Ballooning at Bath: Some notable ascents

H Mary Wills

In the last few years there has been an increasing interest in ballooning, and local enthusiasts can often be seen gliding across Bath, silent except for the occasional roar of gas jets as they try to gain altitude. Perhaps it is not so widely known that Bath was the scene of several early flights, the first in 1802.

SYDNEY-GARDEN VAUXHALL, BATH.

MONSIEUR GARNERIN's ASCENT WITH
A BALLOON.

ON TUESDAY next the 7th of SEPTEMBER, the celebrated Aeronaut Monsieur GARNERIN, will ascend from this Garden with the same BALLOON with which he ascended, accompanied by Madame GARNERIN, and Mr. GLASSFORD, from Vauxhall Gardens, on Tuesday August the 3d.

AFTER THE ASCENSION, WILL BE
A MAGNIFICENT GALA,
In which the GARDEN will Exhibit a scene of unusual BRILLIANCE.

THE CONCERT

Will consist of a Selection of VOCAL and INSTRUMENTAL MUSICK, principally composed for Vauxhall this Season, and performed there with distinguished applause.

Between the 2d and 3d Acts of the Concert,
SIGNOR INVETTO, the famous Italian Artist,
WILL DISPLAY
A SUPERB EXHIBITION OF
FIRE WORKS.

IMMEDIATELY AFTER WHICH
A BAND OF SAVOYARDS
Will perform several favourite Airs in a Rural Orchestra erected in the center of the GARDEN.

The Garden will open at TWO o'Clock, in order that the Company may have an opportunity of seeing M. GARNERIN's new philosophical process of filling his Balloon.

For the accomodation of Parties, Tables will be laid in the Long Room, and the Boxes, for Cold Collations, &c.

TICKETS, FIVE SHILLINGS EACH,

To be had at the Gate of the Gardens; of Mrs. Gye, Stationer, and Mr. Kemp, Grocer, Market-place; at the principal Inns, and different Libraries.

☞ TICKETS for the Orchestra and the Garden Front of the House, Half-a-Guinea each, to be had at the Gate.

N. B. The Balloon will be exhibited till this present Evening, in a commodsous Room on the WALKS:
Admission ONE SHILLING.

Advertisement from Bath Journal, 6 September 1802.

On September 7th 1802 a large crowd gathered in Bath's Sydney Gardens, having paid five shillings (25p) a head entrance fee. An even larger number of people climbed the hills around the city, to watch the first balloon take off from Bath.

Andre-Jacques Garnerin had made twenty-nine previous ascents from other places. He had first taken off in a balloon while a young soldier during the Revolution. Born in Paris in January 1769, the son of a pewterer, he was present in the French capital at the time of the first ever manned balloon ascent in 1783. This exploit fired his imagination, and from then onwards he spent much of his time making and testing small balloons by sending them out of his window. When the Revolution came he joined the Paris National Guard, but retained his enthusiasm for aeronautics. He persuaded a rich patron to buy him a full-size balloon in return for the income from selling tickets to the public. The young man's parents alerted his commanding officer, who sent soldiers to stop him, but Garnerin slashed the tethering ropes with his sword, and thus made his first ascent.

On active service in northern France he was captured and spent two years imprisoned in Hungary. Then, as an exchanged prisoner of war, back in Paris he became official aeronaut for the French Government, developing balloons for military purposes, as well as perfecting his own design for a parachute. He was the first successful parachutist, jumping from a balloon in Paris in 1797.

By the time an uneasy peace was in force in Europe in 1802, Garnerin had acquired considerable expertise as a balloonist and as a showman. With letters of introduction to various parts of Europe he began demonstrating his capabilities - first in Britain. Amid much publicity and great crowds he ascended from Ranelagh in June, from Lord's Cricket Ground in July, and from Vauxhall in August. Several different people went up with him, including his wife occasionally: she was herself an experienced balloonist. At Vauxhall and at Bath his companion was Duncan Glasford.

The method for filling Garnerin's balloon with gas was described at the time as being simple.

