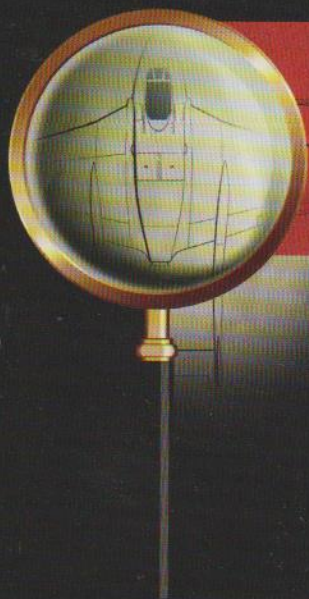


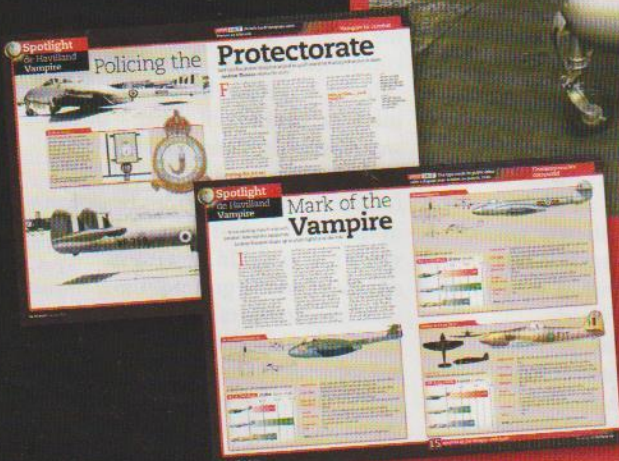


FlyPast Spotlight

de Havilland Vampire

19 Pages in detail

- 62** Origin and history
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- 66** Men behind the Vampire
- 70** Sweden's Vampire J 28A in profile
- 72** Inside the twin-boomer
- 74** In combat - the Vampire in action
- 80** Survivors in camera



Spotlight this month focuses on one of the world's first jet fighter types – the twin-boomed de Havilland Vampire. We look at how it came to be and chart its rise to being one of the RAF's most important aircraft of the era.

Spotlight de Havilland Vampire

FlyPast
Scrutinizes the history of...

Fangs for the memory

The de Havilland Vampire was a brave and unorthodox design that nevertheless stood the test of time.

We examine its history

Clockwise
from right
Two Vampire T.55s -
XE897 and WZ589.
KEY-DUNCAN CUBITT

de Havilland
Vampire FB.5
VV454 on
September 5, 1949.
DE HAVILLAND

Vampire prototype
LZ548/G. CROWN
COPYRIGHT

Given that there are thought to be around 80 airworthy examples extant (although not that many are currently flying), it is remarkable to consider that the de Havilland Vampire is a design that owes its genesis to the war years. Although it arrived in service too late to see action in World War Two, it remained in RAF hands as a trainer until 1966 and was retained by many other air forces for decades beyond.

The RAF's second operational jet fighter after the Gloster Meteor, the Vampire was arguably even more distinctive in the skies, due to its highly unorthodox twin-boomed design. While some World War Two-era piston fighters such as the Lockheed P-38 Lightning had successfully used a similar configuration, it was a surprisingly bold design given how new jet technology was.

Early jet engines were relatively low powered, but as more robust powerplants began to be developed, so the possibilities increased for a single-engined jet fighter. de Havilland's design for the Vampire, designated the DH.100 and initially nicknamed Spider Crab, was nevertheless brave – full of the flair and forward thinking that the designer was known for through its previous work on the Mosquito, among others.

The Vampire was to be powered by Frank Halford's H.1 engine, soon to be known as the Goblin. The use of the twin boom kept the jet pipe short, avoiding the power loss that a

long pipe would have needed in a conventional fuselage. Many of the Mosquito's design features were retained when de Havilland commenced work on two prototypes at its Hatfield, Herts base in 1942.

Geoffrey de Havilland Jr, the company's test pilot and son of its founder, made the first flight in LZ548/G on September 20, 1943, just six months after the Meteor made its debut. The type narrowly missed seeing action in World War Two – the Vampire Mk.1 first flew in April 1945 with most production switching to English Electric's plant at Samlesbury, Lancs, due to existing commitments at Hatfield.

de Havilland later built a two-seat night-fighter version, intended for export. The presence of the second seat meant it was ripe for development into a trainer – the T.11 was built in large numbers, both for the RAF and other nations. The Vampire's success and adaptability is evidenced by the fact that it was eventually used by 31 air forces, and was built in 15 different guises, including a carrier-based aircraft designated Sea Vampire. A total of 3,268 Vampires were made.

The RAF initially saw its Vampires as ground attack fighter-bomber aircraft, although the design eventually proved to be far more versatile. The first specialised Fighter-

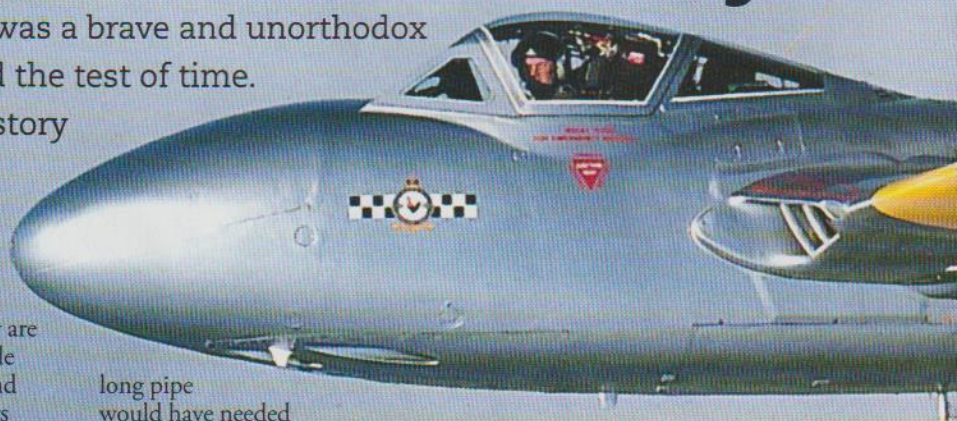
Bomber Mk.5 (FB.5) flew on June 23, 1948. It was adapted to carry either an external fuel tank or a 500lb (227kg) bomb under each wing, plus eight rocket projectiles.

It went on to become the RAF's most numerous single-seat variant, with 473 built.

FB.5s equipped 19 squadrons operating in Europe, the Middle East and the Far East. It was particularly successful when used on attack missions to suppress the insurgency in Malaya during the late 1940s and early 1950s.

Night-fighters were used by three units, eventually being replaced by Venoms, designed by de Havilland as a direct development of the Vampire. After 1955 the RAF began to relegate the latter to training roles, which continued late into the 1960s.

Egypt is among the nations that used the Vampire in anger – three were lost in combat with Israeli jets during the Suez Crisis of 1956. Indian Air Force FB.52s saw action in the 1965 Indo-Pakistani War, and while successful in slowing enemy advances on the ground, three of the now outdated jets were shot down by North American F-86 Sabres armed with air-to-air missiles. A fourth fell to ground fire, and the type was withdrawn from frontline service shortly afterwards.





"The type narrowly missed seeing action in World War Two – the Vampire Mk.I first flew in April 1945..."

The Rhodesian Air Force, however, continued operating Vampires until the end of the bush wars in 1979, the last frontline use of the type anywhere in the world. During Operation DINGO in November 1977, Rhodesian security forces carried out a major raid against the headquarters of Robert Mugabe's Zimbabwe African National Liberation Army, a militant organisation opposing Republican rule in Rhodesia.

Six Vampires, together with four EE Canberras and ten Hawker Hunters, caused devastation on the ground before Rhodesian paratroopers and helicopter-borne troops entered the fray, scoring a decisive victory. A Vampire pilot was killed when he

tried to land in a field after being hit by ground fire, one of only two fatalities suffered that day by the Rhodesians. ZANLA is estimated to have lost around 3,000 in the attack.

Although a British design, a quarter of all Vampires were built under license by other countries, and today survivors can be found all over the world. Several are based in the UK and remain popular attractions on the airshow 'circuit'. A number of ex-Swiss and ex-Australian jets now operate with collectors in the United States, while the Royal Norwegian Air Force Historic Flight fly a T.55 and an F.6 in tandem and were most recently seen in the UK at Leuchars' September airshow. ●



Record breaker

The Vampire certainly had a deep and lasting impact on British aviation. Entering service so soon after the war years, its eye-catching design must have made it seem that a new era had dawned. Introduced to the British public on June 8, 1946, when a formation of 247 Squadron Vampires led a flypast over London, the unmistakable jet went to achieve several aviation firsts.

