

## WORLD WAR 1 ( 36 Home Defense Squadron )

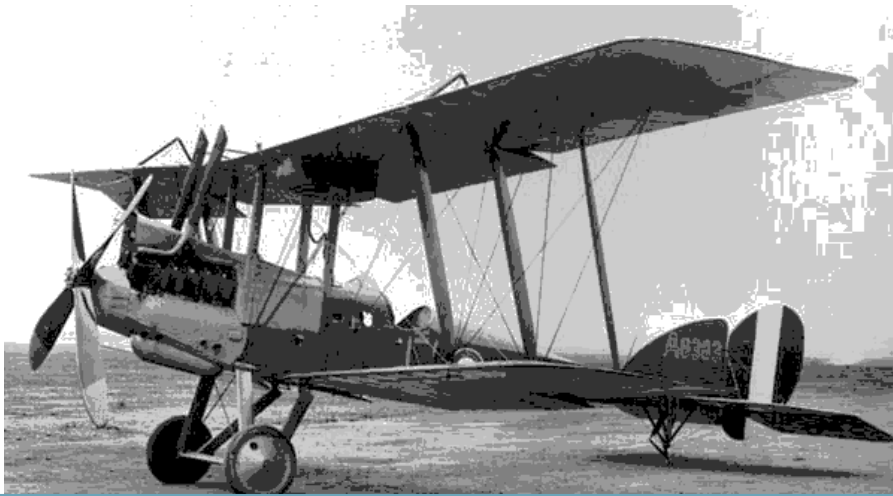
**Table 1**

World War One Units	World War One Aircraft
36 Home Defence Squadron- B Flight, A Flight	Royal Aircraft Factory BE2, BE12, FE2b, FE2d Bristol Scout



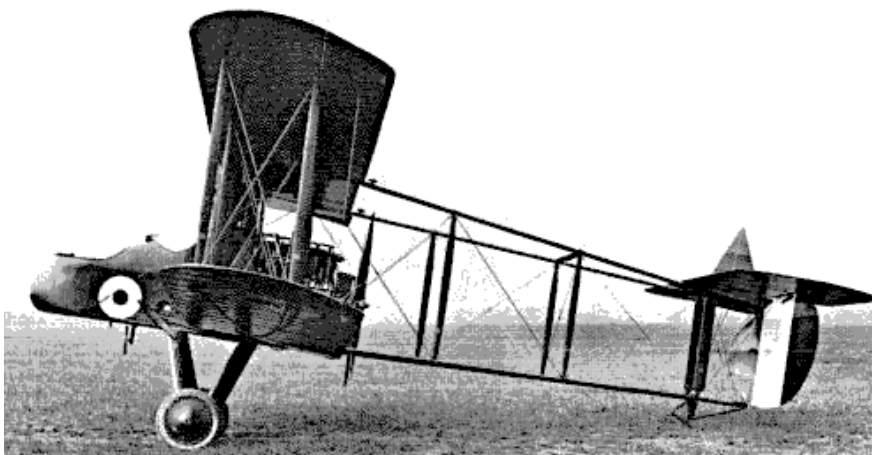
Royal Aircraft Factory BE2c

This single engine 2-seater biplane served with the Royal Flying Corps throughout WW1. It was used primarily for reconnaissance, although some were converted to fighters or bombers. Single-seat BE2cs shot down 6 Zeppelins over Britain. In total, 3,260 BE2cs were built. It had a maximum speed of 90mph, a ceiling of 10,000 feet and had a 4-hour endurance.



**Royal Aircraft Factory BE12**

The BE12 was essentially a single-seat BE2, and entered service in February 1917. It carried a .0303- inch synchronized Vickers machine gun, and had a maximum speed of 102 mph, a ceiling of 12,500 feet, and took 11 minutes to reach 5000 feet. The aircraft proved to be useless when faced with the new German Albatros and Albatrostadt fighters and was withdrawn from Front-line duties in March 1917. The main recorded success for the aircraft was the shooting down of Zeppelin L48 by a Home Defense BE12 on 17th June 1917, but in general the type was considered to be a failure.



**Royal Aircraft Factory - Bristol FE2b (and d)**

The FE2b/d was a two-seat pusher type fighter and bomber aircraft, with the engine mounted behind the pilot. This arrangement allowed a clear field of fire for the .303 Vickers machine gunner in the front cockpit. Additional rear-firing guns were often mounted. The aircraft entered service in 1915, but by Autumn 1916 more modern aircraft meant that it was out-performed and it was withdrawn from front line service a year later. Despite its obsolescence the aircraft was popular with aircrew, and with its strength and good flying characteristics, together with a heavy armament, it often proved to be a handful for enemy pilots. The German ace Max Immelmann was killed in combat with FE2bs of 25 Squadron, RFC. At its peak the FE2b equipped 16 RFC squadrons in France, and 6 Home Defense squadrons.

