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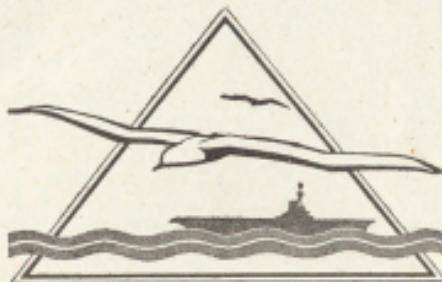
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and the
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THE ROYAL AIR FORCE

THE Royal Air Force was formed on April 1st, 1918, by the amalgamation of the Royal Flying Corps and the Royal Naval Air Service. For 5 years after the Armistice, it was maintained at a strength far below its responsibilities. In 1933 the first of several expansion schemes was put into effect, and expansion was still in progress when war broke out in 1939, after which it was expanded to maximum operational efficiency.

Control of the R.A.F. is exercised by the Air Ministry through a number of home and overseas commands and other formations. The Air Ministry is under the authority of the Air Council, of which the Secretary of State for Air is president. Other members include the Chief of the Air Staff and his deputies, who are responsible for policy, operations, intelligence, staff duties, supply, signals, personnel, training, technical development, etc.

Changes in R.A.F. organisation occurred from time to time during the war, and the details given below relate to the organisation as at May 3rd, 1945, the date of Germany's unconditional surrender.

BOMBER COMMAND

Bomber Command comprises the main home-based bomber strength of the R.A.F., and its great fleet of long-range heavy bombers constitutes the most formidable striking force of Britain's air power. It may be employed strategically to carry the war deep into the enemy's territory, and to destroy his factories, power plants and munition centres. It may also be used tactically in immediate support of troops on a field of battle to which targets in the enemy's back areas such as troop and artillery concentrations, transport lines, etc. Bomber Command is organised in a series of Groups which are in turn subdivided into stations and squadrons.

COASTAL COMMAND

Coastal Command in wartime works under the operational control of the Admiralty and in close co-operation with the Royal Navy and the Fleet Air Arm. Its main functions are the defence of our sea communications and offensive action against enemy submarines and surface craft both at sea and in their home bases. Bombing attacks on enemy coastal fortifications, harbours and docks are also a part of the daily work of this Command.

FIGHTER COMMAND

This Command is primarily responsible for the defence of Great Britain against air attack. It controls a country-wide organisation of day and night fighter squadrons held ready to repel attacks from whichever direction it may be launched, and provides escorts for bombers engaged in daylight operations, and "intruders" for day and night missions over enemy territory. It also controls the Royal Observer Corps, and co-ordinates all other air defence measures.

SECOND TACTICAL AIR FORCE

This Force was formed in Great Britain in 1943, as part of the Allied Expeditionary Air Forces to give direct (or tactical) support to land and sea forces in the invasion of Europe. It consisted of both R.A.F. and U.S.A.A.F. squadrons of day and night fighters, fighter-bombers, bombers and other units, which drew on Continental bases shortly after the Allied landings in Normandy on June 6th, 1944. It played an important part in harassing the retreating enemy, and took heavy toll of his road transport and armoured vehicles.

TRANSPORT COMMAND

Formed in 1943 following disbandment of the R.A.F. Ferry Command, Transport Command controls R.A.F. transport squadrons at home and abroad. It is responsible for the organisation and maintenance of strategic air routes, including the transatlantic air link, for overseas carrying and for reinforcement moves of squadrons to and between overseas theatres of war.

THE TRAINING COMMANDS

There are two R.A.F. Training Commands, one devoted to Flying Training and the other to Technical and Ground Training. The function of both is to prepare pilots, air crews and ground personnel for duties with the operational squadrons of the R.A.F.

MAINTENANCE COMMAND

The rôle of this R.A.F. Command is to co-ordinate, in close collaboration with the Ministry of Aircraft Production and other Government organisations, the supply, salvage and repair of the wide range of equipment used by the R.A.F. both on the ground and in the air.

R.A.F. REGIMENT

Organised and trained for the defence of aerodromes against enemy attack, the R.A.F. Regiment was formed in 1942. It provides units to follow close behind the Army and occupy and hold aerodromes for R.A.F. operations.

AIR FORCES OF THE EMPIRE

CANADA'S AIR FORCE

THE ROYAL CANADIAN AIR FORCE

CANADA's part in the 1939-1945 War in the Air was the greatest played by any British Dominion. Altogether over 8,000 Canadians served as officers in the Imperial flying services, while in Canada itself a vast air training organization came into being which, by 1945, was regularly producing an average of 200 fully trained pilots each month.

After the war a small training force, known as the Canadian Air Force, was set up on a semi-permanent basis, and remained in being until 1948, when it was reorganised on a permanent basis and granted the prefix "Royal". From the outset the Royal Canadian Air Force became, in effect, a Government flying service engaged in such varied activities as mail route development, customs patrols, aerial surveying, and forestry protection. On the outbreak of war a large expansion scheme, part of the British Commonwealth Air Training Plan, was set in motion, as a result of which large numbers of R.C.A.F. personnel—pilots, air crews, and ground staffs—are now serving with the R.A.F., either as members of R.C.A.F. fighter and bomber squadrons or as attached members of R.A.F. units. The R.C.A.F. also maintains a Home War Establishment for the defence of the Dominion, and squadrons of this force have been engaged in the Battle of the Atlantic as convoy escorts and on anti-submarine patrols since the outbreak of the war.

The uniform of the Royal Canadian Air Force is similar to that of the R.A.F. Pilots, however, wear R.C.A.F. "wings" and all R.C.A.F. members when serving overseas wear the same "Canada" epaulettes on the shoulders of tunics and garrison caps.



THE ROYAL AUSTRALIAN AIR FORCE

During the Great War of 1914-18 the Australian Flying Corps, which had originated from an air unit established at Point Cook in 1912, rendered invaluable service to the Allied cause, notably on the Mesopotamian and Palestine fronts. After the war the Corps was disbanded, and in 1921 the Royal Australian Air Force was formed by Proclamation. In September, 1923, it became a separate service of the Commonwealth defence forces, equal in status to the Australian Navy and Army.

Organization of the Royal Australian Air Force is based on Royal Air Force standards. Their uniform also closely follows the R.A.F. pattern but is dark blue in colour. Officers wear miniature wings on their sleeves above the rank rings.

Australia was the first Dominion to have a complete unit of its own Air Force in service in the European theatre on the outbreak of war in 1919. This unit was a General Reconnaissance Standard squadron which was attached to the Coastal Command of the R.A.F. in January, 1919. Other squadrons of the R.A.A.F. served in the European and Eastern war theatres. Australia also took a leading part in the Commonwealth Air Training Plan, and many new R.A.A.F. squadrons were built up from Australian graduates of the Plan.

Australia's Home Defence Force was greatly expanded during the period 1939-1945.

Early in 1945 the Australian Air Minister announced that Australia had provided 35,000 members of air crews for the Commonwealth Air Training Plan, of whom 6,000 had been killed, more than 2,000 reported missing and 1,000 taken prisoner.



ROYAL AUSTRALIAN AIR FORCE

THE ROYAL NEW ZEALAND AIR FORCE

More than 300 New Zealanders served as officers in the British flying services during the 1914-18 War, but it was not until 1923 that New Zealand had its own Air Force. At first the Force was administered by the General Officer Commanding the New Zealand military forces, with the Director of Air Services as his Air Adviser and in command of the Force. In 1947 a complete reorganization of the air defence system took place, and the Royal New Zealand Air Force, which had been granted permission to use the "Royal" prefix in 1934, is now controlled by an Air Board, which administers not only the regular Air Force but also the Air Force Reserve and the Territorial Air Force of New Zealand.

In training, organization, and administration the R.N.Z.A.F. adheres closely to the standards and methods of the R.A.F. Before the war, New Zealand contributed each year a considerable number of successful candidates for commissions in the R.A.F.

From September, 1939, the volume of New Zealand entrants into the R.A.F. and R.N.Z.A.F. increased enormously and each month saw fresh contingents of New Zealand pilots and ground crews reaching the mother country. A number of New Zealand bomber and fighter squadrons, manned entirely by personnel born in the Dominion, repeatedly distinguished themselves in action against the enemy, and won many decorations, including two Victoria Crosses.

From a strength of 1,800 on the outbreak of war the New Zealand Air Force grew to some 420,000, a twenty-fold increase in strength.

THE SOUTH AFRICAN AIR FORCE

The history of South Africa's Air Force began in 1914, when a small group of officers of the Union's Defence Forces was sent to England for flying instruction and active service with the R.F.C. In the same year a

South African Aviation Corps was formed, and after playing a notable part in the capture of German South-West Africa was renamed No. 16 (South Africa) Squadron, R.F.C., and saw two years of arduous service in the German East African campaign.

In addition to this unit, a large number of South Africans came to England on the outbreak of war and joined the British flying services. By 1916 nearly 2,000 South Africans were under training in England and Egypt, and, in all, more than 3,000 South Africans were commissioned in the R.F.C., R.N.A.S., and R.A.F. during the Great War.

In 1920, following a gift to the Union by the British Government of 200 aeroplanes, the South African Air Force came into being, under the command of Sir Pierre van Ryneveld, as Director of Air Services. Development was gradual until, in 1936, an important expansion scheme was embarked upon which aimed at the training, within five years, of 2,000 new pilots and 3,000 mechanics.

From 1939 onwards, the South African Air Force played a notable part in the campaigns in Italian East Africa, in association with the R.A.F., and contributed in large measure to their success. South African Air Force squadrons, in common with other armed services of the Union, were, for the first three years of the war, restricted to service on the African continent. Early in 1943, however, the law was amended and S.A.A.F. squadrons subsequently distinguished themselves in other theatres of war.

Many South Africans served with R.A.F. squadrons in the United Kingdom and in the Middle East.



SOUTH AFRICAN AIR FORCE

THE ROYAL INDIAN AIR FORCE

The Indian Air Force came into being in 1932, though its first full squadron was not formed until 1938. Its personnel is entirely Indian, but officers and airmen from the R.A.F. are attached to it for instructional and technical duties. A large expansion scheme was begun on the outbreak of war, and a Volunteer Air Force Reserve, for coastal defence duties, was formed. The Indian Air Force is administered by the Defence Department of the India Government and operates in close liaison with the R.A.F. in India. It became the Royal Indian Air Force in March, 1945.

THE EIRE AIR CORPS

The Eire Air Corps was formed in 1922 and took over in that year the bases previously occupied by the R.A.F. in Southern Ireland. A small but efficient force, it is administered by the Department of Defence, and has its headquarters at Baldonel, Co. Dublin.

ALLIED AIR FORCES WITH THE R.A.F.

Throughout the greater part of the European war of 1939-1945, large numbers of Allied airmen served with the Royal Air Force. They included Polish, Czech, French, Belgian, Dutch, Greek, Yugoslav, and Norwegian nationals. Many of them were at first enrolled in the Royal Air Force, but by 1944 squadrons of the individual Air Forces had been formed and attached to the R.A.F. for operational duties in all the principal commands at home and overseas.

Large numbers took part in the Battle of Britain in 1940, and in the "sweeps" over France flown by Fighter Command when, the German threat of invasion defeated, the R.A.F. began to carry the air war to the Continent.

