radar ranging, it also gave the A scope picture superimposed on the gunsight so the pilot could follow the target's movements without instructions from the observer.

I must add at this point that the once your observer achieved a lock-on it was almost the equivalent of a pokey jackpot. We never tired of it. As an aside it was generally understood that the radar would break lock if the guns were fired. As that event never occurred in my time I cannot attest to the truthfulness of it. I think it is probably true, but by the time the radar breaks lock the target, hopefully, would have a few rounds of 20mm up his arse!

The Sea Venom was a solid and reliable aircraft built to Admiralty Specifications (will work 900 feet underwater). I did have the odd emergency during my time. One of them was early in the OFS (5 April 1965), before we started Air Intercept training. I was tasked to do a sortie involving gyro gunsight simulated attacks on my leader (Bob Muffett with Barrie Daly as his passenger). On return to ALBATROSS my port main gear remained locked up and a two wheel landing would be required. Bob landed first to get out of the way and I prepared for a hairy landing. To my eternal shame, my base call was 'three wheels and a hook"!!! I was obviously a bit flustered at the time.

Anyway I put it down on the piano keys as every Naval pilot does (irrespective of runway length) and to my surprise, kept the port wing off the ground all the way down to about 50kts. In those days a chain style arrester gear was located well down the runway to catch the odd errant aircraft. I just made it to the arrester wire which I picked up with my hook just as the aircraft left the runway to port. I had been keeping the aircraft straight (or tried to) with brake but as I left the runway I noticed all the emergency vehicles parked on the port side of the runway right in front of me. I let go the brakes and the aircraft spun to the the left and stopped quickly (200 tons of anchor cable helped).

Undoing my harness, I leapt out, only to have to climb back in and undo my emergency oxygen. An Iroquois was sitting there ready to take me to wherever I needed to go – back to the squadron was my preference. That was not to be. For some reason I was carted back to 723, then I had to walk to the tower to see Wings and then walk back to the Squadron. A lot of walking for someone who had just had a prang! No sympathy from anyone. That aircraft had not finished with us though. I heard later that a broken door unlock torque tube was the cause of the failure and a maintainer suffered a serious hand injury when they were trying to unlock the door.

There was one facility at ALBATROSS that very few people, other than Venom crews, knew about. That was the Night Vision school, located in a nondescript fibro hut next to the old sick bay. As far as I know, it was used once during my whole time in aviation and that was during our OFS. We rocked up for the course, got a lecture from the SMO on the Mark1 eyeball, cones, rods and all that stuff and then got some unforgettable instruction and tips on how to see at night. The lights were turned down and a little display of fairy lights appeared along with various models of aircraft and other structures. The lights were turned off and the fairy lights slowly dimmed to the point where they could not be seen and then we applied the lessons we had just learned.

It was amazing just how much you can see using the correct procedures. This new-found knowledge proved invaluable later in the OFS during night intercepts. What happened to the school I have no idea but no doubt it was bulldozed along with everything else. Think of the wonderful display it would have made in the FAA Museum. **Below:** L-R. Sub Lieutenants Gerrit Geerlings, Barrie Daly and Clive Blennerhassett in early 1964, in front of a Venom. Daly and Blennerhassett went on to have long and illustrious careers in the Navy.



# **About the Author**

Originally from the WA Wheatbelt town of Moora, Clive Blennerhassett completed his Leaving Certificate at John Curtin High School, East Fremantle and served 12 months as an apprentice pharmacist before joining No 1 Basic Aircrew Training Course at HMAS *Cerberus* in April '63, in response to a drive for Wessex helicopter aircrew.



