

The Museum Collection

No.24

The Airship R101



A story and tribute to the crew and passengers
including 27 members of the Order
who took that tragic flight in the
Airship R101 to India in 1930

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INTRODUCTION

This book in the series “Museum Collections” is a sectional view of the Airship ‘R 101’, the building of it and it’s fatal flight to India on Saturday 4th October 1930.

Although strictly speaking it has nothing to do with the history of the Royal Antediluvian Order of Buffaloes, it is a fitting story and tribute to the 54 Officers, crew and passengers who died in the crash near Beauvias, France, of which at least 27 were members of the Order.

Thanks are extended to Bro. Stan Stirman, R.O.H., the R.A.O.B., G.L.E. Museum Curator for the building up of his folder. His passion for research into the history of the RAOB knows no bounds, his relentless search into archives has resulted in some amazing stories of which this is one.

Thanks are also extended to Bro. Chris Buckle, R.O.H. for the information supplied on the RAOB Bedford & District web site and for all the help in supplying much needed data.

Read and enjoy.

Mick Walker ROH, Grand Primo 2006

October 2010

Acknowledgements

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“We’re Down Lad’s!” The Tragedy Of The Airship R101 by Ronnie Barclay and published by St. Mary’s Church, Cardington.

R101 A Pictorial History by Nick Le Neve Walmsley, published by Sutton Publishing.

Some of the photographs of the 80th Memorial Service by Tony Margiocchi, the whole of which can be seen at www.flickr.com/photos/snapperz/sets/72157625092640926/

From the Bedford Web Page

H.M.A. R101 And The Royal Antediluvian Order Of Buffaloes

The airship R101 was built at Cardington in Bedfordshire in 1929, well that's when she was completed, it took 3 years to design & build. Most people have heard of the R101, it was the largest lighter than air airship at the time. The R101 and her slightly smaller sister-ship, the R100 were the start of the great Imperial Airship Scheme.

It was a plan to link the far reaches of the Empire with quick travel. At the time aircraft were in their infancy, and travelling any great distance had either to be a sea voyage, or a cramped aeroplane making several stops along the way. A trip to the other side of the world would have to be taken by sea.

The R100 was built by the private sector, the Airship Guarantee Company at Howden (a subsidiary of Vickers) while the R101 was government sponsored and built by the Royal Airship Works. On her maiden flight, just under eight hours after leaving her mooring mast at Cardington she suffered a drastic loss of hydrogen gas and came down just outside Beauvais in France. The escaping gas caught light, and was consumed in fire. Eight of the fifty-four on board managed to escape, but two of the initial survivors did not recover from their injuries and died, one the day after, and the other, two days after, bringing the total deaths to forty eight. Of the fifty four on board at the time, approximately thirty one (possibly thirty-two) were members of the Order, including Lord Thomson of Cardington, of those that perished, either twenty four or twenty eight were members. The reason for the difference in opinion is due to differences in reports at the time, if you read the October Grand Lodge report of 1930 it states twenty

four died, however the report of the November 1930 memorial service states twenty eight. Their remains were returned to London where they laid in state until 11th October 1930. They were brought to Bedford by train and a procession then took them to Cardington village where they were laid to rest in a communal grave in Cardington cemetery almost to the hour that they departed the Saturday before.

Along with them died the airship dream, as the majority of those on board were the leaders in the field of lighter than air travel. The R100 remained in Shed No 1 until 1931 when the government finally decided to cancel the project, it was broken up, steam rolled and sold for scrap, fetching a mere £450.

The members of the Bedford & District Province organised a memorial on the 16th November 1930, which was attended by approximately 5000 members and public, including Bro. A. E. Ingle ROH, who was the Grand Primo of 1930. Memorial services were held on an annual basis up until 1980, when it was decided that the 50th anniversary would be the last. However there have been services held since then, the last being towards the end of the nineties. There was a record of those Brothers that lost their lives up until 1980(ish) but with the deaths of so many of the old Brothers and survivors the list has been lost. I am trying to find out the names of those Brothers that lost their lives and make sure that their names be preserved for future generations. This page, at the present time is a collection of all the related items I've come across, it may jog someone's memory, but I hope at least it will tell the tale of 54 brave explorers that set forth into the unknown, only to find death on their way. I would like to thank all those that have helped me so far, especially Bro. Stan Stirman ROH at Grand Lodge Museum, and for the story of the Astral Lodge memorial plaque that he helped me find!

Airship the R101

Over the summer of 1930, the R101 lay in the Number 1 shed at Cardington undergoing extensive modifications, which were needed following on from her



1929 and early 1930 trial flights. It was already known that both the R100 and R101 were lacking in the disposable lift originally planned at the outset of the Imperial Airship Scheme in 1925. Those involved in the scheme had already learnt that the R100 and R101 would not be viable for full commercial operations to Canada and India, and these intentions were later to be passed on to the new

ship, the R102 class. To achieve the additional lift, R101 had a new central bay and gas bag installed.

It was expected that the new gas bag would give her another nine tons of disposable lift bringing her up to some 50 tons. The alterations were completed by Friday 26th September and the R101 was gassed up and floated in the shed. The “new” ship, R101c, had disposable lift calculated at 49.36 tons, an improvement of 14.5 tons over the original configuration. Pressure was on for the ship to leave for Karachi on 26th September to carry the Air Minister, Lord Thompson of Cardington. Although the target date was on course to be met, wind was to keep the modified R101 in the shed until the morning of 1st October.

It was at 06.30 on the 1st October that the R101 emerged from the shed and was secured to the mast. The new ship had a more elongated look as she had been extended by 35 feet to insert the new bay. At the same time, R100 was removed from Shed No 2, and walked in to shed No.1 where she too was to be altered in the same way to obtain more lift. It was the last time the outside world would see the R100.

The R101 was moored serenely to her mast at Cardington and the crew were busy making preparations for a full 24 hour trial flight. A permit to fly had been issued and a



full report on the new ship would be submitted later, a draft having been prepared. The permit to fly had been granted after a “good deal of general thinking”. It was said by Professor Bairstow, who issued the permit, that “comparison on limited information has been required in reaching our conclusion”.

Final Trial Flight

The R101 slipped her mast at 4.30pm on 1st October to fly a 24 hour endurance flight to complete the engine and other trials. It was noted however, and agreed by officers, Reginald Colemore, Director of Airship Development (DAD) and the AMSR that if the ship behaved well and Major Herbert Scott, one of the most experienced airshipmen in the UK, was satisfied during his flight, then they could curtail the tests to less than 24 hours.

The ship left Cardington and headed south to London then turned east following the Thames and out across Essex. She spent the night out over the

North Sea. Those on board noted that the atmosphere was quiet and serene. Due to the early failure of an engine cooler in the forward starboard engine, it was impossible for the ship to make a full speed trial. During the flight, it was noted that conditions were “perfect” and all other items in the ship behaved perfectly. Even though there was not time to make formal reports, it was noted that the ship handled and she appeared to be much better in the air than before. It was agreed to curtail the flight and head for home at



Cardington. The ship returned to the mast at 09.20 on Thursday 2nd October; she had been in the air for just over 17 hours in smooth flying conditions.

Important things were noted by the crew following this flight. Captain Irwin had made special notice of all the concerns before the alterations. He noted that there was practically no movement in the outer cover; all sealing strips appeared to be secure; no leaks were observed in the gas valves; the movement of the gas bags was so slight that it was barely perceptible; and the padding was secure. All other items were found to be in good order and he was satisfied with the independent inspection which had been carried out on the ship.

The senior members of the crew and technical office, along with the DAD held a conference on the Thursday evening and discussed whether to make the flight to India. It was noted that a longer trial whereby full speed testing could be carried out in adverse conditions was normally essential before such a long voyage. It was also noted that a full speed trial was not recommended during the India flight due to the possibility of failure.

At this stage it had not been calculated what the state of the engines would be with the new design of the ship. Also, the risk of engine failure would mean putting the whole voyage in jeopardy and hence it was deemed that cruising speed would be the maximum recommended speed for the journey.

Even though pressure had been put on all involved with the R101 by the Air Minister suggesting that he must go to India and back in time for the Imperial Conference due on the 20th October 1930, there was one note on the 2nd October by Lord Thompson advising that “You mustn’t allow my natural impatience or anxiety to start to influence you in any way. You must use your considered judgment”.

Final Flight - Saturday 4th October 1930

With the decision made that the India flight should take place, there were two further days of final preparation. The ship remained on the mast and the crews busied themselves in preparation for this momentous voyage. Of course all staff were keeping an eye on the weather conditions to ensure that the ship would be able to make the voyage in the suggested time, not wanting to be inhibited by the problems all airships suffer with the natural elements. Giblett, the meteorological officer, had been providing the officers with updates on the weather forecast over the last few days and the route was selected on his information.



Another weather conference was held on the morning of the 4th October and it was noted that the weather conditions over northern France were becoming cloudy with moderate winds. It was agreed that the ship would

depart between 4pm and 8pm that evening. Two further forecasts were issued to the ship during the day; these indicated that the weather conditions over Cardington and Northern France would begin to deteriorate during the evening, however it was noted that the wind conditions would not increase significantly. These forecasts, even though not particularly good, were not bad enough to cancel the voyage. The decision was made to hurry the passengers on board, complete the loading of the ship, and begin the trip in order to be past the worst weather.

At 6.24pm R101 left the Cardington mast in misty fine rain and darkness. The ship was illuminated by lights from the promenade deck and searchlights from the mooring mast. As the ship was fully



loaded with fuel to make it to the first stop, Egypt, it was noted that 4 tons of ballast had to be dropped before the ship

gained height. The R101 cruised past the sheds and then headed west towards Bedford to salute her home town. She passed around the town and then headed south east towards London. She was flying at her cruising height of 1,500 feet just below the cloud base and by 8pm R101 was flying over London.

A wireless message from the ship was sent at 8.21pm:

“Over London. All well. Moderate rain. Base of low clouds 1,500ft. Wind 240 degrees, west south west,

25mph. Course now set for Paris. Intend to proceed via Paris, Tours, Toulouse and Narbonne”.

An hour later R101 was requesting the Meteorological Office at Cardington to wireless a forecast of the weather expected from Paris to Marseilles “with special reference to wind and cloud”.

At 9.47pm the following message was sent:

“At 21.35 GMT crossing coast in the vicinity of Hastings. It is raining hard and there is a strong South Westerly wind. Cloud base is at 1,500 feet. After a good getaway from the Mooring Tower at 18.30 hours ship circled Bedford before setting course. Course was set for London at 18.54. Engines running well at cruising speed giving 54.2 knots. Reached London at 20.00 hours and then set course for Paris. Gradually increasing height so as to avoid high land. Ship is behaving well generally and we have already begun to recover water ballast”.

It was noted that with the loss of ballast at the beginning of the flight, the crew were more than confident that the water recovery system would replenish the supplies. The R101 was fitted along the top of the envelope with catchment arrangements by which, when rain fell, water could be recovered to increase ballast and so compensate for the loss of weight arising from the consumption of fuel. It is noted that at this point the R101 crew did not consider the ship to be heavy as original sources suggested.

The Channel crossing took two hours for at 11.36 pm the ship reported:

“Crossing French coast at Pointe de St Quentin. Wind 245 true. 35mph”.

From 11.00pm to 02.00am the crew changed watches, R101 continued on it’s usual watch keeping status.

