

A Beaufighter TF X of No 254 Squadron, Coastal Command returns from an anti-shipping mission during 1944.

Credits:

Jan P. Koniarek Brian Marsh J. Lampard British Aerospace Rolls-Royce Bruce Robertson Ron MacKay David Howley A.S. Thomas

Dedication:

This book is dedicated to all ex-Beau crews, wherever they flew the tough old bird.

COPYRIGHT 1995 SQUADRON/SIGNAL PUBLICATIONS, INC.

1115 CROWLEY DRIVE CARROLLTON, TEXAS 75011-5010

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form by means electrical, mechanical or otherwise, without written permission of the publisher.

ISBN 0-89747-333-7

If you have any photographs of aircraft, armor, soldiers or ships of any nation, particularly wartime snapshots, why not share them with us and help make Squadron/Signal's books all the more interesting and complete in the future. Any photograph sent to us will be copied and the original returned. The donor will be fully credited for any photos used. Please send them to:

Squadron/Signal Publications, Inc. 1115 Crowley Drive Carrollton, TX 75011-5010

Если у вас есть фотографии самолетов, вооружения, солдат или кораблей любой страны, особенно, снимки времен войны, поделитесь с нами и помогите сделать новые книги издательства Эскадрон/Сигнал еще интереснее. Мы переснимем ваши фотографии и вернём оригиналы. Имена приславших снимки будут сопровождать все опубликованные фотографии. Пожалуйста, присылайте фотографии по адресу:

Squadron/Signal Publications, Inc. 1115 Crowley Drive Carrollton, TX 75011-5010

軍用機、装甲車両、兵士、軍艦などの写真を 所持しておられる方はいらっしゃいませんか?どの国のものでも結構です。作戦中に撮影されたものが特に良いのです。 Squadron/Signal社の出版する刊行物において、このような写真は内容を一層充実し、興味深くすることができます。当方にお送り頂いた写真は、複写の後お返しいたします。出版物中に写真を使用した場合は、必ず提供者のお名前を明記させて頂きます。お写真は下記にご送付ください。

Squadron/Signal Publications, Inc. 1115 Crowley Drive Carrollton, TX 75011-5010

RD767 was a Beaufighter TF Mk X which featured all the refinements of the Beaufighter line. The aircraft had a thimble nose radome, rear gun position, dorsal fin extension and rocket rails.



Introduction

One of the RAF's most successful and widely used twin engined fighter types, the Bristol Beaufighter borrowed a number of design features from its torpedo bomber forerunner, the Bristol Beaufort. Both aircraft were innovative and leaders in their particular class. The Beaufort was the first modern torpedo bomber and the Beaufighter the first combat-worthy twin-engined fighter to enter RAF service and as such they both found a rightful place in the Royal Air Force "hall of fame."

Beaufort Mk I

By combining requirements for a torpedo bomber and a general reconnaissance (GR) bomber, the Beaufort was to become the most effective land-based anti-shipping aircraft the RAF had for the first three years of the war. It originated in two official specifications issued during 1935 (M.15/35 which covered a twin-engined torpedo bomber and G.24/35 for a General Reconnaissance type) and was built to the revised Specification 10/36. A contract with Bristol for an initial batch of seventy-eight aircraft was placed by the Air Ministry in August of 1936.

Known as the Bristol Type 152, the Beaufort was directly derived from the earlier Type 150, which was based on the Bristol Blenhiem. The Type 150 was similar to the Blenhiem with the cockpit moved forward by fifty-four inches and the dorsal turret moved aft to maintain the center of gravity. Space was provided for a radio operator's position between the flight deck and turret. A single torpedo could be carried in an internal bay.

When Specification G.24/35 was developed by Bristol into the Bolingbroke, a Blenheim variant built exclusively in Canada, the company concentrated on a design which had torpedo bombing as its main role. The Type 152 had the nose extended by a further nine inches to make room for a navigator's position adjacent to the pilot. An aerial camera was also to be located next to the radio station. Still based on the slim Blenheim fuselage, this configuration meant that the torpedo could not be enclosed completely but was semi-recessed in the fuselage underside.

The Air Ministry accepted the method of torpedo carriage, but insisted on a crew of four. Bristol accordingly enlarged the fuselage and raised the forward roof line, fairing the dorsal gun turret into a "step" at the rear end. The navigator's position was moved forward to share the glazed nose with a bomb aimer's station, while the pilot now enjoyed a much improved view from the higher cockpit.

The Beaufort prototype was painted in primer and had cutaway nacelle sections and no landing gear doors to enclose the main wheels when it was rolled out during 1938.





The Beaufort had fewer glazed panels on the port side of the nose than on the starboard side. Production aircraft differed very little from this prototype, apart from the addition of armament.

In this revised form the Beaufort prototype, L4441, made its first flight from Filton on 18 October 1938. Bristol Taurus III engines were fitted after their originally specified Perseus VI power plants were found to be incapable of delivering the required top speed.

As Filton began Beaufort Mk I production, Australian interest in the type resulted in the eighth aircraft built (L4448) being shipped to Australia, together with twenty sets of airframe parts. Australian-built Beauforts were to have been used by RAF squadrons in Malaya as well as by the RAAF, the former aircraft having British engines. In October of 1939 the Australian government decided instead to license-build the Pratt and Whitney Twin Wasp engine and, in the event, all 700 aircraft produced in Australia were fitted with these U.S. engines.

Engine overheating and other problems delayed the Beaufort's entry into RAF service until January of 1940 when No 22 Squadron on Thorney Island took delivery of its first aircraft. By that time Bristol's order book had been increased to 350 aircraft.

The Taurus engines still gave trouble, but No 22 Squadron began torpedo training and in April had moved to North Coates to initiate mine-laying operations. The loss of the squadron commander's aircraft as a result of engine failure led to the Beaufort being grounded in June for engine modifications. By that time, No 42 Squadron had equipped with the type, to start "Rover" sorties against German shipping and bases in Norway.

As the only two Beaufort squadrons, Nos 22 and 42 Squadrons carried out many daring operations, including a strike on the German battlecruiser SCHARNHORST on 21 June 1940. The following summer two more squadrons, No 86 Squadron at North Coates and No 217 Squadron on Thorney Island, were re-equipped with Beauforts.

The two original Beaufort squadrons were highly mobile, flying sorties in small detachments or at full strength from bases throughout the UK, using airfields nearest to their targets. For example, a single No 22 Squadron Beaufort flew from North Coates to torpedo the 5,000 ton transport IJMUIDEN on 15 September, while a strike from Saint Eval in Cornwall on 6 April 1941, got a direct hit on the GNEISENAU in Brest harbor.

In the GNEISENAU attack the Beaufort piloted by F/O Kenneth Campbell was shot down after releasing its torpedo from a height of only thirty feet. Campbell was awarded a posthumous Victoria Cross for this feat.

Heavy return fire from ships under attack was a fact of life for Beaufort crews, who had little to fight back with. The two original Vickers "K" turret guns were not very effective and crews fitted more guns in different locations whenever possible. Two forward firing guns were set into the nose and a single beam gun on each side of the fuselage gave some protec-



This early Beaufort Mk I carries a semirecessed torpedo and is fitted with the short landing gear doors which did not fully enclose the mainwheel tires.

tion from fighter attack. The two rearward-firing guns sighted through a transparent blister under the Beaufort's extreme nose were not considered very useful and these were often removed in squadron service. More effective were a pair of .303 inch Browning machine guns set to fire directly ahead through the nose transparency.

Pending the availability of something more lethal with which to carry on the RAF's antishipping strikes, the Beaufort soldiered on. Eventually eleven squadrons were equipped with the Mk I in the UK and in the Mediterranean, Beauforts being particularly effective in strikes from Malta.

Beaufort Mk II

Meanwhile, the search to improve the Beaufort's single-engine performance resulted in a decision for British Beauforts to have Pratt & Whitney Twin Wasps in a new version. A Mk I (N1110) tested the installation in November of 1940 and L4448, the first Beaufort Mk II, flew from Filton in September of 1941. By then, the first Australian Beaufort with American engines had made its maiden flight as the Mk V.

When Australian production of the Beaufort got underway the RAAF gained a useful strike aircraft. A Beaufort Mk VIII (A9203) gets airborne, probably from the factory runway at Fishermen's Bend. This aircraft was later converted to a Mk IX and re-serialled as A9-736.





The sighting blister for a single Vickers gun is visible under the nose of this Beaufort I (W6491), OA-R of No 22 Squadron on Thorney Island during 1940.

The new engines with Curtiss Electric propellers markedly improved the Beaufort's performance and the Mk II was also better armed. Late production aircraft had twin Browning turret guns. Unfortunately supplies of Twin Wasp engines had to be curtailed due to enemy attacks on Atlantic convoys and Bristol was forced to switch back to building Beauforts with Taurus engines.

After 165 Mk IIs had been completed, Filton fitted 1,130 hp Taurus XII or XVI engines into "improved" Beaufort Is, these being structurally strengthened and fitted with ASV radar with Yagi aerials and the Browning gun turret. When Pratt & Whitney engine supply improved, Bristol was able to complete a total of 415 aircraft with these engines by 1944.

Tropicalised Beauforts equipped Nos 39, 47 and 217 Squadrons, the last of this trio moving from the UK to Malta in June of 1942 with its Mk IIs. No 86 replaced No 217 on Malta in July 1942, when the latter squadron moved to the Far East. In total, five Beaufort squadrons operated from the UK under Coastal Command, the original four units later being joined by No 415 Squadron, which retained its Mk Is. Only Nos 39, 42, 86 and 217 Squadrons received Beaufort IIs.

Three other nations besides Australia operated Beauforts. Canada received fifteen Mk Is for coastal defense duties in 1941 and eighteen were delivered to the South African Air Force that same year. Turkey acquired twelve Mk Is and two Mk IIs, primarily to train Beaufighter crews.

Beaufort Mk V

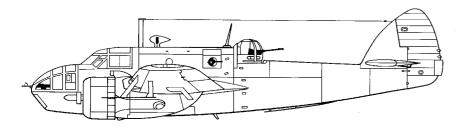
Australian Beauforts (identifiable by their larger fin area compared to RAF aircraft) served with ten operational squadrons plus second line units. A widely used type in RAAF service, the Beaufort was widely and affectionately regarded as a reliable "workhorse" which, in addition to being a fine combat aircraft, put Australia's aerospace industry on its feet.

Australian Beaufort operations against the Japanese began in June of 1942, when No 100 Squadron attacked enemy shipping off Lae. New Guinea remained No 100's operating area and subsequently Aussie-built and manned Beauforts became the scourge of the Japanese throughout the Southwest Pacific.

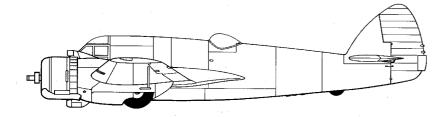
The Beaufort ended its RAF service in late 1944, many examples having served out their time as crew trainers. These included the last 121 of a final batch of 250 Mk IIs built with the turret position faired over. UK and Australian Beaufort production totalled some 2,129 aircraft.