## Interwar Years-

607 Squadron Auxiliary Air Force (County of Durham Squadron)

**Table 2**

Interwar Units	Interwar Aircraft
Auxiliary Airforce 607 (County of Durham Squadron)	De Havilland Gypsy Moth Avro 504n Westland Wapiti Avro Tutor Hawker Hart Hawker Demon Gloster Gladiator
Squadron, 103 (B)	Hawker Hind Fairey Battle
226 Squadron	Hawker Audax
19 Squadron	Gloster Gauntlet
	Boulton Paul Overstrand
'G' Flight of No 1 Anti-Aircraft Co-operation Unit	Hawker Henley Battle Wallace



**Hawker Henley**

The Henley was a target tug derived from the Hawker Hurricane and shared the same Merlin engine and body and wing parts. It was originally intended to be a light bomber. It was introduced in 1938 and served with nine RAF squadrons. A total of 202 aircraft were produced. It had a top speed of 294 mph, a range of 950 miles and a service ceiling of 27,000 feet. The type was retired in 1945.



**de Havilland Gypsy Moth (and Hornet Moth)**

The de Havilland Gypsy Moth was a development of the basic Moth trainer and tourer which first flew in 1925, with the original 60hp engine upgraded to a 100hp Cirrus engine. The original Moth design led to a series of trainer aircraft over the years, and it became one of the most popular military trainers in the world. By 1931 the RAF was operating 124 aircraft of the type. It had a top speed of 102 mph and a range of 320 miles. The aircraft was exported to numerous countries and was built under license in the USA, Canada, Australia and France. After WW2 many ex-military aircraft were sold to civilian flying clubs and private owners.



**Avro 504n**

This WW1 biplane was produced by Avro and other manufacturers under license. Between 1913 and 1932 more than 10,000 were built as bombers and fighters. In November 1914 four Avro 504s bombed the Zeppelin works at Frederichhafen, and although one aircraft was lost the raid was a success with airship hangers and a hydrogen generating plant destroyed. From 1917 onwards fighter versions began to replace Home Defense squadron BE2cs. The type continued as the standard RAF trainer after the war, and more than 300 ex-service aircraft appeared on the Civil Register. Max speed was 95 mph, service ceiling was 16,000 feet and range was 250 miles.



**Westland Wapiti**

This was a two seat, general purpose single engine biplane named after a member of the Deer family. It entered service with the RAF in 1928 and remained in production until 1932, a total of 565 being built. It eventually equipped 20 squadrons of the RAF at home and overseas and remained in service until 1940. Maximum speed was 129 mph, range 310 miles and ceiling 18, 800 feet.



**Hawker Hart**

This was a 2 seat, biplane light bomber, which first flew in 1928. It became the most widely used light bomber of the period. With a top speed of 184 mph, it was faster than most contemporary fighters in RAF service. It entered service in 1932 and saw extensive service on the Northwest Frontier of India, and in the Abyssinian Crisis of 1935-36. By the beginning of WW2, it was obsolete as a bomber, but continued in service as a communications and training aircraft until replaced in 1943. 992 aircraft were built.



**Hawker Demon**

The Demon was a 2 -seat fighter derivative of the Hart day bomber, with a supercharged Kestrel engine and a second machine gun, The rear-facing coaming was modified to give a better field of fire. In April 1933 number 23 squadron was the first of 7 RAF and 5 Auxiliary Air Force squadrons to be equipped with the fighter, Four AAF squadrons saw service during the Abyssinian Crisis of 1935/36. The Demon was not a great success as the high speed of the aircraft meant the rear gunner had difficulty operating the gun against the slipstream. It remained in front line service until 1938 when the remaining squadrons received the Blenheim night fighter.



**Gloster Gladiator**

This was the last biplane fighter used by the RAF and the first to have an enclosed cockpit. It had 4x 0.303 machine guns, a maximum speed of 253 mph, a ceiling of 32, 800 feet and an endurance of 2 hours. It entered service in 1937, and a total of 747 were built. It was exported to 13 countries. Eight squadrons formed the spearhead of London's defenses and served in the Norwegian and French Campaigns. It is best remembered for its part in the defense of Malta where a small number of Sea Gladiators fought with distinction against superior Italian fighters and bombers. After it was withdrawn from front line service a number performed secondary duties and few survived the war.