The 60 miles crossing was well known by Squadron Leader Jonhson, who had flown the route many times between London and Paris. We can see that the wind speed was increasing at this time. It was estimated that at the time of crossing the channel the R101 was at a height of between 700 to 800 feet. It was later recorded that First Officer Atherstone took over the elevator wheel and ordered the coxswain not to go below 1,000ft.

At 00.18 the R101 sent out the following wireless message:

"To Cardington from R101.

24.00GMT 15 miles SW of Abbeville speed 33 knots. Wind 243 degrees [West South West] 35 miles per hour. Altimeter height 1,500feet. Air temperature 51degrees Fahrenheit . Weather - intermittent rain. Cloud nimbus at 500 feet. After an excellent supper our distinguished passengers smoked a final cigar and having sighted the French coast have now gone to bed to rest after the excitement of their leave-taking. All essential services are functioning satisfactorily. Crew have settled down to watch keeping routine".

This was the last message from the R101 giving speed and position. The ship continued to send out directional wireless signals to checking her position or to test the strength of the signals. The last directional signal addressed to Cardington was at 1.28am. A final signal was sent from Cardington to the Croydon Station and relayed via ship at Le Bourget at 01.51am. An acknowledgement at 01.52am was the last signal ever sent by the R101.

At 02.00pm the watch changed as with normal routine on the ship and still nothing was reported wrong with the ship. It can be assumed that had anything been noticed the Captain would have had this signalled back to base. Also, if anything had been noticed, the Captain would not have allowed the men on duty to stand down and pass over to the new watch. Evidence

of engineer Leech at the inquiry confirmed that Leech was off duty and enjoying a smoke in the smoking room between 01.00am and 02.00am, when Captain Irwin came in to the room and spoke to him and the Chief Engineer. Captain Irwin made no remarks about the ship except that the after engine continued to run well. Chief Engineer Gent later turned in and Leech went and inspected all the engine cars. He found them all to be running well and returned to the smoking room.

At 02.00am the ship reached Beauvais and passed to the east of the town. At this time witnesses suggested that the ship was beginning to have difficulty with the gusting winds. Some suggested that the promenade lights became obscured and early suggestions were made that the ship was rolling in the winds, however no amount of rolling would explain obscuring of the lights and it seems more probable that intervening cloud was the cause.

From survivor accounts, at 02.00am the ship made a long and rather steep dive, sufficient to make the engineers lose balance and cause furniture in the smoking room to slide. It is estimated that a rent occurred in the rain soaked upper part of the nose, causing the forward gas bags to become exposed to the elements and damaged by the gusting wind. The loss of gas at this point could have led to the loss of control of the ship. Also, the ship was travelling towards the notorious Beauvais ridge which was well known by aviators for its dangerous gusting wind. The loss of gas at the forward part of the ship, combined with a sudden downward gust of wind would have forced the nose down. Calculations by the University of Bristol in 1995 provided evidence that the maximum downward angle was 18 degrees in this first dive through a time span of 90 seconds.

The crew in the control car would have tried to correct the downward angle by pulling the elevator up. In the

next 30 seconds, the ship pulled out of the forced dive and the crew were steadying the ship. Flying at a nose up angle of three degrees enabled the ship to regain some aerodynamic stability. However it was realised that the elevator was “hard up” and yet the crew knew that the nose was only three degrees above the horizon. This meant that the nose was now extremely heavy and hence a serious loss of gas from the forward bags must have occurred.

The Captain then rang the order for all engines to reduce speed from the original cruising speed, if not to stop them. The bells were heard and acted upon by the crew as evidence from the survivors confirmed. Chief Coxswain Hunt moved aft from the control car to the crew’s quarters. At this point he passed crew member Disley, and warned “We’re down lads”. This famous comment by one of the most experienced airship crew members showed that the R101 was not going to be able to continue and that an executive decision had been made make an emergency landing.

Just after this point the ship moved into a second dive. It is calculated that R101 was now at a height of about 530 feet, which for a vessel of 777 feet long was precarious. Rapid oscillation of the ship had already occurred and any further oscillation would cause it to fail. Rigger Church was ordered to release the emergency ballast from the nose of the ship and was on his way to the mooring platform when he felt the angle of the ship begin to dip once more from an even keel. The ship began to drop again through a downward angle and at this point the nose hit the ground. Evidence from the official inquiry noted that the R101’s ground speed had reduced to almost that of a perfect landing. The impact of R101 with the ground was very gentle, and it was noted that the forward speed of the ship was only 13.8 mph. The ship bounced slightly moving forward some 60 feet and then settled down to the ground. The

survivors recall that a “crunch” was heard and the ship levelled. There was no violent jarring from the impact. Evidence from the crash site confirmed this as the only impact mark in the ground was a two foot deep by nine foot long groove which was cut by the nose cone, in which soil was later found. Also, the starboard forward engine had struck the ground whilst the propeller was still revolving and grooves were made by this. The engine car had been twisted completely around on its struts.

After the impact, fire broke out. The most probably cause of this was that the starboard engine car was twisted around and the hot engine had come into contact with the free gas from the rents in the forward gas bags. The fire immediately consumed the ship, causing each gasbag from the forward to after part of the ship to explode. The force of the explosions was noted by the position of the gas valves and the damage to the framework of the ship. The outer cover was immediately consumed in the ensuing inferno.

Of the crew and passengers only 8 men were able to escape from the wreck.

Foreman Engineer J. H. Leech was sitting in the smoking room at the time of the impact and was saved by the accommodation bulkhead collapsing from above and being held by the top of the settee in the smoking room. He was able to escape through the side of the damaged wooden walls of the smoking room, out through the framework and through the cloth outer cover of the ship to safety.

Engineers A .V. Bell, J. H. Binks, A. J. Cook, V. Savory were in their respective engine cars which were positioned outside the main hull. When the ship landed, they were able to escape through the windows of the engine cars and run away from the ship.

Rigger W. G. Radcliffe survived the crash and worked his way out of the wreckage but later died in the hospital from his injuries.

Wireless Operator A. Disley who was asleep in the crew's quarters, was awakened when his bunk, which was aligned in the same forward direction as the ship, assumed the curious angle of the first dive. He felt the ship come out of that dive to an even keel and then to a nose up angle. At the same moment Hunt passed through the crew's quarters and advised them of the situation. At this point Disley heard the telegraphs ring out in the ship. The electrical switchboard was close at hand and he started to get out of his bunk to cut off the electric current to the ship as he knew that in any aircraft crash there may be the chance of fire. There were two field switches and he recalls tripping on one of them. During this action the ship went into its second dive and he was just about to cut the second switch when the impact was heard and the lights went out all over the ship. Disley recalls that the impact was so gentle that it was not enough to unbalance him from his feet. Seconds later, like Leech, he was fighting his way through the wreckage to the outside of the ship.

The last survivor was **Rigger Church**, who later died of his injuries three days after the crash. He was interviewed and gave the following statement: "I would consider the flight rather bumpy, but not exceptionally so. The second watch had just come on and I was walking back when the ship took up a steep diving attitude. At this moment I received an order to release the emergency forward water ballast (1/2 ton in the nose) but before I could get there the crash came".

The emergency ballast was in the very nose of the ship. It could not be released from the control car and had to be jettisoned locally.

The R101 came to rest with the forward part of her nose in a wood of small trees and the rest of her hull in a meadow. When getting away from the ship, both Disley and Cook made some valuable observations. Disley noted that even though the outer cover was burning,

there was almost no cover left on the top of the ship aft of frames 10 and 11; the ship appeared to be a skeleton. Cook noticed that the underside of the elevator still had its outer cover and was positioned in a full up position, suggesting



that the coxswain was still trying to keep the nose up on landing. The inquiry noted that the number of turns on the auxiliary winch drum confirmed this.

The survivors were treated in the local hospital and the inquiry began the following morning with the French authorities surveying the site and condition of the wreck whilst the British investigators were flown in. Messages were wired to England in the early hours of the morning, reporting the crash to a stunned British public.

Rigger Church died in hospital of his injuries and joined the other victims of the crash. Full state honours were given to the victims and special trains were laid on to transport them

from the crash site to the channel. They were carried by H.M.S. Tempest from Boulogne to Dover, where a special train took the bodies to Victoria Station. From there they were carried in state to

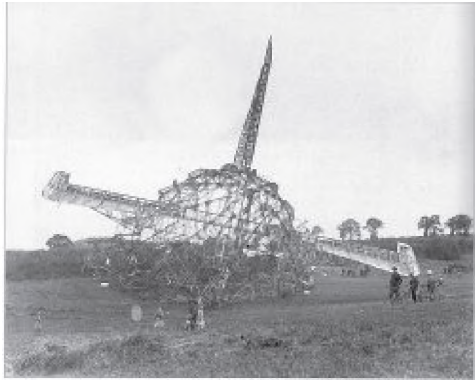


Westminster Hall at the Palace of Westminster and were laid in state. The mourning public waited many hours to pay their respects by filing past the coffins.

A memorial service was held at St Pauls Cathedral on Saturday 11th October, after which the coffins were taken by train to Bedford. They were walked the two miles to Cardington Village, where a space had been prepared in the churchyard. All 48 dead were finally laid to rest in a special grave. A final small service was undertaken, with distinguished guests including Hugo Eckener and Hans Von Schiller, followed by a flypast by the RAF flight. In 1931 a memorial tomb was completed and inscribed with the names of the victims. This memorial still dominates the tiny churchyard to this day.

The Wreckage

The wreck of the R101 lay where it had fallen until well into 1931, becoming a haunt for air accident investigators and day trippers who wanted to see the near perfect skeleton of the largest airship in the world. Scrap contractors from Sheffield who were specialists in stainless steel were employed to salvage what they could. It was noted in the records of the Zeppelin company that they purchased 5,000kgs of duraluminium from the wreckage for their own use. Whether this was for testing and analysis or to re-cast and use in the "Hindenburg", is open to further research and speculation.



R101 Passenger List

On 4th October the R101 was loaded up for her voyage to the Imperial Conference in India. The list below shows the passengers and crew members on this final voyage.

Passenger and Crew List on Board R101 4/5 October 1930

Passengers

1. Brigadier-General, The Right Hon. Lord Christopher Thomson of Cardington (HM Secretary of State for Air) Aged 55 - killed; not identified.
2. Air Vice-Marshal Sir William Sefton Brancker (Director of Civil Aviation) - killed; identified on return to London.
3. Major Percy Bishop (Chief Inspector Aeronautical Inspection Department of the Air Ministry) - killed; not identified.
4. Squadron Leader William Palstra RAAF (representing the Australian Government) - killed; not identified.
5. Squadron Leader William H. O'Neill (Deputy Director of Civil Aviation, India) - killed; identified on return to London.
6. Mr. James Buck, Lord Thomson's valet - killed; identified on return to London.

Officials of the Royal Airship Works, Cardington

7. Wing Commander Reginald B.B. Colmore (DAD) aged 53 - killed; identified on return to London.
8. Major George Herbert Scott (ADAD Flying) - killed; not identified.
9. Lt.Col. Vincent C. Richmond (ADAD Technical) - killed; identified on return to London.
10. Squadron Leader Michael Rope (Assistant to DAD Technical) - killed; identified on return to London.
11. Mr. Alexander Bushfield, (Aeronautical Inspection Department) - killed, identified on return to London.
12. Mr. A.H. Leech, Foreman Engineer Cardington - survivor.