> 'Thirty strong iron-bound rum puncheons were disposed in two circles, and in the centre of each of those circles was placed a brewer's mash tub filled with water; a cask, with one of the heads taken out was inverted or turned with its mouth downwards in each of these tubs, and a tin tube about two inches in diameter, arising from the head of each of the rum puncheons was passed into the mash tub under water, the ends of the tubes turning up into the inverted casks. Into each of those rum puncheons, on the day preceding, was thrown about 74 lbs of iron filings or turnings, to which was added about 98 gallons of water - and, on Tuesday morning, the Balloon being placed within an inclosure about 30 or 40 feet distant from the apparatus, and two oiled silk tubes of six or

eight inches diameter connecting the bottom of the Balloon with two tin tubes fixed in the heads of the inverted casks, a signal was given for filling the Balloon, when about eight gallons of vitriolic acid being poured into each of the thirty casks, and closely stopped down, the operation immediately commenced, the gas rising rapidly in all the casks, was conducted by the tubes through the water in the mash tubs into the inverted casks before-mentioned, and being there sufficiently cooled, was conveyed by the large silken tubes into the Balloon, which was sufficiently inflated by four o'clock in the afternoon.' [1]

For the next hour and a half Garnerin, the practised demonstrator, had his balloon towed slowly along the Walk in Sydney Gardens so that all those who had paid could have a good view of the craft. Then it was towed slowly back to the launching site. The two aeronauts entered the basket, or car as it was then called, Garnerin walked around it twice to salute the assembled company, 'who appeared anxiously interested for him',[2] and the balloon was released. The exact time of the take-off is not clear from the contemporary accounts, but it was about 5.40 pm that the balloon was carried by a 'gentle breeze from the NE amidst the acclamations of thousands of spectators, whose admirations were re-echoed by millions crowding the neighbouring hills.'[3] The breeze was certainly quite gentle, as at 7 o'clock the craft could still be seen from Sydney Gardens over the hills west of Prior Park.

Garnerin left his own account of the 'flight, with details of thermometer and barometer readings, and his calculations of the altitudes at various times. These are shown briefly in the Table below.

Features of the Flight	Time pm	Temperature degrees F	Pressure inches	Altitude feet
Ascent	c5.30	62.10	30	
	5.50	52	26	3420
Thick dark cloud above	6.12	46	26 1/10	3344
Balloon in cloud's vapour		46	25¾	3620
		43	24¾	4494
Upper valve opened	6.40	41	26½	
		36		
Balloon at treetop level	*6.52	46	29	74
20 lbs of ballast thrown out; balloon rose in a spiral through clouds	*6.50	40	24½	
	6.59	36	23 1/10	5420
Descent	7.20			

• times given in Garnerin's narrative

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At about a quarter to seven the two men had a slight disagreement: when they had descended to the level of the tops of some trees Garnerin proposed to set the balloon down in a nearby field, but Glasford wanted to go up again, so ballast was thrown out, and they rose swiftly in an uncontrolled spiral to about 5420 feet above sea level. Monsieur Garnerin then insisted on descending, and they alighted in a field near Mells Park, about 16 miles from Bath. They were 'greeted by the most friendly assistance, and welcomed by a great concourse of people, who were anxiously awaiting [their] arrival'.[4]