**Hawker Hind**

103 Squadron was reformed as a light bomber squadron in 1936 at Andover, flying Hinds, and was then transferred to RAF Usworth. The Hind eventually equipped 20 RAF light bomber squadrons. By 1937 it was being phased out of service as a bomber but found a new career as a trainer representing the next step up from the Tiger Moth. It was replaced by the Fairey Battle. The type had a maximum speed of 185 mph, a ceiling of 26,400 feet and a range of 400 miles.



**Fairy Battle**

The Battle was designed to replace the Hawker Hart light bomber, but by the time it reached operational service in 1937 it was already obsolete. During the early stages of WW2, it was very vulnerable to enemy fighters, having a defensive armament of only one 0.303 machine gun in the wing and a Vickers 0.303 in the rear cockpit. The aircraft experienced heavy losses in the Battle of France and was relegated to night duties. It was soon replaced by the Vickers Wellington bomber. Nevertheless the aircraft performed useful secondary duties during the war, notably in Coastal Command. The aircraft had a crew of three, a maximum speed of 241 mph and a ceiling of 25,000 feet.



**Hawker Audax**

This very successful 2 seat army cooperation aircraft was developed from the Hawker Hart and served throughout the British Empire. There were several modifications from the Hart including a hook to pick up messages from the ground. It first entered RAF service in 1932 and over 700 were built. It was armed with a rear facing 0.303 -inch machine gun and a second machine gun in the wing and had a maximum speed of 170mph. A tropicalized version was developed for service in India and Singapore. It ended its service in 1945.



**Gloster Gauntlet**

This was a single seat fighter which entered service with the RAF in 1935. It was the last RAF fighter to have an open cockpit. At its peak in 1937 the Gauntlet equipped 14 RAF squadrons, but by the outbreak of WW2 the type had been replaced by more modern fighters. It remained in service in the Middle East and in the Sudan in 1940 Gauntlets carried out bombing and strafing attacks against Italian forces. It had a maximum speed of 230mph, a ceiling of 33,500 feet and a range of 460 miles.





## WORLD WAR 2

**Table 3**

World War Two Units	World War Two Aircraft
Sector Fighter Station in 13 Group Fighter-Command	
64 Squadron	Supermarine Spitfire
607 Squadron	Hawker Hurricane
43 Squadron	Hawker Hurricane
3 Radio Maintenance Unit	de Havilland Hornet Moth
55 Operational Training Unit	Hawker Hurricane Fairy Battle Miles Master Martinet De Havilland Tiger Moth North American Harvard Bristol Blenheim Boulton Paul Defiant
72 (Signal) Wing	de Havilland Hornet Moth Bristol Blenheim
62 Operational Training Unit	Avro Anson Vickers Wellington Hawker Hurricane
Airborne Interception Training (AI) Flight	Avro Anson
3RSS	de Havilland Hornet Moth Hawker Hurricane
US Army Signal Corps 416 <sup>th</sup> Night Fighter Squadron	USAAF Bristol Beaufighter
776 Squadron	Bristol Blenheim Blackburn Roc Blackburn Skua Vought Chesapeake Fairey Barracuda Grumman Martlet



**Supermarine Spitfire**

Probably the most famous British military aircraft, the Spitfire was a single engine fighter designed by R J Mitchell at Supermarine Aviation. It first flew in 1936 and was introduced into RAF service in 1938. It was manufactured throughout the war years and 20,351 aircraft were built in fighter and photo reconnaissance variants. The aircraft was initially powered by the Rolls Royce Merlin engine, and in its early marks had a top speed of around 350 mph, rising to more 400 mph in later models. The aircraft initially carried 8 wing mounted machine guns, but later versions introduced cannons. It had a limited range of around 250 miles and a ceiling of 36, 500 feet.



**Hawker Hurricane**

This single seat fighter served with distinction in the Battle of Britain and shot down 60 % of the enemy kills, more than its better- known contemporary the Spitfire. It went into production in 1936 and entered squadron service in December 1937. Production ended in July 1944, by which time 14,487 aircraft had been produced. The type served in all the major theatres of WW2. The Hurricane was developed through fighter, fighter bomber, and ground support versions, and was also modified to serve from aircraft carriers as the Sea Hurricane. It was powered by the Rolls Royce Merlin engine, and had a top speed of 340 mph, a ceiling of 36, 000 feet and a range of 600 miles. It initially had 8 wing mounted machine guns, but some later carried 4 20mm cannon.