Development

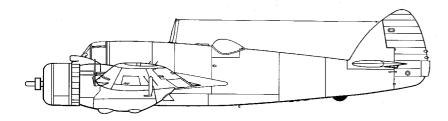
Beaufort Mk II



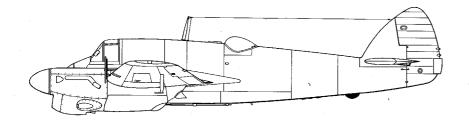
Beaufighter Prototype



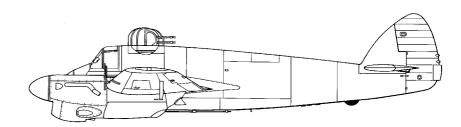
Beaufighter Mk IF



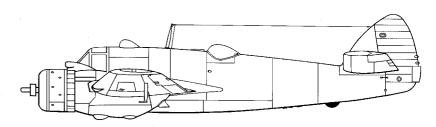
Beaufighter Mk II



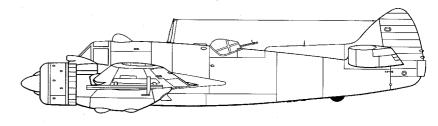
Beaufighter Mk V



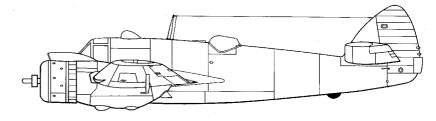
Beaufighter Mk VI



Beaufighter Mk X



Beaufighter Mk 21



Beaufighter Mk I

As Bristol prepared to flight-test the first Beaufort, chief designer Leslie Frise and his colleague, Roy Faddon, undertook a design study of the new torpedo bomber to see where the airframe could be adapted into a "stop-gap" fighter. The RAF would, it was estimated, be critically short of fighters in the event of war.

The idea of producing a fighter with minimum cost and without the long time scale needed for an entirely new, "off the drawing board," aircraft was enthusiastically taken up by the Air Staff. A few days after the first Beaufort flew, Bristol was asked to build four prototypes of the "Beaufort fighter."

Some useful preliminary work on fighter projects powered by the company's Hercules engines had already been undertaken at Filton. Among them was the Type 156. By utilizing the Beaufort's wing, tail unit and landing gear, Bristol engineers were able to refine the Type 156 as the first prototype Beaufighter in just six months.

A new, slim fuselage was added to the Beaufort components, with a short, solid nose incorporating a single seat cockpit. A dorsal position for an observer was located at the fuselage mid-point and, serialed N2052, the new aircraft made its maiden flight on 17 July 1939. Provision had been made for an armament of four 20MM cannon, although these guns were not fitted for the first flight.

With the first few test flights having shown the Beaufighter's potential, the prototype was camouflaged and for a time it had the undersurfaces finished in the "half and half" fighter recognition color scheme of White and Black, which was in use during 1940.

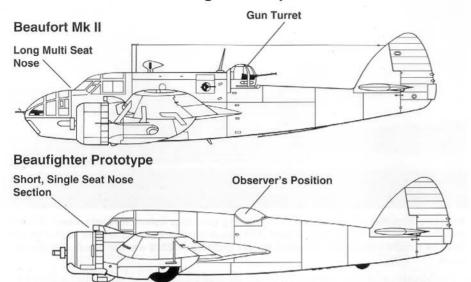


Adapting Beaufort wings, tail unit and landing gear to a fighter fuselage saved Bristol months of work in meeting an urgent RAF requirement for a twin engine fighter to be used as a night interceptor. The Beaufighter prototype R2052 was the result of this marriage.

Considerable work was now needed to turn the Beaufighter into an operational combat aircraft and almost a year was to pass before the RAF received its first aircraft. In that time Bristol was able to refine the design and boost the performance, which with early Hercules



Fuselage Development



engines, was similar to that of the Hawker Hurricane, 335 mph at 13,500 feet. For the Beaufighter, the aim was 360 mph at 15,000 feet with Bristol Hercules VI engines.

Only Hercules III engines were immediately on hand, these giving the Beaufighter "Hurricane performance" and after Air Ministry Specification F.17/39 was issued to cover the Beaufighter, production commenced on a first batch of 300 aircraft. With the engine supply situation far from certain, it was agreed that the Beaufighter wing should be able, with minimum modification, to take in-line Rolls-Rolls Griffon engines as an alternative to the aircooled Hercules radials.

With its steep ground angle and large engine cowlings jutting forward of the wings, the snub-nosed "Beau," as it became known to its crews, immediately impressed onlookers who saw a tough, workmanlike design with excellent forward vision for the pilot and space enough for heavy armament. Handling trials with the prototype were generally good, apart from a need to increase the vertical fin area and to stiffen the elevator control circuit. The landing gear was also revised, Lockheed oleo legs being introduced to replace the Vickers units. The propeller blades were shortened by three inches to maintain an adequate ground clearance.

Bristol built four Beaufighter prototypes (R2052 to R2055) for pre-service tests, although the summer of 1940 saw some curtailment of the future development program while the outcome of the Battle of Britain was awaited. The second prototype, R2053, soon joined the flight test program. This aircraft was also unarmed, but Beaufighter number three, R2054, had four cannon and their blast tubes installed under the forward fuselage, together with armor plate, a bullet-proof windscreen and a gun camera. Located directly in front of the pilot, the camera position gave most Beaufighters a distinctive bulge on top of the nose.

The first two prototype Beaufighters were passed to the RAF for evaluation in April of 1940 and that June, the Aeroplane and Armament Experimental Establishment (A&AEE) at

Boscombe Down received R2054. A&AEE pilots found that a fully combat-worthy Beaufighter, inevitably weighed down by military equipment, barely managed 309 mph at 15,000 feet. Otherwise, the test report was generally favorable, although R2054, in common with all Beaufighters, had a tendency to swing on take-off, a factor partially aggravated by the forward position of the engines.

One way to improve the Beaufighter's performance, pending adequate supplies of the Hercules VI engine, was to fit the only alternative power plant that was available, the Rolls-Royce Merlin. Design modifications, primarily to the engine nacelles, were therefore made for a new model which was designated the Beaufighter Mk II. The Merlin XX engine installation was confirmed for 450 of the 1,218 Beaufighters on the Filton production line by mid-1940, and three airframes (R2058, R2061 and R2062) were set aside to serve as Mk II test-beds.

As part of the development of the Beaufighter, Bristol made a number of airframe refinements. These included shortening the engine nacelle fairing on the wing upper surface to reduce drag, fitting doors to completely enclose the main landing gear wheels and deleting the fuel jettison pipes from the outer wing tanks. These pipes were replaced by a neater arrangement which drew fuel from both inner and outer tanks and jettisoned it from a single short pipe at the end of each engine nacelle. Another small change was the relocation of the oil coolers from the engine nacelle to distinctive wing leading edge fairings outboard of the engine nacelles, similar to the Beaufort.

Only the four Hispano cannon, mounted in the lower forward front fuselage, were fitted to the first fifty production Beaufighters, but subsequent Mk Is were standardized with an additional six .303 inch Browning machine guns in the wings, two on the port side and four on the starboard. This gun combination made the Beaufighter the most heavily armed aircraft in service with the RAF for the duration of the war. While little could be done to increase the Beaufighter's disappointing performance owing to the lack of more powerful engines, the need to improve stability led Bristol to slightly increase the fin area and stiffen the elevator control.

R2054 was the third protype Beaufighter which was used for tests of the sixty round ammunition drum feed for the fuselage mounted 20mm cannon armament.



Beaufighter Mk IF

With the Luftwaffe increasingly turning from day to night bombing during the Fall of 1940, a new priority was given to the testing of the first airborne radar sets, which were being readied for installation in a suitable night fighter airframe. The RAF had few aircraft to undertake this vital role, although Blenheims had been modified as an interim night interceptor. What was needed was a large, preferable twin-engined, aircraft which could accommodate the radar and an operator, with sufficient performance to catch the raiders (something the Blenheim lacked). The Beaufighter offered the RAF an ideal answer.

In the night fighting role, a sparkling performance was not so important and the Fighter Interception Unit (FIU) at Ford carried out the necessary work to fit an Airborne Interception (AI) Mark IV radar to the Beaufighter Mk IF. Individual aircraft had the distinctive "bow and arrow" interrogator aerials fitted on the nose and pairs of rod receiver antennas on both wingtips. The radar scope was installed in the observer's position. He guided the pilot onto the target by intercom directions, reading the range, direction and angle of approach to the enemy aircraft from his scope.

Along with the night fighter role, Beaufighters adopted an appropriate overall Matt Black finish known as RDM2, which had an interesting quality that was not immediately realized. While Black paint absorbs available light, it also attracts heat. More than a few crew members learned this to their cost when climbing aboard a Beaufighter that had been standing out in the sun for some hours before take-off. The aircraft's skin became so hot that it could cause blisters.

Beaufighter Mk IF R2059 flew the first night interception sortie while it was assigned to the Fighter Interception Unit (FIU), on the night of 4/5 September 1940. The first interception flight by an RAF squadron Beaufighter was on 17/18 September when No 29 Squadron at Digby sent up R2077. No enemy aircraft were found but on 25 October, No 219 recorded the first confirmed night kill by a Beaufighter. Some early night sorties achieved victories without the temperamental radar and it was not until 19 November that an AI-assisted kill was made. In the following six months, radar-equipped Beaufighters destroyed about twelve enemy raiders.

Single Beaufighter night fighters were issued to four different squadrons, primarily to test the effectiveness of AI radar. Besides No 29 Squadron, the other units were Nos 25, 219 and 604 Squadrons. Later, on 8 September, No 600 Squadron, a specialized night fighter unit, also received its first Beaufighter IFs.

The 100th Beaufighter was completed at Filton on 7 December 1940, and the 200th example followed on 10 May 1941. By that time, the Fairey Aviation "shadow" factory at Stockport and the Ministry of Aircraft Production plant at Weston-super-Mare were both producing the Mk I at a steady rate.

Despite the forward location of the engine nacelles, the Beaufighter pilot had good all round vision. The control column is in the center with the firing button on the right side of the control column and the brake lever is mounted on the column below it. The circular object above the instrument panel is the reflector gun sight.



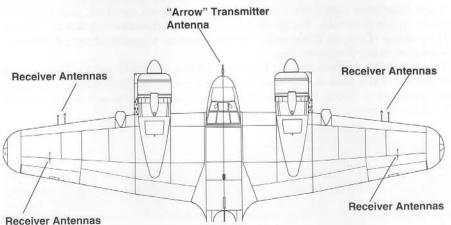


The Western Desert became synonymous with Beaufighter operations and among the models that saw service in the theater were radar-equipped Mk IF night fighters. Both the nose mounted arrow shaped transmitter antenna and wing mounted receiver post antennas are visible.

An early recipient of the night fighter Beaufighter Mk IF was No 307 Squadron, Polish Air Force. One of the squadron's Mk IFs is met by a welcoming committee after taxiing in at Exeter. The aircraft was apparently carrying General Sikorski, leader of the free Poles, as a passenger.



Antenna Configuration





The crew of a Beaufighter Mk IF night fighter pose with their aircraft at a landing ground in the Western Desert. The exhaust pipe flame damper is visible as are details of the main landing gear oleo leg.



Beaufighter-equipped night fighter squadrons gave Luftwaffe bomber crews a dangerous task over England until the night blitz was all but abandoned. This No 409 Squadron Beaufighter Mk IF (X8025), suffered a hard landing in mid-1942. No 409 Squadron operated in the night-fighter role at Coleby Grange near Lincoln.

No 409 Squadron's groundcrews had more work to do when Beaufighter IF (X8191) coded KP-N lost its port landing gear. The fuselage codes were in Red.



Beaufighter Mk IC

Bristol and the RAF now considered other roles for the Beaufighter. A series of day bomber and fighter sorties had begun to take the war to the enemy in occupied Europe and the Beaufighter was seen as an ideal long range fighter to hit enemy bases and shipping as far way as Norway.

Long range tanks were tested on a Beaufighter Mk I (R5152) which had its wing guns replaced by fuel cells. To assist in navigation on long over-water flights a table and instruments were added in the rear position and a D/F loop was fitted in place of the gun camera. A batch of eighty modified "Coastal" Beaufighter Mk Is was completed, these aircraft having a fifty gallon Wellington fuel tank temporarily mounted on the fuselage floor between the cannon bays. Standard wing fuel tanks would be ready later.

