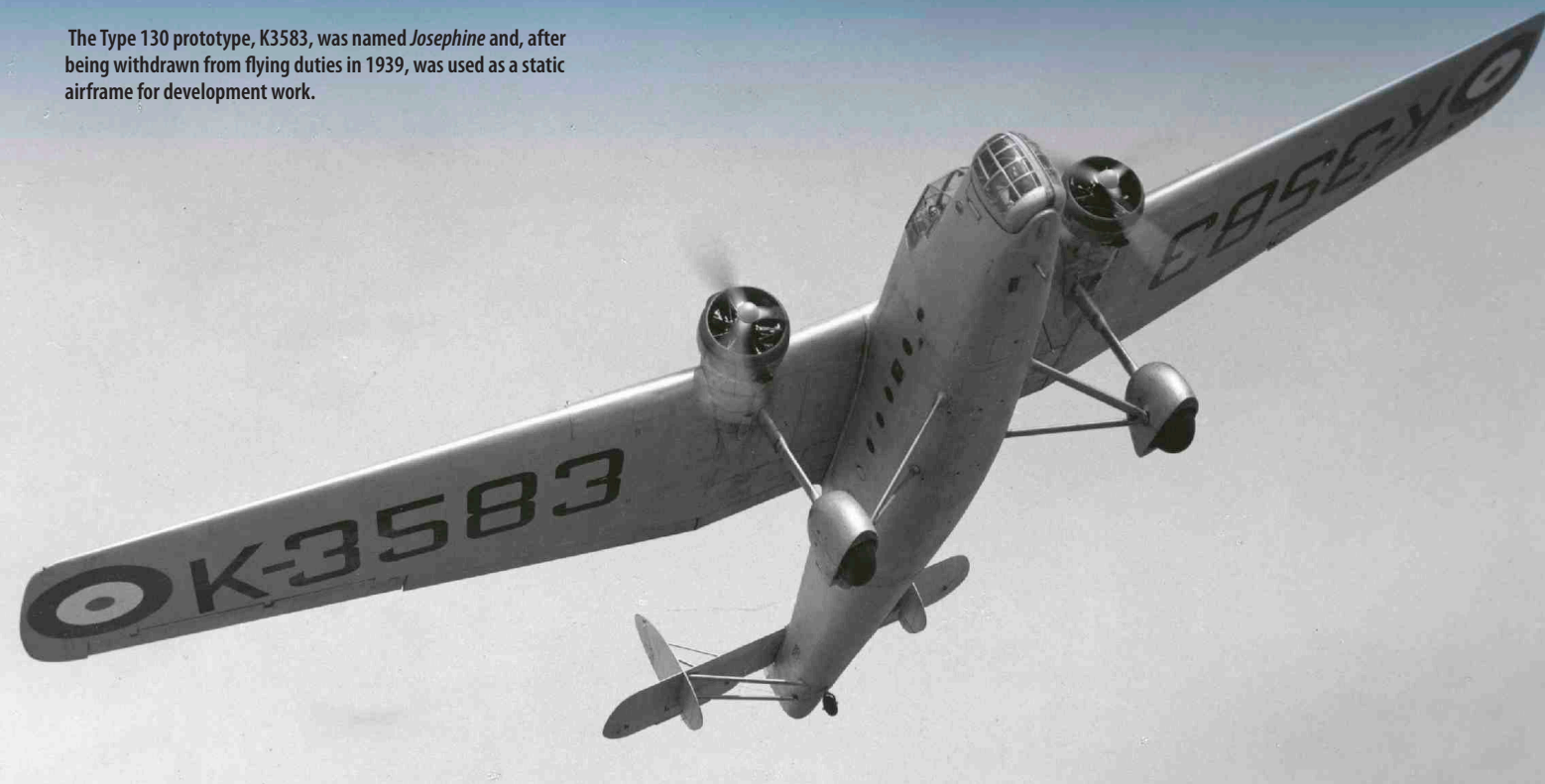


# TYPE 130 BOMBAY

The Type 130 prototype, K3583, was named *Josephine* and, after being withdrawn from flying duties in 1939, was used as a static airframe for development work.



## » MAR 1933

Contract for a single prototype awarded

## » JUN 23, 1935

Maiden flight of K3583 by Uwins

## » APR 1937

Aircraft first christened 'Bombay'

## » MAR 1939

First production aircraft flies from Sydenham

## » OCT 1939

Enters service with 216 Squadron at Heliopolis

## » AUG 1944

Last examples withdrawn from North Africa

## Unsung bomber-transport

### DEVELOPMENT

The Bombay was one of those aircraft which quietly served in the background while other types grabbed the headlines. It was designed for an unglamorous role which it performed excellently in one of the world's harshest environments, the Middle East. Designed to Air Ministry Specification C.26/31, which called for a troop-carrier and bomber-transport, the Bombay was up against the Handley Page HP.51 (developed into the Harrow) and the Armstrong Whitworth AW.23 which would evolve into the excellent Whitley.

### DESIGN

The largest aircraft to be designed at Filton to date, the Bombay would benefit from the in depth research information collected from the Bagshot and, as a result, it had amongst other developments a multi-spar wing of steel strip construction. A high-wing monoplane, the prototype Bombay (Type 130) was powered by a pair of 600hp Pegasus IIIM 3 engines with fixed-pitch propellers while production aircraft would have the improved 1,010hp Pegasus XXII with variable-pitch propellers. The prototype also differed by having spats around the main wheels.

Designed to be operated by a crew of three and capable of carrying 24 troops, the Bombay was fitted with two .303in Vickers 'K' machine-guns in power-operated turrets for self-defence and was also capable of carrying up to 2,000lb of bombs on external racks in an offensive role.

### SERVICE

The prototype Bombay (known as the Type 130 until April 1937), K3583 first flew from Filton in the hands of Cyril Uwins on June 23, 1935 and, during the trials with

the A&AEE, one of the test pilots was Flt Lt 'Bill' Pegg who would later join Bristol, replacing Uwins in 1947 as chief test pilot. Because of the company's commitment to the Blenheim, all Bombay production was transferred to Short & Harland in Belfast, the first production aircraft, L5808 flew from Sydenham in March 1939.

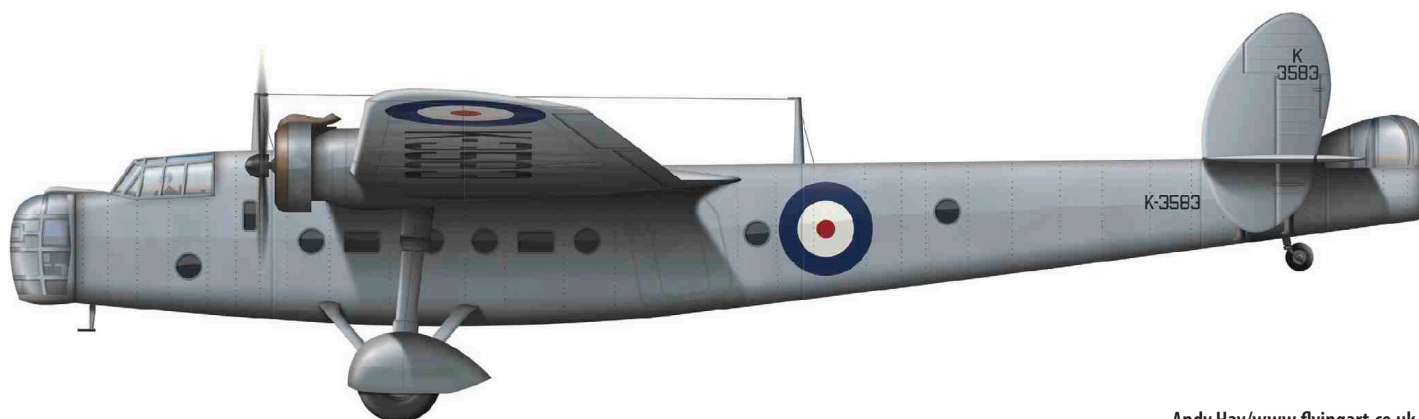
The first Bombays in RAF service joined 216 Squadron at Heliopolis in October 1939, and operated alongside the vintage Valentia until the big biplanes were retired in November 1941. 117 Squadron, also based in the Middle East at Khartoum, received the Bombay when they were reformed in March 1941.

271 Squadron, based at Doncaster, Hendon and Errol was the only home unit to use the type in numbers from May 1940 through to February 1944. These aircraft helped to support hundreds of squadron movements throughout the country and also distinguished themselves by delivering supplies to troops in France just before the collapse of France in June 1940.

In the Middle East, the Bombay also carried out its dual role as a bomber, attacking targets along the North African coast, including the Libyan campaign in 1940 and also in Eritrea. Another Bombay achievement was to evacuate the Greek royal family from Crete to Egypt. As more modern transport types, such as the C-47/Dakota, began to take over the transport role, the Bombay fell by the wayside but remained in service in North Africa until August 1944.

### PRODUCTION

One prototype, K3583 (No.7809) and 50 production aircraft, serialled L5808 to L5857, built by Short & Harland, Belfast to Contract No.562468/36 all delivered between April 1939 and June 1940.



Andy Hay/www.flyingart.co.uk

The first production Bombay, L5808, never entered operational service, and only served with the A&AEE, Martlesham Heath. The aircraft crashed on take-off at Martlesham on August 23, 1939 after control was lost due to incorrect trimming.



L5831 being employed in another of the Bombay's less publicised roles as an air ambulance with 216 Squadron. After being posted to the AAU (Aircraft Acceptance Unit), the Bombay was one of the last to be retired from the RAF on August 31, 1944.

## TECHNICAL DATA -BOMBAY

<b>ENGINE:</b> Two 1,010hp Bristol Pegasus XXII	<b>ALL-UP WEIGHT:</b> 20,000lb
<b>WING SPAN:</b> 95ft 9in	<b>MAX SPEED:</b> 192mph
<b>LENGTH:</b> 69ft 3in	<b>CEILING:</b> 25,000ft
<b>HEIGHT:</b> 19ft 6in	<b>RANGE:</b> 2,230miles
<b>WING AREA:</b> 1,340 sq ft	<b>ACCOMMODATION:</b> Three crew and 24 troops
<b>EMPTY WEIGHT:</b> 13,800lb	

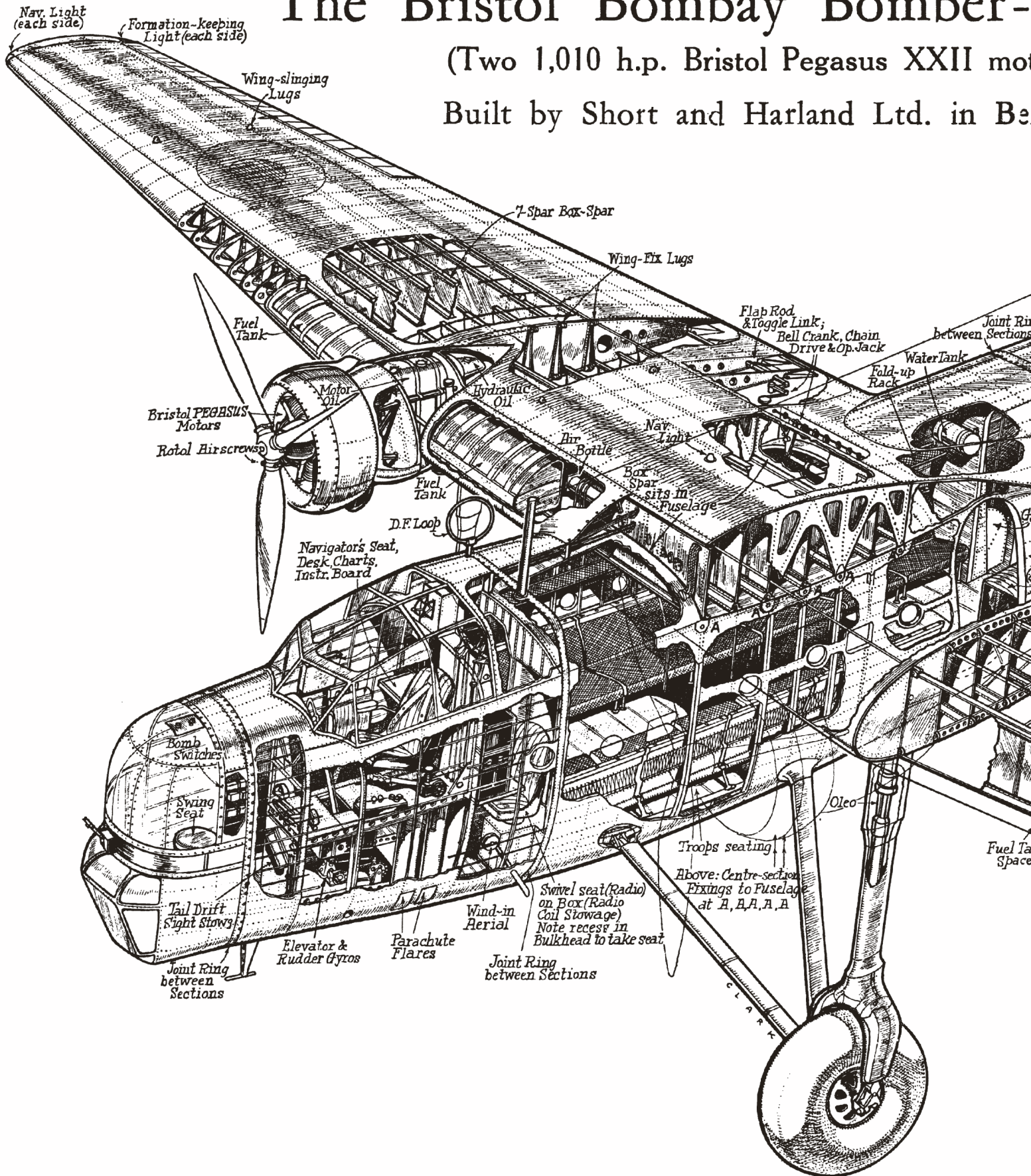


Bombay L5857 of 216 Squadron which operated the type from October 1939 until May 1943 when it was superseded by the Douglas Dakota. L5857 was destroyed in an air raid at Kufra on September 25, 1942.

# The Bristol Bombay Bomber-

(Two 1,010 h.p. Bristol Pegasus XXII motors)

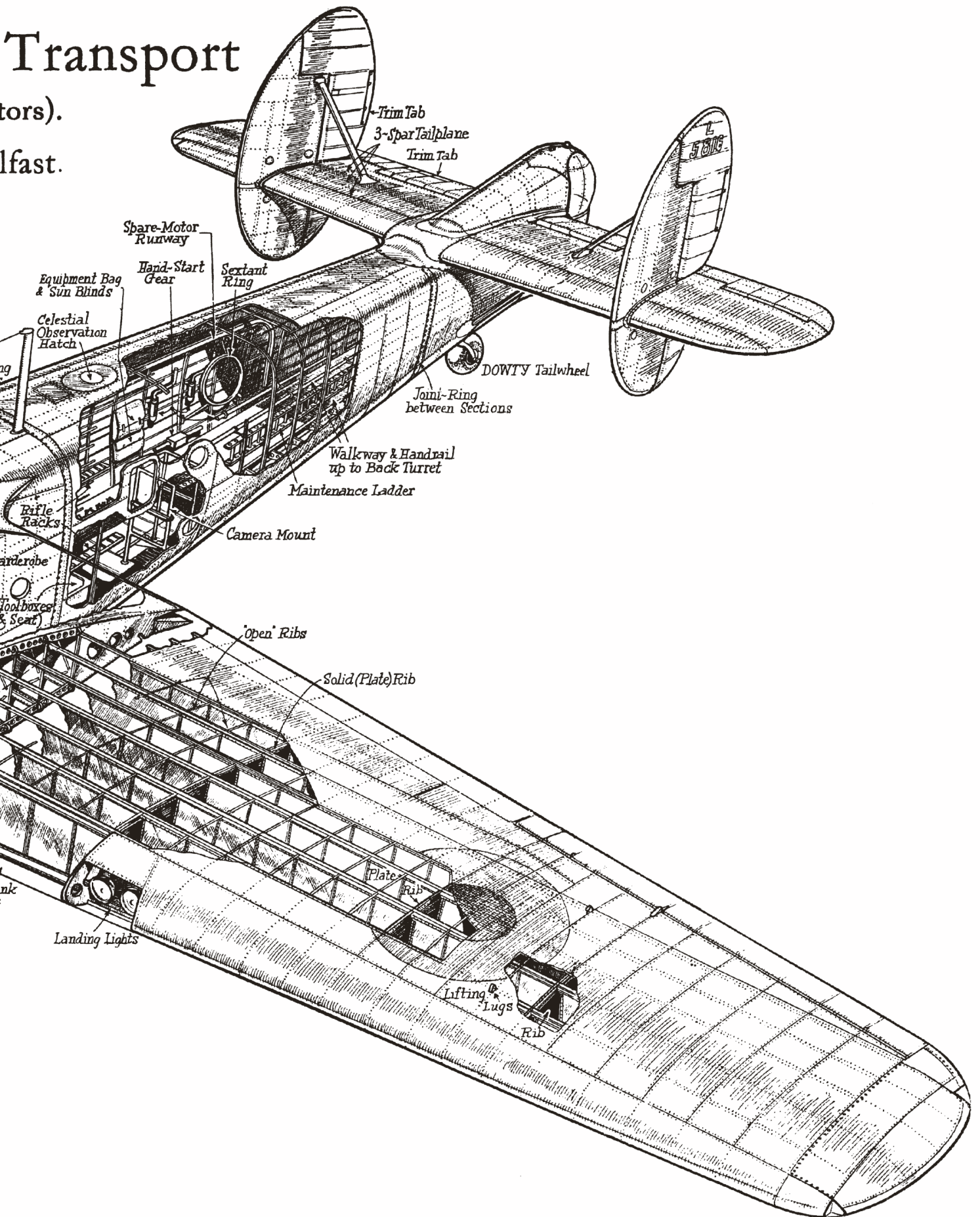
Built by Short and Harland Ltd. in Be...