**Miles Master**

This was a two-seat advanced trainer that functioned as a high-performance introduction to the Spitfire and Hurricane. It was comparatively fast for a trainer and was fully aerobatic. It first flew in 1939 and a total of 3,249 aircraft were eventually produced. It had a speed of 242 mph at 6000 feet, a ceiling of 25,100 feet and range of 393 miles. No examples have survived to today.



**Miles Martinet**

This was a target tug, which served in the RAF and Fleet Air Arm during the Second World War, and it was the first British aircraft specifically designed for the purpose. It first flew in 1942, and 1,724 Martinets were eventually built. The type became a mainstay of gunnery schools, operational training units, anti-aircraft cooperation squadrons and air-sea reconnaissance units. It served into the early 1950s until replaced by more advanced aircraft such as the Balliol.



**North American Harvard/Texan**

An American advanced trainer designated T6 Texan, but in British service it was known as the Harvard. It served in the United States Air Force, the RAF, and many other air forces well into the 1970s. It first flew in 1935 and a total of 15,495 were built. During the Korean War, 1340 Flight of the RAF used the type against Mau Mau in Kenya, armed with 20 lb bombs and machine guns. Many are now in private hands or in museums, and it can regularly be seen at air displays.



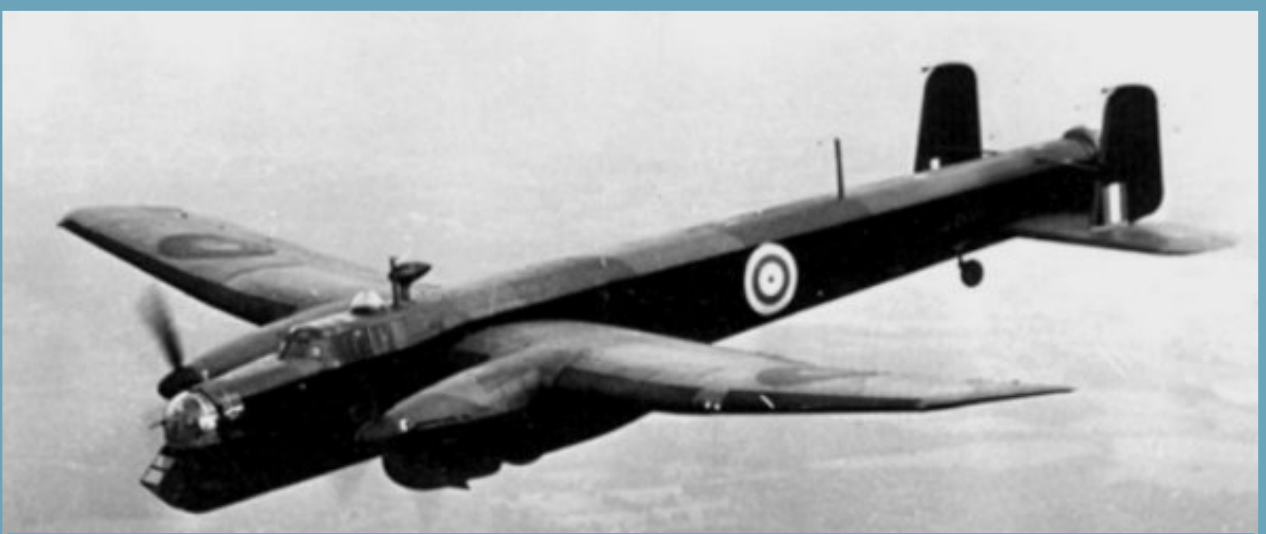
**Bristol Blenheim**

The Blenheim was a twin-engine, high performance bomber, powered by two Bristol Mercury radial engines. It first flew in 1935 and entered RAF service in 1937, and, was faster than the RAF fighters of the time, but, rapid fighter development in the late 1930s made the aircraft obsolete by the beginning of WW. Its poor defensive armament made it vulnerable to German fighters. Nevertheless, the aircraft was used extensively in all major theatres of war until it was replaced by more advanced types. The aircraft had a maximum speed of 266 mph, a ceiling of 27,260 feet and a range of 1460 miles.