Officers of R101

13. Flight Lieutenant Herbert Carmichael Irwin (R101 Captain) - killed; identified on return to London.
14. Squadron Leader Ernest L. Johnston (Navigator) - killed; not identified.
15. Lt-Commander Noel Grabowsky-Atherstone (First Officer) - killed; identified on return to London.
16. Flying Officer Maurice H. Steff (Second Officer) - killed; not identified.
17. Mr. Maurice A. Giblett (Chief Meteorological Officer) - killed; identified on return to London.

Petty Officers and Charge Hands

18. George W. Hunt (Chief Coxswain) Aged 41 - killed; not identified.
19. William R. Gent (Chief Engineer) Aged 53 - killed; identified on return to London.
20. George W. Short (Charge-Hand Engineer) Aged 34 - killed; not identified.
21. Sidney E. Scott (Charge-Hand Engineer) Aged 40 - killed; identified at Allonne.
22. Thomas A.A. Key (Charge-Hand Engineer) Aged 35 - killed; not identified.
23. Spencer T. Keeley (Chief Wireless Operator) Aged 35 - killed; not identified.
24. Albert H. Savidge (Chief Steward) Aged 32 - killed; not identified.

Crew members

25. Flight-Sergeant Walter A. Potter (Assistant Chief Coxswain) Aged 32 - killed; identified at Allonne.
26. Leonard F. Oughton (Assistant Coxswain) Aged 29 - killed; identified on return to London.
27. Christopher H. Mason (Assistant Coxswain) Aged 33 - killed; not identified.
28. Martin G. Rampton (Assistant Coxswain) Aged 31 - killed, identified on return to London.
29. Hector E. Ford (Assistant Coxswain) Aged 27 - killed; not identified.
30. Percy A. Foster (Assistant Coxswain) Aged 28 - killed; not identified.
31. Ernest G. Rudd (Rigger) Aged 25 - killed; identified at Allonne.
32. Cecil E. Taylor (Rigger) Aged 33 - killed; identified on return to London.
33. Arthur W.J. Norcott (Rigger) Aged 29 - killed; not identified.
34. Arthur J. Richardson (Rigger) Aged 29 - killed; identified on return to London.
35. Walter G. Radcliffe (Rigger) Aged 31 - survived, but died at Beauvais on October 6th.
36. Samuel Church (Rigger) - survived, but died at Beauvais on October 8th.
37. Richard Blake (Engineer) Aged 33 - killed; identified at Allonne.
38. Charles A. Burton (Engineer) Aged 29 - killed; identified on return to London.
39. Christopher J. Ferguson (Engineer) Aged 36 - killed; not identified.

40. Alfred C. Hastings (Engineer) Aged 30 - killed; not identified.
41. William H. King (Engineer) Aged 32 - killed; identified on return to London.
42. Maurice F. Littlekitt (Engineer) No. 1 car Aged 29 - killed; not identified.
43. Wilfred Moule (Engineer) No. 2 car Aged 30 - killed; identified on return to London.
44. Albert H. Watkins (Engineer) - killed; not identified.
45. Arthur (Ginger) Victor Bell (Engineer) No. 5 car - survivor.
46. Joseph H. Binks (Engineer) No. 5 car - survivor.
47. A.J. Cook (Engineer) No. 4 car - survivor
48. Victor Savory (Engineer) No. 3 car - survivor.
49. George K. Atkins (Wireless Operator) Aged 30 - killed; identified on return to London.
50. Frank Elliott (Wireless Operator) - killed; identified on return to London.
51. A. Disley (Wireless Operator/Electrician) - survivor.
52. F. Hodnett (aka John Curran) (Assistant Steward) Aged 29 - killed; not identified.
53. Eric A. Graham (Cook) Aged 28 - killed; not identified.
54. Thomas W. Megginson (Galley Boy) Aged 18 - killed, not identified.

Of the foregoing list at least eighteen can be identified as members of the Royal Antediluvian Order of Buffaloes, those being:-

Brigadier-General, The Right Hon. Lord Thomson of Cardington (HM Secretary of State for Air) - Killed.
 Wilfred Moule (Engineer) No. 2 car - Killed.
 George W. Short (Charge-Hand Engineer) - Killed.
 William H. King (Engineer) - killed.
 Maurice F. Littlekitt (Engineer) No. 1 car - killed.
 Hector E. Ford (Assistant Coxswain) - killed.
 Charles A. Burton (Engineer) - killed.
 Albert H. Watkins (Engineer) - killed.
 Martin G. Rampton (Assistant Coxswain) - killed.
 Sidney E. Scott (Charge-Hand Engineer) - killed.
 Squadron Leader Ernest L. Johnston (Navigator) - killed.
 Major George Herbert Scott (ADAD Flying) - killed.
 Leonard E. Oughton (Assistant Coxswain) - killed.
 Arthur J. Richardson (Rigger) - killed.
 Cecil E. Taylor (Rigger) - killed.
 Arthur (Ginger) Victor Bell (Engineer) No. 5 car - survivor.
 Joseph H. Binks (Engineer) No. 5 car - survivor.
 Victor Savory (Engineer) No. 3 car - survivor.

The R 101 Design and Interiors

The R101 and R100 dispensed with existing designs and both ships designers added new passenger accommodation within the body of the airship. All previous commercial passenger ships had extended the lower command gondola with the accommodation behind the main cabin.

In 1926, the original design of the R101 showed a ship with seven engine cars and a long external passenger accommodation behind the command gondola, very similar to the configuration of the R36. However, to include accommodation for the proposed 100 passengers, the design was altered.

It was decided to adopt a two deck approach to the ship. The upper would contain the main passenger accommodation, public spaces, lounge, dining room and promenades. The lower deck would contain the smoking room and washrooms and the crew's quarters. There were many design changes to the R101's interior; some of the original drawings show a three deck ship, with the promenade decks on the upper level.

The Main Lounge

The colour scheme was white panels with gold inlay. The curtains on to the promenade deck were of fine Cambridge blue. The seating arrangements were of small tables, and the chairs were constructed of upholstered green cane wicker.



At each side of the left hand side of the lounge were writing desks running alongside the wall. The ship had

provided R101 headed stationery. On the walls were paintings, however we have not been able to ascertain what they depicted at the present time.

Another close up shot of the lounge showing the entrance to the promenade deck. Three steps led up to the deck. The curtains would be drawn closed at night in order to give those on the Promenade Deck a better view of the ground without light pollution from the lounge. The cushions on the side chairs were inflated with air to save weight.



The Dining Room

The dining room was able to seat 50 people in one sitting. A dumb waiter hoisted the food up from the galley below to the dining room. There was also a wireless set fitted in the wall to provide music to diners whilst they ate.



The Promenade Decks

The promenade decks had deck chairs and a safety rail with a foot rest. The design followed very traditional nautical designs and almost felt as if passengers were on the deck of a ship. Deck chairs were provided as seen here.



The promenade decks were on both sides of the lounge, and also ran along the side of the dining room. Even though early designs suggested that they would both

be interlinked, there was no door between each section of the promenade decks.

The original windows were made of glass but were removed and replaced by light weight cello safety glass. A second set of windows and promenade ran along the corridor on the starboard side of the passenger accommodation near the sleeping quarters. These windows were removed in September 1930 as part of the weight saving programme. Few photographs of the ship exist with the second set of windows removed.



The Corridors

One of the two corridors leading from the lounge. The set of steps seen here lead over a main ring girder. In the distance is the staircase to the lower deck. To the right would have been the main washrooms for passengers.

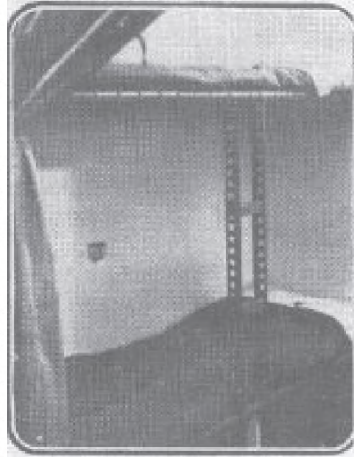
The walls were made of fine 2mm thick spruce cladding on main pillars and stretched doped double thickness white painted cloth on the wall spaces. The lines on the pillar inlays were painted gold, as were the edges to the cloth panels. To the left of the photo you can make out the writing desk attached to the wall.



The Passenger Cabins

A very rare shot of a two berth passenger cabin. The sleeping arrangements were in the form of bunks. Even though they may seem spartan, the cabins were

warmed by a heating vent driven from the main radiator which could be heated or cooled by being lowered out of the ship. Each cabin had a main “porthole” electric light, fitted to the wall with a small blind which could be drawn over it. This continued the nautical influence. A small reading light was also provided above each bunk. A small luggage stool would be provided for cabin



bags and a small rug would be on the floor. Each cabin had a notice regarding the protocols of airship life, including details for summoning a steward.

Some 50 cabins were constructed in formations of single, twin and four berth arrangements.

Washroom facilities were available close by. These had aluminium sinks with long half length mirrors suspended on two wires in front of the basins.

Toilets were on the lower deck.

Below Decks - Crew's Quarters

The crew's sleeping quarters were in the lower deck of the ship. The crew had a series of sets of sleeping accommodations and as seen here, were comfortable compared to those of the Zeppelins, in which it was not



uncommon for the crew to sleep in hammocks.

The R101 crew had a large mess hall for their private space. This contained a large table with bench seating.

The lower deck also contained the cargo hold into which the luggage and stores could be hoisted through the cargo hatch using the winch.

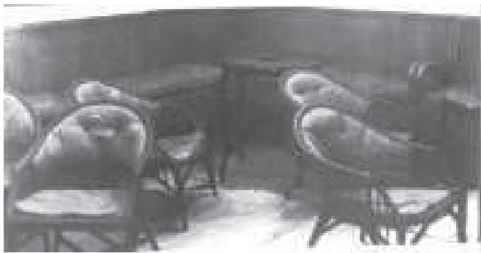
The Galley



All of the utensils were made of light aluminium. The galley was well fitted out with an all electric oven, a vegetable steamer and ample space for the chef.

The Smoking Room

A unique example of design. The R101 was fitted with a smoking room on the lower deck able to seat 24 people. The floor and ceiling were made of light asbestos with a thin sheet of metal on the floor. The walls were the same construction as the rest of the ship, being made of cloth. The smoking room was not considered a hazard to the ship as all precautions had been taken with materials in construction. This is where you could retire after dinner and enjoy a cigar and postprandial drink.



Lower deck corridor.

The corridor from the nose of the ship to the passenger accommodation was constructed of a similar material to the corridors above in the upper deck. This

meant that the passengers entering the ship would see a long white and gold “panelled” corridor to the lower deck accommodation and a stair case up to the main cabins. The corridor had wooden doors on each side to the crews quarters, the cargo room, the wireless room, the galley, the smoking room and the toilets.

There were small windows in the lower deck corridor near the wireless room and the chart room. Lower windows were also in the crew room.

This then completed the rather luxurious interior of the R101 whose designers planned to accommodate the passengers in excellent and plush comfort for their long journeys in the coming years.



The following story has been submitted with my grateful thanks by Bro. Chris Buckle ROH, P.G. Secretary Bedford Province who has spent much time researching the history of the Airship R101 and has come up with some amazing pictures many of which are added to the appendix of this booklet. The story now continues with what is called:

“We’re Down Lads”

Introduction

During the First World War the Royal Navy operated a fleet of at least 211 airships.