Throughout the war, as numbers of air and ground crews, these Allied airmen gave valuable service to the R.A.F., and won many decorations for gallantry and devotion to duty. They wore R.A.F. uniforms with their own badges and insignia, and bore the names of their country as a shoulder tab. After hostilities in Europe ended, many Allied airmen returned to their own countries, leaving the warplanes they had flown on operations.

The Women's Auxiliary Air Force—Continued.

3 ft. 3 in., car drivers 5 ft. 2 in.). Basic rates of pay vary from 1s. 4d. to 2s. 6d. a day in the lowest ranks according to trade, and recruits are enrolled for the duration of the war with the obligation to serve anywhere in the United Kingdom or overseas. Trade training is given where necessary, and, under the supervision of their own officers and N.C.O.s, airwomen are housed and fed, their health safeguarded, and ample facilities provided for recreation.

Commissioned officers of the W.A.A.F. are normally selected from airwomen and N.C.O.s who show special promise and ability to take responsibility. Their rate of pay is two-thirds that of a R.A.F. officer (Equipment Branch) of equivalent rank, and there are a variety of specialist duties in which they may be employed. A large number of W.A.A.F. officers are employed on Administrative duties, with either the R.A.F. or the W.A.A.F. Others may specialize, after suitable training, as Accountant Officers, Codes and Cipher Officers, Equipment Officers, Hospital Caterers, Intelligence Officers, Meteorologists, Operations Officers, Photographic and Photographic Interpretation Officers, Radio Officers, Watchkeeping Supervisors and Signals Officers.

The W.A.A.F. had its counterpart in the 1914-18 war in the W.R.A.F. (Women's Royal Air Force), which at its peak numbered 30,000 strong. This force was disbanded in 1919.

W.A.A.F. RANKS and their R.A.F. Equivalents

Air Chief Commandant	Air Vice-Marshal
Air Commandant	Air Commodore
Group Officer	Group Captain
Wing Officer	Wing Commander
Squadron Officer	Squadron Leader
Flight Officer	Flight Lieutenant
Section Officer	Flying Officer
Assistant Section Officer	Fleet Officer

Non-Commissioned Ranks

Warrant Officer	Warrant Officer
Flight Sergeant	Flight Sergeant
Corporal	Corporal
Leading Aircraftwoman	Leading Aircraftman
A.C.W.1	A.C.1
A.C.W.2	A.C.2

THE AIR TRAINING CORPS

THE Air Training Corps is a voluntary part-time Service. Training open to young men from the age of 15½ until they enrol in one of the three Services at the age of 18 or 19. It forms a vital part of the training schemes of the R.A.F. and Fleet Air Arm in providing a constant flow of enthusiastic, well-disciplined and semi-skilled candidates mainly for air crew duties or as glider pilots for the Army. Organised into eleven separate Commands on a geographical basis and administering some 1,700 separate squadrons and units all over Great Britain and Northern Ireland, the Corps had a total strength of about 200,000, including instructors and deferred service airmen under training, on January 31, 1943.

The A.T.C.—as it is generally known—grew out of an earlier organisation sponsored by the Air League of the British Empire, the Air Defence Cadet Corps. It is now under the aegis of the Air Ministry and is privileged to have as its Air Commodore-in-Chief, H.M. The King. Chief Commandant and Director-General of the Corps is Air Marshal Sir Leslie Gossage, K.C.B., C.V.O., D.S.O., M.C.

Subjects taught to all cadets include signalling, drill, physical training, aircraft recognition, rifle shooting and Service procedure. Technical training includes tuition in the R.A.F. trades of wireless operator, wireless mechanic, engine and airframe mechanic. Air crew candidates receive special training in navigation, gunnery and air bombing.

Training is given at each squadron's local headquarters in the cadets' spare time during evenings and at week-ends, and is combined with frequent visits to R.A.F. and Royal Naval air stations where passenger flying facilities are available to cadets.

Since its formation on February 1, 1941, more than 200,000 cadets have joined the R.A.F., and several thousand more have enrolled in the F.A.A. During 1944 some 25,000 joined the flying services.



PRINCIPAL TYPES OF BRITISH AIRCRAFT USED BY THE ROYAL AIR FORCE AND THE FLEET AIR ARM
 (See also List of U.S. Military Aircraft on page 34)

Type	FIGHTERS	Speed m.p.h.
GLOSTER METEOR	R. R. Whittle gas turbine	—
Bristol Beaufighter	2 x 1,600 h.p. Hercules	330+
de Havilland Mosquito VI	2 Merlin XXI	400+
de Havilland Mosquito XVII*	2 Merlins	—
Supermarine Spitfire V	Merlin "45"	375
Supermarine Spitfire IX	Merlin "50"	—
Supermarine Spitfire XII	Griffon	—
Supermarine Spitfire XIV	Griffon	450
Hawker Tempest V	2,400 h.p. Sabre IIB	435
Hawker Typhoon	2,000 h.p. Sabre	—
Hawker Hurricane IIa	1,185 h.p. Merlin XX	344

* Assessed includes six pounder gun.

BOMBERS

Aero Lancaster III	4 x 1,280 Merlin	375
de Havilland Mosquito IV	2 Merlins	400+
de Havilland Mosquito XVI	2 Merlins	400+
Hawker-PAGE HALIFAX II	4 x 1,275 Merlin XX	270
Hawker-PAGE HALIFAX III	4 x 1,375 Hercules	261
VICKERS WELLINGTON II	2 x 1,145 Merlin	254
VICKERS WELLINGTON III	2 x 1,375 Hercules	260
VICKERS WELLINGTON IV	2 Twin Wasp	247

Principal Aircraft Types—Continued

FLEET AIR ARM		
Type	Power Plant	Speed m.p.h.
FAIREY BARRACUDA (TB)	Merlin	—
FAIREY ALBACORE (TSR)	850 Taurus	—
FAIREY SWORDFISH (TSR)	545 Pegasus	—
FAIREY-FOXHOUND (FP)	9,000 Griffon	—
HAWKER SEA HURRICANE (SP)	1,030 Merlin	362
SUPERMARINE SEAFIRE (SE)	Merlin "45"	—
FLYING-BOATS		
SHORT SUNDERLAND	4 x 840 Pegasus	259
SUPERMARINE WALRUS (A)	Pegasus VI	135
SUPERMARINE SEA OTTER (A)	Mercury 30	—
TRAINERS		
AIR SPEED OXFORD	2 x 355 Cheetah	183
AIR SPEED OXFORD II	2 x 420 Wasp	202
AVRO ANSON	2 x 320 Cheetah	188
AVRO ANSON II	2 x 450 Wairwind	—
AVRO TUTOR	240 Lynx	222
BLACKBURN BOLSA	2 Bristol Perseus	—
de Havilland DINGOES	2 x 200 Gipsy VI	157
de Havilland TIGER Moth II	190 Gipsy Major	109
FAIREY BATTLE	990 Merlin III	—
GENERAL AVIATION OWLET	120 Cirrus Major	127
MILES MAGISTER	120 Gipsy Major	145
MILES MASTERS III	120 Twin Wasp Jrs.	214
MILES M-18	120 Gipsy Major	135
PERCIVAL PROCTOR IV	120 Gipsy Queen	170

Principal Aircraft Types—Continued

COMMUNICATIONS AND TRANSPORT

Type	Power Plant	Speed (m.p.h.)
AVRO YORK	4 x Merlin 22	—
ARMSTRONG WHITWORTH ENGLISH	4 x 900 Cyclone	220
DE HAVILLAND FLAMINGO	2 x 220 Pegasus	139
DE HAVILLAND ALBACORE	—	—
DE HAVILLAND DRAGON RAPIDE	4 x 535 Gipsy XII	250
GENERAL AIRCRAFT CYGNET	2 x 300 Gipsy VI	157
HANDLEY PAGE HAWK	130 Cirrus Major	130
MILES M.28	2 x 220 Pegasus	200
PERCIVAL PROCTOR	220 Gipsy Major	176
SHORT STERLING IV	220 Gipsy Queen	170
VICKERS-ARMSTRONG WARWICK	4 x 1,600 Hercules	250

GLIDERS

AIRFIELD HORSA	Span 55 ft., length 67 ft., height 22 ft.
GENERAL AIRCRAFT HAMPSHIRE	Span 110 ft., length 68 ft. 1 in., height 20 ft. 3 in.
GENERAL AIRCRAFT HOTSPUR II	Span 46 ft., length 29 ft. 6 in., height 10 ft. 6 in.

MISCELLANEOUS TYPES

BOULTON PAUL DEFIANT (TT)	Merlin XX	—
TAYLORCRAFT AUSTER III (AR)	130 Gipsy Major	135
WEYLAND LYANDER II	905 Pegasus	120
ARMSTRONG WHITWORTH ALBISSOLE (GT)	2 x 1,370 Hercules	—

FB = Fighter Bomber; TB = Torpedo Bomber; TSR = Torpedo Spotter Reconnaissance; FF = Fleet Fighter; SF = Shipboard Fighter; A = Amphibian; AR = Army Reconnaissance; TT = Target Tower; GT = Glider Tug.

BRITISH MILITARY AIRCRAFT



AVRO LANCASTER HEAVY BOMBER

Equipped with four 1,280-h.p. Rolls-Royce Merlin engines, the Lancaster Mark I can carry approximately 8 tons of bombs at a maximum speed of 275 m.p.h. Maximum range is about 1,000 miles; armament includes ten .303-in. machine-guns. Normal crew is seven, and total loaded weight is 60,000 lb. The Mark II is powered with four 1,600-h.p. Bristol Hercules engines; the Mark III by Packard-built Merlins. Modified Lancasters carry the R.A.F.'s 10-ton bomb.



HANDLEY PAGE HALIFAX HEAVY BOMBER

The Mark I is powered by four 1,175-h.p. Merlins, and can carry 5½ tons of bombs at a top speed of 290 m.p.h. Maximum range is about 3,000 miles; normal loaded weight 60,000 lb. The Halifax III has a larger wing span and four Bristol Hercules engines, each of 1,650 h.p. Halifax VI (Hercules engine), has a top speed of 328 m.p.h., and an all-up weight of 68,000 lb.

BRITISH MILITARY AIRCRAFT



"Flight" photograph

SHORT STIRLING TUG AND TRANSPORT

First of the large four-engined heavy bombers to go into service with the R.A.F., the Stirling has either four 1,600-h.p. Bristol Hercules or four 2,000-h.p. Wright Cyclones. Maximum bomb load is 18,000 lb. Four power-operated gun turrets house ten .303-in. machine-guns. Normal loaded weight is 26,000 lb. Span is 99 ft. 1 in. and length 87 ft. 3 in. The Stirling later became a glider-tug and supply transport.



ARMSTRONG WHITWORTH ALBEMARLE TUG AND TRANSPORT

Originally intended as a reconnaissance bomber, the Armstrong Whitworth Albemarle has since been adapted for use as a glider-tug or as a transport for airborne troops. It has a retractable undercarriage and is driven by two Bristol Hercules air-cooled radial engines.

BRITISH MILITARY AIRCRAFT



VICKERS-ARMSTRONGS WARWICK TRANSPORT

Bearing a strong resemblance to its kinship, the Wellington, both in line and construction, the Warwick was originally designed as a bomber, but was ultimately transferred to transport and Air-Sea Rescue duties. Its engines are Pratt and Whitney Double Wasps of 2,000 h.p. Span is 96 ft. 8½ in.; length, 70 ft.; and height, 18 ft. 6 in.



