Fairey Albacore

Le Fairey Albacore est un biplan monomoteur bombardier-torpilleur britannique embarqué sur porte-avion construit par Fairey Aviation entre 1939 et 1943 pour la Fleet Air Arm et utilisé pendant la Deuxième Guerre mondiale. L'Albacore est conçu comme un bombardier torpilleur triplace et remplaçant du vieillissant Fairey Swordfish , qui est en service depuis 1936 . Le prototype de l'Albacore est construit pour répondre aux spécifications S.41/36 pour un avion triplace TSR (torpilleur/surveillance/reconnaissance) de la FAA. Comme le Swordfish, l'Albacore est parfaitement capable de bombardement en piqué à des vitesses allants jusqu'à 400 km /h, avec une charge de 500 kg de bombes et équipé de freins de plongées. L'Albacore possède un moteur plus puissant et une aérodynamique plus raffinée que son grand frère. Il offre a l'équipage un habitacle fermé et chauffé, ainsi qu'un système de radeau de sauvetage automatique, éjecté en cas d'amerrissage forcé. Le premier des deux prototypes vole le 12 Décembre 1938 et la production d'un premier lot de 98 avions en 1939. L'Albacore est dans un premier temps équipé du moteur Bristol Taurus II, puis d'une évolution le Taurus XII. En février 1940, l'Albacore atteint une vitesse maximale de 277 Km/h à vide et 260 km/h en charge. Il est capable d'emporter soit une torpille de 910 kg, soit 750 Kg de bombes et possède un armement défensif composé de 2 ou 3 mitrailleuses Vickers 7,7 mm. En mars 1940, le 826éme Naval Air Squadron est spécialement formée pour exploiter l'Albacore. Il est utilisé pour des attaques contre les ports et la navigation dans le Manche, à partir de bases à terre, ainsi que pour l'escorte de convoi. Dés le début, l'Albacore souffre de problèmes de fiabilité moteurs avec le Bristol Taurus. Certains problèmes de dégagement suite au largage de la torpille sont aussi évoqués. Finalement, 15 escadrons de première ligne de la FAA sont équipés de l'Albacore, largement exploité en Méditerranée. L'Albacore joue un rôle de premier plan dans l'infortuné raid sur Kirkenes et Petsamo (Norvège et Finlande) en Juillet 1941. Avec plus de succès il a participé à la bataille du cap Matapan (Gréce) et les combats à El Alamein (Egypte), ainsi qu'au soutien des débarquements de Sicile et de Salerne. Le 9 Mars 1942, 12 Albacore du porte-avions HMS Victorious sont lancés à l'attaque du cuirassé allemand Tirpitz en mer près de Narvik. Sur la base d'informations communiquées par l'un des six aéronefs équipés de radar, les Albacore du 817éme et 832éme escadrons torpillent le cuirassé nazi, lui infligeant de nombreux dégâts, ce qui lui vaudra de nombreux mois d'immobilisation. En 1943, l'Albacore est progressivement remplacé par le Fairey Barracuda et le Grumman Avenger dans la Fleet Air Arm.

Fairey Albacore :

- Moteur Bristol Taurus XII
- 1130 Ch
- 260 Km/h
- 2 ou 3 Mitrailleuses 7.7 mm 750 Kg de bombes ou 1 torpilles de 910 Kg
- 5730 Kg en charge
- 6310 m de plafond pratique
- 930Km en distance franchissable
- 3 Equipiers

Source : http://les-avions-de-legende.e-monsite.com/pages/les-bombardiers/les-bombardiers-anglais/fairey-albacore.html