After selection for pilot training he went to Point Cook for No. 51 Pilots' Course and then later to Pearce for Vampire training. Arriving at HMAS Albatross in November 1964 he undertook No. 5 Sea Venom OFS and subsequently posted to 816 "B" Flight on board HMAS Melbourne. He was subsequently selected for the first Skyhawk course and on completion served on VF 805 on its first sea deployment. His career path from then on was pretty much a mixture of sea and shore postings, including as a QFI at Pearce and Nowra, Bridge watchkeeping training (HMAS Vendetta), Senior Pilot VC 724, Naval Operations Officer at AJWE (RAAF Williamtown), CO VC 724, CO VF 805 ( where he ejected after catapult launch), Operations Officer NOCWA, XO HMAS Leeuwin, Deputy Commander NAVCOMSTA Harold E.Holt, Director of Navy Recruiting, Deputy, then Director Facilities Planning Navy and acted as the DG Naval Facilities and finally as the Project Officer HQ Australian Theatre. He paid off in 1998 and has enjoyed retired life ever since, in Canberra. +

**Below:** Clive Blennerhassett's Venom incident in April '65 when the port mainwheel remained locked up requiring a two-wheel landing. The fault was later traced to a broken torque tube which prevented the port undercarriage door from opening.  $\rightarrow$ 



Finally, I ask the question: What was the date the first time an RAN aircraft landed on HMAS Melbourne in Australian waters? What type of aircraft was it and who were the crew? It seems to me to be a very significant event that does not seem to have been recorded. The present history seems to end with the aircraft being offloaded in JB and moved to ALBA-TROSS. That was probably the start of a fairly long process which also does not seem to be recorded. Were all of them unpacked, test flown and put into service? Or what? How long did it take? Endless questions which culminate in the first flight to the carrier. →

808 Squadron pilots training on RN Mk 20 Sea Venoms in 1955/6 near Yeovilton, whilst our own aircraft were being built. None of the 39 RAN Mk 53 Sea Venoms ever flew in the UK during this period: they were transported to Glasgow and loaded directly aboard the newly commissioned HMAS Melbourne for passage to Australia. (Image: Michael Sandberg).

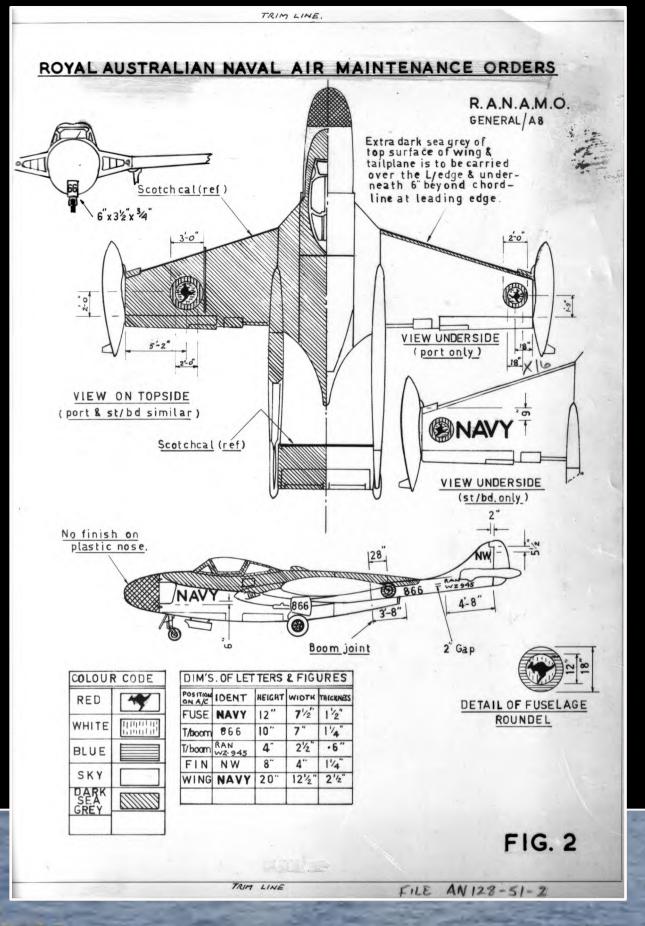




Left: 808 Squadron was commissioned in Yeovilton in 1955. Back row L to R: LEUTs P. Wyatt, D. Hilliard; LCDRs P. Seed (Senior Pilot), G. Jude (CO); LEUTs P. Thompson, A. Cordell, E. Wilson, G. Gratwick. Front Row, L to R: LEUTs R. McIver, S. Carmichael, K. Potts, N. Ralph, B. Brennan. Missing from the photo are LCDR G. Kable (SOBS) LEUTs C. Champ, E. Sandberg, G. Eccleston and SBLT A. Eccleston. Peter Wyatt tragically lost his life (together with CMDR George Brown the Senior Naval Officer UK) when their aircraft crashed in poor weather on departure from Yeovilton in January 1956. Thompson and Potts were both killed later that same year when their aircraft crashed into the sea off Queensland. Stanley Carmichael also lost his life in similar circumstances in 1959. (RAN image, via Jeff Chartier).