# Transport

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# BLenheim I, IF, II & BOLINGBROKE

Blenheim Mk I L1295 pitches up for the camera prior to being delivered to 107 Squadron. The aircraft went on to serve with many second-line units. The Blenheim's career ended at Harlaxton with 12 PAFU in July 1943.



## » JUN 25, 1936

First flight of K7033

## » MAR 1, 1937

Deliveries begin to reach 114 Squadron at Wyton

## » DEC 1937

Filton Mk I output reaches 24 aircraft per month

## » DEC 1938

Mk IF enters service with 25 Sqn, Hawkinge

## » SEP 1939

1,134 Blenheims built on the outbreak of war

## » MAY 1941

Mk IF withdrawn from operations

## Fastest bomber available, and in numbers

### DESIGN

Originally proposed in July 1935, the Type 142M (M for Military), was the bomber version of the original Britain First. The main difference in this design was the position of the wing, which was moved from its low position to the mid-fuselage releasing sufficient room for a bomb bay below. Behind the trailing edge of the wing, space was made for a dorsal turret and the nose compartment was redesigned to accommodate a bomb aimer. The new wing position also saw the tailplane raised by eight inches. All of these modifications, including a host of internal changes pertinent to a military aircraft, were installed under a new Air Ministry Specification B28/35 which was drawn up in August 1935. By September, 150 Blenheim Mk Is were ordered direct from the drawing board. The first production machine, which was effectively the prototype, K7033, made its maiden flight from Filton on June 25, 1936. After service trials at Martlesham Heath, the design was officially given permission to proceed with the order and production began in December 1936. It was the third aircraft off the line, K7035, which became the first Blenheim to be delivered to the RAF on March 1, 1937. The customer was 114 Squadron at Wyton and this first aircraft was, appropriately, a dual-controlled trainer which would prove invaluable in training new pilots on the complex systems and higher performance range that the Blenheim introduced.

### SERVICE

First envisaged as a long-range day fighter, the Mk IF was also capable of ground attack and bomber escort.

This role was introduced in late 1938 and, by July 1939, the arrival of fighters such as the Bf109 saw the Blenheim lose its original speed advantage. Therefore, the Mk IF found itself in the night fighting role which, combined with pioneering introduction of AI (Airborne Interception) radar, saw the mark achieve some success.

The main difference between the Mk IF and the Mk I was the introduction of a gun tray below the fuselage which was fitted with four Browning machine guns. Approximately 200 Mk Is were converted to Mk IFs, the first of which entered service with 25 Squadron at Hawkinge in December 1938. 111 were in service with Fighter Command at the beginning of the Second World War and one unit, 219 Squadron, was still operating in daylight at the height of the Battle of Britain. Mk IFs also served with Coastal Command, flying shipping protection duties, but, with the arrival of the Beaufighter Mk IF, the Blenheim fighter was rapidly being replaced by late 1940.

One Mk II, L1222, converted from an Mk I, with long-range wing tanks, strengthened undercarriage and external bombs; fitted with Mercury VIII engines. Only one 'official' Blenheim PR Mk I was converted and used by 2 Camouflage Unit at Heston.

### PRODUCTION

Blenheim Mk I production in Britain comprised 684 built at Filton; 250 by Avro at Chadderton; 250 by Rootes Securities at Speke and Blyth Bridge. Overseas, 18 Mk I, were built by Fairchild Aircraft, Canada; 45 by Valtion Lentokonetehtas, Finland and 16 by Ikarus AD in Yugoslavia.



Andy Hay/www.flyingart.co.uk

Lovely echelon of three Blenheim Mk Is captured just days before they were delivered to the RAF's first Blenheim unit, 114 Squadron, in early March 1937.



▲ Nice viewpoint of Mk I K7067 'B' of 90 Squadron at Bicester. Only weeks after this photo was taken, the Blenheim was abandoned after control was lost in icy conditions over Cottonhopehead Moor, near Redesdale Camp in Northumberland.

▼ The very first Fairchild-built Bolingbroke Mk I No.702.

## TECHNICAL DATA - BLENHEIM I, IF, II & BOLINGBROKE I

**ENGINE:** Two 840hp Bristol Mercury VIII

**WING SPAN:** 56ft 4in

**LENGTH:** (I) 39ft 9in;  
(Bolingbroke I) 42ft 9in

**HEIGHT:** 12ft 10in

**WING AREA:** 469 sq ft

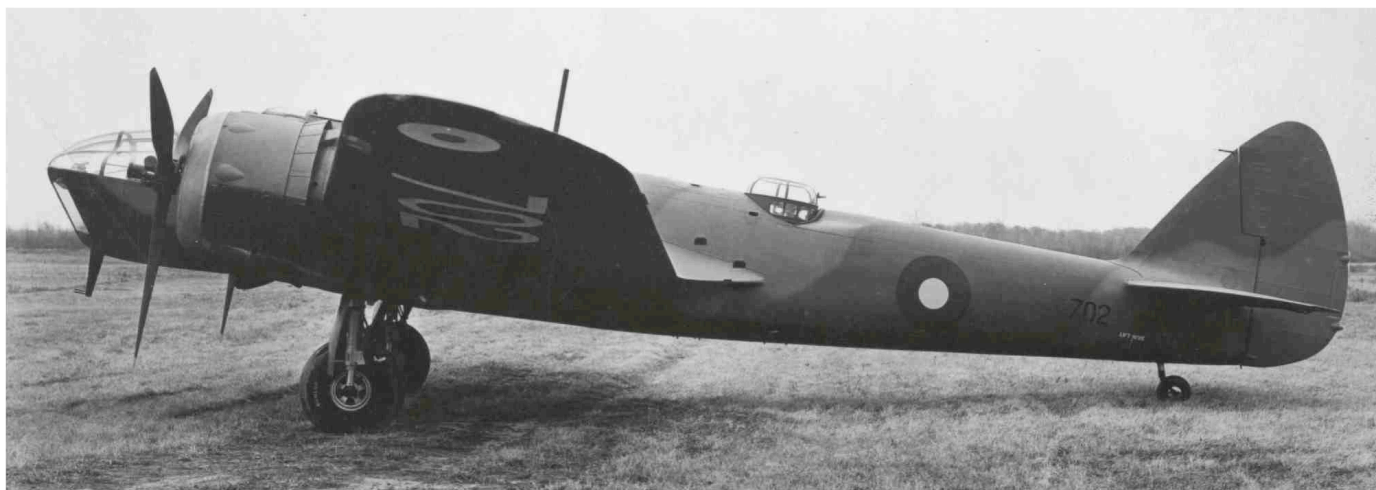
**EMPTY WEIGHT:** (I) 8,100lb;  
(Bolingbroke I) 9,800lb

**ALL-UP WEIGHT:** (I) 12,250lb;  
(Bolingbroke I) 12,500-  
14,400lb

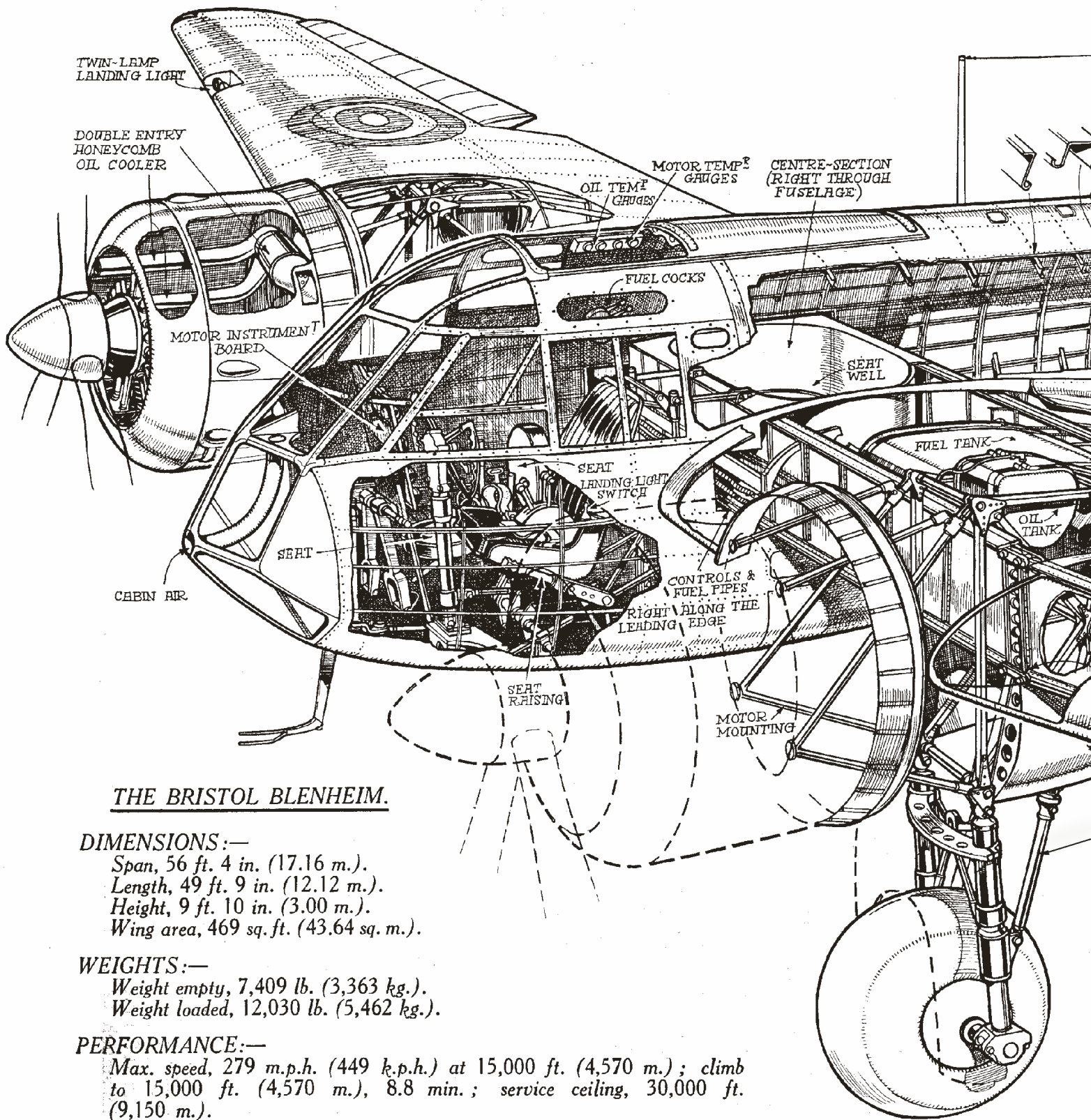
**MAX SPEED:** (I) 285mph;  
(Bolingbroke I) 260-295mph

**CEILING:** (I) 32,000ft;  
(Bolingbroke I) 31,500ft

**RANGE:** (I) 1,125 miles;  
(Bolingbroke I) 1,950 miles



# THE BRISTOL



## THE BRISTOL BLENHEIM.

### DIMENSIONS:—

Span, 56 ft. 4 in. (17.16 m.).  
 Length, 49 ft. 9 in. (12.12 m.).  
 Height, 9 ft. 10 in. (3.00 m.).  
 Wing area, 469 sq. ft. (43.64 sq. m.).

### WEIGHTS:—

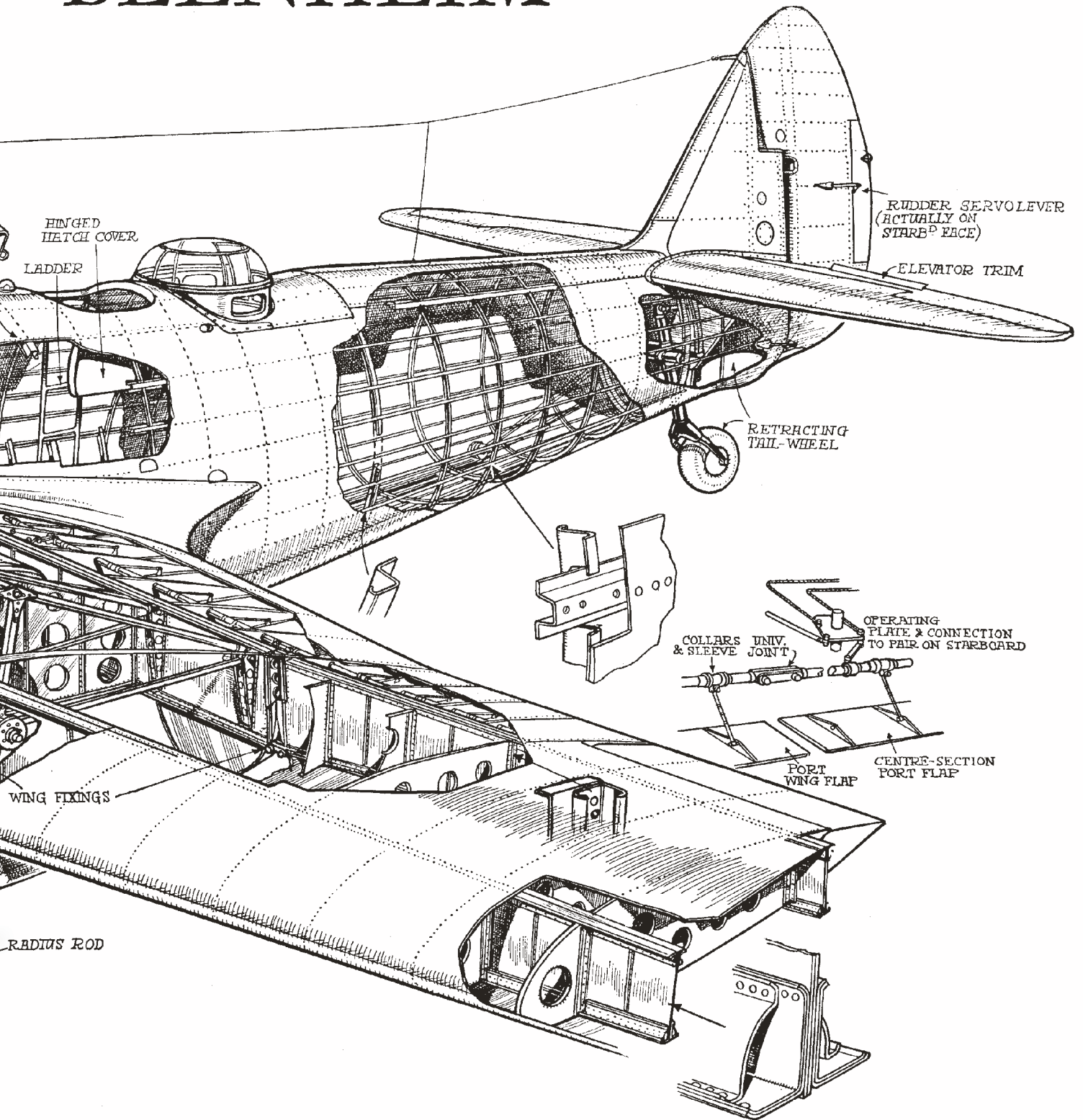
Weight empty, 7,409 lb. (3,363 kg.).  
 Weight loaded, 12,030 lb. (5,462 kg.).