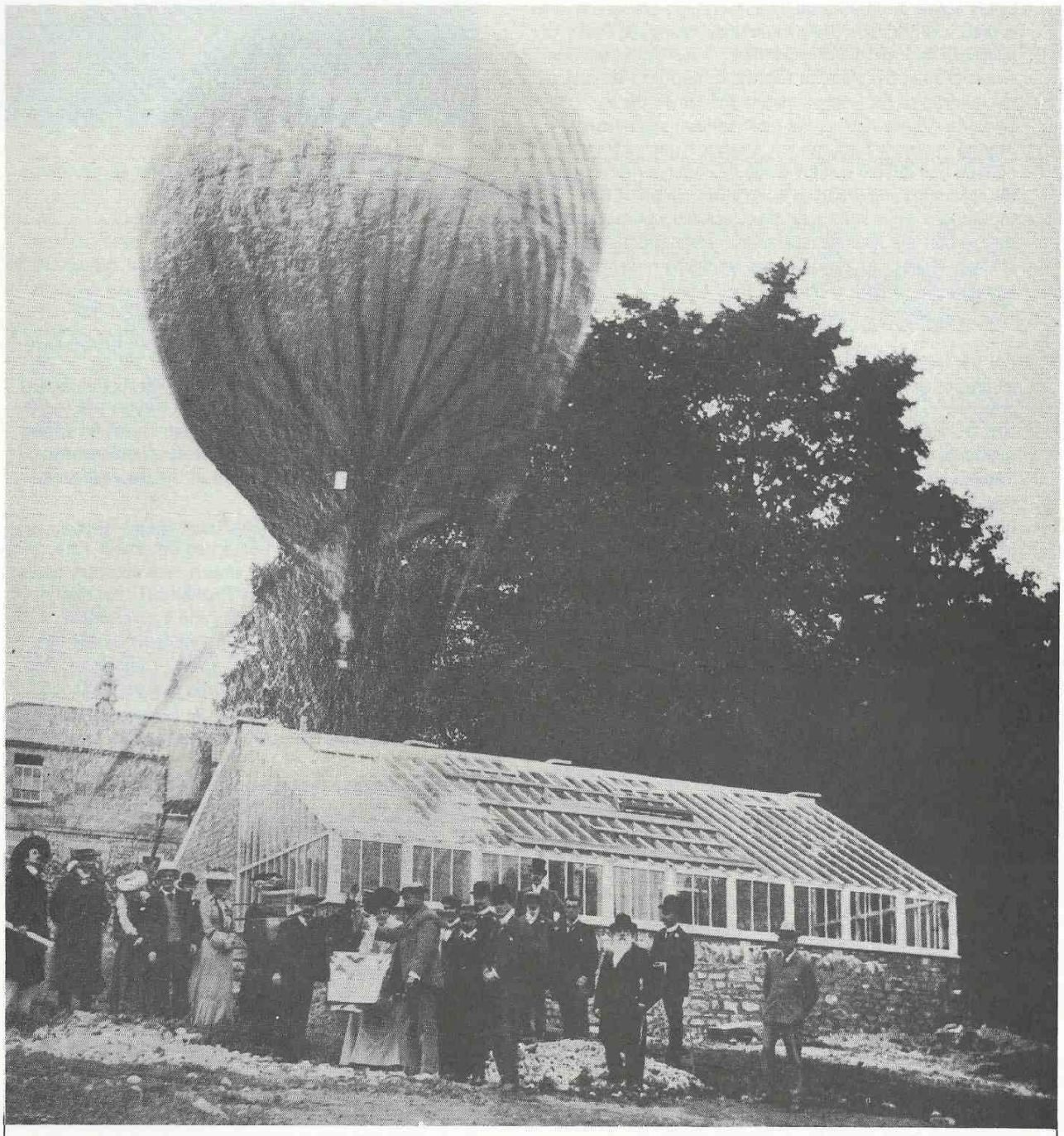
After his success at Bath, Garnerin went on to give further aeronautical displays around England. Just two weeks later, on September 21st 1802 he made a spectacular jump from his balloon at about 8000 feet, strapped to a white canvas parachute. This was made by joining thirty-two gores of sailcloth into an umbrella-like shape 23 feet across, with a surface of about 860 square feet. Garnerin's own description of this parachute jump was published on September 23rd 1802, with the accompanying engraving.

On September 7th 1902 a balloon flight was arranged to celebrate the centenary of that first Bath ascent. This also started from Sydney Gardens, but was a more private event, without the large crowds of paying spectators that had been present in 1802.

The commemorative flight was organised by Patrick Young Alexander, scientist and inventor, of The Mount, Batheaston. His father was Andrew Alexander, another aeronautical enthusiast, a founder member of the Aeronautical Society, who died at Bath in 1890 leaving a fortune to 23 year old Patrick, who used it largely for his

engineering experiments. When he first came to Bath he is said to have lived at the Lansdown Grove Hotel, and his workshop was in a large building at the rear of Ballance Street.[5] Later he moved to The Mount,where he established the Bath Experimental Works, for aeronautical projects.

