



P1767, the prototype of the Fairey Barracuda in its initial clean form, as it was "rolled out" from the Hayes factory in December 1940.
(Photo: Imperial War Museum, ref. 104398)

Fairey Barracuda Mk. I-V

by David Brown

"I want a Barracuda I can call my own,
A plane the RAF can never steal;
And all those whiskered P/O Prunes
With their Mossies and Typhoons
Will have to fly in aircraft that are real.
As through the evening sky we slowly stagger;
A-waiting for the next poor chap to die;
I'd rather have a Barra I can call my own
Than have an aircraft that can really fly!"

(Attributed to Number 9 Naval Torpedo-Bomber-Reconnaissance Wing; sung to the popular wartime ditty "Paper Doll")

No fewer than 2,572 Fairey Barracudas of all marks were built for the British Royal Navy. Not only was the "Barra" supplied in greater quantities than any other naval aircraft but also it was probably the most disliked—at least by the majority of crews who flew it in action.

Yet, the same men who sang the many caustic songs dedicated to their "Barras" nevertheless achieved conspicuous successes against enemy shipping off the Norwegian coast and in strikes against the Japanese in the Bay of Bengal.

BACKGROUND TO BARRACUDA

On Saturday, May 29, 1937, the Admiralty informed the Air Ministry of its requirements for a Torpedo-Bomber-Reconnaissance (TBR) monoplane successor to the conventional but as-yet unbuilt biplane, the Fairey Albacore. After prolonged discussion—which included the suggestion that a two-motor design should be called for—the finally agreed details of Specification S.24/37 were sent in October to interested manufacturers. No fewer than 17 companies were informed; 13 airframe and four aero-engine factories in the United Kingdom.

The full Specification was issued on January 6, 1938. A month later, only six of the original airframe companies were invited to tender in competition.

By the end of March, all six designs were ready for consideration by a joint Admiralty/Air Ministry conference. Those of the Bristol Aeroplane Company and Blackburn Aircraft Ltd. were turned down. The Hawker Aircraft and Westland Aircraft designs offered features of considerable interest—power-operated wingfolding in the former and an enclosed weapons bay in the latter. The fifth company, Vickers-Armstrongs (Supermarine), submitted an ambitious design with a variable-incidence main-plane; but this was regarded as being too advanced.* The Fairey Aviation Company's submission of a shoulder-wing monoplane with a fully-retractable main undercarriage, powered by the recommended Rolls-Royce sleeve-valve, high-pressure-air cooled in-line "X" engine, was accepted as the most suitable. After further Staff discussions, two prototypes were ordered from Fairey in July 1938.

Consideration was given to ordering one or other of the Hawker and Westland designs, but both manufacturing concerns were fully occupied; Hawker with the fighter which was to become the Tornado and Westland with the army co-operation Lysander and the two-motor fighter Whirlwind. In September 1938, it was recommended that the Fairey Aviation Company should remain as the only contender for the S.24/37 contract; there was now no insurance against failure or protracted development periods.

* Built, as the Supermarine Type 322, to an Air Ministry Research & Development contract related to S.24/37; flying in February 1943 and unofficially named "Dumbo". Two prototypes, serial R1810 (Merlin 30-powered) and R1815 (Merlin 32).

SPECIFICATION S.24/37

Air Ministry Specification No. S.24/37 was relatively demanding. Performance details are included in the Appendix, for comparison with the finished products; but several other aspects are noteworthy. The British-built engine was to have a 100-octane rating, and starting was to be by means of a cartridge system, with the standard hand-cranked inertia starter as a back-up.

As the aircraft was to have a long-range reconnaissance endurance of eight hours—and control forces would be heavier with a monoplane—the Admiralty insisted on the provision of an automatic pilot, to reduce the fatigue suffered by the human pilot. A dual-control "kit" was to be delivered with the prototypes and to special order with production aircraft.

The Observer was to be given as much space as possible in his cabin, from which he was to be able to take bearings through 90° on either beam and through a downwards vertical angle of 70° on the beam. The main radio was to be a standard General Purpose set, operating on Medium and High Frequencies, controlled by the Telegraphist Air Gunner (TAG) but with a morse key for both rear-seat members. The Type 72 homing beacon was about to be installed in the Royal Navy's carriers and a beacon receiver was specified for the S.24/37.

The requirements for tactical roles were standard for TBR types—either a torpedo or a combination of bombs up to 1500 lb. weight; defensive armament was to be a single fixed forward-firing machine-gun, and a single rear-firing flexibly mounted gun for the TAG. A dive angle of 70° was demanded for the dive-bomber role, and the Specification suggested that some form of flap might be needed to control the speed in the dive.

The S.24/37 design was regarded primarily as a carrier-borne aircraft, but an alternative float undercarriage was to be available, so that the aircraft could be operated from battleships and cruisers fitted with "heavy" catapults. The float attachment was to permit the carriage and release of a torpedo, or bombs, in level flight.

A short-lived requirement was for the replacement of the TAG's position with a Boulton Paul Defiant-type four-gun turret (based on the French SAMM design). This was to permit the S.24/37 to fulfil the requirements of S.9/36, which called for a "Spotter-Fighter" with a secondary dive-bombing capability. The requirement was waived in the autumn of 1939 after initial Service experience with the Blackburn Roc turret fighter development of the Skua.

DEVELOPMENT

The Fairey Type 100 was designed by M. J. O. Lobelle, assisted by R. T. Youngman. It owed little to the earlier Battle and was a much more complex and sophisticated aircraft which required considerably more development time at all stages. The fuselage had to accommodate more hydraulic pumps and accumulators and electrical generators than had been needed in any previous single-engine aircraft. Yet its width and length had to be kept within Specification limits—the width being limited by the need to fit the aircraft to a catapult trolley. At the same time there was a maximum weight restriction.

Such was the promise of the design that the Air Ministry recommended it should be ordered "off the drawing board" as early as September 1938. Admiralty agreement followed in February 1939, and 250 aircraft

were ordered on August 10, 1939, with delivery expected in 1941. The name Barracuda was bestowed on the aircraft.

A severe blow now fell. In September, Rolls-Royce intimated that they wished to cease work on the Barracuda's intended Boreas (popularly but incorrectly known as the "Exe"), so as to release production and design capacity for the existing range of engines—Merlin, Peregrine and Vulture. The Bristol Taurus and Wright Cyclone air-cooled radials were considered, but neither was a 100-octane engine and the redesign needed to the fore end of the fuselage would have been extensive. The choice of the liquid-cooled Merlin VIII was inevitable, although it meant an equally inevitable increase in weight. In October 1939, Fairey began re-working the design for the new powerplant.

Prototype construction was slowed almost to a standstill during the summer of 1940, when an emergency programme gave over-riding priority to a small number of Royal Air Force fighters and bomber types. It was not until September that the Admiralty eventually persuaded the Ministry of Aircraft Production to reinstate full production of necessary naval aircraft.

THE PROTOTYPE

The first Barracuda prototype (P1767), flew at last on December 7, 1940, from Fairey's Great West Aerodrome, near Hayes, Middlesex. The engine was now the Merlin 30, a more powerful version which was also being installed in the company's Fulmar II naval fighter. In its original form, the prototype had an excellent performance, with a maximum level speed of 269 m.p.h. at 9,000 feet without an external weapons load, and 249 m.p.h. with a torpedo; the rate of climb while carrying the torpedo was 1,100 feet per minute. In production form, with radar and radio antennae to create drag, it was anticipated that the maximum speed would fall to about 250 m.p.h. in the clean configuration, with corresponding reductions in rate of climb and radius of action.

The general arrangements of the Barracuda prototype were, with one important exception, those of the production aircraft. All three crew members were housed under a continuous transparent canopy, with separate access to the three positions. The Observer's space, admidships, extended from the canopy to the bottom of the fuselage; his seat being on the floor. His field of view through the canopy and through the bulged "bow windows" below the wing-roots was probably better than in any other aircraft of conventional design. The forward section of the canopy over this cockpit was hinged to tilt upwards to act as a windshield; originally intended for the instructor-pilot in the dual control variant, it was retained in all production aircraft.

All fuel was stowed in wing tanks—the two main tanks (one in each inboard section) each containing 90 Imp. gallons, while outboard of the main tanks were two smaller overload tanks, each with a 24-gal. capacity. An external tank could be carried on the torpedo crutches, giving an additional 116 gal. for long-range reconnaissance missions. The prototype did not have the outboard fuel cells, although it was "fitted for".

The undercarriage was flush-fitting when retracted, even the outboard portion of each wheel-bay being covered by a hinged panel. The arrangement was ingeni-



Another view of P1767, showing the Albacore-type tail unit and the original form of the flap hinges, with the jack and the two fairings above the wing trailing edge. The installation on the rear-fuselage top-decking is a spin recovery parachute.

(Photo: Imperial War Museum, ref. 10439D)



A prototype Barracuda is catapulted from Victorious during carrier trials in Scapa Flow in mid-May 1942. The ship is at least 45° out of a very fresh breeze.

(Photo: Imperial War Museum, ref. 1712112)

P1767 in October 1941 after rebuilding with reshaped fin and rudder and high, braced tailplane. The small stub of the wing locking pin can be seen near the port wing-tip; with the wing folded, the pin locked into a socket on the underside of the tailplane. The flap hinges have been altered, but the gap between the flap and the mainplane has not yet been increased.

(Photo: Imperial War Museum, ref. 9811D)

P9642, the first production Barracuda I, seen in April 1942, on the hard-standing of what is now London Airport (Heathrow). Patches cover the position of the wing locking pins, removed in order to assess the difference in performance; as this amounted to less than two knots, the decision was made to retain the fixed installation, rather than replace it with retractable fittings.

(Photo: Imperial War Museum, ref. 10830E)





P9647, the prototype Barracuda II, showing the four-blade propeller needed to absorb the extra power provided by the Rolls-Royce Merlin 32 engine. Under the fuselage can be seen the 116-gallon auxiliary fuel tank, and outboard of the wing bomb-racks are the "lee-boards"—boundary-layer fences to prevent the spanwise spread of vortices set up when the flaps were used as dive-brakes. (Photo: Imperial War Museum, ref. 10996A)

ous, consisting of load-bearing beams which folded into channels on each side of the fuselage when retracted, and extended to a horizontal position. The oleos were mounted at the outboard extremities of the beams and were relatively short; radius arms connecting the main spar and the upper face of each beam retracted the right-angled assemblies and formed positive geometric down-locks after extension. In this way, a broad track was available without the necessity for 9-foot long oleos.

