"Bristol" Flyer

May 2020

Editorial

Welcome to the first issue of the new "*Bristol Flyer*".

The story of the many tens of thousands of people who have worked in and around the Filton Works and Aerodrome, their innovations and the products they built, is a fascinating one which began in February 1910.

The *Bristol Flyer* intends to explain and illustrate this great story in words and images from a variety of sources, including "Bristol"end users". It is intended to be an online companion to the series of Bristol Aero Talks which are in temporary abeyance due to the Covid-19 pandemic.

This first edition looks at events up to mid-1940 that eventually led to the "Victory In Europe" 75 years ago. Its viewpoint is from that of the Bristol Aeroplane Company's people and products; it will include the RAF's 501 "County of Gloucester" Squadron, which shared the airfield from 1929-1957.

I hope you enjoy this first issue – what happens after this edition depends on you, the readers. I would relish receiving your stories and memories of the BAC so they can be added into future issues. If you can include pictures as well as words, that would be excellent. I intend to publish future issues of *Bristol Flyer* around forthcoming anniveraries as shown on page 20.

Please let me know if the Flyer would be a welcome future addition to your inbox (it's free!).

Editor

Email: bristol.flyer@btinternet.com

Contents:

The Fable of the Wise Man of Filton	*Page 3*
"Bristol" and WW2 - the story from 1935 – 1940	*Page 5*
501 "County of Gloucester" Squadron RAF - its story from 1929 – 1940	*Page 12*
In Memoriam – Blenheim Mk.IV N6173, 59 Squadron RAF, Lost 13 May 1940	*Page 16*
The indestructible Air Raid Shelter that still lurks under Downend	*Page 18*
On this day – 20th May 2020 – Hubble Space Telescope news	*Page 20*

Please note:

Bristol Flyer ***is intended to provide a temporary replacement for the BATalks which cannot take place during the Covid-19 lockdown.***
It is provided free of charge to people on the BATalks circulation list.

Bristol Flyer ***has no connection with Aerospace Bristol.***

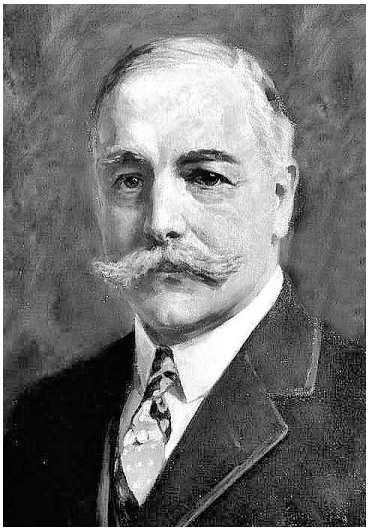
THE FABLE OF THE WISE MAN OF FILTON

according to the ancient and wise Duncan.

In days of yore, the world did ride upon lowly beasts or suffer miserable wet mud and painful sharp stones on Mr. Shank's "Pony", before new-fangled mechanical contrivances eased their toil. Many such serfs were impoverished, of dismal occupation and who, or so doth Mr. Dickens tell, did toil under masters of vile greedy intent and grievous avaricious disposition.

Yet behold, in the reigns of good King Edward VII and his Mum Victoria before him, a wise and visionary star did arise in the West, being philanthropic and determined of disposition and of great renown in his own country. His name was "George of the White" and, as befits such a goodly West-country-man, his King did proclaim him "Sir George, Baronet White of Clifton", in the year of our Lord one thousand, nineteen hundred and four.

Yea verily, George and his Lady, Caroline, did oft take holidays in other lands because they did not suffer any shortage of shekels which, being interpreted, means they suffered no paucity of funds or, in other dialects, no fiscal stringencies. So, they sallied forth across the English Channel, even unto that fragrant land called "France" and travelled unto a place known in the French tongue as "Pau". For it was here that exhibitions of French flying took place – or flying by French exhibitionists, si vous voulez.



But know ye that "Pau" was the place where the Brothers Wright – who dwelt across the mighty Atlantic in the "good old U S of A" - gathered to reveal their aviation achievements to their disciples amongst the struggling Europeans, in the years 1908 and 1909. For it be recorded that, on 17th December of the year 1903, these ingenious but sneaky Colonials had achieved the first free flight in the entire known world by a machine with an engine and pointed by a human pilot. The present author believes they were just the only ones of the early pioneers who had a camera to hand when required. Indeed, one of the Brothers did profess that this first flight could as easily have taken place in England, where the achievements of their technology was comparable.

But verily, 'tis easy to be magnanimous when you are the first to achieve success where others struggle and fail, often with fatal consequences, after falling from celestial heights with much banging of heads on "terra firma". For even people from Barcelona knew this, even those who frequently proclaimed they knew nothing, according to the great sage Manuel (d.2016).

It came to pass that George did meet many early practitioners in aviation and did admire their foolhardy "vol planés". Thus, when he did need to gather unto himself such men of daring and flying-man-ship for his intended new workings at Filton, he did know where he might ask and whom he should seek to employ.

And verily, Sir George did conjure and conceive in his entrepreneurial and fertile mind a wondrous scheme, by which mankind would conquer the devious Mistress Gravity and her despicable consort le Compte de Dragge, by using true and mighty cunning and that quiet British persistence, oft called "dogged" by those of foreign issue. So George did make diligent search amongst those of great learning of the (oft-deemed useless) book variety, and those of more practical application, called in those days "craftsmen".

And again, it came to pass that Sir George did create an early example – perhaps even the greatest – of those magnificent manufactories of aeroplanes, which he called "The British & Colonial Aeroplane Company". Many have asked over the subsequent decades why he did not endow his great endeavour with the colloquial and popular name of the "Bristol Aeroplane Company". The answer is simple – the miserable burghers of Bristol did consider, in their infinite and flawed wisdom, that the name of the great and goodly city of Bristol should not be lightly associated

with a commercial venture, certainly not one with such a likelihood of catastrophic and public failure. Subsequent history has shown their decision to be unutterably wrong and them to be very silly burghers indeed.