It was the first RAF fighter to exceed 500mph (800km/h), and in the hands of legendary test pilot Eric 'Winkle' Brown, a Vampire was the first pure jet aircraft to land and take-off from an aircraft carrier. On March 23, 1948, another famous test pilot, John 'Cats Eyes' Cunningham, flying a modified Mk.I with a DH Ghost engine, set a new world altitude record of 59,446ft (18,119m). That same year, six F.3s of 54 Squadron became the first jet aircraft to cross the Atlantic, albeit via stops in the Outer Hebrides, Iceland and Labrador.

Spotlight

de Havilland Vampire

Mark of the Vampire

In an exciting time for British aviation, how did the distinctive-looking Vampire shape up to other fighters of the era?

In the mid-1940s, Britain had the luxury of developing two state-of-the-art jet fighters, effectively maintaining its rank among the leading lights of world aviation. It already had the Gloster Meteor, the only Allied jet fighter to see operational service during World War Two. The first post-war Meteor was the potent F.4, which through its new Rolls-Royce Derwent turbojets produced 75% more thrust than earlier versions.

The Meteor's partner was arguably even more distinctive, at least in terms of appearance. Small and twin-boomed, the Vampire was an unmistakable sight in British skies. Though slightly slower than the F.4, the Vampire was a much lighter machine. The fact that it came close to

the Meteor in speed despite producing less than half the thrust through just one turbojet demonstrates how effective a performer it was.

Despite its unusual layout, the Vampire was popular among pilots and ripe for development. It was adopted for both RAF and naval use, and supplied to several air forces around the world, including Australia, Canada, Egypt and Finland. In terms of longevity, its service career came close to mirroring that of the Meteor – the last new Vampire was delivered to Austria in 1961, and the type soldiered on in the Swiss Air Force until the early 1990s.

Both jets outperformed the piston fighters of the late 1940s. The former represented new technology,

whereas the latter – types such as the Grumman F8F Bearcat, late mark Supermarine Spitfires and the Hawker Sea Fury – was the ultimate development of World War Two technology. An order for 200 Furies was in fact cancelled by the RAF at the end of the war, but 932 examples of the navalised Sea Fury were built, and some were used effectively in the Korean War.

Aircraft such as these were far more familiar in terms of layout and handling to the fighter pilots of the day, but they represented the end of the line for piston power. With the rise of the jet, of the Vampire and Meteor in the RAF, and a range of Lockheed, Republic and North American designs in the US, it was clear that a new era had dawned.

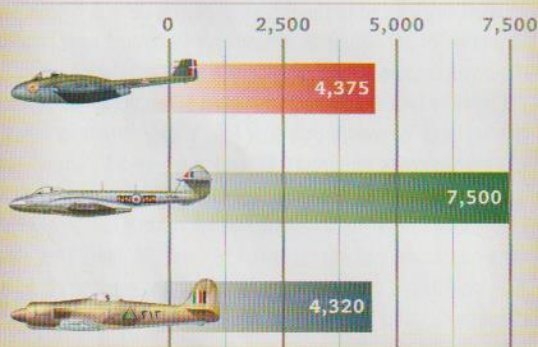
de Havilland Vampire F.1



Above right

de Havilland Vampire F.1 2707 of the Dominican Air Force. PETE WEST 2011

AT A GLANCE: CLIMB (ft per min)



Construction: 2,957 single-seat Vampires of all models were built, including three prototypes, 249 F.1, 206 F.3 and 30 Sea Vampire F.20s.

First Flight: The first of the three prototypes flew on September 20, 1943, from Hatfield, Herts, with Geoffrey de Havilland Jr at the controls.

Powerplant: One 3,100lb (13.8kN) de Havilland Goblin 2 turbojet.

Dimension: Span 40ft 0in (12.19m). Length 30ft 9in. Height 8ft 10in. Wing area 266ft² (24.7m²).

Weight: Empty 6,372lb (2,890kg). Maximum take-off weight 10,480lb.

Performance: Max speed 540mph (869km/h) at sea level. Initial climb 4,375ft (1,333m) per minute. Service ceiling 43,500ft. Range 1,145 miles (1,843km).

Armament: Four 20mm cannon in lower nose.

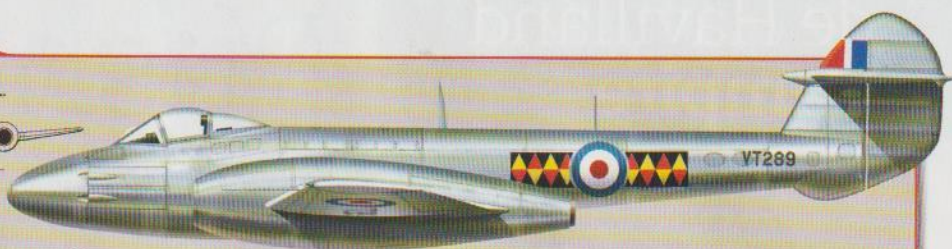
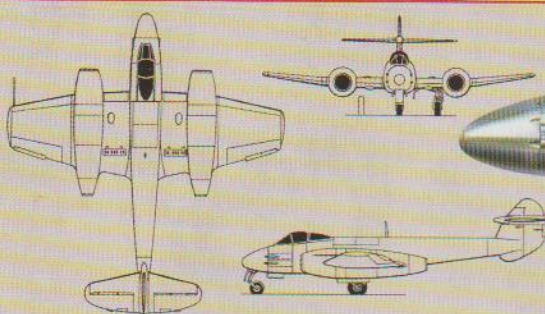
Crew: One.

Note: performance and weights varied according to role and configuration.

SPOT FACT The type made its public debut with a flypast over London on June 8, 1946

Contemporaries compared

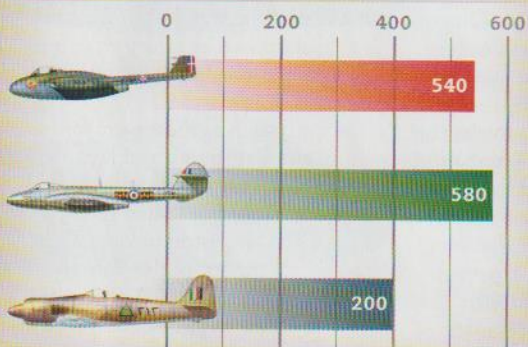
Gloster Meteor F.4



Above right

Gloster Meteor F.4 VT289. PETE WEST 2011

AT A GLANCE: SPEED (mph)



Construction: 3,866 Meteors of all versions were made, including 680 F.4s built in the UK by Gloster (635) and Armstrong Whitworth (45).

First flight: The first of eight Meteor prototypes flew on March 5, 1943. The F.4 first flew on May 17, 1945.

Powerplant: Two 3,500lb (15.6kN) Rolls-Royce Derwent 5 turbojets.

Dimension: Span 37ft 2in (11.33m). Length 41ft 0in. Height 13ft 0in. Wing area 350ft² (32.5m²).

Weight: Empty 11,217lb (5,088kg). Maximum take-off weight 14,545lb.

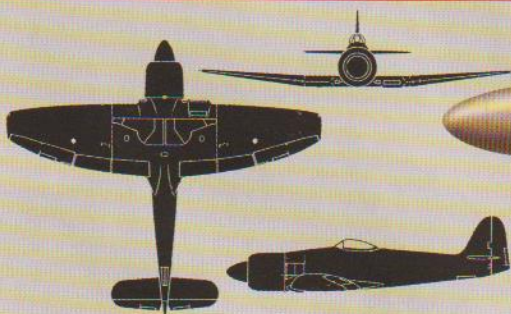
Performance: Max speed 580mph (933km/h) at 10,000ft (3,048m). Initial climb 7,500ft per minute. Service ceiling 44,500ft. Range 610 miles (982km).

Armament: Four 20mm cannon in nose.

Crew: One.

Note: performance and weights varied according to role and configuration.

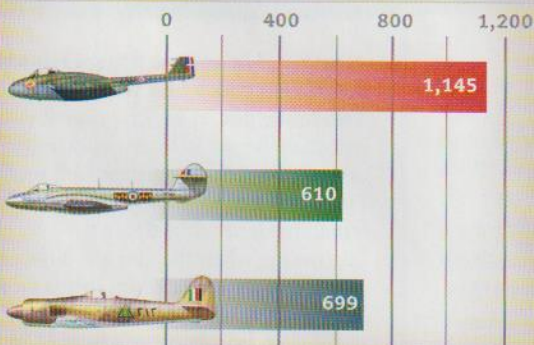
Hawker Sea Fury FB.11



Above right

A Hawker Sea Fury in service with the Iraqi Air Force. PETE WEST 2011

AT A GLANCE: RANGE (miles)



Construction: The FB.11 was the most produced variant with 611 made, from a total of 932.

First Flight: The first Fury to fly was NX798 on September 1, 1944. The Sea Fury prototype, SR661, first flew at Langley, Berkshire, on February 21, 1945.

Powerplant: One 2,550hp (1,900kW) Bristol Centaurus XVIII 18-cylinder radial, driving a five-bladed propeller.