**Below left:** Standing Room only! Melbourne departed the UK on 11 March 1956 with 64 aircraft aboard: 39 Sea Venoms, 22 Gannets, 2 Sycamores and an Avro 707A. The Venoms were 'cocooned' in protective material and did not fly until arrival in Australia. The CO of Melbourne, CAPT G. Gatacre, noted that that lack of recreational space on the ship necessitated frequent stops on the journey home, including to Gibraltar, Naples, Malta, Aden and Colombo. Image: Jeff Chartier collection. **Below right:** A Venom being loaded aboard a barge in Jervis Bay, NSW, for transportation via HMAS Creswell and thence NAS Nowra 07 May 1956. Image: Jeff Chartier collection.



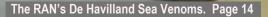


Left: RANAMOs dictated the colour scheme of the RAN Venoms and the size and location of lettering and other markings. Aircraft were in standard livery except for painted designs on the wing-tip tanks, that designated which Squadron they were from.





Above: Training at NAS Nowra. A Mk 53 crosses the runway threshold. Image: Phil Thompson collection. Below: A Venom comes to a halt after an arrested landing aboard Melbourne. In the 1950's it was discovered that the massive G forces from the hook's single anchor point was causing cracking problems in the aircraft fuselage, so a "V" shaped hook was devised that was anchored to both sides (inset photo). Melbourne had six arrestrr cables: five were relatively close together whilst the sixth was a little further forward. It was irreverently known as the "Jesus Christ wire" as it offered the last chance of being arrested. At full extension the aircraft was not far from the edge of the flight deck when six wire was caught. Image:Kim Dunstan.





A Venom departs the catapult on Melbourne. The ship was only fitted with one cat, which slowed deck operations somewhat and, on the occasions it was unserviceable, curtailed all fixed-wing flying operations. The thick diagonal line where the sailor is sitting demarcates the edge of the angled deck: it gives an indication of just how small Melbourne was, in terms of clearance between flying and parked aircraft. Below the Venom you can see the wire catapult sling about to drop free: Melbourne was later modified to capture the slings as the aircraft launched, rather than lose them in the sea. Image: Jeff Chartier collection. $\Rightarrow$ 



**Right**. A dramatic series of five photographs show what can go wrong, and how quickly. During the work up for pilot Deck Landing qualification this Venom got into the funnel smoke of Melbourne on late finals. The "gate speed" for the deck was 114–118 knots, and the aircraft was at 115KTS when it went into hot funnel smoke. It thundered onto the deck at 105KTs – one small knot above stall speed. As it hit the deck, the Observer recalls thinking that unless the Venom touched again to arrest the rate of descent after the initial bounce, it was going to be ugly. He went for the canopy jettison as the anchor flashed past but with a bit of free air the aircraft was able to climb away to live another day. FLTCO reportedly suggested that the pilot "Don't do that again!" The photos came from stills off the cine camera that recorded all landings, and were forwarded via Max Speedy. +



Above Left. An unusual. shot of the radar installation in a Venom nose. Above Right. Venom WZ894 undergoing maintenance at Albatross. This particular aircraft was to crash in May of 1959 after suffering an engine failure over Jervis Bay. Below: LEUT Barrie Daly of 816 Squadron 'B' Flight checks the security of the 3-inch rockets during a pre-flight inspection c.1966, prior to a catapult launch. The rockets were unguided but were fitted with 60b HE heads and could be fired singly, in pairs, or as a salvo. Image: Phil Thompson. Inset: A popular Flying Overall patch was that shown below. "Ghost Riders" was not only a reference to their night flying intercept ability, but that the engine of the Venom was a De Havilland Ghost.  $\rightarrow$ 