And lo, George did gather these functionaries even unto Filton, where great constructions called "sheds" were used by his other commercial endeavour, the "Bristol Tramways and Carriage Company". And Filton did become a famous place of legend, being replete with craftsmen in wood and wire and where did dwell people of great intuition and invention, with divers skills in design and manufacturification in the art and science of "aviation".

Forsooth, George and his brother, Samuel, did decide to use designs of the "le Companie Zodiac de Paris", said to be "the best machines available" during this time of 1910, for the Brothers White did believe in their steadfast but careful hearts that by not producing machines to their own faltering design they would, in the ungracious parlance of later days, "mitigate the risks".

And lo, when diligent enquiry was made, several "aviateurs de la France" did say unto George "verily, we have seen your star rising in the West and will come, even unto the place where you rest and have your being; yea, even unto Filton, in Gloucestershire, en Angleterre".

And for a third time, it did come to pass, that Sir George's new and splendid endeavour was dealt a grievous and mighty blow when the first of the so-called "best machines available" did fail to rise into the skies of Merrie England upon its first attempt at flight. Verily, it was unable to fly well enough even to crash with glorious but doomed bravado. It could only make brief hops, not even sufficient in height or speed to dash itself to splinters when coming once more upon the earth.

But behold, George was not cast down in his heart but did consign the iniquitous and knavish Zodiac "load of old junk" unto the fires of perdition. But George did decree that, from that day and for all time, or even longer, aeroplane serial numbers one unto six of the "Bristol" marque would not be expunged from company memory, but be retained in the company records, in sure and certain witness that miserable beginnings might deliver great endings.

And lo, George did say unto another of like given first name with fortuitously coupled appropriate family moniker, verily one George Challenger, "*get thee hence, creature of science, even unto thine own shed, and create me a design of such artful cunning and gentleness in motion that it offends not the Gods of the Air. Being such, in their mercy, they shall permit its passage without any injury to those Godly folk who might try to master any inherent perverse behaviour whilst "en vol*". He did also place upon this second George such stringent strictures of time and place that the task was accomplished with great acclaim in only six weeks. Ten years later, the mighty and famous Bristol Aeroplane Company was eventually formed and continues even unto this day in spirit, at Filton.

And lo, many years later, another name of France – Dunkirk - did signal to our nation's brave and stalwart fighters for truth and justice, being persecuted and accosted as they were by diabolical hoards from the east, that faith and perseverance will deliver light from darkness and doubters will be cast out, even unto the great festering and noxious compost heap of history.

~~~~~~~~~~~~~~~~~~~~~~

This is where our story starts for this first edition of *Bristol Flyer*, not in the year of grace 1939, but four years before in October 1935, when most of the politicians of the world did not foresee what might befall unsuspecting nations – and exceeding grievous the threat turned out to be. But, once again, the offspring of Sir George's vision proved hugely valuable to Great Britain, and once again "Bristol" men, women, aircraft and engines proved worthy of the trust placed in them by our courageous fighting forces.
~~~~~~~~~~~~~~~~~~~~~~

"Bristol" and WW2 - the story from 1935 – 1940

Since the early-1930s, European political tensions were recognised as potential future aggression. On 15th October 1935, Air Minister Philip Cunliffe-Lister sent a personal letter to Herbert Thomas, then Works Manager at Filton. It is interesting to read, the threats are clearly stated – political, moral and commercial. The original letter is in my personal collection – just holding it, with its RAF-blue signature on 1930's paper, seems to strongly transmit Lister's deepest political worries.

Air Ministry, Kingsway, W.C. 2

15th October 1935

PERSONAL

Dear Mr. Thomas,

Owing to the gravity of the matter I am taking the rather unusual course of writing to you personally in supplement of an official Air Council communication which is being addressed to the industry generally.

In June last, when I took over the Air Ministry, the new requirements of the Royal Air Force called for a very considerable expansion in aircraft supply to secure a particular and essential first line strength by a specific date. After discussion with Lord Weir, it was decided to adopt the definite policy of relying for these expanded needs almost entirely on the existing military aircraft industry, and contracts have been placed accordingly.

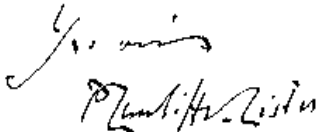
This policy, as opposed to one of bringing in new units wholesale and encouraging the definite creation of other units is, we are convinced, sound and wise for the particular problem in question. Of course as a corollary it places on the shoulders of those who direct the existing units of the industry a very heavy responsibility for the due fulfilment of these contracts so that we may rely on the formation of our squadrons according to plan.

While I am confident that this responsibility is realised by you, I feel it essential to draw your special attention to the absolute necessity of taking every step in your power to ensure that deliveries will be fulfilled strictly according to programme. However essential this requirement was a few months ago, today it is even more vital.

Accordingly, I write to you personally to ask you to survey in every detail your own individual programmes, to consult with your organisation and to estimate your difficulties and troubles, and then to send me a letter confirming your realisation of your responsibilities and your ability to fulfil them. More than this, if any major difficulties arise out of your review, and you feel that the Ministry can help you in resolving them, please let me know.

Perhaps you may also feel that you would desire to see me along with Lord Weir on any matters arising out of this letter. If so, I shall be very glad to arrange for an interview.

I should also like to say that I have sent a similar letter to Mr. Sopwith, Sir John Siddeley, Sir Robert McLean, Mr. Fairey and Mr. Handley-Page.



As an historian, it is easy to look back on the events of the past and tell today's audience how obvious it was that a particular event was inevitable. Our hands are not tied by the many and various contemporary opinions and politically driven comments about what action should be taken, within what budget and time constraints and using which scarce resources. Reading Lister's letter, it is clear the men from the Air Ministry were not taking any chances of being caught out, even in 1935. So strong was their concern that even senior ministers took to impressing on the key people they had to rely on within the industry that any inserted digits had to extracted immediately. Timings were so tight that even Chamberlain's much derided "peace for our time" declaration of 30th September 1938 bought the UK a bit more time - almost a year, during which many fighting aircraft and engines would be built, many at Filton.