Crown copyright

AVRO YORK TRANSPORT

In service with the R.A.F. Transport Command, the York has the wings and tail unit of the Lancaster, with the addition of a third fin, but different fuselage. Loaded weight is 30 tons, and with four 1,280-h.p. Merlin engines, cruising speed is 220 m.p.h. Span is 100 ft., length 79 ft. 6 in. and height 20 ft. Special Yorks have been built for Mr. Churchill, Field-Marshal Smuts and the Duke of Gloucester.

BRITISH MILITARY AIRCRAFT



VICKERS-SUPERMARINE SPITFIRE FIGHTER

Tested and proved in the Battle of Britain, the single-seat Spitfire held pride of place as an interceptor fighter throughout the war. It appeared in more than a dozen different versions, the principal Mark numbers being V, VIII, IX, XII, and XIV. The majority had Merlin engines, but the XII and XIV had the Griffon. The Spitfire XIV was officially credited with a top speed of 450 m.p.h. The Spitfire VI and VII (Merlin engines) have "pressure" cockpits.



HAWKER TEMPEST V FIGHTER

Successor to the Typhoon, the Tempest has an official top speed of 435 m.p.h. with the 2,400-h.p. Napier Sabre engine. Squadrons equipped with it destroyed some 60 flying-bombs during the first four months of the campaign against Southern England in the summer and early autumn of 1944. Interesting technical features are its thin, laminar-flow wing, and powerful ailerons, which give it an exceptionally fast rolling movement. Armament consists of four 20-mm. cannon.

BRITISH MILITARY AIRCRAFT



Crown copyright

HAWKER TYPHOON FIGHTER

First in action in mid-1942, the Typhoon single-seater fighter was the first operational aircraft to be fitted with the Napier Sabre 24-cylinder H-type sleeve-valve liquid-cooled engine. Armament consists of either twelve .303-in. machine-guns or four 20-mm. cannon mounted in the wings. As a fighter-bomber the Typhoon carries a heavy bomb beneath each wing. It is also equipped for rocket-firing.



HAWKER HURRICANE FIGHTER

The Hurricane has seen action in seventeen different theatres. It bore the brunt of the Battle of Britain and has been adapted and developed as a fighter, fighter-bomber, tank-buster and shipboard fighter. As the Mark IID tank-buster, illustrated above, it had two 40-mm. cannon and two .303-in. machine-guns, and a top speed of about 340 m.p.h. Hurricane squadrons were serving with S.E.A.C. in 1945.

BRITISH MILITARY AIRCRAFT



BRISTOL BEAUFIGHTER FIGHTER

Used first as a night fighter for the defence of Great Britain, the Beaufighter subsequently saw service as a day-interceptor fighter, fighter-bomber, and torpedo aircraft. In each rôle it won high honours in many different theatres of war. Its relentless campaign against enemy shipping in the Kattegat and Skagerrak was an outstanding feature of the closing months of the war in Europe. Armament: four 20-mm. cannon and six .303-in. machine-guns.



DE HAVILLAND MOSQUITO BOMBER

Fast and versatile, the Mosquito is one of the war's outstanding successes. Conceived and first built as a gunless bomber with a 1,000-lb. bomb load, it became, also, day fighter, fighter-bomber, night fighter, photographic aircraft, high-altitude bomber, submarine destroyer (armed with six-pounder gun), minelayer, and rocket-firing aircraft. Its bomb-load has been increased to 4,000 lb. Photograph is of Mark XVI high-altitude bomber with supercharged cabin. Span is 54 ft. 2 in., length 40 ft. 9½ in.

BRITISH MILITARY AIRCRAFT



SHORT SUNDERLAND FLYING-BOAT

A general reconnaissance flying-boat with a fine war record in Coastal Command operations, the Sunderland carries a crew of 10. Armament comprises gun turrets in nose and tail and two more gun positions amidships. It is driven by four 2,000-h.p. Bristol Pegasus engines, has a top speed of 210 m.p.h. and a normal range of 2,880 miles. Some have been converted for civil duties.



VICKERS-SUPERMARINE SEA OTTER AMPHIBIAN

Successor to the Walrus, which it closely resembles, the Sea Otter formed part of the equipment of the Air-Sea Rescue Service, working from bases in Great Britain, the Mediterranean and the Far East. Since 1944, when they went into general use, Sea Otters have rescued hundreds of "ditched" British and Allied airmen. They are extremely robust, and can stand hours of pounding by heavy seas. They can also work from aircraft carriers, if necessary being catapulted off.

BRITISH MILITARY AIRCRAFT



FAIREY BARRACUDA TORPEDO-BOMBER

Designed in the first place around a new and powerful aero-engine which was later withdrawn from production, the Barracuda was given a highly supercharged version of the Merlin. It was the first British monoplane torpedo-bomber to see service with the Royal Navy, and can carry bombs, depth charges, or an 18-in. torpedo. Large flaps permanently extended on outriggers give different positions for take-off, cruising, diving and landing.



FAIREY SWORDFISH TORPEDO-BOMBER

Old, and approaching retirement in 1939, the Swordfish was restored to full operational status when war broke out, and won battle honours as glorious as any bestowed upon its contemporaries. With bombs, torpedoes and rockets, it has taken heavy toll of enemy shipping in many seas. Famous among its exploits were the attack on the Italian fleet at Taranto and Matapan, and the crippling of the Bismarck,

BRITISH MILITARY AIRCRAFT



FAIREY FIREFLY FLEET-FIGHTER

Continuing the traditional policy of the Royal Navy, the Firefly is a two-seat fighter, though it has the "lines" and the performance of a single-seater. Interesting technical features are the large retracting flaps (which steepen the approach glide, assist take-off and, when needed in combat, improve manoeuvrability) and the wing-folding mechanism. Armament consists of four 20-mm. cannon. Engine is the Griffon II, which delivers more than 2,000 h.p.



Crown copyright
TAYLORCRAFT AUSTER SPOTTER

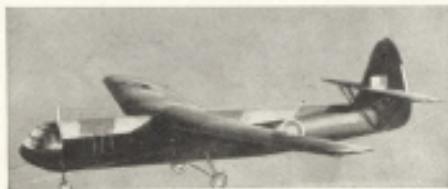
The Auster is used by the Army as a light military observation and liaison plane. A high-wing braced monoplane, it has an enclosed cabin seating two side-by-side with dual controls and radio equipment. With a 130-h.p. Gipsy Major engine the Auster III has a top speed in excess of 120 m.p.h. over a range of 350 miles and lands at less than 40 m.p.h. The Auster IV has a Lycoming engine.

BRITISH MILITARY AIRCRAFT



GENERAL AIRCRAFT HAMILCAR GLIDER

Tanks, field guns and other heavy items of military equipment were flown straight into battle in the spacious holds of a large fleet of Hamilcar gliders on June 6, 1944, when the Allied Armies breached the Normandy wall of "Festung Europa." Hamilcars were in action at Arnhem, and again when the Rhine was crossed. Weighing, fully loaded, some 16 tons, this robust, all-wood, high-wing monoplane can carry a load of nearly eight tons. Span, 110 ft.; length, 68 ft. 2 in.



Crown copyright

AIRSPED HORSA GLIDER

A military glider for the transport of airborne troops and their equipment, the Horsa is a high-wing monoplane of wood construction with tricycle undercarriage. The pilots' compartment is in the nose with side-by-side seats and dual controls. Principal dimensions are span 88 ft., length 67 ft., height 21 ft. and wing area 1,148 sq. ft.

BRITISH MILITARY AIRCRAFT



AIRSPED OXFORD TRAINER

Adopted by the R.A.F. as a twin-engined advanced-trainer, the Oxford is a low-wing monoplane fitted with two 355-h.p. Cheetah engines. It has a top speed of 202 m.p.h. On the Oxford I, an upper gun-turret is fitted amidships to allow of gunnery training. Construction is of wood, and the normal crew is three to four.



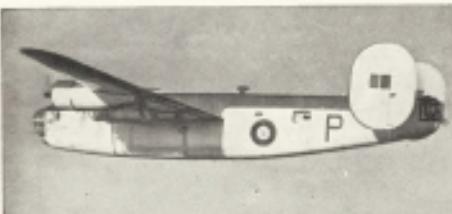
GLOSTER EXPERIMENTAL "JET" FIGHTER

Forerunner of the "Meteor" twin jet fighter, this Gloster experimental design first flew on May 15, 1941, piloted by the late Flight Lieutenant, P. R. G. Sayer. It was powered by a gas-turbine unit designed by Air Commodore P. Whittle and developed by his company, Power Jets, Ltd. The Meteor was first reported operational in the late summer of 1944 against the flying-bombs, and early in 1945 as part of the R.A.F. Second Tactical Air Force on the Continent.

U.S. TYPES USED BY R.A.F. & F.A.A.



BOEING FLYING FORTRESS BOMBER



CONSOLIDATED LIBERATOR HEAVY BOMBER



NORTH AMERICAN MITCHELL BOMBER

U.S. TYPES USED BY R.A.F. & F.A.A.



MARTIN MARAUDER BOMBER



DOUGLAS BOSTON III BOMBER



LOCKHEED-VEGA VENTURA RECONNAISSANCE-BOMBER

"Flight" photograph

U.S. TYPES USED BY R.A.F. & F.A.A.



NORTH AMERICAN MUSTANG FIGHTER



REPUBLIC THUNDERBOLT FIGHTER

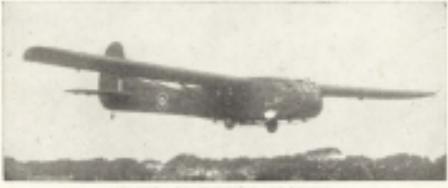


"Flight" photograph
CONSOLIDATED CATALINA FLYING-BOAT

U.S. TYPES USED BY R.A.F. & F.A.A.



DOUGLAS DAKOTA TRANSPORT



WACO HADRIAN GLIDER



VOUGHT-SIKORSKY HELICOPTER

U.S. TYPES USED BY R.A.F. & F.A.A.



VOUGHT-SIKORSKY CORSAIR FLEET-FIGHTER



GRUMMAN HELLCAT FLEET-FIGHTER



GRUMMAN AVENGER TORPEDO-BOMBER

PRINCIPAL TYPES OF BRITISH AND U.S. AERO-ENGINES

(See also Aeroplane Engines)
a.c. = air-cooled; inv. = inverted; s. = supercharged;
l.c. = liquid-cooled; p.v. = poppet valves; s.v. = sleeve
valve,

BRITISH ENGINES

Armstrong Siddeley—**Cheetah**, 7-cyl., a.c., s.v., p.v., radial; 370 h.p.; X, 325 h.p. **Lynx**, 7-cyl., a.c., p.v., radial; 240 h.p. **Tiger**, 14-cyl., a.c., p.v., radial; 460 h.p. **Bristol**—**Centaurus**, 18-cyl., a.c., s., s.v., 2-row radial, 2,300 h.p. **Hercules**, 14-cyl., a.c., s., 2-row a.v., radial; II, 1,375 h.p.; IV, 1,220 h.p. **Mercury**, 9-cyl., a.c., s., p.v., radial; XI, 840 h.p.; XV, 955 h.p. **Pegasus**, 9-cyl., a.c., s., p.v., radial; XVIII, 1,000 h.p.; XXII, 980 h.p. **Perseus**, 9-cyl., a.c., s., s.v., radial; X, 880 h.p.; XII, 965 h.p.; XIV, 825 h.p. **Taurus**, 14-cyl., a.c., 2-row s.v., radial; II, I, 145 h.p.

