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Plus reviews and comments on new kits, decals and accessories





# Alan W. Hall describes the single-seat versions of Britain's first twin-boomed jet fighter

ALONGSIDE the Gloster Meteor the de Havilland Vampire was the first jet fighter to be built in quantity for the Royal Air Force and like its contemporary was exported overseas to many different countries and was used for both day and night roles. Unlike the Meteor, the Vampire went to sea with the Royal Navy and was developed into a two-seat side-by-side trainer which served the RAF and many other countries until well into the 1970s.

My first contact came during early 1944 when, with a number of youthful contemporaries, we saw some of the early trial flights get airborne from Hatfield. Previously rumours originating from chums in the DH Apprentice School were rife that DH's had built a propellerless aircraft. We were told it was to be called the Spidercrab. 'What an odd name' we thought, but as soon as we heard the now familiar whistle of a jet engine being started over by the black experimental hangar at Hatfield we realised that this was something entirely new and that we were witnessing technology in the making. I recall that there were plenty of engine runs but not all that many flights. Excitement outside Hatfield's protective ring of barbed wire ran high when we heard the unusual sound of the jet engine. 'Would it fly today?'.

We were impressed. Would the Spidercrab go into production or was it just an experimental type? Most of us were then of an age where in a few months time we would be in the

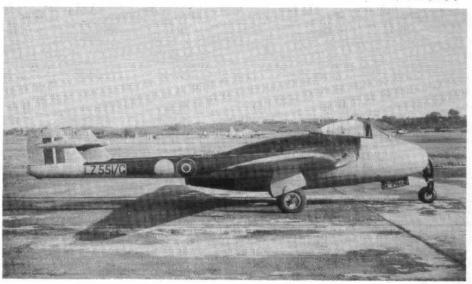
This interesting picture of the second Vampire prototype LZ551/G shows it some time after its initial flight trials. It has since been modified to take the one piece sliding hood canopy that became standard from 1946 onward. (RAE photograph) RAF ourselves. Would we get a chance to fly one of these miracles of contemporary aviation invention?

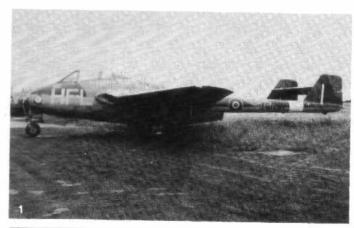
At that time aircraft production at Hatfield was completely concentrated on the Mosquito with Leavesden nearby also adding to the totals. It was surprising perhaps that we were not so interested in those two airfields at that time because we had seen the early flights of the Mosquito and the production aircraft simply came and went in monotonous regularity, a regular six weekly visit noting any new variants that might be around. Our interests lay more in the operational airfields like North

Vampire FB.5 WA180 served with both Nos.94 and 145 Squadrons in Germany. Seen here in front of a typical former German Air Force hangar complex, the aircraft is being prepared for flight.

Weald and some of the American bases like Bassingbourn and Duxford that were within a day's bike ride.

We therefore missed the first flight of de Havilland's latest creation which took place on 29 September 1943, the first prototype being LZ548/G flown by Geoffrey de Havilland. Work on the Spidercrab had started a mere 16 months previously in a lot of secrecy in the Hatfield drawing offices. It was to be an all metal aircraft with twin booms and a central nacelle which was DH's answer to overcoming the jet efflux problem. Typical Mosquito construction was used in the new aircraft's cockpit area with the now familiar Mosquito style ply-











SQUADRON AIRCRAFT (1)

1. TG/287 was a Vampire F.Mk.I of No.54 Squadron based at RAF Odiham. 2. Vampire F.Mk.I in immediate post World War 2 colours of overall silver with codes and markings in black. VF/279

belonged to No.5 Squadron, based in Germany. 3. Another No.5 Squadron aircraft VF/267 being drained after a wet start. 4. F.Mk.I was struck off charge in August 1953 to become 7060M and a gate guardian at RAF Debden.

wood and balsa construction.