Dimension: Span 38ft 5in (11.7m). Length 34ft 8in. Height 15ft 11in. Wing area 280ft² (26m²).

Weight: Empty 9,240lb (4,191kg). Maximum take-off weight 14,650lb.

Performance: Max speed 460mph (740km/h) at 18,000ft (5,486m). Initial climb 4,320ft per minute. Service ceiling 35,800ft. Range 699 miles (1,126km) on internal fuel or 1,040 miles with drop tanks.

Armament: four 20mm cannon in wings plus up to 2,000lb (907kg) of bombs or rockets.

Crew: One.

Note: performance and weights varied according to role and configuration.



Spotlight de Havilland Vampire

Pushing the Barriers

Only the RAF's second jet, the Vampire achieved many firsts. We profile two of the men at the sharp end of its development

Right
Vampires of 247
Squadron, the first
unit to equip with
the type. CROWN
COPYRIGHT

Born in 1910, the same year that his father flew (and crashed) his first aircraft, Geoffrey de Havilland Jr seemed set for a career in aviation from a very early age. He is thought to have made his first flight aged only six with his father at Hendon in a DH.6, a trainer used by the Royal Flying Corps in World War One. During his relatively short life, 'Young DH' achieved much, including test flying the first Vampire prototype on September 20, 1943.

Leaving school at 18, he spent four years working as an apprentice for his father, learning to fly Moths at the same time. A six month spell undertaking air survey work in South Africa was marred by a surprising lack of flying, resulting in a return to England and a job as a flying instructor with the de Havilland Aeronautical Technical School.

By 1934 he had become involved in test flying due to the sheer quantity of work. Capt Hubert Broad was chief test pilot at the time, with his successor, Robert J Waight, handling the production

side. With so much of the latter, Geoffrey was delighted to find himself testing Tiger Moths, Dragon Rapides, Hornet Moths and others.

He survived a close shave when carrying out spinning tests on the first production Moth Minor, in the company of John Cunningham – soon to be a decorated war hero and to play his own role in the Vampire's development. Both men baled out when the aircraft's engine stopped and a spin from around 5,000ft (1,524m) seemed unrecoverable.

War birds to jets

When Broad left the company in 1935, Waight took over, working on the elegant but ultimately unsuccessful DH.91 Albatross. Sadly, he lost his life flying the company's TK.4 racing monoplane on October 1, 1937.

At this point, Geoffrey took over as chief test pilot, continuing his predecessor's work on the

Goblin to Ghost

The Ghost turbojet was the company's second jet engine to enter production after the Goblin, and was the world's first gas turbine engine to see airline service, with BOAC.

Originally known as the Halford H-2, it used ten larger flame cans in place of the H-1/ Goblin's 16 smaller ones, using 'split intakes' to each can to feed in more air. While prototypes were being built, de Havilland acquired Frank Halford's firm and renamed the H-1 and H-2 as the Goblin and Ghost respectively.

The Goblin, first run on April 13, 1942, was based around Frank Whittle's centrifugal compressor concept, and powered the first Vampire. It produced only 2,100lb (9.3kN) of thrust, though the Goblin 3 used in the FB.6 delivered 3,350lb. The more powerful Ghost was used for the Venom, effectively a development of the Vampire, giving the FB.1 an output of 4,850lb of thrust.

Albatross. He was test flying Oxfords and Flamingoes when World War Two broke out, at which point the company began to focus on carrying out repair work on damaged Hawker Hurricanes. He survived a potentially lethal incident while flying a Hurricane, when the canopy came off mid-flight and struck him in the face. Virtually unable to see due to blood in his eyes, he somehow managed to make a safe landing.



Excitingly for 'Young DH', work was gathering pace on an aircraft that would become a legend of the war. Geoffrey flew the first Mosquito at Hatfield, Herts, on November 25, 1940. He also made the first flight in the prototype of the fighter version, built at a dispersal factory with no runway. To save time, Geoffrey 'adapted' local fields, placing bridges over ditches, to give sufficient room for a successful take-off run, and then flew the machine to Hatfield.

As the war progressed, the focus for designers gradually switched to jet power. The Gloster E.28/39 was the first British jet to fly, piloted by Flt Lt Gerry Sayer on May 15, 1941, at Cranwell, Lincs. Geoffrey later flew

made its debut. It had been delayed because of the need to replace an engine destroyed in ground testing.

Broadly pleased with the performance of the new aircraft, reporting that it behaved very much as expected, the only problem he experienced was a tendency for the ailerons to overbalance, limiting the speed to an unsatisfactory 250mph (402km/h). Having heeded lessons learned during Mosquito test flights, Geoffrey carried out a number of intensive investigations into the Vampire, eventually correcting the problem. Among the more risky trials that Geoffrey took part in were tight formation flights at 500mph, and flying a Vampire with rudder locked to investigate 'snaking'.

Awarded an OBE in 1945, he went on to fly TG283, the DH.108 Swallow prototype on May 15, 1946. Designed to test low-speed handling and utilising a swept wing and a Vampire fuselage, initial tests were successful and Geoffrey displayed it at the 1946 Farnborough Airshow.

A second, modified Swallow prototype, TG306, designed for higher speed, flew the following month. Tragically, while flying this aircraft on September 27 to evaluate handling characteristics at high speed,

Geoffrey was killed when a catastrophic structural failure

sent the jet plummeting into the Thames Estuary. Despite the loss of their chief test pilot, a third prototype was built, and flown successfully by John Cunningham, but the experimental programme was cancelled in 1950.

Cat's Eyes

Gp Capt John 'Cat's Eyes' Cunningham CBE DSO** DFC* succeeded Geoffrey de Havilland Jr as the company's chief test pilot after the latter's death in 1946.

Having already worked as a test pilot at de Havilland before World War



"Geoffrey has the distinction of being the second man in Britain to have made a first flight on a jet aircraft"

Two, he was to gain considerable fame during the conflict as a night-fighter 'ace', before returning to Hatfield to pick up where he had left off.

Born on July 27, 1917, he joined the company in 1938 as an apprentice at the de Havilland Aeronautical Technical School. Learning to fly at weekends with 604 (County of Middlesex) Squadron, a Royal Auxiliary Air Force unit, he was

appointed by de Havilland

as a junior test pilot, but had only recently started his job in 1939 when called up to full-time service.

Flying Bristol Blenheims at night, he shot down his first enemy aircraft, a Junkers Ju 88, on November 19, 1940. Progressing to the Beaufighter, more 'kills' followed, the first being a Heinkel He 111 over the Channel, closely followed by another over Lyme Bay.

As his score mounted, the story was spread that his supposedly excellent night vision was down to a hearty consumption of carrots, reflecting the popular myth. Attracting the nickname 'Cat's Eyes' which he was allegedly never fond of, the real reason for Cunningham's success – alongside that of his fellow crew member – was the introduction ➔

Above
Geoffrey de Havilland
Jr. KEC

the Gloster jet himself at Farnborough, and also has the distinction of being the second man in Britain to have made a first flight on a jet aircraft. The machine in question was Vampire prototype LZ548/G, which got airborne from Hatfield for the first time on September 20, 1943.

Testing times

The flight took place only six months after the Gloster Meteor

3,268 Vampires were built

SPOT FACT Many of its basic design features were first used on the Mosquito

John 'Cat's Eyes'
Cunningham. KEC



"On March 23, 1948,
he set a new world
altitude record flying
a modified Vampire
Mk.1"

Right
Vampire Mk.II
prototype TX807.
CROWN COPYRIGHT

Three of the six 54 Squadron
Vampires making the first jet-
powered transatlantic flight.
KEY COLLECTION



of airborne radar. Locating and despatching an enemy aircraft at night remained an extremely exacting and frustrating business. "It would have been easier had the carrots worked," he later mused.

After serving a staff appointment in 1943, John received command of No.85, a Mosquito night-fighter unit. Now at the controls of the more manoeuvrable and versatile de Havilland design, his tally continued to increase, and included four Focke-Wulf Fw 190s. He finished the war with 20 victories to his name, all but one of which were scored at night.

A lifetime's dedication

Eschewing a career in the post-war RAF, the highly decorated pilot returned to de Havilland to take over flight development of the Goblin turbojet engine, which was being used to power the new Vampire. The death of Geoffrey de Havilland Jr saw him promoted to chief test pilot, his first responsibility being to finish the work that his predecessor had started – assessing characteristics of the swept wing DH.108 design. He also set to work on obtaining data for the future Comet airliner and Sea Vixen naval fighter.

Cunningham continued his involvement with the ever-developing Vampire and its powerplants. On

March 23, 1948, he set a new world altitude record of 59,446ft (18,119m) flying a Vampire Mk.1 modified with extended wing tips and powered by a de Havilland Ghost engine. The Ghost was a scaled up development of the Goblin, and would soon be implemented into several new designs, all flown or test flown by John.