Gipsy—**Major**, 4-cyl., a.c., inv. in line, p.v.; 120 h.p. **Minor**, 4-cyl., a.c., inv. in line; p.v. go h.p.

de Havilland—**Gipsy Major**, 4-cyl., a.c., inv. in line; p.v. 130-150 h.p. **Gipsy Six**, 6-cyl., a.c., inv. in line; p.v. I, 200 h.p. **Gipsy Twelve**, 12-cyl., a.c., s., inv. vee p.v.; **Gas-Turbine** (instream), "jet" engine.

Napier—**Dragon**, 24-cyl., a.c., s., p.v. "H" type; VIII, 1,000 h.p. **Rapier**, 26-cyl., a.c., s., p.v. "H" type; VI, 335 h.p. **Sabre**, 24-cyl., "H" type, Ic, s.v.; 2,400 h.p.

Rolls-Royce—**Kestrel**, 12-cyl., s., Ic, p.v. vee; XXX, 600 h.p. **Merlin**, 12-cyl., s., Ic, p.v. vee; II, III, and IV, 1,250 h.p.; X, 1,130 h.p.; XX, 1,265 h.p.; XLV, 1,610 h.p. **Gリフォン**, 18-cyl., s., Ic, p.v. vee, 2,000 h.p. **Whittle**—Gas-turbine "jet" engine; manufactured by Rolls-Royce.

U.S. ENGINES

Allison—12-cyl., s.i.e., p.v. vee; V-1710-C15, 1,690 h.p.; V-1710-F3R, 1,150 h.p.; V-1710-H4, 1,150 h.p.

Pratt & Whitney—**Wasp**, 9-cyl., a.c., s., p.v. radial; 350 h.p. **Wasp Jr.**, 9-cyl., a.c., s., p.v. radial; 400-450 h.p. **Twin Wasp**, 14-cyl., a.c., s., p.v. 2-row radial; 1,200-2,000 h.p. **Double Wasp**, 18-cyl., a.c., p.v. 2-row radial; 1,450-2,850 h.p.

Wright—**Double Cyclone**, 14-cyl., a.c., s., p.v. 2-row radial; 1,200-1,350 h.p. **Cyclone**, 9-cyl., a.c., s., p.v. radial; 260-3,000 h.p. **Cyclone "R"**, 18-cyl., a.c., s., p.v. 2-row radial; 3,000 h.p. plus. **Whirlwind**, 9-cyl., a.c., s., p.v. radial; 235-350 h.p.

AMERICAN MILITARY AIRCRAFT

**Principal Types used by the United States Army
and Navy Air Forces**

Name	H.P. and Engine	Spd	Type
BORING SUPERFOR- TRESS (B-29)	4 x 2,200 Cyclone	—	B
*BORING FORTRESS (B-27)	4 x 1,200 Cyclone	300+	B
CONSOLIDATED DOM- INATOR	4 x 2,200 Dbl. Cyclone	—	B
*CONSOLIDATED CAS- LINA (PBV-5)	2 x 1,200 Twin Wasp	190	FB
CONSOLIDATED CON- NARD (PB2Y-5)	4 x 1,200 Twin Wasp	—	FB
*CONSOLIDATED LIB- ERATOR III (B-24)	4 x 1,200 Twin Wasp	300+	B
CONSOLIDATED LIB- ERATOR (PB4Y-2)	4 x 1,200 Twin Wasp	320+	B
*CURTISS WARHAWK (F-4D-N)	1,325 Allison	350+	F
CURTIS HELLCAT (A-4S)	1,700 Cyclone	—	DB
CURTIS COMMANDO (C-46)	2 x 2,000 Wasp	264	MT
*DOUGLAS DAIRIA II (C-33)	2 x 1,200 Cyclone	220	MT
DOUGLAS SKYMMASTER (C-54)	4 x 1,350 Wasp	265	MT
DOUGLAS DEVASTA- TOR (TBD-1)	825 Wasp	225	TB
*DOUGLAS DAUNTLESS (A-24)	950 Cyclone	275	DB
DOUGLAS A-33	1,200 Cyclone	265	AB
DOUGLAS HORNET (A-20T)	2 x 1,345 Cyclone	320+	B
DOUGLAS INVADER (A-26B)	2 x 2,000 Dbl. Wasp	350+	B
*DOUGLAS BOSTON III (DB-7B)	2 x 1,330 Cyclone	—	B
FAIRCHILD PAKET (C-82)	2 x 1,600 Dbl. Wasp	—	MT
FLEETWINGS Model 23	420 Wasp Jr.	195	T
*GRUMMAN AVENGER (TBF-1)	1,700 Cyclone	270	TB
*GRUMMAN HELLCAT (F4F-4)	2,000 Double Wasp	350+	FF

American Military Aircraft—Continued

Name	H.P. and Engine	Spd	Type	
LOCKHEED LODESTAR (C-60)	—	2 x 1,100 Cyclone	159	MT
LOCKHEED LIGHT- NING (P-38)	2 x 1,520 Allison	400+	F	
*LOCKHEED VENTURA (B-34)	—	2 x 2,000 Wasp	300+	AB
*MARTIN MARAUDER (B-26B)	—	2 x 2,000 Dbl. Wasp	320	B
MARTIN MARINER	2 x 1,700 Cyclone	220	FB	
MARTIN MARS	4 x 2,000 Cyclone	300+	FB	
*NORTH AMERICAN MUSTANG (P-51)	Packard-built Merlin	450	F	
*NORTH AMERICAN MITCHELL (B-25)	2 x 1,700 Cyclone	300+	B	
NORTHERN BLACK WIDOW	—	2 x 2,000+ Dbl. Wasp	350+	F
PIPER GRASSHOPPER	64 Continental	90	T	
PIPER CUB	65 Continental	95	T	
*REPUBLIC THUNDER- BOLT (P-47B)	2,000 Wasp	430+	F	
SEXTON BRILLIANT (AT-29)	295 Lycoming	—	T	
*VOUGHT SEAFURY CORSAIR	1,350 Wasp	400	SF	
VOUGHT SEAFURY KINGFISHER	400 Wasp Jr.	172	GR	
VOUGHT-SEAFURY SEAWOLF (TBV-2)	Single engine	—	TB	
*VULTEE VENGEANCE (A-35)	1,500 Cyclone	273	DB	
*VULTEE VIGILANT	Lycoming	—	GR	
VACO Model UPF-7	220 Continental	128	T	

*Denotes aircraft used by British as well as U.S. Air Forces.

F = Fighter; B = Bomber; DB = Dive Bomber;
FB = Flying-Boat; MT = Military Transport; TB =
Torpedo Bomber; AB = Attack Bomber; GR = General
Reconnaissance; SF = Shipboard Fighter; T = Trainer.

AIRCRAFT OF THE LUFTWAFFE

Principal Types of Operational Aircraft employed by the German Air Force as at 8/5/45.

Type	FIGHTERS	Engines	Speed
HEINKEL He 111	2 gas-turbines	—	
MESSERSCHMITT Me 109F	2 x 1,000 DB*	399	
MESSERSCHMITT Me 109G	2 x 1,000 DB	—	
MESSERSCHMITT Me 110	2 x 1,200 DB	349	
MESSERSCHMITT Me 163	Rocket-propelled	600+	
MESSERSCHMITT Me 210	2 x 1,400 DB	399	
MESSERSCHMITT Me 410	2 x 1,750 DB	399	
MESSERSCHMITT Me 262	2 Jumo 004†	359	
JUNKERS Ju 88	2 x 1,200 Jumo	385	
FOCKE-WULF Fw 190	1,700 BMW†	395	
HEINKEL He 177	BOMBERS		
DORNIER Do 17Z	2 x 1,000 Brasso	355	
HEINKEL He 111	2 x 1,200 Jumo	355	
JUNKERS Ju 88 A6	2 x 1,200 Jumo	258	
FOCKE-WULF Fw 190	4 x 900 Brasso	350	
DORNIER Do 217Y	2 x 1,200 BMW	310	
HEINKEL He 177	4 x 2,450 DB	380	
JUNKERS Ju 87	1,200 Jumo	210	
JUNKERS Ju 88	2 x 1,200 Jumo	255	
DORNIER Do 217	2 x 1,600 Jumo	310	
MESSERSCHMITT Me 260	2 x 1,600 DB	360	
HEINKEL He 123	900 BMW	225	
HEINKEL He 129	2 x 800 Grdme	—	
FOCKE-WULF Fw 289	2 x 450 Argus	—	
HEINKEL He 126	940 Brasso	230	
HEINKEL He 134	980 BMW	180	
HEINKEL He 115	2 x 900 BMW	205	
ARADO Ar 196	960 BMW	195	
BLAUM & VOSS BV 138	4 x 750 Jumo	309	
BLAUM & VOSS BV 222	8 x BMW	—	
MESSERSCHMITT Me 323	8 x 800 Grdme	—	
JUNKERS Ju 52	3 x 600 BMW	165	
JUNKERS Ju 290	4 x 1,200 BMW	243	
BLAUM & VOSS BV 141	4 x 880 BMW	243	
DB = Daimler-Benz, †BMW = Bayerische Motoren Werke, ‡Junkers gas-turbine.			

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AIR V.C.'S OF THE SECOND WORLD WAR

The Ranks shown are those at the time of the Award.



- *GARLAND, F/O D. H., R.A.F., May, 1945 (Advanced Air Striking Force).
- *GRAY, Sgt. T., R.A.F., May, 1940 (Advanced Air Striking Force).
- LEAROYD, F/LT. A. B., R.A.F., Aug., 1940 (Bomber Command).
- *NICHOLSON, F/LT. J. B., R.A.F., Aug., 1945 (Fighter Command).
- HANAHAN, Sgt. J., R.A.F., Sept., 1940 (Bomber Command).
- EDWARDS, Wing-Comdr. H. I., D.F.C., R.A.F., July, 1941 (Bomber Command).
- *WARD, Sgt. J. A., R.N.Z.A.F., July, 1941 (Bomber Command).
- *CAMPBELL, F/O R. C., R.A.F., Mar., 1942 (Coastal Command).
- *NETTLETON, S/Ldr. J. D., R.A.F., Apr., 1942 (Bomber Command).
- *MANNER, F/LT. L. T. R. A.F., Oct., 1942 (Bomber Command).
- *MINDETON, F/Sgt. R. H., R.A.F., January, 1943 (Bomber Command).
- *MALCOLM, Wing-Comdr. H. G., R.A.F., May, 1943 (Mediterranean Command).
- GIBSON, Wing-Comdr. G. P., D.S.O., D.F.C., R.A.F., June, 1944 (Bomber Command).
- *NEWTON, F/LT. W. E., R.A.F.V.R., Oct., 1943 (Bomber Command).
- *TRIGO, F/O L. A., D.F.C., R.N.Z.A.F., November, 1943 (Coastal Command).
- *AARON, F/Sgt. A. L., D.F.M., R.A.F.V.R., November, 1943 (Bomber Command).
- REED, F/LT. W., R.A.F.V.R., Dec., 1943 (Bomber Command).
- *BARTON, P/O C. J., R.A.F.V.R., June, 1944 (Bomber Command).
- *HORNELL, F/LT. D. K., R.C.A.F., July, 1944 (Coastal Command).
- CAUKE-BRAME, F/O. J. A., R.A.F.V.R., Sept., 1944 (Coastal Command).
- CHESHIRE, W/Cdr. G. L., R.A.F.V.R., Sept., 1944 (Bomber Command).
- *THOMPSON, F/Sgt. G., R.A.F.V.R., Feb., 1945 (Bomber Command).
- *PALMER, A/S/Ldr. R. A. M., R.A.F.V.R., Mar., 1945 (Bomber Command).
- *SWALES, Capt. E. S.A.F., April, 1945 (Bomber Command).