The engine was a 2,700 lbs s.t. Goblin 1 turbojet designed by Major F.B. Halford and made by de Havilland Engines Ltd. As there were no propellers the aircraft had a short stubby tricycle undercarriage which was of very strong construction.

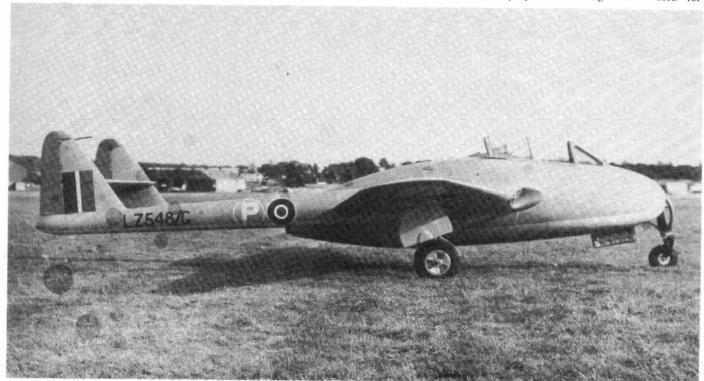
The prototype Vampire T.Mk.I was LZ548/G. It had entirely different fins and rudders from the F.Mk.1 or even subsequent variants and is therefore quite distinctive.

#### PROTOTYPES

Two more prototypes LZ551/G and MP838/G flew shortly afterwards, the second of which was the first to carry the jet's four 20 mm cannon armament.

The Ministry of Aircraft Production wanted both the Meteor and Vampire as it was now called, into production as soon as possible. Intelligence sources already knew that the Germans were developing jet powered fighter aircraft as much as we were and knowing the potential and performance possible, Allied commanders feared the worst if aircraft of this calibre were to be used against the daily bomber streams that criss-crossed Europe leading up to the 6 June D-Day landings.

Before development trials were really under way the MAP therefore placed an initial order for 120 aircraft, later increased to 300, on 13 May 1944 and these were to be built at the Preston works of English Electric Co. The first production aircraft, TG274/G, first flew from the company airfield at Salmesbury on 20 April 1945. Forty of the initial batch were used for test purposes including TG277 used for





Vampire T.Mk.II TX807 was the first to be fitted with a Rolls-Royce Nene turbojet. The nickname 'elephant ears' has stuck as may be imagined. This aircraft subsequently went to Australia as the prototype for the Mk.30 and Mk.31.

squadron evaluation, TG279 which went to Farnbrough, TG282 and TG284 which were engine and armament prototypes, English Electric conducted their own trials on TG287 and aerodynamic tests on TG289 using wing tip mounted cameras.

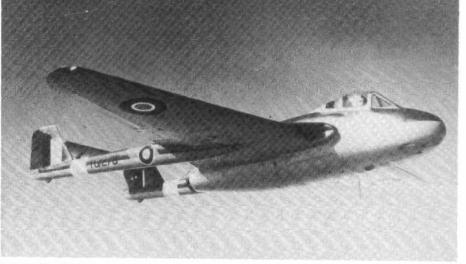
From the 41st production aircraft onwards the Vampire was powered by a Goblin 2 of 3,100 lb s.t. and equipped with Mosquito type slipper tanks. Cockpits were pressurised from the 51st aircraft onwards and changes made to the configuration of the canopy which became a one piece rearwards sliding hood commencing with TG386 in January 1946.

### EARLY SERVICE

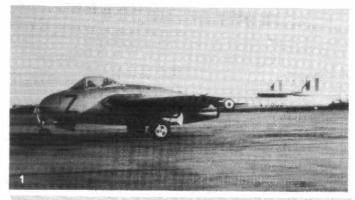
But the Vampire, in spite of the tremendous impetus to get it into service missed operational flying in World War 2. The Meteor had beaten it by a short head but Vampires were soon to be seen in RAF colours notably re-equipping squadrons at that time part of the 2nd Tactical Air Force in Germany. The first UK based Wing was that at RAF Odiham, Hants, their public debut on behalf of Fighter Command being made at the victory parade and flypast over London by No.247 Squadron on 8 June 1946

Vampires were also the first jet fighters to re-

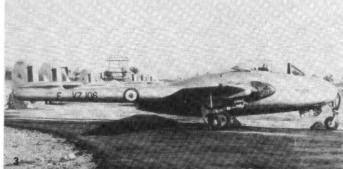
Above right: Vampire F.Mk.1 TG278/G was the prototype that set a new world altitude record of 59,446 ft. It is seen here before conversion to have a different canopy and extended wing tips. Right: Another No.247 Squadron Vampire but this time an F.3, VF344 in traditional overall silver colour scheme.

