An alternative attachment for floats was designed, but the requirement lapsed in 1940 and no fitting was actually made.

Special flaps had been designed by R. T. Youngman,

and were in the form of independent aerofoils, attached to the inboard trailing edge of each wing by two hinges and a hydraulic jack extension. The flaps had four selective positions—zero incidence for normal cruising flight, a variable positive incidence for take-off and landing, 30° of negative incidence to produce maximum drag in a dive, and a folded position. The last position used the flap jack system to fold the trailing edge of the wings, inboard of the ailerons, upwards and forwards over the mainplane, to permit full wing folding. The wings folded aft about the rear spar attachment, the tips overlapping the tailplane; four men could unlock, fold, and secure each mainplane, using retractable hoops

An Observer of 787 Squadron, the Naval Air Fighting Development Unit, demonstrates the twin Vickers machine-gun mounting in the Telegraphist-Air-Gunner's cockpit of P9788. The ammunition drums are not fitted to the guns. Note the dinghy lanyard wire, held over the standard white diagonal stripe by patches of doped fabric. (Photo: via author)





P9667, the first production Barracuda II, seen in a 40° dive, with the flaps at a negative incidence. The monoplane air tail usually fitted to the Mk. XII torpedo has been omitted as its existence was a secret at the time. (Photo: Charles E. Brown)

on the underside of each wing to overcome the difficulty of the wing's height above the ground.

The most obvious serious shortcoming in the design to appear during trials was the effect of the turbulent wake behind the flaps when used as dive-brakes. The low-set tailplane was subjected to severe buffeting, and there was moderate buffeting with the flaps in the "down" position. Fairey had apparently foreseen the possibility, for an alternative empennage, with a tall fin and rudder and a high-set tailplane replace the prototype's Albacore-type tail. Delivery of the second prototype (P1770) was delayed by the need for the modification and did not fly until June 29, 1941.

In the meantime, P1767 had been loaned to 778 Squadron for deck-landing trials. These were carried out on May 18-19, 1941, aboard the brand-new HMS *Victorious*. Thereafter, P1767 was returned to the manufacturer for a new empennage and for the installation of operational equipment. In October, it was delivered to A.&A.E.E., the Aeroplane & Armament Experimental Establishment at Boscombe Down, Wiltshire, for hand-

ling trials. Unserviceability and the need for occasional modification delayed the completion of these trials until February 1942. The aircraft had become much heavier than intended because of the addition of equipment not anticipated in the Specification, and by the addition of structural strengthening. As a result, the Barracuda was seriously underpowered, and although the anticipated level speed of 250 m.p.h. was attained at 10,900 feet, the take-off was excessively long and the climb slow.

Development of the Barracuda airframe was a continuous process. In many instances, modifications were introduced to "fix" shortcomings as they appeared; and the need to reduce weight occupied both the company and the Royal Navy, and their engineers, throughout the career of the aircraft.

PRODUCTION—BARRACUDA MKS. 1 & 11

The first production Barracuda I (P9642) flew on May 18 1942, powered by the standard 1,260 h.p. Merlin 30 which had been installed in the prototypes. The decision

to replace the engine with a more powerful variant had already been taken, and only 24 more Barracuda Is were built at the Fairey's Stockport (Heaton Chapel) factory before the re-engined Barracuda IIs began to appear.

On return from Boscombe Down, P1767 had been modified to accommodate the Merlin 32, a low-altitude engine which offered 1,640 h.p. for take off—33% more than the Merlin 30. Flown for the first time with the new engine on August 17 1942, P1767 displayed a performance which, if not startling, was at least considerably improved. The airframe was unchanged, and the Merlin 32 used the same mountings and drove the same auxiliary

systems as its predecessor. A four-blade propeller unit replaced the Merlin 30's three-blade unit.

Sub-contract production orders were placed with Westland Aircraft in February 1941, with Blackburn Aircraft in August, and with Boulton Paul in November. With the first order to Fairey included, there were now 1,050 Barracudas on order. Of the subcontractors, only Westland at Yeovil, Somerset, completed Mark Is, the first of five (DN625–DN629) flying during the autumn of 1942. Thirteen Mark IIs followed from the Yeovil factory, but the balance of the order, for another 232 aircraft was cancelled in order to free Westland for

The prototype Barracuda III, DP855/G, at A. & A.E.E., Boscombe Down in February 1944, showing the flat-bottomed radome of the ASV X centimetric radar. At the left-hand edge of the picture there is a standard Barracuda II and what appears to be a white Barracuda II. Note that the Barracuda III retained the shaped torpedo crutches and the catapult spigots above the radome and below the Observer's side windows. The non-standard 3-blade propeller was replaced by a 4-blade unit on production aircraft. (Photo: Imperial War Museum, ref. 12629B)



Left:
LS789, a standard Barracuda II modified to carry the American AN/APS-4 (ASH) centimetric radar under the port wing. As far as is known, this variant was issued only to 817 Squadron, in the autumn of 1945, although three other Squadrons were intended to be so equipped. (Photo: Imperial War Museum, ref. ATP15045B)

Below:
An unusual view of a Barracuda III, taken after rain—which accounts for the odd appearance of the paint scheme. The aerials of the AYD radio altimeter can just be distinguished inboard of the wheel-bay doors, between the flaps and wings. Seen from either side they were in the form of an inverted "T". (Photo: Imperial War Museum, ref. 13076E)





Some mystery surrounds this Barracuda trials installation. Hitherto, it has been described as an "agent" dropper, but as trials did not commence until most of western Europe had been liberated, it is considered more probable that this is the air-portable Naval W/T Station test-flown on a Barracuda II at the beginning of 1945. The aircraft is P9795/G.

(Photo: Imperial War Museum, ref. MH4667)



BV727, a Blackburn-built Barracuda II of the Naval Air-Sea Warfare Development Unit, seen during trials with the Airborne Lifeboat adapted for carriage by the Barracuda. The trials were entirely successful and the lifeboat was put into limited production, for carriage by either the Barracuda II or the Barracuda III.

(Photo: Imperial War Museum, ref. A29658)

Supermarine Sealfire production.

Neither Blackburn nor Boulton Paul completed Barracudas during 1942 and the first of the former company's Barracuda IIs entered service in March 1943, followed two months later by the first from Boulton Paul. The revised Specifications for the aircraft were not received by the companies until December 1942; and this, undoubtedly, contributed to the delays.

In late 1942 and during the first months of 1943, there occurred a serious crisis of confidence in the Barracuda. The long gestation period, the need for one corrective modification after another, and the delay in delivery of production aircraft resulted in a Parliamentary campaign for the ending of the programme. The obvious disappointment felt by some of the naval squadron aircrew was matched by low morale in certain factories, where the men who were building Barracudas began to believe that the aircraft could or would not be put to good use. Not until the autumn of 1943, when the Barracuda took part in its first operation was the civilian disquiet stilled.

In the meanwhile, additional orders had been placed, and by the end of 1943, 2,843 Merlin-engined Barracudas were on order. The end of World War Two led to the cancellation of 65 aircraft from Blackburn and the last 208 on the Boulton Paul production line.

RADIO, RADAR & BARRACUDA III

The Barracuda Is and most of the Barracuda IIs were equipped with the standard naval "Air-Surface Vessel" radar—ASV IIN—a metric wavelength set with fixed yagi antennae mounted on the upper surfaces of the wings. This radar performed well; but it had limitations, among which were bearing inaccuracy and poor discrimination between targets. A centimetric radar was under development for the Barracuda as early as December 1941. Following successful trials in a Lockheed Hudson and a Fairey Swordfish in early 1943, it was ordered into production as the ASV X. Later in the year, the first Boulton Paul-built Barracuda II (DP855) was modified to become the first Barracuda III.

The Mark III differed from the II principally in the radar installation—a blister-type radome under the aft fuselage housing a parabolic antenna. Other differences concerned the redistribution of fixed weight. The main reduction was achieved by the deletion of two of the six wing ordnance fittings; other savings being negligible. In consequence, the empty weight of the Barracuda III

was 300 lb. greater than that of the II, and the centre-of-gravity was moved aft to the limit.

An extremely comprehensive radio "fit" had been intended, including Medium, High and Very High Frequency equipment, but development of the VHF set lagged and it was not until 1944 that alternatives could be installed. Some Barracudas had been fitted with fighter-type VHF sets for communications with escorting fighters, but this was a local modification and could not be applied generally. The final "fit" consisted of a British ARI 5206 H/F wireless telegraphy set and either an SCR 522 or an AN/ARC-1 VHF R/T—both American-built—and the latter installed in the Mark III.

Barracuda III production began in early 1944. The Mark III was intended for escort carrier operation in the anti-submarine (A/S) role, although it retained a torpedo-bombing and minelaying capability. Only 25% of the aircraft on the Fairey and Boulton Paul lines were built as Mark IIIs, interspersed among standard Mark IIs in the same batches.

Late in 1944, a Fairey-built Mark II (LS789) was modified to carry an American AN/APS-4 centimetric radar (known in Royal Navy service as "Air-Surface Homing"—ASH) in a "pod" semi-recessed below the port wing leading edge. Although this set lacked the all-round

A Barracuda II of the front-line Reserve Aircraft Pool held at Gibraltar for carriers operating in the Mediterranean. The "drums" below the cantilevered Merlin 32 are the engine radiators and the oil cooling radiator (below). Surprisingly, the engine, with accessories and propeller, was nearly as heavy as the remainder of the fuselage structure.

(Photo: Imperial War Museum, ref. 21927)



coverage of ASV X (renumbered ASV XI in December 1944), it was much lighter and its range and discrimination were almost as good. Not until the summer of 1945 were sufficient ASH sets available to permit installation in front-line Barracuda IIs, and the end of the War came before the four squadrons concerned could be equipped.