These were powered balloons that could sail through the air in a similar manner to ships crossing the sea, hence the name ‘airships’. There were three types:

A gasbag, simple non rigid; semi rigid that were envelopes with a keel along the bottom that made them more rigid than a simple envelope and rigid airships with a strong metal frame work covered in linen that contained gasbags (R101 means “rigid” airship 101).

In the mid 1920’s there was a large amount of experimental research on airships carried out in Britain that led to the construction of the R100 and R101. The attractions were considerable: India in five or six days; Egypt in two to three days; Canada in three days; Australia in ten days. It was a dream of an efficient way of linking the Empire together. The voyage to India on 4th October 1930 would have been the culmination of a dream, the linking of the mother country to the Empire as never before. Comfort, speed, safety, were all provided in half of the time taken by the steamships. Do not dismiss the airships as mad schemes with no future. At that time, to many people, it was a brilliant way forward!

In 1919 the R34 made the first double crossing of an aircraft of the Atlantic and the Germans with their Zeppelins were never far behind the British and the whole question of prestige was uppermost in everyone's mind in the mid 1920's.

In 1924 the Labour Government started a programme to build two huge airships to decide once and for all whether airship travel could be made a safe and commercial proposition. It was to be a three year programme costing £1,350,000 with the R100 and R101 able to carry passengers and cargoes on intercontinental travel. The Airship Guarantee Company with a fixed price contract would build the R100 in Howden in Yorkshire privately and the R101 was to be Government subsidised and built at Cardington at the Royal Airship Works.

The R101 was to be an experimental airship with new techniques in design and construction to be implemented. This fact became lost in the frantic rush that took over the whole project later and the experimental part of the R101's reason for its existence played a part in the final tragedy. The R101 would be the largest vessel in the world, taller than Nelson's Column with the outer cover of more than four acres and built in the largest building in the U.K. When Dr. Eckener, the German Zeppelin expert, first saw the R101, he said: "Very nice, but isn't it a little big?"

Two separate sets of brains for the R100 and R101 set about the same problem. Even at this very early stage some critics felt that a large rigid airship was too fragile, too ponderous, too slow and too unproductive, despite the originality of the project.

The Main Characters in the Story

Christopher Thomson PC: CBE: DSO: DSC: 49 in 1924, a retired Brigadier General of the Royal Engineers; the first trained engineer to reach Cabinet

rank. He had come into politics after serving as a military adviser at many post-war conferences. He was a forceful character who had a great interest in, but no great knowledge of aeronautics. He was given the post of Air Minister in 1924 and 1929-30 and later took the title of Lord Thomson of Cardington. He was responsible for the two airships and for six years worked on their progress. He was tall, aloof, classically handsome and, age 55, was still a bachelor at the time of the crash. He was devoted to Princess Bibesca of Romania who was married.

Lieutenant-Colonel Vincent C. Richmond OBE designer and Assistant Director Technical: a very able and energetic administrator, a good organizer and hard worker. He had had no experience in big, rigid airship practices, but he had studied the techniques endlessly and he employed the best engineers and scientific specialists he could find. It is worth noting that the R38 met with disaster in 1921 and that had left no real specialists to choose from.

Wing Commander Reginald Colmore OBE Director of Airship Development.

Major Villiers Senior Assistant Intelligence Officer.

Major G. H. Scott OBE, AFC Responsible for flying and training, in charge of the airships in the sheds at Cardington. There is debate about his ability. He was the most experienced person on the team, but some thought that his judgment was at fault and his powers were deteriorating as the airship programme developed.

Barnes Wallis (of Dambuster fame) designer of the R100: He was bitter that Cardington had been given the principal role. A prima donna engineer, compared to the hard working, team leader Colmore.

Michael Rope Richmond's principal assistant. Designer of many innovations, an airship man for many years, including World War 1.

Lieutenant-Commander N. G. Atherstone AFC First Officer. Also known as Grabby (his former name was Grabowsky).

Squadron Leader E. A. Johnston OBE, AFC Navigator.

Flight Lieutenants H. C. Irwin, AFC known as "Bird" and Booth AFC Captains.

Chief Coxswain Fl. Sgt. G. W. Hunt AFM and Bar famous words: "We're down lads!". He served with airships in World War 1 and gained the AFM for the return of H.M.A. R33 when she broke away from her mast at Pulham.

Captain George Meatier AFC Captain of H.M.A. 34 on the trip to U.S.A.

Sir Denistoun Burney the first loader of the R100 team; headed the Airship Guarantee Company. Instead of co-operation between the two teams, there was acrimony, partly because of Barnes Wallis and Burney's attitude towards Cardington.

Sir Sefton Brancker KCB, AFC Director of Civil Aviation.

Sir John Simon Chairman of the Committee of Enquiry after the crash.

The Background

Between November 1916 and November 1926 fourteen airships had flown 3,382 hours in Britain. By June 1929, 50,000 hours had been flown by German airships.

The USA had two airships ZR-1 Shenandoah, built in Philadelphia in 1922 and the ZR-3 Los Angeles, built in Germany. The Shenandoah broke up in mid-air over Ohio on 3rd September 1925 due to air turbulence. The new British Airships were to be a symbol of new opportunities for Britain.

The passage to India took sixteen weeks via Cape Town. In 1930 the fastest liners took four weeks to

reach the Suez Canal. The R101 would take five days or less to India. The proposal was made in February 1924 for an advanced new airship of five million cubic feet capacity to carry one hundred passengers and fourteen tons of baggage plus sixteen tons of goods. The 3500 mile flight would have a re-fuelling stop in Egypt and the whole concept was extraordinarily advanced for its day. Approval for the project was granted on 1st May 1924. The Royal Airship works at Cardington was brought back into active service on 22nd October 1924.

The Directorate of Airship Development was responsible for overall control of the airship programme something that Barnes Wallis never fully grasped. The R101 became known as the “socialist” airship because of it being financed by the government. Vickers, a private firm, constructed the R100 and the Government paid for the work. It became known as the “capitalist” airship.

The Labour Government collapsed in November 1924 and it was not until 1929 when it was re-elected that Thomson took over again. The actual construction of the R100 and R101 did not begin until 1927. Unfortunately, there was still little co-operation between the two teams.

The R100

The R100 was built at a fixed price by Vickers and had a capacity of 5 million cubic foot. It had a crew of forty-eight and space for the passengers within the framework.

In contrast to the R101 there was practically no provision for research and it was an orthodox airship built on known principles by an experienced team.

Its first flight was on 17th December 1929 with Booth and Meager as captains.

It was designed by Barnes Wallis, was 709 feet long, 130 feet in diameter with a top speed of 80mph. It was

probably the fastest and finest rigid airship built in Britain. It could reverse, which the R101 could not. It was airborne for two and a half days in January 1930 and the Government inspectors were satisfied and Vickers could be paid.

Five flights totalling eight-seven and a half hours were completed with a useful lift of fifty four tons.

A twenty three hour test flight was completed on 21st/22nd May when the tail cone buckled. By July the R100 was ready for its moment of triumph, a flight to Canada, and left on 29th July with a crew of thirty seven, including Colemore, under Major Scott's command. It reached Montreal with no major problems and the return journey was equally successful. There was now immense pressure on Cardington to produce an equally successful ship and the irony is that the very success of the R100 brought about the eventual tragedy of the R101, since the pressure was on Cardington to do better. The R101 was technically conservative. Straightforward, backed by Vickers unrivalled ability. The R101 was technically adventuresome, admired for its workmanship, but unbelievably complicated in its design.

A comparison of the two airships and the specification is revealing:

In tons	SPECIFICATION	R100	R101
Gross Lift	152	157	149
Fixed weight	90	106	114
Disposable lift	62	51	35
Lift available for full payload	32	31	15

The figures say it all. The R101 is simply too heavy. Note that different sources calculate the figures differently. You will find discrepancies in this area in this booklet. It depends which source you take!

On 16th August 1930 the R100 moored at Cardington. She never flew again and the skeleton was

eventually sold as scrap for £427! The fabric was cut up and given away as prizes in a children's magazine. The Air Ministry required some parts back prior to disposal.

The Building of the R101

It is strange to hear in our modern world how the gasbags of the R101 were constructed. Goldbeaters' skins were used - membranes that were part of a bullock's intestines. They were cleaned of fat and scraped by teams of female workers. The skins were



then soaked in glycerine and stretched and varnished and finally made into bags. More than one million oxen were needed for the R101! The cells were like a series of huge bass drums on end. They were not

rigid, though the hull was. The gasbags were flabby, clumsy sacks. No one at that time had found a substitute. The Goldbeaters' skin was assembled in

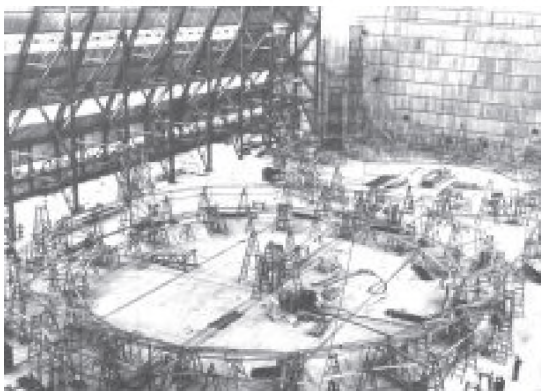
enormous sheets and looked like thin, transparent parchment. When they were wet they were bound together in continuous sheets without glue and finally these sheets were glued to the



inside of the cotton bags to form the cells. A one-foot hole in a cell could cause the loss of nearly 10,000 cubic feet of hydrogen per minute, a crucial fact when we come to consider the final disaster.

Hundreds of circles, woven like a giant Meccano set were put into an enormous cobweb. Great ferris wheels, 400 feet round, were slipped into the structure.

Workers swarmed all over the growing structure like ants. 14.6 tons of Duralumin sheet and 36.2 tons of stainless steel (which saved about three tons in weight) were used. The outer

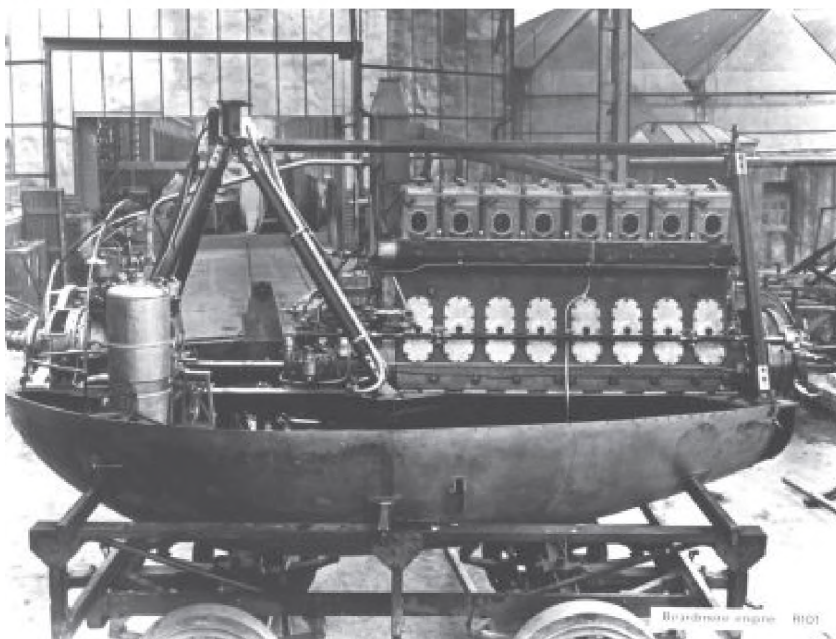


cover weighed 8.1 tons and was 27,000 square yards of cotton fabric. The R101 was 732 feet long, 140 feet high and had a diameter of 132 feet. The problem of weight beset the Airship from the beginning. Prepared for service the Airship weighed one hundred and thirty-three and a half tons, gross lift was 146.3 tons, which left only 13 tons, far too little. The problems were never properly solved.