The Mk IC (the suffix letter standing for Coastal Command) Beaufighters entered service with No 252 Squadron, being ready for initial operations in late March of 1941. The destruction of a Fw 200 on 16 April marked the beginning of a long and distinguished career for the Beaufighter in Coastal Command, one that would grow both in scope and in the variety of weapons used and targets attacked. No 143 Squadron became the second Coastal Beaufighter unit in June 1941.

So important was the Beaufighter to become in Coastal Command that Bristol adapted the airframe to take various fittings for the singular task of attacking enemy shipping and continued to allocate the "C for Coastal" suffix. Similarly, the "F" suffix was used to denoted all Fighter Command Beaufighters.

The urgent war situation in the Mediterranean led No 252 Squadron to take its Beaufighters to Malta in May of 1941, to be followed by No 272 Squadron with Mk ICs and Nos 46 and 89

While the Beaufighter was proving its worth in service, Bristol explored ways to reduce some of its less attractive handling qualities. Twin fins were fitted to this Mk I (R2288) in an effort to improve directional stability, but no production in this configuration was undertaken.

with night-fighters. On Malta, No 252 Squadron was heavily engaged in convoy escorts and in support of the Syrian campaign. Later based in Egypt, the squadron claimed its first enemy aircraft shot down on 24 July.

In the meantime, Bristol explored ways to cure the Beaufighter's instability problems which had not improved. Among the airframes used for tests was Mk I R2268, which was fitted with a wider chord tail plane with twin fins and rudders, and R2057, which had its horizontal stabilizers angled up by twelve degrees. A horizontal stabilizer with a pronounced dihedral was found to be the most effective way to improve handling and this was adopted as standard on production Beaufighters.

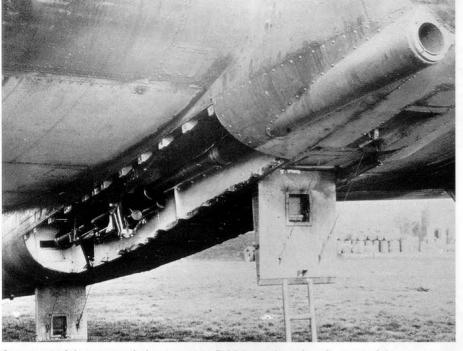
Having proved that effective night interception was possible given the right aircraft and equipment, the Beaufighter Mk I undertook a variety of other roles including reconnaissance and ground attack, relying primarily on its heavy gun armament. In the days before bomb release gear and rocket projectiles were cleared for Beaufighter use, the heavy gun battery was put to deadly use against a variety of targets.

In total, the Beaufighter Mk I equipped twenty-eight RAF squadrons and operated in most war theaters, a total of 954 having been built.

This was the starboard side fuselage cannon bay housing two of the Beaufighter's four 20MM Hispano cannon. The two "U" shaped objects are the ammunition feed chutes. The cannon were mounted with heavy blast tubes over their barrels. The hatch at the right is the fuselage underside escape/boarding hatch. When opened in the air, the hatch served as a wind break for the crew when they bailed out.





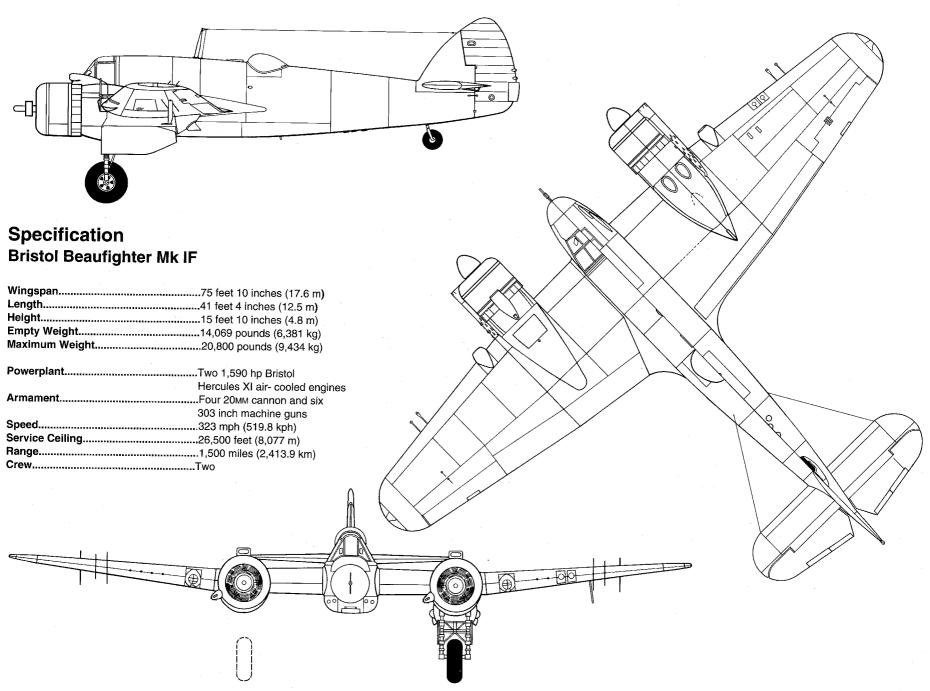


Armament trials were carried out on most British wartime aircraft, many of them connected with the use of heavy caliber guns. Among the weapons fitted to the Beaufighter was a Vickers 40mm cannon. This installation was tested on the fourth prototype (R2055). A Rolls-Royce 40mm gun was fitted on the port side replacing both 20mm weapons normally carried.



(Above/Below) This Beaufighter Mk IF (T3032) not only conducted many trials with the Merlin engine installation for the Mk II, but also tested the dihedral horizontal tailplane in January 1942, (below) and the dorsal fin extension commonly associated with the Beaufighter Mk X. The original 'flat' tailplane was fitted in this test.







A landing gear retraction test being carried out on a Beaufighter Mk I in the primitive surroundings of a sand-bagged blast pen. Like most ground crews, the RAF men coped magnificently, despite the lack of proper servicing facilities. (J. Lampard via B Marsh)

(Right) Unusual in that it carries full squadron and individual aircraft code lettering in North Africa, this Beaufighter Mk I was used by No 252 Squadron. (J. Lampard)

Fuel drums and other equipment surround this Beaufighter Mk I (T4723/N) as it is worked on by a mobile repair team. More than likely it was later able to fly out from this desert landing place after ground crews completed their repairs. (J. Lampard)





Ground specialists attached to squadrons operating in the desert had to be mobile, as their charges were often repairable - if they could be located. This Beaufighter Mk I (T4723/N), which had suffered minor damage from a crash landing away from its base is being attended to by a mobile repair team. (J. Lampard)



A Beaufighter Mk I (T4831/D) of No 252 Squadron has just had the wheel chocks removed as the pilot runs up his engines as he prepares for take off from Idku (Landing Ground 229) near Alexandria, Egypt during March of 1942. (J. Lampard)



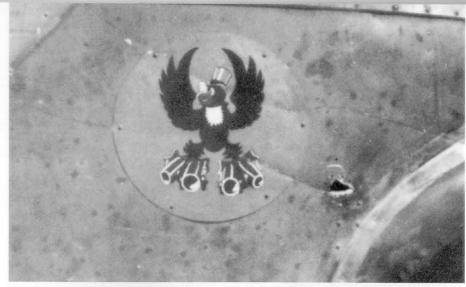


Believed to have been serialled T4919, this Beaufighter Mk I "K for King" chose the edge of a desert wadi to make a crash landing after sustaining battle damage. (J. Lampard)



It was relatively unusual for RAF aircraft to display their full squadron code letters while operating in the Middle East, but this Beaufighter Mk I (ZT4882) of No 256 Squadron, was one exception that proved the rule. (J. Lampard)





This artwork was carried on the Beaufighter Mk I flown by Flight Lieutenant Frecker, believed to have been with No 252 Squadron, at Idku in November of 1942. (J. Lampard)

The "Snake" legend under the horizontal stabilizer of this Beaufighter Mk I indicates that it was destined for use by a RAF unit in Burma and was staging through a base in the Middle East.

A desert Beaufighter Mk I flown by Fiight Officer Horn of No 252 Squadron and coded "T" carried this artwork of a British lion chasing a symbolic swastika out to sea on a speedboat. (J. Lampard)



Beaufighter Mk II

R2058, the first of the three Beaufighter Mk I airframes reserved for testing the Rolls-Royce in-line engine installation, flew for the first time on 14 June 1940. The flight was made from Rolls-Royce's airfield at Hucknall and the power plants fitted were 1,075 hp Merlin X liquid cooled engines. The second test aircraft, R2061, flew shortly afterward with the same power plant installation. The longer cowlings for the liquid-cooled, in-line engines did nothing to improve the Beaufighter's swing on take-off or directional stability in flight and both Mk II prototypes were experimentally fitted with a taller fin and rudder to improve handling.

A third prototype Beaufighter Mk II joined the Merlin test program, although this aircraft had a short life. On 13 October 1940 the Luftwaffe bombed Filton, destroying R2062 in the process. This setback did not prevent the successful outcome of the test program on the inline engined Beaufighter and production commenced late in 1940. On 22 March 1941, the first production Beaufighter IIF (R2270) was test flown.

Despite reports of poorer handling qualities compared to its radial engined counterpart, a

Although Beaufighters were to have had Griffon engines as the main alternative to the Hercules radial, these were all allocated for Naval aircraft. This Mk IIF (T3177) was test flown with Griffon engines before Bristol was obliged to fit Merlins to all Beaufighter Mk IIs.

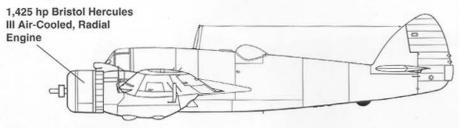


Among the alternative power plant installations designed for the Beaufighter as an insurance against shortages of Hercules radials were these aerodynamic cowlings for the proposed Rolls-Royce Exe engine, which were experimentally fitted to this Beaufighter Mk II (R2061).

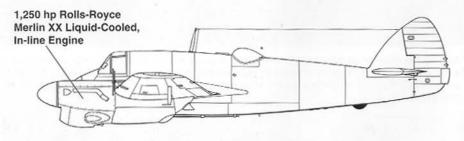


Engine Development

Beaufighter Mk I



Beaufighter Mk II



single (and only) contract for some 450 production Beaufighter Mk IIs was awarded. The decision to fit the Merlin XX engine rather than the preferred Griffon (which was reserved for use in naval aircraft) meant that production Mk IIs used modified outboard Lancaster engine nacelles with a wedge-shaped insert for the firewall and throttle connections.

Merlin X engines, fitted in the three prototypes, were also used for early production Mk IIs pending delivery of enough Merlin XX power plants. But the supply of these 1,250 hp engines was increasingly earmarked for Lancasters and resulted in numerous Beaufighter Mk IIs being delivered to maintenance units without engines. Production of this model ended in July of 1942.

All in-line engined Beaufighters, apart from the experimental Mk Vs, were designated as Mk IIFs and a total of nineteen squadrons were fully or partially equipped with them. A further twelve Fleet Air Arm units, spread across the world from Gibraltar to Australia, used Mk IIs in varying numbers. At least ninety-seven aircraft were transferred to the Admiralty and the naval Beau II (which had no special modifications) generally spent its life doing training, target towing and other second line duties.