Radio altimeters were fitted to a number of Barracuda IIs and IIIs in the spring of 1944, these aircraft being intended for night torpedo and anti-submarine attacks. The aircrew never really trusted the AYD, which was susceptible to accepting spurious return signals—"when the light came on, you were as likely to be 100 feet under the water as 100 feet in the air."

WEAPONS AND ORDNANCE

Although designed with a single 0.303-in. machine-gun forward and another aft, the Barracuda was never actually fitted with the pilot's gun. Instead, a machine-gun was provided for the Observer, to cover the arcs on either beam which were outside the TAG's field of fire. This gun was installed in the prototypes and all the Mark Is, and even on Mark IIs (up to at least P9788); but it was discarded by the front-line squadrons before the first Barracudas went to sea. The TAG's single 0.303-in. Vickers Gas-Operated machine-gun was replaced by a twin mounting.

This aft gun mounting was an adaptation of the Albacore mounting, the guns being stowed under the fuselage decking, one panel of which had to be moved back to swing the guns out for firing. A prismatic sight was fitted on early mountings, but from 1944 a gyro-sights was available, permitting more accurate deflection shooting. The TAG fired his guns from a standing position, protected from the slipstream by the last section of the canopy, which hinged upwards. The exten-

sion of this large panel had the effect of an airbrake: not only did it reduce speed by about 10 m.p.h., but also it caused severe buffeting, making an already heavy and under-powered aircraft even more fatiguing to handle. Most squadrons developed tactics which forbade the TAG from using his guns, preferring to use "corkscrew" evasive manoeuvres to shake-off enemy fighters.

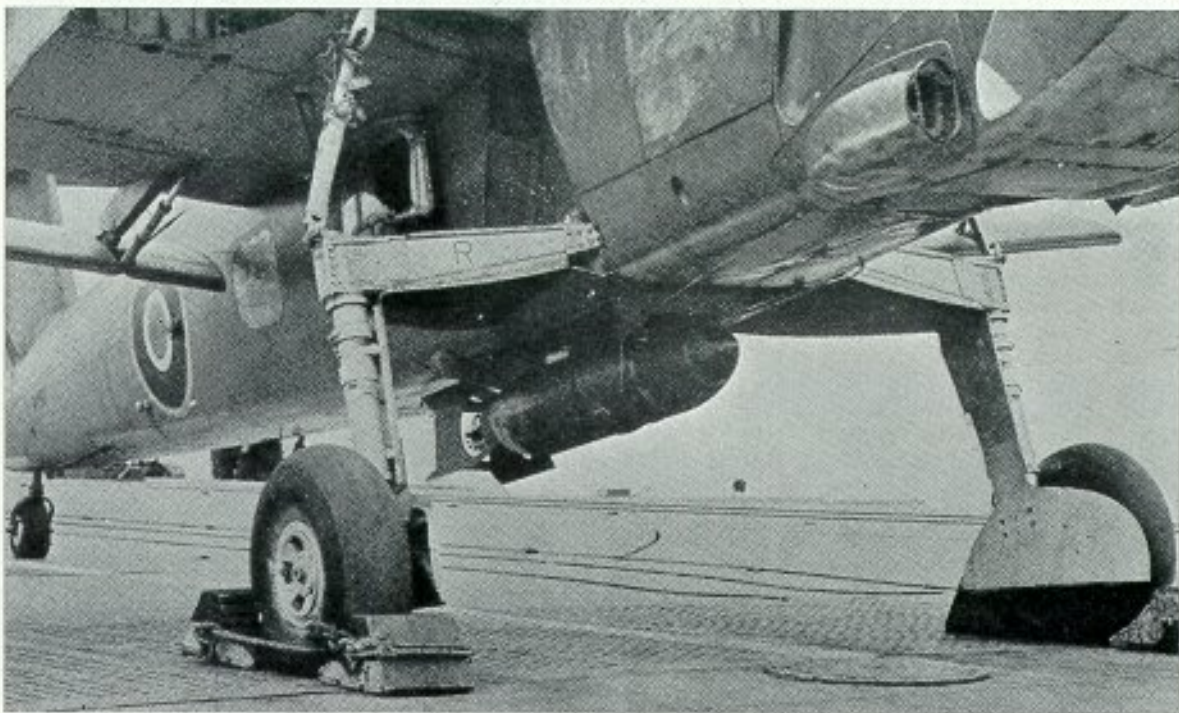
The 18-in. Mark XIIIB air torpedo was intended to be the Barracuda's primary weapon, delivered in level flight at about 200 m.p.h. after a steep diving approach. A computer formed part of the Type F Torpedo Director (sight) so that the pilot could aim directly at the bows of the target during the final half-mile run-in low on the water, while the computer adjusted the torpedo's course gyro to give the correct track to intercept. The torpedo's flight in air, between release and water entry, at about 180 m.p.h., was controlled by a wooden monoplane air tail which prevented roll and corrected pitch, so that the critical angle-of-entry was achieved correctly.

In point of fact, only 16 torpedo-armed Barracudas were launched on two missions, both against shipping off the Norwegian coast, and almost all other missions were bomb-armed. Although level bombing was possible with early aircraft—the Observer aiming through a ventral panel and controlling release—dive- (more than 60°) or glide-bombing were the invariable methods of delivery; the pilot aiming by means of a ring-and-bead sight. In 1943, the Royal Navy formally abandoned level bombing and ceased training aircrew for what was an unprofitable role for a single-engine attack aircraft.

The six underwing hardpoints could carry up to 1,500 lb. of bombs. The actual combination varied from squadron to squadron. In Home waters, three 500-lb. bombs could be carried, two under the port wing and one under the starboard; but the Barracuda's performance became so degraded in tropical conditions, that at least

The 1,600-lb. A/P bomb slung under a modified Barracuda II during carrier handling trials aboard Victorious in early 1944.

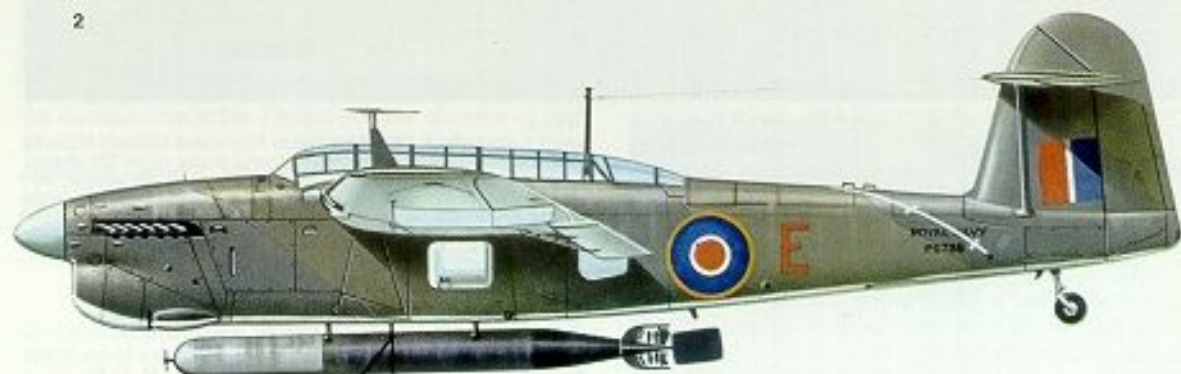
(Photo: via author)



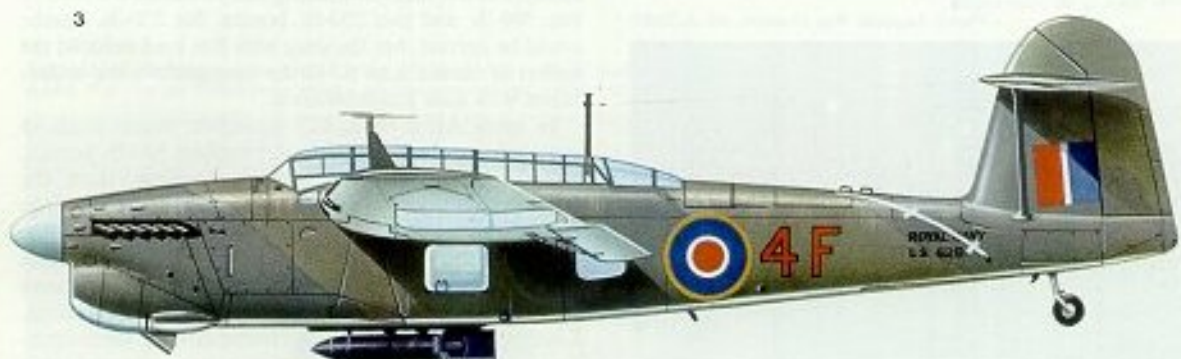
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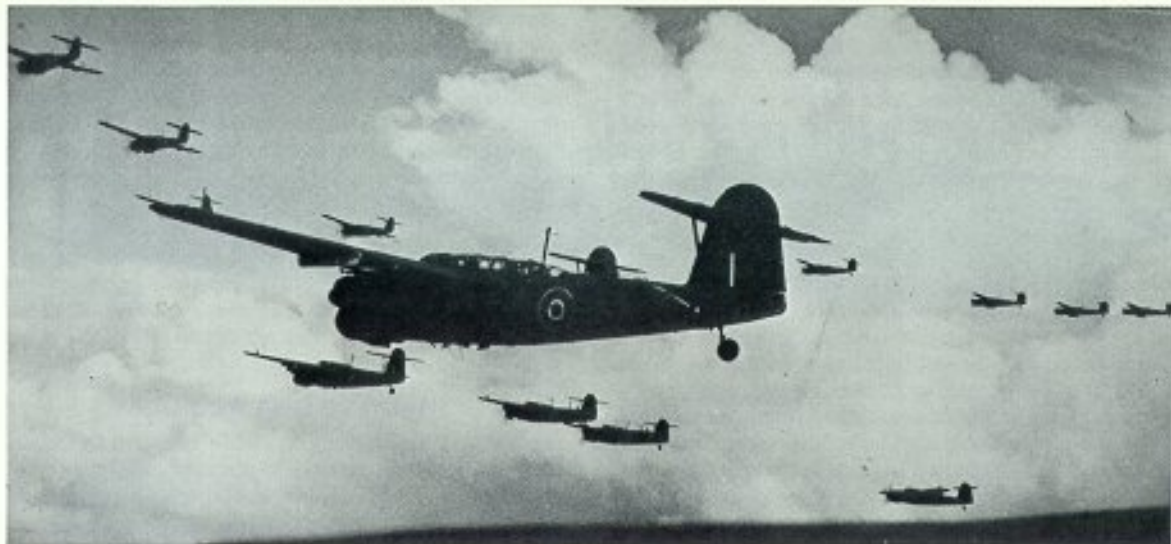
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3



- 1 The first prototype as it appeared in December 1941.
- 2 Barracuda II of 810 Squadron (HMS Illustrious) June 1943.
- 3 Barracuda II of 831 Squadron (No. 52 T.B.R. Wing from Furious) flown against Tirpitz on 3 April 1944 by Lt. (A) G. Russell Jones RNVr.