SQUADRON AIRCRAFT (2)

1. Vampire F.3 VT809 belonged to No.73 Squadron, a Middle East unit, ended its days in a crash at Brescia, Italy in September 1949.

2. VZ115 belonged to No.54 Squadron and was an FB.5. 3. FB.5 VZ106 seen with No.6 Squadron's flying tin opener emblem on the

fin. 4. Vampire FB.5 WA331 was an RAF Germany aircraft noted by the nose lightning flash and belonged to No.112 Squadron. 5. This unusual FB.9 WR266/B was used by No.607 Squadron RAuxAF and is seen in full camouflage. 6. VT867, an F.3 of No.32 Squadron.

equip the reinstated Royal Auxiliary Air Force when they replaced Mosquitos with No.605 (County of Warwick) Squadron at Honiley on

3 July 1948. Two years later when I was back from my own full-time RAF service, I shared a flat with one of No.605 Squadron's pilots who

One of the pre-production aircraft Vampire T.Mk.Is TG/386 was the first to be fitted with a one piece teardrop canopy in January 1946.

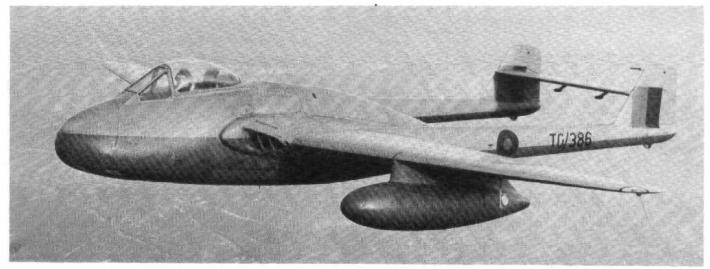
also worked on the Severn River Conservancy Board. We had many a visit to this now long deceased airfield in the Midlands together and although I was not able to join them I had by then become associated with the Royal Observer Corps, which easily got me past the gate.

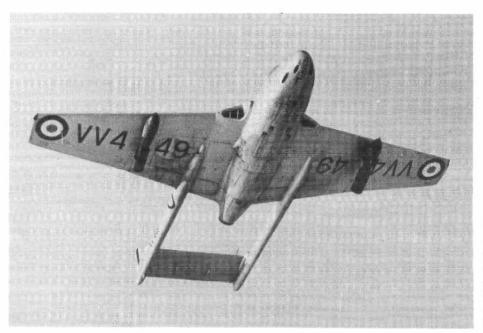
# VARIANTS AND EXPORTS

At that time the prodigious efforts of the

British aircraft industry produced a great many different airframes and engines. Various of these were mated to existing airframes and the Vampire did not miss out in the proceedings. Three early production Vampires TG276, TG280 and TX807 were experimentally fitted with the Rolls-Royce Nene to Specification F.11/45 and were known as Vampire F.IIs.

They were easily distinguishable by the two large intakes that were mounted immediately behind the cockpit canopy and nicknamed





This FB.5 VV449 has two 250 lb bombs slung under the wings emphasising its ground attack role. It probably belonged to No.71 Squadron when the picture was taken.

eventually became the DH.112 Venom.

Out of the first production batch various aircraft were sent for export. Of these one Vampire F.Mk.I went to the Royal Canadian Air Force and another TG372, went to Canada for winterisation trials.

The Swiss were amongst the first to express an interest in the Vampire and TG433 fitted with a 3,300 lb s.t. Goblin 3 served as the prototype for the FB.Mk.6. The Swiss had four Vampire F.Mk.1s beginning with J-1001 and 75 FB.Mk.6s which served for many years with their air force followed by Vampire Trainers, only recently retired from service and Venoms.