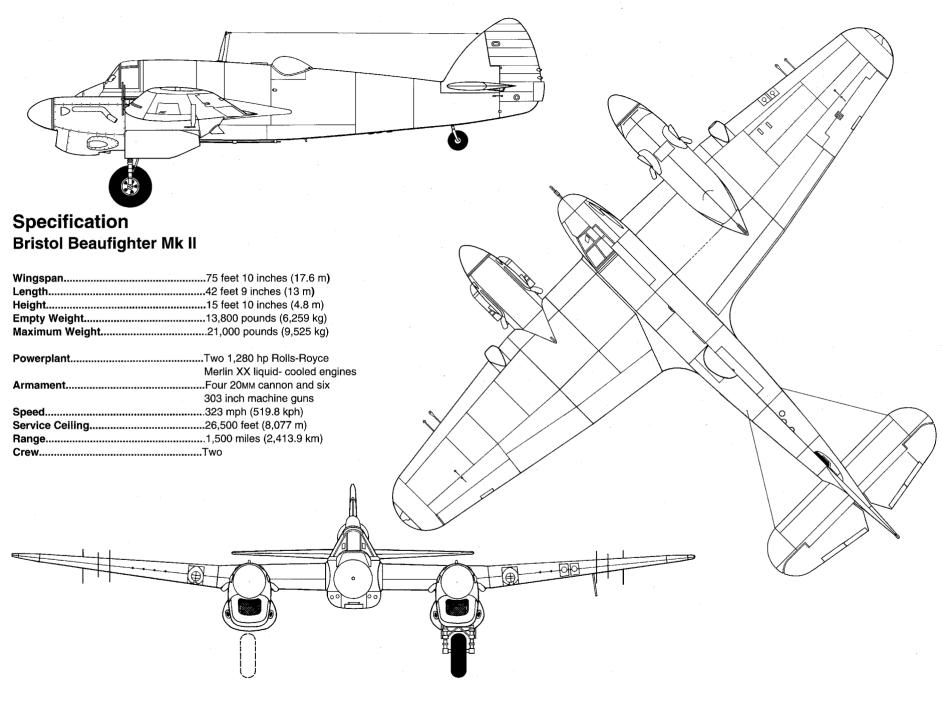
In general, the delay in engine deliveries reduced the effectiveness of the Merlin Beaus, particularly as by the time it was available, the threat to the British Isles from German night raids had significantly diminished. Also, the nocturnal interception role was already well filled by Hercules engined Beaufighters. The Mk II saw relatively little action against the Luftwaffe and only two are known to have been lost in air combat.



This Beaufigher Mk IIF night-fighter shows the affects of air flow on the sooty RDM2 Night Black paint finish, particularly around the propeller spinners, nose and wing leading edges.

In service, the thick RDM2 Night Black finish helped RAF security since the Red squadron and individual aircraft codes and serial numbers failed to show up well. This dispersed Beaufighter Mk IIF is typical in that regard.







Beaufighter Mk III and Mk IV

Neither of these two projected 'slim fuselage' Beaufighter developments were actually built. The Mk III was to have had Hercules VI radial engines and the Mk IV Rolls-Royce Griffons.

Beaufighter Mk V

The British obsession with fitting ineffectual gun turrets to otherwise perfectly good fighters, even ones with vastly superior built-in armament, extended to the Beaufighter during March of 1941. Two Mk II airframes, R2274 and R2306, were converted to take a Boulton Paul BPA.I (Defiant type) turret aft of the pilot's cockpit and were redesignated as Beaufighter Mk Vs. Armed with four Browning .303 inch machine guns, this turret was intended to replace not only all of the wing guns, but one pair of cannon. The observer's dorsal "blister" was faired flush with the fuselage using a transparent panel which retained the lower edge "scoop out" of the original design.

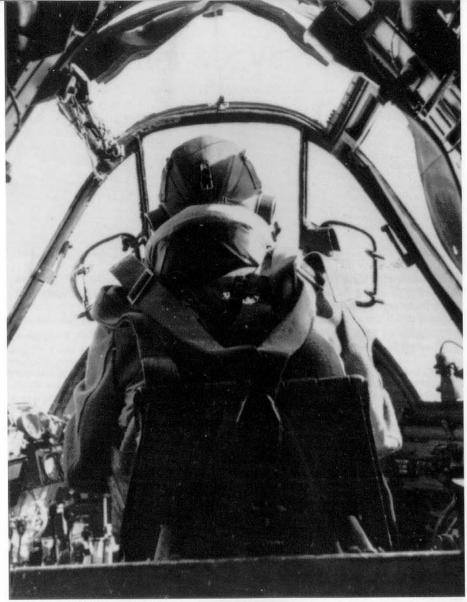
Although turret armament did have some merit in attacking enemy bombers at night, as was demonstrated by RAF Defiants and the Luftwaffe's Schrage Musik upward firing cannon, the advantages were not so obvious as to justify series production of the Beaufighter Mk V. It

In an effort to surprise enemy bombers at night, Bristol experimented with mounting a Defiant four-gun dorsal turret on Beaufighter Mk II (R2274), which then became the prototype Beaufighter Mk V. Unlike the Boulton Paul fighter, the Beaufighter Mk V had forward-firing guns, one pair of its 20mm cannon being retained. Only two Mk Vs were built.

was realized that standard aircraft could handle the interception task well enough.

Both Mk Vs were operationally tested, the first example being passed to No 406 (RCAF) Squadron, after a period with the A&AEE and the FIU. The second machine apparently went straight to No 600 Squadron and served until it was destroyed in an accident. Apparently the aircraft went out of control and spun into the ground on 29 September 1941.

A&AEE prepared a handling report on the turret Beaufighter in August of 1941 and among the performance figures recorded was a further drop in top speed, to 302 mph at 19,300 feet. Limited squadron use also revealed that the turret body obstructed the pilot's escape hatch. All Beaufighters were fitted with a floor hatch which could be quickly unlocked in an emergency and forced back by the slipstream to form a windshield for the crew, each member of which then dropped straight through the hatch. No further Beaufighter Mk Vs were built.



A Polish fighter pilot of No 307 *Lwowski* Squadron in the cockpit of his Beaufighter Mk IIF. The forward field of view from the Beaufighter cockpit was excellent. (Dr. Jan Koniarek)

(Right) A pair of overall Night Black Beaufighter IIFs of No 307 *Lwowski* Squadron, Polish Air Force at Exeter during 1942. The Polish unit was the first non-British unit to be given aircraft equipped with the secret Air Intercept (AI) radar. (Dr. Jan Koniarek)



Four Beaufighter IIFs of No 307 *Lwowski* Squadron, Polish Air Force perform a daylight training mission during 1942. The squadron was based at Exeter. Later the unit transitioned to the Beaufighter VI and flew long range patrols out over the Bay of Biscay. (Dr. Jan Koniarek)





Beaufighter Mk VIs taxi around the forlorn wreck of a Mk II which carries day fighter finish, which was relatively unusual on a Merlin engined aircraft. The only identification visible on the aircraft is the individual code letter R, just behind the roundel.





This Beaufighter Mk II was fitted with Merlin XX engines in September of 1941. The reduced bulk of the engine nacelles helped reduce drag, but the overall RDM2 Night Black finish produced plenty of drag of its own.

(Below, Left) In a heavy landing the Merlin engines of the Beaufighter Mk II did not have the cushioning effect of the big Hercules radials. This aircraft was well and truly shredded and shorn and was a total write-off -- but the Canadian crew emerged from the wreck unscathed.

A Beaufighter Mk II (T3082) on the ramp at Fayid, Egypt during 1943. Despite their lackluster performance, Beau Mk IIs were widely used. Once their usefulness as night fighters had passed, many were pressed into service as advanced trainers.



Beaufighter Mk VI

Output of 1,670 hp Bristol Hercules VI engines steadily increased and by late 1941 enough were on hand to initiate production of a much-improved Beaufighter variant, the Mk VI. With the new engines the top speed of the Beaufighter was raised to 333 mph at 15,600 feet, with a cruising speed of 243 mph.

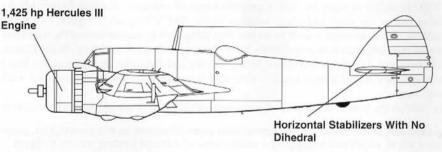
Some minor modifications were made to the airframe, the most obvious external change being the installation of a single Vickers 303 inch K gun in the observers canopy for rearward defense. This blister had to be redesigned and strengthened by framing to take the gun mount. Wing bomb racks were also introduced and the horizontal tail plane was modified with some 12 degree of dihedral.

Extra wing fuel tankage (a 50 gallon tank in the starboard wing gun bay and a 24 gallon tank in the port bay) gave the Beaufighter Mk VIC a range of 1,810 miles compared to 1,480 miles for a standard Mk VIF, the F and C suffix letters continuing to denote Beaufighters built for what had become widely divergent roles. On the one hand, Fighter Beaus were faster at altitude where the extra speed margin was appreciated, particularly when the airframe was adapted to take the centimetric AI Mk VI or Mk VII radar sets in an elongated "thimble" nose radome.

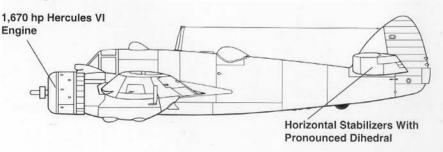
On the other hand, Coastal crews wanted performance "on the deck", their shipping attacks taking place at 500 feet or less. Bristol therefore responded to this need by cropping the impellers and locking the blowers of the Hercules VI engine to produce the Hercules XVII. These modified power plants provided a useful performance surge at low levels.

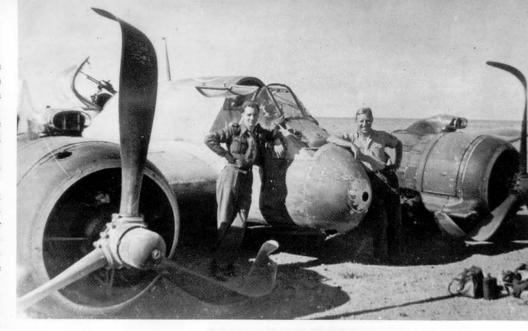
Fuselage Development

Beaufighter Mk I



Beaufighter Mk VI





Looking pleased to be down in one piece, this Beaufighter VI crew of No 252 Squadron have neatly stacked their kit in front of their belly-landed aircraft and are doubtless about to hitch a lift with the truck that brought the repair crew to the crash site. The Beau has been fitted with a Vickers K gun in the observer's cockpit, a not uncommon modification on desert Beaus. The gun camera hatch on the nose is open, probably indicating that the crew has removed the film.

The "Torbeau"

In late 1941 the Air Staff suggested that Bristol might develop a useful torpedo bomber with Hercules engines, Beaufort fuselage and Beaufighter wings. To Bristol a new aircraft seemed unnecessary and the company suggested that they modify the Beaufighter to carry a torpedo. In March of 1942, drawings were submitted and a trial installation was called for by the Air Staff on 13 April.

Two weeks later, X8065 was ready for inspection, complete with pick-up points for either a British 18 inch or an American 22 inch torpedo. The extra weight (a maximum of 2,127 pounds) had little adverse effect on the Beaufighter's flying characteristics and X8065, after successful manufacturer's trials, was sent to the Torpedo Development Unit at Gosport. There it unfortunately crashed due to engine failure, but the concept of the "Torbeau" had been well proven.

Bristol incorporated torpedo release gear in sixteen additional Mk VI airframes and all these went to a special service test squadron, No 254 Squadron at Dyce. Things were moving toward the formation of Coastal Command Beaufighter Strike Wings. Each of these three squadron wings was to be dedicated solely to anti-shipping attack, one with torpedo aircraft and two flying the fighter defense/attack role, a mutually-protective force working out its own combat tactics.



This Beaufighter MK VI of No 404 Squadron crash landed, apparently at Dyce, Scotland. The aircraft was jacked up on a pair of massive four wheel dollies under the main landing gear points to move it to a hanger for repair.

The first Beaufighter Strike Wing was formed at North Coates in November of 1942, comprising Nos 236, 254 and 143 Squadrons. Operations began on 20 November and, although these initial sorties highlighted some problems, not the least of which was that the promised fighter escort failed to appear, the idea had much merit.

Standard Beaufighter VIFs became the first of the type to see widespread service in the India-Burma theater when No 176 Squadron began flying defensive patrols over Calcutta in January of 1943. It was the Japanese who gave the Beau one of its lasting nicknames when attacks on ground targets in support of the Allied drive to retake Burma began. The name "Whistling Death," derived from the sound of twin Hercules engines at full throttle, became synonymous with Beaufighter operations.