* Killed in Action or Missing.

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AIR FORCE DECORATIONS



THE DISTINGUISHED FLYING CROSS

Awarded to officers and warrant officers of the R.A.F. and Dominion Air Forces for acts of exceptional valour, courage, or devotion to duty while flying in active operations against the enemy. The ribbon is one and a quarter inches wide and has alternate violet and white stripes, one-eighth of an inch wide, running at an angle of 45° downwards towards the wearer's left. An heraldic description of the Cross, which is of silver, is "A Cross crossy, terminated in the horizontal and base bars with bombs, the upper bar terminating with a nose, surmounted by another cross composed of aeroplane propellers charged in the centre with a roundel within a wreath of laurel; a rose winged ensign by an Imperial Crown, thereon the letters R.A.F. On the reverse side the Royal Cypher above the date 1918."



THE DISTINGUISHED FLYING MEDAL

Awarded to N.C.O.s and airmen of the R.A.F. and Dominion Air Forces for exceptional valour, courage, or devotion to duty while flying in active operations against the enemy. The design and colours of the ribbon are the same as those of the D.F.C., except that the diagonal stripes are one-sixteenth of an inch in width. The Medal, which is of silver and oval shaped, bears "Our Effigy on the obverse, and on the reverse, within a wreath of laurel, a representation of Athena Nike seated on an aeroplane, a hawk rising from her right arm above the words 'For Courage.' The whole ensigned by a bomb attached to the clasp and ribbon by two wings."

The four decorations mentioned on this and the following page were instituted by Royal Warrant on June 3rd, 1928.

AIR FORCE DECORATIONS—Continued

THE AIR FORCE CROSS

Awarded to officers and warrant officers of the R.A.F. and Dominion Air Forces for exceptional valour, courage, or devotion to duty while flying, though not in active operations against the enemy. The ribbon has red and white diagonal stripes, one-eighth of an inch wide. The Cross is of silver and consists of "a Thunderbolt in the form of a cross, the arms conjoint by wings, the base bar terminating with a bomb surmounted by another cross composed of aeroplane propellers, the four ends inscribed with the letters G.V.R.L. In the centre a rounded thereon, a representation of Hermes mounted on a hawk in flight bestowing a wreath. On the reverse the Royal Cypher above the date 1928." The Cross is attached to the clasp and ribbon by two sprigs of laurel.



THE AIR FORCE MEDAL

Awarded to N.C.O.s and airmen of the R.A.F. and Dominion Air Forces under the same conditions as the A.F.C., the ribbon of the Medal is of similar design and colour except that the red and white diagonal stripes are one-sixteenth of an inch instead of one-eighth of an inch in width. The Medal is of silver and oval shaped and bears "Our Effigy on the obverse, and on the reverse, within a wreath of laurel, a representation of Hermes mounted on a hawk in flight bestowing a wreath. The whole ensigned by a bomb attached to the clasp and ribbon by two wings."

BARS TO DECORATIONS

Where an individual who has been awarded one of the above decorations is recommended for further exceptional valour, courage or devotion to duty, he is awarded a bar to be attached to the ribbon by which the cross or medal is suspended. When the actual cross or medal is not worn the award of a bar or bars is indicated by a silver rosette or rosettes on the medal ribbon.

**BADGES OF RANK OF
COMPARATIVE**

ROYAL NAVY	ARMY	ROYAL AIR FORCE
ADMIRAL OF THE FLEET	FELDMARSHAL	MARSHAL OF THE ROYAL AIR FORCE
ADMIRAL	GENERAL	AIR CHIEF MARSHAL
VICE-ADMIRAL	WELL GENERAL	AIR MARSHAL
REAR-ADMIRAL	MAJOR GENERAL	AIR VICE-MARSHAL
CORPORAL 1 ST CLASS	BRIGADIER	AIR COMMODORE
CAPTAIN	COLONEL	GROUP CAPTAIN

**COMMISSIONED OFFICERS
TABLE**

ROYAL NAVY	ARMY	ROYAL AIR FORCE
COMMANDER	LIEUT-COLONEL	WING COMMANDER
LIEUT-COMMANDER	MAJOR	SQUADRON LEADER
LIEUTENANT	CAPTAIN	FLIGHT LIEUT
SUB-LIEUTENANT	VICE-LIEUTENANT	FLYING OFFICER
3 RD LIEUTENANT	2 ND LIEUTENANT	PILOT OFFICER

BADGES OF THE R.A.F.

BADGE OF AIR RANK

The cap badge worn by R.A.F. officers of air rank, i.e. those of and above the rank of Air Commodores. It differs from the cap badge of junior officers in that the eagle is enclosed by a wreath of gilt palm leaves and the crown is surrounded by a lion.



PILOT'S WINGS

Pilots of the R.A.F. wear wings to show that they have passed the Service flying tests. Originally these wings bore the letters "R.F.C." (Royal Flying Corps), while naval pilots wore a brass eagle. The wings are worn on the left breast of the jacket above medals and decorations.



WARRANT OFFICERS

Warrant officers of the R.A.F. may be recognised by the Royal Coat of Arms which they wear on both sleeves in place of the braid rings of a commissioned officer. The badge is embroidered cloth.



OFFICER'S CAP BADGE

An embroidered badge of gilt palm leaves surmounted by brass eagle and crown. The white badge is mounted on black cloth sewn to hair band.

Badges of the R.A.F.—Continued.



OBSERVER'S BADGE

Worn on the left breast, the winged "O" is the distinguishing mark of an Air Observer who has passed the necessary tests and carried out, as an observer, the stipulated number of flying hours.



RADIO OBSERVER

This winged badge, with the initials "RO," is the distinguishing mark of a qualified Radio Observer (Air).

There are also single-winged badges for qualified Navigators, Flight Engineers, Bomb Aimers and Wireless Operators (Air), with the letters "N," "E," "BA," and "WO."



AIR GUNNER'S BADGE

Qualified Air Gunners in the R.A.F. wear on the left breast of their tunics the letters "AG" surrounded by a wreath of leaves and beside it a single wing. This badge, like that of the Radio Observer (Air), has been introduced since the outbreak of the war in 1939.



RADIO OPERATOR

Qualified Wireless Operators and Wireless Mechanics of the R.A.F. may be recognised by this cloth badge worn on the sleeve of their tunics. It denotes that the wearer has passed the necessary specialist trade tests in the operation and maintenance of wireless equipment.

Badges of the R.A.F.—Continued

See also [R.A.F. insignia](#)

R.A.F. CHAPLAIN

This gilt badge, consisting of a winged Maltese Cross with the letters "R.A.F." in the centre, is worn by R.A.F. Chaplains on the lapels on each side of the collar.



MEDICAL BRANCH

This illustration depicts the lapel badge worn by all ranks of the Medical Branch, R.A.F., and W.A.A.F. Medical Officers' rank, that of Dental Officers, Chaplains, and Education Officers, is indicated by the usual rows of braid on the sleeve.



DENTAL BRANCH

Dental Officers of the Royal Air Force wear, on the lapels on each side of their tunic collar, this small gilt badge consisting of the letters "DB" enclosed in a winged wreath.



EDUCATION OFFICER

This badge of two gilt flambeaux surmounted by an eagle is the distinguishing mark of an Education Officer of the R.A.F. It is worn on the tunic lapels on each side of the collar.



Badges of the R.A.F.—Continued

See also [R.A.F. insignia](#)

R.A.F. MUSICIANS

Worn on the sleeve, this gilt badge is the distinguishing emblem of a member of the Central Band of the R.A.F.



See also [R.A.F. insignia](#)

P.T.I. BADGE

This badge, worn on the sleeve, is the mark of a Physical Training Instructor of the R.A.F.

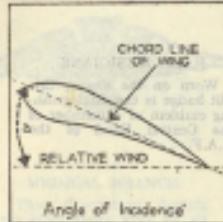


CAP BADGE—OTHER RANKS

All ranks except commissioned and warrant officers of the R.A.F. and W.A.A.F. wear a metal badge of polished brass, representing the letters "R.A.F." surrounded by laurel leaves and surmounted by a crown. This cap badge is also worn by airwomen of the W.A.A.F.



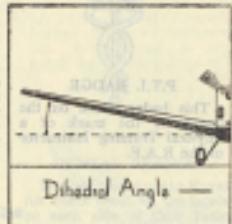
TECHNICAL TERMS, ILLUSTRATED



ANGLE OF INCIDENCE
often known as "Angle of Attack," is the angle between the relative wind and the chord line of an aerofoil or wing. It should not be confused with the Rigging Angle of Incidence, which is the angle between the chord line of the main plane and the horizontal when the aeroplane is in rigging position.

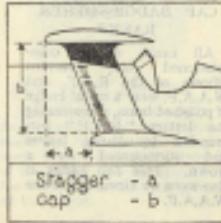
DIHEDRAL ANGLE

is the angle which the wings of an aeroplane, viewed from the front, make with the horizontal. The dihedral angle helps stability by damping out the tendency to roll.

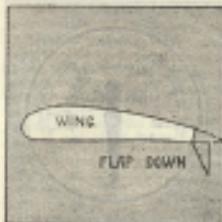


STAGGER AND GAP

When one main plane of a multiplane aeroplane in flying position is in front of another main plane, it is said to be "staggered." The stagger is positive if the uppermost plane is ahead of the lower, and negative if the reverse is the case. Gap is the vertical distance between two adjacent planes in a multiplane.

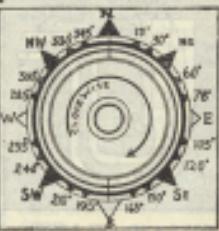


R.A.F. EQUIPMENT, ILLUSTRATED



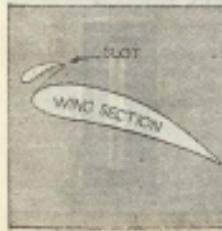
COMPASS CARD

This is a diagrammatic representation of the card. The airmen talks of his course as so many "degrees," the compass card being divided into 360 degrees, numbered clockwise from North, which is 0°, to 360°. Where the sailor speaks of going South-East, the airmen says "a course of 135 degrees."