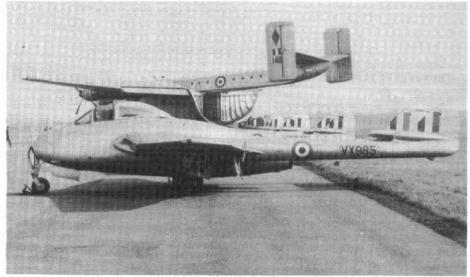
The Swedish Air Force also re-equipped with 70 Vampire F.Mk.Is, the first of which, 28001, was delivered in March 1946. They were allotted the Swedish type designation J28 and

Vampire FB.5 VX985 spent all of its service life in training establishments. Firstly with the Central Fighter Establishment, then ATDU and finally No.5 FTS.

'elephant ears'. These fed air to the doublesided impellers characteristic of this engine but were not totally successful. Boulton-Paul Ltd later modified TX807 to dispense with these intakes by enlarging the wing root intakes and this machine was shipped to Australia where it became A78-2 serving as the development aircraft for the Nene powered F.Mk.30 which became the type issued to the RAAF and built in Australia.

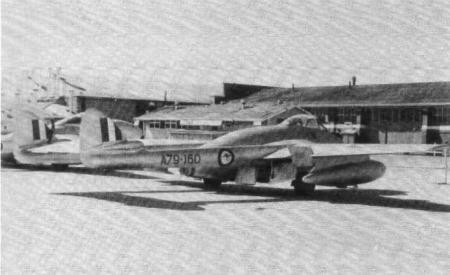
Other experiments included adding a four foot extension to the wing tips of the third production aircraft TG278 and fitting it with a special reinforced canopy for an attempt on the high altitude record. John Cunningham took this aircraft to a record height of 59,446 ft on 23 March 1948 when fitted with a DH Ghost engine. This aircraft remained with de Havilland and became the development model for the Ghost engined production version which was initially designated Mk.8 but

An excellent portrait of an immediate post-war Vampire F.Mk.I TG/301 'ZY-Z' belonging to No.247 Squadron.









No.247 Squadron changed its markings to the squadron badge and an individual letter in red outlined in black. FB.5 VX975 is unusual in that it is flying without drop tanks.

tailplane chord by four-and-a-half inches, reducing that of the elevator by one-and-a-half inches and fitting acorns to the fin and tailplane joining sections. The tailplane was lowered by 13 inches and vertical tail surfaces changed to look more like the well-known DH tail that had characterised so many aircraft from this manufacturer over the years.

With these modifications completed the aircraft was redesignated Vampire F.Mk.3, the prototype of which first flew on 4 November 1946 to Specification F.3/47 and production started at Preston with VF335.

The newly produced aircraft quickly replaced the F.Mk.Is both in the UK and RAF Germany. Six aircraft of the type belonging to No.54 Squadron from the Odiham Wing made the first jet fighter transatlantic crossing under their own power accompanied by two

Vampire FB.31 in Royal Australian Air Force service. Most of these aircraft were reworks of earlier F.Mk.30s and were fitted with Rolls-Royce Nene engines.

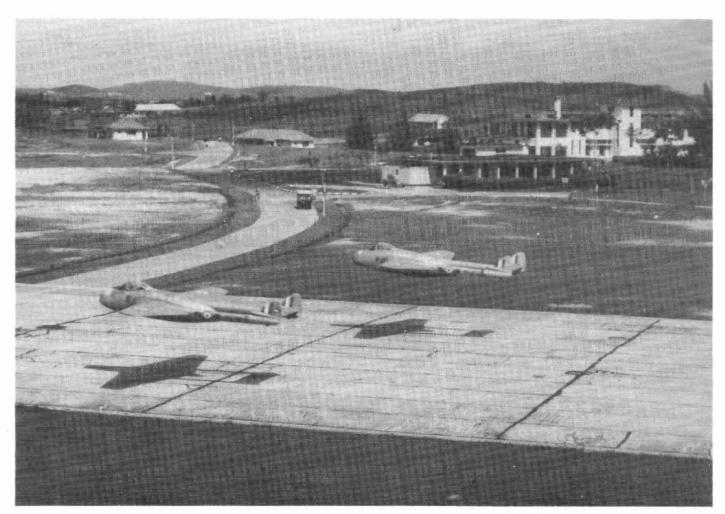
many later had Swedish Flygmotor-built Goblin engines.