When the RAF asked for an improved version of the Vampire with greater load carrying capacity and a larger engine, de Havilland's answer was the Ghost-powered Venom, which entered service in 1952.

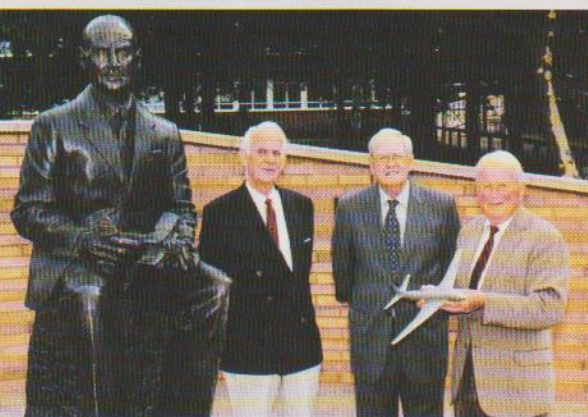
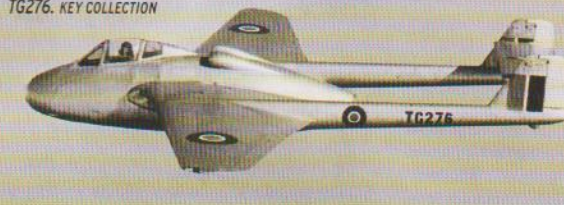
John went on to test fly the Comet, the world's first jet airliner. Flying it for the first time on July 27, 1949, from Hatfield, he later commented: "I assumed that it would change aviation, and so it proved. It was a bit like Concorde." He also test flew the Comet 3 and 4 in the mid-1950s and the Trident in 1962.

When de Havilland became a division of Hawker Siddeley, John's services were retained until his retirement in 1980. He died on July 21, 2002, aged 84. The street Cunningham Avenue has been named after him in Salisbury village, a housing development on the former Hatfield site. Geoffrey de Havilland Jr described him as a "test pilot, demonstration pilot and ambassador all in one." ●

John Cunningham flying a high altitude Ghost-powered Vampire with modified wingtips.



Nene-powered Vampire II TG276. KEY COLLECTION



Above John Cunningham (far right) poses with a statue of Geoffrey de Havilland. KEY COLLECTION





Spotlight

de Havilland Vampire

SPOT FACT Design work began at Hatfield, Herts, in mid-1942

Scandinavian Squadron

It wasn't just the RAF that was keen to establish the Vampire in their forces. **Pete West** profiles a jet that flew with the Swedish Air Force

de Havilland
J 28A Vampire
28065 of
Norrköping-based
F 13 Wing.
PETE WEST-2011

A total of 31 air forces around the world chose to equip with the de Havilland Vampire. One of the first to do so was the Swedish Air Force, its first F.1s arriving in 1946.

No less than 437 Vampires would fly with the SwAF, comprising 70 F.1s or FB.1s (called J 28A in Swedish service), 310 FB.50s (J 28B) and 57 T.55s (J 28C). The jet illustrated is J 28A 28065 of F 13 Wing at Norrköping.

On purchasing its first batch of 70 Vampires, the SwAF was looking

for a machine to replace its existing SAAB 21 and FFVS J 22s, which were rapidly becoming obsolete. The first of the de Havillands to arrive were assigned to F 13.

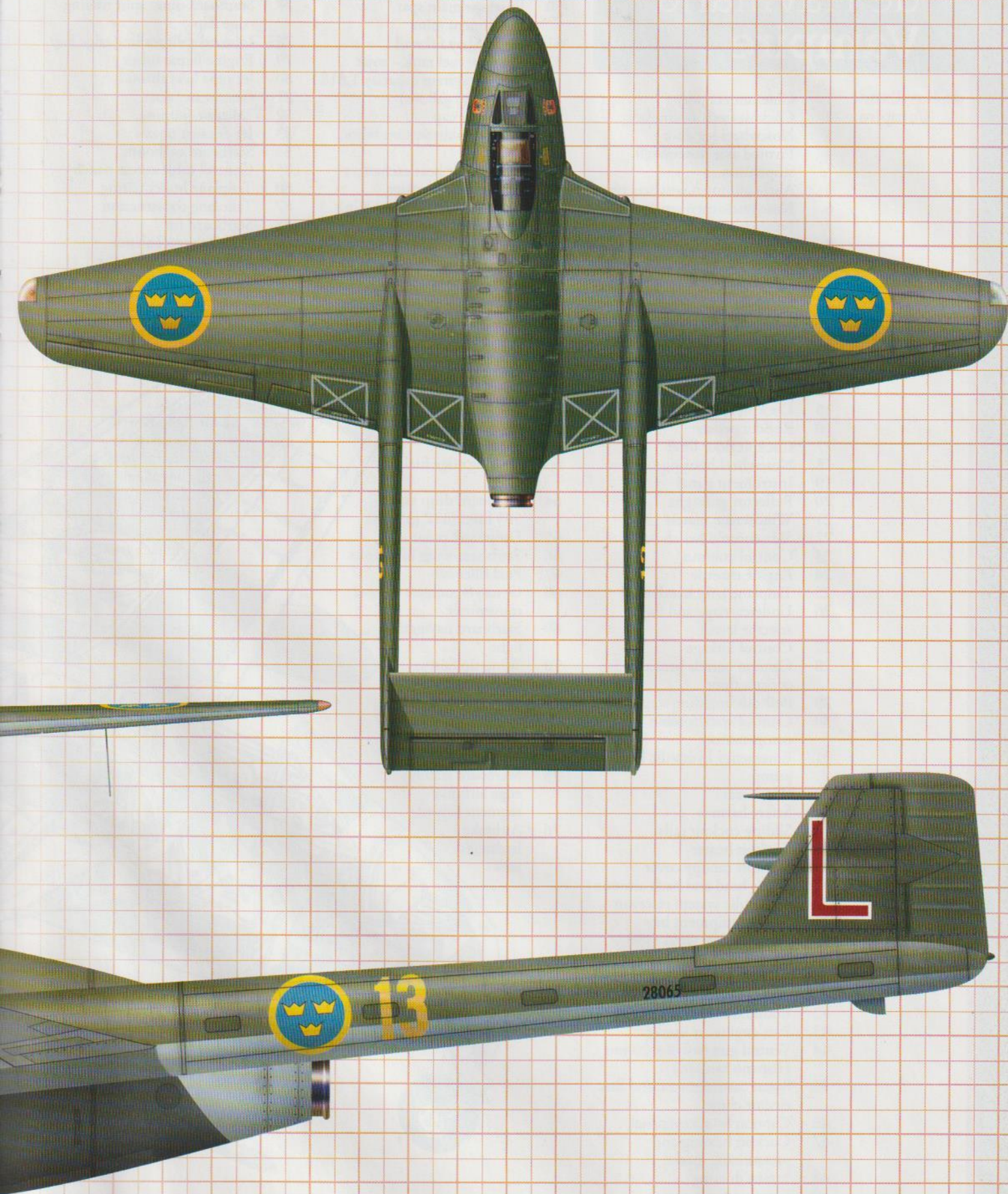
Formed just three years earlier, F 13 had the distinction of being the first SwAF Wing to convert to jets in 1946. Later it became the first to introduce the SAAB J 29 'Tunnan' and the J 35 Draken, which entered service in 1951 and 1960 respectively.

Upgraded FB.50s were purchased in 1949, the last one being delivered

in 1952. It sounded the death knell for piston-engined fighters, all of which began to be decommissioned that year. A total of 57 two-seater Vampires were used for training.

The J 28C outlived its single-seat sisters – all the fighters were retired in 1956 while the trainer version remained in service for another 12 years, finally bowing out in 1968. Despite the prevalence of the Vampire in the SwAF, all those currently owned privately in Sweden are believed to originate from the Swiss Air Force.