Version anglaise Wikipédia

The **Fairey Albacore** is a single-engine biplane torpedo bomber designed and produced by the British aircraft manufacturer Fairey Aviation. It was primarily operated by the Royal Navy Fleet Air Arm (FAA) during the Second World War. The Albacore, popularly known as the "Applecore", was conceived as a replacement for the Fairey Swordfish, an earlier biplane introduced during the mid 1930s. It was typically operated by a crew of three and was designed for spotting and reconnaissance as well as level, dive, and torpedo bombing. First flown on 12 December 1938, the Albacore was in production between 1939 and 1943, and entered FAA service with 826 Naval Air Squadron during March 1940. The type was initially operated from land bases, being dispatched on attack missions against enemy shipping and harbours in the vicinity of the English Channel. The first operations on board an aircraft carrier commenced in November 1940. At its height, 15 first-line FAA squadrons flew the Albacore. The type was much used in the Mediterranean, participating in the Battle of Cape Matapan, the Second Battle of El Alamein, as well as the landings at Sicily and Salerno. Despite the intention to replace the Swordfish, the Albacore served with it and was eventually retired before it, both aircraft having been replaced by a pair of monoplane designs, the Fairey Barracuda and Grumman Avenger. In addition to the FAA, the Royal Air Force (RAF) and the Royal Canadian Air Force (RCAF) operated the type.

Design and development

Background

The origins of the Albacore can be traced back to the issuing of Specification S.41/36 by the Air Ministry on 11 February 1937, as well as the earlier Specification M.7/36.[2] The latter had sought a three-seat TSR (torpedo/spotter/reconnaissance) aircraft with which to replace the Fairey Swordfish in Fleet Air Arm (FAA) service. It was required to be capable of speeds between 58 and 183 knots while also carrying a single 18-inch Mark XIIA torpedo; furthermore, it was to be fitted with dual flight controls, have a powered rear turret, comprehensive facilities for observation and navigation, and incorporate soundproofing and heating measures.[2] In response, Fairey Aviation decided to work on its own design.[2] Early activities included the wind tunnel testing of various biplane models at RAE Farnborough between November 1936 and June 1937. These tests reportedly influenced designs regarding the fitting of flaps upon the wings.[2] The company produced both biplane and monoplane configurations to fulfil the requirement, officials dismissed the monoplane proposal as it raised uncertainties for the role it was to be tasked with at that time. Accordingly, Fairey focused its efforts onto the biplane configuration.[2] The Albacore, otherwise designated *TBR* (torpedo/bomber/reconnaissance), was a single-bay all-metal biplane. Its fuselage was of a semi-monocoque design and was equipped with a split undercarriage.[2] In comparison to the Swordfish, the Albacore was furnished with a more powerful engine that drove a Constant-speed propeller,[3] while the fuselage was also more aerodynamically refined.[4] The engine that powered the early Albacores was a single Bristol Taurus II radial engine, capable of 1,065 hp, while those built later on received the more powerful Taurus XII, capable of 1,130 hp, instead.[5] Furthermore, the Albacore provided numerous amenities for the benefit of its crew, such as its fully enclosed cockpit, a central heating system, a windscreen wiper for the pilot, and lavatory. In the event of a water landing, the aircraft was also fitted with an automatic liferaft deployment system to assist in the crew's survival.[6] The armament of the Albacore typically included a single fixed forward-firing machine gun in the upper starboard wing, while the rear cockpit was provided with either a single or twin Vickers K machine gun.[7] It could carry a maximum under-wing bomb load of four 500 lb (230 kg) bombs.[8][9] The wings of the Albacore were of an equal span and were foldable for more compact stowage onboard aircraft carriers.[2] These wings, which were covered by fabric, featured relatively large flaps that were hydraulically-actuated and could also act as air brakes during dives.[2] Akin to the preceding Swordfish, it was capable of dive bombing; it was capable of diving at speeds of up to 215 knots (400 km/h) IAS irrespective of the positioning of the flaps. According to the wartime pilot Eric Brown, the Albacore was relatively steady throughout the dive, while the recovery was typically both smooth and relatively easy to perform.[8]

Into flight

On 12 December 1938, the first of two prototypes performed its maiden flight from the Great West Aerodrome, flown by F. H. Dixon.[7] During April 1939, the second prototype made its first flight, joining its sibling in the flight test programme shortly thereafter. Both prototypes had not been ordered under individual contracts, but had instead been the first two of a production batch of 100 aircraft.