SLOTS

The Handley Page slot is a small auxiliary wing mounted on the leading edge of the main planes. When the aeroplane stalls, that is, has no longer sufficient flying speed, a jet of air rushes through the slot made by the leading edge of the small wing. This jet straightens out the turbulent air flow and the wing retains its "lift" until a much greater angle is reached,



AIRCRAFT INSTRUMENTS, ILLUSTRATED

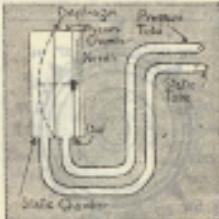
AIR-SPEED INDICATOR

This instrument tells the pilot his speed through the air, which is not, if there is any wind, the same as his speed over the ground. If his Air-speed Indicator shows 100 m.p.h. and he is flying against a 10 m.p.h. wind, his ground speed is only 90 m.p.h. Conversely, if the wind is with him his ground speed is 110 m.p.h.



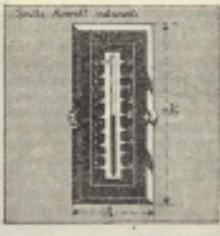
AIR-SPEED INDICATOR (WORKING OF)

The air-speed indicator is operated by air pressure working on a diaphragm. The diaphragm measures the difference between the air pressure inside the instrument and that caused by the movement of the aeroplane and transfers the answer to the dial, the answer being the air speed.



FORE-AND-AFT LEVEL

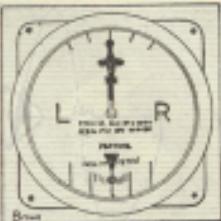
An essential blind-flying instrument, the Fore-and-Aft Level is used as an indicator of pitch. It consists of a glass tube containing coloured liquid and is mounted vertical and parallel to the longitudinal axis of the aeroplane in level flight. During a steady climb or dive the tube is tilted, the level of the liquid rises or falls and the degree of tilt of the longitudinal axis of the aircraft is given on the scale alongside.



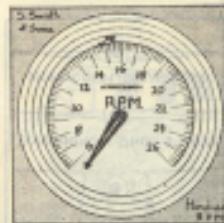
AIRCRAFT INSTRUMENTS, ILLUSTRATED

TURN INDICATOR

The top needle shows the rate of turn, and the lower pointer is an inclinometer which serves to indicate the lateral trim of the aircraft. This is a "blind-flying" instrument. The dial is usually black (with white needle and markings), but is shown white for清楚ness.



REVOLUTION COUNTER
This instrument shows the number of revolutions per minute which the crankshaft is doing at a given moment. (It must not be confused with the tachometer, which actually counts the number of revolutions in a given time.) It is driven at one-quarter engine speed through a flexible drive and a governor. Another type of "revolution counter" is electrically driven.

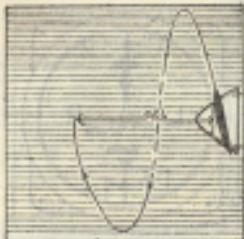


ALTIMETER

is used to show height above a predetermined point. For that reason the indicating needle can be adjusted as necessary. The instrument works on the barometric principle and measures the pressure of the atmosphere. The outer scale shows height in thousands of feet, while the inner shows atmospheric pressure in tens of millimetres of mercury. A radio altimeter is also in use in certain aircraft.



TECHNICAL TERMS, ILLUSTRATED

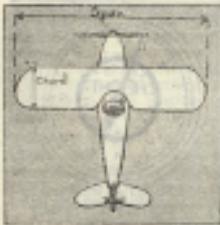


AIRSCREW PITCH

Every revolution of the air-screw in theory drives or propels the aeroplane a certain distance forward. This is the "pitch" of the air-screw. The "variable pitch" air-screw has two or more angles at which the blades can be set while in flight, thus allowing changes to be made to meet changing conditions.

MONOPLANES

Monoplanes are of three principal types — low-wing, middle-wing, and high-wing. Each has its special advantages and disadvantages, the low- and middle-wing types being the most popular at the present time. A feature of the low-wing layout is its "cushioning" effect when an aircraft is landing.



SPAN AND CHORD

The span of an aeroplane is the greatest width across the longest main plane. Chord is the greatest distance from leading to trailing edge of the main plane measured parallel to the longitudinal axis of the aircraft.

WIND INDICATORS

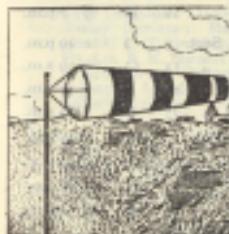
LANDING T

This may be of fabric laid on the ground, or may be automatic, like a weather-cock. An aeroplane lands towards the cross piece of the T, which faces the wind.



WIND STOCKING

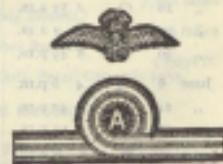
A common form of wind indicator. The wind enters the stocking at the larger end, and passes out at the smaller. The strength of the wind can often be judged by the angle of the stocking, which is usually marked in a conspicuous way.



NAVAL AIRMEN

who have qualified for their "wings" wear the pilot's badge, consisting of wings of gold embroidery with a silver anchor in the centre, surrounded by a wreath and surmounted by a crown on their left sleeve. Shown below is the badge of the Air Branch of the Royal Navy, a capital "A" in gold embroidery worn inside the circle of the uppermost ring of the distinction lace.

FLEET AIR ARM BADGE



PHASES OF THE MOON, 1946

These Tables are based on Greenwich Mean Time.
For B.S.T. add one hour.

Jan. 3	●	12 30 p.m.	July 6	)	5 15 a.m.
" 10	)	8 27 p.m.	" 14	○	9 22 a.m.
" 17	○	2 46 p.m.	" 21	{	7 52 p.m.
" 25	{	5 0 a.m.	" 28	●	11 53 a.m.
Feb. 1	●	4 43 a.m.	Aug. 4	)	8 35 p.m.
" 9	)	4 28 a.m.	" 22	○	10 26 p.m.
" 16	○	4 28 a.m.	" 29	{	1 17 a.m.
" 24	{	2 36 a.m.	" 36	●	9 7 p.m.
Mar. 3	●	6 1 p.m.	Sept. 3	)	2 49 p.m.
" 10	)	19 3 p.m.	" 21	○	9 59 a.m.
" 17	○	7 12 p.m.	" 28	{	6 44 a.m.
" 25	{	10 37 p.m.	" 35	●	8 43 a.m.
Apr. 2	●	6 37 a.m.	Oct. 3	)	9 53 a.m.
" 9	)	8 4 p.m.	" 10	○	8 40 p.m.
" 16	○	10 47 a.m.	" 17	{	1 28 p.m.
" 24	{	3 18 p.m.	" 24	●	11 32 p.m.
May 1	●	1 16 p.m.	Nov. 2	)	4 40 a.m.
" 8	)	13 13 a.m.	" 9	○	7 16 a.m.
" 16	○	2 32 a.m.	" 15	{	10 35 p.m.
" 24	{	4 2 0 a.m.	" 23	●	5 24 p.m.
" 30	●	8 49 p.m.	Dec. 1	)	9 47 p.m.
June 6	)	4 6 p.m.	" 8	○	5 52 p.m.
" 14	○	6 42 p.m.	" 15	{	10 57 a.m.
" 22	{	8 11 p.m.	" 23	●	1 6 p.m.
" 29	●	4 6 a.m.	" 31	)	12 23 p.m.
● New Moon		○ First Qtr.	○ Full Moon		{ Last Qtr.

WORLD AVIATION RECORDS

(As recognised by the *Federation Aeronautique Internationale*
(See *Aero World*, up to the outbreak of war.) (See *Aero World*,
up to the outbreak of war.) (See *Aero World*,
up to the outbreak of war.)

ABSOLUTE RECORDS

SPEED 468-94 m.p.h.
GERMANY : Held by Fliegerkapitän Fritz Wendel in a
Messerschmitt Bf. 109-R (2,500-h.p. Daimler-Benz).
Augsburg, Berlin, April 26, 1939.
(World's Speed Record for any Type of Vehicle.)

HEIGHT 72,350 ft.
AMERICA : Held by Capt. Orville A. Anderson and
Albert W. Stevens, in a spherical balloon, "Explorer
II," Rapid City, South Dakota, November 11, 1935.

DISTANCE (STRAIGHT LINE) 7,565 miles
GREAT BRITAIN : Held by Sq.-Ldr. R. Kellie,
Flt-Lt. R. T. Gethling, and P.O. M. L. Gaine; and
Flt-Lts. B. K. Bennett and A. N. Combe, and Sgt. H.
B. Gray, in two Vickers Wellesley (1,610-h.p. Bristol
Pegasus), Izmailia, Egypt-Darwin, Australia, Novem-
ber 5-7, 1938.

DISTANCE (CLOSED CIRCUIT) 8,033 miles
ITALY : Held by A. Tonzi, R. Dugasso, F. Vignali
(pilot), A. Stagliano (mechanic), in a Savoia-Marchetti
S.82-UD with three Alfa-Romeo 800-h.p. engines.
July 30-31 and August 1, 1939.

LANDPLANE RECORDS

SPEED 468-94 m.p.h.
(See *Absolute Records*.)

DISTANCE (STRAIGHT LINE) 7,162 miles
(See *Absolute Records*.)

DISTANCE (CLOSED CIRCUIT) 8,033 miles
(See *Absolute Records*.)

HEIGHT 55,012 ft.
ITALY : Held by Col. Mario Pezzi, Caproni, 1939.

SEAPLANE RECORDS

SPEED 440-67 m.p.h.
ITALY : Held by Lieut. Francesco Agnelli, in a Macchi-
Castoldi 7a racing seaplane (3,000-h.p. Fiat A.5.6
engine). Desenzano, Lake Garda, October 23, 1934.

World Records—Continued

DISTANCE (STRAIGHT LINE) 5,993.8 miles
 GREAT BRITAIN : Held by D. C. T. Bennett and I. Harvey, in Short-Mayo Mercury, four Napier-Rapier 370-h.p. engines; from Dundee to mouth of Orange River, Port Nolloth, S. Africa. October 6-8, 1938 (composite launching).

DISTANCE (CLOSED CIRCUIT) 3,230 miles
 ITALY : Held by Mario Stoppani and Carlo Tonini, in a Cant Z-506 seaplane (three 750-h.p. Alfa-Romeo 126-RC-34 engines). Monfalcone-Rimini-Senigallia-Monfalcone-Punto Tagliamento-Punta Salvore. May 27-28, 1937.

HEIGHT 38,550 ft.
 U.S.A. : Held by Lieut. Apollo Soucek, U.S.N., in a Wright "Apache" biplane (425-h.p. supercharged Pratt & Whitney "Wasp" engine). Washington, D.C. June 4, 1929.

SPEED OVER 100 KM. 390 m.p.h.
 ITALY : Held by Guglielmo Cassinelli, in a Macchi C-72 seaplane (2,400-h.p. Fiat A.S.6 engine). Falconara-Pesaro. October 8, 1933.

SAILPLANE RECORDS

DISTANCE (Straight Line) 465.3 miles
 U.S.S.R. : Held by O. Klepikou, in single-seat Rot-Front 7 sailplane; Moscow to Otradnoe, district of Stalingrad. July 6, 1939.

DISTANCE (Out and Back) 212.6 miles
 U.S.S.R. : Held by Boris Knielman in single-seat Rot-Front 7 sailplane; Trula-Riajsk-Trula. July 23, 1939.

HEIGHT 22,428 ft.
 GERMANY : Held by Erwin Ziller, in single-seat Kranich D.6-440, from aerodrome of Hirschberg. November 21, 1938.