# VAMPIRE F.Mk.3

All early Vampires can be distinguished by their square cut fins and rudders but there soon became a requirement to extend the range of this comparatively small aircraft and the need for standardisation on external fuel tanks became important. TG275 as used for experiments with two 100 gallon pylon mounted tanks of cylindrical shape but it was found that these affected the longitudinal stability of the aircraft and was overcome by increasing the

A French Vampire which retained its original RAF serial WR195 alongside a Junkers Ju 52 still in use at that time for transport work.





Two Vampire FB.9s of No.60 Squadron taking off from RAF Tengah, Singapore on an anti-terrorist sortie over the Malaysian jungle.

Mosquitos, staging through Iceland and Greenland to land at Goose Bay, Canada on 14 July 1948 where they were used for display flying and took part in a number of exercises in both Canada and the USA.

Vampires were also being sent to other parts of the world on proving trials. VG703, for example, completed 15 months tropical trials in Singapore, the Philippines and Khartoum during 1948 and 1949.

Exports were also once again in the news and four F.Mk.3s were delivered to the Royal Norwegian Air Force and 83, beginning with 17001, equipped four Canadian fighter squadrons. As referred to earlier one Mk.II had been sent to Australia and after modification to the intakes and the inclusion of the Rolls-Royce Nene power plant a production line was set up under the direction of de Havilland Aircraft (Pty) Ltd for the construction of 80 Vampire F.Mk.30s.

# FIGHTER-BOMBER

With the addition of underwing tanks it was a simple matter to consider the Vampire for the carriage of other more lethal stores. F.Mk.1 TG444 had its rounded wing tips clipped to a span of 38 ft and first flew on 29 June 1948 for trials with bombs and/or rockets. With strengthening of the wing structure and the provision of stronger undercarriage legs with increased travel the Vampire FB.Mk.5 was born.

The first production aircraft of this variant flew on 23 June 1948 and by the end of the year was replacing the F.Mk.3 in Fighter Command. They also replaced Mosquitos in

No.421 Squadron on parade. RCAF Vampires retained their original RAF serials for a short period after entering service.

RAF squadrons in Germany.

It was in Germany that the Vampire saw much of its service life. Increased responsibilities with the Cold War and the Berlin Airlift coincident with the United Nations action in Korea saw Vampire FB.5s serving with Nos.3, 4, 5, 11, 16, 20, 26, 67, 71, 93, 94, 118, 145, 234 and 266 Fighter Squadrons. In the UK Vampires served with Nos.11 and 12 Groups made up of Nos.54 and 247 Squadrons at Odiham and Nos.72 and 130 Squadrons elsewhere. The Royal Auxiliary Air Force mainly used F.Mk.3s but these were later supplemented by the FB.Mk.5 before the RAUXAF was disbanded in 1957. Auxiliary squadrons with Vampires included Nos.501, 502, 601, 602, 603, 604, 605, 607, 608, 609, 612, 613 and 614.

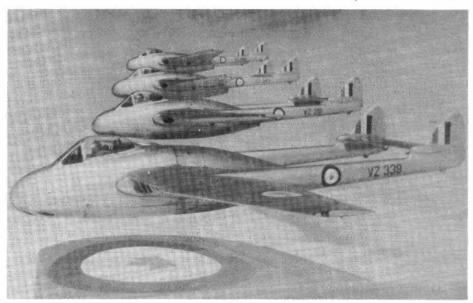
The Vampire FB.5 also served in the Middle and Far East. After moving from Nicosia in

Cyprus, No.32 Squadron re-equipped with Vampire 5s at Shallufa whilst No.60 Squadron distinguished itself on anti-terrorist rocket and bomb attacks in Malaya operating from Tengah, Singapore.