At Filton, in both Aircraft and Engine Divisions, the products required by the Air Ministry were under rapid development. The Bristol Type 130a Bombay bomber / troop transport powered by a pair of 1010 hp Bristol Pegasus XXII engines, would be sent to Short & Harland in Belfast for building because the Filton workshops were stuffed full of Blenheims, although only 50 Bombays were eventually built. The prototype Type 130 (not called "Bombay") was based on a specification originally issued in 1926 and first flew almost nine years later on 23rd June 1935. The first production Type 130a "Bombay", L5808, did not fly until March 1939 in Belfast – this aircraft is seen below on its first flight to Filton.

Note: It is my intention to discuss the development of the famous "Bristol" aircraft engines in the next issue of the Flyer, *which I expect to issue in July to mark the 100th anniversary of the founding of Bristol Engines in 1920.*

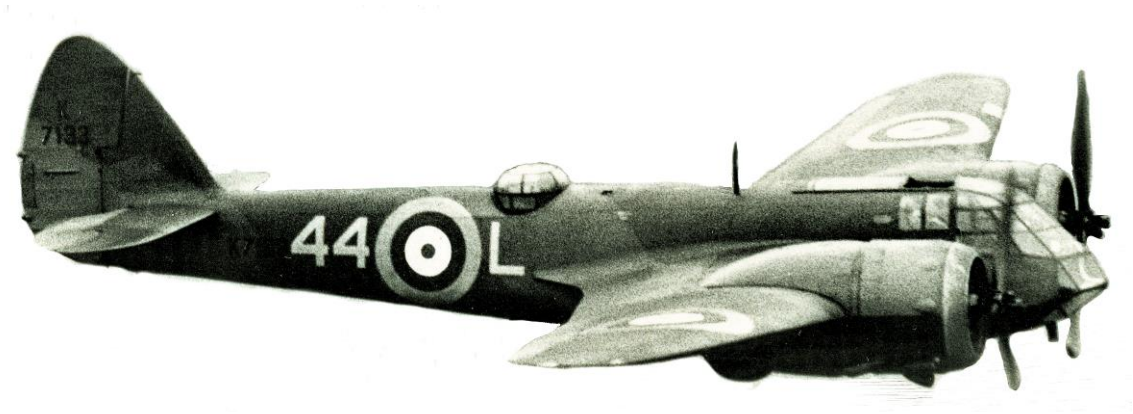
The story of the Bristol Blenheim has been told many times, but it needs to be repeated in the context of the huge efforts that were made at Filton from 1936 to 1938 to ensure it would be ready for service should the worst happen and hostilities did break out.

At a conference on future airports held in London in December 1935, the Prince of Wales – who was what we would call today a frequent flyer and who had his own aircraft – shared his view that consideration should be given to increasing aircraft cruising speeds to 250 mph. In 1933, Bristol's Chief Designers , Frank Barnwell (Aircraft) and Roy Fedden (Engines), had already started working on a similar idea and, in July 1933, Barnwell sketched a light transport monoplane design for six passengers and two crew designated

the Bristol Type 135. It was to be powered by a new type of piston engine, the sleeve valve Bristol Aquila of 500 hp, but the Bristol directors did not approve of a prototype being built. However, such was the enthusiasm for the new aircraft that news soon leaked out and came to the notice of Lord Rothermere, proprietor of the Daily Mail newspaper. He was looking to have a small fast aircraft built for his personal use that would be the fastest commercial aircraft in Europe, in direct competition with the Douglas DC1 then being built in the USA.

By 6th March 1934, Barnwell had drawn up details of a Type 135 variant with a top speed of 240 mph at 6,500 feet, powered by a pair of supercharged Bristol Mercury engines. On 26th March, Rothermere placed an order which put the Bristol Directors in a dilemma, because Rothermere wanted to use his new aeroplane to show the Air Ministry that their fighters would not be able to catch his new aeroplane – they were too slow by about 50 mph. By accepting the order, the Bristol Directors were afraid they might offend their best – and often only – customer. On 29th March, in best tradition, the three Bristol Directors met Lord Rothermere for lunch and the deal was done for a price of £18,500. It turned out that the Air Ministry were enthusiastic; Lord Rothermere named the aircraft "Britain First" and presented it to the nation for development into a fighting aircraft - and so a legend was born.

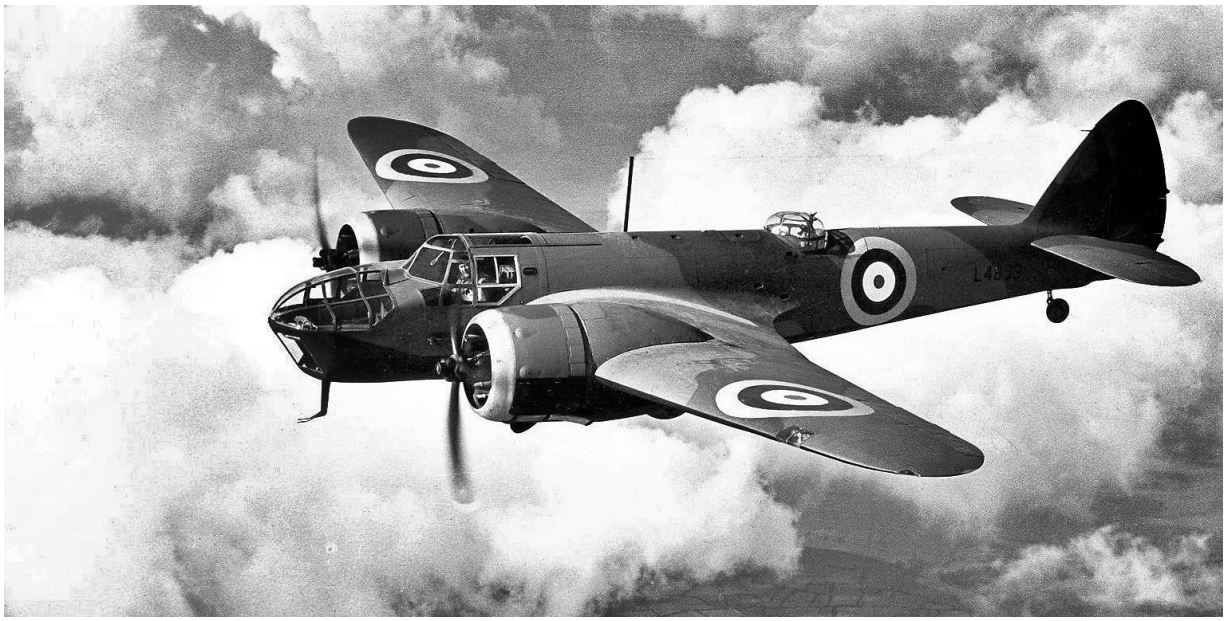
Above - the Bristol Type 142, wearing B-class serial R-12, with original 4-blade wooden airscrews, outside the Filton West Works; this site is now occupied by the GPO's Patchway Sorting Office.