DURATION (including return to start) 36 hrs. 35 mins.
 GERMANY : Held by Kurt Schmidt, in a D-Loerzer German Baby sailplane. Korschenruh, East Prussia, August 3-4, 1933.

THE MORSE CODE

The Morse Code is a system of dots and dashes representing the letters of the alphabet and numerals 1 to 0. It is commonly used for signalling either by sight (by means of flags, flashlamps, etc.) or by hearing (using buzzers or tapping).

THE MORSE ALPHABET

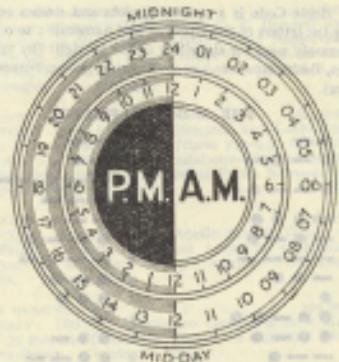
a	● -	m	- - -
ä	● - ● -	n	- ●
á}	● - - ● -	ñ	- - - ● -
å	● - - -	o	- - - -
b	- - ● ●	ö	- - - - ●
c	- - ● ●	p	- - ● -
ch	- - - -	q	- - - ●
d	- - ● ●	r	- ● -
e	●	s	● ● -
é	● - - ●	t	-
f	● - ● ●	u	● ● -
g	- - - ●	v	● ● - -
h	● ● ● ●	w	● ● - - -
i	● ●	x	● ● - - - -
j	● - - -	y	● - - - -
k	- - ● ●	z	● - - - - -
l	● - - ●		

NUMERALS

1	● - - -	6	- ● ● ●
2	● - - -	7	- ● ● ●
3	● - ● -	8	- - - ● ●
4	● - ● -	9	- - - ● ●
5	● - ● -	0	- - - - -

Acknowledgment of figures is made by signalling the letters A to K (J is not used). Thus figures 2345 would be acknowledged by sending the letters BCDE.

THE 24-HOUR CLOCK



The 24-hour clock is in use in many countries, and is employed throughout the Royal Air Force at home and abroad.

The hours between midnight and midday are numbered as usual 1 to 12, hour figures always being used; from midday to midnight they are numbered 13, 14, 15, and so on.

Thus: 9.15 a.m. is known as 09.15,

10.15 p.m. is known as 22.15,

Midnight is known as 24.00,

but 12.35 a.m. (25 minutes to 1 in the morning) is known as 00.35.

The use of the 24-hour clock saves, once one has become used to thinking of the afternoon hours in the new way, much confusion in calculating air corrections on long journeys; and although it is possible to buy watches and clocks marked with 24-hour faces, the ordinary face marked with 12 hours is generally used.

The diagram shows the 24-hour dial on the outer ring and the corresponding 24-hour time on the inner ring.

ABBREVIATIONS COMMONLY USED IN THE ROYAL AIR FORCE

- A.A.F.—Auxiliary Air Force
- A. & S.D.—Administrative and Special Duties
- A.C.—Aircraftman (1st or 2nd Class)
- A.C.A.S.—Assistant Chief of Air Staff
- A.C.H.—Aircraftsman
- A.C.W.—Aircraftwoman
- A.E.A.F.—Allied Expeditionary Air Force
- A.M.—Air Ministry
- A.M.O.—Air Ministry Order
- A.O.A.—Air Officer in Charge of Administration
- A.O.C.—Air Officer Commanding
- A.O.C.-in-C.—Air Officer Commanding-in-Chief
- A.S.I.—Air Speed Indicator
- A.S.R.—Air-Sea Rescue Service
- A.T.C.—Air Training Corps
- A.V.M.—Air Vice-Marshal
- C.A.S.—Chief of the Air Staff
- C.O.—Commanding Officer
- D.C.A.S.—Deputy Chief of Air Staff
- D/F.—Direction Finding
- D.R.Os.—Daily Routine Orders
- E.F.T.S.—Elementary Flying Training School
- F/Sgt.—Flight Sergeant
- F.T.W.—Flying Training Wing
- G.D.—General Duties
- G.O.C.—General Officer Commanding
- I.T.W.—Initial Training Wing
- J.A.G.—Judge Advocate General
- K.R.R.—King's Regulations & Air Council Instructions
- L.A.C.—Leading Aircraftman
- L.A.C.W.—Leading Aircraftwoman
- Met.—Meteorological
- M.L.O.—Movements Liaison Officer
- N.A.A.F.I.—Navy, Army, and Air Force Institute
- N.O.—Naval Officer
- O.T.U.—Operational Training Unit
- P.A.—Personal Assistant
- P.M.—Provost Marshal
- P.M.C.—President of the Mess Committees
- P.R.O.—Public Relations Officer
- R.A.A.F.—Royal Australian Air Force
- R.A.F.O.—Reserve of Air Force Officers
- R.A.F.V.R.—Royal Air Force Volunteer Reserve
- R.C.A.F.—Royal Canadian Air Force
- R.N.Z.A.F.—Royal New Zealand Air Forces
- R.O.C.—Royal Observer Corps
- R.T.—Radio Telegraphy
- S.A.A.F.—South African Air Force
- S.A.O.—Senior Administrative Officer
- S.A.S.O.—Senior Air Staff Officer
- S.I.O.—Senior Intelligence Officer
- V.C.A.S.—Vice-Chief of Air Staff
- W.R.A.A.F.—Women's Auxiliary Air Force
- W.O.—Warrant Officer
- W/T.—Wireless Telegraphy

SHORT GLOSSARY OF AIR TERMS

(Technical and Slang).

Ab Initio.—From the beginning.

Aerofoil.—A flat or curved structure, such as an aeroplane's wing, designed to obtain reaction upon its surface from the air through which it moves.

Aeroplane.—A flying machine with fixed wings.

Aircraft.—Aircraft which are supported by their buoyancy in the air.

Alleron.—A movable auxiliary surface, usually forming a part of the wing and employed for the lateral control of an aircraft.

Aircraft.—An aircraft without its engines.

Airman.—In R.A.F. parlance, an aeronautian, N.C.O., or warrant officer.

Airspeed.—Non-rigid: An airship in which the shape of the gas bag is maintained by the pressure of the gas inside it.

Rigid: An airship in which the gas bags are housed in a rigid framework.

Semi-rigid: An airship having a rigid keel but being otherwise non-rigid.

Airspeed Indicator.—An instrument which records the speed of an aircraft with reference to the air. Commonly known as an A.S.I.

Airworthy.—Complying with the Air Ministry's Certificate which states that an aeroplane is fit to fly.

Altimeter.—An instrument of the aneroid barometer type which, carried on an aircraft, continuously indicates the approximate height of the machine above sea-level.

Amphibian.—An aeroplane fitted for alighting either on land or water.

Anemometer.—An instrument for determining the speed of the wind.

Aspect Ratio.—The ratio of the span to the chord of an aeroplane.

Bale Out!—To take to one's parachute. (Slang.)

Balloon.—Kite: A gas bag fitted with tail appendages to keep it heading into the wind and provided with a basket to carry a crew. Kite balloons are anchored to the ground by a cable and winch, and are commonly used for observation purposes. (Now largely obsolete.)

Free: Comprises a spherical gas bag supporting a basket for the crew, and is allowed to drift freely with the wind.

Barrage: A captive balloon, without basket, which can be raised as a protection against attacks by low-flying raiders.

Short Glossary of Air Terms—Continued.

Sounding: A small spherical free balloon which is sent aloft with automatically registering instruments to record meteorological data.

Base (Compass).—A concrete circle built on an aerodrome and marked with the principal degrees of the compass upon which an aeroplane is placed for compass adjustments.

Black, A.—To make a mistake or do a job badly is to "put up a black." (Slang.)

Barding.—Connection of the screening of the ignition system to the earthed system of an aeroplane.

Briefing.—Giving final instructions before an air operation.

Browns Off!—To be "browned off" or "beasted off" is to be fed up. (Slang.)

Bent: The first half of an inverted loop, then normal altitude by a half-roll.

Ceiling: Absolute: The greatest height to which an aeroplane can climb.

Servicing: The height at which the rate of climb has fallen to one hundred feet per minute.

Clouds.—Cirrus: Isolated clouds, usually in wisps or bands.

Cumulus: Usually rising from 1,500 feet, very tall and cauliflower-shaped top.

Cumulus, Alto: Small, round clouds showing some shadow.

Cumulus, Cirro: Small, white tufts of cloud, usually at about 20,000 feet.

Cumulus, Stratoc.: A cloudbank composed of large masses of cloud, usually having the appearance of waves.

Nimbus: Ragged, dark grey clouds, usually below 7,000 feet.

Dive.—Terresia: A dive with engine on at the highest possible speed.

Drag.—The resistance of the air to the passage of an aeroplane.

Drift.—Sideways movement under the influence of side winds.

Drill.—The right or the wrong "drill" is the correct or incorrect method of doing anything. (Slang.)

Drift, The.—The sea; to come down "in the drift" is to be forced to land in the sea. (Slang.)

Driver: Slang term for pilot of an aircraft. Leader of a wing is said to be "driving the train."

Short Glossary of Air Terms—Continued

Endurance.—The time in hours which an aeroplane can fly without refuelling.

Engines, Diesel.—An engine which burns crude oil. Ignition is usually by compression and not by spark.

Four-stroke:—An engine in which the piston makes four strokes to complete a cycle of operations.

Gas-Turbine:—A continuous combustion pistonless reaction engine, driving an aircrew or emitting a jet.

"H" ; "F" ; "W" and "X": Engines whose cylinders, seen in end view, form the letter after which they are named.

In-line:—An engine with its cylinders arranged in row(s) from front to rear.

Inverted:—An engine with its cylinders below the crank-shaft.

Radial:—An engine with its cylinders arranged round a common crank-shaft, the cylinders being stationary.

Rotary:—A radial engine in which the cylinders revolve and the crank-shaft remains stationary.

Two-stroke:—An engine in which the piston makes two strokes to complete a cycle of operations.

Vertical:—An in-line engine with its cylinders above the crank-shaft.

Erik, An.—A novice. (Slang.) Often applied to a newly-qualified A.C.S.

Evaporative Cooling:—A cooling system which allows the water or other fluid cooling an engine to boil, then condenses it and takes it back to cool the cylinders.

Fix.—To obtain a "fix" is to ascertain the position of an aircraft by bearings or celestial observation.

Flak.—German Anti-aircraft gunfire. A word composed of initials of the four weeds in the German term.

Flap.—Excitement. (Slang.)

Flare, Landing:—An electrically ignited flare released from an aeroplane to enable the pilot to light the aerodrome when landing.

Marker:—A flare dropped by Pathfinder aircraft to indicate the target. Used chiefly at night.

Parachute:—A flare attached to a parachute which drifts slowly to the ground.

Flying, Blind:—Flying by instruments without seeing the ground.

Fox, Ta.—To trick or to baffle. (Slang.)

Short Glossary of Air Terms—Continued

Gas.—Information; it may be of two kinds: "publica gen," which is accurate information, or "dust gas," which is inaccurate. (Slang.)

Glide.—Slow descent without engine.

Glider.—A flying machine without an engine.

Gong.—A medal; a man who has been decorated is said to have been "gonged." (Slang.)