There were some differences from subsequent production aircraft, such as their initial outfitting with non-tapered engine cowlings and wheel-spats.[7] While the Albacore had been developed as a carrier-capable land plane, there was interest in its potential as a floatplane, thus the first prototype was later outfitted with floats and was experimentally configured for catapult-assisted takeoffs.[7] The Marine Aircraft Experimental Establishment (MAEE) tested it in early 1940, during which its water-handling was less than favourable, although it retained acceptable airborne characteristics, save for its reportedly poorly-harmonised flight controls.[7] During 1939, quantity production of the first batch of 98 aircraft commenced;[10] the start of production had been delayed on account of production slippages of the Taurus engine.[11] During February 1940, testing of the Albacore and Taurus II engine alike commenced at RAF Boscombe Down. During these tests, the prototype demonstrated its ability to attain a maximum speed of 160 mph (140 kn; 260 km/h), at an altitude of 4,800 ft (1,463 m), at 11,570 lb (5,259 kg), which was achieved while carrying four depth charges underneath its wings, while its maximum speed without the depth charges was 172 mph (149 kn; 277 km/h).[12] An Albacore fitted with the Taurus II engine and carrying a torpedo weighed 11,100 lb (5,045 kg).[12] Some minor criticisms of the Albacore were produced during its 1940 evaluation flights; issues included the excessive heat of the forward cockpit during the summer months, while the rear cockpit was cold and subject to persistent drafts.[13] The stall characteristics were described as uncomfortable, while the crew boarding process was also seen as somewhat hazardous. However, the only notable change in the specification was the replacement of the Taurus II engine with the improved Taurus XII counterpart.[11] A total of 800 Albacores were built, including the two prototypes, which were all manufactured at Fairey's Hayes factory. Production came to an end in 1943.[11] They were typically test flown from London's Great West Aerodrome, what has since been expanded into London Heathrow Airport.[14][15][16]

Operational history

Fairey Albacore N4389, 827 Naval Air Squadron, HMS *Victorious*. Shot down during raid on Kirkenes, July 1941. Salvaged, rebuilt and now on display in the FAA Museum