Above:

April 3, 1944: No. 8 TBR Wing goes to War—14 of 827 and 830 Squadrons' Barracudas seen from the Observer's station of an 827 aircraft. Only five are carrying 1,600-lb. bombs as not all the aircraft were modified for the big bomb. The aircraft closest to the camera is carrying a pair of 600-lb. A/S bombs. (Photo: A. J. Ward)



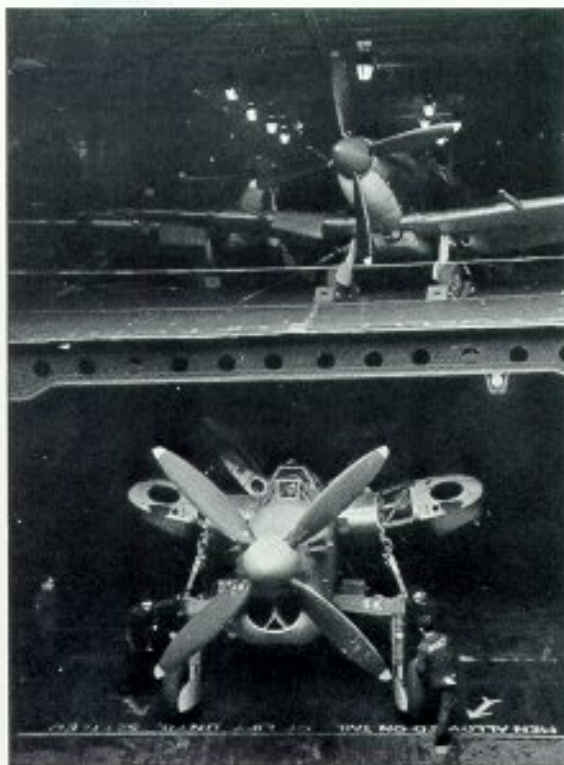
Left:

Torpedo-armed Barracudas of No. 8 TBR Wing depart for a strike on a convoy off Bad Island on May 6, 1944, in which they claimed to have scored five definite hits for the loss of one 827 aircraft to AA fire. (Photo: Imperial War Museum, ref. A26172)

Below:

"5K" of 827 Squadron is pushed out of Furious' lower hangar on to the lift. The Seafires "on the first floor" (830 Squadron) conceal their Merlin 32s under much more streamlined cowlings. Furious was the only fleet carrier to operate an Air Group all of whose aircraft were powered by the same Mark of the same engine.

(Photo: Imperial War Museum, ref. A22695)



one squadron (810) refused to accept the risks inherent in asymmetric take-off loading and substituted a load of two 500-lb. and two 250-lb. bombs. Six 250-lb. bombs could be carried, but the drag with this load reduced the radius of action and no strike operations were undertaken with such a combination.

In early April 1943, 827 Squadron began trials to establish the practicality of carrying four 500-lb. bombs, but the trial was abandoned incomplete, since the handling qualities of the aircraft deteriorated as badly as did the performance. At the same time, trials with a 1,600-lb. mine were successful, and it was proposed that the Barracuda should be modified to carry the American 1,600-lb. Armour Piercing bomb under the fuselage. Local strengthening of the airframe around the suspension points was required and, following successful trials and clearance in December 1943, modification kits were sent to the squadrons, while aircraft on the production lines were modified during construction.

On April 7, 1945, US Navy dive- and torpedo-bombers sank the Imperial Japanese Navy battleship *Yamato*. Three weeks later, the Royal Navy ceased torpedo training for Barracudas for the reason that such targets as were left could be dealt with by dive-bombing. The squadrons in the Far East were given the option of flying their aircraft as two-seaters, omitting the TAG and stripping his cockpit to save weight but retaining the internal fittings for the torpedo role.

Depth-charges could be, and were, carried by all Barracudas, the usual load being either three 450-lb. Mk. VII or four 250-lb. Mk. VIII weapons. A rare variation, used by 827 Squadron during the first attack on



Few photographs seem to have been taken of Barracudas in the Indian Ocean area. Here is the end of an 815 Squadron aircraft in the Indian Ocean—literally. The "Barra" suffered an engine failure on take-off, off the Nicobar Islands, on October 19, 1944, all three members of the crew being rescued. (Photo: Lt. Cdr. S. C. Farquhar, RN)



3A 767 Squadron Barracuda comes to grief during a deck-landing training session aboard the escort carrier *Rajah*, landing with too much sideways "drift" and causing the port oleo to collapse. The cloud of sawdust immediately in front of the aircraft has been thrown up from the wooden deck, under the impact of the propeller blades. (Photo: via author)

the German battleship *Tirpitz*, was the carriage of two 600-lb. anti-submarine bombs; these light-case high explosive capacity weapons were used for maximum blast effect against close-range AA weapons and gunnery directors.

FRONT-LINE SERVICE

In September 1943, 827 Squadron, ashore at RN Air Station Lee-on-Solent, was informed that it would be the first unit to exchange its Albacores for Barracudas. A Fulmar was attached for monoplane conversion and acquaintance with the Merlin engine. The personnel were sent on various Service and manufacturers' courses, and on December 15, the squadron personnel moved to

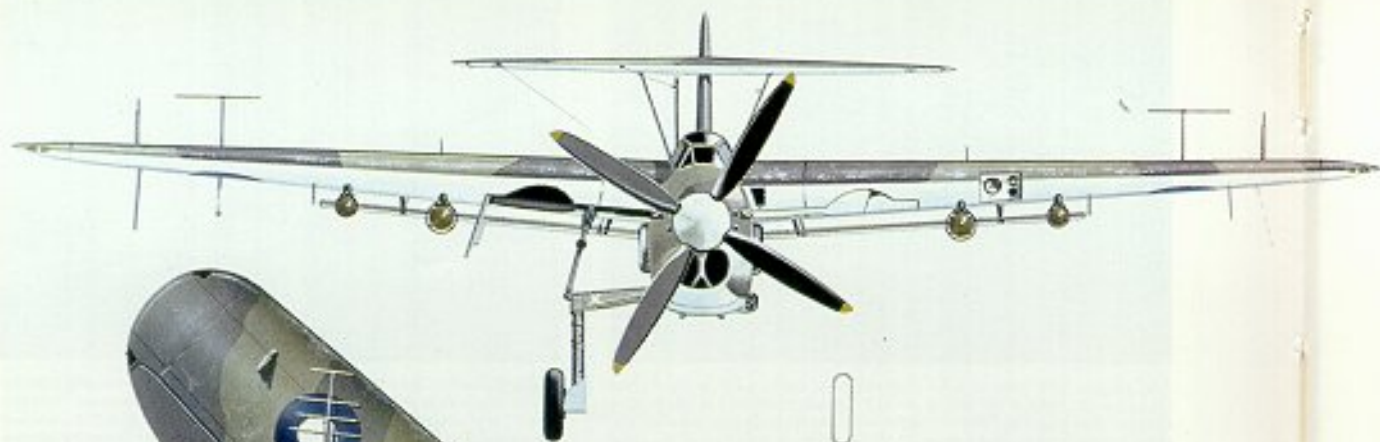
RNAS Stretton, near Warrington, to await the delivery of the first aircraft from the Stockport factory.

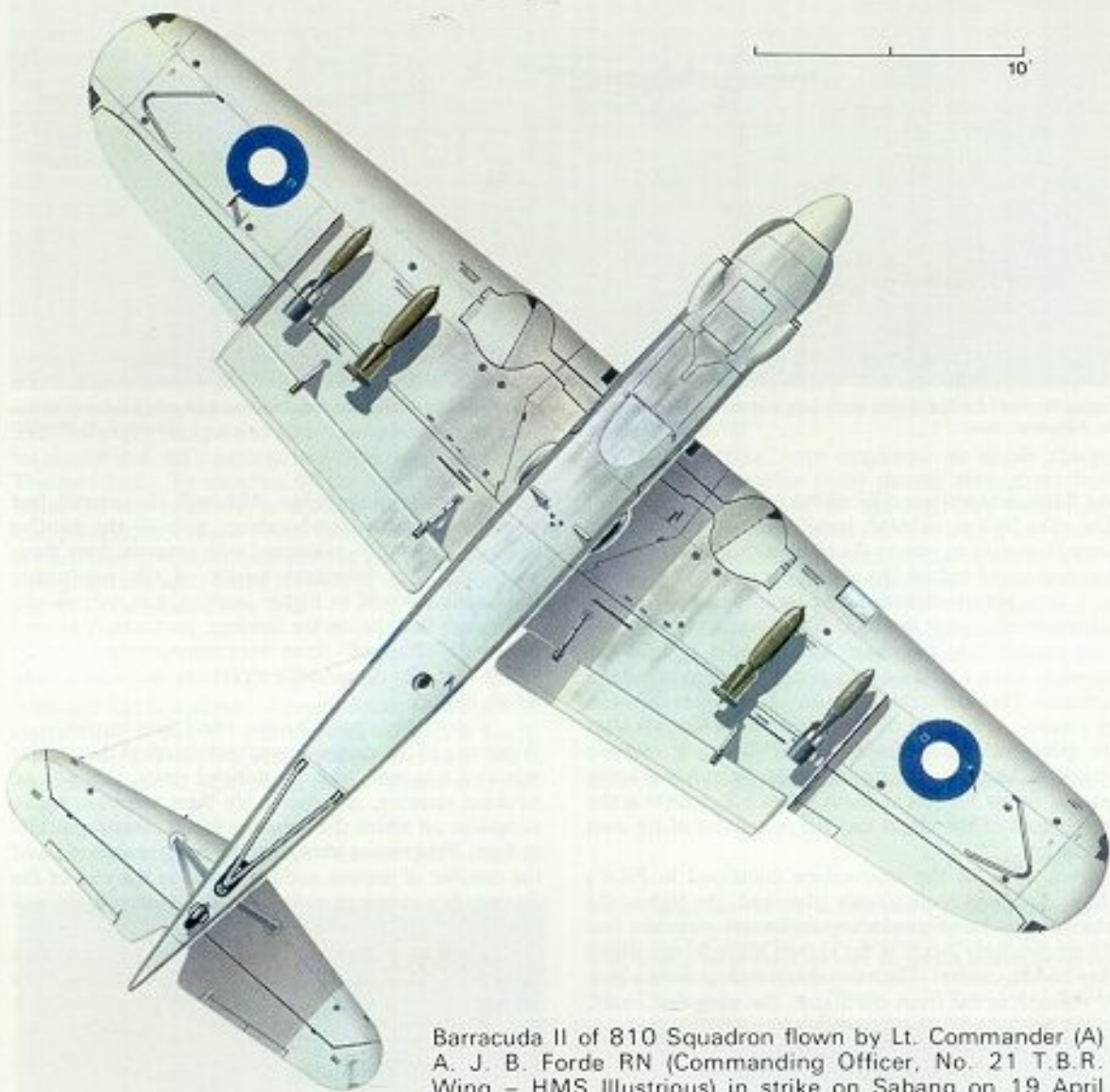
The next three months were taken up with conversion and operational training on Barracuda Is and IIs. The period was marked by a series of accidents, many of them fatal, which gave the Barracuda a notorious reputation which it never overcame.