### MORE EXPORTS

Considerable overseas interest had by now been generated by the Vampire and both direct exports and licence construction was initiated in a number of countries. The Australians, for example, followed on the Mk.30 with the Mk.31, 29 of which were remodelled from the earlier version and were brought up to the equivalent of the FB.5.

The Swedes followed their original order by two more contracts for FB.Mk.50s whilst the Swiss built 85 F.Mk.6s in their own factories. The same went for Italy. Here VZ253 was sold



Right: A South African Air Force Vampire FB.5 on display. No other details are known. Lower right: An ex RCAF Vampire F.3 eventually ended up being repainted in camouflage colours and coded 'YG' with the registration VN68. It belongs to Pete Regina in Van Nuys, California. (Jay Sherlock)

to the Italian government who set up a production line run by both Fiat and Macchi who built 80 FB.Mk.52As.

The French had the original FB.Mk.51 VV568 for Nene development work but in the end settled for 67 Goblin powered FB.5s assembled in that country by SNCA Sud Est, the first of which flew from Marignane on 21 December 1950. These were followed by 183 more and then a production line was set up to build the FB.Mk.53 powered by a French built Nene and known as the SE-535 Mistral. It was on one of these aircraft that Mme Auriol broke the women's world air speed record averaging 515 mph round a 100 kilometre course on 12 May 1951.

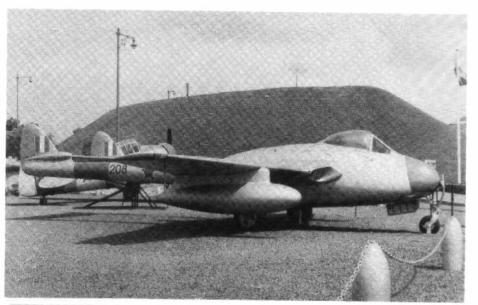
May 1951.

Other countries taking export versions included Egypt, Finland, Iraq, Lebanon, Norway and Venezuela. Standard FB.5s were also delivered to the Indian Air Force and South African Air Force.

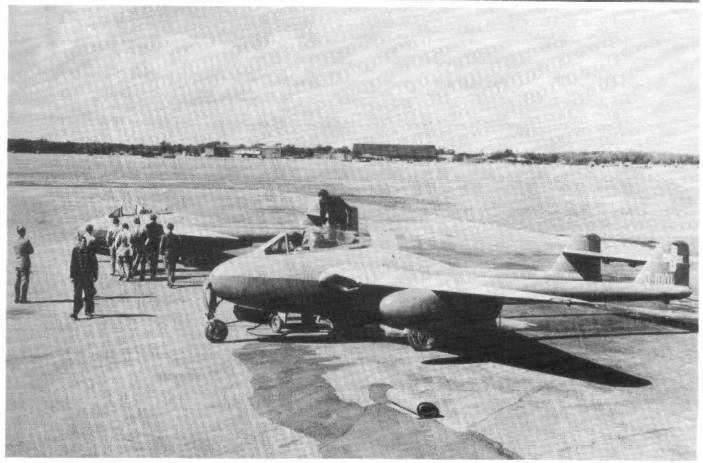
#### VAMPIRES OVERSEAS

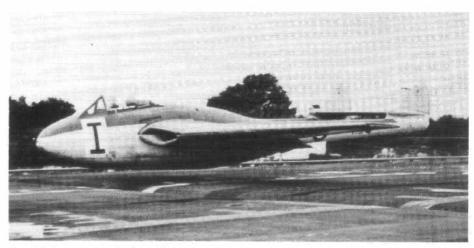
By 1953 the Vampire was becoming outdated in the Royal Air Force and many were relegated to advanced training duties. They served with Nos.1, 4, 5, 7 and 8 Flying Training Schools, the Advanced Flying Training Schools at Valley and Westland Zoyland and the Operational Conversion Unit at Chivenor. Others went to the RAF College at Cranwell, the Central Flying School, the Central Fighter

The first four Vampires for the Swiss Air Force were F.Mk.Is. Two are seen at Hatfield including J-1001, before delivery. Note the underwing tanks, the only example that could be found showing the Mosquito style units which were fitted to many early Vampires.