### PERFORMANCE:—

Max. speed, 279 m.p.h. (449 k.p.h.) at 15,000 ft. (4,570 m.); climb to 15,000 ft. (4,570 m.), 8.8 min.; service ceiling, 30,000 ft. (9,150 m.).

**THE WORLD'S FASTEST BOMBER.**—The official speed of the Bristol Blenheim (two 840 h.p. Bristol) with everything wide open regardless of consequences, it can go ve

# BLLENHEIM



(Mercury VIII) is given as 279 m.p.h. at 15,000 feet, but there is a general belief that lower down, it is nearly as fast as Mr. Howard Hughes's Land-plane Record.



# BLenheim IV, IVF & BOLINGBROKE

Blenheim Mk IV, V6083, which started its career with 86 Squadron then 3 SGR and finally 13 OTU at Bicester, where it was SOC on March 3, 1944.



## » SEP 24, 1937

Converted Mk I, K7072, makes maiden flight

## » JAN 1939

First delivers to 53 Sqn at Odiham

## » SEP 3, 1939

139 Sqn becomes first British aircraft to cross German frontier

## » APR 1940

Mk IVF enters service with 235, 236, 248 & 254 Sqns

## » DEC 1942

Last Mk IV operations in the Middle East

## » 1943

Mk IV withdrawn from operational squadrons

## Bearing the brunt of daylight operations

### DESIGN AND SERVICE

Originally known as the Bolingbroke, a name which was later adopted by all Canadian-built machines, the long-nosed version of the Blenheim had its roots in Air Ministry Specification 11/36. The lengthened nose gave the navigator a new, and more roomy station by moving his position from behind the pilot to in front. The prototype, K7072, referred to as the Bolingbroke Mk I retained the same contour as the Blenheim Mk I but was extended forward. First flown on September 24, 1937, it was obvious from an early stage that the pilot's windscreen was too far away from his eyes and that the reflections caused by the multiple glazed panels caused a great deal of trouble. Over the coming months, attempts were made to rectify the problem until the familiar asymmetric glazed nose, with the navigator's position scalloped down to give the pilot a good line of sight, was tested at Martlesham Heath and approved for production from July 1938.

With production of the Blenheim Mk I already in full swing, a large number of the first Mk IVs were retrospectively converted before leaving the factory. It was not until January 1939 that the first Mk IVs entered RAF service with 53 Squadron at Odiham for night reconnaissance duties. The first light bombers arrived on 90 Squadron at Bicester two months later and, by the beginning of the war, seven squadrons in 2 Group had been equipped with the Mk IV. The types bore the brunt of RAF Bomber Command's early

operations and were in action from the first day of war until at least late 1943 in the Far East.

Like the Blenheim Mk IF before it, Mk VIF was converted in the same way, with the most obvious difference being the attachment of a four-gun under fuselage gun pack. Approximately 125 Blenheims were converted to Mk IVFs and, initially, the type's main role was to serve with several Coastal Command fighter/reconnaissance squadrons on convoy patrol and protection duties. The big fighter entered service with 235, 236, 248 and 254 Squadrons from April 1940 and, only days later, the first success was achieved. On April 25, Plt Off Illingworth in R3628 of 254 Squadron at Hatston managed to shoot down an He 111 while escorting Royal Navy warships off Norway. Several Mk IVFs helped to cover the Dunkirk evacuation but only had a small role to play during the Battle of Britain, with only the odd skirmish recorded.

A handful of Mk IVFs were delivered to some Fighter Command night fighter squadrons in the summer of 1940, the first of which was 25 Squadron. The mark also saw some service in the Middle East and the Near East.

### PRODUCTION

3,296 Blenheim Mk IVs were built, serving with 43 squadrons from UK airfields, they also operated in Aden, Burma, Ceylon, Egypt, Greece, India, Iraq, Java, Jordan, Malta, Palestine, Sudan, Sumatra Crete and Libya.



Andy Hay/www.flyingart.co.uk



### TECHNICAL DATA -BLENHEIM & BOLINGBROKE IV

**ENGINE:** Two 920hp Bristol Mercury XV

**WING SPAN:** 56ft 4in

**LENGTH:** 42ft 9in

**HEIGHT:** 12ft 10in

**WING AREA:** 469 sq ft

**EMPTY WEIGHT:** 9,800lb

**ALL-UP WEIGHT:** 12,500-14,400lb

**MAX SPEED:** 260-295mph

**CEILING:** 31,500ft

**RANGE:** 1,950 miles

**ARMAMENT:** One .303in machine gun in the port wing and two .303in Browning machine guns in a dorsal turret. Some aircraft fitted with twin remotely controlled, rearward firing twin .303 Browning machine guns under the nose. Up to 1,320lb of bombs.

◀ 53 Squadron at Odiham, re-equipped with the Blenheim Mk IV, from the Hawker Hector in January 1939. The unit suffered heavy losses during the Battle of France in May 1940 and retained the Mk IV until July/August 1941 when it was replaced by the Lockheed Hudson.

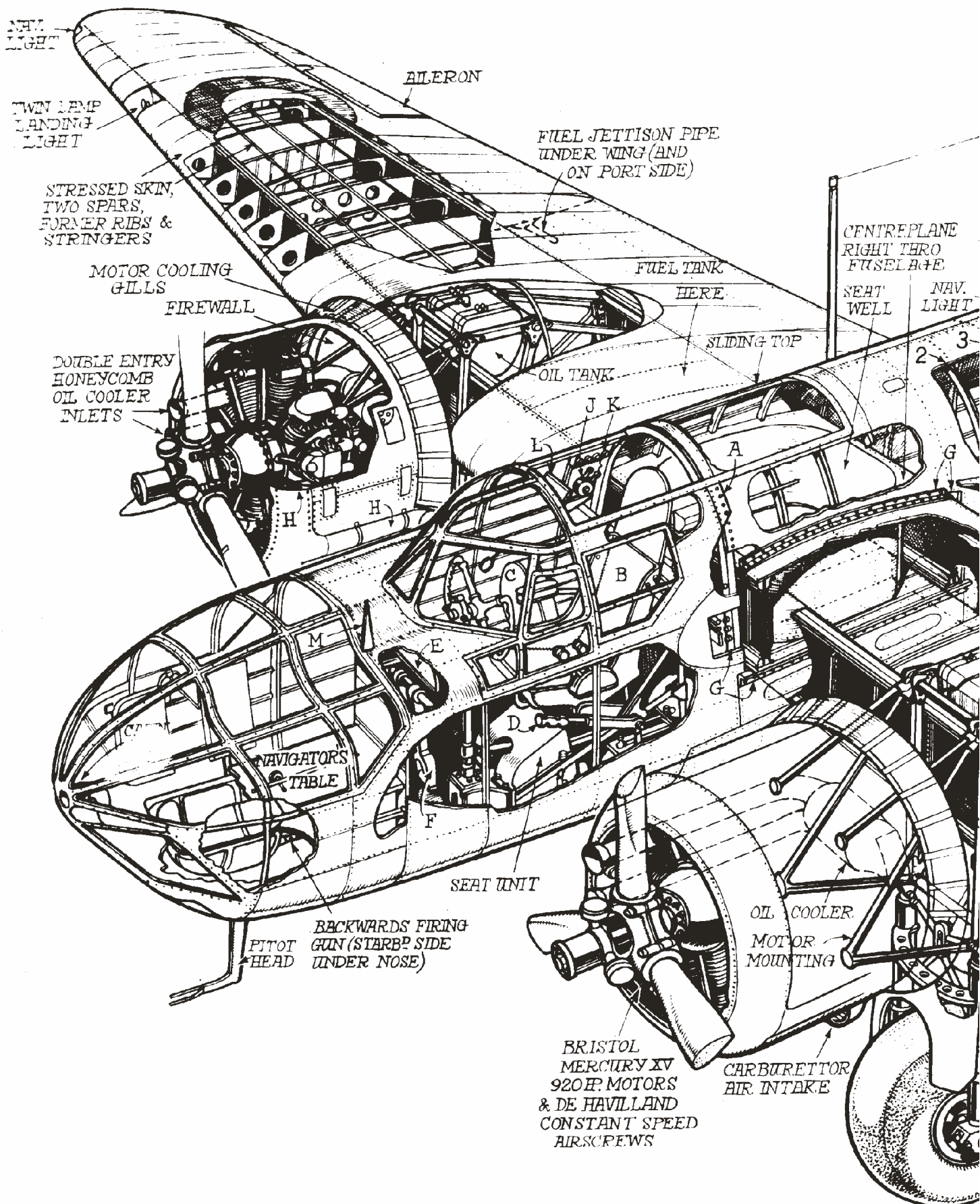


The most prolific of all Fairchild-built Bolingbrokes was the Mk IV-T and, thanks to none of them being lost in action, several survive today, or live on through providing donor parts to other aircraft.

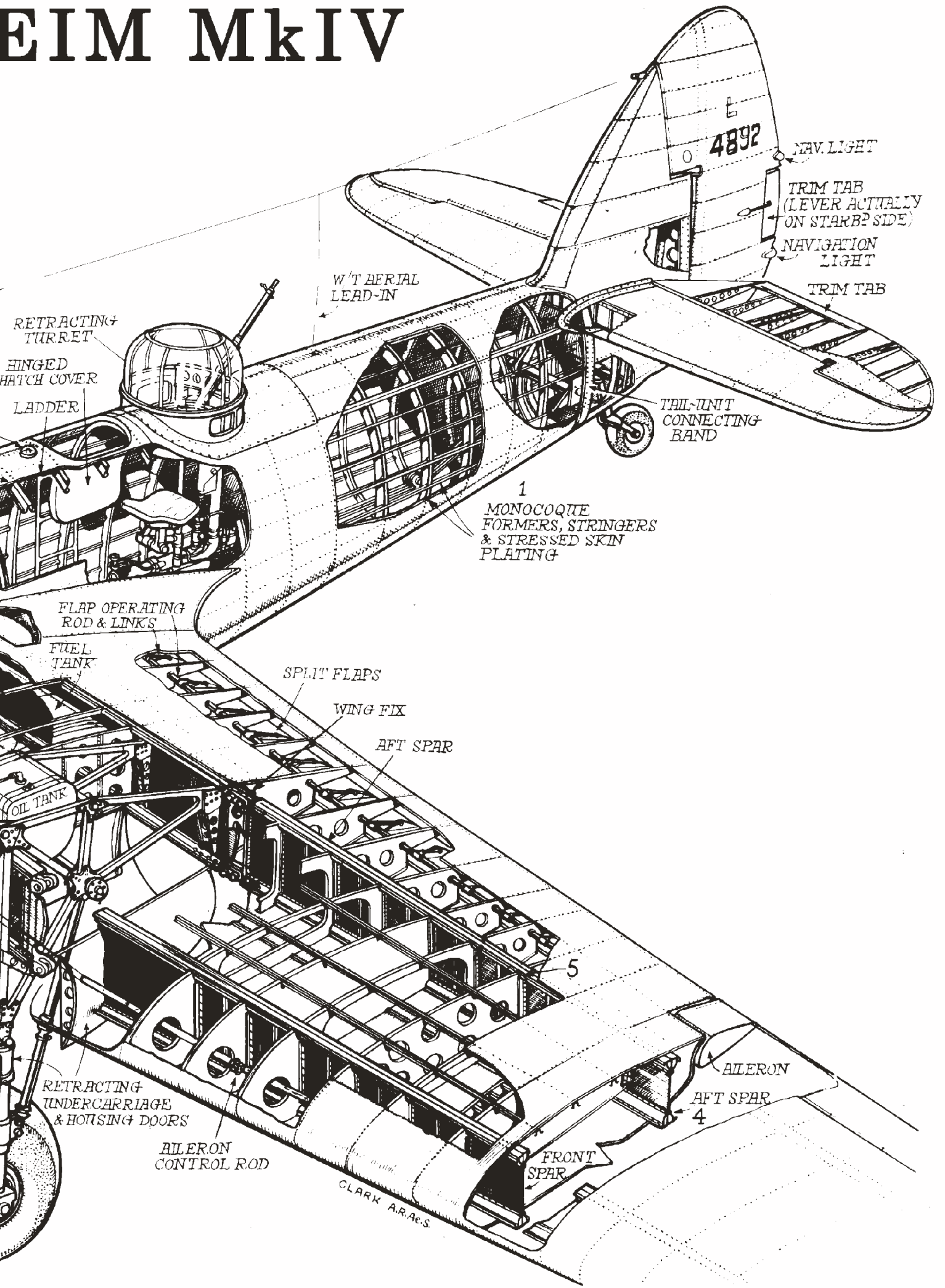


Brand new Blenheim Mk IV, N6212, showing the mark's final configuration. N6212's operational career was short as it was lost whilst serving with 110 Squadron on September 28, 1939.

# BRISTOL BLENHIM



# EIM MkIV



# BEAUFORT

Beaufort Mk I, L9878, of 217 Squadron based at St Eval, Cornwall in late 1940.



## » OCT 15, 1938

First flight of L4441 from Filton

## » NOV 1939

22 Sqn receive first Beauforts

## » APR 6, 1941

Fg Off K Campbell of 22 Sqn wins the VC

## » OCT 1941

Mk II enters service with 217 Sqn at Thorney Island & St Eval

## » SEP 10, 1944

Last operational sortie by 217 Sqn in Ceylon

## » 1946

Mk IIA (no turret) withdrawn from 17 SFTS at Spittlegate

## Re-equipping the RAF's torpedo-bomber strike force

### DEVELOPMENT

It was originally the intention of the Air Ministry to re-equip Coastal Command's home-based squadrons with the Blackburn Botha while in the Far East, torpedo-bomber squadrons would be re-equipped with the Beaufort. However, the Botha proved unsuitable for the role and all Beauforts were transferred to UK-based squadrons while in the Far East, it was the Australian-built Beauforts that stepped up to the plate, but not until October 1941.

### DESIGN

The Beaufort was the result of combining two specifications, namely M.15/35 for a torpedo-bomber and G.24/35 for a general purpose bomber. The general structure of the Beaufort was the same as the Blenheim although the torpedo-bomber was larger than its older sibling; the structural weight was lower because of several design refinements.

The development of the Beaufort concentrated on the engines and the armament. The Mk I was fitted with the Taurus VI, while the Mk IA was powered by the Taurus XII and also introduced a Daimler-designed rear turret. The Mk II differed again by having a pair of Twin Wasp engines driving full-feathering propellers.

The Australian variants began with the Twin Wasp-powered Mk V, Va, VI, VII and VIII the latter, ASV-radar equipped being the most prolific with 520 built. A light transport conversion of various RAAF marks

resulted in the Mk IX.

### SERVICE

The prototype Beaufort, L4441, first flew on October 15, 1938 but the type did not enter service until November 1939 with 22 Squadron at Thorney Island because of problems with the Taurus engines. 22 Squadron's aircraft did not go into action until April 15, 1940 but made a good initial impression when they dropped the RAF's first 2,000lb bombs during a raid on enemy shipping off Norderney on May 7, 1940. RAF Beauforts often spent more time dropping bombs conventionally rather than delivering torpedoes, although they would become famous for attacking German warships such as the Scharnhorst, Gneisenau, Prinz Eugen and the Lützow, the latter being seriously damaged on June 13, 1941 by 42 Squadron.

The Australian-built Beauforts entered RAAF service in the summer of 1942 and served extensively across the Pacific theatre until the end of the Second World War.

### PRODUCTION

1,180 Beauforts were built at Filton and Banwell comprising, 1,103 Mk Is. 167 Mk II, and a single Mk IV prototype. 121 Mk IIs were converted to T Mk II trainers with the rear turret faired over. Australian production totalled 700 aircraft made up of 50 Mk V, 30 Mk Va, 40 Mk VI, 60 Mk VII and 520 Mk VIII. 46 RAAF Beauforts of varying marks were converted to Mk IX light transports.