Among the weapons used by Beaufighter squadrons to good effect in the Far East and elsewhere was the simple but deadly airborne rocket. Trials to adapt the Beaufighter VI to carry eight rocket projectile launch rails under the wings began in September of 1942 with a Mk VIC (EL329). Few technical difficulties were found and by April of 1943 Beaufighters armed with rockets were training with the Coastal Strike Wings.

The early operations from the island of Malta meant that the Mediterranean theater soon became familiar with the Beaufighter's distinctive engine note as the Allies drove the Axis from North Africa. What endeared the Beau to air crews and ground commanders alike was that it had the range and armament to reach and destroy virtually any target. When aircraft inevitably crashed for one reason or another, the crew had little fear of coming to additional harm if the pilot made a nice, flat approach. The Beau often proved strong enough to survive a heavy landing and allow the crew to walk away without further harm.

Following the early operations from Malta with Beaufighter Mk Is in the hands of Nos 252 and 272 Squadrons, Nos 227 and 153 Squadrons went operational, firstly from Malta and later, from bases in Algeria, the "old hands" frequently interchanging personnel with the newcomers in a combat zone where everything was in short supply. Nos 603 and 108 Squadrons began Beaufighter ops in 1943. No 108 was a night fighter unit which shared nocturnal interception of enemy aircraft with a Flight of No 89 Squadron on Malta.

While it did a fine job on all types of ops, the Beau's forte in the Middle East was ground



One of the first "Torbeaus" on the ramp at the Bristol facility, just before it entered service. It is believed tht this aircraft continued to fly as a Bristol test bed. The torpedo carrying Beaufighter Mk VI was the fastest aircraft in the world to actually use the aerial torpedo as a weapon in combat.

strafing. German and Italian airfields, supply lines, fuel dumps and other installations were constantly harried by the big, low flying Beaufighters with their heavy armament. Shipping strikes accounted for a large number of freighters, as well as small boats and launches being utilized by a retreating enemy to ferry supplies and particularly, fuel.

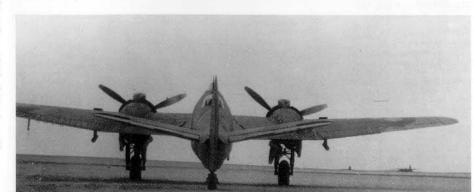
Production of the Beaufighter Mk VI totaled some 1,830 aircraft before Bristol and the shadow factories moved on to build the generally similar Mk X. For some duties this mark introduced a seat for a third crew member directly behind the pilot.

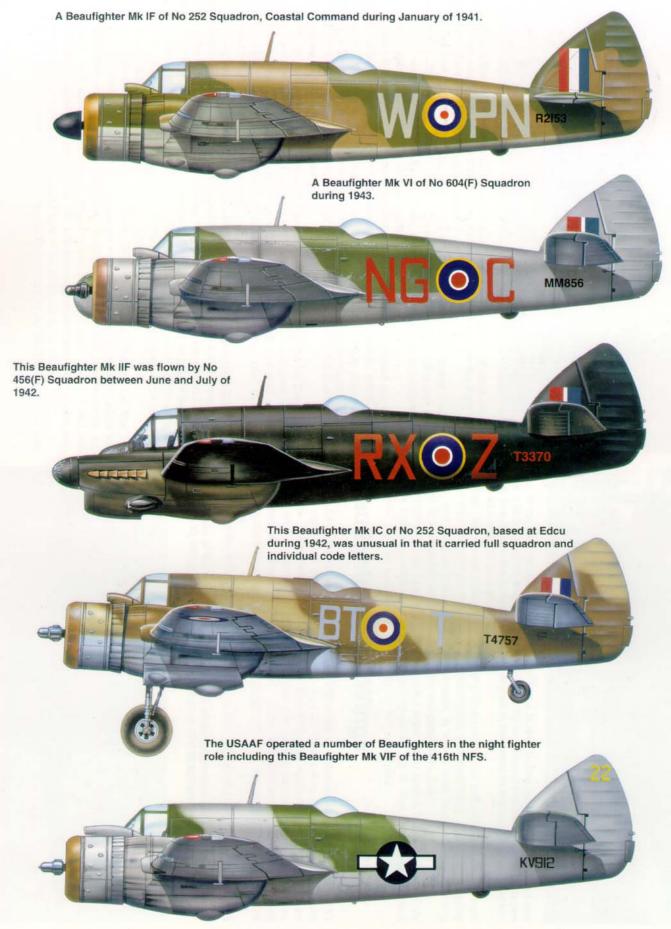
Beaufighter Strike Wings

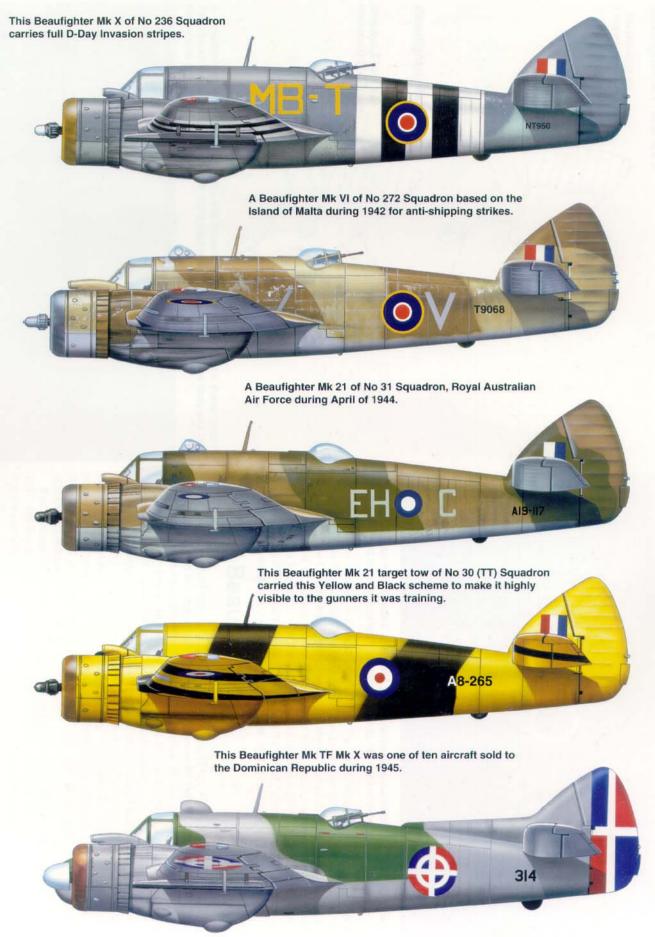
With its ability to carry the fullest possible range of ordnance, the Beaufighter Mk VI became one of the most important weapons in the RAF's long range fighter and strike squadrons. It was eventually used by no less than thirty-four squadrons around the world and included nine which flew in seven Strike Wings from various bases including, North Coates, Wick, Leuchars, Langham, Davidstow Moor, Stubby and Dallachy. In addition, the Banff Wing operated Beaufighters briefly, although this unit was primarily equipped with Mosquitoes.

Included in the Strike Wings' total of more than 300,000 tons of enemy shipping sunk, were

The vastness of the desert can be appreciated when compared to this Beaufighter, probabaly a Mk VI, which was occupying a small corner of a desert landing ground in Egypt.



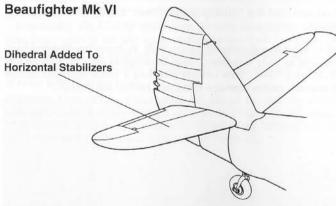




Horizontal Stabilizer Development

Beaufighter Mk I and Mk II





A Beaufighter Mk VIF (KW103) of No 406 Squadron, Royal Canadian Air Force (RCAF). The aircraft carries the mid-war RAF night fighter scheme of Medium Sea Grey and Dark Green with Dull Red code letters.





This Beaufighter Mk VIF HU-T of No 406 Squadron reveals the external starter cart, rear entry hatch and the rear fuselage breakpoint (just to the right of the crew man).

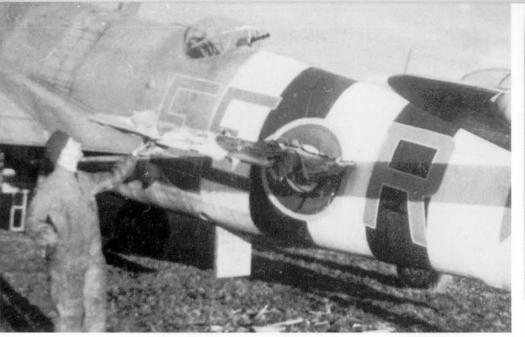
the eight U-boats credited to Coastal Beaufighters. The Strike Wings made the mere thought of challenging the British aerial blockade a nightmare to German seamen in the North Sea and the Atlantic. The Coastal Beaufighter force became the scourge of enemy convoys, their devastating firepower of cannon, rockets and torpedoes being equally adept at destroying naval vessels as well as transports. Not that this kind of warfare was a picnic. Flak claimed a number of low flying Beaufighters and there was always the risk of fighter attack, although losses to this cause remained mercifully light as the Germans went increasingly on the defensive.

USAAF Beaufighters

Four 12th Army Air Force night fighter squadrons, the 414th, 415th, 416th and 417th NFS were equipped with Beaufighter Mk VIs from the Summer of 1943. Of these, the 414th and 415th belatedly re-equipped with the P-61 in late 1944-45 and the 416th received some Mosquitoes shortly before the end of the war, but the bulk of the night interceptor missions in the MTO by U.S. squadrons were flown by the Beaufighter.

Over 100 Beaufighter VIFs were passed to the USAAF during March and April of 1943, these aircraft being equipped with either AI Mk I in the standard nose or Mk VII/VIII in the thimble nose radome. Initial night fighter training was undertaken with RAF Beaufighter units in the UK, many of the U.S. personnel being fresh from basic training in the States. The Beaufighter had previously been tested in the U.S. but few of the future crews had been checked out in the aircraft.

Key personnel of the four AAF night fighter squadrons left the UK during the Spring of 1943, heading for Algeria. On 10 May, the 414th NFS, based at La Senia, was the first to become operational. The 415th NFS followed two days later and occupied the same airfield.



Prominently marked with D-Day "invasion stripes" this Beaufighter VI of No 404 Squadron suffered a freak accident that caused considerable damage to the fuselage. The aircraft had a ground collision with another aircraft which somehow managed to put its wing right through the Beau's fuselage.



The other side of EE-R reveals that the "enemy aircraft" was a RAF communications type, not another Beaufighter.

It was sometimes difficult to tell a Beaufighter Mk I from a Mk VI, since the dihedral horizontal stabilizer was retrofitted to early airframes. This Beaufighter Mk I (X7633) was at Foggia Main, Italy on 10 January 1944. This aircraft also has a small plexiglas blister covering for the D/F loop antenna on the fuselage spine just behind the cockpit.



The 416th NFS operated from Algiers airfield and the 417th NFS made its home at Tafaraoui. Both squadrons began flight operations on 8 August.

As had many British pilots before them, some American pilots found the big Beau a handful to fly. Used to tricycle landing gear aircraft, particularly the P-70 on which most of them had trained in the U.S., some individuals had difficulty in allowing for the take-off swing and many Beaufighters were damaged in accidents. Other pilots swore by the Beau and appreciated its rugged construction.

The 12th AAF night fighter crews found relatively little "trade" as far as night interceptions went; the major war had moved on and numerous base changes were made before they all ended up in Italy, so the list of Beaufighter night kills remained modest. In total the four squadrons were credited with thirty-two confirmed victories while flying Beaufighters. These broke down as: eight for the 414th; eleven for the 415th; four for the 416th and nine for the 417th.