**Boulton Paul Defiant**

The Defiant was a “turret Fighter” designed to destroy enemy bombers. The turret was able to fire in all directions. The type achieved some success as a night fighter but was vulnerable to faster and more maneuverable enemy fighters and was soon withdrawn from day service. It equipped thirteen squadrons as night fighters, and only two as day-fighters. In 1942 it was replaced by more effective aircraft such as the Mosquito and the Beaufighter , and for the rest of its life was used for gunnery training, as a target tug, for electronic countermeasures and for air sea rescue.



**Armstrong Whitworth Whitley**

The Whitley was a medium night bomber which entered service in 1937. It was in service at the beginning of WW2, alongside the Wellington and Hampden. At the outbreak of war seven squadrons operated the type, and it carried out some of the earliest bombing raids on Germany. It was obsolete when it entered service, but over 1,000 aircraft were produced pending the arrival of more capable types, and it was withdrawn in 1942. In a secondary role it was used as a paratroop transport, a target tug and in the Coastal Command long - range patrol role.



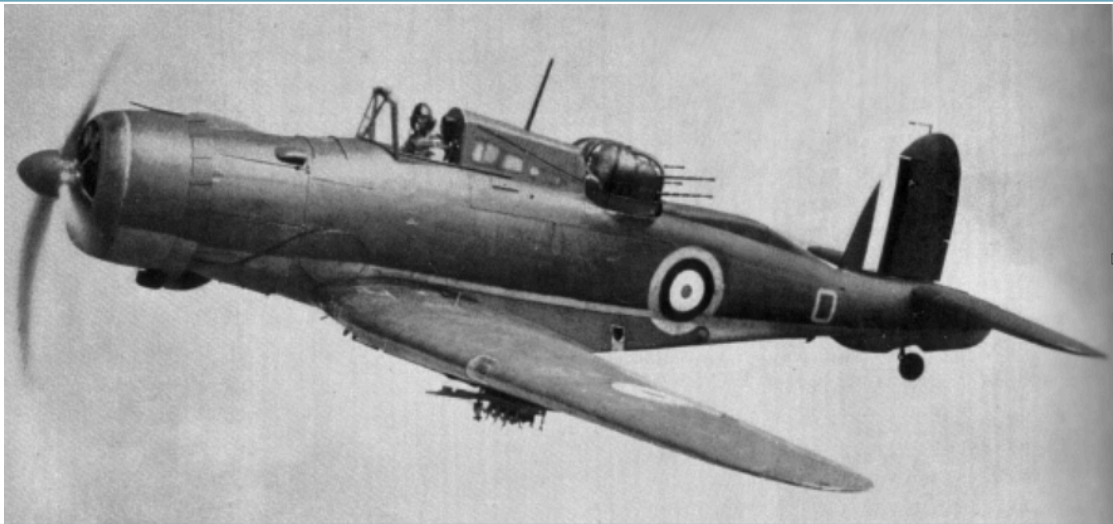
**Avro Anson**

This was a twin engine, multi-role aircraft developed from a small airliner in the 1930s. It entered service in 1936 and was the first aircraft in RAF service to have retractable landing gear. It was initially engaged in maritime reconnaissance duties but later became a general-purpose, transport and trainer aircraft. Early versions were armed with a forward firing 0.303- inch machine gun in the fuselage and a Lewis gun in a turret in the dorsal position. 828 Ansons were in RAF service at the outbreak of WW2. After the war the aircraft remained in production and saw widespread use as an executive aircraft and for charter. The type had a maximum speed of 188 mph, a ceiling of 19,000 feet and a range of 660 miles.



**Bristol Beaufighter**

The Beaufighter was a twin- engine, long- range day and night fighter, which first flew in 1939, and entered RAF service in 1940. The type served with 59 RAF squadrons during the war in many different roles, including rocket-armed ground attack, and torpedo bombing. It was also a very potent night-fighter, equipped with airborne radar equipment and a heavy canon armament. The unit based at RAF Usworth worked as a night-fighter training unit, training American Airforce aircrew in the use of airborne radar, and night interception techniques, as at the time, the American Airforce did not have its own night fighter aircraft. They returned to the USA to train American personnel. The type had a maximum speed of 320 mph, a range of 1750 miles and a ceiling of 19,000 feet.



**Blackburn Roc**

A naval fighter aircraft with all its armament contained in a revolving turret. The type entered service in 1939 and served in the Norwegian campaign, and the Dunkirk evacuation. It was slow for a fighter and was viewed as inferior to existing aircraft types. It was soon withdrawn from front line service and relegated to air-sea rescue and target-towing duties. It was withdrawn during 1943.