Every penny had to be accounted for to Parliament and there was extra responsibility to the workers and their families. In mid summer 1929 the airship would not balance properly in the shed. A million cubic feet of hydrogen were used and it seemed that it was percolating through the porous goldbeater skin.

The engines were also a problem - 526hp Beardmore Tornado diesel engines (the specification did not allow petrol engines since they were considered unsafe because of the hydrogen and the heat of Egypt and India): were originally designed for use in railway

locomotives in Canada, the originally specified Typhoon engines were not yet ready.



They were slung below the bottom of the envelope, combined weight seventeen tons (R100: 9 tons: Graf Zeppelin: 7 tons). By 1929 the R101 was two years behind schedule and the tax payers bill was more than £2 million. Some newspapers headlined the R101 as underpowered, overweight, too slow, not enough passenger space. Others described it as “a wonder in steel silver”: “a gift of the gods that is yet the handwork of man”. The passenger lounge was to be the crowning glory - 160 feet by 30 feet, imitation palm trees, wicker chairs and tables, circulating hot air for warmth, writing tables etc. The walls were made of canvas and balsawood and the doors were curtains to save weight. There was accommodation for 52 passengers in two berth cabins. It all gave the R101 the impression of elegance and a modest degree of luxury, especially when compared to aircraft interiors. By 30th September all was ready for lift and trim trials. The airship was 23.5 tons heavier

than the target of 90 tons. The weight had to be reduced: some non stressed girders were removed, some servo assisted controls dispensed with, celluloid replaced glass for the windows, the gasbags were then expanded to their farthest, chafing against the girders, causing hydrogen leaks. An extra 9 tons of lift was gained. The valves were releasing too much hydrogen and new ones were fitted, but a list of only three degrees either way off the vertical opened them when the airship rolled. With hindsight it can be seen that the specification was over demanding. There is no evidence that the R101 was structurally weak, but it was an impossible task for its designers. On 8th October 1929 the Works formally handed over the R101 to its flying crew, but the hunt for major weight reduction continued until the middle of June 1930.

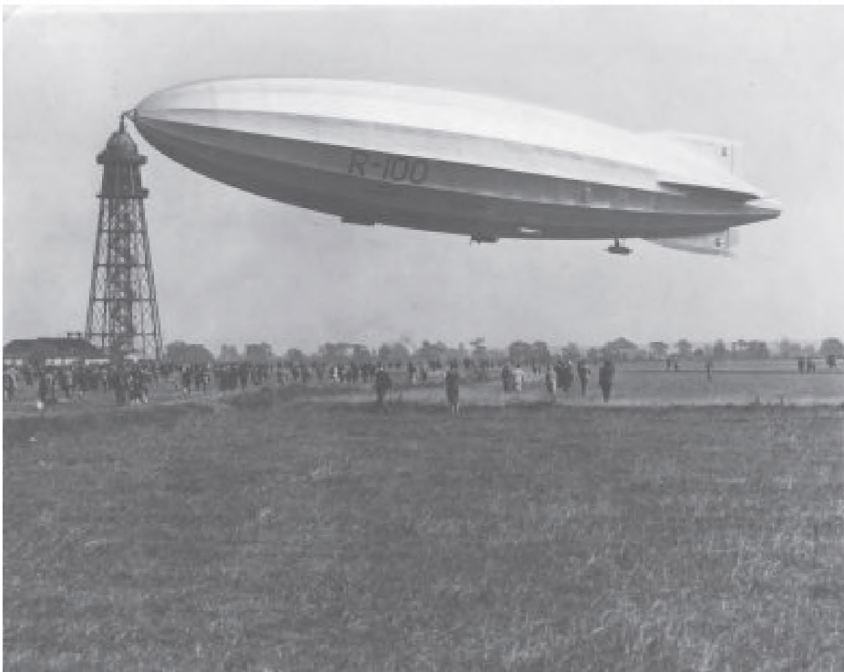
Even before the airship was launched Colmore had confided that it was only a matter of time before the R101 would need to be cut in half for an additional bay. It had long since been forgotten that the R101 was to be a prototype, an experimental airship and that commercial airships would be developed later. The tragedy is that the aim was now not to lose face in the light of so much publicity and that decisions began to be made that led to the final disaster.



Over the fifty years since the R101 was lost, stories have gradually hardened into a single, simple, but quite vicious legend, that the flight that led to disaster was a clear cut case of political murder (Geoffrey Chamberlain) Harsh words, but that is undoubtedly the view of some observers.

The First Flights

The R101 left the Cardington shed at dawn on 12th October 1929. The handling party consisted of 400 men. A month later its rival the R100, was ready to fly. Scott was in control on the ground and Irwin and Atherstone were on board. The first day was spent on testing and the second on mooring drill. Then, on 14th



October with Scott in command and Irwin the captain under training and Johnston as navigator, the R101 had her maiden voyage. There were traffic jams for four and a half miles as people watched spellbound. A ton of dust was whipped off the top by the breeze. A ton of

ballast water was released and the airship rose to 500 feet.

From Cardington to Bedford Road had become a solid parking lot; petrol was sold out everywhere. "A more perfect operation could not be desired - a happy augury for the future". (The Times) "... The whole ship felt immensely strong and gives one a wonderful feeling of security and confidence". (Atherstone)

Thomson requested to fly on the second flight and this was the beginning of constant pestering by Air Ministry officials to allow passengers on board. Scott remonstrated bitterly to Colmore about the intrusion. The Mayor of Bedford was on the fourth flight, 10 M.P.'s and 22 Air Ministry passengers on the fifth. On the first flight, only two of the five engines were working properly. By 18th October all were operating on a nine and a half hour flight. Even at this early stage questions were being asked: launching and tying up were very clumsy and slow; only four places in the world could accept an airship of this size - Montreal, Ismailia, Karachi and Cardington; the airship was the size of an ocean liner, but could carry only 50 people; the freight load was pitiful and the fabric was easily torn. The flight on 18th October covered Northampton, Birmingham, Nottingham and back to Bedford, 210 miles in 7 hours 18 minutes with 63 mph recorded. One positive feature was that the R101 rode out hurricane winds of 83 mph at the mooring mast on 11th November. The seventh flight organized for 100 M.P.'s on 16th November never took place due to weather conditions. At one point the elevator of the mooring tower broke down and half of the visitors had to climb 200 feet down the exposed stairway, soaked to the skin! It was what Fuller calls: "A taste of honey, with a bee sting afterwards!". The first real signs of political pressure began to appear. In a speech Thomson said: "... No pressure will be brought to bear on the technical staff or anyone else. Subject to this I hope to travel to India during the Parliamentary

Recess at Christmas. Safety First and Safety Second". Cardington greeted this with laughter and Colmore and Richmond were deeply embarrassed. They were both working hard to reduce the R101's weight and increase its lifting capacity. Scott was training crews for the R100 and R101 simultaneously. 2nd to 3rd March saw the first night flight of 14 hours with four engines at full power and a speed of 55 knots. One engine failed and could not be restarted.

Further political pressure came from Thomson's wish to fly to India before the First Imperial Conference in October 1930. This would be a major propaganda coup and would unlock funds from Dominion Governments for an airship programme. It was also rumoured that Thomson's ultimate aim was to become Viceroy of India and the airship programme became increasingly subordinate to the accomplishment of a triumphant return of Lord Thomson from an Indian journey in the R101 in time for the Commonwealth Conference in London.

Critics have claimed that the ultimate tragedy of the R101 was, in part, due to the ruthless over-confidence of the aspiring Thomson.

The first flights took 54 days with 938 hours at the mooring mast, 73 hours flying and 2220 miles logged.

The Additional Section

I am of the opinion that no good, and possibly some harm, might be done by a flight to India in the early months of 1930.

The best course would I think be:

- a: To make the various alterations.
- b: To insert the extra bay.
- c: To make every effort for a flight with 55 tons disposable load to India and back at the end of September.

(Air Ministry memo from Lord Thomson).

And so the pressure and almost impossible time schedule on Cardington continued.

It was proposed to loosen the wires of the gasbags and allow more hydrogen to be pumped into them, resulting in 6 tons extra lift. A new section would increase the length from 732 feet to 777 feet and the capacity from five million to five and a half million cubic feet of hydrogen, giving nine tons more lift.

The plan was to show off the R101 at the RAF Air Display in Hendon in June 1930.

The R101 was sliced into two, hanging from the roof of its shed and a new section was built and inserted in the gap at frame eight, near the end of the passenger quarters. It was the largest possible cell at the widest part of the ship and it did not interfere with the passenger quarters.

On 6th June it was decided to replace the cover: 575 feet of brand new cover and 202 feet of the original were left in place. This was a significant decision since the final tragedy on 5th October was perhaps caused by the failure of this original cover. On the two main sections where it remained rubber solution was used and there was serious deterioration of the fabric. Additional reinforcing strips over these places were added. Had time permitted the entire cover would have been replaced.

Inspector McWade of the Aeronautical Inspection Division at Cardington criticised the padding, which was put in to reduce the rubbing of the gasbags (now let out to their fullest) against the girders. Colmore rejected the criticism, all that mattered was the need for more lift. Colmore did not pass on McWade's views to the higher authorities and Thomson and the Air Council were not informed. McWade was overruled by his superior and the Director of Airship development. Atherstone found a piece of cover from the top of the

ship, completely rotten: it can be torn, just like paper. We see yet another clue to the final catastrophe.

At the masthead a 146 foot tear appeared in the canvas cover and the next day another tear appeared in a different place. As early as 20th January 1930 substantial damage to the cover had been discovered. The pressure to get the R101 ready was increased when the German Graf Zeppelin made a perfect landing and take off at Cardington on 26th April 1930.

On 23rd June the R101 was hauled out of her shed to be shown off at the Air Pageant at Hendon on 28th June 1930. The behaviour of the ship was not promising. She went into a short, sharp dive from 1200 feet to 500 feet, a long slow climb back to heights. It seemed that the airship was still too heavy and it was all that her pilot could do to hold her up. Captain George Meager's description of this flight showed that the final tragedy at Beauvais could have happened on this earlier flight, if the water ballast had not been released. In the twelve hours of flying the R101 had to drop ten tons of water ballast or the ship would have sunk to the ground once the engines were cut. Four thousand pads were wrapped round potential chafing points. The loss of gas dismayed everyone and the actual lift diminished steadily. The climax of the display came when the R101 swooped gracefully over the crowds and dipped in royal salute. As it regained height one of the main wire bridles snapped which resulted in a difficult journey back to Cardington. The irony is that the spectators did not suspect the trust and got a reasonable display from the R101. The extensive repairs and leaking gasbags told Cardington a different story e.g. gasbag 5 had fifty seven holes; gasbag 11 had 103 holes and that there was an average loss of gas of 51,070 cubic feet - normal is 14,250 cubic feet per day. McWade's damning indictment was made at this point and he would not recommend the "Permit to Fly".