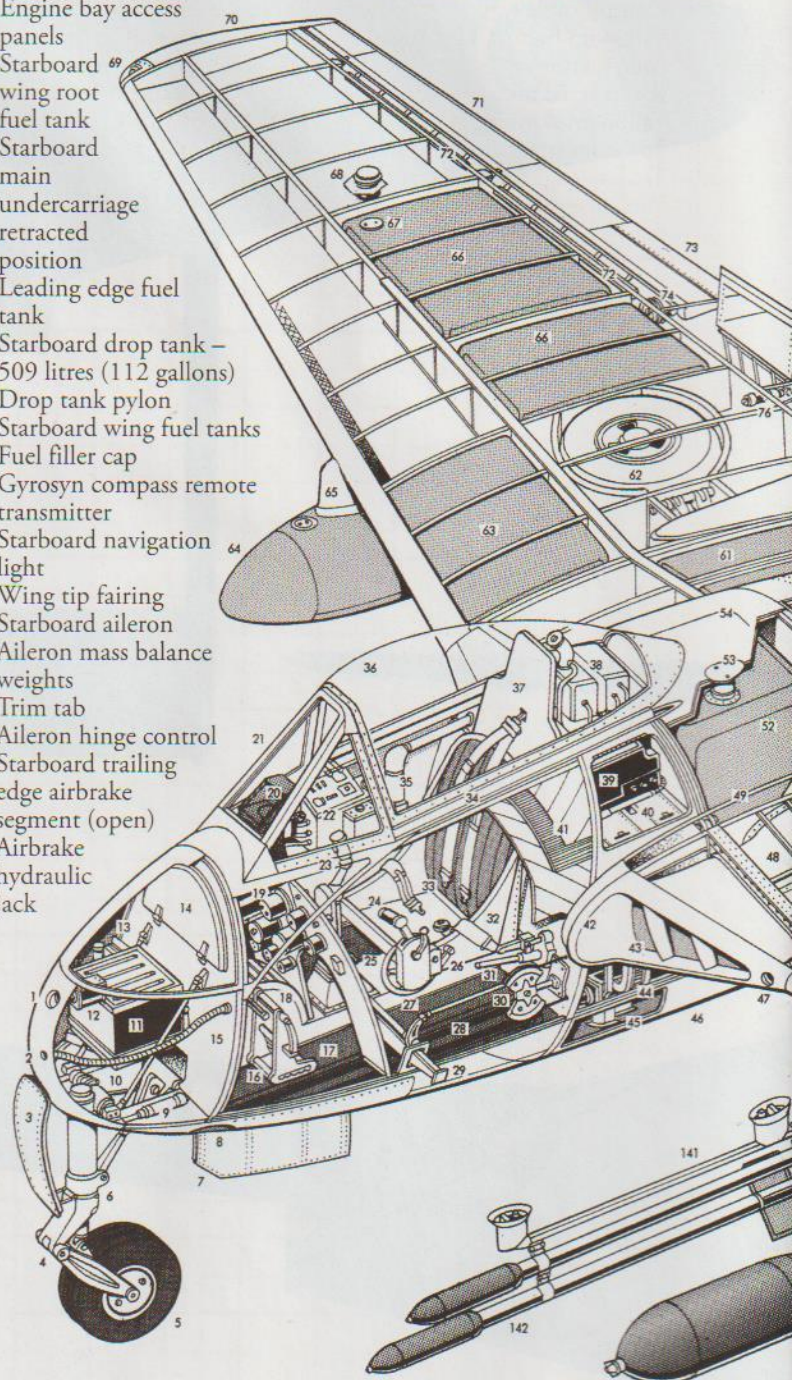
Spotlight

de Havilland Vampire

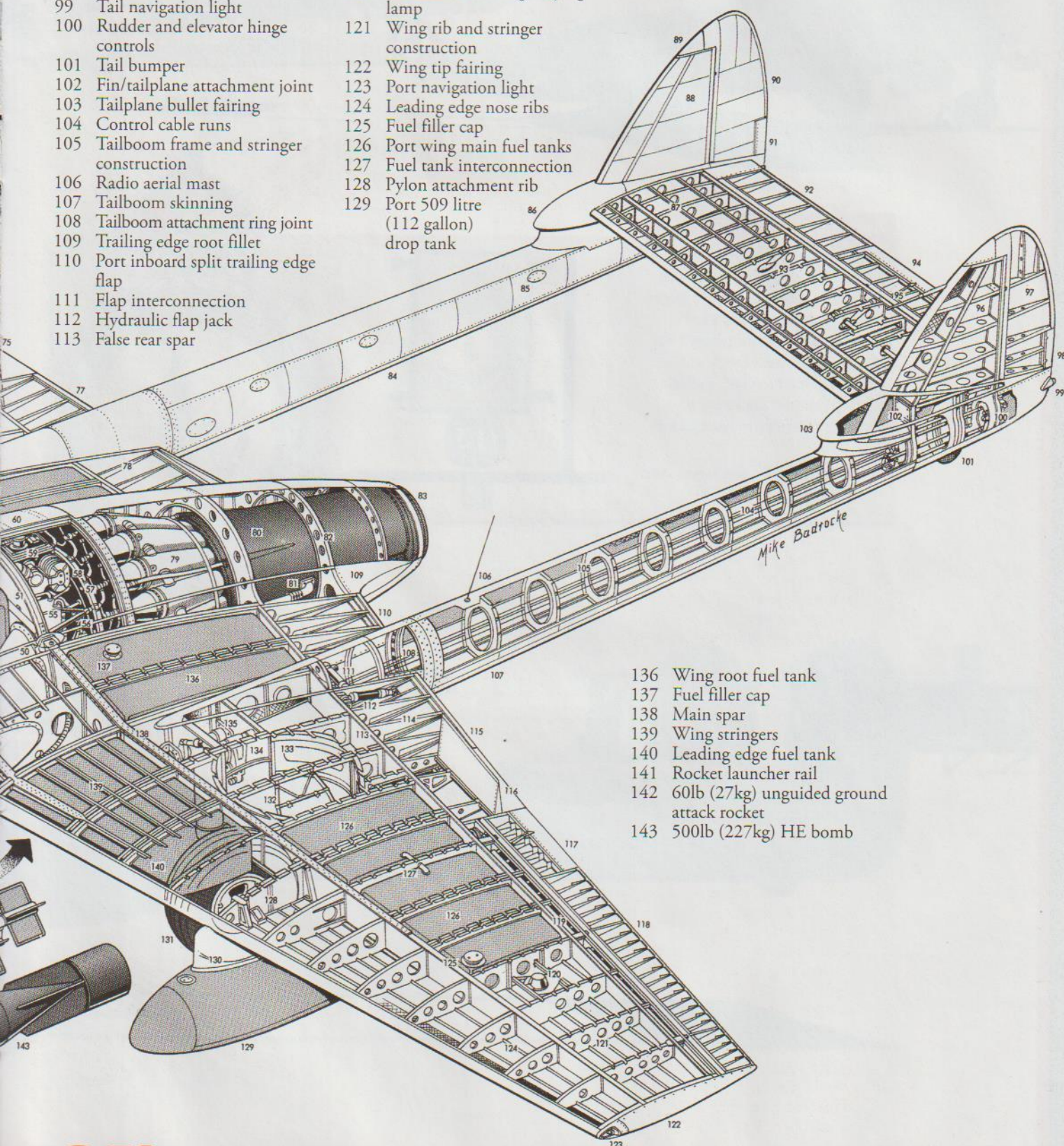
de Havilland Vampire

- 1 Cine camera port
- 2 Cockpit fresh air intake
- 3 Nosewheel leg door
- 4 Pivoted axle nosewheel suspension
- 5 Anti-shimmy nosewheel tyre
- 6 Nose undercarriage leg strut
- 7 Nosewheel door
- 8 Cannon muzzle blast trough
- 9 Nosewheel hydraulic jack
- 10 Nose undercarriage pivot fixing
- 11 Radio
- 12 Gun camera
- 13 Windscreen fluid de-icing reservoir
- 14 Armoured instrument access panel
- 15 Cockpit front bulkhead
- 16 Rudder pedals
- 17 Cockpit floor level
- 18 Nosewheel housing
- 19 Instrument panel
- 20 Reflector gunsight
- 21 Windscreen panels
- 22 Side console switch panel
- 23 Control column
- 24 Engine throttle
- 25 Tailplane trim handwheel
- 26 Undercarriage and flap selector levers
- 27 Control linkage
- 28 Cannon barrels beneath cockpit floor
- 29 Pull-out boarding step
- 30 Control system cable compensator
- 31 Emergency hydraulic hand pump
- 32 Pilot's seat
- 33 Safety harness
- 34 Sliding cockpit rails
- 35 Cockpit heater
- 36 Cockpit canopy cover
- 37 Pilot's head and back armour
- 38 Hydraulic system reservoir
- 39 Radio equipment bay
- 40 Ammunition tanks (150 rounds per gun)
- 41 Plywood/balsa fuselage skinning
- 42 Boundary layer splitter
- 43 Port engine air intake
- 44 Ventral gun bay (4 x 20mm Hispano cannon)
- 45 Spent cartridge case and link ejector chute
- 46 Cannon by access panel
- 47 Cockpit heating and pressurizing intake
- 48 Intake ducting
- 49 Fuselage/front spar attachment joint