Above – K-7133, an early production Blenheim Mk.1 – note the changes made to produce a 3-crew medium bomber from the Type 142, including a reset mid-wing, 3-blade metal propellors, a new nose and revised fuselage.

Above: Filton Blenheim Mk.1 production on 7th June 1937; the prototype K-7557 with a slender rear fuselage can be seen in the left foreground, just behind is BL-104, the first aircraft for Finland which would wear a pale-blue swastika when in service. The rest of the RAF aircraft are first batch and have tail serials around K-7050; somewhere in the melee is also the first aircraft for Turkey.

The first Blenheim K-7033 flew on 25th June 1936 and, after trials, the Blenheim Mk.1 entered production in December 1936; 1415 aircraft were produced before the updated Blenheim Mk.IV superceded it on the production line. This aircraft had a longer fuselage and redesigned front fuselage to give the navigator more space to work. In the Mk.1, he had to use a small drawing board which rested on his knees whilst he sat on the main spar behind the pilot. This might have sufficed when the aircraft were only flying locally using road maps to find their way around, but once longer range operations started, a proper solution had to be found. The proposed glazed stepped nose of the Mk.IV caused the pilot problems seeing where he was going, so the upper glazing was scalloped to give a good forward view (see L4899 below).



Returning for a moment to more peaceful days of 1936, Cunliffe-Lister – by then Lord Swinton - was replaced by Sir Kingsley Wood. Wood was showed a series of studies that had been made since 1935 on the "shadow factory" concept. Under this scheme for instance, Morris Motors had been asked to consider their capability to host aircraft engine production at their Cowley plant near Oxford. It is reported that Wood's immediate response was to put forward a plan for a number of shadow factories, which should enable aircraft and engine production to be increased by a factor of three, depending on the local availability of skilled personnel. His plan was presented in two parts:

1. Development of nine new factories;
2. Build extensions to existing factory complexes to allow a) either easier switching to aircraft industry capability, or b) expansion in current production capacity, as at Filton.

There was government funding for the building of these new production facilities through grants and loans. Shadow Factories relating to Bristol products eventually included:

- Short & Harland, Belfast – for the construction of Bristol Type 130a Bombay aircraft.
- Acocks Green, Birmingham - Parts for Bristol Hercules radial engines.
- Banner Lane, Coventry - Bristol Hercules sleeve valve radial engines.
- Drakelow Tunnels, Kidderminster - Machined parts for Bristol Hercules engines.
- Filton, Gloucestershire – Bristol engines.
- Hawthorn, Wiltshire - Bath stone quarry for Hercules and Centaurus engine production.
- Liverpool – Rootes factories at Blythe Bridge and Speke – Bristol Blenheim Marks I & IV.
- Manchester – A.V.Roe, Chadderton - Bristol Blenheim Marks I & IV.
- Solihull, Warwickshire - Parts for Bristol Hercules radial engines.
- Weston-super-Mare, Somerset – Bristol Beaufighter production.

The Shadow Factory concept was very successful and huge numbers of Blenheims were produced. Production rates at Filton had reached 24 aircraft per month by December 1937 and 700 had been delivered by March 1939, from a standing start in 1936. Also by then, the Shadow Factories at Manchester Chadderton and Liverpool Speke were in full production. The number of Blenheims eventually built by the Shadow Factories were:

A.V. Roe	Mk.I	250	
Chadderton	Mk.IV	750	
Rootes	Mk.I	422	(Speke only)
	MK.IV	2060	(Speke and Blythe Bridge)
	Mk.V	942	(Blythe Bridge only, from 1942)

Immediately before the onset of WW2, Blenheims – mostly Mk.IV - equipped 16 Bomber squadrons, and 2 Army Co-operation Squadrons at home, whilst mainly Blenheim Mk.1 equipped more than a dozen squadrons in Egypt, Aden, Iraq, India and Singapore. The first aircraft to enter enemy airspace during WW2, at 11:45 on 3rd September 1939, was a Filton-built Blenheim Mk.IV of 139 Squadron, N6215 – within 45 minutes of the declaration, Filton's war had begun.

Prior to the start of the War, the Company had:

- developed and/or put into production a number of important pairings of Bristol aircraft and Bristol engines – Blenheim, Beaufort, Beaufighter;

- expanded the Filton design and manufacturing capabilities;
- laid a new hard runway;
- created an Armaments division;
- become fully engaged in the shadow factory scheme for both aircraft and engines;
- from 1940, it recruited many ladies into the expanding workforce, both in their own right and as replacements for the male employees who had joined the armed services;

At the outbreak of war, the BAC had provided half the RAF's frontline strength with its Mercury-powered Blenheim fighter/bomber aircraft and provided 80% of the engines powering RAF aircraft and Fleet Air Arm. The Rolls-Royce Merlin had yet to make any great impact although that was to change rapidly as the number of Spitfires and Hurricanes in service grew through 1940 and after.

However, there were a number of Bristol aircraft and engines waiting in the wings (sorry!), being the Bristol Taurus-powered Beaufort and the Bristol Hercules-powered Beaufighter. Both of these aircraft would see extensive active service throughout the rest of the war in all theatres of action. On the engines side, the Bristol Hercules-powered Short Stirling – the first of the famous four-engined heavy bombers - was about to enter service in May 1940. The development of these aircraft, and the continuation of the BAC role in WW2 will be told in the August edition of the Bristol Flyer, timed to coincide with the 80th anniversary of the Victory over Japan celebrations in August 2020.