Establishment and the Air Fighting Development Squadron.

There was still a need for the Vampire overseas, however and with experience gained from using the F.3 and FB.5 in hotter climates there was seen to be a need to fit a refrigerated cockpit to the aircraft. The unit to supply this was fitted in the starboard wing intake fillet resulting in the fillet being extended about eight inches forward.

Vampires like other jets suffered from high ambient temperatures and as a result performance fell off rapidly. To overcome this dual fuel booster pumps were fitted to the Goblin 3 and the aircraft thus equipped was designated Vampire FB.9.

The first to be re-equipped were the Far East squadrons Nos.28 and 60 in Singapore and aircraft were ferried out to them and their FB.5s brought back starting in January 1952.

Thereafter Middle East squadrons including Nos.6, 8, 32, 73, 213 and 249 received FB.9s. All of these were based in Cyprus or the Canal Zone but No.8 Squadron were stationed in Kenya and took a very active part in the war against the Mau Mau terrorists.

This was the last production version of single-seat Vampires for the RAF and when WX260 left the production line in December 1953, 1,157 Vampires of all marks had been produced including 792 at Chester and about 50 FB.Mk.9s by Fairey Aviation at Ringway,

The Vampire was designated J28B in Swedish Air Force service. These two belong to F.3 Wing.

Manchester. This total includes export FB.Mk.9s not mentioned previously which were sold to the Royal New Zealand Air Force.

#### NAVAL INTEREST

The Royal Navy was quick to express an interest in the Vampire as a possible Fleet fighter. The second prototype LZ551 went to

Undercarriageless landings of Sea Vampires were experimented with on a rubberised deck at RAE Farnborough and HMS Warrior between 1949 and 1953.

the DH factory at Christchurch where it was given a 40 per cent increase in flap area, long travel oleo legs and an arrester hook that was housed above the jet pipe efflux.

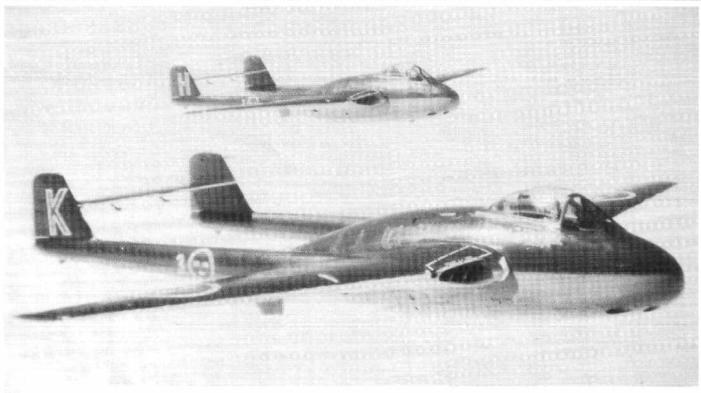
The first deck landings were made on HMS Ocean on 3 December 1945 by Lieutenant Commander 'Winkle' Brown thus making the first ever jet aircraft landing at sea.

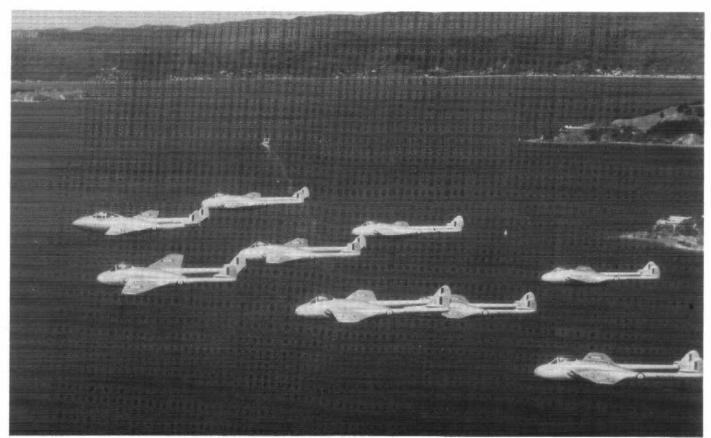
The second naval Vampire was converted from the 91st production Mk.1, WG426 and was followed by two fully navalised examples VF315 and IG328. There followed a batch of 18 production Sea Vampire F.Mk.20s of which the first flew in October 1948.