- 50 Fuselage/main spar attachment joint
- 51 Engine bay firewall
- 52 Fuselage fuel tank – total internal system capacity 1,818 litres (400 gallons)
- 53 Fuel filler cap
- 54 Wooden skin section fabric covering
- 55 Cockpit air heat exchanger
- 56 Engine bearer struts
- 57 de Havilland Goblin DGn2 centrifugal flow turbojet
- 58 Cabin blower
- 59 Engine accessories
- 60 Engine bay access panels
- 61 Starboard wing root fuel tank
- 62 Starboard main undercarriage retracted position
- 63 Leading edge fuel tank
- 64 Starboard drop tank – 509 litres (112 gallons)
- 65 Drop tank pylon
- 66 Starboard wing fuel tanks
- 67 Fuel filler cap
- 68 Gyrosyn compass remote transmitter
- 69 Starboard navigation light
- 70 Wing tip fairing
- 71 Starboard aileron
- 72 Aileron mass balance weights
- 73 Trim tab
- 74 Aileron hinge control
- 75 Starboard trailing edge airbrake segment (open)
- 76 Airbrake hydraulic jack
- 77 Starboard outer split trailing edge flap
- 78 Inboard split trailing edge flap
- 79 Engine flame tubes
- 80 Jet pipe heat shroud
- 81 Gun heater duct
- 82 Tailcone framing
- 83 Jet exhaust nozzle
- 84 Starboard tailboom
- 85 Control cable access panels
- 86 Tailplane bullet fairing
- 87 Tailplane construction
- 88 Starboard fin
- 89 Rudder mass balance
- 90 Starboard rudder



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| 91 Rudder trim tab | 114 Flap shroud ribs | 130 Drop tank pylon |
| 92 Elevator construction | 115 Port outboard split trailing edge flap | 131 Port main wheel |
| 93 Ventral elevator mass balance weights | 116 Rotating trailing edge segment airbrake (open) | 132 Main wheel door actuating linkage |
| 94 Elevator tab | 117 Aileron tab | 133 Port main wheel bay |
| 95 Pitot tube | 118 Port aileron construction | 134 Retraction linkages and locks |
| 96 Port fin construction | 119 Aileron mass balance weights | 135 Main undercarriage leg strut pivot fixing |
| 97 Port rudder | 120 Retractable landing/taxying lamp | |
| 98 Rudder trim tab | 121 Wing rib and stringer construction | |
| 99 Tail navigation light | 122 Wing tip fairing | |
| 100 Rudder and elevator hinge controls | 123 Port navigation light | |
| 101 Tail bumper | 124 Leading edge nose ribs | |
| 102 Fin/tailplane attachment joint | 125 Fuel filler cap | |
| 103 Tailplane bullet fairing | 126 Port wing main fuel tanks | |
| 104 Control cable runs | 127 Fuel tank interconnection | |
| 105 Tailboom frame and stringer construction | 128 Pylon attachment rib | |
| 106 Radio aerial mast | 129 Port 509 litre (112 gallon) drop tank | |
| 107 Tailboom skinning | | |
| 108 Tailboom attachment ring joint | | |
| 109 Trailing edge root fillet | | |
| 110 Port inboard split trailing edge flap | | |
| 111 Flap interconnection | | |
| 112 Hydraulic flap jack | | |
| 113 False rear spar | | |



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| 136 Wing root fuel tank |
| 137 Fuel filler cap |
| 138 Main spar |
| 139 Wing stringers |
| 140 Leading edge fuel tank |
| 141 Rocket launcher rail |
| 142 60lb (27kg) unguided ground attack rocket |
| 143 500lb (227kg) HE bomb |



Spotlight de Havilland Vampire

Policing the

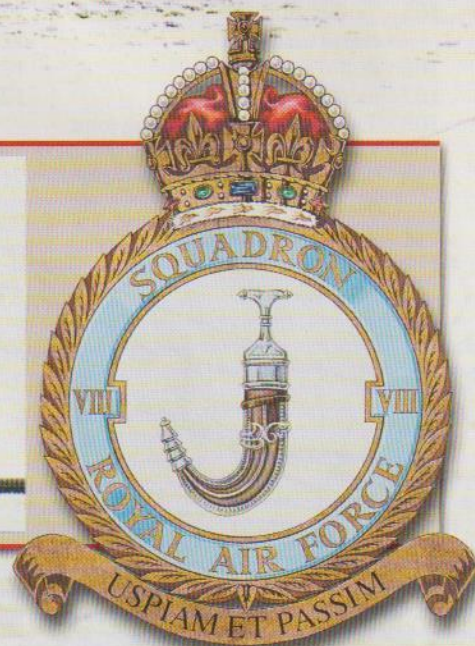
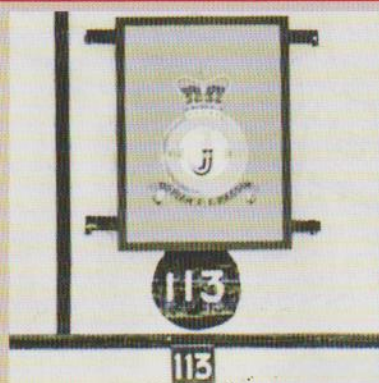


Arabian dagger

No.8 Squadron's badge, a sheathed Arabian dagger, was approved by King George VI in December 1943. The dagger was chosen to emphasise the unit's long association with the region. It was sheathed to symbolise the guardian nature of 8 Squadron's task. The Latin motto is: *Uspiam et passim* which translates as "everywhere unbounded".

Right

The squadron's badge advertises its ownership of the large hangar at Khormaksar. M DAY



Protectorate

RAF and Rhodesian Vampires helped to quell unrest by feuding tribesmen in Aden – **Andrew Thomas** relates the story

From the earliest days of its existence, the RAF had been closely involved in so-called 'aerial policing' in the wilder regions of the British Empire and in supporting army columns on punitive expeditions. In the Aden Protectorate such duties had been the responsibility of 8 Squadron, based at Khormaksar, since the late 1920s. After World War Two, 8 returned to this task with de Havilland Mosquitos and, later, Hawker Tempests.

By the early 1950s Bristol Brigands were carrying out 8's flag-waving by supporting British troops or the locally-recruited Aden Protectorate Levies. When requested by the local Political Officer, more active operations were flown, usually resulting in the destruction of forts, livestock or water wells as a punitive measure to keep the locals 'in order'.

Joining the jet-set

In December 1952, under the command of Sqn Ldr D B Bretherton DFC, 8 Squadron began

re-equipping with the first jets in the region, their DH Vampire FB.9s arriving amid much eager anticipation. As the runways at Khormaksar were not yet suitable for jets, most flying took place from nearby Sheikh Othman.

As there were no two-seat Vampires then, a pair of Gloster Meteor T.7s were provided for training. Gradually, 8's pilots went through the transition and by March 1953 all of the Brigands had been scrapped.

To cover for 8 during the conversion period, in January 1953 a detachment of four Vampires from 32 Squadron, based at Deversoir in Egypt, arrived. These undertook several small-scale attacks during their stay, destroying a couple of targets with 500lb (226kg) bombs. No.32 was replaced by a Vampire quartet from 213 Squadron which remained until 8 became operational.

Wearing a modern 'bone-dome' helmet under the bubble canopy in the searing Aden heat could cause severe dehydration – just one of many problems encountered while piloting

jets in Aden – while the DH Goblin turbojets and the Vampires' wooden fuselage both suffered from the heat and the prevalent corrosive dust.