Left: A Sea Venom arrests on the deck of Melbourne. The chequered wing tip tanks denote an 805 Squadron aircraft. Image: Phil Thompson collection. **Below** *Left: Taken from a low* perspective, the squat profile of the Sea Venom is emphasised. Image: Jeff Chartier collection. Below right: An image of HMAS Melbourne's hangar deck occupied by Sea Venom and Gannet aircraft. The relatively small size of the ship didn't just generate problems in operating aircraft on the flight deck: it also meant that even with two lifts, aircraft in the congested hangar space frequently had to be 'shuffled' depending on which were serviceable and which were not.→







Venom WZ900 being refuelled at NAS Nowra with a Gannet taxying in the background. Note the ROTAX cartridge on the port wing of the Venom in the foreground. WZ900 ditched in February 1956 when an arrester cable failed on HMAS Melbourne. The pilot, LEUT J. Dacosta survived but LEUT E. Kennell, the Observer, did not. (Jeff Chartier collection). +

**Below**: A funeral service held aboard HMAS Melbourne for the late LEUTs Potts(P) and Thompson(O), who lost their lives when Venom WZ933 crashed into the sea on launch, near Hervey Bay on 08Aug56. The ship hove to and two crosses were delivered into the sea by the Padre in a very moving ceremony. The incident resulted in the Venoms being grounded and offloaded, with the ship then proceeding to SEATO with Gannets for the remainder of the exercise. Words and image provided by Kevin Duffey. +

# De Havilland's Big Navy Task

The De Havilland aircraft factory at Bankstown is carrying out modification and servicing of R.A.N. Sea Venom jet aircraft.

Fitted with combat radar for interception at night and in bad weather, the Sea Venom is classed as a two-seat fighter for operation from aircraft carriers. It has a span of 41 feet 9 inches and is 35 feet 3 inches in length, but other per-formance figures are still restricted.

90 men, work-bo shifts, have engaged on work since the H.M.A.S.

Ghost is **Civil Version** 

R.A.N. trab



A MOBILE CRANE lifts an R.A.N. Sea Venom from the low-loader on arrival at De "Havilland's



Left: An article from the Navy News edition of 22 August 1958 on the maintenance of Venoms at the HdH factory at Bankstown. (Expand page to read). **Below**. Venoms on the deck of HMAS Melbourne during a visit to Japan. (Jeff Chartier collection).+



Strict

### Routine

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A then Lacey W.LD

Next, a Board of Sur-vey is convened by the Naval Resident Technical



be caught again, as it cost her 12/- to shout the bar. SEA VENOM photographed on HMA.S. Melbourne to the Far East and Honolulu

NAVY NEWS, Friday, August 22, 1958

a lar to audition, a large ser-vicing establishment for civil aircraft is maintained. Current work includes the aarembity of the fourth De Havilland Canadian - built Otter for Dentis

The monthly social was need in the mess on Friday evening with good music and an ex-cellent supper contributing to a successful evening. It is sold that, in future, when the C.P.O.'s mess bar is again painted out, the colour scheme will be decided by any one but the president, since a deftodil yellow celling is a little strong to mix with beer. A tarevel Aurocha wel, subhartarer' blads not

A farewell Aurochs, wel-come Andrew, and stay with us Telemachus Spring Ball will be held in the Chief Petty Officers' Mess on SENIOR NON-COMMIS-SIONED OFFICERS' BALL The N.C.O.'s Ball in the Trocadero on November 2 rather mem-since it is the Penguin will three submarbe a great success, ain's quota almost

Trocadero ry and im-PETTY OFFICERS MESS

The Petty Officers' Mess in-tends holding a Spring Ball on October J, to welcome Andrew and farewell the Auroche

this is merely a f days before Aur-for home, some, no ill have a rough

LONG HADES HARS: If you see is van out Penguin not be alarmed, firm, sin doubt, is out a load of vio-

With the power failure, Simon the Barber" has been at of buriness this week, and Penguin looks as if if being invalid by woolly

Pel

WE ALL LEARN: Did you W.R.A.N. the bur

there to fore of Austi ost the

£157 N of A member



BE WELL ADVIS ----

# **Surviving Airframes**

# News

# DH jets are Ultimate racers

Red Rock Warbirds' former RAN de Havilland Sea Venom FAW 53 WZ944 (N7022H), last flown in 2002, has been transported from Ogden, Utah, to Ultimate Aviation's new facility at the Brigham City Airport in Brigham City, Utah, for the completion of its return to operational status by early 2018.