Andy Hay/www.flyingart.co.uk



▲ The Beaufort Mk II first entered service in Britain in October 1941 with 217 Squadron based at Thorney Island and St Eval. With much improved performance over the Mk I thanks to Twin Wasp engines, the Mk II had a Bristol Type 1, Mk V rear turret, ASV radar and Yagi aerials.

▼ The first production Australian-built Beaufort Mk VIII which was powered by a pair of license-built Pratt & Whitney S3C4-G engines with Curtiss Electric propellers. The aircraft also featured larger fuel tanks and Loran navigation system. 540 were built and production did not come to an end until August 1944.

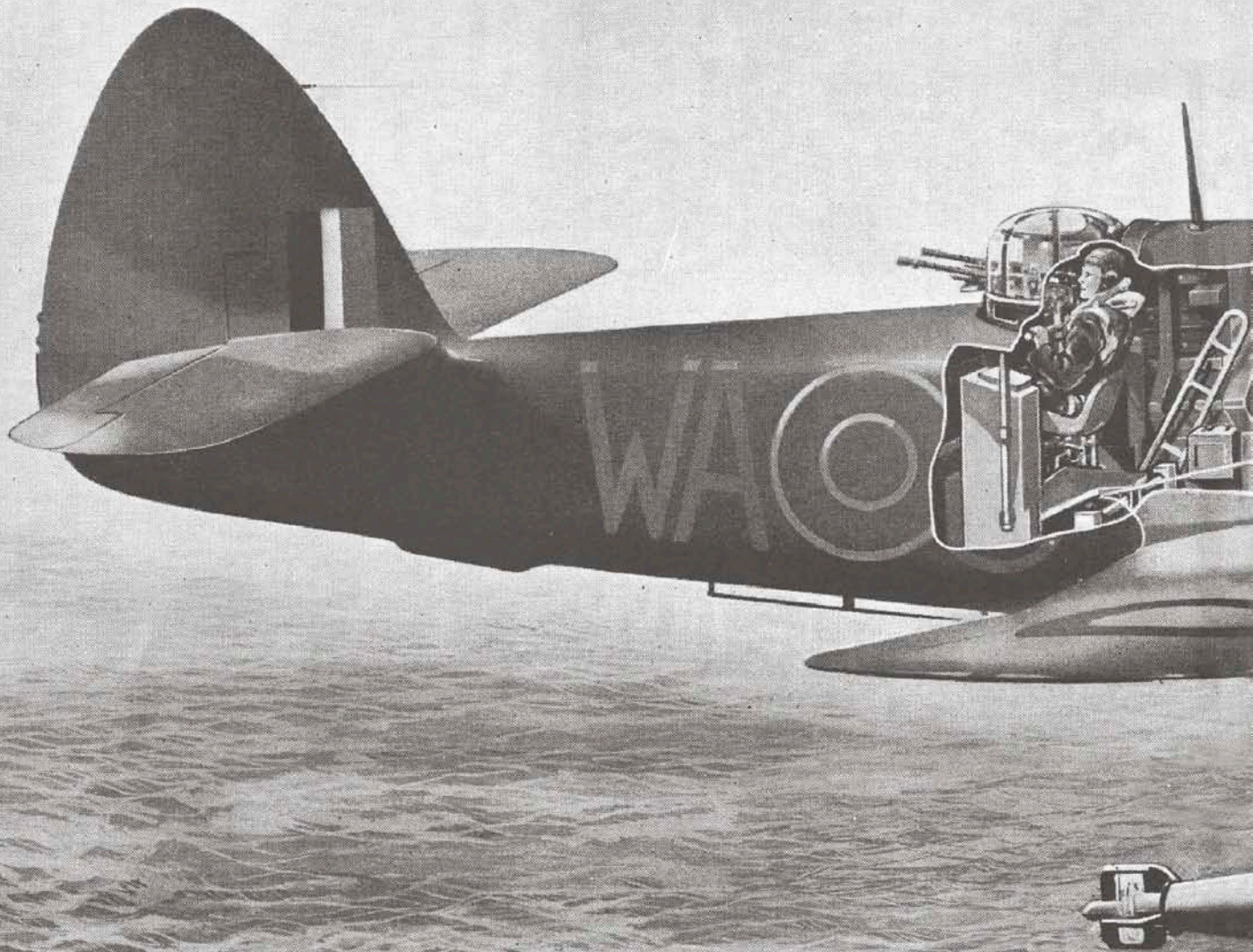


A crew in high spirits gets kitted up before embarking across the North Sea to attack the battleship, *Prinz Eugen*.

## TECHNICAL DATA - BEAUFORT I, II, V-VIII & IX

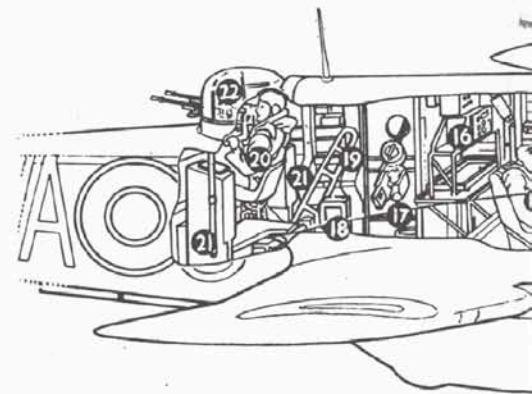
<b>ENGINE:</b> (I) Two 1,130hp Bristol Taurus VI, XII or XVI; (II, V, VA, VIII & IX) two 1,200hp Pratt & Whitney Twin Wasp S3C4G; (Mk IV & VII) two 1,200hp Twin Wasp S1C3G; (IV) two 1,250hp Taurus XX	<b>EMPTY WEIGHT:</b> (I) 13,100lb; (II, V-VIII) 14,070lb; (IX) 13,000lb
<b>WING SPAN:</b> 57ft 10in	<b>ALL-UP WEIGHT:</b> (I) 21,230lb; (II, V-VIII) 22,500lb; (IX) 20,000lb
<b>LENGTH:</b> 44ft 3in	<b>MAX SPEED:</b> (I) 260mph; (II, V-VIII) 265mph; (IX) 250mph
<b>HEIGHT:</b> 14ft 3in	<b>CEILING:</b> (I) 16,500ft; (II, V-VIII) 22,500ft; (IX) 23,000ft
<b>WING AREA:</b> 503 sq ft	<b>RANGE:</b> (I) 1,600 miles; (II, V-VIII) 1,450 miles; (IX) 1,500 miles

# THE BRISTOL

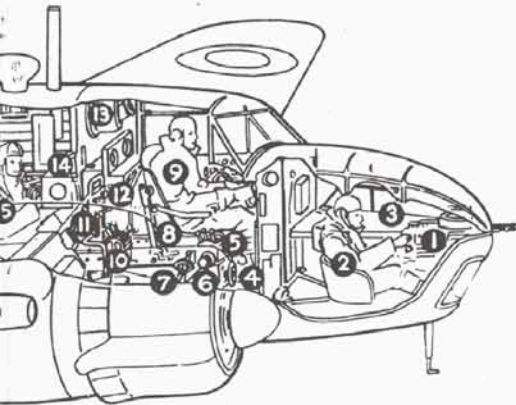
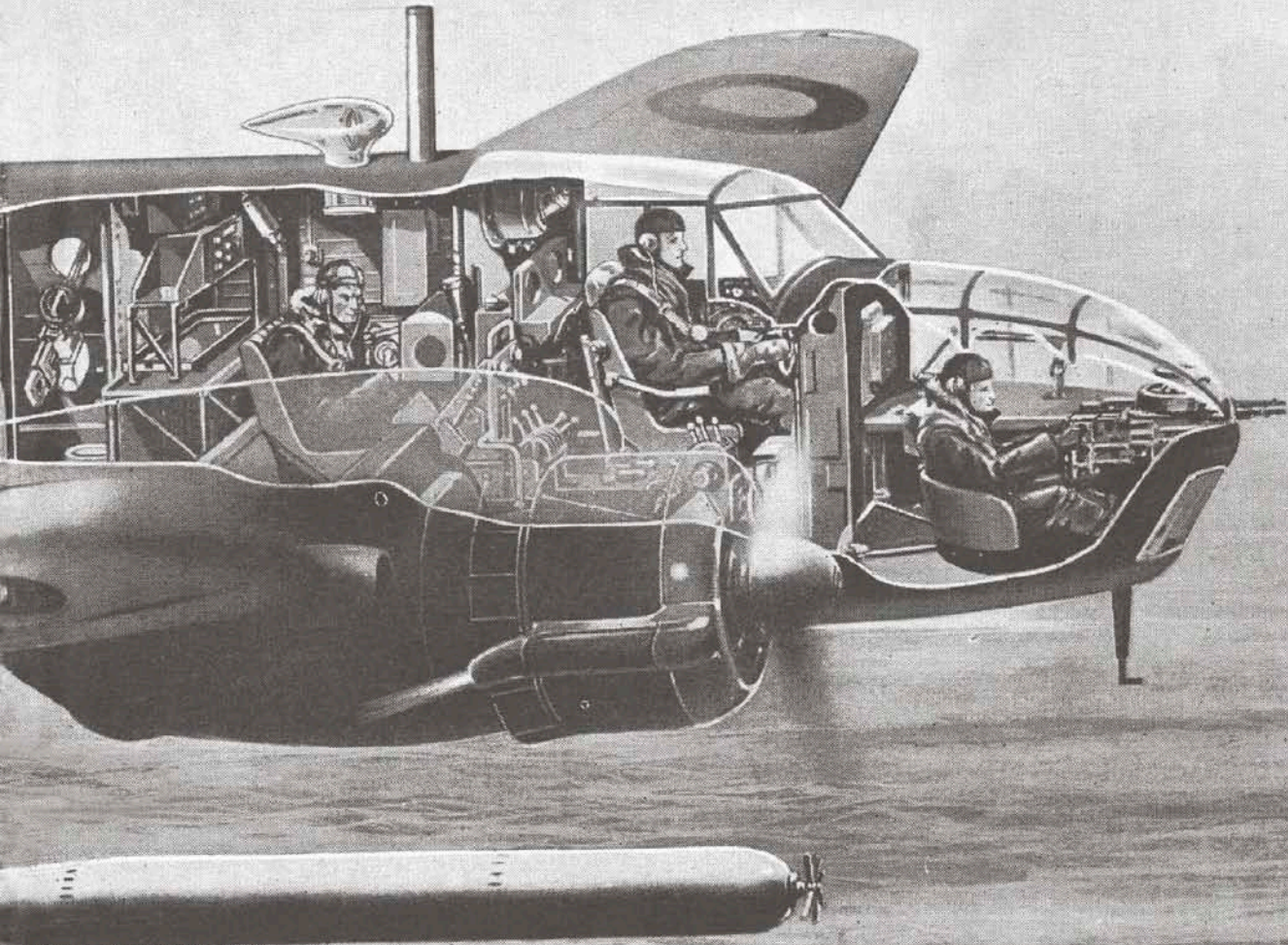


HAROLD  
BUBB

- |                                   |                          |
|-----------------------------------|--------------------------|
| 12 CARBURETTER CUT-OUT CONTROLS   | 17 BEAM GUN              |
| 13 HYDRAULIC FLUID TANK           | 18 FIRST AID EQUIPMENT   |
| 14 RADIO (RECEIVER & TRANSMITTER) | 19 ENTRANCE LADDER       |
| 15 RADIO OPERATOR                 | 20 REAR GUNNER           |
| 16 PANEL CONTROLS                 | 21 AMMUNITION CONTAINERS |
| 22 REAR GUN TURRET                |                          |



# BEAUFORT I



1 NOSE MACHINE GUNS

2 FRONT GUNNER-NAVIGATOR AND BOMB AIMER

3 NAVIGATOR'S TABLE

4 AILERON TRIM TAB CONTROL

5 THROTTLES

6 FRICTION ADJUSTMENT ON LOWER CONTROL BOX

7 LANDING LAMP CONTROL

8 AIRSCREW CONSTANT SPEED CONTROL

9 PILOT

10 FUEL TANK CONTROLS

11 COLD & WARM AIR CONTROLS



# BEAUFIGHTER IF & IC

The prototype Bristol Type 156 Beaufighter in its purest form without armament at Filton in July 1939.



## » JUL 17, 1939

Prototype, R2052, makes first flight

## » JUL 27, 1940

First aircraft handed over to the RAF

## » AUG 12, 1940

FIU receive first Beaufighters

## » SEP 2, 1940

Beaufighter arrives on 25 and 29 Sqns

## » SEP 17/18, 1940

First operation patrol by 29 Sqn

## » MAY 1941

200 Beaufighters delivered to RAF so far

## Desperately needed night fighter and long range escort

### DEVELOPMENT

As the dust began to settle following the Munich Crisis in 1938, the RAF suddenly realised that it had a distinct lack of modern fighters, especially heavily armed ones which could be employed as long-range escort or night fighters. As the Beaufort approached completion, it was suggested that the design team, led by Roy Fedden and Leslie Frise, could incorporate the major assemblies of the torpedo-bomber into a new design, designated the Type 156, and later named the Beaufighter. A draft proposal for the new aircraft was produced in a few days and submitted to the Air Ministry in October 1938. On July 17, 1939, an order for four prototypes was placed to Specification F.17/39 and was followed by a production order for 300 aircraft.

### DESIGN

The Beaufighter was a mid-wing cantilever monoplane of all-metal construction with a conventional fuselage and tail unit structures, complete with a retractable main and tail undercarriage. Power for the four prototypes was provided by several different marks of Hercules sleeve-valve while the production Mk IF settled for a pair of 1,400hp Hercules XIs. The standard armament of the Mk IF was four 20mm cannon in the nose, four .303in in the starboard wing and two more machine guns in the leading edge of the port wing. An AI Mk IV was installed in the nose.

The Mk IC was a dedicated Coastal Command variant furnished with an additional radio and navigational equipment.

### SERVICE

The first prototype, R2052, flew on July 17, 1939, while the remainder were in the air by May 1940. The Beaufighter Mk IF first entered RAF service with the FIU (Fighter Interception Unit) at Tangmere on August 12, 1940. The FIU machines flew their first operational sortie on September 4/5; the same month, the type joined 25,

29, 219 and 604 Squadrons at North Weald, Digby, Redhill and Middle Wallop. The first night victory using the AI radar was achieved by 604 Squadron on November 19 when a Ju 88 was shot down over Oxfordshire.

The Coastal Command Mk IF first joined 252 Squadron at Chivenor in December 1940, replacing the Blenheim IVF in the same role. The dedicated Mk IC variant began arriving from March 1941.

By late 1940, healthy production meant that the Beaufighter was also despatched to the Middle East as a long-range day fighter flown by 252 and 272 Squadrons. The range was extended by fitting 50-gallon internal fuel tanks to the fuselage floor although this method was updated with extra tanks in the outer wings and this resulted in a reduction in machine guns.

### PRODUCTION

Beaufighter Mk IF and Mk IC production totalled 910 aircraft and was carried out at Filton and Whitchurch by Bristol, by Fairey at Stockport and at the MAP (Ministry of Aircraft Production) Shadow Factory at Old Mixon, Weston-Super-Mare.