The first Beaufighter victory was a He 115, shot down by Captain Nathaniel Lindsay and Flight Officer Austin Petty of the 415th NFS on 24 July 1943. The last claim was filed by the 417th for a Ju 290 on 28 December 1944, the Beaufighter crew being 1st Lieutenant Malcolm Campbell and 2nd Lieutenant Robert McCullen. Numerous other enemy aircraft were credited as damaged or "probables", but as was the nature of night fighting in general, many rounds were fired at targets with inconclusive results.

In summary, the USAAF association with the Beaufighter was not as successful as it might have been; most of the aircraft passed on by the RAF had seen considerable service and the airfields used by the squadrons were often far from ideal. It was also true that there was, in 1943, no other type available and the night fighters cut their teeth on the Beau, learning much of value while the war lasted.

Crewmen pose with a Beaufighter Mk VIF of No 406 Squadron (HU-Z). The Airborne Intercept Radar's arrow shaped antenna is visible on the nose. The gun ports for the 20mm cannon are covered over with doped paper to keep out dust and dirt. The paper was blown away with the first burst from the guns.





Armed with a torpedo under the fuselage, a "Torbeau" (LX99) rests on the ramp at Foggia Main, Italy on 22 November 1943. This aircraft is also configured with the long carburetor air intakes on top of the engine nacelles. The small square on the extreme nose is the window for a strike camera.

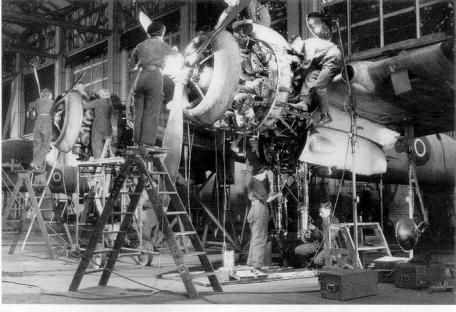
A Beaufighter Mk VI (KWI03) of No 406 Squadron RCAF ready for the next sortie. No 406 "Lynx" Squadron occupied a number of UK bases during its Beaufighter period, including Anglesy in Wales and Exeter in Devon.





A Beaufighter Mk VIF chocked on the grass at A&AEE, Boscombe Down, Wiltshire during February of 1945. This aircraft had previously seen service with No 409 Squadron.

This Beaufighter Mk VI has underwing launch rails for eight rockets and a prominent antenna for ASV radar mounted under the nose. The small dome on the nose is a housing for a strike camera, while under it is a light.



Two WAAFs and an airmen perform a major overhaul on the engines of this Beaufighter Mk VI at No 51 Operational Training Unit, while other maintenance personnel work on the main landing gear legs.





This Beaufighter Mk VIF (KV975) is equipped with the thimble nose radome that housed a centimetric Airborne Intercept (AI) radar. This type of radar and radome gradually replaced the earlier arrow head type antenna on all Beaufighters VIFs.

Six U.S. Army Air Force Beaufighters are parked on the grass at La Vailon airfield in southern France. The aircraft belonged to the 415th and 417th Night Fighter Squadrons. The squadrons shared the field with Lockheed P-38s, North American B-25s, Douglas A-20s and a French Air Force Martin Maryland. (USAF)



A Beaufighter Mk VI (probably V9442) parked on the grass at the Aeroplane & Armament Experimental Establishment (A&AEE) Boscome Down with its wheel chocks in place. The aircraft in the background are Spitfire Mk IXs.





These Beaufighter air crews are from the 416th Night Fighter Squadron, U.S. Army Air Force. The aircraft carried the name OL'E JOHN CONNELL on the nose in White along with a cartoon figure. (USAF)

A ground crewman stands by to remove the wheel chocks from this Beaufighter VIF of No 176 Squadron at Baigachi, India during late 1943. (A. S. Thomas via H. Fisher)





This Beaufigher Mk VI (MM934) of the 414th NFS, 12th U. S. Army Air Force carried a Black Panther insignia on the fuselage behind the cockpit. Beaufighters were used by four USAAF night fighter squadrons in the MTO.

Beaufighter Mk VII, VIII and IX

After the Mk VI, the next three sequential mark numbers were not used on British production Beaufighters, although a version with Hercules VIII engines fitted with turbo superchargers and four blade air screws was to have become the Mk VII. The mark numbers VIII and IX were reserved for Australian production but neither were actually used.

A Beaufighter Mk VIF (ND220) of No 176 Squadron on the Pierced Steel Plank (PSP) ramp at Cox's Bazaar, India during April of 1944. (R. Lythgoe via A. S. Thomas)



Beaufighter Mk X

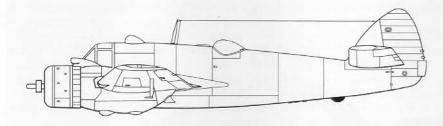
Outwardly similar to the Beaufighter Mk VI, the Mk X was initially a designation used to distinguish Coastal Command Mk VIs fitted with Hercules XVII engines modified for low altitude attack. This version, which succeeded the Mk VI on the production lines in May of 1943, also standardized on centrimetric AI Mks VII or VIII radar in a thimble nose radome.

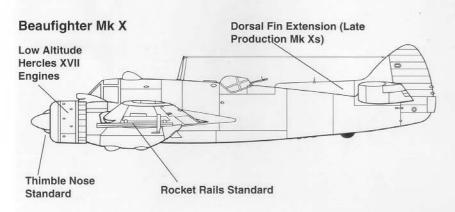
With its exceptionally heavy armament and ability to undertake a variety of roles, the Beaufighter Mk X represented a true multipurpose aircraft which was to serve the RAF well for the remainder of the war. As an alternative to a torpedo for anti-shipping strikes, the Mk X could carry two 500 pound bombs under the fuselage plus a 250 pound bomb under each wing. A 200 gallon drop tank could replace the torpedo on the centerline fuselage rack.

Late production Beaufighter Mk Xs had a prominent dorsal fin extension carried forward almost to the gun cupola, and the wings developed for the Mk XII, which were stressed to take a 1,000 pound bomb on each side outboard of the engine nacelles, were also fitted to late production aircraft. A total of 2,205 Mk Xs were built, including the last example delivered (on 21 September 1945, serial number SR919).

Fuselage Development

Beaufighter Mk VI







A Beaufighter Mk IX of No 19 Squadron, South African Air Force makes a rocket attack on an enemy headquarters at Zuzemberk, Yugoslavia early during February of 1945.

Beaufighter TT Mk 10

With the end of the war, numerous RAF combat aircraft were adapted to undertake less aggressive roles, the Beaufighter being no exception. Towing targets became an important second line task as training of a new generation of airmen began.

Following a prototype installation of a standard "windmill" towing winch on a Beaufighter Mk X (NT913), a number of conversions were made to standard airframes. This aircraft flight-tested the winch, set on the port side of the fuselage below the observer's position, in May of 1948. It was followed by thirty-four TT Mk 10s, the airframe conversion work being carried out between 1948 and 1950. The TT Mk 10s were flown by five squadrons in the UK, the Middle East and Far East.

Final Sortie

On 12 May 1960, the final operational sortie by an RAF Beaufighter was flown by TT Mk 10 (RD761) of the Seletar Base Flight at Singapore. This target-towing sortie was the culmination of many hundreds before it, flown by an aircraft that remained reliable and adaptable right to the end.

Beaufighter Mk XI

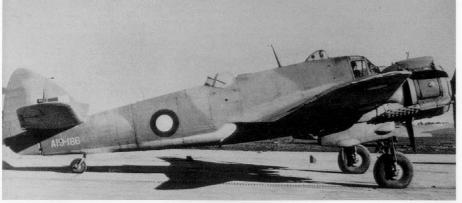
To distinguish Beaufighter Mk Xs without torpedo release gear, Bristol allocated the aircraft the Mk XI designation and built 163 examples. These aircraft completed the total of 5,562 Beaufighters built in Britain, although the last one, a Mk X, was not rolled out until after the end of the war, on 21 September 1945.

Beaufighter Mk XII

A final variant of the Beaufighter powered by Hercules 27 engines, the Mk XII, was canceled due mainly to the non-availability of Bendix carburetors. The strengthened wing designed to take two 1,000 pound bombs, originally intended for the Mk XII, was adapted for late production Mk Xs.

This Beaufighter Mk X (KW338) was one of the trials aircraft which tested the aerial torpedo for the last production models. The aircraft was configured with flame-damper exhausts and doped over cannon ports.





Before Beaufighter production began in Australia, a number of pattern aircraft were shipped out from the UK. This Beaufighter TF X, (ex-LZ327) was given the Royal Australian Air Force serial A19-186.

Post War Operations

Although a considerable amount of "second line" flying lay ahead of the Beaufighter when the Second World War ended, that event was not quite the end of its combat operations with the RAF. The immediate postwar years saw considerable unrest around the world as nationalist groups strove to change their former colonial status.

In Malaya, Chinese communist insurgents attempted armed insurrection, but the fighting was contained by British troops with extensive air cover from RAF and Commonwealth squadrons flying Operation FIREDOG sorties from 1948 to 1960. The first strike against communist positions was carried out by Beaufighter TF Mk 10s of No 45 Squadron on 19 August 1948. Then based at Negombo near Colombo in Ceylon, the squadron was obliged to station a detachment of Beaufighters at Kuala Lumpur to be within range of its targets. With No 84 Squadron at Tengah, Singapore, No 45 Squadron flew Beaufighter strike sorties on a virtual

This Beaufighter TF X (NV862) of No 211 Squadron was flown by Warrant Officer Alf Wythe, DFM and Warrant Officer Tom Wilson. The aircraft carries the White Southeast Asia recognition markings on the fin and horizontal stabilizers and SEAC roundels. (H. Hurtell via A. S. Thomas)



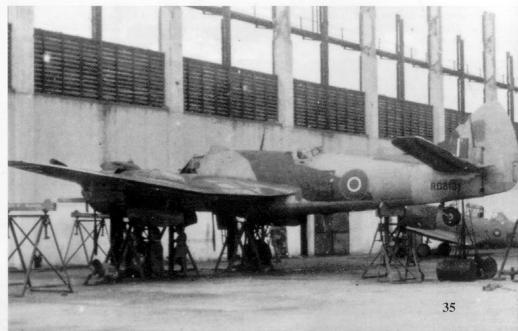


This Beaufighter X (RD785) was fitted with the distinctive cigar shaped long range fuel tank under the fuselage. The aircraft also has under wing racks with a pair of rocket rails attached, rather than the standard four rail mounting.

daily basis and continued to do so even after converting to the Bristol Brigand during October of 1949.

No 84 Squadron's Beaufighter period ended much earlier, and by October 1948 most crews had left for the UK to undertake a Brigand conversion course. By year's end the unit had moved to Iraq, but it returned to Malaya to fly its Brigands in action during 1950.

This Beaufighter Mk X (RD813) was up on jacks for maintenance and inspection at RAF Seletar, Singapore during 1946. The aircraft in the background is a North American Harvard (T-6) trainer. (H. Holmes)



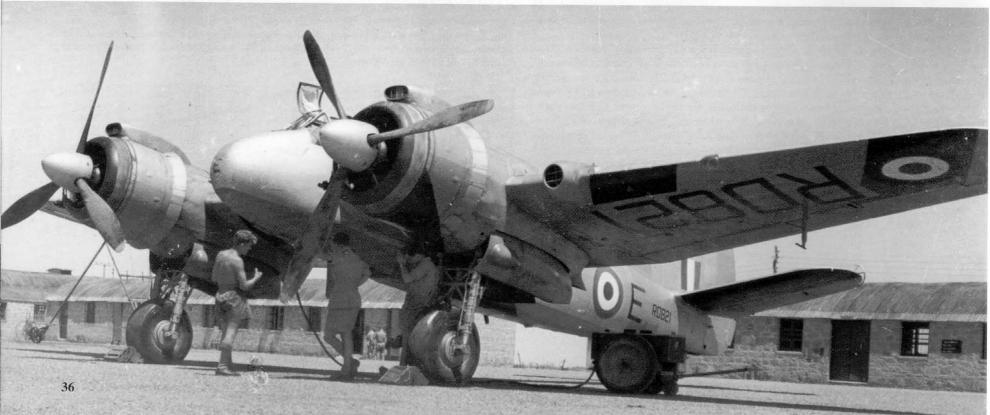


As with many Second World War first line aircraft, the Beaufighter spent its last service days towing gunnery targets. This Beaufighter TT 10 (SR912) carries the standard target tow Yellow and Black markings and has its drogue extended on a flight out of Kai Tak, Hong Kong.