Filton, Summer 1938. *A wealth of detail can be seen in this photograph of a flight of Blenheim Mk.IV aircraft just returned from ground testing. The leading aircraft has already had its propellors removed prior to be put into No.1 Flight Shed and is about to be defueled – both precautions against accidents whist being worked on in the hangars. The former flying school hangars, by now the West Works of the Engine Division, can be seen in the background (in 2020 this is the site of the GPO Sorting Office) with the new hard runway and taxiways leading to the bridge over the GWR cutting, under and to the left of which were the Filton West platforms. A hard standing is being built south and west of the railway bridge, on which aircraft on test and awaiting delivery would be parked. In 2020, it is underneath Airbus buildings and car park. To the top right can be seen the 1930's office building of the Engine Division and the Filton Engine Shadow Factory bicycle sheds and bus station – the factory is out of the picture to the right.*

An illustration taken from my late Father's book "Britain's Fighting Forces" dating from 1940. It shows the principal aircraft in service – at least those to which the Government would admit. In addition to the Bristol aircraft shown, the Harrow, Wellesley, Wellington (3000+ built), Hampden (1400+ built), Skua and Vildebeest were all Bristol powered. Not shown is the legendary Fairey Swordfish torpedo bomber (2390+ built) which was also Bristol powered.

No. 501 "County of Gloucester" Squadron, Royal Auxiliary Air Force.

Formed at Filton on 14 June 1929 as 501 "City of Bristol" Squadron, it was renamed **501 "County of Gloucester" Squadron** on 1st May 1930. It was formed as a Special Reserve unit with Avro 504N biplanes until D.H.9A day bombers arrived in March 1930.

Westland Wapitis came on strength during September 1930 and Westland Wallace in January 1933; these aircraft were powered by a Bristol Pegasus IV radial piston engine, rated at 680 hp. Hawker Hinds arrived in March 1938.

At the end of 1938 No.501 was redesignated as a fighter squadron, receiving Hurricane Mk.1 aircraft in March 1939. On the outbreak of World War Two, 501 Squadron formed the air defence of Bristol and its surrounding area. 501 was moved to Tangmere in late-November 1939, then to France in May 1940.

A flight of three DH 9Ack aircraft.

The caption of this picture says they are pictured over Filton but no other details are known

A 501 Squadron Westland Wallace Mk.1 powered by a 680 hp Bristol Pegasus IIM3 9-cylinder radial piston engine c. June 1936.

Much of the original establishment of the Squadron was part-time and drawn from the local area, including the aircrews. By the time the first Rolls-Royce Merlin-powered Hawker Hurricane Mk.1 aircraft arrived, it was fully established and ready for whatever was to come. Of course, the Hurricane was a thoroughly modern machine, with such innovations as a fully enclosed cockpit, eight guns and a retractable undercarriage. Just as the crews of the equally modern Blenheim tended to forget this last feature and land "wheels-up", so did some of the ex-biplane jockeys of 501, as the photograph below shows.

L1869, the first Hurricane Mk.1 of 501 squadron to land at Filton stalled and crashed on March 9, 1939. Who was the pilot? None other than the 501 C.O. Squadron Leader Clube! He later rose to the rank of Air Vice Marshal.

On the outbreak of World War Two, 501 Squadron formed the air defence of Bristol and its surrounding area but was moved to Tangmere in late-November 1939, not to return until after the Battle in December 1940.

From Tangmere, just inland from the English Channel, 501 flew defensive patrols until the German attack on France in May 1940. It then moved across the Channel to provide fighter cover for the Advanced Air Strike Force in France from May 1940, where it acquired an enviable reputation.

It is not my intention to describe 501's many activities in what became known as the Battle of France - that is a story for another day, although I would refer you to David Watkins excellent book "Fear Nothing", ISBN 1-872308-07-4 for a full account. The rapid advance of German forces into Northern France caused 501 to frequently move base ……

14 June 1929	28 November 1939	RAF Filton, Gloucestershire
28 November 1939	10 May 1940	RAF Tangmere, West Sussex
10 May 1940	16 May 1940	Bétheniville, France
16 May 1940	2 June 1940	Anglure, France
2 June 1940	11 June 1940	Le Mans, France
11 June 1940	17 June 1940	Dinard, France
17 June 1940	21 June 1940	RAF Saint Helier, Jersey, Channel Islands
21 June 1940	4 July 1940	RAF Croydon, Surrey

Bristol Bombay (L5813) of 271 Squadron ran into trouble when it was delivering 501's rear party at Bétheniville on 11th May 1940; four RAF personnel were killed. Pilot Officer Leonard Duckenfield was on board the ill-fated aircraft, he remembered:

"When we first approached to land … the aircraft developed a very high nose-up attitude and the captain abandoned the approach and went around again. Next time, the same thing happened….. Looking out of a fuselage window, it seemed to me that momentarily everything was quiet and motionless; I recognised later this was the point of the stall. Eye witnesses on the ground later told me when the aircraft stalled, it first went into a tail slide, but resumed a level attitude immediately before impact with the ground.

"The Bombay was new to the RAF and this particular aircraft was undergoing handling trials at Boscombe Down when it was pressed into service to ferry us to France. I believe the accident was caused by an incorrect distribution of passengers and cargo and, as the aircraft was a high-wing monoplane, the fact that it was level when it hit the ground probably caused the deaths of the passengers sitting in the centre section, which crushed flat that part of the fuselage immediately beneath it on impact.

The aircraft did not explode on impact otherwise the seven who escaped, all with injuries, might not have been so lucky. Even so, P.O. Duckenfield's injuries were severe enough for him to be repatriated for treatment; he did not re-join the Squadron until 24th July 1940.