### TECHNICAL DATA - BEAUFIGHTER I

**ENGINE:** Two 1,400hp Bristol Hercules III, X or XI

**EMPTY WEIGHT:** 13,800lb

**WING SPAN:** 57ft 10in

**ALL-UP WEIGHT:** 21,000lb

**LENGTH:** 41ft 4in

**MAX SPEED:** 330mph

**HEIGHT:** 15ft 10in

**CEILING:** 29,000ft

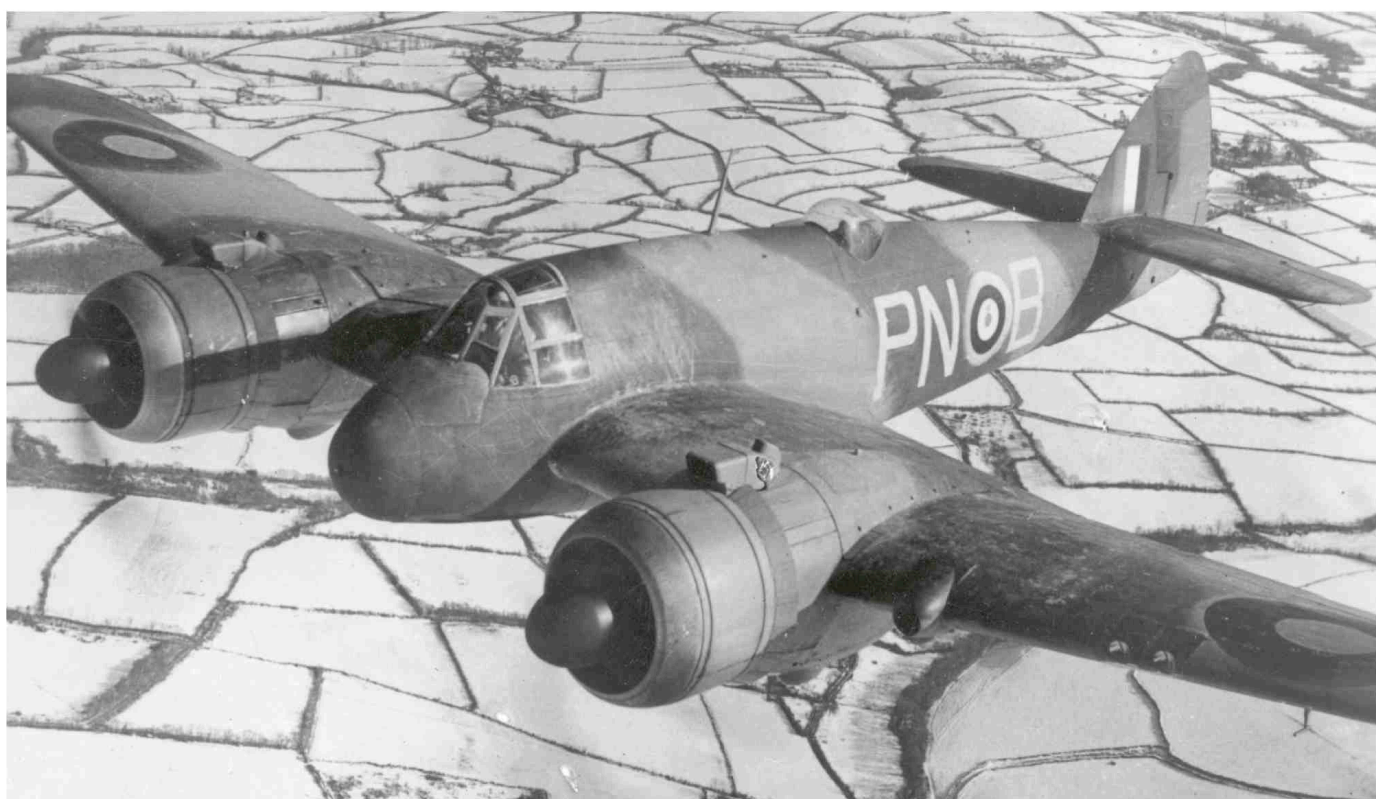
**WING AREA:**

503 sq ft

**RANGE:** 1,500 miles (1,750 miles with extra wing tanks)



Andy Hay/www.flyingart.co.uk



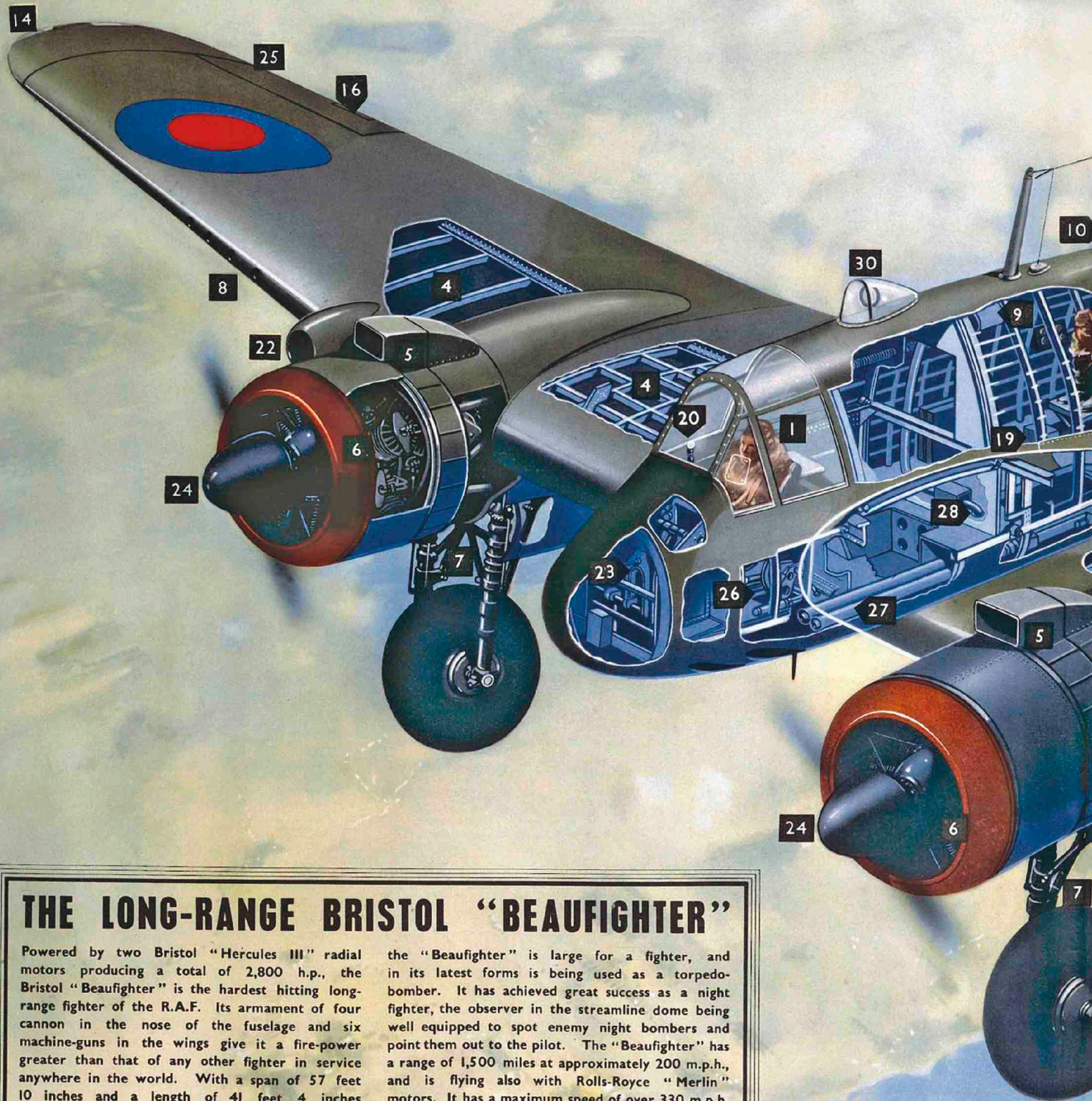
252 Squadron reformed with Mk IF and Mk IC at Bircham Newton on November 21, 1940, until it was renumbered as 143 Squadron on June 15, 1941. It was destined to remain a Beaufighter unit for the entire war after reforming at Idku in November 1941. Aeroplane



X7543 was one of 239 Beaufighter Mk IFs built by Bristol at Weston-super-Mare and delivered between February 1941 and February 1942. X7543 was retained by Bristol for trials work and continued flying until April 1944.



The very first Weston-super-Mare-built Mk IF was X7540 which was delivered to the RAF on February 1941 and is pictured after arriving at the A&AEE, Boscombe Down, a few days later.

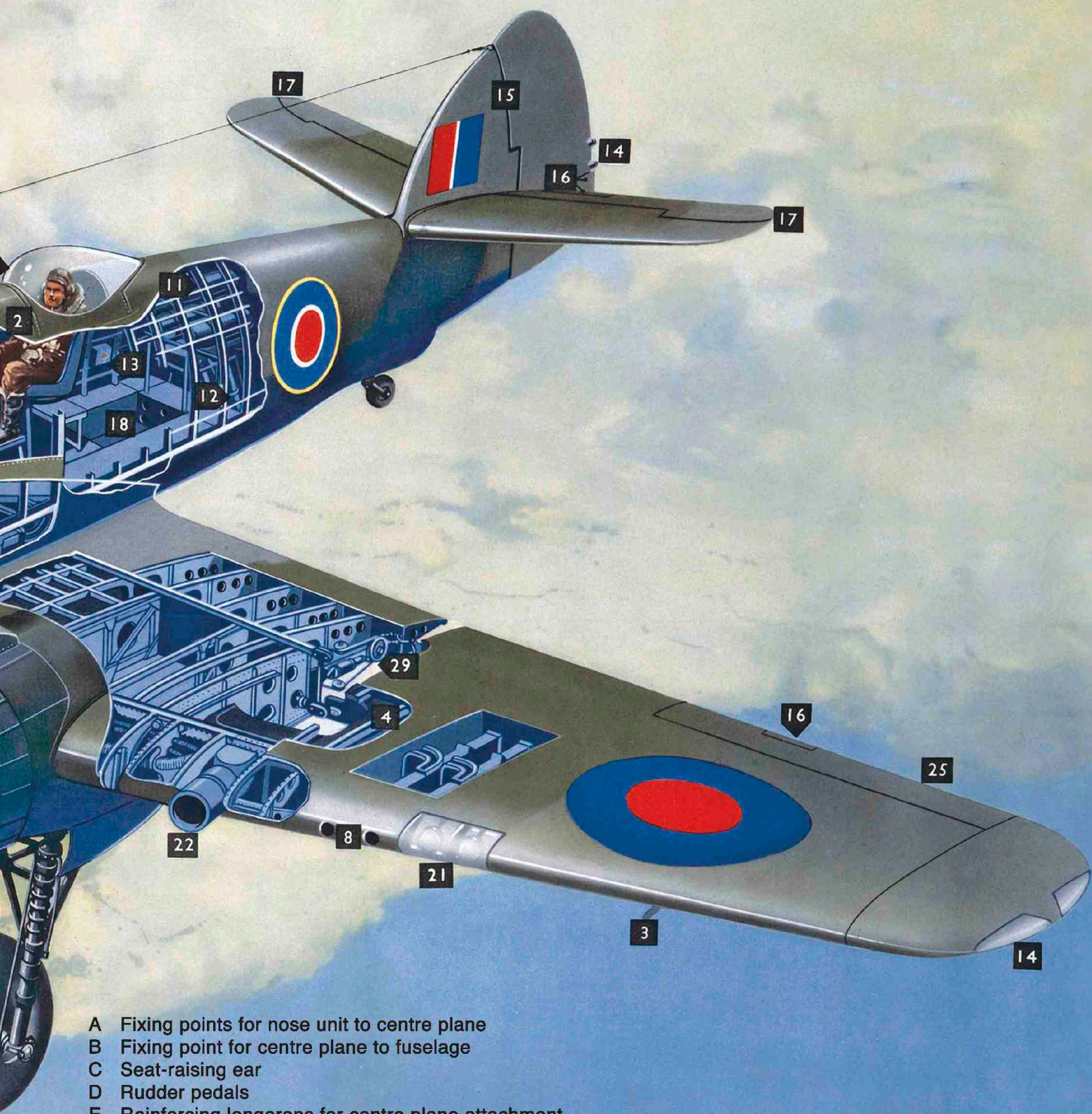


## THE LONG-RANGE BRISTOL "BEAUFIGHTER"

Powered by two Bristol "Hercules III" radial motors producing a total of 2,800 h.p., the Bristol "Beaufighter" is the hardest hitting long-range fighter of the R.A.F. Its armament of four cannon in the nose of the fuselage and six machine-guns in the wings give it a fire-power greater than that of any other fighter in service anywhere in the world. With a span of 57 feet 10 inches and a length of 41 feet 4 inches

the "Beaufighter" is large for a fighter, and in its latest forms is being used as a torpedo-bomber. It has achieved great success as a night fighter, the observer in the streamline dome being well equipped to spot enemy night bombers and point them out to the pilot. The "Beaufighter" has a range of 1,500 miles at approximately 200 m.p.h., and is flying also with Rolls-Royce "Merlin" motors. It has a maximum speed of over 330 m.p.h.

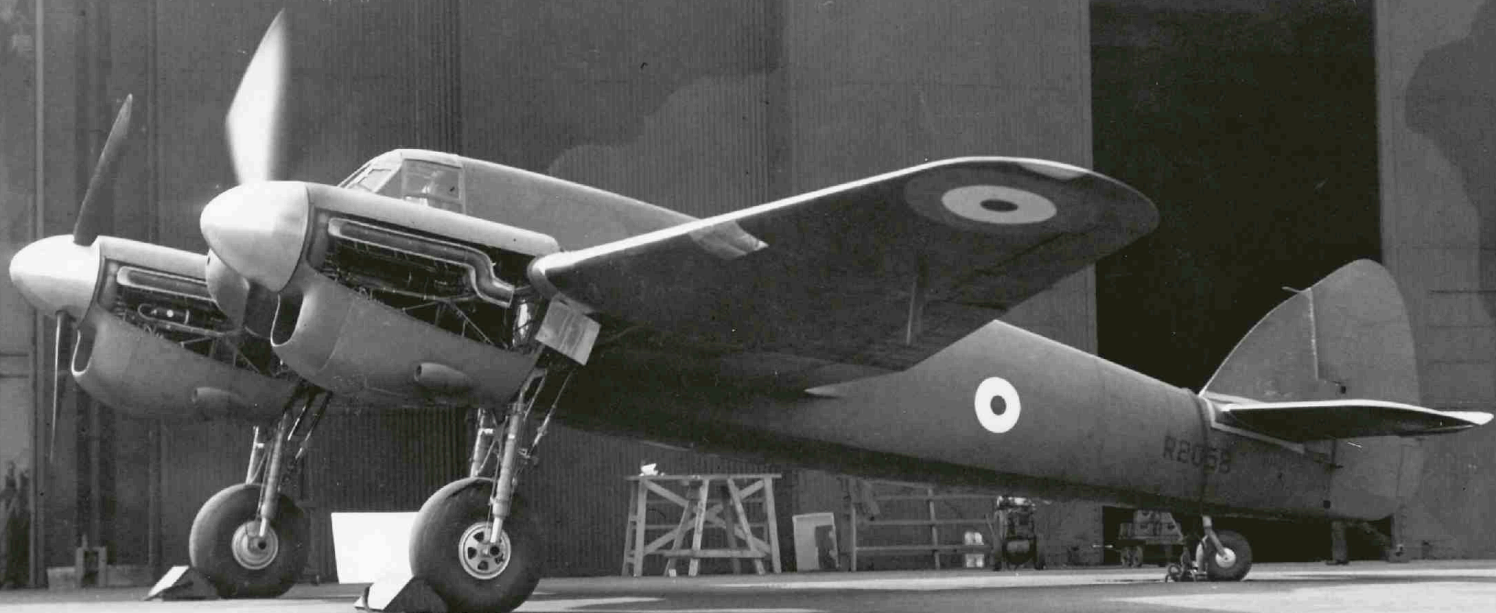
- |  |                                       |                                      |
|--|---------------------------------------|--------------------------------------|
| 1 PILOT                                    | 11 OXYGEN BOTTLES                     | 21 LANDING LIGHTS                    |
| 2 OBSERVER                                 | 12 FLARE TUBES                        | 22 OIL COOLER                        |
| 3 PITOT HEAD                               | 13 FIRST-AID BOX                      | 23 RUDDER PEDALS                     |
| 4 FUEL TANK                                | 14 NAVIGATION LIGHTS                  | 24 DE HAVILLAND HYDROMATIC AIRSCREWS |
| 5 SUPERCHARGER INTAKE                      | 15 FIN AND RUDDER                     | 25 BALANCED AILERONS                 |
| 6 1,400 H.P. BRISTOL "HERCULES III" MOTORS | 16 TRIM TAB                           | 26 SEAT-RAISING GEAR                 |
| 7 UNDERCARRIAGE                            | 17 TAIL-PLANE AND ELEVATORS           | 27 CANNON (TWO EACH SIDE)            |
| 8 MACHINE GUNS (4 STARBOARD, 2 PORT)       | 18 WELLS FOR ENTRY AND EMERGENCY EXIT | 28 WARM AIR FOR CANNON HEATING       |
| 9 HYDRAULIC FLUID RESERVOIR                | 19 GUN CONTROL UNIT                   | 29 JACK OPERATING FLAP               |
| 10 SIDE-HINGED COVER                       | 20 REFLECTOR GUN SIGHT                | 30 DIRECTION-FINDING LOOP AERIAL     |



- A Fixing points for nose unit to centre plane
- B Fixing point for centre plane to fuselage
- C Seat-raising ear
- D Rudder pedals
- E Reinforcing longerons for centre plane attachment.
- F Warm air for cannon heating.
- G Wells for entry and emergency exit.
- H Fuel jettison pipes under wing
- J Wing fixings
- K Operating ram for undercarriage.
- L Exhaust manifold (air from inlet in oil cooler is heated in manifold).
- M Motor mounting ring.
- N Tip-up floor acts as entrance ladder and emergency exit chute.
- P Jack(s) operating N.
- R Longeron.