**Blackburn Skua**

The Skua was a carrier-borne, 2 seat dive bomber and fighter, which entered service in 1937. At the beginning of WW2, 33 aircraft were in service. The Skua was heavily involved in the Norwegian campaign, and Skuas sank the German cruiser Konigsberg in a dive-bombing attack. While it was a capable dive-bomber it was too slow to be a successful as a fighter, and it was unable to compete successfully with contemporary German fighters. It had a maximum speed of 225 mph, a ceiling of 20,200 feet and range of 760 miles.



**Vought Vindicator/ Chesapeake**

The Vindicator was an American carrier-based dive bomber, which, in RAF service, was known as the Chesapeake. It was developed during the 1930s and a total of 260 aircraft were manufactured, with 50 supplied to the British Fleet Air Arm. It was operated by 811 Naval Air Squadron in 1941 and was intended for use on small British escort carriers, but it was found to be under-powered for this role and was unable to carry a useful bomb load. It was then relegated to training duties. It had a maximum speed of 243mph, a ceiling of 23,600 feet and a range of 1,129 miles.



**Fairey Barracuda**

A British carrier borne dive bomber and torpedo aircraft operated by the Fleet Air Arm, it was developed as a replacement for the Fairey Albacore biplane. It first flew in 1940 and was introduced to front-line service in 1943 with 827 Squadron of the Fleet Air Arm. Eventually 24 squadrons operated the type, and it served effectively in all major theatres of action. One of its most famous operations was the attack on the Tirpitz battleship in Norway in 1944 when 42 aircraft dive-bombed the battleship, obtaining 1 hit and putting the ship out of action for over 2 months. It had a maximum speed of 240 mph, a ceiling of 16,000 feet and a range of 1,150 miles.





### **Grumman Martlet**

An American carrier-based fighter called the Wildcat, which was also operated by the British Fleet Air Arm, where it was known as the Martlet. It pioneered operations from small Royal Navy carriers. In 1941 Martlets from HMS Audacity shot down several FW 200 bombers during convoy protection operations. Almost 1,200 Martlets were operated by the Fleet Air Arm and the Martlet was regarded as one of the best allied naval fighters of the early part of the war. The last air raid in the European theatre was carried out by Martlets on 5 May 1945 when 28 aircraft from 846, 853 and 882 naval aircraft squadrons attacked a U -boat depot in Norway where 2 ships and a U-boat were sunk for the loss of one Martlet and one Avenger torpedo bomber. The aircraft had a maximum speed of 331 mph, a ceiling of 39, 500 feet and a range of 845 miles.



## POST WAR AIRCRAFT

**Table 4**

Post War Units	Post War Aircraft
31 (641) Gliding School	Slingsby Sedbergh Miles Falcon 111 Slingsby Cadet
23 Reserve Flying School	Avro Anson de Havilland Tiger Moth de Havilland Chipmunk
1965 Flight of 664 Squadron	Taylorcraft Auster
2 Basic Air Navigation School	Avro Anson T21
Durham University Air Squadron	De Havilland Tiger Moth North American Aviation Harvard de Havilland Chipmunk Airspeed Oxford Avro Anson Percival Proctor Boulton Paul Balliol



**Taylorcraft Auster**



This was an air observation post aircraft used by 12 RAF squadrons during WW2 and post war. It was also used for general liaison duties. 1,630 were built from 1942 onwards.



**Slingsby Falcon 111**



The Slingsby was a single seat sport glider used from 1935 by the Air Training Corps, developed from a German design. Only 21 were built.



**Slingsby T7 Kirby Cadet**



A British glider which first flew in 1935 and was used by the Air Training Corps in the 1950s, 60s and 70s to train air cadets. 376 aircraft were built, and some still survive in civilian hands.



**Slingsby Sedbergh**

An open cockpit, 2 seat glider which first flew in 1944. The RAF received 85 Sedberghs and the type stayed in service until the mid- 1980s. It was used mainly for Air Cadet training.



**Avro Anson T21**

After the war the Anson remained in production for the RAF until March 1952, and the type stayed in service as a trainer and Station Communications Aircraft until 1968.



**de Havilland Tiger Moth**

Having first flown in 1932 the type was still being used as a primary trainer after the Second World War. It was replaced by the Chipmunk. 8,868 aircraft were built and many still exist in private ownership.



**de Havilland Chipmunk**

A tandem 2 seat primary trainer designed by the Canadian aircraft manufacturer de Havilland. 1,284 aircraft were built of which 735 were delivered to the RAF to replace the Tiger Moth. The aircraft remained in service until 1996 with the Air Training Corps for air experience flights.