John Hammans, Ultimate Aviation's owner, previously brought ex-Indian Air Force DH Vampire T.Mk55 BY385 (N172LA) back to life after it had spent fifteen years in storage. This was done just in time to qualify and compete in the Jet class at the 2016 Reno air races where the Vampire came third in the Gold Race. It returned to Ultimate's new facility for a thorough inspection and has been repainted and prepped for its participation in this year's races. This will be the jet to watch out for in 2017! **Keith Charlot** 





ABOVE: WZ944 on the road to its return to flight.[Keith Charlot]

BELOW: WZ944 against a stunning Utah backdrop. [Keith Charlot]

LEFT: The 2016 Reno air races marked the second year in a row that Vampires have surprised with their performance around the pylons. This is BY385. [Keth Charlot]



Of the 39 Sea Venoms purchased, few remain. In the lottery of life some were destroyed, some left to languish and a very few were preserved. The images above tell part of the story, although it is not complete. [1] WZ944 in its new life in Utah, USA, where it was restored to flying status by Ultimate Aviation. Regrettably it is in RN livery, but is never-





3







theless a good news story. Images courtesy of "Flightpath" magazine (Vol 28 No 4). [2] Restored to her former glory, WZ939 now resides in the Parafield Classic Fighters Museum near Adelaide (image Malcolm Clarke); [3] Not so lucky, this Venom rots in the elements at an unknown location; [4] WZ939 was also on a pole in Caloundra, and then at Tuggarah Lakes before being sold to the Classic Aviation Museum in SA. [5] WZ939 again, fallen from grace. It was sold by the Classic Aviation Museum for the princely sum of just \$14K and ended up in Tim's junkyard in the NT, where it sits outside a cafe . [6] WZ943 lived on a pole at Nowra for many years but fell into disrepair and was removed. It was bought by some members of the ADF Serials team in 2005 and its last known position was at the back of the FAA museum. [7] WZ937 survived though the years and now resides inside the FAA Museum in Nowra.

When the Historic Aircraft Restoration Society (HARS) bought the remnants of the Naval Historic Flight at the end of 2018, pieces of Sea Venom WZ895 were included, stored in two containers. HARS began piecing it together and the image shows their progress by June 2019. It is hoped to restore the airframe to static display condition.



# **RAN Sea Venom**

# AIRFRAME HISTORIES

With grateful thanks to <u>ADF Serials</u>, without whom this section would have been immeasurably harder.