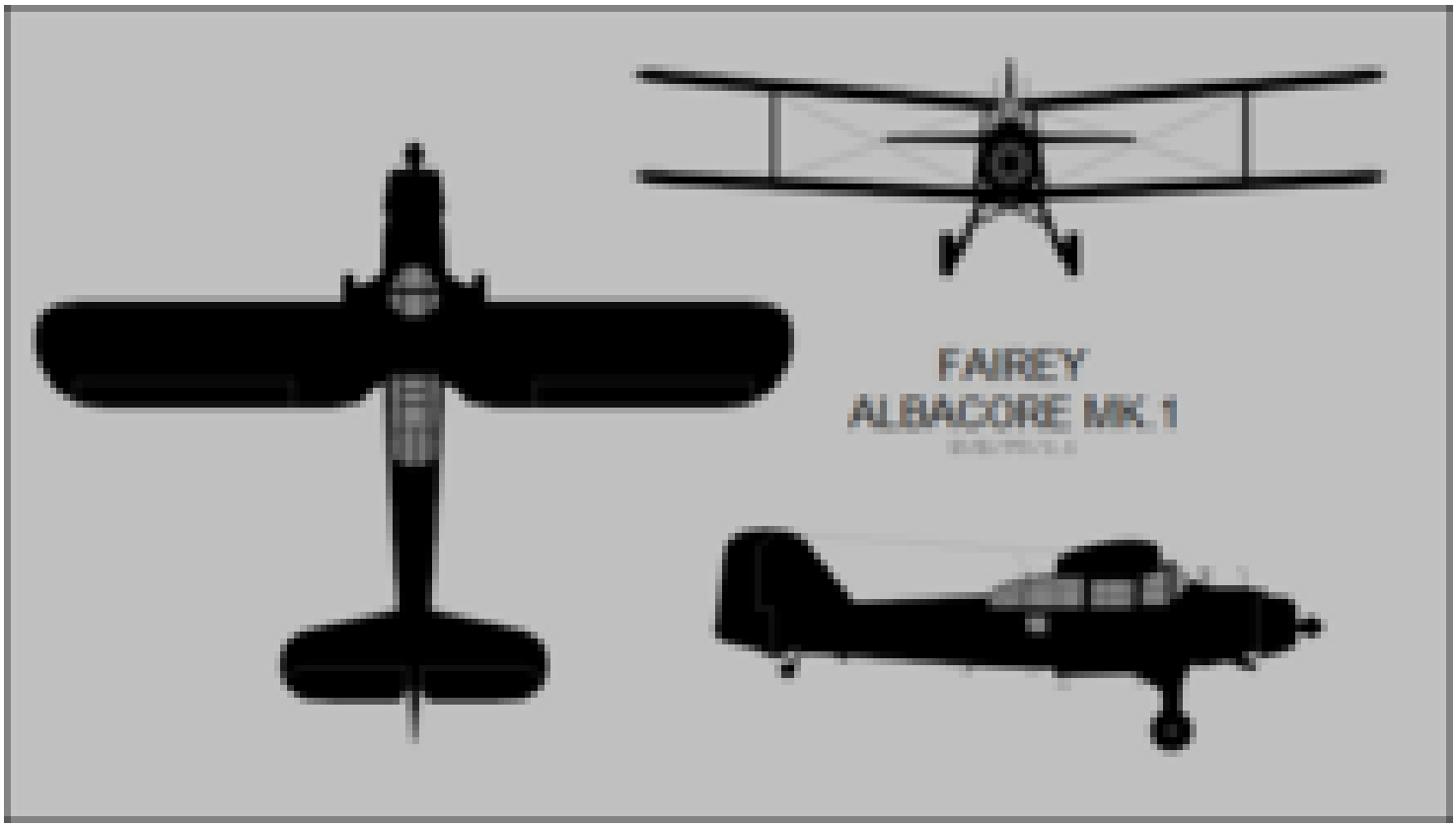
During March 1940, No. 826 Naval Air Squadron was specially formed to operate the first Albacores; within weeks, the type has been put into active combat, performing attacks against enemy-held harbours and shipping in the English Channel, operating from shore bases, as well as providing convoy escort for the rest of 1940.[17][18] HMS *Formidable*'s 826 and 829 Squadrons were the first to operate the Albacore from an aircraft carrier, operations commencing in November 1940.[15][19] Initially, the Albacore suffered from reliability problems with the Taurus engine, although these were later solved, so that the failure rate was no worse than the Pegasus equipped Swordfish.[20] The Albacore remained less popular than the Swordfish, as it was less manoeuvrable, while the controls were considered to be too heavy for a pilot to perform much evasive action after dropping a torpedo.[20] Eventually, there were 15 first-line FAA squadrons equipped with the Albacore which operated widely in the Mediterranean.[17] In March 1941, Albacores successfully undertook torpedo attacks during the Battle of Cape Matapan, inflicting heavy damage on the Italian battleship Vittorio Veneto despite the presence of heavy anti-aircraft fire. The type also played a prominent role in the ill-fated raid on Kirkenes and Petsamo during July 1941.[19]

Albacores also participated, with greater success, in the fighting at El Alamein, highlighting German positions using air-dropped flares to assist RAF night bombers.[19] Between September 1941 and June 1943, No. 828 Squadron, based at RAF Hal Far, Malta, operated a squadron of Albacores under severe blitz conditions during the Siege of Malta.[19] The type employed a mixture of mines and bombs to attack both Italian shipping, including massed convoys, along with shore targets in Sicily, mainland Italy, and North Africa. Albacores also supported the landings at Sicily and Salerno, guarding against enemy submarines and raiding key enemy facilities such as airfields and forts.[19]

Albacore in flight. The markings place it around 1940.