Also mentioned in reports of this accident was the Squadron Medical Officer, Flt. Lt. Frank Mogg, who "worked relentlessly" with his medical team to attend to the injured. Dr Mogg had been a local doctor in the Filton area since the early 1920s. He was reassigned when the squadron returned from France and was awarded the George Cross later in the war for his work on another similar crash.

501 made quite a name for itself during the Battle of France but was forced to start withdrawing from France during the same period as the land forces were heading for Dunkirk and Operation Dynamo, from 17th May – 4th June 1940. The aircraft, pilots and ground crew went west via Dinard and Le Mans – some reports say it was the last squadron operating in France and that, at times, it was only hours ahead of the advancing German forces, before escaping to Jersey. The squadron's "score" during its time in France was 71 enemy aircraft at the cost of 18 Hurricanes and eight pilots.

However, just as 501's arrival in France had had its casualties, its evacuation was worse. Some ground crew, equipment and luggage was embarked on HM Transport Lancastrian in Brest, but just as the ship finished loading, she was bombed and damaged on the bridge. As she left port, she was again bombed, suffering three hits. HMT Lancastria went down in 20 minutes about 9 miles from St. Nazaire. The sinking is particularly notorious for the survivors in the water being strafed by enemy aircraft. Some of the 501 ground crew were lost and all of the squadron's equipment.

There were reckoned to be 2447 survivors, but about 4000 British nationals and service personnel were lost in this, the UK's worst ever sea disaster. The Lancastria Association names 1,738 people known to have been killed, one of whom was from the author's family, an Aircraftsman not associated with any squadron at the time. Lancastria had been taking part in Operation Ariel, the evacuation of British nationals and troops from France, two weeks after the Dunkirk evacuation.

Right - A youthful looking Sgt Bill Green in his cockpit. Bill came from Clevedon and passed away there on 7th November 2014, aged 97. When he was shot down the first time, he said he was most worried about the loss of his new socks, a gift from his wife.

Left a 501 Hurricane showing squadron markings SD-H being serviced at an unknown location; the RAF tail markings are not discernible.

(The sources of the three images on this page are not known; they have been cleaned and enhanced by the author)

Servicing in the open air was normal during 501's fight across France, as can be seen from the two photographs below, believed to have been taken at Anglure (upper) and Bétheniville (bottom) during the Battle for France.

The many and famous exploits of 501 during the Battle of Britain will be outlined in the July 2020 issue of the ***Bristol Flyer***

80 years ago - In Memoriam – 13th May 1940.

Historians such as myself do a lot of deep research into what happened in our particular field of interest and, normally, this is enough to satisfy us. However, on one occasion in July 2014, I answered an enquiry which enabled the families of a crew lost on 13th May 1940 in an RAF Blenheim Mk.IV to trace their fate.

Ken Jelfs, from Sydney, Australia, sent a simple request : "*For some years I have been seeking to solve an identification problem referring to the loss of 2x Bristol Blenheim Mk.IV aircraft in the early days after the invasion of Belgium by the German forces in 1940. The frame numbers are ……"* The so-called frame numbers had been noted down by a German Corporal at the crash scene.

Research in my records led me to establish that the frame numbers Ken had been given were not from two aircraft, but a combination of the RAF tail number and the Filton manufacturer's serial number from 1938. Ken then supplied more information in a second email – "*My cousin, P/O Croydon Jelfs Edinburgh CHAMBERLAIN [RNZAF} was in command of N6173 59 Squadron, call sign Tango-Romeo* ***OSCAR,*** *in company with Sgt. George Edward SELDON and A/C1 Frank HANDS, on that sad day. They were on a low level photo recon targeting the Maastricht docks, locks, bridges, roads and railways etc. The area had been subject of a disastrous allied air attack the previous day."*

In a later email of 12th August 2014 Ken added "*They were initially buried alongside the wreck by the local residents and German troops located nearby; the remains were incinerated beyond identification and later disinterred three times. First at the original church at Neerwinden, then to a new church that replaced the original which was badly damaged later during the liberation. In July 1956 they were once again disinterred and relocated to the CWGC site at Hotton, Belgium.....where the remains were identified.*

On 12th September 2014, Ken wrote "*It would have been bad mistake to head directly for the presumed target area via Sedan on 13 May 1940....The German army was then in the process of forcing a crossing over the River Meuse, near Sedan, and the airspace would have been saturated with patrolling Luftwaffe....For this reason I believe that Croydon may have taken a flight path further south, perhaps via Montmedy, France and to the Luxembourg border where there might have been less hostility. Then north to Aachen for the low level photo-recon of the supply lines of the Germans pouring over the Belgian border, ending up (being) brought down by an anti-aircraft position. A local resident has stated ack-ack was very thick in the aera at that time. With the cloud base from Aachen Met. records indicating cloud base as 700 feet above sea level - Landen and Neerwinden are at an altitude of 213 to 240ft.* It is most unlikely a fighter shot them down as no claims of downed enemy aircraft have been found in German records.

On 18th May 2020, Ken records *"Farmer Alphonse Micheaux (*still alive in 2020*) was positive that the downing occurred five minutes either side of 19:40 (zulu) and that he ran straight to the site to the scattered remains of both aircraft and crew. He was ushered away by armed German soldiers stationed 300 meters away."*

After much effort and perseverance, Ken and his modern day helpers living in the vicinity of the crash site were able to persuade the appropriate authorities that the remains of the three aircrew who died in Tango Romeo Oscar should be reinterred with full military and civil honours. This was carried out on 11th May 2017 in Hotton War Cemetery in Belgium, in the presence of Ken and family members, plus a strong contingent from the local community.

Photographs via Ken Jelfs, reproduced with permission.

The grave site is well maintained by the local community and, until this day, not even weeds will grow on the crash site. It was a privilege for me to help Ken in his pursuit of recognition for his family member and the other crew members of an aircraft produced at Filton in 1938. Their final resting place now pays appropriate and worthy tribute to three brave men.

Memories of 1940 – Indestructible Self-build Air Raid Shelter still lurks under Downend.

Peter Coombs – a former Trustee of BACT – too young to have witnessed the action himself, recalls the stories told by his Dad, Filton aircraft engineer Ray Coombs, about the day his next door neighbour decided to build a shelter, which remained indestructible for many years after it was no longer needed.