Ex-RAN/RN	Delivered	RAN Codes	Aircraft History
WZ893	27/02/56	882, 803	Served with 805 Sqn. Part of the Checkmates Aerobatic Team (RAN). Damaged 02/10/62 when it collided with WZ940 over Sydney Harbour, landed at Nowra. Crew; LEUT B. Roberts. Scrapped 05/67.
WZ894		205, 868, 806, 806/M	Crashed 11/05/59 Jervis Bay NSW. Flown by LEUT(P) P.Vickers, RAN of 724 Sqn, heard a thump, ASI failed, vibrations, fire warning light, undercarriage and flaps could not be lowered, engine off. Pilot made a dead stick landing at Jervis Bay airfield, aircraft overshot runway and written off. Disposed off 4/02/60.
WZ895	27/02/56	804, 865, 870, 867	Used by de Havilland Christchurch Hampshire, UK to design ejection seat layout. Damaged 04/02/58, Nose wheel failed to lower when with 808 Sqn. Restored to ground running by ABATA Steve Long 1981 and to taxying condition in 1982. Participated in the last fixed wing airday at Nowra and led the A-4's and Trackers out to runway 21 with Fairey Firefly WD-826. Restoration to flying condition started 1986 but was cancelled. VH-NVV ntu Aircraft currently stored with the RAN Historic Flight
WZ896	27/02/56	206, 206/Y	Used by de Havilland Christchurch Hampshire, UK to design ejection seat layout. Damaged 04/02/58, Nose wheel failed to lower when with 808 Sqn. Restored to ground running by ABATA Steve Long 1981 and to taxying condition in 1982. Participated in the last fixed wing airday at Nowra and led the A-4's and Trackers out to runway 21 with Fairey Firefly WD-826. Restoration to flying condition started 1986 but was cancelled. VH-NVV ntu Aircraft currently stored with the RAN Historic Flight
WZ897	27/02/56	801/M, 864/M, 864/NW, 211/Y, 206/Y	First Sea Venom to fly in Australia. Ikara missile trials aircraft Damaged 29/10/58 whilst being flown by SBLT(P)C.Patterson RAN of 724 Sqn Aircraft descended to low and hit trees on approach to Nowra. To Swan Hill Vic. Fuselage pod moved from Swan Hill to Sydney Tech College, date unknown, as spares support for WZ-910. Label found in cockpit states aircraft reduced to spares 1972 Sold to Camden Aviation Museum. Fuselage pod currently under restoration at Camden Aviation Museum by Steve Long
WZ898	27/02/56	862, 863, 874	Damaged 22/10/57 during landing. To HMAS Nirimba as an Apprentice training aid 1970, Still there in 1976 with side No's 874/NW. Used as spares support for WZ937 Has had major component changes with WZ910 and WZ937 Listed for disposal as scrap 1979 and bought by Queensland Air Museum on 25/07/79. Now on display at Queensland Air Museum as 862/M. Has tail of WZ910 fitted.
WZ899	27/02/56	801, 885	Sold for Scrap 25/07/66.
WZ900		866	Served with 816 Sqn, B Flt. Crashed 28/04/66 fatal, off HMAS MELBOURNE Philippine Sea Arrester wire parted during carrier landing, aircraft crashed into sea. (Accident happened approx 1500 Hrs) Pilot ejected at near sea-level and rescued with minor injuries. Observer also ejected but was lost at sea. Crew; LEUT (P) J. Dacosta, LEUT (O) E. Kennell. RAN Ejection number 4. <u>More info.</u>
WZ901	27/02/56	810/M, 867/NW, 876/NW, 875/NW, 875/M	1968 made a heavy landing on HMAS Melbourne and distorted the main spar. Withdrawn 20/08/70. On display Moorabbin Air Museum Vic. as 867/NW.
WZ902	27/02/56	807, 865, 884	Sold for Scrap 25/07/66.
WZ903	27/02/56	812, 817, 871	Sold for Scrap 25/07/66. To Warbirds Museum Mildura NSW. Later to Chino, California USA as N903WZ.
WZ904	27/02/56	804, 864, 868	Damaged 06/04/65, when with 724 Sqn, Port main undercarriage failed to lower, pilot carried out successful two wheel landing. Ikara missile trials aircraft. Sold 25/07/66. Townsville Air Museum 10/74. On display Beck Collection, Mareeba QLD.
WZ905	27/02/56	863, 886	Sold for Scrap 25/07/66.
WZ906	27/02/56	803, 804, 880	Sold for Scrap 25/07/66.