# BEAUFIGHTER II, IIF & V

The prototype Beaufighter Mk II, R2058, having its Rolls-Royce Merlin X engines run-up at Hucknall, prior to its maiden flight in July 1940.



## » JUL 1940

R2080 first flown from Hucknall with Merlin Xs

## » MAR 22, 1941

First production aircraft, R2270, makes first flight

## » APR 1941

Mk IIF enters service with 600 Squadron at Colerne

## » APR 1942

One Mk V trialed by 29 Sqn; without success

## » JUL 1942

Last Mk II delivered to the RAF

## Rolls-Royce Merlin back-up plan

### DEVELOPMENT

By 1940 the demand for the Bristol Hercules engines had reached a point where it became prudent to begin experiments with an alternative powerplant. Priority was being given to the Hercules-powered Short Stirling and another alternative, the Rolls-Royce Griffon, had already been allocated to Fairey Firefly production. This still left the Merlin, which was in good supply by late 1940 despite the demands placed upon its production.

### DESIGN

Three Beaufighter Mk Is, R2058, R2061 and R2062 were selected for Mk II conversion with a pair of Merlin XX engines. However, the Merlin XX was not available at first and, after being delivered to Hucknall, R2058 was fitted with a pair of 1,075hp Merlin X engines instead. In this form, the aircraft first flew in July 1940 and demonstrated a slight improvement in performance but also displayed directional stability issues because of a slightly altered centre of gravity. Despite this, the Mk II was cleared for RAF service and the stability problem was only retrospectively solved with a twelve degree dihedral tailplane. A tendency to swing on take-off was additionally helped by a dorsal fin extension; both of these modifications were applied to all subsequent marks of Beaufighter. The dorsal fin extension and dihedral tailplane were first trialed on Mk IIF, T3032. Roto air screws with wooden, non-feathering Schwartz blades were made as standard for all service Mk IIFs.

One other Merlin-powered variant was the Mk V of which only two aircraft, R2274 and R2306, were converted. These were fitted with an experimental Boulton-Paul power-operated four-gun turret mounted directly behind the cockpit. Both aircraft were trialed by

406 and 600 Squadron, but the idea was not pursued.

### SERVICE

The first production Mk IIF, powered by Merlin XX engines, was first flown on March 22, 1941 and was in service by April, initially with 600 Squadron, at Colerne. The Mk IIF re-equipped eight home-defence night fighter squadrons out of a total of 15 operational units with which it served. The Mk IIF was also served with 721, 723, 726, 733, 762, 775, 779, 781, 788, 789, 797 and 798 Squadrons of the Fleet Air Arm.

### PRODUCTION

Three Beaufighter Mk II prototypes followed by 447 production Mk IIF serialised R2270-2479, T3009-3447 and V8131-8218, delivered between March 1941 and July 1942, all built at Filton. R2274 and R2306 were converted on the production line at Filton to Mk V standard.

### TECHNICAL DATA - BEAUFIGHTER II, IIF & V

<b>ENGINE:</b> Two 1,250hp Rolls-Royce Merlin XX	13,800lb
<b>WING SPAN:</b> 57ft 10in	<b>ALL-UP WEIGHT:</b> 21,000lb
<b>LENGTH:</b> 42ft 9in	<b>MAX SPEED:</b> 330mph
<b>HEIGHT:</b> 15ft 10in	<b>CEILING:</b> 29,000ft
<b>WING AREA:</b> 503 sq ft	<b>RANGE:</b> 1,500 miles (1,750 miles with extra wing tanks)
<b>EMPTY WEIGHT:</b>	



Andy Hay/www.flyingart.co.uk



The first production Beaufighter Mk IIF, R2270, which was completed in March 1941. After flight trials with the A&AEE and the RAE, the aircraft served operationally with 604 and 406 Squadrons before being SOC in February 1944.



The first of two Mk IIs, converted to Mk V standard with a Boulton Paul turret mounted behind the pilot's cockpit. Installed in an effort to improve the aircraft's field of fire, the cumbersome turret reduced the performance of the Beaufighter and the idea was abandoned.



After initial service with the FIU, Mk IIF T3032 proved to be a useful trials machine on which the familiar dihedral tailplane was tested and later the large dorsal fillet which was adopted by the Mk X.

# BISLEY I & BLENHEIM V

The first of two prototype Blenheim Mk Vs (built by Rootes) was DJ702, which was delivered to the A&AE in late 1941. The aircraft later served with 12 PAFU and 17 SFTS until it came to grief at Cranwell on April 19, 1945.



## » FEB 24, 1941

Maiden flight of AD657 from Filton

## » NOV 1942

Operations in Algeria begin

## » DEC 4, 1942

Wg Cdr Malcom wins VC in BA875, 18 Sqn

## » APR 1943

14th Army in Burma, support operations begin

## » JUN 1943

Mk V production ends at Blythe Bridge

## » APR 1944

Type withdrawn from 244 Sqn

## Armoured ground-attack aircraft

### DEVELOPMENT

Originally known as the Bisley Mk I but later renamed the Blenheim Mk V, this variant was an attempt to rectify the many shortcomings of the previous marks. Unfortunately, the Mk V was nothing more than a disappointment and was very unpopular both with the crews who had to fly it and the mechanics who had to keep them flying.

### DESIGN

The Mk V story began in 1940 when a redesign of the Blenheim was called for under Air Ministry Specification B.6/40. Prior to this, Operational Requirements No.83 and 84 had also called for an improvement in the aircraft's ground attack capability and it was to these specifications that Bristol set to work trying to improve the Blenheim.

The first major alteration was to the power plants which were uprated to a pair of Mercury 30s. Their increased horsepower was cancelled out by the 600lb of increased armour protection for the crew, a modified oxygen system and heavier BX turret which made the average loaded weight another 2,000lb heavier than the Mk IV.

Two versions were built at the prototype stage, the first Type 160 Bisley Mk I, AD657, flew from Filton on February 24, 1941. This aircraft was a two-seat close support aircraft with a solid nose containing four .303in machine guns. The second prototype, AD661, was designed as a three-seat high-altitude day bomber with a new semi-glazed nose, which due to its lack of symmetry was referred to as a 'duck bill'. The Type 160 evolved into the Type 160BS which by then had been designated as the Blenheim Mk VB. The latter was not built in great numbers and the major production version was the Type 160D (Mk VD) which was a tropicalized version of the Blenheim Mk VA.

### SERVICE

The Blenheim Mk Vs tentatively entered service with 139 Squadron in June 1942 but were replaced by Mosquitoes before becoming operational. By late 1942, the type was serving with 13, 18, 114 and 614 Squadrons in North Africa but poor performance and heavy losses saw them all replaced by American-built Baltimores and Bostons. The Mk V also saw service in the Far East including Burma and Ceylon and a few also served with 8 Squadron in the Persian Gulf. The last Mk V operations were flown by 244 Squadron in Oman before being replaced by Wellington XIIs in April 1944.

### PRODUCTION

942 Blenheim Mk Vs were built in total, only two them (AD657 & AD661), the prototypes, were built at Filton while the remainder were built by Rootes Securities Ltd at Blyth Bridge, Staffordshire. The last was delivered in June 1943.

### TECHNICAL DATA - BISLEY I & BLENHEIM V

<b>ENGINE:</b> (Bisley) Two 950hp Bristol Mercury XVI; (V) two 950hp Mercury 25 or 30	<b>WING AREA:</b> 469 sq ft
<b>WING SPAN:</b> 56ft 1in	<b>EMPTY WEIGHT:</b> 11,000lb
<b>LENGTH:</b> (Bisley) 43ft 4in; (V) 43ft 11in	<b>ALL-UP WEIGHT:</b> 17,000lb
<b>HEIGHT:</b> 12ft 10in	<b>MAX SPEED:</b> (Bisley) 262mph; (V) 260mph
	<b>CEILING:</b> 31,000ft
	<b>RANGE:</b> 1,600 miles

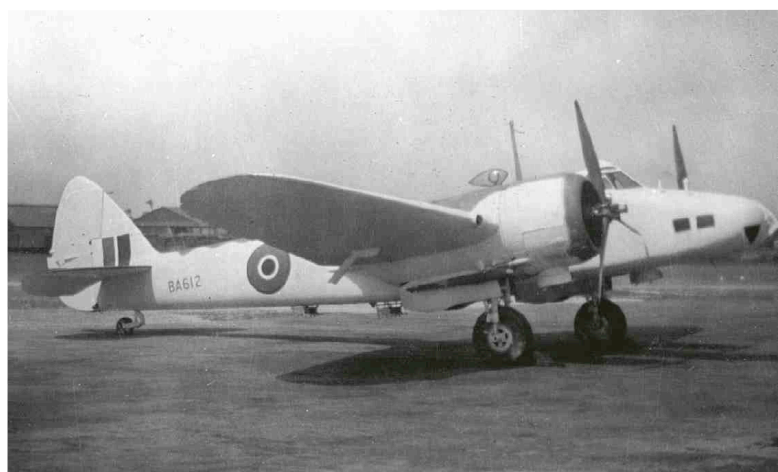


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The first prototype Bisley Mk I (Blenheim Mk V), AD657, which only saw service with the A&AE and Bristols before being SOC on July 13, 1942.



A 614 (County of Glamorgan) Mk V being prepared for an operation at dawn from Canrobert in Algeria.



8 Squadron Mk V, BA612, one of several which took part in attacks against Italian forces in East Africa. The unit operated the Mk V from September 1942 until January 1944.



# BEAUFIGHTER VI, VIF & VIC

The first rocket projectile-armed Beaufighter was Mk VIC, EL329, pictured during its brief time at Boscombe Down. The aircraft was lost on September 24, 1942 following an engine failure and subsequent crash near Bulford Camp.



- » **MAR 1942**  
Mk VIF enters service with 255 Sqn at High Ercall
- » **SEP 1942**  
Mk VIC, EL329, becomes first Beaufighter armed with RPs
- » **NOV 1942**  
North Coates Strike Wing is formed
- » **MAY 1943**  
RP-armed Mk VIC enters service
- » **JAN 1944**  
Last Mk VIs delivered to the RAF
- » **JUL 1944**  
Mk VIF withdrawn from squadron service

## Hercules-power for Fighter & Coastal Command

### DEVELOPMENT

It was fortunate, for both Bristol and the RAF, that the envisaged shortage of Hercules engines did not materialise and that all focus reverted to the Beaufighter's original powerplant while the Merlin-powered machines were pushed to the back burner. In fact, production of the original engine began to rise and, in late 1941, the 1,650hp, Hercules VI was made available to the Beaufighter. The resulting variant was the Mk VI which, like the Mk I before it, was produced for both Fighter Command (Mk VIF) and Coastal Command (Mk VIC) in some quantity.

### DESIGN

Three aircraft were used to trial the new Hercules VI and XVI engine, both being accepted as the standard powerplants for the Beaufighter Mk VI. The extra power generated by the engine gave the Beaufighter more flexibility from an equipment and weapons point of view. Machine guns in the wings could be replaced by a 50-gallon tank on the starboard side and a 24-gallon on the port to give a potential range of 1,750 miles. A pair of 250lb bombs could be carried under the wings or eight 90lb rocket projectiles. Following trials, which began in March 1942, the Beaufighter was also found to be more than capable of carrying a single American or British-built standard marine torpedo. Nicknamed the 'Torbeau', the combination would prove to be lethal against enemy shipping.

### SERVICE

The Mk VIF first entered service with 255 Squadron at High Ercall in March, going on to equip a total of four home-based night fighter units; the type remained in service with 68 Squadron at Castle Camps until July 1944. The Mk VIC with its rocket and torpedo carrying capability was initially known as the Mk VIC (ITF) (ITF standing for 'Interim Torpedo Fighter') until the arrival of the specialist Mk X. The ITFs helped form the first Beaufighter Strike Wing at

North Coates in November 1942 made up of 143 Squadron with fighter variants, 246 Squadron with bombs and 254 Squadron with 'Torbeaus'. The North Coates Strike Wing achieved their first successful attack against enemy shipping on April 18, 1943 and, from May 1943, Coastal Command's capability rose when the rocket-armed version of the Mk VIC also entered squadron service.

The Mk VIF also served in the Burma/India theatre with 176 Squadron, at first serving in the defence of Calcutta. This variant was served with four USAAF units (414th, 415th, 416th and 17th NFS (Night Fighter Squadron)) as part of the 1st Tactical Air Command in the Mediterranean theatre.

### PRODUCTION

Beaufighter Mk VIF production was 1,842 (including one prototype) built at Filton and Whitchurch by Bristol and by Rootes Securities Ltd, Blythe Bridge. The Mk VIC was built by Fairey at Stockport and at the MAP (Ministry of Aircraft Production) Shadow Factory at Old Mixon, Weston-Super-Mare.

### TECHNICAL DATA - BEAUFIGHTER VI, VIF & VIC

<b>ENGINE:</b> Two 1,650hp Bristol Hercules VI or XVI	14,900lb
<b>WING SPAN:</b> 57ft 10in	<b>ALL-UP WEIGHT:</b> 21,000lb
<b>LENGTH:</b> 41ft 4in	<b>MAX SPEED:</b> 330mph
<b>HEIGHT:</b> 15ft 10in	<b>CEILING:</b> 29,000ft
<b>WING AREA:</b> 503 sq ft	<b>RANGE:</b> 1,500 miles (1,750 miles with extra wing tanks)
<b>EMPTY WEIGHT:</b>	



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A Beaufighter VIC during trials with the A&AE at Boscombe Down in November 1942.



Mk VIF V8442 still in service with the A&AE in February 1945. One of 400 delivered between July 1942 and May 1943, V8442 first served with 409 Squadron and was not SOC until July 9, 1945.



Beaufighter Mk VIF, KV912, of the 416th NFS based at Lecce in Italy in late 1943. The aircraft has three nicknames; the aircraft as a whole is named 'Fluff' while the port Hercules is named 'Patsy' and starboard 'Amby'.

# BEAUFIGHTER X

Beaufighter Mk X, NE343, during rocket projectile and overload tank trials with the A&AE in March 1944. The aircraft later served with 455 (RAAF) Squadron at Langham and Dallachy and was not SOC until January 1947.



## » FEB 1943

First Mk Xs delivered to RAF

## » JUN 1943

Mk X enters service with 248 Sqn at Predannock

## » MAY 1945

North Coates Strike Wing ends war having sunk over 150,000 tons of shipping

## » SEP 1945

Last aircraft, SR919, delivered to the RAF

## » MAY 12, 1960

Final sortie flown by TT Mk 10 RD761

## Anti-shipping – strike!

### DEVELOPMENT

While the Mosquito and Beaufighter had been around since the early stages of the Second World War, it was not until 1943 that they had both been fully developed into heavily armed machines capable of packing a punch sufficient enough to sink an enemy ship or submarine. The Mk X version of the Beaufighter in particular was by then available in great numbers thanks to the Mosquito taking over the night fighting role.

### DESIGN

Powered by a pair of Bristol Hercules XVII radial engines, each developing 1,770hp, the Beaufighter was a formidable looking aircraft. It was not as fast or as manoeuvrable as the Mosquito but it could pack the same punch with accuracy, thanks to its excellent stability. In the anti-shipping role, the Beaufighter could be fitted with RPs under each wing, up to 250lbs of bombs or a single 1,650lb or 2,127lb torpedo. Later production Beaufighter Mk Xs also had the added advantage of an ASV radar fitted in a modified 'thimble' shaped nose, giving a greater operational capability. With a range of nearly 1,500 miles, its crew of two could operate the Beaufighter against any target along the Norwegian or Danish coasts.