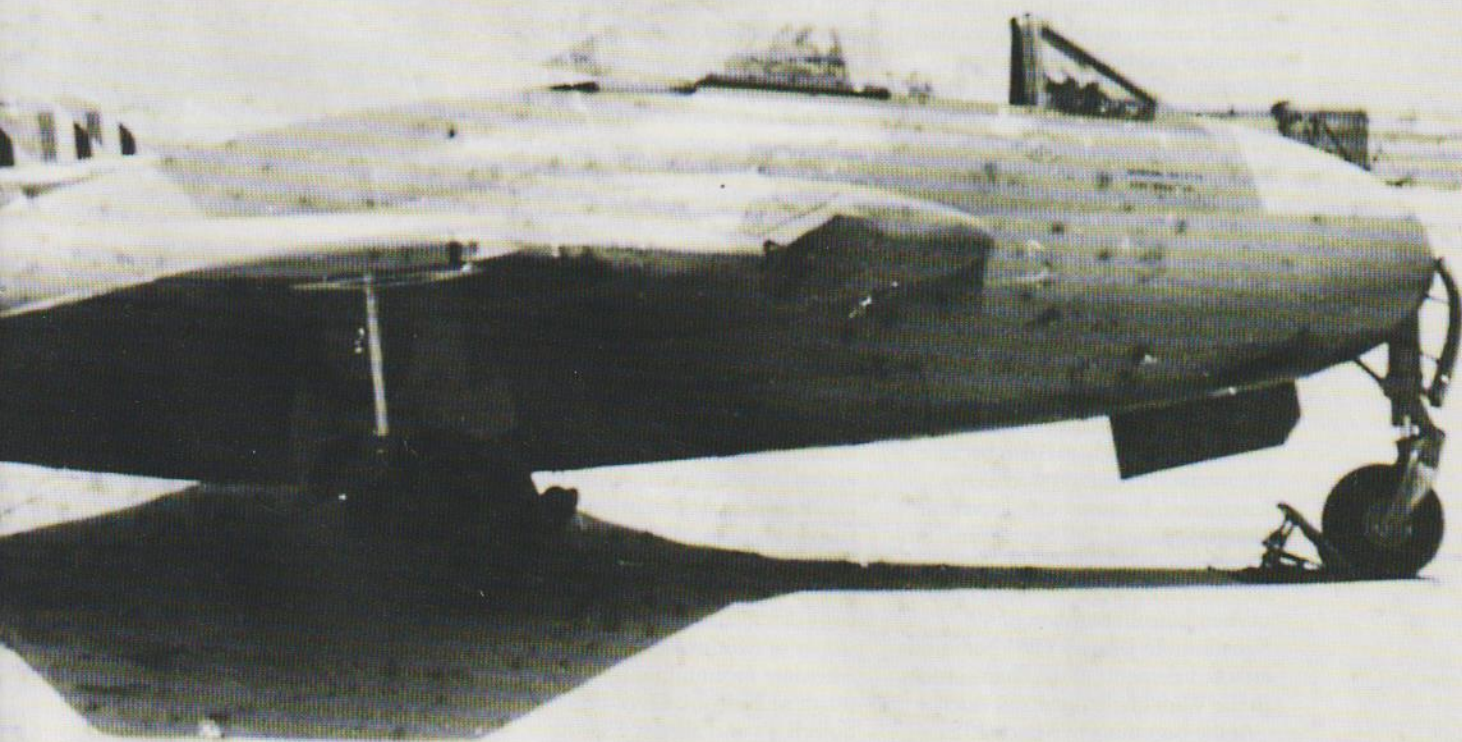
Into action... and trouble

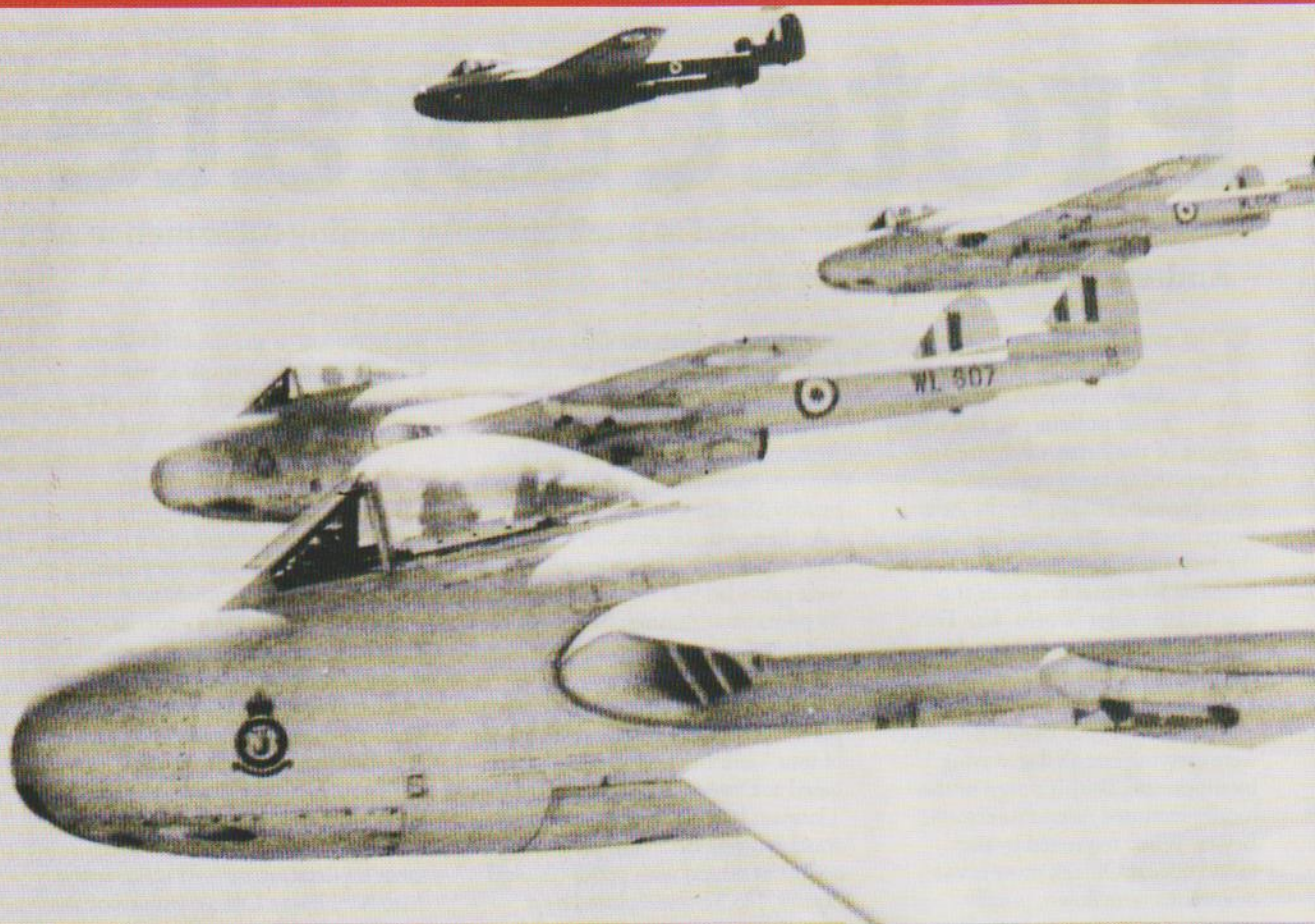
One of 8's first actions came in May 1953 when, as part of Operation WEST BARD, its Vampires were employed in attacking a fort at Mariba. This type of target was strongly built and armour-piercing rocket projectiles (R/Ps) were often required to ensure destruction.

As 8's pilots soon discovered, it was an itinerant life, the crews often spending only about a third of their time at Khormaksar. The rest was spent on detachment – or up-country, as an Air Liaison Officer with troops. The ALO had his own Land Rover complete with a cumbersome VHF radio. There was always an ALO from 8 on the fortnightly supply convoy to Dhala. This numbered about 50 vehicles and took 24 hours to make the 60-mile (96km) journey across the desert and up into the mountains. ➡

Left
Vampire FB.9 WR105 was one of the first delivered to 8 Squadron at Khormaksar from late 1952. R B TREVETT

Below
Some of 8's Vampires wore tactical camouflage, including WR259. R C B ASHWORTH





“Vampires flew almost 500 hours, dropped over 300 bombs, fired 300 rockets and almost 9,000 cannon rounds”

No.8's first armament practice camp (APC) came in mid-July when a dozen Vampires and both Meteors flew to Nicosia in Cyprus. It was not a happy deployment as, on the 17th, Vampire WR182 sank back onto the runway after take-off and was damaged. Three days later the pilot of WR238 misjudged his approach, struck a bank 50 yards short of the runway and was thrown out. He sustained only minor injuries but the aircraft was wrecked. Four more jets had been damaged by the time the detachment left on August 14.

Somewhat chastened, 8 did not return immediately to Aden because Khormaksar's runways were being lengthened. It moved into Deversoir, alongside 32 and 249 Squadrons, until November. By this time, 8's Vampires had been reinforced by a detachment of Avro Lincoln bombers of 49 Squadron. In January 1954 both units attacked elements of the Shamsi tribe in the Wadi Hatib district of Aden.

At the beginning of March 1954

Sqn Ldr A J Houston took over the unit. He arrived along with two new pilots. Sadly, one of them, 20-year-old Plt Off R B Scotney, was killed when WL558 failed to pull out of dive during bombing practice on the 26th. No.8 had a much happier event in early April when the Governor of Aden presented the squadron with its Standard at an impressive parade.

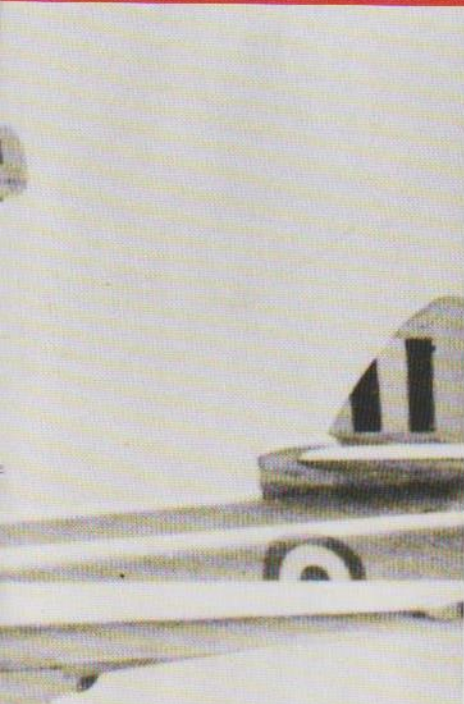
Mau Mau interlude

In April, 8 Squadron sent a detachment to Eastleigh near Nairobi, in Kenya, to support actions against Mau Mau gangs conducting a terror campaign. Their arrival coincided with Operation ANVIL, the mass detention of suspected Mau Mau supporters around Nairobi. As well as providing a deterrent, 8 Squadron conducted strikes in forests on the slopes of Mount Kenya or in the Aberdare mountain range to the north of Nairobi. Over a hundred 60lb R/Ps and almost 13,000



rounds of 20mm cannon shells were expended.