The Barracuda did have inherent design faults, but not all the accidents were attributable to the aircraft alone. These early pilots were all experienced, but their experience had been gained in biplanes and their monoplane training had been limited and insufficiently supervised. High-speed stalls were an unknown phenomenon in the Albacore, and coarse applications of rudder in a banked turn did not result in a flick into a spin. Spin recovery

"4A" (LS350, the flagship of No. 52 TBR Wing (829 and 831 Squadrons), folds its starboard flap and inboard trailing edge preparatory to the wings being folded. Note that the TAG's lower window has been removed and replaced by a "solid" panel. (Photo: Imperial War Museum, ref. Q23038)



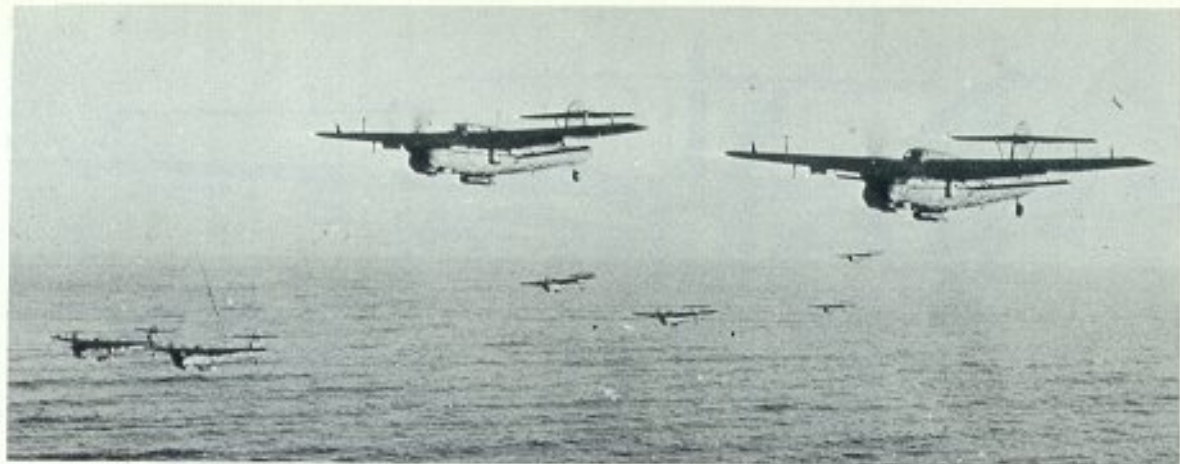




Barracuda II of 810 Squadron flown by Lt. Commander (A) A. J. B. Forde RN (Commanding Officer, No. 21 T.B.R. Wing - HMS Illustrious) in strike on Sabang on 19 April 1944.

P. Endsleigh Castle ARAS © Profile Publications Ltd





August 29, 1944: The last Tirpitz strike—eight of the dozen Barracuda IIs provided by Indefatigable's 820 Squadron seen during the low-level run-in to the Norwegian coast.
(Photo: C. H. Woods)

in a Barracuda was not difficult but much height was lost. The dive-brakes induced handling eccentricities, the aircraft tending to yaw to the right; although the rudder trimmer could reduce the effect, the use of the rudder with dive brakes extended was forbidden as excessive sideslip would result in a flick. The elevator trimmer was very powerful, to the extent that it could be used for recovery from a dive—at the risk of over-stressing the airframe. The retraction of the dive-brakes was followed by a strong nose-down change of trim some seconds after the pilot had made the selection; during a torpedo attack, he was thus retrimming as the aircraft was being levelled below 500 feet at about 240 m.p.h., watching the movements of the target and the remainder of his own formation.

Even after all the instructions contained in Pilot's Notes had been meticulously observed, the Barracuda was still capable of producing unpleasant surprises, but the aircrew were aware of the known hazards over which they had no control. The main shortcomings were a lack of strength in the front main spar, the wing-fold locks,

and the wing leading-edge. Although the aircraft had been designed for dive-bombing, with all the positive acceleration—"g"—associated with recovery from dives up to 70°, the increased weight of the production Barracuda resulted in higher loading, not only on the wing spars but also on the fuselage, particularly around Frame 25. "Popped" rivets were commonplace—to the extent that 820 Squadron's repertoire included a song which began:

'Every time it rains it rains, rivets from heaven.'

Wrinkling of the monocoque fuselage aft of the cockpit was also frequent; like the strained rivets, this was an advance warning, and inevitably there were too many occasions on which the structure failed catastrophically in flight. Progressive strengthening programmes reduced the number of serious accidents, but to the end of the Barracuda's career as a dive-bomber serviceability and availability suffered as a result of the weakness.

Engine-bay fires were also among the Barracuda's early problems. The original exhaust system employed a collector pipe which covered the six ports on either side

Not quite airborne, this Barracuda II of 812 Squadron is about to leave the flight deck of Vengeance during the ship's work up in the Clyde in January 1945.
(Photo: C. H. Wood)



and then turned down through approximately 75° to run down channels in the fuselage sides to discharge the exhaust gases and flames outboard and aft. The purpose of the ducting was to leave the pilot's vision unaffected by bursts of flame, but the effect was to create overheated areas behind the downpipe channels. As hydraulic and fuel lines ran in the heated areas, the likelihood of fires was great. On May 16, 1943, all Barracudas in service were grounded for the replacement of the collector and downpipes by individual exhaust stubs. Not only was the fire risk considerably reduced, but weight was saved and a small amount of thrust from the aft-facing stubs added a marginal increase in speed.

Pilots found the Barracuda tiring to fly if violent manoeuvring was required, and the specified auto-pilot was never fitted; but there were few complaints about the cockpit's comfort. The view for decklanding was good, and the position of the pilot's cockpit over the wing leading-edge gave an excellent downwards field of vision. The Observer's cockpit was roomy, with ample space for his chartboard, ASV controls and indicator, radios, and Thermos flasks. By standing on the longerons running below the side windows, he could look out of the top canopy to direct evasive action—an important function of the Observer in strike aircraft. The TAG was provided with a rotating seat; facing forward to operate the W/T and aft to maintain a look-out.

TO SEA

Although 827 Squadron had been the first to re-arm with Barracudas, it was not the first unit to become operational. On April 4, 1943, 810 Squadron arrived at Lee to re-arm as a matter of urgency, for service aboard HMS

Illustrious. The lessons learned from 827 Squadron's experiences were to benefit 810; for the pilots were sent to R.A.F. Station Errol for a supervised monoplane conversion course on Miles Master I dual-control trainers; followed by familiarization on the Barracuda I. The first Barracuda II was delivered to 810 Squadron on April 12, together with a Fulmar, and subsequent aircraft were transferred from 827 Squadron. The pilots of the latter squadron then left for Errol, leaving the maintenance personnel to await the delivery of new and largely unmodified Barracudas. The priority of spares and support accorded to 810 led to a marked drop in 827's serviceability and delayed completion of the work-up by several weeks.

On June 9, 1943, 810 Squadron embarked on *Illustrious*, following catapulting and arresting trials on the previous day. After a six-week work-up in the Clyde and off the Orkneys, the carrier sailed for a diversionary sweep off the Norwegian coast and then left for the Mediterranean to join Force "H".

The Barracudas were employed on depth charge-armed anti-submarine (A/S) patrols throughout their time aboard *Illustrious*, for although they were highly proficient at torpedo attacks and scored a convincing proportion of hits during practices, there were no targets for them. The one major operation, the Allied invasion at Salerno, was an anti-climax for 810. They did no flying between September 9–11, the deck being left clear for the ship's Grumman Martlets and Supermarine Seafires, and the Italian Fleet surrendered on the first day.