There is nothing unusual about this Beaufighter TT 10 (RD758) but the location, Clark Field Air Base, The Philippines is unusual. The old Beau shares the field with Philippine Air Force F-86s and USAF C-47s on 14 March 1958.

It is believed that this Beaufighter TT 10 (RD821/E) was almost certainly based in the Far East during the late 1940s. The aircraft has an external battery cart hooked up to provide the Beaufighter with electrical power.





This Beaufighter TT 10 (NT913) was one of the last to be converted from a standard Beaufighter Mk 10. There are a number of the Beaufighter's replacement, the Bristol Brigand, in the background, along with two Bristol 170 Freighter transports.

NT913 reveals the method of application of the Black and Yellow diagional stripes on the aircraft undersufraces. The uppersurfaces were Natural Metal. This was more or less the standard color scheme for RAF target tugs during the 1940s and 1950s.

It was as a target tug that the Beaufighter made its last operational flight in RAF service. This TT 10 (SR914) as part of the Seletar Station Flight, Singapore and made the last flight on 12 May 1960.





Beaufighter Mk 21

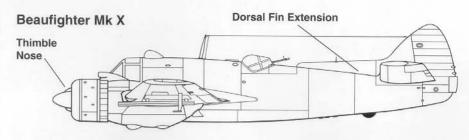
Following the supply of fifty-four Fairey Aviation-built Beaufighter Mk ICs to Australia during 1941/42, one aircraft (A19-2) was modified to take Wright Cyclone 14 GR-2800 engines. This move was made as a safeguard against the limited delivery of Hercules engines from Britain but in the event, enough Bristol engines were shipped to power all the Royal Australian Air Force's Beaufighters. Although the Cyclone installation was successfully flown, the engine was of larger diameter than the Hercules and would have required considerable modification to the nacelles to maintain the aerodynamic qualities of the Beaufighter's wing.

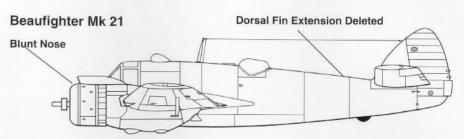
Incorporating the refinements of the British Mk X and designated Beaufighter Mk 21, the first Australian-built example (RAAF serial A8-l) was flown on 26 May 1944. Factories at Fishermen's Bend, Melbourne, Mascot and Sydney participated in the Beaufighter program to complete a total of 364 aircraft by late 1945.

RAAF Beaufighter 21s differed from their British counterparts in a number of ways. A larger bulge was installed ahead of the cockpit intended to house a Sperry auto pilot, and four wing guns were fitted instead of six, these being U.S. .50 caliber Brownings rather than the

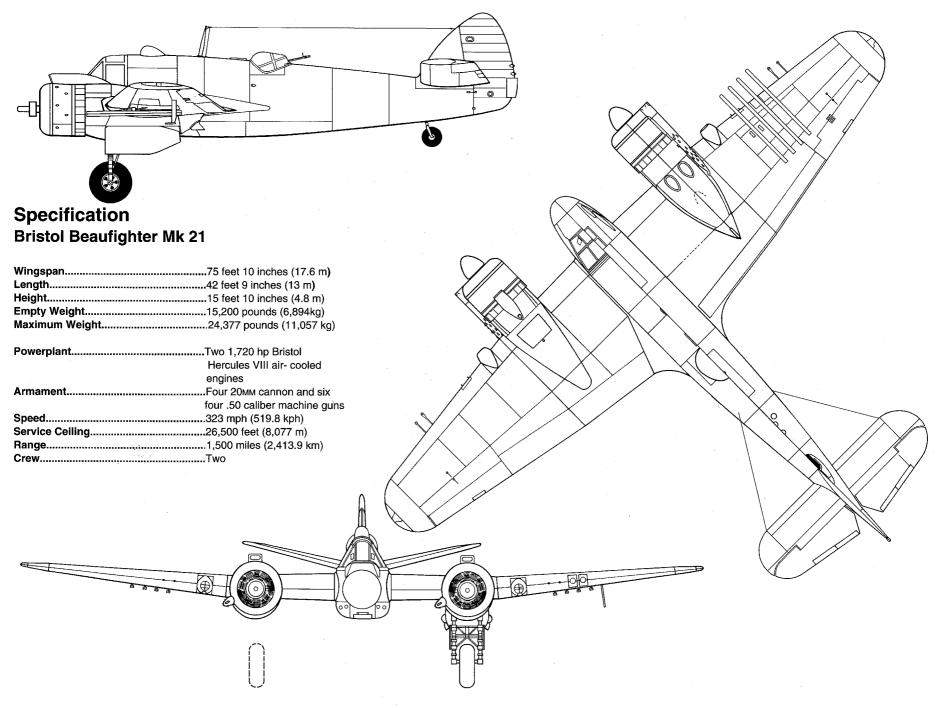
When Australia considered using U.S. Pratt & Whitney engines on the Mk 21, a single aircraft, A8-2. was modified to accept the new engines. Considerable work had to be done to the cowlings since the Pratt & Whitney engines were larger than the Bristol Hercules.

Fuselage Development









.303 inch Browning machine guns used in Britain. Supercharged Hercules XVIII engines gave RAAF Mk 21s the best possible performance, marginally better than any other Beaufighter under ideal conditions.

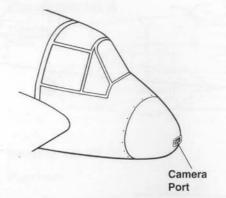
Two Australian squadrons, Nos 30 and 31 operated Beaufighters in the Southwest Pacific area during the Second World War. Nos 92 and 93 were briefly equipped with the Beaufighter, but only No 93 Squadron saw action before the Japanese surrender. Royal Australian Air Force Beaufighters, like their RAF counterparts, spent the early postwar years on second line duties before the type was stricken from the inventory in 1957.

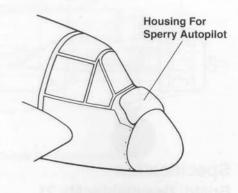
Carrying the serial A8-1, this Beaufighter Mk 21 was the first of some 365 aircraft built in Australia between 1942 and 1946. The bulge on the nose housed a Sperry auto-pilot. The aircraft was delivered to the RAAF during June of 1944 and remained in service until stricken off charge during August of 1949.

Nose Development

Bueaufighter Mk VI

Bueaufighter Mk 21









This Beaufighter Mk 21 was converted to the target towing role and assigned to No 30 (TT) Squadron. In this role, a few Beaufighters remained active in Australia until the mid-1950s. (via Nick Waters)



This Beaufighter Mk 21 was assigned to No 30 Squadron, Royal Australian Air Force. The squadron received its first Beaufighters during 1942 and was the first Australian based squadron to fly the Beaufighter. This Mk 21 is armed with eight rockets. (via Nick Waters)

Few Beaufighters survived to become memorials to wartime air crews, although there are at least three in Australia and the RAF Museum has a Mk 10. This Mk VI (marked as RD867) was at Henlow during the 1970s.



Overseas Customers

After the war there was a ready market for warplanes in countries needing to modernize their air arms and, although Britain faced strong competition from the U.S., some valuable revenue was earned in the lean postwar years. The Beaufighter did its bit in this respect, a total of at least fifty-six finding their way abroad, as follows:.

Dominican Republic:

In 1948, ten Beaufighter TF Mk Xs were modified back to Mk VIF standards, mainly by removal of the torpedo release gear, and sold to the Dominican Military Aviation Corps. The Beaufighters, all of which had thimble nose radomes and rocket launcher rails, were given the

The Dominican Republic was among the small number of foreign air forces that flew Beaufighters. The FAD received ten aircraft, which were numbered 306 to 315. This pair of Beaufighters were the last and are on the ramp at Filton prior to delivery.



Dominican three-digit serial numbers (306 to 315, No 309 previously being RD432).

The Dominican Beaus were used in action at least once when, in company with FAD Mosquitoes, they attacked the remnants of an abortive Guatemalan invasion force on 20 June 1949. The aircraft strafed a wrecked PBY with fifteen would-be invaders aboard which had been forced down off Puerto Plata the previous day. The Dominican Republic's last three flyable Beaufighters were retired from front line service with the single Escuadron de Caza-Bombardeo (fighter-bomber squadron) in June of 1954, the rest having been stripped to provide spares.

Israel:

During the build-up of the Israeli Defense Force/Air Force in the late 1940s, four Beaufighter Xs were among the types used on ground attack sorties by No 103 Squadron at Ramat David. These aircraft were part of a batch of six (UK-civil registered G-AJMB to G-AJMG) overhauled by Fairey Aviation at Ringway and purchased by R. Dickson and partners for a war movie.

One Beaufighter crashed in the UK on a ferry flight and one other Beaufighter apparently remained in the UK. The other four were flown out to arrive in Israel in July of 1948. The Beaufighter was one of a number of types that saw action against Syrian and Egyptian forces during Israel's early fight for independence.

In October 1948, No 103 Squadron lost a Beaufighter to Egyptian Flak over Iraq-Suweidan. A second Beau was damaged while attacking Egyptian aircraft on the ground at El Arish earlier that month. While Israeli ground crews performed minor miracles in keeping various obsolete aircraft serviceable under the most difficult conditions, the Beaufighter apparently disap-

This Beaufighter was returned from Portugal and restored for display at the Royal Air Force Museum, Hendon, London. The 20MM cannon in the foreground was removed from the aircraft for the display. (Dr. Jan Koniarek)



peared from inventory in November, shortly after a truce halted this phase of the fighting on 31 October.

Portugal:

Fifteen Beaufighter TF Mk Xs were bought for use by the Portuguese naval air arm, the *Forcas Aereas du Armada*, and were delivered during March and April of 1945. A further two were delivered in 1946 after being overhauled by Bristol. All of these aircraft came from RAF stocks and were operated from Lisbon's Portela de Sacavem airfield. In 1965, one of these ex-Portuguese Beaufighters (RD253) made a welcome return home for display at the RAF Museum.

Turkey:

The largest export customer for Beaufighters, Turkey, purchased twenty-three Mk Xs in 1946. In 1944, at least nine RAF Beaufighter Mk Xs were transferred to Turkey "in the field", retaining their RAF serials, but having Turkish national insignia applied.

The ex-Forcas Aereas du Armada (Portuguese Naval Air Arm) Beaufighter was returned to England during 1965. Once restoration was complete the aircraft went on display at the RAF Museum. The Portuguese received a total of fifteen Beaufighters which were delivered between March and April of 1945. (Dr. Jan Koniarek)



Bristol Brigand

Brigand TF Mk I

While the Torbeau was an undisputed success, it had numerous drawbacks as a torpedo fighter, not the least of which was the fact that the crew compartments were separated and a fully equipped navigator's station had not been necessary. Looking to future development of the Beaufighter and its other twin engined types, Bristol put forward a torpedo fighter development.

opment based on the Buckingham, which was an intended replacement for the Blenheim.