Given the initial interest it is difficult to see why the Navy did not go for the Vampire as its standard shipboard fighter. Possible reasons were that the aircraft was not flexible enough to be used on carrier decks and that the

Vampire F.3 VF345 was retained by de Havilland at Hatfield who took this picture showing the aircraft having two colour roundels which was unusual for that period. The aircraft later went on to serve with No.73 Squadron.







Vampire FB.9s of No.75 Squadron, RNZAF base Ohakea in North Island seen in formation over Wellington harbour led by a T 11

problems caused by jet blast might prejudice operations. Another possibility was the Vampire's short range which would only allow it to give top cover over the Fleet and not, as with most naval aircraft, have sufficient range to take it away from the immediate vicinity in either the defence or attack roles.

One other experiment was tried with a Royal Navy idea and that was the use of rubberised deck surfaces whereby an undercarriageless landing could be made. Trials of this unique idea were carried out first of all at RAE Farnborough and later on *HMS Warrior*. The purpose of these experiments was to see if an aircraft could withstand such shocks and to accelerate deck handling by simply manoeuvring the aircraft out of the way of other aircraft about to land. At least three Sea Vampire F.21s were used for the trials including TG286 and VT802. The advent of the angled flight deck did much to cancel out this experiment and it was not continued with after 1953.

## OTHER ACTIVITIES

Like many other fast military aircraft the Vampire was used for air racing in the immediate post-war period. Unfortunately most of these were severely handicapped and consequently the Vampire did not do much better than aircraft like the Sea Fury, Hornet or even the Meteor.

John Cunningham raised the Class C.1/1 100 kilometre closed circuit speed record to 496.88 mph in F.Mk.1 VF332 on 31 August 1947 at Lympne, but on both occasions that Vampires were entered for the Kemsley Trophy Race Cunningham came second at 470 mph in VV190 in 1949 and J.W. Wilson coming fifth at 445 mph in WR211 in 1952.

Some Vampires are still thought to be flying in the United States. As far as is known 39 examples from former RCAF stocks were sold

The first deck landing of a jet fighter aircraft took place on HMS Ocean on 3 December 1945 and was made by LZ551 in the hands of Lieutenant Commander 'Winkle' Brown.

to Fliteways of West Bend, Wisconsin in 1954 and became warbirds flying civil airshow circuits or fast personal hacks of rich Americans who both had the money and expertise to fly them.

One of the ex-Canadian machines 17072 was used for the air show circuit painted in an overall gold colour scheme as N6878D by John Morgan. It later spent a number of years in storage before being bought by Pete Regina of Van Nuys Airport, California who restored it as an aircraft of No.502 Squadron, RCAF and it flew again on 8 April 1972 registered VN68 and coded 'YG'.

Several including the example shown in this month's *Inside Story* on page 000, have been preserved in museums around the world.

The Vampire had an operational life in the RAF's European environment of less than ten years which is not a great deal when one comes to think of present day terms of service expected of an aircraft like the Tornado.

Nevertheless in its single-seat version it did a great deal to bolster the free world's air forces in the so-called transition to peace which inevitably led to the Cold War and all that meant in keeping up with the Soviet Union in terms of air power.

The fact that the Vampire was a very simple aircraft in construction and operation, there being only six vital actions before flight for example, did not take away a sprightly performance with a very high rate of roll and incredible lightness of touch and sensitivity of control.

As a first generation jet fighter it had no sophistication of radar and relied upon the World War 2 armament of four 20 mm cannon aimed by a gyroscopic gunsight.

Only the twin-boomed layout of the Vampire made it distinctive and therefore memorable. It started a line of fighter aircraft that ended in the Sea Vixen for de Havilland and as such its place in history is of infinite value.