On 9 March 1942, 12 Albacores from HMS *Victorious* were launched to attack the German *Bismarck*-class battleship *Tirpitz* at sea near Narvik.[19] Based on information from one of a search force of six Albacores that had been launched earlier, Albacores from 817 and 832 Squadrons launched torpedoes. One attack came within 20 yards (18 m) of *Tirpitz*, but the attack was a failure, having incurred the loss of two aircraft.[21] During 1943, the Albacore was progressively replaced in FAA service by the newer Barracuda. The final Albacore squadron of the FAA, No. 841 Squadron, which had flown numerous shore-based attacks against shipping in the English Channel for the whole of its career with the Albacore, was disbanded in late 1943.[17][22] The Royal Air Force deployed some Albacores; No. 36 Squadron based at Singapore acquired five to supplement its Vickers Vildebeests at RAF Seletar in December 1941.[23][24] The remnants of the squadron was captured by the Japanese in March 1942. During 1943, No. 415 Squadron RCAF was equipped with Albacores (presumably ex-FAA) before the Flight operating them was transferred and reformed as 119 Squadron at RAF Manston in July 1944. The squadron deployed later to Belgium and their Albacores were disposed of in early 1945, due to spares shortages, in favour of the inferior but ASV radar-equipped Swordfish Mk.IIIs that the squadron kept until the end of the war on 8 May.[25] This was to combat German mini-submarines attacking Allied shipping entering the River Scheldt on its way to Antwerp Port. The Aden Communication Flight used 17 Albacores between the middle of 1944 and August 1946. Some of these were delivered by sea on the SS *Empire Arun* in December 1945 (all from Royal Navy stock). The Royal Canadian Air Force took over the Albacores and used them during the Normandy invasion, for a similar role until July 1944.[24] The Albacore was the last biplane to be used in combat by the RCAF.

Specifications (Albacore with Taurus XII)



Fairey Albacore Mk.1

General characteristics

- **Crew:** 2 (torpedo bomber) or 3 (reconnaissance mission)
- **Length:** 40 ft 1+⅛ in (12.22 m) in tail-up rigging position (landplane)[9]

41 ft 7+⅛ in (12.68 m) in tail-up rigging position (seaplane)[9]

- **Wingspan:** 50 ft 0 in (15.24 m)
- **Width:** 17 ft 9 in (5.41 m) wings folded[9]
- **Height:** 12 ft 10+½ in (3.92 m) (landplane) tail down, propeller tip down[9]
- **Height (seaplane):** 16 ft 8+¼ in (5.09 m) in tail-up rigging position[9]
- **Wing area:** 623 sq ft (57.9 m^2)
- **Empty weight:** 7,250 lb (3,289 kg) (torpedo bomber)

7,200 lb (3,300 kg) (reconnaissance mission)

- **Gross weight:** 10,460 lb (4,745 kg) (torpedo bomber)

9,615 lb (4,361 kg) (reconnaissance mission)

- **Max takeoff weight:** 12,830 lb (5,820 kg)
- **Powerplant:** 1 × Bristol Taurus II 14-cylinder two-row sleeve-valve radial piston engine, 1,065 hp (794 kW) for take-off

or Bristol Taurus XII at 1,130 hp (840 kW) for take-off ; 1,130 hp (840 kW) at 3,500 ft (1,100 m)

- **Propellers:** 3-bladed constant-speed propeller

Performance

- **Maximum speed:** 161 mph (259 km/h, 140 kn) (torpedo bomber) at 4,500 ft (1,400 m)

169 mph (147 kn; 272 km/h) (reconnaissance mission) at 4,500 ft (1,400 m)

- **Cruise speed:** 140 mph (230 km/h, 120 kn) maximum

- **Stall speed:** 54 mph (87 km/h, 47 kn) flaps down[29]
- **Range:** 710 mi (1,140 km, 620 nmi) with torpedo[30]
- **Ferry range:** 930 mi (1,500 km, 810 nmi)
- **Service ceiling:** 18,800 ft (5,700 m)
- **Time to altitude:** 6,000 ft (1,800 m) in eight minutes

Armament

- **Guns:**
  - 1 × fixed, forward-firing 0.303 in (7.7 mm) M1919 Browning machine gun in starboard wing
  - 1 or 2 × 0.303 in (7.7 mm) Vickers K machine guns in rear cockpit.
- **Bombs:**
  - 1 × 1,670 lb (760 kg) torpedo

or

- 2,000 lb (910 kg) of bombs

Source : https://en.wikipedia.org/wiki/Fairey_Albacore