Ex-RAN/RN	Delivered	RAN Codes	Aircraft History
WZ908	27/02/56	804, 864M, 864, 875, 887, 866	Arrived at Hurn, England 29/06/55. Flown to RNAS Stretton 29/07/55 thence to Glasgow, Scotland on 30/01/56. Allocated to RAN on 27/02/56. Loaded onto HMAS Melbourne at King George V Dock on 11/02/56 sailing for Australia. Served with 805 Sqn as 864/M and 724 Sqn as 864 & 887, Placed in storage with Hawker De Havilland at Bankstown until sold by the Department of Supply on 25 /07/66, Scrapped 05/67.
WZ909	27/02/56	887, 865	Crashed 21/05/59, <b>Fatal</b> . When with 724 Squadron. Flown by LEUT(P) S.R Carmichael RAN & ASLT(O) Mike Williams RAN on a photographic exercise crashed into sea off Ulladulla NSW. Crash seen by a passing Merchant ship. Twenty nine years later on 18/05/88 remains of aircraft bought to surface by CSIRO vessel. Port wheel cover at Australia's Museum of Flight. <u>More info.</u>
WZ910	27/02/56	802, 808, 867	To Sydney Technical College. Stored Queensland Air Museum QLD - some parts used for WZ898/N4-898.
WZ911	27/02/56	207, 806M, 887, 810/M, 867/NW	Crashed 04/03/64 while coded as 867/NW with 724 Sqn after windscreen imploded resulting in a forced landing and damaging the aircraft. Written off 4/03/64. Later sold and for a while at Chewing Gum airfield, Tallebudgera, Qld. By 01/80 in a rather dilapidated state with faded side No's 810/M Still with Museum when it closed in 1989. Later reported in Brisbane. Current status and location unknown
WZ927	27/02/56	802, 865, 867	Served with 724 Sqn. Crashed 15/06/60 RAN Air Station Nowra NSW. Aircraft hit trees in circuit for night landing. Crew; SBLT (P) B. Dutch, LEUT (O) E. Sandberg, ejected safely. RAN Ejection number 2.
WZ928	27/02/56	806, 886	Sold for Scrap 25/07/66.
WZ929	27/02/56	800, 801, 803, 810, 881	Sold for Scrap 25/07/66.
WZ930	27/02/56	806, 804, 805, 865	Sold for Scrap 25/07/66. Tocumwal & District Historical Society VIC. Noted in outside storage at Tocumwal airport for many years Sold to a concrete plant owner in Sydney Tail booms, horizontal stabilisers, elevators, rudders and tip tanks stored in Auckland NZ Outer wing sections (the folding part) stored at Dairy Flat NZ We believe that the pod and inner wings remain in Australia
WZ931	27/02/56	887, 868, 877	Damaged when with 724 Sqn during display 8G imposed, false spar cracked, starboard stub plane buckled Previously reported date of 3/11/56 must be incorrect due to aircraft having UHF radio mods that were incorporated until 1964 Aircraft dumped at NAS Nowra (date unknown) until 1981 when it was bought back to Air Training Department and paint stripped It was used as spares support for the restoration of WZ895 Was on display at Naval Aviation Museum, Nowra Currently loaned to and on display at South Australian Aviation Museum
WZ932	27/02/56	866, 864, 864/NW	Whilst attached to 724 Squadron, crashed <b>fatal</b> on landing at RANAS Nowra on 03/12/64, The pilot ASLT(P) G.J Geerlings RAN undershot the runway and was killed. Aircraft destroyed. <u>More info.</u>
WZ933	27/02/56	207, 207/Y	Crashed whilst attached to 808 Squadron, Fatal 08/08/56, Flown by LEUT(P) B.Y Thompson, RAN & LEUT(O) K.C.M Potts, RAN. On being catapulted from HMAS Melbourne crashed into the sea killing the crew. <u>More info.</u>
WZ934	27/02/56	208, 864, 872	Sold for Scrap 25/07/66.
WZ935	27/02/56	210, 865, 878	Withdrawn 06/73. Sold to Maitland Aero Club NSW 12/73. FAAM Nowra 07/89 on external display. Some members of the ADF-Serials team purchased this aircraft in 2005 to save it from the scrap man. It is currently in storage with another aircraft preservation group.
WZ936	27/02/56	203, 210/Y	Coded as 210/Y Crashed 25/06/57 when the aircraft undershot runway 26 at RANAS Nowra crashed and burned. The crew of Leut (P) Knowles RAN and Leut(O) B. McKeon RAN were injured in the crash but survived. Aircraft written off.
WZ937	27/02/56	211	Used as a training aid at HMAS Nirimba until 1984 Returned to HMAS Albatross for the Naval Aviation Museum Aircraft was to be restored to running condition but on inspection was found to have a collapsed front engine bearing An engine change was carried out by VC 724 Squadron and was regularly ground run until being put on permanent display. Current at Fleet Air Arm Museum, Nowra.
WZ938	27/02/56	208, 872	Firefighting HMAS Albatross, 30/07/68.