Post-war, 35 Mk Xs were converted into target-towing TT Mk 10s and the final British-built Beaufighter variant was the Mk XIC which was powered by Hercules XVII engines.

### SERVICE

The Beaufighter Mk X first entered service with 248 Squadron at Predannock in June 1943 and, by the end of the war, the mark had re-equipped 30 RAF squadrons. The Mk X quickly gained a well-deserved reputation as a formidable anti-shipping strike aircraft especially when it

was operated as part of a strike wing. The Dallachy Strike Wing alone flew 2,230 sorties, sunk 15 ships and damaged 55 others during its brief existence. 236 and 254 Squadrons of the North Coates Wing achieved fame when they located and destroyed five U-boats in the space of 48hrs in March 1945.

Post-war, the Mk X remained in the Coastal Command inventory until February 1950 when it was replaced by the Brigand. Another useful extension of the type's service came with the TT Mk 10 which was delivered between 1948 and 1950. It was TT Mk 10, RD761, which marked the end of the Beaufighter in RAF service when it flew a final sortie from Seletar on May 12, 1960.

### PRODUCTION

Beaufighter Mk X production totalled 2,205 aircraft built at the MAP (Ministry of Aircraft Production) Shadow Factory at Old Mixon, Weston-Super-Mare and by Rootes Securities Ltd, Blythe Bridge. 163 Mk VICs were built and 35 Mk Xs were converted to TT Mk 10.

### TECHNICAL DATA - BEAUFIGHTER X

<b>ENGINE:</b> Two 1,735hp Bristol Hercules XVII	15,600lb
<b>WING SPAN:</b> 57ft 10in	<b>ALL-UP WEIGHT:</b> 25,400lb
<b>LENGTH:</b> 42ft 6in	<b>MAX SPEED:</b> 330mph
<b>HEIGHT:</b> 15ft 10in	<b>CEILING:</b> 29,000ft
<b>WING AREA:</b> 503 sq ft	<b>RANGE:</b> 1,500 miles (1,750 miles with extra wing tanks)
<b>EMPTY WEIGHT:</b>	



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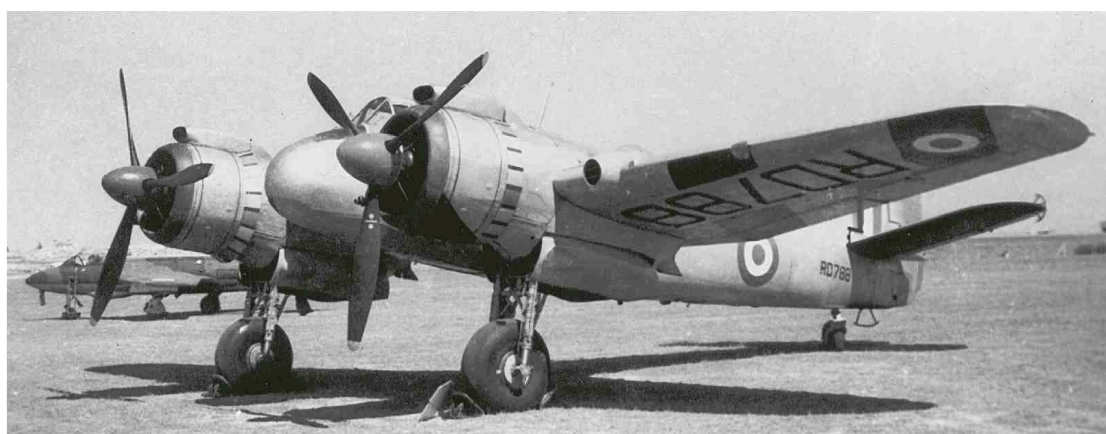


A quartet of Beaufighter Mk Xs of 404 (Buffalo) Squadron RCAF, which served at Dallachy from October 1944 to April 1945.

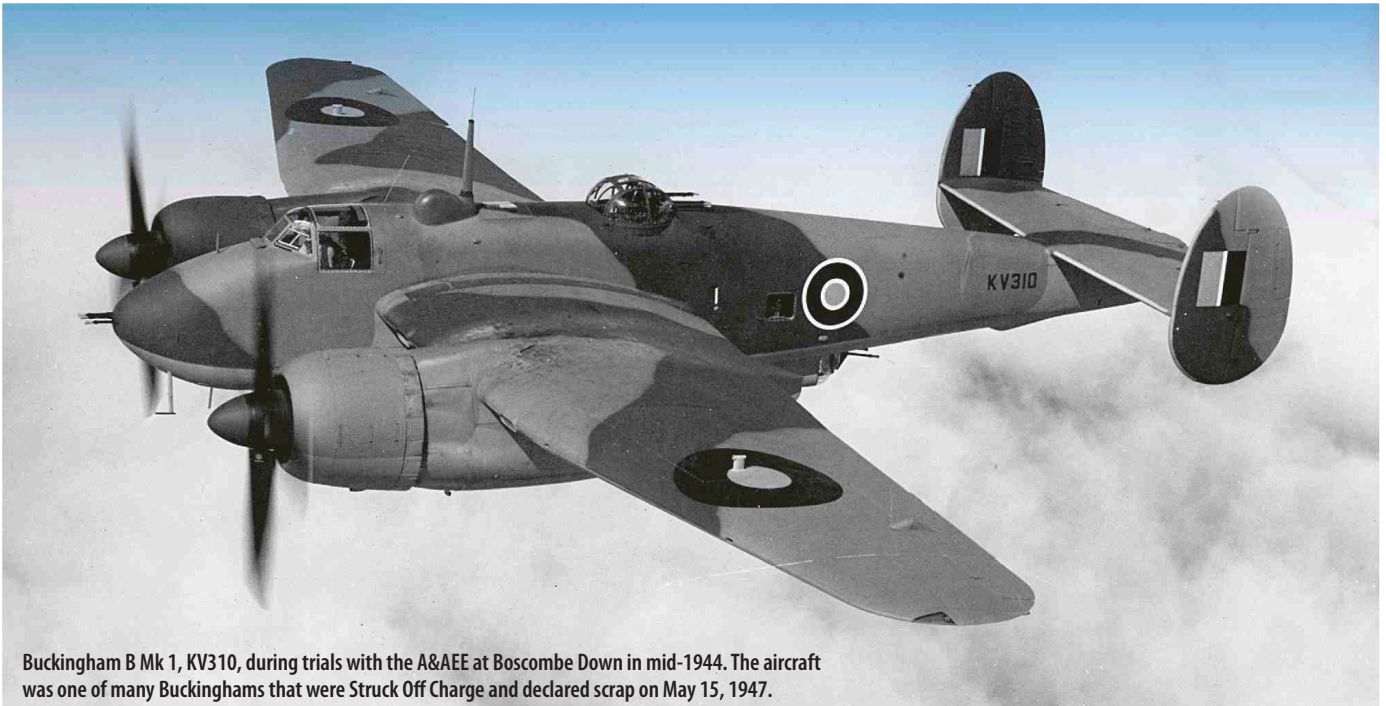


163 Hercules XVII-powered Beaufighter Mk XICs were built for Coastal Command in the serial ranges JL876 to JL948 and JM105 to JM267.

Beaufighter TT.10, RD788, of the Malta C&TTS (Communication & Target Towing Squadron) at Luqa, who operated the aircraft until 1958.



# BUCKINGHAM & BUCKMASTER



Buckingham B Mk 1, KV310, during trials with the A&EE at Boscombe Down in mid-1944. The aircraft was one of many Buckinghams that were Struck Off Charge and declared scrap on May 15, 1947.

## » FEB 1942

Contract for 400 Buckinghams is signed

## » FEB 4, 1943

Uwins makes maiden flight in Buckingham DX249

## » FEB 12, 1944

First production Buckingham, KV301 makes maiden flight

## » OCT 27, 1944

Maiden flight of Buckmaster TJ714 by Uwins

## » 1945

Buckmaster joins RAF Flying Training Command

## » 1956

Buckmaster T Mk 1 retired from the RAF

## Protracted Blenheim replacement

### DEVELOPMENT

Completely overshadowed and surpassed in all respects by the de Havilland Mosquito, the Buckingham was originally planned back in 1940 as a replacement, by 1942, for the Blenheim in the tactical day bomber role. It came too late for the Buckingham although a training derivative, named the Buckmaster, did give the RAF ten years of post-war service.

### DESIGN

The Buckingham was a development of a day-bomber project called the Beaumont which was designed to Specification B.2/41 and intended to meet a separate requirement for a close support bomber. The Beaumont was to be fitted with a pair of Hercules engines but when the more powerful Centaurus became available, all focus was on the Buckingham. This is where the Buckingham's problems began; the early 18-cylinder Centaurus engines suffered a host of teething troubles combined with an ever changing role.

Built in two variants, the Buckingham B Mk 1 was capable of carrying up to 4,000lbs of bombs and was furnished with ten 0.303in machine-guns; four mounted in the nose, four in a dorsal turret and two at the rear of a ventral copula which was occupied by a bomb-aimer/navigator. The Buckingham was the fastest turreted bomber to be built by a British aircraft manufacturer. The second variant was the C Mk 1 which was designed to be a high-speed courier transport capable of carrying four passengers and three crew. Fitted with higher capacity fuel tanks and the dorsal turret removed, the C Mk 1 had an impressive range of up to 3,000 miles.

First planned in 1943, the Buckmaster T Mk 1 featured dual-controls and side-by-side seating for an instructor and pupil. With a combined 5,000hp from its two Centaurus VII radials, the Buckmaster was one of the most-powerful and fastest aircraft ever to serve the RAF in the training role.

### SERVICE

The prototype Buckingham, DX249, first flew on February 4, 1943 but it was not until a year later that the first production

machines began rolling off the Filton line. By this time, the original production order for 400 aircraft was reduced to 119 and with no role for the B Mk 1, the last 65 were built as C Mk 1s. The transport version carried out services to Malta and Egypt for the remainder of the war and early post-war period.

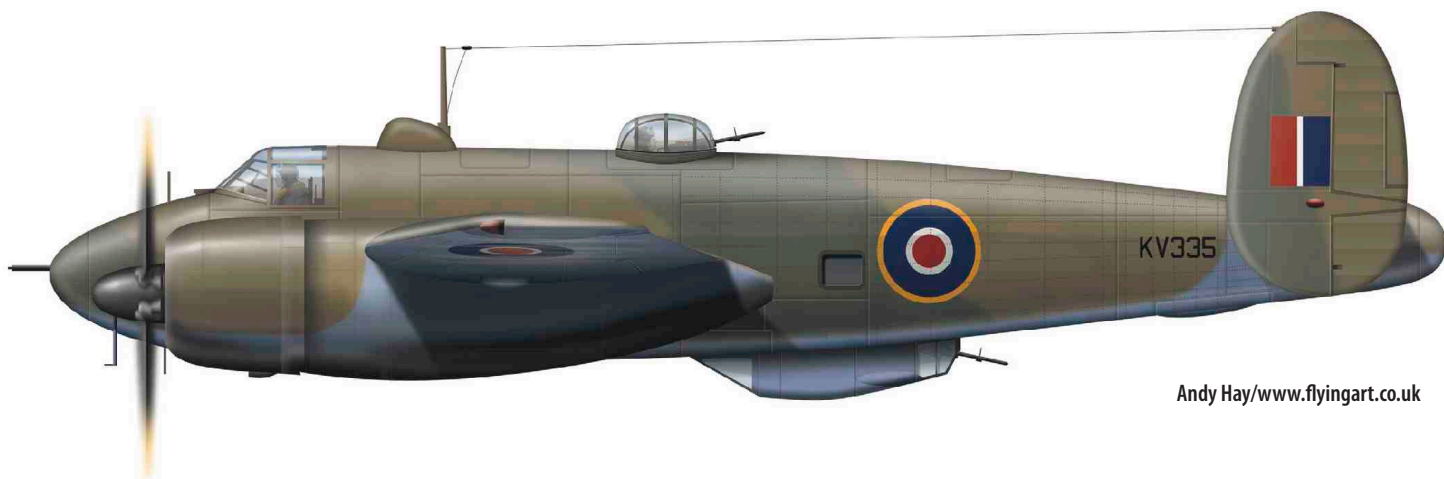
The first of two Buckmaster prototypes, TJ714, first flew on October 27, 1944 and, by 1945, the first production machines were already rolling off the line. The 110 aircraft built were extensively used by 6, 132, 228 and 238 OCU's, CFS, the ECFs (Empire Central Flying School) and 8, 36, 45, 84 and 154 Squadrons from 1945 to 1956. The type proved to be an excellent introduction for aircrew converting to the Brigand light bomber which would see action overseas.

### PRODUCTION

Four prototypes (DX249, DX255, DX259 & DX266) and 119 production Buckinghams (Type 163) were built; the latter made up of 54 B Mk 1s and 65 C Mk 1s. Two prototypes (TJ714 & TJ717) and 1s (Type 166) were built.

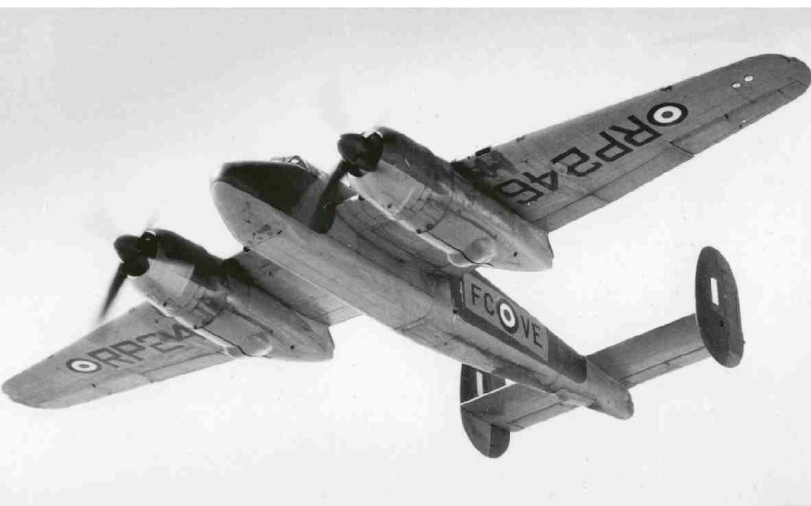
### TECHNICAL DATA - TYPE 163 BUCKINGHAM & TYPE 166 BUCKMASTER

<b>ENGINE:</b> (163) Two 2,400hp Bristol Centaurus IV, VII or XI (166) Centaurus VII	24,040lb; (166) 23,000lb
<b>WING SPAN:</b> 71ft 10in	<b>ALL-UP WEIGHT:</b> (163) 36,900lb; (166) 33,700lb
<b>LENGTH:</b> 46ft 10in	<b>MAX SPEED:</b> (163) 335mph; (166) 352mph
<b>HEIGHT:</b> 17ft 7in	<b>CEILING:</b> (163) 25,000ft; (166) 30,000ft
<b>WING AREA:</b> 708 sq ft	<b>RANGE:</b> (163) 2,200 miles; (166) 2,000 miles
<b>EMPTY WEIGHT:</b> (163)	

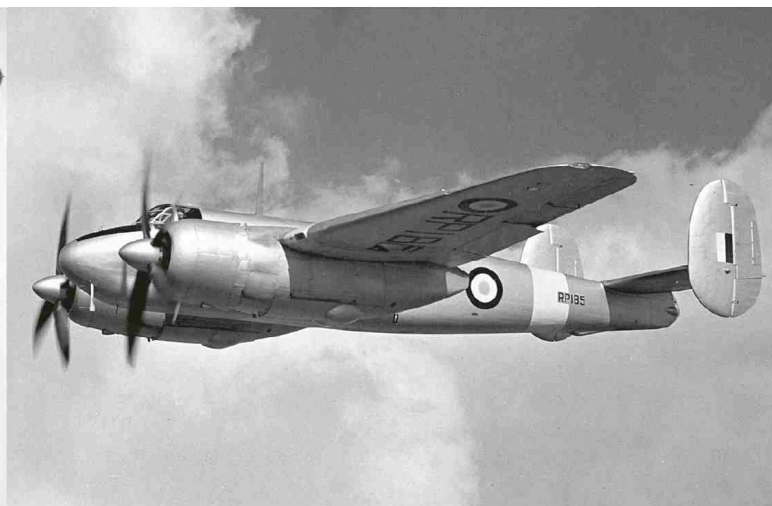


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A total of 65 Buckinghams, serialled KV338 to KV479, were built as C Mk 1s, operating as high speed long-range courier aircraft. Their limited capacity of just four passengers made them very uneconomical to operate.