Peter writes: *Most of this second-hand information dates from a number of years before I was born but I believe the facts to be largely correct.*

My parents married in 1938 about the time of Neville Chamberlain's piece of paper. They commissioned a builder to build a house in Bromley Heath road Downend. As a temporary measure they rented a semi-detached house in Heath Walk, Downend.

Progress on the new house seems to have been slow. In the end the foundations were dug and things looked promising. Then on Sept 3rd 1939, WW2 broke out. Suddenly, house ownership did not look such a good idea. Not only that but the builder joined the army and I have no idea what became of him.

As a result of the pressure on the Filton engine department with its shortage of experienced engineers, development and production were falling behind. The government introduced legislation early in the war, directing skilled labour to where there was a perceived need. Hence experienced engineers from the Midlands motor industry were directed to the engine company at Filton. The two of whom I am aware were Charley Newcombe and Walter Hassen; Walter, together with his family, moved to the semi next door to my parents.

Walter had begun his engineering career with W.O. Bentley in west London. He became part of the Bentley team that were winners at Le Mans on a number of occasions in the late 20s. His particular claim to fame involved rolling one of the Le Mans cars shortly before the race and putting about 3 impressions of his face in the roadside mud. He seems to have survived this without permanent damage (they were made of sterner stuff in those days). Following the collapse of the Bentley company and its take-over by Rolls-Royce during the depression, Hassen independently maintained, overhauled, re-built and generally fettled racing Bentleys at Brooklands, largely on behalf of rich owners of the marque.

He then joined William Lyons of SS Motors in Coventry. (with the unfortunate connotations of the name, the company was subsequently re-named Jaguar).

When it became evident that Bristol was likely to suffer enemy bombing, 'Wally' Hassen and my father decided to build a shelter. As the Hassens were a large family, an Anderson shelter would not have been big enough; an altogether more impressive edifice was called for.

The two semis had been built during 1937/8 on behalf of a local dentist, name of Connell Cole. Cole owned a large parcel of land, much of it undeveloped by the time war broke out. On the opposite side of the road from the semis, in Cole's ownership, was an embankment rising some 10/15 feet above the road.

Wally and my Father, both being handy with the drawing board, quickly schemed a shelter to be positioned within the bank. Wally went off to see Cole who, presumably fearing loss of a valuable building plot, insisted that the construction should be positioned discretely in the back garden of no 7, the semi occupied by the Hassen family. Being not a man to be trifled with, Wally retorted that he would build it in the front garden of no 7 if he was not allowed to use the bank . The end of the conversation is not recorded but the

shelter was ultimately built into the bank. This involved shifting many tons of earth by hand and constructing a very substantial brick arch over which most of the removed earth was replaced. I suspect brick and cement were the few non-strategic materials available by then. I gather the Coombs and Hassen families spent many anxious nights in this construction, listening to audible bomb explosions.

Wally was a confident chap, able to turn his hand to most things. On their rare days off, my father's motorbike was moved into the front room of no 5, dismantled and generally fettled by Wally, much in the way he had tuned up Bentleys back at Brooklands in the 30s. Presumably they rolled up the carpet to limit the collateral damage generated by this activity. The front room floor boards were later used for 'full-scale layout' of the design of a caravan built at the end of the war, but that is another story.

One of Wally's less successful ventures was an attempt to sweep the chimney. Back in the days of coal fires this was a frequent requirement normally carried out by tradesmen who were not too fussy about the state and cleanliness of the guest rooms after they had departed. The more enterprising (certainly by the 1950s) had come to utilise a vacuum cleaner to reduce the general distribution of soot about the house during the sweeping process. Numerous long standing professionals spurned such high tech solutions to an old problem and considered possession of a Vac to be an insult to their professionalism. Others used the possession of a vacuum cleaner more as an advertising ploy than a means of reducing the mess left after their departure. I don't know how 'Wally' came to own the appropriate brushes but it was probably the consequence of an unsatisfactory encounter with a man 'in the trade'.

Suffice is to say that bright and early one sunny Sunday morning Wally inserted his brush in the fireplace at number 7. Up he pushed it, connecting additional poles as he went. Unfortunately, having managed to push the brush half way up the chimney it became stuck and no amount of pushing, pulling and twisting would free it. A gathering collection of neighbouring householders were sympathetic of his plight but jointly unable to offer a solution. Only one thing for it; swallow pride and summon the professionals. The undoubted doyen of chimney sweeping in Downend was one Johnny Green, a man of quite remarkably disreputable appearance, in clothing and body an exact colour match for the substance he removed from chimneys.

Johnny arrived and proceeded to push, pull and twist, all the time emitting language unsuitable for respectable company. After a considerable time his exertions were rewarded with a cascade of soot and Wally's offending brush. Having demanded and receiving appropriate remuneration (double time Sundays) Johnny loaded his equipment and Wally's brush on the old pram he used to carry various brushes, poles and other equipment of his profession and headed for the door. Wally diplomatically pointed out that one of the brushes belonged to the householder, not the sweep. Johnny responded with the words "every man to 'is own trade and what I finds up my chimneys be mine." These chaps had a way with words.

In about 1944, the Hassen family returned to the Coventry area, Wally having been summoned back to Lyons company to develop a new off-road vehicle for the army. This came to nothing following the end of the War but it seems Wally and Munday schemed the Jaguar Overhead Cam XK engine whilst stationed on the factory roof fire watching, a widely practiced activity in industry in those days before May 1945. The new engine was key to the success of Jaguar in competitions and in production cars for the next 30 years. I only met Wally twice but I know he left Jaguar for Coventry Climax where he turned their fire-pump engine into the power unit used by Cooper, Lotus and many other formula 1 racing teams of the early 60s, along with the BAe Rapier generating set. Lyons seems to have regretted Wally's departure and

found the easiest way to bring him back was to buy Coventry Climax. On his return to Jaguar Wally designed the new Jaguar V8 engine. A clever chap.