Designed to Specification H.7/42, the resulting Bristol Type 164 was a three seat aircraft powered by Hercules XVII engines, giving it an anticipated performance of 330 mph at sea level at a weight of 25,600 pounds. A single fin and a high set tail plane rather than the twin fin and rudder unit of the Buckingham were proposed but dropped, as was the name Buccaneer. The Type 164 became the Brigand and four prototypes were ordered in April of 1943.

This Bristol Brigand TF I (RH797) carries an overall White finish and is armed with both a torpedo and rockets on zero-length under wing launchers. This aircraft was later converted to the Brigand B Mk I standard and later served as the prototype for the T Mk 4.





The Gray and White "Coastal" color scheme accented the Brigand's chunky fuselage lines. This Brigand TF 1 (RH754) was on a test flight during 1947. The first eleven Brigand torpedo bombers were later converted to the light bomber role for service in tropical areas.

Similar in construction to the Buckingham and using the same jigs for final assembly, the Brigand's most obvious external recognition point was the raised cockpit, although the fuse-lage was an oval cross section and there were many other detail differences between the two aircraft.

The first flight of the prototype Brigand took place on 4 December 1944, this and other prototypes being powered by 2,400 hp Bristol Centaurus VII engines. Production Brigands were to standardize on the Centaurus 57 with water methanol injection to provide 2,500 hp.

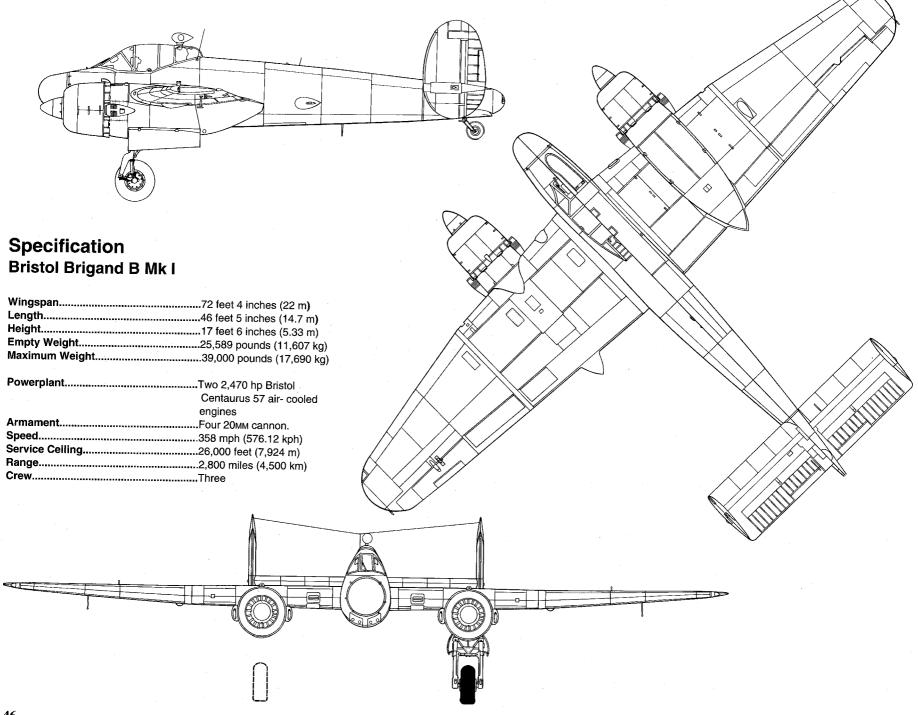
With the war in Europe drawing to a close, the Air Ministry's attention turned to the Pacific. Had the war against the Japanese lasted into 1946, new types like the Brigand would have seen service with Tiger Force, the RAF contingent to support the invasion of Japan. As

it was, the surrender of the Japanese brought about major changes in requirements for RAF military aircraft. Torpedo bombers were no longer wanted and consequently only eleven Brigand TF Mk Is were built. In 1946, these machines went to the Air/Sea Weapons Development Unit and to Nos 36 and 42 Squadrons of Coastal Command.

Withdrawn from service in 1947 for conversion to light bombers, these early Brigands were armed with four 20MM cannon under the cockpit floor and one .50 caliber machine gun in the rear of the cockpit. Up to sixteen rockets could be carried under the wings and as an alternative to a torpedo, the Brigand could carry mines or bombs under the fuselage.

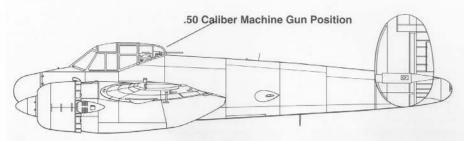
Brigand B Mk I

Production of Brigands switched to the B Mk I, similar to the TF I with a revised, thin frame canopy with a bullet-proof windscreen replacing the earlier canopy, and the rear gun was deleted. As light bombers, Brigands entered service with No 84 Squadron at Habbaniyah,

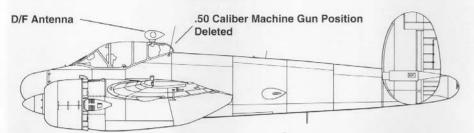


Fuselage Development

Brigand TF Mk 1



Brigand B Mk 1



Iraq during 1949 and also replaced the Tempests of No 8 Squadron in Aden. In 1950 they replaced the last of the RAF's operational Beaufighters flying with No 45 Squadron in Malaya.

For four years (1950-54) Brigands flew combat missions in Malaya as part of Operation FIREDOG. Using bombs, rockets and guns, they delivered a heavy weight of fire on terrorist camps and lines of communication. A total of 107 Brigand B Is were built.

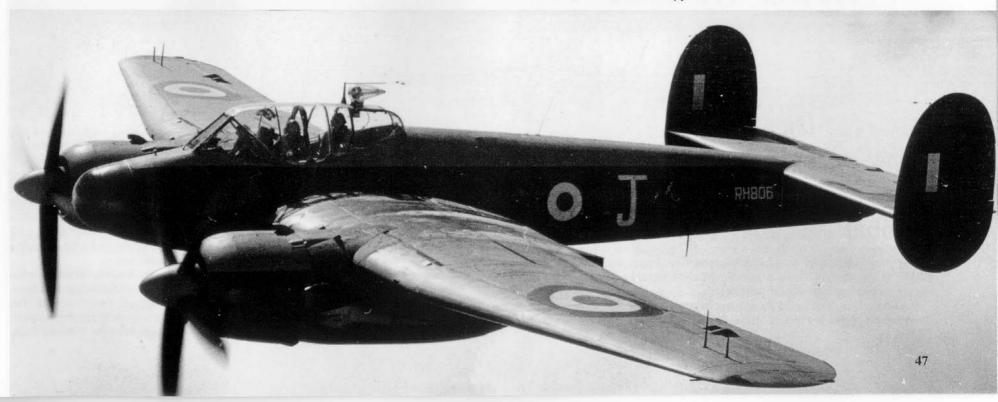
Brigand Met Mk 3

The Met Mk 3 derivative of the Brigand B I was an unarmed weather reconnaissance model with photographic capability. Only sixteen were built, to be used principally by No 1301 Met Flight operating out of Negombo, Ceylon for weather flights over the Indian Ocean.

Brigand T Mk 4

Fitted with AI radar, nine new Brigand T Mk 4s were built for Operational Conversion Units to train navigators in night operations. The Brigand T 4s were joined by a few examples of the bomber version which were converted to T 4 configuration to meet RAF training needs in the first half of the 1950s.

This Brigand B Mk 1 (RH806) carries the individual code J on the fuselage side. The aircraft is believed to have been assigned to No 84 Squadron. The B MK 1 differed from the TF MK 1 in that it had a modified canopy and no rear defensive armament.





Brigand T Mk 5

The T Mk 5 differed from the T 4 mark only in the type of AI radar fitted. Training continued on the Brigand until March of 1958, when the type was retired from RAF service. A total of 147 Brigands of all marks were built before the production line closed in 1950. Three Brigands were tested by the Pakistan Air Force, but no order was placed.

Combat

To combat the growing communist insurgency in Malaya, the RAF mounted Operation FIREDOG. Among the air units engaged in the anti-insurgent campaign were Nos 45 and 85 Squadrons, both equipped with Bristol Brigands.

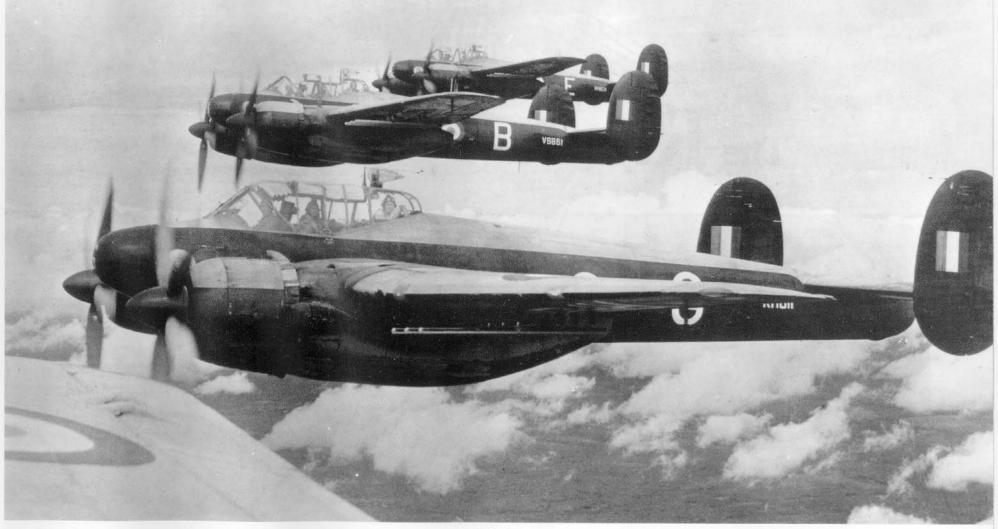
The Brigand was well suited for this type of action since it was heavily armed with four 20MM cannon, bombs and rockets. Based first out of Kuala Lumpur and then out of Tengah,

This Brigand B Mk I (RH813), on Malta during 1949, is camouflaged with Medium Sea Gray uppersurfaces and Gloss Black undersurfaces. The aircraft was on the strength with No 84 Squadron at Habbaniyah, Iraq.

on the island of Singapore, the Brigand squadrons flew anti-insurgent missions over all of Malaya. The Brigand had a crew of three pilot, navigator and raidoman, all being housed under the large canopy. In the tropical climate of Malaya, this canopy was a disadvantage in that it raised temperatures in the cockpit to very uncomfortable levels.

Attacks on communist targets were carried out in shallow dives, since the Brigand had a 3.5 G limit on the airframe. Normally, aircraft would attack in a follow-the-leader style, first dropping bombs, then repeating the attacks with rockets and cannon fire.

The Brigands remained in combat until 1953. During that time a number of problems arose with the aircraft that hampered operations. First there were a series of landing gear failures. The problem was traced to the rubber seals in the hydraulic landing gear extension jacks. The heat and humidity caused the rubber to shed fragments which were jamming the hydraulic lines and valves. The problem was solved with frequent inspections of the hydraulic fluids



A formation of Brigand B Mk 1s of No 84 Squadron return from a strike over Malaya during the Operation FIREDOG anti-terrorist campaign of the early 1950s.

and replacing the seals whenever particles were found in the fluid. Another problem surfaced with the aircraft's 20MM cannon. Gun gasses were building up in the long gun blast tubes and were setting off the high explosive shells that made up part of the ammunition supply. To solve the problem, the ammunition load was cut by half and only ball ammunition was car-

ried. A much more serious problem came up when a Brigand crashed after losing an engine. The problem was traced to the propeller. The crashed aircraft had thrown a propeller blade due to corrosion and the unbalanced prop had torn the engine from its mounts. Two other aircraft were lost to this type of accident before all propellers were changed. Finally, an aircraft lost a wing during a high speed pull out from a strafing run and this accident led to the Brigands being grounded and replaced by de Havilland Sea Hornets.