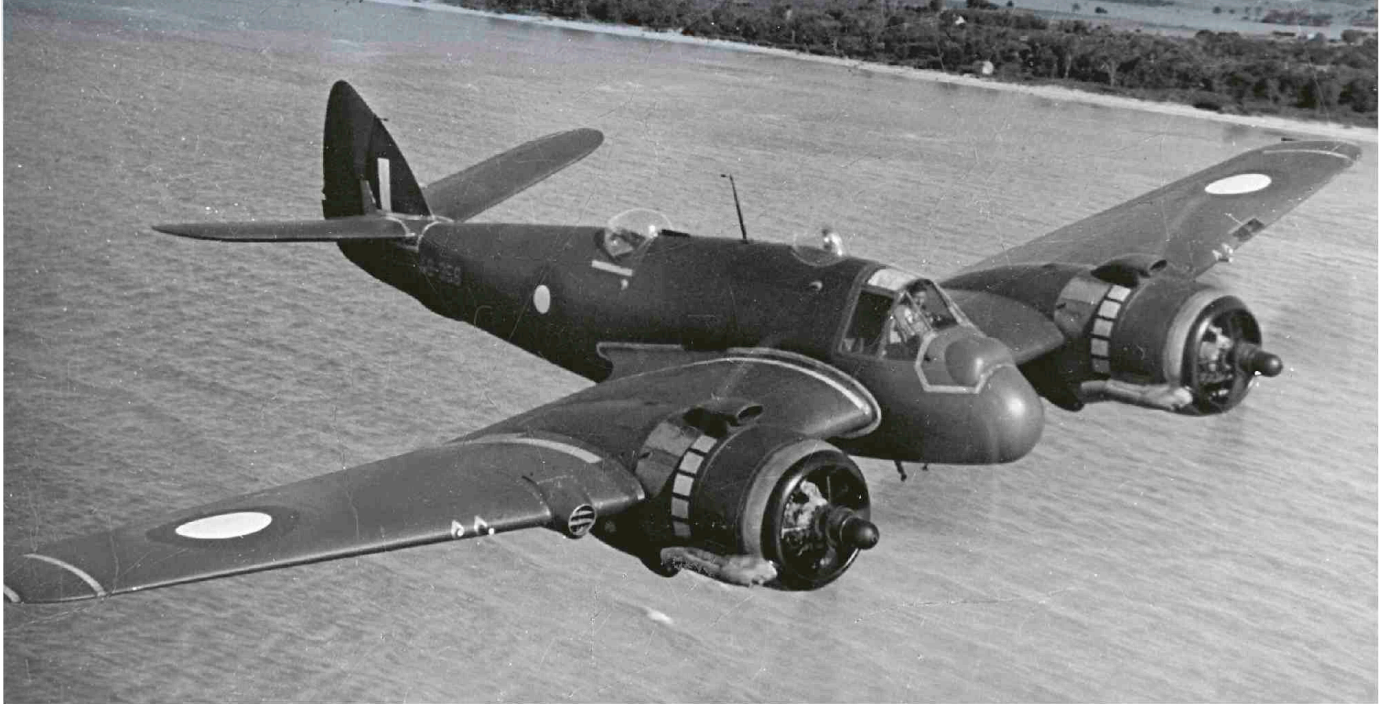
RP246, a Buckmaster T Mk 1, was the last of 100 built by Bristol at Filton and delivered to the RAF between March 1945 and April 1946. This aircraft is pictured in service with the ECFS based at Hullavington.



Buckmaster T Mk 1, RP185 of 228 OCU at Leeming, a unit tasked with training night fighter and all-weather fighter crews.

# BEAUFIGHTER 21

365 Beaufighter Mk 21s were built by the DAP at Fisherman's Bend between May 1944 and November 1945. Note the bulge on the nose for the autopilot which was one of the few unique features of the mark.



## » MAY 26, 1944

First Mk 21, A8-1 test flown from Fisherman's Bend

## » SEP 1944

Type enters service with 31 (RAAF) Squadron

## » NOV 6, 1945

Last Mk 21, A8-365, is delivered to RAAF

## » JUL 9, 1946

31 Sqn disbanded

## » AUG 15, 1946

22 Sqn disbanded

## » 1956

30 (Target Towing) Sqn retired the TT Mk 10

## 'Whispering Death'

### DEVELOPMENT

The RAAF was first supplied with 50 Beaufighter Mk IC and Mk VIC in 1941 and 1942 but by 1944, a licence had been agreed and Australia began to build their own machines with the designation Mk 21. Constructed by the Department of Aircraft Production (DAP), the Mk 21 would expand the reputation of the Beaufighter across the Far East and Pacific theatres of war.

### DESIGN

Very similar in design to the Beaufighter Mk X, the Mk 21 was powered by a pair of Hercules CVII or CXVIII engines. Built as an attack/torpedo variant, the Mk 21 was armed with four 20mm cannon in the nose, four .5in Brownings in the wings, eight 5in HVAR, a pair of 250lb bombs and a single Mk 13 torpedo. Mk 21s also had the luxury feature of an auto-pilot which was visible from the outside from a bulge on top of the nose.

Just like the RAF's Mk X, several Mk 21s were converted into target tugs; the first of them, A8-265, was modified on July 8, 1945.

### SERVICE

The Beaufighter Mk 21 first entered RAAF service with 31 Squadron in September 1944, a seasoned unit which had been formed in August 1942 with the Mk IC. 30 Squadron received their first Mk 21s in November 1944 while 93 and 22 Squadrons saw their first examples in January and February 1945 respectively.

It was during operations against the Japanese that the grim nickname 'Whispering Death' was applied to the Beaufighter whilst operating with the RAF and RAAF. The Mk 21 saw extensive action against the Japanese, 31 Squadron become quite adept at scoring air to air victories as well as destroying ground targets. 30 Squadron, serving as part of the Australian 1st TAF

(Tactical Air Force), operated in the Netherlands East Indies (NEI) from November 1944, roaming over the Celebes Sea. The unit also supported Australian ground forces in Borneo and, in May 1945, 30 Squadron flew from Tarakan in support of the landings at Balikpapan, NEI.

22 Squadron first went into action in February 1945 when nine Beaufighter Mk 21s carried out an attack on Tandao in the Celebes Sea. The unit also played an important role in Operation *Oboe Six* when the Australians invaded Tarakan.

93 Squadron began operations on July 26, 1945 which were concluded on August 13 when four aircraft flew an armed reconnaissance to Kuching airfield and eight more attacked Tromboul. Despite this lack of action, 93 Squadron had the honour of filming the Japanese surrender at RAAF Laverton, Singapore, on September 25, 1945.

### PRODUCTION

365 Beaufighter Mk 21s, serialised A8-1 to A8-365, were built by the Beaufort Division, DAP, at Fisherman's Bend, Victoria, Australia.

### TECHNICAL DATA - BEAUFIGHTER 21

**ENGINE:** Two 1,735hp Bristol Hercules XVIII  
**WING SPAN:** 57ft 10in  
**LENGTH:** 41ft 4in  
**HEIGHT:** 15ft 10in  
**WING AREA:** 503 sq ft  
**EMPTY WEIGHT:** 15,600lb

**ALL-UP WEIGHT:** 25,400lb  
**MAX SPEED:** 330mph  
**CEILING:** 29,000ft  
**RANGE:** 1,500 miles (1,750 miles with extra wing tanks)



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Beaufighter Mk 21, A8-229, during its service with 8 Communications Unit when it was employed to transport senior staff officers during the summer of 1945.



After being placed in storage in October 1945, A8-350 was modified as a target tug in August 1950 and remained in service until 1956 which was when this photo was probably taken.



Early production (possibly the first aircraft, A8-1) Mk 21, christened 'Red Cliffs' presents the key features of the mark. 20mm cannon in the nose, four .5in Brownings in the wings, rails for eight 5in HVAR (High Velocity Aircraft Rocket), two racks for 250lb bombs and empty shackles for a single Mk 13 torpedo.



# BRIGAND

RH754, one of a few built as Brigand TF Mk 1s from the first production batch of 80 aircraft delivered between January 1946 and February 1949. RH754 only served with the A&AEE and de Havilland before being resigned to the ranges of the Proof & Experimental Establishment (P&EE) at Shoeburyness.



## » DEC 4, 1944

Maiden flight of MX988 by Uwins

## » DEC 19, 1949

45 Sqn Brigand flies first combat operation

## » FEB 1951

Last Brigand delivered to RAF

## » JUL 1951

T Mk 4 enters service with 228 OCU

## » FEB 1953

Brigand B Mk 1 retired as 84 Sqn disbands

## » MAR 1958

238 OCU disbanded at North Luffenham

## Beaufighter replacement

### DEVELOPMENT

The Beaufighter would always be a tough act to follow and this was complicated by the change of requirement from that of a torpedo-bomber/torpedo-fighter to one of a light bomber which was demanded by a post-war RAF, especially for those units that were serving in the Middle and Far East.

Originally named the Buccaneer, the Brigand was designed in response to Specification H.7/42 which was effectively a Beaufighter variant with a crew of three and with power provided by a pair of Hercules VIII engines. This idea was soon abandoned and the aircraft instead drew heavily from its unsuccessful sibling, the Buckingham.

### DESIGN

The Type 164 Brigand utilized the wings, tail assembly and twin Centaurus engines of the Buckingham combined with a re-designed fuselage with a much smaller cross-section. No power-operated turret was installed and the cockpit was rebuilt to accommodate three crew under a large transparent canopy which could be jettisoned in the event of an emergency. The first 13 Brigands built were designated TF Mk 1, capable of carrying a single torpedo. The main production B Mk 1 variant featured extra armour plating, four 20mm cannon in the nose and provision for a single machine gun in the rear of the cockpit.

The Met Mk 3 was an unarmed weather reconnaissance variant while the T Mk 4 radar trainer, also unarmed, featured an AI Mk X radar in the nose and black-out blinds for the trainee's rear cockpit. The final version, which was converted from B Mk 1s and T Mk 4s, was the T Mk 5 radar trainer installed with an AI Mk 21 radar in a slightly longer nose.

### SERVICE

Four Brigand prototypes were ordered in April 1943 the first of them, MX988, made its maiden flight on December 4, 1944. The early production TF Mk 1s served with the Air-Sea Weapons Development Unit at Gosport from May 1946, but

this variant was destined never to join Coastal Command squadrons.

The B Mk 1 entered service with 84 Squadron at Habbaniya in June 1949 and 8 Squadron at Aden from October 1949. In the Far East, 45 Squadron RAF began replacing its Beaufighters with the Met Mk 3 from May 1949 and the B Mk 1 from October. Joined at Tengah by 84 Squadron in April 1950, the two squadrons carried out many successful strikes as part of Operation Firedog against terrorists in Malaya. The Brigand B Mk 1 was not without its problems and far more were lost in accidents due to mechanical failure than to enemy action. The RAF's last piston-engined attack aircraft was withdrawn from operations in February 1953.

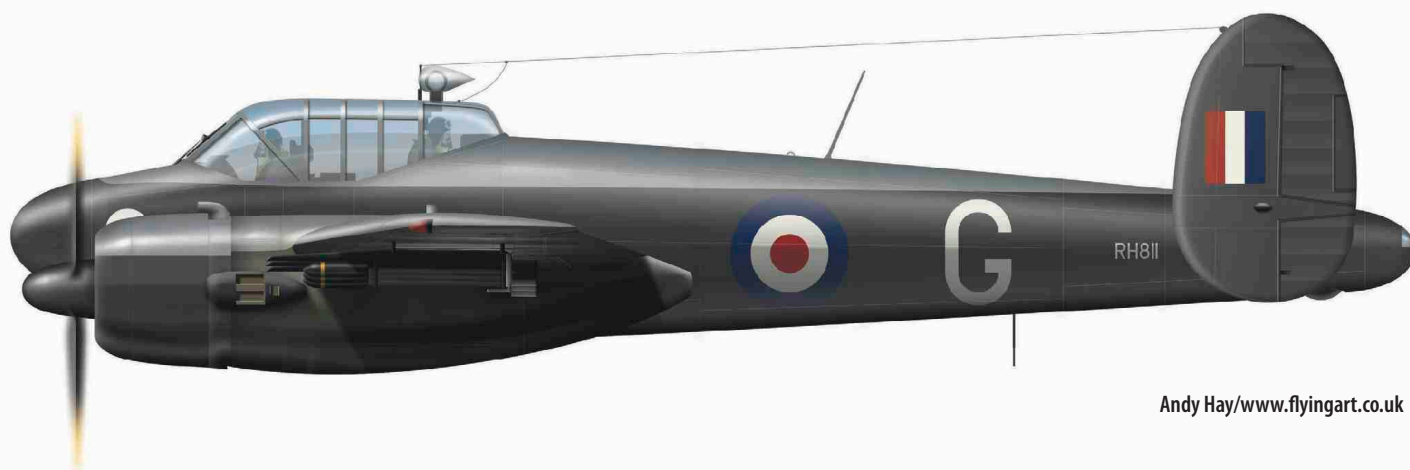
The T Mk 4 first flew in 1949 and entered service with 228 OCU at Leeming in July 1951. It was joined by the T Mk 5 from 1955 and, by the time of their retirement in 1958, the two aircraft had training approximately 600 radar navigators.

### PRODUCTION

147 Brigands were built which included; four prototypes, 16 Met Mk 3s and nine T Mk 4s. Up to 30 B Mk 1s and T Mk 4s were converted to T Mk 5 standard.

### TECHNICAL DATA - TYPE 164 BRIGAND

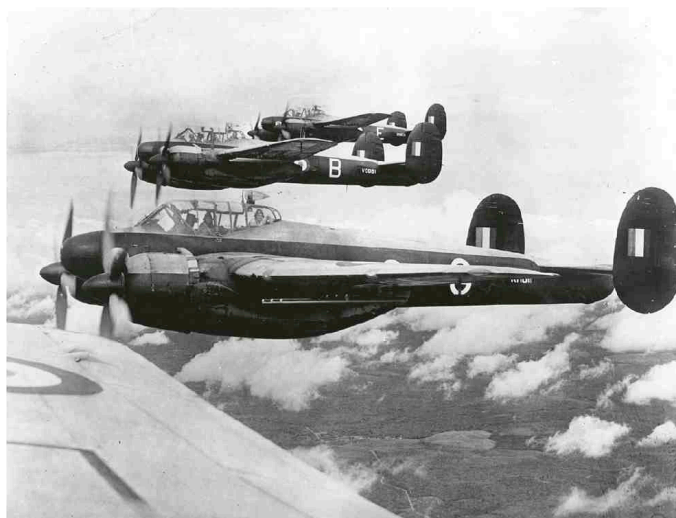
<b>ENGINE:</b> (163) Two 2,500hp Bristol Centaurus 57	<b>EMPTY WEIGHT:</b> 25,600lb
<b>WING SPAN:</b> 72ft 4in	<b>ALL-UP WEIGHT:</b> 39,000lb
<b>LENGTH:</b> 46ft 5in	<b>MAX SPEED:</b> 360mph
<b>HEIGHT:</b> 17ft 6in	<b>CEILING:</b> 26,000ft
<b>WING AREA:</b> 718 sq ft	<b>RANGE:</b> 2,000 miles



Andy Hay/www.flyingart.co.uk



The first production Brigand, was TF Mk 1, RH742, which enjoyed a lengthy career (for a Brigand), serving with the ECFS (Empire Central Flying School), A&AEE and the ATDU. It was not SOC until June 17, 1954.



RH811 is now seen flying on a sortie in company with two more Brigands (VS861 'B' and RH831 'E') all with empty rocket rails after completing their attack. These photographs were shot in late 1951 and show a protective roof cover in the cockpit to reduce heat and glare through the canopy. On June 19, 1951, RH811 became one of the Brigands to be lost in a crash when first a propeller and then the engine broke away from its wing.



VS837 was originally ordered as a Brigand B Mk 1 to contract 6/ACFT/621 but was instead converted to T Mk 4 standard. The aircraft only served with 238 OCU and was SOC on September 15, 1958.