Gyroplane.—A flying machine which is supported in the air by one or more freely revolving rotors.

Helicopter.—A flying machine supported by and controlled through one or more engine driven rotors. It has no airframe[s].

Horse-power.—Brake:—The horse-power developed by an aero-engine at the aircrew.

Horsepower:—The brake-horse power developed by an engine when run at full revolutions.

Intercom.—An interior telephone system in an aircraft for intercommunication between the crew.

Lamp, Landing:—A landing device carried on an aeroplane [similar to a motor-car headlamp].

Navigators:—A lamp for indicating the position of an aeroplane and its direction. A red lamp is carried on the port wing-tip, a green light on the starboard wing-tip and a white light astern.

Lay On,—To produce or contribute something. (Slang.)

Leading Edge.—The front edge of a wing or aircrew blade. Also called *Exterior Edge*.

Line Sheeting.—Bombing or telling a tall story. (Slang.)

Load.—Pay:—The part of the useful load (smalls, passengers, or freight) which can bring money to the operator.

Useful:—The total flying weight of the aeroplane less the weight of it when empty; otherwise known as disposable load.

Loading.—Power:—The flying weight of the machine divided by the horse-power of the engine.

Wing.—The flying weight of an aeroplane divided by the area in square feet of the main planes.

Loosener.—A span or member running fore and aft along the framework of an aeroplane fuselage.

Loop.—Inverted:—A loop in which the under surface of the wings is on the inside of the loop.

Mae West.—Slang term for airman's life-saving jacket in case of descent on water.

Mickey Mouse.—Regulating device for bomb-release mechanism. (Slang.)

Short Glossary of Air Terms—Continued

Monoplane.—An aeroplane the main supporting surface of which consists of a single wing extending equally on either side of the body. Monoplanes may be of the high-wing, mid-wing, or low-wing type, according to the position of the wing in relation to the fuselage.

Organise.—To acquire or "pick." (Slang.)

Oriholpter.—A form of aircraftless aircraft deriving its support and propulsive power from flapping wings. No practical aircraft of this type has yet been produced.

Pitching.—Tendency to dive and climb alternately.

Porpoising.—Up and down movement of a seaplane on the water.

Port.—The left-hand side of an aeroplane when sitting in the cockpit.

Propeller Diameter.—The diameter of the circle described by the tips of the propeller blades.

Range.—Endurance stated in terms of miles.

Rip Cord.—A cord having a ring at the end which, when pulled, frees a parachute from its pack.

Ropey.—Bad or unpleasant. (Slang.)

Safire.—A number of bombs dropped simultaneously at different times dropped in series (see Slick).

Screening.—A screen insulating the sparking plugs and ignition system to avoid interference with wireless equipment.

Seaplane.—An aeroplane fitted for taking off from and alighting on water.

Sideslip.—A downward and inward slide resulting from excessive bank being applied when making a turn in the air.

Skid.—A sideways slide away from the centre of a turn in flight, usually caused by insufficient application of bank. The opposite to a sideslip.

Skipstream.—The stream of disturbed air drives back by an aerofoil in motion.

Span or Spread.—The maximum lateral distance from tip to tip of an aeroplane's wing.

Speed.—*Air.* The speed of an aeroplane through the air—as distinct from ground speed.

Flying.—Usually the lowest speed at which an aeroplane can fly without stalling.

Ground.—The speed of an aeroplane over the ground.

Landing.—The lowest speed at which an aeroplane can safely land.

Spitfire.—A short burst of machine-guns or cannon fire. Also applied to jet-propelled aircraft. (Slang.)

Short Glossary of Air Terms—Continued

Stall.—The point at which an aeroplane loses flying speed.

Starboard.—The right-hand side of an aeroplane when sitting in the cockpit.

Stationmaster.—Slang term for officer commanding an R.A.F. station.

Step.—The break on the bottom surface of a float or flying-boat hull.

Stick.—Bombs released one after another at predetermined intervals.

Strafe.—A target is said to be straddled when a stick of bombs falls directly across it.

Supercharger.—A mechanically driven fan which increases the pressure of the petrol mixture in the induction system, producing greater power.

SwEEPBACK.—The horizontal angle between the lateral axis of an aeroplane and the entering edge of the main planes.

Tall Boy Charlie.—Rear gunner of a bomber. (Slang.)

Tail Unit.—The rearmost portion of an aeroplane to which are usually attached the rudder, elevators, and fin. Also known as the empennage.

Tear off a Strip.—To drop down or specimen. (Slang.)

Tailing Edge.—The rearmost portion of a wing or aerofoil blade.

Triplane.—An aeroplane whose main supporting surfaces are divided into three aerofoils, or wings, one above the other.

Type.—Any person; qualified by adjectives such as "good" type, "poor" type, or "ropey" type. A khaki-clad soldier might be referred to, for example, as a "brown" type. (Slang.)

Wing.—An R.A.F. formation which may comprise two, three, or four squadrons, according to type.

Wing Loading.—The weight carried per unit area of supporting surface (see Loading).

Wires.—Drag: Wires which transfer the drag of the wings to the fuselage.

Lift (sometimes called Flying Wires): Wires which transfer the lift of the wings to the fuselage.

Wizard.—Excellent, outstanding. (Slang.)

Yaw.—To swing off course about the vertical axis. Yawing may be due to gusts of wind or lack of directional stability in the aircraft.

Calendar for 1946

	January	February	March	April
S	6 13 20 27 ..	8 18 25 28 ..	2 10 17 24 31 ..	7 14 21 28 ..
M	7 24 31 38 ..	9 13 20 27 ..	4 11 18 25 ..	8 10 22 29 ..
Tu	8 10 17 24 ..	9 18 19 26 ..	5 15 19 26 ..	9 23 26 29 ..
W	9 8 15 22 ..	..	6 12 19 27 ..	9 19 27 34 ..
Th	9 19 26 33 ..	..	7 14 21 28 ..	4 11 18 25 ..
F	4 21 18 25 ..	1 8 15 22 ..	3 22 29 36 ..	..
S	5 22 19 26 ..	2 9 16 23 ..	4 9 16 23 30 ..	4 19 26 27 ..

May

	June	July	August
S	5 15 19 26 ..	2 9 16 23 ..	7 14 21 28 ..
M	6 12 19 27 ..	1 8 15 22 ..	8 15 19 25 ..
Tu	7 14 21 28 ..	8 11 18 25 ..	9 12 19 27 ..
W	8 13 19 26 ..	3 10 17 24 ..	7 14 21 28 ..
Th	9 18 25 32 ..	4 11 18 25 ..	8 19 26 33 ..
F	3 10 17 24 ..	7 14 21 28 ..	5 15 19 26 ..
S	4 11 18 25 ..	1 8 15 22 ..	6 10 17 27 ..

September

	October	November	December
S	1 8 15 22 29 ..	6 13 20 27 ..	2 29 12 30 ..
M	2 9 16 23 30 ..	4 11 18 25 ..	9 15 22 29 ..
Tu	3 10 17 24 ..	5 12 19 25 ..	9 16 17 24 31 ..
W	4 11 18 25 ..	6 13 20 27 ..	6 18 25 33 ..
Th	5 12 19 26 ..	7 14 21 28 ..	7 18 25 32 ..
F	6 13 19 27 ..	8 16 23 30 ..	4 11 18 25 ..
S	7 14 21 28 ..	2 16 23 30 ..	5 12 19 26 ..

Calendar for 1947

	January	February	March	April
S	7 14 21 28 ..	9 8 15 22 ..	5 12 19 26 ..	4 13 20 27 ..
M	8 15 22 29 ..	3 19 17 24 ..	1 14 21 28 ..	7 14 21 28 ..
Tu	9 16 23 30 ..	4 11 18 25 ..	6 11 18 25 ..	1 8 15 22 ..
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F	3 10 17 24 ..	7 14 21 28 ..	4 11 18 25 ..	5 12 19 26 ..
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W	8 14 21 28 ..	4 11 18 25 ..	7 12 19 26 ..
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	October	November	December
S	3 14 21 28 ..	5 12 19 26 ..	2 10 17 24 ..
M	4 15 22 29 ..	6 13 20 27 ..	3 19 17 24 ..
Tu	5 16 23 30 ..	7 14 21 28 ..	4 11 18 25 ..
W	6 17 24 31 ..	8 15 22 29 ..	5 18 25 33 ..
Th	7 18 25 32 ..	9 16 23 30 ..	6 19 26 33 ..
F	8 19 26 33 ..	2 16 23 30 ..	7 14 21 28 ..
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BANK AND PUBLIC HOLIDAYS 1946

England, Northern Ireland and Eire

St. Patrick's Day (Ireland only)	..	March 17*
Good Friday	..	April 19
Easter Monday	..	April 22
Whit Monday	..	June 10
Grangeman's Day (Northern Ireland)	..	July 12
First Monday in August	..	August 5
Christmas Day	..	December 25
Boxing Day	..	December 26

* Observed on March 18 (Monday).

Scotland

New Year's Day	..	January 1
Good Friday	..	April 19
First Monday in May	..	May 6
First Monday in August	..	August 5
Christmas Day	..	December 25

Calendar for 1945

	January	February	March	April
S	7 14 21 28 ..	9 8 15 22 ..	5 11 18 25 ..	4 11 18 25 ..
M	8 15 22 29 ..	3 19 17 24 ..	5 12 19 26 ..	3 16 23 30 ..
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S	2 19 27 34 ..	7 14 21 28 ..	9 16 23 30 ..	4 11 18 25 ..

	September	October	November	December
S	3 16 23 30 ..	5 14 21 28 ..	2 11 18 25 ..	4 11 18 25 ..
M	4 17 24 31 ..	6 15 22 29 ..	3 12 19 26 ..	5 19 26 33 ..
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S	9 22 29 36 ..	2 19 26 33 ..	8 16 23 30 ..	4 11 18 25 ..

PERSONAL MEMORANDA

Name GEORGE J. BUBB

Service No.

Mess No.

Page No.

Home Address 36, Town Road

MOSELEY
BIRMINGHAM

Dates of Promotion _____

Car Number

Driving Licence Expires _____

Insurance Expires.....

Weight stone lb. oz.

Home Phone No.

YOLA TELEPHONE NUMBERS

NAME	CODE.	PHONE
AMOUNT	Pmt to Date	TAX
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2.	2. 15.5	5. 11.10
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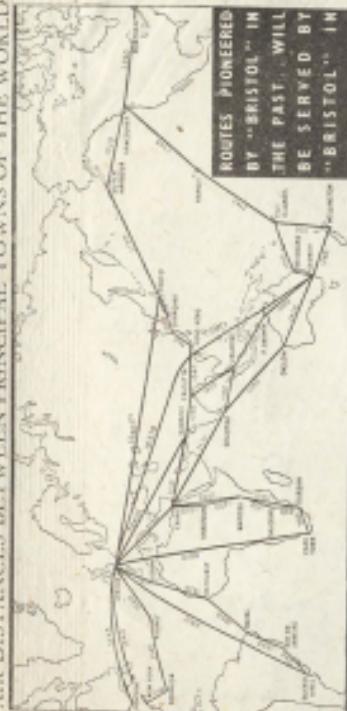
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AIR DISTANCES BETWEEN PRINCIPAL TOWNS OF THE WORLD



THE *Bristol* AEROPLANE COMPANY LTD.

