

Commodore Norman Lee continues his series of articles on aircraft he flew during his service with the Fleet Air Arm.

DE HAVILLAND SEA VENOM

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.

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 were 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 for 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, but the canopy coaming 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 care needed to be exercised with the HP cock and speed brake lever if one was flying Vampires concurrently as they were transposed in the two aircraft. Starting was by cartridge and straight forward.

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 had discovered that 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 aircraft and timed it in the climb, discovering, not to my surprise, that its performance far exceeded a 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 producing above specification thrust. The Ghost for some reason ran well below maximum permissible JPT 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 an 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 Sea-hawks, 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 that 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 that it was much more comfortable, with less loading in the vertical plane. The final routine evolved consisted of a four plane takeoff, followed by a double loop, two barrel rolls, a half loop and bomb burst, followed by a thread-the-needle and a re-form and four plane formation landing. It was not a long routine, but then we hadn't been allocated very much display time.

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 takeoff was made in 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 that 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, followed 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 at least 30 degrees above the horizontal before initiating the roll, and that we were rolling with positive rudder. Aileron alone could leave the wingmen "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



The Sea Venom is generally thought of as a marine version of the Vampire but it was really a much larger and far more complex aircraft. Depicted left is a Sea Venom preparing for a mission from NAS Nowra and another of the breed aboard its nautical home, HMAS Melbourne. (Defence PR)



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 crowd pleaser as it looks dangerous whereas it is perfectly safe providing 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 had 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 little difficult to get used to, one had to trust the observer, particularly close in.

Towards the end of our work-up, the wingmen were tending to get a little close to the extent that I could feel aerodynamic interference on my aircraft. The Commander (Air) at the time became concerned at the tightness of the formation and indicated that 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 an almighty thump through the rudders. My immediate thought was that I had snapped a rudder cable. My Observer said a rude word 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 tiptank 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 thin-

DE HAVILLAND DH.112 SEA VENOM FAW.53

Type: Two seat all weather naval fighter.

Powerplant: One 4,950lb thrust DH Ghost Mk.104 turbojet.

Dimensions: Wing span 42ft 10in (13.05m); length 36ft 7.25in (11.15m); height 8ft 6in (2.59m).

Weights: Empty 11,000lb (4,990kg); max loaded 15,900lb (7,212kg).

Armament: Four 20mm cannon, eight 60lb (27kg) rockets.

Performance: Max speed 489kt (906km/h); patrol speed 295kt

(546km/h); initial climb 4,850ft (1,478m)/min; service ceiling 40,000ft (12,192m); max range 869nm (1,609km).

In service: 1956-67. Quantity: 39. Serial Nos: WZ893-911, WZ927-946 (also N4 prefix on some aircraft from 1966).

The next aircraft in the series is the Winjeel.

Unfortunately I muddled my spirits in the Vampire article. The Vampire engine was of course the Goblin, not the Ghost; the latter powered the Sea Venom.