By 25th August 1930 all the structural work had been completed and a new engine capable of reversing was to be fitted and on 27th September the R101 was handed over to the flying staff. On 1st October the airship was put on the tower - a new, untried airship. Professor Bairstow, in charge of air worthiness, commented on the lack of time for a considered report on the R101. A 16hr 51min test flight revealed the failure of one engine. There was no Certificate of Airworthiness and it was eventually temporarily handed to the captain as the ship was being loaded for the fateful flight. It was agreed that speed trials would take place with the passengers on board - an amazing gamble and totally unacceptable by today's standards. On Wednesday 1st October the R101 slipped from the mast with 4 officers, 38 crew, 15 passengers, 22.8 tons of fuel, 10 tons of water ballast and a disposable load of 42 tons. Colemore and Richmond were on board. London, Southend, East Coast, Great Yarmouth and back to Cardington was the route that took 16 hours 51 minutes and was 533 nautical miles. An oil cooler burst and the full speed test did not take place. That was the single test flight and there was no written report.

Colemore, the ultimate decision maker, was stranded in a hopeless position. He had full responsibility for a political decision, instead of only a technical one.

4th October 1930

Instead of a cautious holding back to assess what was going wrong and why, the decision was made to set out for India. The growing struggle between the three main streams: Thomson and the Air Ministry, the designer and the flight officers Irwin, Scott and Johnston resulted in success for Thomson and the Air Ministry. In all fairness it must be said that the Government had too much to lose to put off the flight any longer. The huge amount of money spent on

Airships, the propaganda a successful flight would make for the Imperial Conference, the threat of the drying up of the funds for future development made the decision a foregone conclusion.

At 6.30pm on 4th October 1930, in front of 3000 people at the sheds, the result of six years of work set off for India. On the airship were 54 men, including six important passengers, Thomson, Sefton Brancker etc. and 48 crew under Captain Irwin. Thomson had caused concern by requesting that a pale blue Axminster carpet, weighing 1052 lb. should be laid along the entrance gangway and in the lounge of the R101. He also took with him a carpet weighing 129 lb. as a gift for his hosts. Lord Thomson's baggage weighed 254 lb. out of a total for the passengers of 394 lb.! Crates of champagne, barrels of beer, and twenty varieties of cheese, beautifully engraved silver and glassware were taken on board. These heavy items and where they were stored might well have altered the balance of the ship. No matches were allowed on board, and the cigarette lighters were chained to the tables. Passengers were allowed 30 lb of luggage, the crew 15 lb.

There was a brisk wind from the west and showers - damp, muggy, blustery, autumn day. The weather later deteriorated catastrophically and the flight would never have been made, had the true weather conditions been known. Yet had they delayed its departure by 7 hours the weather would have improved and they would have had a following wind all the way to Egypt.

Different views are expressed about the crew's attitude. Sir John Simon in his report spoke of: "the high courage and genuine confidence of all concerned". Hunt is reported to have said to his son: "Look after your mother boy: this old ragbag won't make it". It is in keeping with the mystery of the R101 that some observers speak of the confidence of the Cardington team and others talk about considerable depression at the launch.

At 6.36pm with all engines running the R101 set off on her 5000 mile flight. The bow, instead of soaring upwards, dipped slightly and four tons of water ballast was dropped, nearly half of the total ballast. In heavy rain the airship moved off sluggishly into the night at one third of the expected speed and at low altitude. A farewell circle of her native Bedford as salute to the families of her crew was completed and then off to France with the first stop Ismailia in Egypt 2570 miles away.

The plan was a total of fifteen days: five days outward; four days in Karachi; six days back. Thomson had to be back for 20th October, having put off the air business at the Imperial Conference till then. The decision to start was, in fact, taken ahead of the trial flight; the trial flight was in fact going to be the journey to India.

This flight was to set the seal on the forward programme and the future of airships. Failure was unthinkable. "This is the voyage for which I have been waiting all my life". (*Thomson*).

Problems started with No.5 engine and it had to be shut down. There was no mention of this in the wireless messages. The weather worsened with wind speeds of 50mph and the ground speed of the airship at one point was only 25 mph. She crossed the Sussex coast after three hours and 127 miles. "Never, with or without the extra bay, had R101 experienced weather approaching in violence anything met with during this journey". (*Sir John Simon*).

Engine No.5 was repaired, but full speed put more stress on the cover. Five hours from Cardington and the airship crossed into France at Pointe de St. Quentin. By now the cover would have absorbed four tons of water and one and a quarter tons of water ballast would have been collected.

At 00:18 the message was sent: "To Cardington from R101, 2400GMT 15 miles SW of Abbeville speed 33 knots. Wind 243 degrees (West South West) 35 miles

per hour. Altimeter height 1,500 feet. Air temperature 51degrees Fahrenheit. Weather - intermittent rain. Cloud nimbus at 500 feet. After an excellent supper our distinguished passengers smoked a final cigar and having sighted this French coast have now gone to bed to rest after the excitement of their leave taking. All essential services are functioning satisfactorily. Crew have settled down to watch keeping routine”.

By now there was a fiercely gusting wind and continuous low level turbulence. The ground speed was 27 mph into the teeth of the storm. The ship was rolling and was brought back to 1000 feet. Suddenly, above Allonne, near Beauvais the ship plunged downwards, then resumed even keel for one minute, then dived again. Then came the crash that was not violent - a blinding flash and it was all over. The order to slow down engines to 450 rpm meant that there was a first impact, then a rebound and then the all consuming fire.

A reconstruction of what happened is as follows

There was a change of watch at 2.00. Irwin and Atherstone retired to rest. It is a fact that a new crew always took some time to adjust to the controls and the behaviour of the airship.

Irwin and Atherstone might have been able to save the airship.

- a. 0200: level flight.
- b. 0205: a split starts to develop in the forward upper part of the outer cover.
- c. 0206: Michael Rope discovers the developing failure of the cover.
- d. 0206.45 seconds: he reports to the control car that he had found serious damage forward.
- e. 0207.15 seconds: emergency recognized in the control car; slow down to avoid further damage.

- f. 0207.25 seconds: telegraph rang to slow No.1 engine.
- g. 0207.30 seconds: Slow engines 2, 3 and 4. Hunt climbs up to warn the crew.
- h. 0207.35 seconds: Engine power reduced. Ship's nose begins to drop, the first dive. Order to release ballast forward.
- i. 0208.10 seconds: No.5 engine still at cruising speed. Elevator full up. Ship levels off at 500 feet. Hunt calls out "We're down lads!".
- j. 0208.35 seconds: No.5 engine power reduced. Nose falls again. Another dive at 450 feet.
- k. 0209.00 seconds: Airship hits the ground, bounces sixty feet, and finally crashes into the ground. The calcium flares are activated by water and cause the fire.

The inferno was described as an enormous 'whoof' like the ignition of a pool of petrol and there was a huge searing sheet of flame from the lower part of the Airship. It had a white hot core, not like the colour of hydrogen flames.

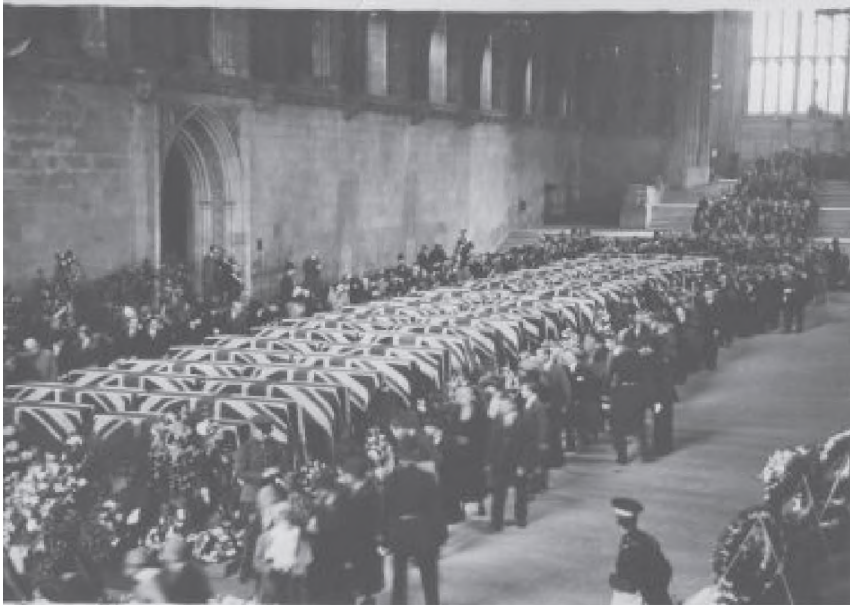
Even with the split cover and two deflated gasbags there would have been enough elevator power at cruising speed to keep the nose up, but the Airship would dive if the power was reduced, a fact mentioned in the Court's Report. If the fore part of the cover was torn, the wind would cause serious damage to the gasbags quite suddenly. It is worth noting that it was only 85 seconds from the first dive to striking the ground and that the crisis had developed BEFORE the first dive.

There were eight survivors, of whom two died within twenty four hours, out of the fifty four on board. Two survived because a 200 hundred gallon radiator tank split open and covered them in water. The hydrogen burned out rapidly, but the wooden passenger quarters

blazed all over the area and finally all that was left of that beautiful, sleek airship was a mass of twisted girders.

The Court of Enquiry

The shockwaves spread throughout Bedford on Sunday 5th October and the scenes outside the newspaper office of the Bedfordshire Times were heart rending as the names of the dead were chalked up on blackboards. The bodies were brought back to London on 7th October and lay in state in Westminster Hall.



A Memorial Service was held in St Paul's on the same day and was broadcast throughout the world.

The scorched ensign lay on the altar. The Prince of Wales, the Duke of York, Cabinet Ministers, and the Dominion statesmen joined the 5000 people in the Cathedral. The coffins were taken by train from King's Cross Station to Bedford St John's and then transferred to RAF tenders. RAF men flanked the three mile route.

Leading the procession were Service Chiefs, Prime Ministers, Ambassadors, M.P.'s, Dr. Eckener and German crew representatives. The funeral took place at Cardington on Saturday 11th October with full honours, almost to the hour when they left the previous week. There were 48 coffins, all in one grave, 26 of them named. Lord Thomson was not named. The passengers in the sleeping quarters above the control car made up most of the un-named. After the firing party the Last Post sounded as daylight began to fade.

The Public Enquiry was set up on 22nd October 1930 under Sir John Simon KC, jurist, Solicitor-General, Attorney-General and Home Secretary in the past and proceedings began on 28th October. There were 13 public sessions; 42 witnesses were called (from an Air Marshall to a French poacher), including the six survivors. The proceedings ended on 5th December and the 129 page Report was published on 27th March 1931.