For the centenary he had gathered a select but interesting group of scientists and engineers. Among them was Major Baden-Powell, brother of the hero of Mafeking. The Major was President of the Aeronautical Society. Another guest was the Hon Charles Stewart Rolls of the Aero Club, who was later to be one of the co-founders of Rolls-Royce. Rolls was only 25, but had already been involved in early automobile races and trials. In that same year (1902) he became a motor dealer, and in 1906 joined forces with Sir Frederick Royce. In 1910 he was the first aviator to fly across the English Channel and back non-stop — though in an aeroplane, not a balloon. His last claim to fame was later in 1910: in July he became the first British pilot to be killed in a flying accident, at Bournemouth. Others present at The Mount included Major Frank Trollope of His



Photograph of balloon and party at the Mount, Batheaston, 7 September 1902. Extreme left, Samuel Franklin Cody; 2nd from right, Major Baden Powell; 4th from right (hatless), Patrick Young Alexander; 7th from right (in front row), Charles Stewart Rolls.

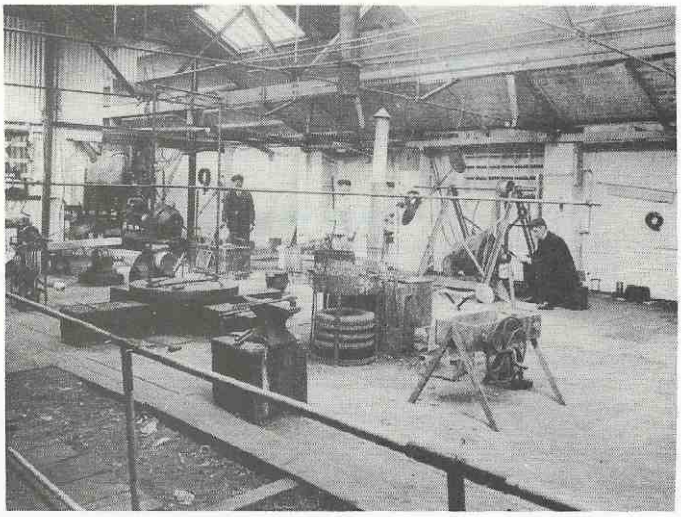
Majesty's Balloon Factory at Aldershot, also Dr Barton, Chairman of the Aeronautical Institute, who had made a balloon flight across the Channel. Another member of the group was Charles Groombridge, inventor of the Groombridge propeller, and of course Professor Auguste Gaudron who was to be the pilot on the commemorative flight.

The balloon chosen was designed by the host, P Y Alexander. It had a capacity of about 37,000 cubic feet of gas, with a lifting power of 5 cwt. Before the two-man craft was let loose, two preliminary balloons were sent up. First a **ballon sonde** of 3,000 cubic feet, carrying a barograph in its basket, was dispatched with a message asking the finder to telegraph back details of its landing. Then a pilot balloon was sent up at 5 o'clock to test the conditions. At about ten minutes to six, approximately the same time as Garnerin's flight started, the main balloon was released, bearing Professor Gaudron and Charles Poole. After the balloon had drifted quickly away in a westerly direction, the spectators adjourned to Fortt's Restaurant at Bath for dinner. While still there, they received a message that the balloon and its crew had landed safely at 6.15 pm. at Chew Magna. The triumphant aeronauts returned immediately to Bath and joined their friends at Fortt's for a well-deserved meal.

For the following day Mr Alexander had arranged an exhibition at The Mount. Various experiments were prepared in his laboratories, showing different designs of aircraft wings, propellers and gliders. Also on show was a substance called thermite which, when ignited, was 'capable of destroying an iron plate in a few seconds, the metal shrivelling up like a piece of paper. . . one could not help thinking what would happen if an enterprising burglar obtained some of the chemical for the purposes of his profession - safes would be absolutely impotent before him'[6] as the newspaper reported.