And what of the Shelter? It lost its doors at the end of the war and the local kids including myself played in it until about 1953 when houses were built on the 'Bank'. The earth was removed from above the arch and a slot was drilled along the length of the crown of the arch with pneumatic drills. Various attempts were made to smash and collapse the two sides of the arch using a variety of demolition equipment but to no avail. Eventually, the builders filled the void with rubble and positioned the foundations of a large bungalow either side of the foundations of the arch so the remains of the shelter survive to confuse future archaeologists'.

About 30 years ago, a man with a German wife bought the bungalow. He disarmingly informed my parents that his wife had paid for it. She was the daughter of a builder who had made all his money reconstructing the homes and factories of the Ruhr valley, the ones that the RAF had destroyed about 40 years earlier. And the rented house? My parents bought it in 1948 when the landlord died, by which time the activities of the Luftwaffe had created an unresolved shortage of houses and a profusion of new car parks in the Bristol area. Despite periodic plans for the future, they remained there for the rest of their lives.

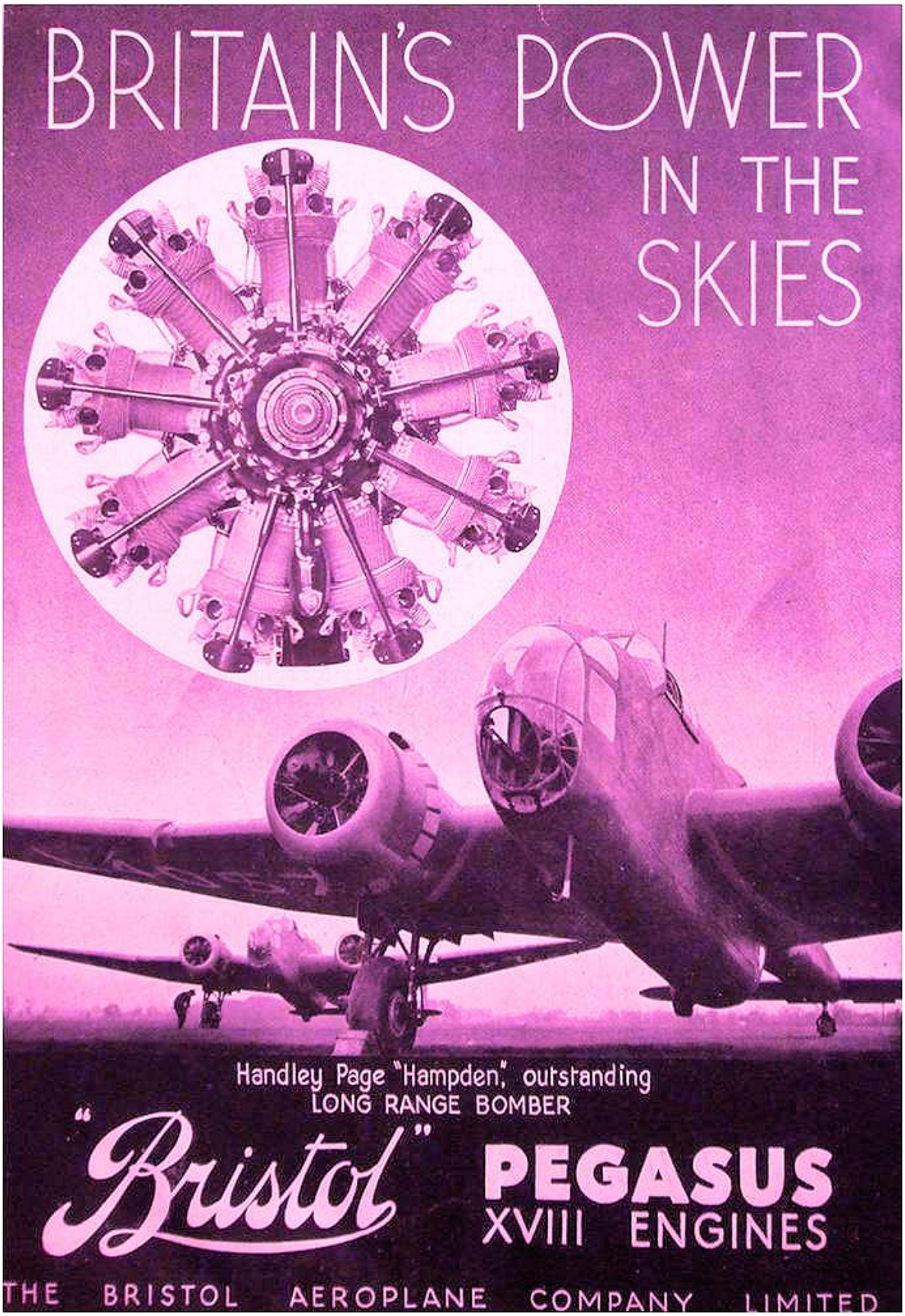
On this day - 20th May 1990 *(via Terry Ransome)*

On this day in 1990, the American Hubble Space Telescope sent its first image back to Earth, powered by Bristol solar arrays. For details see:
https://spacetelescope.org/images/opo9004a/?fbclid=IwAR0Bz8AZKjaJhCMbwDU3rxwJCk0qAgi8Zp50xKdJ1KG_-akaD-ODGHiUxqE

A glimpse at future issues of the *Bristol Flyer*.

2020 is a year with many anniversaries which all need to be recognised. Any readers having appropriate memories or family stories - not just about the 2020 anniversaries below - are invited to send these by email to Duncan Greenman at bristol.flyer@btinternet.com. Subjects intended to be covered in future issues are:

- July 2020 The Bristol Aeroplane Company Engine Division from 1919 – 1945.
- August 2020 "Bristol" and WW2 from May 1940 to VEJ Day, 15th August 1945.
- September 2020 The Raids on Filton, 25th and 26th September 1940.


BRITAIN'S POWER
IN THE
SKIES
Handley Page "Hampden," outstanding
LONG RANGE BOMBER
"Bristol"
PEGASUS
XVIII ENGINES
THE BRISTOL AEROPLANE COMPANY LIMITED