EXPANSION

Priority for re-equipment with Barracudas was given to



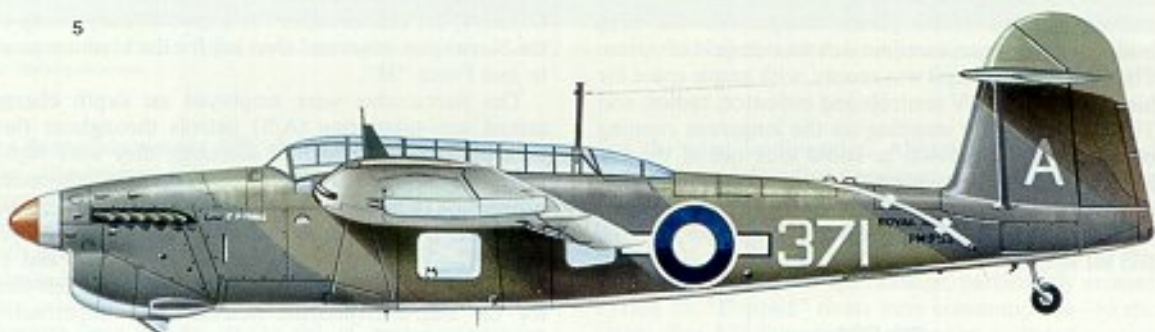
Nobody has got their feet wet, yet! The crew of an 812 Squadron Barracuda—the pilot on the trailing-edge of the port wing, Observer leaving his cockpit, and TAG preparing to haul the circular dinghy in. The sequence of the ditching can be seen in the inset, the furthest disturbance marking the first bounce as the aircraft touched the water, tearing off the starboard flap. (Photos: C. H. Wood and G. Wallace)



4



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6



4 Barracuda III of 810 Squadron July 1945.

5 Barracuda II of 812 Squadron (Vengeance) January 1946 in South West Pacific Area Markings.

6 Barracuda V of 753 Squadron Lee-on-Solent 1948.



A superb air-to-air view of a Barracuda III of 810 Squadron, seen flying over the Irish Sea. The Squadron was at this time operating from Machrihanish, working up prior to embarkation in HMS Queen in August 1945. Note that this aircraft retains the three bomb-racks of the Mark II, a multiple carrier on the inboard rack carrying three practice bombs. (Photo: C. W. H. Morton)

the Fleet carrier Squadrons, many of which had been equipped with Albacores. First, 830 Squadron reformed on May 15, 1943, and then in June three more squadrons received Barracudas—823, 847, and 831. These were followed by 822 (August), 815 and 829 (October), and 817 and 826 (December). By January 1, 1944, when 820 Squadron re-armed, the Royal Navy had a dozen Barracuda squadrons, organized into six Torpedo-Bomber-Reconnaissance Wings, with 135 Barracuda IIs on strength.

Six more squadrons formed during 1944, but only two of these—841 (February) and 828 (March)—formed a TBR Wing. Three of the other squadrons, 812, 814, and 837, were intended for the new class of Light Fleet carriers, and the last, 821, was armed with Barracuda IIIs, for service aboard the escort carrier *Puncher*.

The training squadrons also re-equipped as quickly as Barracudas became available. TBR Operational Training Units at R.N. Air Stations Crail (Fifeshire), Fearn (Ross-shire), Burscough (Lancashire) and Ronaldsway (Isle of Man) were all equipped with Barracudas, and they were used as part-equipment of units attached to the

various "Schools"—Naval Air Warfare at St Merryn (Cornwall), Observer Training at Arbroath (Angus) and Piarco (Trinidad, B.W.I.) and Deck Landing Training at Easthaven (Angus).

TBR Wing training began in August 1943, when No. 8 Wing—827 and 830 Squadrons—moved to Machrihanish. Co-ordinated attacks with bomb and torpedo were practised, as were co-operation with escort fighters and fighter evasion tactics. 810 and 847 Squadrons were paired as No. 21 TBR Wing in November, and at the end of 1943, 829 and 831 began training as No. 52 TBR Wing.

These three Wings were the first to go into action, Nos. 8 and 52 off Norway, and No. 21 in the Bay of Bengal. Three of the other Wings—No. 9 (820 and 826), No. 12 (815 and 817), and No. 2 (828 and 841)—did not begin operations until July 1944, and the seventh—No. 11 (822 and 823) was reduced to a single squadron before it embarked in an operational carrier.

NORWAY

The Barracuda's greatest successes were scored off the

An engine fire shortly after take-off caused the loss of this Naval Air/Sea Warfare Development Unit Barracuda III, seen in shallow water less than a quarter of a mile from the end of the runway at RAF Thorney Island. Both the pilot, Lieutenant G. W. Halliday, DSC, RNVR, and the Observer, Lieutenant G. Wallace, RNVR, escaped, virtually uninjured. (Photo: G. Wallace)



"Jumbo", the mobile crane, is conned towards one of 812's aircraft which has come to rest in Vengeance's port deck-edge catwalk after the port main undercarriage leg had collapsed during a landing. (Photo: C. H. Wood)





An 814 Squadron Barracuda overshoots to starboard, a hazardous manoeuvre—after the pilot has badly misjudged his circuit, possibly because Venerable steadied on the flying course earlier than he had expected. By the autumn of 1945, the Barracuda squadrons in the Pacific had removed the ASV IIN antennae and most aircraft had only two or four bomb racks.
(Photo: Imperial War Museum, ref. A30652)

814 Squadron, disembarked at Katukurunda, Ceylon, in early 1945. The aircraft are preparing for a practice dive-bombing strike, each carrying six 250-lb. bombs apiece. The nearest and farthest Barracudas have already been "painted up" in SEAC markings, with the retired ship/squadron code-R1-C and R1-H, but the leader's aircraft retains the European-style national markings and the individual aircraft letter has not yet been applied.

(Photo: via author)





A member of HMS Vengeance's catapult crew watches the bomb-laden "378" of 812 Squadron as it leaves the catapult trolley during flying exercises off Australia in December 1945. (Photo: C. H. Wood)

Right:
PM948 bounces as it catches one of Vengeance's arrester wires during flying exercises off Australia in December 1945—a month before 812 Squadron began to re-equip with Fairey Firefly Is. The British Pacific Fleet national markings continued to be worn on Royal Navy aircraft until the Fleet was disbanded in the autumn of 1946.

(Photo: C. H. Wood)

Below:
Vengeance and Venerable arrived in the Pacific in July 1945, and proceeded to Sydney for armament modifications prior to joining the British Pacific Fleet. Here, an 812 Squadron aircraft flies up Vengeance's port side, at a height of barely 20 feet above the water.

(Photo: C. H. Wood)



coast of Norway between February 1944 and February 1945. Five major attacks were delivered against the battleship *Tirpitz* in Kaafjord between April 3 and August 29, and a sixth strike was launched but forced to turn back due to bad weather in the target area. Nine other strikes attacked coastal convoys and the last operation, on February 22, 1945, was to lay a minefield off Stavanger.

Only the first strike on *Tirpitz*, by Nos. 8 and 52 TBR Wings flying from *Furious* and *Victorious*, scored a large proportion of hits—with 14 1,600-lb., 600-lb. and 500-lb. bombs; for after this operation the defences were better prepared and *Tirpitz* was invariably hidden in smoke when the Barracudas arrived.

No. 8 Wing transferred to *Formidable* for the *Tirpitz* strike on July 17, and No. 9 Wing was embarked in *Indefatigable*. For the last operation, with strikes on August 22, 24 and 29, No. 8 Wing returned to *Furious*. No. 9 Wing was divided between *Indefatigable* (820) and *Formidable*, with 828 Squadron (of No. 2 Wing) joining 826 in the last-named carrier. Two hits were scored on August 24, one by a 1,600-lb. bomb which did not detonate correctly, and the other by a 500-lb. bomb dropped by a Grumman Helicat of 1840 Squadron.

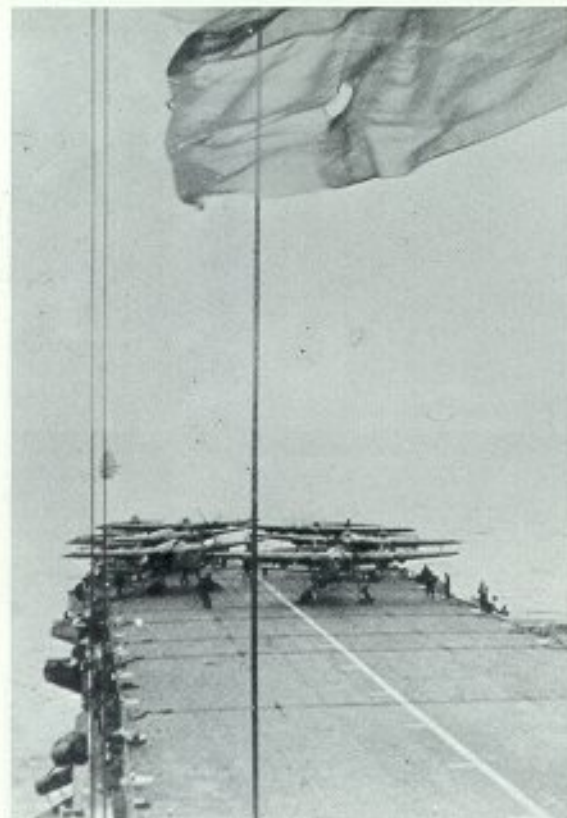
In all, 176 Barracuda sorties were launched against

Tirpitz and of the 174 which reached the target, only two were shot down by flak—both on April 3, while three others were lost in accidents.

The first anti-shipping strike was delivered on February 11, 1944, with 10 Barracudas of No. 8 TBR Wing (*Furious*) dive-bombing a beached ship near Stadlandet. Five Messerschmitt Bf 109s and Focke-Wulf FW 190s attempted to intercept but were driven-off by four escorting Seafires of 801 Squadron—the only occasion on which a Barracuda strike was approached by enemy fighters.

Thereafter, a total of 104 dive-bombing and 16 torpedo sorties was flown against shipping. Of these, 61 were by Nos. 8 and 52 Wings on April 26, May 6, and June 1, and 59 by No. 2 Wing on October 26–28 and November 27, 1944. The return for the effort was outstanding; 14 ships totalling 41,650 tons were sunk, a 1,064-ton Type VII U-boat (*U-1060*) was driven aground, and 17 ships totalling 19,690 tons, were damaged. Defensive AA fire claimed one Barracuda of 827 Squadron on April 26, but the only other losses—three—were due to non-combat causes. No other anti-shipping strike force in the European War could claim such a record, the result of thorough individual and team training.