No less a personage than Winston Churchill – a keen proponent of displays of air power over the heads of the Mau Mau – stated: “The more they saw an aircraft overhead, the more they would feel that all their movements were under observation.” Soon afterwards, the interrogation of two prisoners revealed that, when a pair of Vampires flew over, their speed and noise terrified them so much that they decided to surrender immediately. After six weeks in which unit records noted “they earned their black and yellow medal ribbons”, the detachment returned to Aden.



Hitting hard

In May 1954 a serious situation developed when troops were airlifted into Am Ruseis before moving on to relieve the Levie fort at Robat which was under constant attack. No.8 provided the relief column with top cover, working with an embedded air control party to direct the attacks with some precision. The Vampires also marked targets for 49's Lincolns.

Operation WEST BOARD commenced on June 7 and lasted the rest of the year. It commenced with a series of strikes against the Rabizi tribe near Nizab in Wadi Hatib. With Yemeni support, the tribe were attacking Aden government installations on a daily basis. The jets employed their full arsenal – bombs, R/Ps and cannon – in efforts to force the dissidents into submission. During June, No.8's Vampires flew almost 500

hours, dropped over 300 bombs, fired 300 rockets and some 9,000 cannon rounds. These attacks were highly accurate but there was often confusion as to the target and attack lines, leading to further development of the ALO system.

Throughout June and July, 8 was on operations almost every day, from dawn until late afternoon. Tribal forts were attacked and border patrols flown to try to reduce the smuggling of arms to the dissidents. Wadi Hatib became a proscribed area in which all movement was forbidden and the squadron was given a free hand to attack *anything* seen there at any time. By the end of the year, the Rabizi tribe arranged a truce with the government.

Swansong

By some margin, 8 Squadron was the most 'operational' unit in the Middle East. Its commitments

Clockwise from above

For all operations up-country, one of the pilots was detached as an Air Liaison Officer, with a VHF radio-equipped Land Rover. AUTHOR'S COLLECTION

FB.9 WR252 'G' was the first to be adorned with 8's gold, red and blue flashes – which still adorn its current Boeing Sentry AEW.1s. R B TREVETT

To assist 8 Squadron convert to jets it was issued with Meteor T.7s, including WN313. A WILLIAMS

Vampire FB.9s of 8 Squadron – nearest the camera is WL558 in which Pit Off Scotney was killed on March 26, 1954. VIA C H GOSS



SPOT FACT The first fighter-bomber variant flew on June 23, 1948



Above
By 1954, 8 Squadron had been issued with two-seat Vampire T.11 WZ560 for training.
A WILLIAMS

were such that it could not attend the annual APC in Cyprus, so in January 1955 personnel from No.8 carried out a training deployment to Khormaksar instead.

The squadron sent a formation team to Ethiopia in April for the Silver Jubilee celebrations of Emperor Haile Selassie. The trip was not without incident as, during one loop, Sgt Holland's engine flamed out – he nonetheless completed the manoeuvre and landed wheels-down on a short strip. He also had the misfortune to have his cockpit hood fractured and fly off while flying back to Khormaksar – he made an emergency landing at Djibouti. For these examples of outstanding airmanship, Holland was awarded a well-deserved AFM.

The Ethiopia deployment was almost the swansong for the Vampire with 8 Squadron, as that month it began re-equipping with the similar, but much more powerful, DH Venom.

Rhodesian support

In the mid-1950s the Royal Rhodesian Air Force began an expansion, including re-equipping its fighter squadron with Vampire FB.9s. Having high-performance jet fighter-bombers on strength allowed the RRAF to contribute to wider British defence interests in Africa and the Middle East. Getting

RAF Vampires in action

Although too late to see combat during World War Two, the Vampire served operationally with the RAF until 1955. It was deployed in considerable numbers to squadrons in Germany and was a key type in the rapid expansion of the RAF at the start of the 'Cold War'.

It was soon fielded further eastwards with 32 Squadron receiving its F.3s in July 1948; the rest of the Middle East Fighter Wing soon followed. In Singapore, 60 Squadron received FB.9s from December 1950 and began intermittently using them in strikes on communist terrorists in the Malay jungles until it was re-equipped in mid-1955. In Hong Kong, 28 Squadron continued its patrols along the 'Bamboo Curtain' until August 1956 – the last operational RAF unit with Vampires.

Vampire WR178 of 32 Squadron, one of four helping to cover for 8 Squadron while it was converting at Khormaksar. R B TREVETT



this support from a strategically important African nation had been a key objective for the UK Government.

By late 1957, with 1 Squadron RRAF up and running, it was timely to practise its reinforcement of the RAF in the Middle East. On January 4, 1958, five Douglas Dakotas carried

1's support party to Khormaksar. Five days later 16 Vampires, led by Sqn Ldr Charles Paxton, departed for Aden. The deployment was mainly intended for training, but the unit would also be available for operations at any time.

The Rhodesians were warmly welcomed by the RAF and soon began initial familiarisation sorties. Under



the control of the RAF's HQ Arabian Peninsula, ground attack policing sorties with rockets and cannon began on February 14. Targets around Abyan were hit and further strikes were mounted around Beihan a week later.

As well as a visible sign of commitment to Commonwealth defence, the flying provided excellent

experience for the keen Rhodesians. To ensure that the ground units were properly supported, a pilot was always attached to the army as a liaison officer. This



first detachment ended on March 4 and the following day the first Vampires arrived back in Rhodesia, having proved the efficacy of the reinforcement plans.

Iraq and Congo Rebellions

On July 14, 1958 army officers in Iraq seized power from the monarchy and a republic was declared. Sqn Ldr Paxton received secret orders to move his unit up to Khormaksar. By the end of July it was operational, relieving 8 Squadron.

The first of a number of 'live' policing sorties was near Dhala on August 11. Sqn Ldr Paxton noted: "We worked in conjunction with the army. When suitable targets cropped up we were briefed and off we went. Some of the 'ops' were quite upsetting to the pilots, such as when they had to attack a camel train south of Dhala to prevent the arms being carried being used in a possible uprising." The squadron was put to more decisive use during September when its rockets destroyed two rebel forts near the Yemeni border at Am Sauma.

From late 1959, the Rhodesian squadron staged an annual detachment to Aden. In late 1960, the unit also deployed to Sharjah in the Persian Gulf. Despite the ongoing crisis in the Congo – with the Katanga secession from Belgium bringing about a large UN-led operation – 1 Squadron was again sent to Aden in November 1961, this time also visiting Bahrain. This turned out to be the last Arabian detachment for the Rhodesian Vampires. ●

Left
The Governor of Aden presented the unit with its standard in April 1955. 8 SQUADRON RECORDS

Below left
The Khormaksar station badge. MARY DENTON-MADE UNDER LICENCES FROM THE SECRETARY OF STATE FOR DEFENCE

Below
FB.9 112 of 1 Squadron RRAF on standby at Khormaksar. The red flag denotes a fully-armed aircraft. WG CDR P COOKE





Spotlight de Havilland Vampire

Vampire survivors

Vampires worldwide



Vampires have fared well after retirement, with large numbers being preserved around the world.

We look at some of the best examples that survive

Temora Aviation Museum's Vampire T.35 A79-617 served with the Royal Australian Air Force from May 1958 to January 1970, being operated by the Central Flying School at East Sale in Victoria, and later the No.1 Advance Flying Training School at Pearce in Western Australia. In the early 1970s it was exported to the USA and had a long spell in store. A79-617 was then returned to flying condition and operated by a private owner until purchased by David Lowy in 1998. It was transported back to Australia and underwent extensive restoration and repainting. In February 2001 David donated the Vampire to the New South Wales museum, where it remains. KEY-DUNCAN CUBITT



Vampire FB.5 NZ5757, in the atrium of the Royal New Zealand Air Force Museum at Wigram, near Christchurch, New Zealand. It was one of eight former RAF examples purchased from the UK in 1953 as attrition replacements. It is displayed in 14 Squadron (RNZAF) colours and its RAF serial number was WA311. KEY COLLECTION



Vampire T.11 WZ550 at the Malta Air Museum. This machine has been restored as a Malta-based, 750 Fleet Air Arm Squadron, T.22 trainer. KEY-KEN ELLIS



Spotlight Next Month

Bristol Fighter

January's *Spotlight* shines on an aircraft that made its name during the Great War – the legendary Bristol Fighter. We chart its development and its operational life over the trenches in World War One, plus we look at the surviving examples. Don't miss this issue, in the UK shops on **December 1**, or see page 50 for our latest money-saving subscription deals.