Ex-RAN/RN	Delivered	RAN Codes	Aircraft History
WZ939	27/02/56	212, 803	Was mounted on pole at Chittaway NSW. On display Classic Fighter Jets Museum SA.
WZ940	27/02/56	887, 809	Served with 805 Sqn. Part of the Checkmates Aerobatic Team (RAN). Collided with WZ893 02/10/62 during formation aerobatics display over Sydney Harbour. Pilot ejected at about 500 ft over water, suffering only minor injuries. Recovered by HMAS Kimbla. Crew; LEUT A. Riley. RAN Ejection number 3. WZ893 recovered to Nowra.
WZ941	27/02/56	875, 866, 875	Damaged 11/10/56. Brake and radio failure, aircraft ran off runway at Nowra. Served with 724 Sqn. Crashed 11/02/60, RAN Air Station Nowra NSW - Fatal. Crashed fatal during practice PFL. Ejection seats fired on ground impact but outside safe ejection envelope. Crew; 724 Sqn SBLT (P) F. Hodgson, EMAW2 M. Holloway. RAN Ejection number 1. <u>More info.</u>
WZ942	27/02/56	207, 809	Damaged 15/4/57 when attached to 808 Sqn, Flared out on finals at NAS Nowra, aircraft landed 200 yards short of the airfield perimeter. Withdrawn 15/01/63. Use for fire training at Nowra NSW.
WZ943	27/02/56	805, 807, 865, 876	<ul> <li>With 805 Sqn, damaged 8/8/58, undershot the runway at Nowra, lost both oleo legs.</li> <li>Withdrawn 06/73, last Sea Venom to fly.</li> <li>Was on display on Pole Nowra as '876'.</li> <li>Returned to HMAS Albatross 1985 for cosmetic restoration.</li> <li>Remaining cockpit fittings were stripped out and the fuselage pod was filled with expanding foam.</li> <li>The Perspex canopy was replaced with sheet metal</li> <li>However it fell off the pole and was damaged quite badly.</li> <li>Was located at the rear of Australia's Museum of Flight, without cockpit and forward fuselage.</li> <li>Some members of the ADF-Serials team purchased this aircraft in 2005 to save it from the scrap man.</li> <li>It is now in storage with another group.</li> </ul>
WZ944	27/02/56	810, 873	Sold 25/07/66. Warbirds Museum, Mildura VIC. Sold in USA as N7022H 1971. Owned by Rich Grinnell, Ontarion, Oregon Currently under restoration to airworthy by John Hammons' Ultimate Aviation, Ogden, Utah
WZ945	27/02/56	804, 805, 866	Sold for Scrap 25/07/66. Fuselage pod purchased by Camden Aviation Museum. Cockpit internals stripped out and pod sold to Syd Beck Instrument panel on display at Camden Aviation Museum Fuselage pod on display at Syd Beck Collection, Mareeba Qld
WZ946	27/02/56	807/M, 809/M, 809, 817/M, 869	28/3/1960 While taxiing forward the brakes failed and the aircraft struck the Island of HMAS Melbourne, nose on. Sold by DOS to Chieftain Aviation, Bankstown NSW. In 1974 placed on a pole at the clubs entrance. On display there for approx 25 years. Removed in 1993 it went into storage at Murrurundi NSW. Inner wings noted in Penrith car yard some time after sale Shipped to Portland, Oregon USA. Was offered for sale on eBay 11/2002.

# Acknowledgements:

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# **References:**

RAN Sea Power Centre AWM – Reports of Proceedings for HMAS 'Melbourne' 'Venom & Sea Venom' by David Watkins, 2003 ADF Serials Martin Baker Company 'Slipstream' archives. Wikipedia. Typesetting by Marcus Peake. ©The Fleet Air Arm Association of Australia.