The last operation off Norway was by 821 Squadron, flying from the Canadian-manned *Puncher*. On February



The only foreign air unit to be equipped with Barracudas was No. 860 Squadron, Royal Netherlands Navy, six of whose Mark IIIs can be seen ranged for take-off from the escort carrier *Nairana* (subsequently transferred to the RNeN as *Karel Doorman*) during the Squadron's work-up in November 1945. Although the quality of the photograph is poor, the twin "barrels" of the Rocket-Assisted Take-Off Gear can be distinguished on the starboard fuselage of the closest left-hand aircraft. (Photo: Lt. Cdr. H. van der Minne, RNeN.)

22, 1945, nine Barracuda IIIs attempted to lay mines off Stavanger. The 16 Wildcats which should have attacked the flak batteries lost touch with the minelayers in poor visibility, and two Barracudas were shot down before the release point. A 90-ton R-class minesweeper was sunk in the 7-mine field in March.

SHORE-BASED OPERATIONS

No. 8 TBR Wing undertook its last operation on September 14, 1944, being used for A/S patrols from *Furious* while Avengers from two escort carriers laid mines off the Norwegian coast. On October 3, 830 Squadron was disbanded and its personnel and aircraft absorbed by 827; 12 days later, the 18 aircraft were moved to R.A.F. Station Beccles, Norfolk, to begin night strikes against German shipping off the Dutch coast.

In November, 827 Squadron was operational for only 29 days and bad weather prevented flying on all but eight days. But 79 sorties were flown and four attacks were made, claiming to have damaged five ships and forced two aground off Terselling (on the night of November 25/26). In fact, only near-misses were scored and one escort run aground. No losses were suffered from any cause, and 827 withdrew intact to prepare for embarkation in *Colossus*.



Barracuda IIs of 827 Squadron ashore at an airfield in India during the closing months of 1945 (PM913 to the right), while *Colossus* was engaged in troop and repatriation duties.

(Photo: via David Birch, Air-Britain)



A Barracuda III of 750 Squadron (Observer School) from St Merryn, seen at the Daily Express Exhibition to mark 50 years of flying, in 1951, at RAF Hendon. The discolouration aft of the code number is the doping over the patches on the re-aligned dingy lanyard.

(Photo: Charles W. Cain)



P9976, the initial Griffon-Barracuda, a Mark II from the first production batch modified to accommodate a Rolls-Royce Griffon VIII engine, and with an extended dorsal fillet to compensate for the opposite (to the Merlin) propeller rotation and the extra length of the engine cowling.

(Photo: Imperial War Museum, ref. ATP.13576D)

Three squadrons were attached to R.A.F. Coastal Command in January 1945. Barracuda IIIs of 815 Squadron were used for convoy escort patrols from Mullaghmore, Ulster, until mid-March, when they embarked in the escort carrier *Smiter*, arriving in the Indian Ocean just too late for action. Nos. 810 and 822 Squadrons, like 815, returned from Fleet carriers in the Indian Ocean at the end of 1944, to operate in the English Channel and southern North Sea from R.A.F. Stations Thorney Island, Manston, and Beccles. Most of the patrols were uneventful, apart from spotting drifting mines, but in mid-April, when 810 moved to Beccles and 822 to Manston, the Germans began a midget submarine offensive against Allied shipping in the Scheldt. Barracuda IIIs were used for detection, accompanied by Barracuda IIs for attacks, and on April 13, Sub-Lieutenant D. J. McCarthy RNVR, of 810 Squadron, scored the only positive success against a midget. Several others were depth-charged, and at least three probables were credited to the two squadrons, which flew their last operational patrols on May 10, 1945.

FAR EAST

As mentioned earlier, the performance of the Barracuda in tropical conditions deteriorated, and although careful attention to carburettor and tachometer settings could

reduce the loss, the take-off and climb performance was poor and the bomb-armed strike radius fell by up to 30% to 145 miles.

HMS *Illustrious*' No. 21 TBR Wing (810 and 847) struck at Sabang, Sumatra, on April 19, 1944, and at Port Blair, Andamans Islands, on June 21. Thirty-three sorties were flown during the two strikes, which inflicted only moderate damage on harbour installations and cost 810 Squadron one aircraft on June 21. For the raid on Soerabaya, in May, the Wing was replaced by two Grumman TBF-1 Avenger I Squadrons.

In July 1944, *Victorious* and *Indomitable* joined the Eastern Fleet, the former with 831 and the latter with 815 and 817 Squadrons embarked. The two ships undertook two joint strikes. On August 24, no fewer than 32 Barracudas attacked a cement works at Indarong and the port of Emmahaven, reducing the output of the former and damaging two ships (6,000 tons) at the latter. On September 18, the important rail centre at Sigli was bombed by 815, 817 and 822, which had replaced 831 in *Victorious*. Eighteen Barracudas returned safely, two others being non-combat losses.

The last Barracuda operation in the Indian Ocean involved strikes on Japanese defences in the Nicobar Islands, on October 17 and 19. *Victorious* had embarked only Chance Vought Corsairs, but *Indomitable* retained her two squadrons, which flew 20 sorties, losing one Barracuda to AA fire on the 17th, and suffering one operational loss on the 19th.

The use of the Barracuda against land targets was inappropriate, and as soon as sufficient Avengers became available, the "Barra" Wings were withdrawn and

the aircraft put into storage at R.N.A.S. Coimbatore, Kerala State, India.

Not until the last weeks of the Pacific War did Barracuda Squadrons return to the Far East. Four Light Fleet carriers—*Glory* (837), *Colossus* (827), *Venerable* (814) and *Vengeance* (812)—were completing their work-up for service in the Pacific on VJ-Day, and the first three flew patrols as British and Dominion forces re-occupied Rabaul, northern Formosa, and Hong Kong. 812, 814 and 837 Squadrons all re-armed with Fairey Fireflies before the end of January 1946, but 827—the first Barracuda squadron—retained its Barracuda IIs until *Colossus* returned to Portsmouth in July 1946.

Four Barracuda II (ASH) squadrons and one Barracuda III squadron were still in the United Kingdom on VJ-Day; no longer needed, they were all soon disbanded, leaving only the Royal Netherlands Navy's 860 Squadron formed on September 1, 1945 with 12 Barracuda IIIs, as well as a number of training squadrons.

The Dutch Squadron exchanged its Barracudas for Fireflies in February 1946, but the training units retained theirs—750 and 796 Squadrons for Observer Training, and 719 and 744 Squadrons for A/S training. On December 1, 1947, 744 Squadron was renumbered 815, still with an establishment of 12 Barracuda IIIs, and this squadron continued to operate from R.N.A.S. Eglinton until May 1954, embarking from time to time in the Training Carrier—*Illustrious*—and providing the Royal Navy with a suitable vehicle for the development of air A/S tactics. Then, for the second time in 10 years, the Barracuda was replaced by the Grumman Avenger.

The "tidiest" Barracuda III of all. RK479, belonging to *Vengeance's Ship's Flight*, seen painted in gloss navy (not "midnight") blue as the *First Sea Lord's Barge* for a ceremonial visit to Oslo in 1948. In November of the same year, the aircraft was used as an airborne lifeboat carrier (painted in standard scheme once more) for the cold-weather flying trials conducted by the ship in Arctic waters. (Photo: Charles E. Brown)





PM940, the first true Barracuda V prototype, with extended fin and wing-tips. The ASH radar nacelle was subsequently moved to the underside of the port wing. (Photo: Crown copyright, ref. 15205B)



RK558, the 14th production Barracuda V, in service with 753 Squadron (Naval Air Signals School) at Lee-on-Solent in the late 1940s. (Photo: MoD(N))



Yet another variation in the shape of the Barracuda V's empennage: RK335 with an extended rudder. (Photo: Charles W. Cain)

BARRACUDA MKS. IV & V

By June 1941, it was realized that the Merlin-engined Barracuda was going to be drastically underpowered. The replacement aircraft was already in the preliminary project stage, but this, the Fairey Spearfish, would not be available before 1946 and an interim TBR type was required. The Napier Sabre engine was considered for installation in the existing Barracuda airframe, but the R.A.F. had absolute priority for deliveries of this engine (for the Hawker Typhoon—successor to the Tornado—and Tempest), and the rather lighter and less powerful Rolls-Royce Griffon was selected.

The basic structure of the Barracuda remained unchanged, except for the engine bearers. As the Griffon's propeller rotated in the opposite direction to that of the Merlin, and because there was a much greater swing on take-off, the fin area was increased, although the rudder trim tab area remained the same as that of the Barracuda I and II.

The first "prototype" Griffon-Barracuda (P9876), was flying from Ringway on November 16, 1944, after conversion at Stockport. Within a month, two more development aircraft had joined the flight test programme, which finally used at least seven converted Barracuda IIs (P9976, DT845, PM940, PM941, PM944, LS479, and LS846). The first five all featured different forms of fin, but the last two retained the original fin of the Barracuda II.

The Barracuda IV, which was to have been a straight-forward re-engining of a Barracuda II, was passed over in favour of the Barracuda V, with a four-feet greater span and squared-off wingtips, increased fuel capacity after the deletion of four out of six wing bomb-racks, and the strengthening of the structure. Armament alterations included the deletion of the rear guns and the installation of a single forward-firing 0.5-in. machine-gun; the two wing bomb-racks could carry a 500-lb. bomb each, but the centre-line rack was stressed to carry a single 2,000-lb. A/P (armour-piercing) bomb or a pair of 500-lb. bombs. An ASH radar was installed in a port wing nacelle.

The first production Barracuda V did not fly until November 22, 1945, and only 30 out of the order for 140 were delivered, the last being accepted on October 27, 1947. The Griffons VII and VIII, rated at 1,890 h.p. at 1,250 feet, which had been installed in the development aircraft were replaced by the Griffon 37, rated at 2,020 h.p. at 2,000 feet.

There was no place in the Royal Navy's front-line inventory for the Barracuda V, and it served only with training squadrons—750 at R.N.A.S. St Merryn, 753 at Lee-on-Solent and 744 at Eglinton—until 1950. During the autumn of 1945, one or two of the development aircraft appear to have been delivered to R.N.A.S. Fearn, where 817 Squadron pilots discovered the merits of an amply-powered, adequately-stressed Barracuda.