Then from the top of a hill nearby they watched a demonstration of aero-planes, or rather kites, by Mr Samuel Franklin Cody. He was born in Texas in 1862, but became a British citizen, and was a pioneer aviator in this country. He made the first British powered aeroplane flight, at Farnborough. He, like Charles Rolls, was to die in an air crash a few years after the Bath balloon event. Cody's largest kite could not be shown at Bath, because it was too difficult to transport it there. The party was disappointed at not seeing this craft, as its inventor sometimes went up in a basket attached to it. However, he was able to demonstrate one of his large military kites, 35 feet long with several rows of wings. This went up on a wire and was almost powerful enough to carry a man. It was able to remain at a considerable height for the rest of the day. A second kite was sent up the same wire, and other experiments were carried out: an explosive charge was sent up the wire and detonated at the top, and Cody even hauled up a 'Stars & Stripes' flag to flutter over the Batheaston spectators. After a most interesting morning the party returned to The Mount for lunch, and then dispersed: all in all a suitable commemoration of Garnerin's flight one hundred years before.

These were not the only balloon flights from Bath in that period. In 1881 there were two memorable ascents by



Photograph of P Y Alexander's workshop at the Mount, Batheaston

Walter Powell. He had been the Member of Parliament for Malmesbury since 1868, and had made several previous flights. On December 3rd 1881 he assembled three of his balloons at the Bath Gas Works, and was in the car of one which had just been inflated. Just as the balloon's ropes were released, a sudden gust of wind took it, and caused it to crash into an elm tree. This ripped a huge hole in the silk canopy. Powell managed to throw out all his ballast quickly, to help slow the rate of descent, and came to earth safely in a field at the back of the Royal School.

This near-disaster did not discourage Walter Powell: exactly one week later, on Saturday December 10th, he was back at the Gas Works. This time he was accompanied by James T Agg-Gardner, MP for Cheltenham, Captain Templer of the Royal Engineers, and a government balloon named Saladin. Captain Templer's mother and sister were living in Bath at the time in Darlington Place. He and Saladin had been lent by the government to the Meteorological Society for scientific experiments and observations.

By about mid-day the balloon had been inflated at the Gas Works field, and with the three men aboard its car it was released safely into the air. The wind took them south-west, across Somerset, past Exeter and on towards the Dorset coast. At 5 o'clock they were near Eype, a small village not far from Bridport. It was December, and becoming cold and dark. Not wishing to cross the Channel in such conditions, the aeronauts decided to end their journey and pulled the valve line to release some of the gas, but the balloon dropped so rapidly that the car struck the ground violently. Agg-Gardner and Templer were thrown out. Agg-Gardner's leg was broken in the fall, and Templer was bruised and cut, but managed to retain his hold on the valve line. He shouted for Powell to slide down the line, but it was wrenched out of his grasp as the balloon was swept up high on the wind and carried swiftly out over the sea south-east into the darkness.

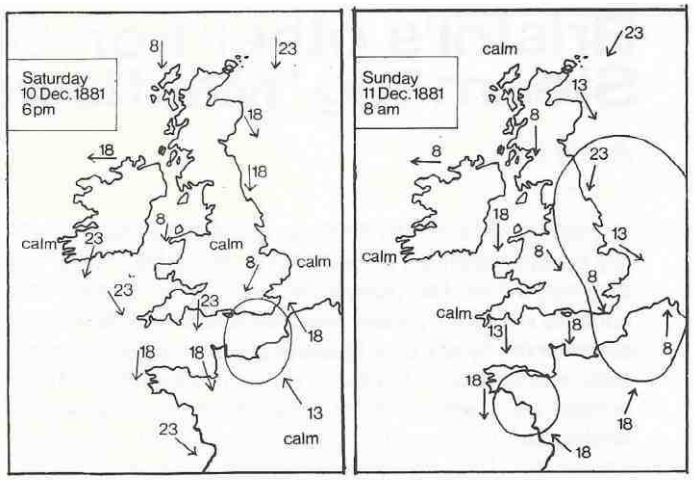
> 'When last seen Mr Powell was bravely standing up in the car waving a courageous adieu to his comrades'.[7]

According to **The Graphic** the only eye-witness was David Forsay, an Eype boatbuilder, who described the scene to the journal's artist Edward Malan in an unmistakable Dorset accent:

> 'I were the only mortal hereabouts at the time, and I seed it so plain as ever I seed anything in my life. There, 'twas this way, sir. I was just a-driving the kaows into their field over yonder, and I was a-standing as it might be by that gate, you understand, when I looks up, and I see, bless your heart, coming over the hill there, sir, a balloon, and so far as I can judge it was about half-past four, or a bit more handy to five o'clock. Well, I was main puzzled at first, but there wasn't no time for puzzles, for while I was looking, down she came in this very field where we is now sir, and it must have been somewhere hereabouts - ay, here it is - here's the ballast they throwed out - and there's the print of the car - 'twas plainer before the rain come. Well, sir, I run so fast as I was able, just as if it were a fire, and it was all over in half-a-second. The balloon, she come down, chucked the two gentlemen out, and sottled, there didn't she sottle, and bumped along a short bit, and then she rose like a gull, and we watched her till she was almost out of sight, and the last I ever seed of the gentleman in her was he was standing up, with no hat on. And it went to my heart, sir, it did; the snow clouds coming up, and he a-drifting off into the thick night, with Death above, Death below, and Death all around, and we not able to do a thing. No, sir, I didn't see him throw nothing out, and I didn't see him fall into the water, and I should fancy he's got to land, but it did go to my heart, poor gentleman. Then, sir, I shoured out 'Help, for God's sake, help' and I runned up and found one of the gentlemen groaning badly, and the other rather shaken. But he said 'Have you any conveyance here?' and I said 'Nothing, sir, but a donkey-cart' and so I went and fetched that and a hurdle, and sent my son into Bridport for the doctor, and we took the poor gentleman to the public [ie public house] , and then into hospital, and I saw him again, and he said there wasn't enough gas in the balloon, and that's the truth about that,sir.'[8]

The purpose of Powell's balloon flight had been to conduct meteorological experiments and observations. In **The Graphic** three weeks after the disaster there appeared an article accompanied by maps showing the meteorological conditions on the night of the 10th-11th December. These are reproduced here: the arrows show the wind direction, and the figures give the wind speed in miles per hour. The author of the article concluded that if the balloon had been intact the winds ought to have taken it safely across the Channel during the night and well into France by morning. Because of the condition of the balloon itself, after the crash landing and the force which had been exerted on the valve line by Captain Templer, it was unlikely that there was enough gas left in the canopy to carry the craft more than a few hundred yards from shore. Significantly, two days after the accident a piece from a broken thermometer was found on the beach near Portland. It was identified as one of those belonging to Captain Templer. In the sea off Swyre near Bridport a hat was found, but no other traces of Walter Powell, MP or Saladin the Balloon ever came to light.

Captain Templer lived to fly again, and became commander of the balloonists carrying out aerial observations in the South African War. James T Agg-Gardner represented Cheltenham in the House of Commons for 43 years of his life, although not consecutively. He was knighted in 1916, became a Privy Councillor in 1923, and died in 1928 at the age of 84.



Charts showing meteorological conditions 10-11 December 1881 from The Graphic, 31 December 1881.

References

1 ***Bath Journal*** September 13th 1802

2 ***European Magazine*** September 1802

3 ***Bath Chronicle & Argus*** September 19th 1902

4 ***European Magazine*** op. cit.

5 ***Bath Chronicle & Herald*** July 17th 1943

6 ***Bath Herald*** September 10th 1902

7 ***The Graphic*** December 24th 1881

8 ***The Graphic*** op. cit.

Sources Used

Bath Chronicle September 19th 1902; June 26th 1937; July 17th 81 24th 1943.

Bath Herald September 9th & 10th 1902.

Bath Journal September 6th 1802; September 18th 1902.

Bladud September 19th 1902.

The Car September 24th 1902.

European Magazine July and September 1802.

The Graphic December 24th & 31st 1881.

Hodgson, J E The History of aeronautics in Great Britain from the earliest times to the latter half of the nineteenth century O.U.P. 1924.

Illustrated London News December 24th 1881.

Universal Magazine September 1802.

Acknowledgements

Avon County Library (Bath Reference Library)
Bath & West Evening Chronicle
Gordon G Cullingham, of Windsor