No one was blamed: "substantial loss of gas in very bumpy conditions"; one or more gasbags had suddenly deflated; and a Downdraught of wind from the nearby hills had forced the Airship to dive into the ground. Structural damage was not blamed. The cable that controlled the elevators was found broken and jammed, but a steel industry expert claimed that it had broken after the crash. A prominent naval architect, E. F. Spanner, later wrote a two volume analysis of the official findings and branded them as a complete whitewash. He made a strong case for a structural break of the girders in the air, causing the fabric to rip and the ship to crash. The only hint of criticism of Thomson came in the statement: "It is impossible to avoid the conclusion that the R101 would not have started for India on the evening of 4th October if it had not been that masons of public policy were considered as making it highly desirable for her to do so if she could". The report was a jigsaw with most of the parts missing and

the verdict has remained permanently under suspicion. The people of Cardington and Bedford were bitter. They had watched the hurried alterations and the forebodings had grown. (Everyone had noticed the nose down position on leaving the tower and the straining to gain altitude. The popular belief was that Lord Thomson had forced the departure on 4th October for selfish, political motives but not all observers agree with this view. Thomson said: "Safe as a house except for the millionth chance". What is undeniable is that an unready Airship flew to disaster. The momentum of public expectations generated by years of government publicity about the coming glories of air travel, a combination of public opinion, national pride, the desire to counter Germany's Graf Zeppelin, it all amounted to a non-stoppable tide that could not be turned back. It is difficult to make the politicians accountable and impossible to indict the public in general.

Why did it Happen?

A year before the crash Lieutenant Commander Atherstone wrote in his diary (which was only found in 1967): "There is a mad rush and panic to complete the ship ... It is grossly unfair to expect the officers to take out a novel vessel of this size ... The airship has no lift worth talking about, and is obviously tail heavy". A memo of 14th June 1930 from Lord Thomson confirms the pressure on the Cardington team: "So long as the R101 is ready to go to India by the last week in September, this further delay in getting her altered may pass. I must insist on the programme for the Indian flight being adhered to, as I have made my plans accordingly".

Atherstone wrote in his diary: "... we all feel that the future of airships very largely depends on what sort of show we put up". "The ship should not have been used to demonstrate achievements when she had not yet

had a chance to exhibit her weakness”. (Robin Higham). There is no doubt that the pressure put on Cardington was one of the main causes of the disaster. Professor Bairstow in charge of the Certificate of Airworthiness required for international flying reluctantly gave a verbal Permit over the telephone for the 4th October flight.

“The difference between the conditions of loading of R101 now submitted and those of the original design ... surprised us by their magnitude ... A good deal of general thinking and comparison on limited information has been required in reaching our conclusion”. The Indian flight should never have started since the R101 was not ready.

An Intelligent Guess at What Happened

1. Chief Coxswain Hunt’s “We’re down lads!” is very significant. He is not yelling hysterically or rushing around like a madman. The Court of Enquiry heard that he certainly did not seem excited. As Hunt spoke the R101 was about 550ft above the ground, just before the second dive.
2. It is not likely that it was due to structural failure because of the inherent strength of the airship although we cannot discount Spanners research. There is no evidence of a fire on board before hitting the ground. All five engines were cruising satisfactorily.
3. A hypothesis can be set out that the steady gas leakage from the forward cells was a major part of the cause of the final descent at Allonne. All throughout its life the R101 had suffered from deflation and gas loss. There was also gas leakage through the valves. The enquiry did not show that from 14th October to the end of November 1929 the R101 used three million cubic feet of hydrogen! With the airship surging, corkscrewing,

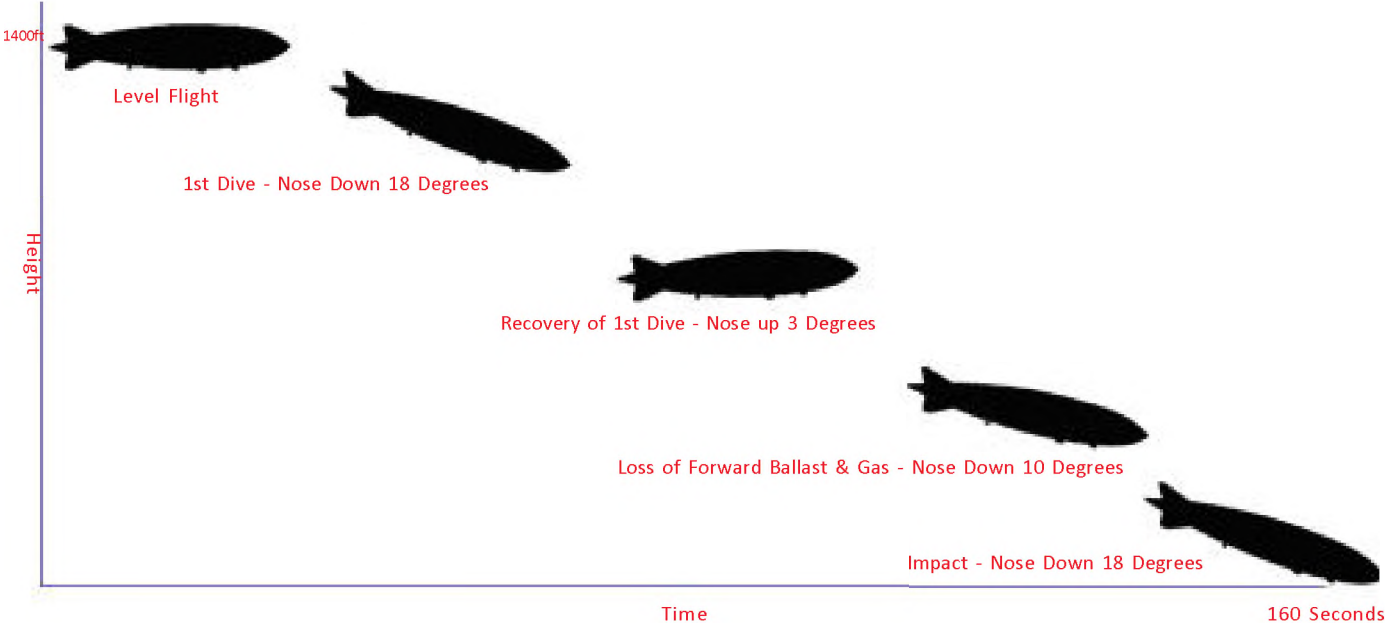
over the Channel, Hunt was concerned about the gas loss and at the moment of truth over Beauvais he knew that the ship could not stay airborne. The splitting of the forward coving exposed the cells to the high winds, which probably tore the valves away from the forward cells resulting in a massive loss of hydrogen and the calamity has happened. It was estimated that the R101 hit the ground at just below 14mph.

4. What caused the fire? The evidence of the survivors speaks of: “a rumbling sound, like a long drawn out sound”; “just a ‘whoof’ rather similar to igniting petrol which has been poured on to the floor or something like that”. “.... The flame appeared to originate from over the control car and was very white, and not at all like a hydrogen flame!”. Squadron Leader Johnston had taken drift readings using calcium flares that were dropped into the sea and self-ignited, giving a searing white flame at night. Witnesses thought that five were left in the box in the control car. The flames would normally burn as five pounds of calcium phosphate in a perforated cardboard cylinder for about thirty seconds. The water ballast storage and control system piped a vast supply of cold water into the control car, next to where the box of flares with the lid off had been seen. When the airship crashed the two and a half inch diameter aluminium pipes would be flattened and there would be water everywhere.
5. Shutting down the power could have been a fatal decision. When the nose fell for the last time, there was no power, no dynamic lift.
6. The R101 could have turned back since the weather forecast had deteriorated considerably. The final decision came perhaps forty three minutes into the flight when the airship turned away from Cardington and headed towards

London and the coast. Scott, Irwin, Atherstone and Johnston with Colmore and possibly Thomson took the fateful decision to carry on, despite the dreadful weather conditions. Ignoring these storm warnings was another factor in the crash. On Saturday morning the forecast for France gave tolerable conditions, but this changed rapidly. Despite the Court of Enquiry rejecting the weather as a major cause, the storm almost certainly brought about the damage to the envelope and the leakage of the gas.

7. Another cause advanced by some experts is static electricity. When the cable was dropped from the nose of the R101 in normal conditions, it had to touch the ground or anyone touching it received a severe shock. It could be that the underside of the airship touched the ground, there was a spark and the hydrogen exploded.
8. The cover of the R101 was a potential disaster. Michael Rope, Richmond's right hand man, sent a note to him and Colmore, giving results of tests on the deterioration of the fabric of the cover. "...the risk involved in sending either ship on a long overseas flight is, or is not, greater than is justified by the need to fulfil public expectation".
9. It has been claimed that the violent application of the up elevator broke her back before she reached the ground or that the ship buckled in the new bay as she struck the earth. The splitting of the envelope combined with the massive gas leakage (it has been calculated that she was losing one ton of lift per hour) and the shutting down of the engines would seem to be the immediate major reasons why the R101 had to hit the ground in the middle of that terrible storm and the presence of the calcium flares and so much water made the fire inevitable.

The Estimated Impact of the R101



The Buffs

Of the crew and passengers, an estimated 27 were members of the Order, including Lord Thomson, 24 perished in the crash and 3 survived; they were Bro. J. Binks, Bro. A. Bell and Bro. V. Savory. The last surviving buff Bro. A. Bell R.O.H. died in 1998 and is buried close to his friends and fellow buffs in Cardington Cemetery.

The R.A.O.B. were not given any part in the original parade on the 11th October 1930, but in order for the members of the Order to pay their respects, the Bedford & District Provincial Grand Secretary Bro. F. Toombs R.O.H., organised a memorial service held the following month on the Sunday 16th November.

A letter was sent to the Grand Secretary which was read at the Grand Lodge meeting of 25th October, and Grand Lodge in session instructed the Grand Primo, Bro. A. E. Ingle R.O.H. to attend and lay a wreath on behalf of Grand Lodge.

On the day, some 6000 or 7000 people attended the memorial service, which was held in Shed number 2, those that attended, as well as the Grand Primo were estimated at some 5000 Buffs. The service was conducted by Bro. (the Rev.) F. W. Bennitt of Bletchley.

After the service a procession was formed, which included two bands and they marched down to Cardington cemetery where more people were waiting, the relatives, chief officers and wreath bearers were admitted to the cemetery, where the RAF provided a guard of honour. The Burial Service of the Order was read, the wreaths laid and the chief officers dropped ivy leaves on the grave. The vast crowd joined in the singing of the hymn of the Order, Spirit of Truth. The ceremony concluded with the playing of Reveille.

Epilogue

It is unlikely that we will ever know with complete certainty what caused the R101 tragedy. It is right to look at the facts and make intelligent conclusions based on the knowledge we have. There is little point in apportioning blame to Lord Thomson, the designers or the crew. The response of the captain and crew to the unusual situation which confronted them was entirely consistent with the regulations for actions in such emergencies i.e. lighten the ship by discharging all available ballast and stop engines (The International Airship Convention of July, 1996). Everyone in this tragic story faced their own dilemmas and each person chose to do what he thought was right.

Lord Thomson's oft quoted words take on a dreadful significance "R101 will, I hope, give me joy. To ride the storm has always been my ambition". These famous words were to become the title of a book by Sir Peter G. Masefield, passages of which were read at the 80th Memorial Service on Sunday 3rd October 2010.

The R101's twisted girders were bought by a scrap dealer and melted down and sold as pots, pans and kettles. What an ignoble end for what was hoped to be the pride of the Empire!. The last survivor (Cook) died in 1999.

The twisted girders and the pots and pans are not the end of the story. Professor R.V. Southwell, in a letter to The Times, sums up our final comments on the fate of the R101 and its crew. ".....In so far as man's thoughts and labour could have ensured success, the best of man's thoughts and labour were given without stint;.... no chances were taken where certainty could be obtained one possession will still remain - the memory of a gallant company bound together by selfless devotion to the cause they had at heart".



The Funeral Service

The news of the unsuccessful and tragic flight of the Airship R101 with the death toll as high as it was has been felt across the world, none more so than in England and to some extent, France.