RK532, the third production Barracuda V, seen at A. & A.E.E., Boscombe Down in October 1946, during handling trials.
(Photo: Imperial War Museum, ref. ATP.14668C)

SPECIFICATION

Construction

Fuselage—Light alloy monocoque aft of main spar, tubular upper fuselage and engine cowl, reinforced monocoque lower fuselage forward of main spar; Alclad covering. Wings and Tailplane—2-spar light alloy and steel strip frame; Alclad covering; fabric covered control surfaces. Fin and Rudder—tubular spars and sheet ribs; Alclad covering; fabric covered rudder.

PARTICULARS: Dimensions Specification

Span: 50 feet (Folded 18 feet)
Length: 37 ft.
Height: 14 ft. 9 in. (tail down)

Barracuda I, II and III

Span: 49 feet 2 inches (folded—17 ft. 9 in.)
Length: 39 ft. 9 in.
Height: 12 ft. 3 in. (tail down)
Wing Area: 414 square feet

Barracuda V

Span: 52 ft. 5 in. (folded—17 ft. 9 in.)
Length: 41 ft. 1 in.
Height: 13 ft. 2 in. (tail down)
Wing Area: 480 sq. ft.

Powerplant

Barracuda I

Rolls-Royce Merlin 30 rated at 1,260 h.p. at 8,750 ft. at 2,850 r.p.m. and +9½ lb. (49 in. Hg.) manifold pressure (boost); 1,300 h.p. for take-off and 5 minutes combat below 6,000 feet at 3,000 r.p.m. and +9½ lb. (combat) or +12½ lb. (61 in. Hg.) (take-off).

Barracuda II & III

Rolls-Royce Merlin 32 rated at 1,640 h.p. at 1,750 ft. at 3,000 r.p.m. and +18 lb. (66 in. Hg.) boost (for take-off and 5 minutes combat).

Barracuda V

Rolls-Royce Griffon 37 rated at 2,020 h.p. at 2,000 ft. and 1,840 h.p. at 10,000 ft. at 2,850 r.p.m. and +18 lb. boost.

WEIGHTS

Specification

Max. all-up-weight 10,500 lb.

P1770—June 1941

Empty, 9,494 lb.; Maximum loaded, 13,068 lb. (with 1,568 lb. torpedo) or 12,360 lb. (with maximum fuel).

Barracuda I

Empty, 10,012 lb.; Maximum loaded, 12,064 lb. (clean—180 Imperial gallons fuel) or 13,177 lb. (with 1,610 lb. torpedo); maximum permissible, 13,200 lb.

Barracuda II

Empty, 10,818 lb.; Maximum loaded, 12,600 lb. (clean—225 gal. fuel) or 14,112 lb. (with 1,620 lb. torpedo); maximum permissible, 14,250 lb.

Barracuda III

Empty, 11,113 lb.; Maximum loaded, 12,895 lb. (clean—225 gal. fuel) or 13,762 lb. (with 4 depth-charges); maximum permissible, 14,250 lb.

Barracuda V

Empty, 12,120 lb.; Maximum loaded, 14,466 lb. (clean—300 gal. fuel) or 15,900 lb. (with 1,672 lb. torpedo).

ARMAMENT:

Barracuda I

1 × 0.303-in. Vickers Gas-operated machine-gun with 200 rounds.
2 × 0.303-in. V-GO with 500 rounds per gun.

Barracuda II & III

2 × 0.303-in. V-GO with 500 r.p.g. early Mark IIs had three machine-guns; from July 1945, some squadrons removed all guns.

Barracuda V

1 × 0.50-in. Colt-Browning (fixed) with 200 rounds.

Ordnance

Mark I	II	III	V	
1,568 lb.	1,620 lb.	1,572 lb.	1,672 lb.	Torpedo
three	three	two	four	500 lb. bombs
six	six	na	four	250 lb. bombs
—	one	—	—	1,600 lb. bomb
—	—	—	one	2,000 lb. bomb
3 × 450-lb.	6 × 250-lb.	4 × 250-lb.	4 × 250-lb.	depth-charges
1,500-lb.	1,640-lb.	1,640-lb.	4 × 400-lb.	Mine(s)

PERFORMANCE

Specification

Max. Speed: 211.5 m.p.h. at operational height
Endurance: 6 hours at 138 m.p.h. at 2,000 ft.
(8 hours with overload fuel)
Radius of Action: 230 miles (with 33% reserves)
at 180 m.p.h. at 6,000 ft.
Take-off Run in 20 kts wind: 225 ft. (clean—internal fuel, no ordnance)

P1767—(Original form)

Max. Speed: 269 m.p.h. at 9,000 ft. (clean)
249 m.p.h. at 9,000 ft. (with torpedo)
Max. Cruising: 199 m.p.h. at 6,000 ft. (clean)
197 m.p.h. at 2,000 ft. (torpedo)
Radius: 280 miles (reconnaissance)
(180 gal.) 240 miles (torpedo strike)
Time to 2,000 ft.—1 minute 30 seconds (clean)
6,000 ft.—5 minutes 30 seconds (torpedo)
Ceiling at Mean A.U.W.—23,000 ft. (clean)

PERFORMANCE (contd.)

Barracuda I

Max. Speed:	250 m.p.h. at 11,000 ft. (clean) 221 m.p.h. at 2,000 ft. (torpedo) 225 m.p.h. at 11,000 ft. (3 x 500-lb. bombs)
Max. Cruising:	183 m.p.h. at 2,000 ft. (clean) 181 m.p.h. at 6,000 ft. (torpedo) 180 m.p.h. at 6,000 ft. (bombs)
Radius:	300 miles (reconnaissance) (226 gal.) 270 miles (torpedo) 200 miles (bombs)
Time to	2,000 ft. (clean)—as P1770 6,000 ft. (torpedo)—6 minutes 42 seconds
Ceiling at Mean A.U.W.	21,300 feet (torpedo)
Take-off in 20 knots wind	430 feet (clean) 570 feet (torpedo)

Barracuda II

Max. Speed:	240 m.p.h. at 1,750 ft. (clean) 228 m.p.h. at 1,750 ft. (torpedo) 200 m.p.h. at 9,000 ft. (6 x 250-lb. bombs)—approx
Max. Cruising:	205 m.p.h. at 5,000 ft. (clean) 193 m.p.h. at 5,000 ft. (torpedo)
Radius:	290 miles (reconnaissance) (226 gal.) 230 miles (torpedo) 190 miles (bombs)
Time to	5,000 ft. (clean)—4 minutes 12 seconds 5,000 ft. (torpedo)—6 minutes 14,000 ft. (bombs)—45 minutes
Ceiling at Mean A.U.W.	18,200 ft. (torpedo)
(Service Ceiling 15,000 ft. for all useful purposes)	
Take-off in 20 knots wind	520 ft. (clean)

Barracuda III

Max. Speed:	239 m.p.h. at 1,750 ft. (clean)
Patrol Cruise:	145 m.p.h. at 2,000 ft.
Radius:	210 miles (reconnaissance) (226 gal.)
Endurance:	3 hours 5 minutes (with 33% reserves)
Time to	5,000 ft. (clean)—4 minutes 30 seconds
Ceiling—as Barracuda II	
Take-off in 20 knots wind	565 feet

Barracuda V

Max. Speed:	270 m.p.h. at 11,000 ft. (clean) 259 m.p.h. at 3,000 ft. (clean) 255 m.p.h. at 11,000 ft. (torpedo) 247 m.p.h. at 3,000 ft. (torpedo)
Max. Cruising:	217 m.p.h. at 5,000 ft. (clean) 203 m.p.h. at 5,000 ft. (torpedo)
Radius:	255 miles (reconnaissance) (300 gal.) 210 miles (torpedo)
Time to	5,000 ft. (clean)—3 minutes 55 seconds (torpedo)—4 minutes 42 seconds
Ceiling at Mean A.U.W.	27,000 ft. (clean)
Take-off in 20 knots wind	450 feet (clean) 560 feet (torpedo)

PRODUCTION

Fairey Aviation, Heaton Chapel (Stockport)

Mark I:	P9542 - P9655				
Mark II:	P9657 - P9691, P9709 - P9748, P9787 - P9836				
	P9847 - P9891, P9909 - P9943, P9957 - P9986;				
	DT813 - DT831, DT845 - DT865, DT878 - DT887;				
	LS464 - LS506, LS519 - LS556, LS568 - LS595;				
	LS608 - LS653, LS668 - LS713, LS726 - LS763;				
	LS778 - LS820, LS833 - LS870, LS891 - LS936;				
	LS949 - LS974				
Marks	PM682 - PM723, PM738 - PM780, PM796 - PM838,				
II/III:	PM852 - PM897, PM913 - PM958, PM970 - PM999;				
	PN115 - PN164, RK328 - RK369, RK382 - RK428,				
	RK441 - RK485, RK498 - RK523				
Mark V:	RK530 - RK542, RK558 - RK574				

Westland Aircraft, Yeovil

Mark I:	DN625 - DN629
Mark II:	DN630 - DN642

Blackburn Aircraft, Brough

Mark II:	BV660 - BV707, BV721 - BV766, BV788 - BV834,
	BV847 - BV885, BV898 - BV932, BV937 - BV981;
	MD612 - MD656, MD674 - MD723, MD736 - MD778,
	MD792 - MD807, MX535 - MX576, MX591 - MX638,
	MX652 - MX696, MX709 - MX753, MX767 - MX808,
	MX820 - MX864, MX877 - MX907

Boulton Paul Aircraft, Wolverhampton

Mark II:	DP855 - DP902, DP917 - DP955, DP967 - DP999,
	DR113 - DR162, DR179 - DR224, DR237 - DR275,
	DR291 - DR335;
Marks	MD811 - MD859, MD876 - MD924, MD945 - MD992,
II & III:	ME104 - ME152, ME166 - ME210, ME223 - ME270,
	ME282 - ME293, RJ759 - RJ799, RJ902 - RJ948,
	RJ963 - RJ966.

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"The End": Stripped and gutted, RJ767 decays in a quiet corner at RNAS St. Merryn.

(Photo: A. J. Pearce, Air-Britain)