There are an enormous amount of photographs surrounding the tragedy at Beauvais and to incorporate them all in this publication would make the book just too big, so I have selected a few of the more interesting ones and tried to place them in a chronological order so the reader can piece together the last events as they occurred.

Some of the pictures are of a poor quality but it has to be remembered that they are taken from newspapers of the day and as such are not photographic quality.

*Removal of the bodies in coffins from the crash site,
in the background can be seen the twisted remains of the airship*



Transporting the coffins from France

This pictorial journey starts in the Square at Beauvais when the French Nation with its leaders paid a moving tribute to the victims of the R101 disaster.



French troops saluting the coffins outside the station at Beauvais. Each coffin was covered with a Union Jack, wreaths and bunches of flowers, many of which were sent by residents of the district in which the disaster occurred.



On arrival at Boulogne the coffins were taken on board HMS Destroyers Tempest and Tribune.

The first picture shows one of the coffins being loaded on to the deck. The second picture shows the coffins at their resting place prior to the voyage to Dover.





This next picture shows the coffins being taken off the train from Dover, to be loaded on to Army trucks for the Lying in State in Westminster Hall.



All along the route of the procession from Westminster to Euston, large crowds gathered to pay a last tribute to the dead of the R101.

The coffins were borne on Army wagons, each being covered by a Union Jack surmounted by flowers.



The Journey back to Cardington

Platform 6, Euston Station was the start point for the sad journey back to Cardington. Music played quietly and banners hung limp around the station as



the coffins were loaded. When all mourners were aboard, the train, which was decorated at the front by a huge wreath on its engine, left for its journey, to the sound of the hymn “When our

heads are bowed with woe”. During the journey the victims were remembered by many people including rail staff. Drivers and plate-layers stood bare headed and with bowed heads. At Bletchley the high ground by the station was black with mourners, at all small stations mourners stood in silence. In Bedford the shops were closed as a day of mourning had been declared.

On arrival at St Johns Station, Bedford, the wreath on the train was removed to travel to Cardington Village on one of the twenty four army tenders which were waiting. Slowly and tenderly the many coffins were loaded. The fifty vehicles to carry the relatives and mourners were supplied by Mr. Edward Fuller, of Lurke Street, Bedford for £1 -10s complete with chauffeurs.

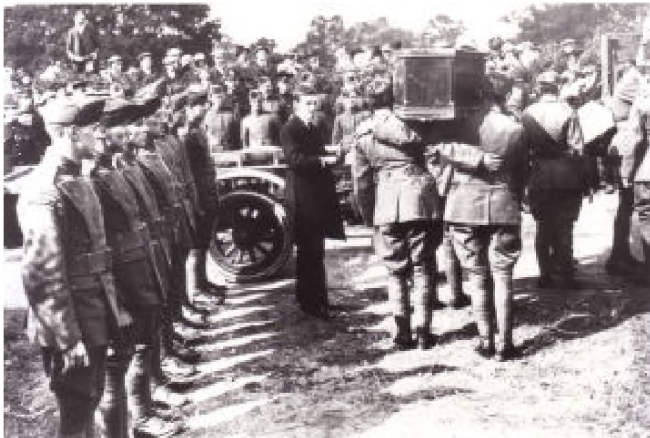
As the solemn procession made its way through Bedford and slowly on to Cardington it was thought that over seventy five thousand mourners lined the

street and country roads. Many in tears with some collapsing. Such was the length of the procession that the head of the column was halfway there when the last vehicle left the station yard. The detachment of airmen detailed to unload and place the coffins in the newly



dug grave commenced their sad task, slowly filling the grave with coffins laid in two rows and covered with Union Jacks. Only fourteen coffins bore their occupants' name on a plate made from the same material as the airship. The other thirty four simply stated. "AN UNKNOWN AIRMAN WHO DIED ON 5th OCTOBER 1930".

Pictured below are the bodies arriving at Cardington.





Above, the funeral service at Cardington showing the massed grave and below, a few of the hundreds of wreaths that were laid on the day.



The following article appeared on page 14 of the Times Newspaper, Monday 17th November 1930.

R.A.O.B. Tribute to R101 Victims

A memorial service was arranged by the Bedfordshire Province of the Royal Antediluvian Order of Buffaloes in honour of the 28 members of their Order who died in the disaster to R101 took place at the Royal Airship Works, Cardington, yesterday. Members of the Order from all parts of the country attended including the Grand Primo of England, Brother A. E. Ingle, R.O.H., P.P.G.P., of Manchester, who read the lesson.

The service was attended by Civic representatives and Mr. S. R. Wells, M.P. for the Bedford Division of Bedfordshire. There was a large attendance of the general public.

The main service was held in the No.2 Shed, in which the R101 lay for some time early this year. The hymns, the singing of which was led by the bands, were "Through the night of doubt and sorrow", "Eternal Father, strong to save", and "Abide with me". The service was conducted by Brother the Rev. J. W. Bennitt, of Bletchley, who brought with him the choir of his parish church. In his address he paid tribute to the dead who had honoured the Order.

A procession then took place to the grave at Cardington Cemetary, where the burial service of the Order was read. Many wreaths were laid on the grave, and upon it the chief officers of the Order dropped single ivy leaves for brotherhood and remembrance.



Memorial service in Airship Shed
R.A.O.B. Honour their dead
Thousands at Cardington

By permission of the Air Ministry, No. 2 Airship Shed at Cardington Royal Airship Works, in which the R101 lay for some weeks early last year, was used on the afternoon of Sunday, November 16, for an impressive memorial service in connection with the Order, which had 28 of its brethren among the 48 victims of the R101 disaster. The great roof echoed and re-echoed to the music of the hymns sung by the six or seven thousand voices.

The members of the Order had experienced some disappointment when no provision was made for them in the obsequies of October 11, seeing that more than half the victims were their brethren, but in the general grief they gave no voice to their disappointment. Instead the Bedford Province went steadily to work to organize the Order's own tribute to be given on a subsequent date, and the ceremony was the result. In this organization Bro. Frank Toombs, R.O.H. (Provincial Grand Secretary of the Bedford Province), played a leading part, and members of the Order all over the country took the deepest interest in the event.

It is estimated that there were 5,000 Buffaloes present, and among them were the Grand Primo (Bro. A. E. Ingle, R.O.H., P.P.G.P. of Manchester) and Bro. A. V. Bell, (Engineer) a survivor of the disaster. Owing to the shortness of the notice the Mayor and Corporation of Bedford were unable to attend, but Mr. S. R. Wells, M.P., was present and occupied a seat on the rostrum, accompanied by the Grand Primo and Bro. (the Rev.) F. W. Bennitt, of Bletchley who conducted the service. Among those invited to the service were the relatives of the victims, members of the staff of the R.A.W., and the wives of the members of the Order. The R.A.W.

staff had been to considerable trouble to organize the layout of the shed, and the rostrum was erected half way down on the northern side. Facing it in the centre of the shed were 400 chairs to accommodate those



specially invited. Before the members of the Order marched in these were all occupied and another thousand people were standing.

The members of the Order had assembled by motor coach and bus at Shortstown, and came together for robing on the aerodrome near the shed. Here a line of R.A.F. men was spaced out across the field to keep the crowds from wandering in the direction of the mooring tower. The members of the Order marched into the shed by the door in the centre of the southern side. It seemed that they would never stop coming in. The wreath-bearers came first and ranged themselves in two long lines on either side of the rostrum. In front of the rostrum lay the wreaths of the Grand Lodge of England, of the Bedfordshire Province, and of many other Provinces. Among the wreath bearers was a sailor of H.M.S. Nelson, one of three delegates from the Nelson Lodge. For the rest there were neighbours from Luton and Huntingdon and distant friends from

London and the North. The members of the Order were still trooping in when Bro. Bennitt, who had brought his full surpliced choir, deemed it necessary to begin the service. The service opened with the hymn "Through the night of doubt and sorrow", and the singing was led by the choir of Bletchley St. Mary's, accompanied by the Bedford Town Silver Band under the conductorship of Bro. A. Warrington.

Buffaloes - Wonderful singing

The singing was wonderful. From the rostrum the Reverend Brother read a few prayers and then followed the hymn "Eternal Father, strong to save". The Grand Primo read the Lesson, the first seven verses of the 21st Chapter of the Revelation of St. John, and Bro. Bennitt addressed the concourse, taking for his text: "So we, being many, are one body in Christ and every one members one of another". "I am here today", he said, "as one of the brethren of this Order. It was suggested that some big man such as the Bishop should pay this tribute to our dead, but it was decided otherwise, so that we might keep the service simple and brotherly. We are all Brothers. In the Church we talk about brotherhood; in the Buffalo Order we get it".

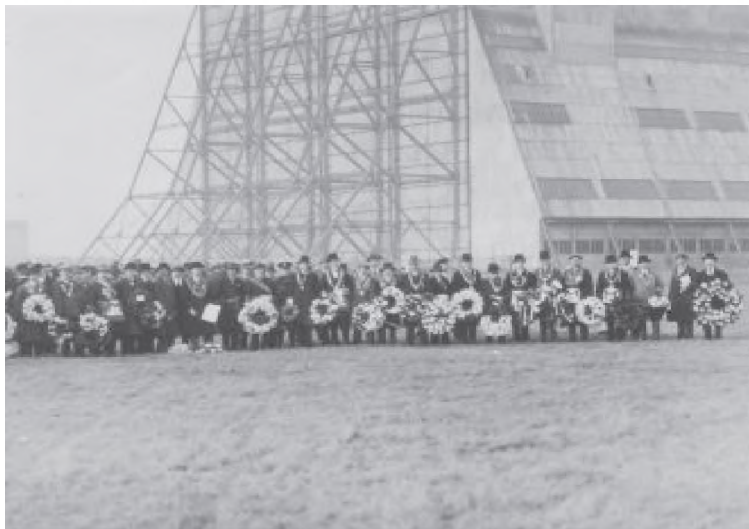
Bro. Bennitt went on to speak of how they had come together to show comradeship in the suffering caused by the sudden tragedy. There was no curiosity about their gathering, but merely sympathy with the bereaved in this time of dark shadow. It was fitting they should do honour to the courage and devotion of their dead Brothers. Indeed the Order was honoured in them. In the disaster to the R101 the whole nation mourned, and it provided an example of the comradeship of suffering reminiscent of the Great War. There were different ways of making a memorial. It need not be only of stone; it might be invisible, in the thought and feeling of men and women, a living memorial. The

disaster had stirred the nation's heart and no formal memorial would do. That which was real and sincere lay too deep for mere outward expression, and when we thought of deep things we turned to where deep things were, to God. We brought our feelings before God in prayer. The Christian faith was the one thing that had a message to man in the disaster and tragedy of human life; "Come unto me all ye that labour and are heavy laden, and I will give you rest". The material powers of man were widening, it was true, but that did not narrow the spiritual and moral heart of man, which was his true greatness. Man was great, greater than he knew, but that was because he was redeemed. And man must redeem the world and make it the Kingdom of God.

The last hymn was "Abide with me", and after a simple benediction and the singing of the National Anthem the great assembly filed out of the shed.

The procession to the cemetery

Back on the aerodrome the members of the Order formed up in procession. This was headed by representatives of the County Police Force, followed by



the Town Silver Band and stretcher bearers of the St. John Ambulance Brigade. The head of the Order's procession was taken by the chief officers, who were followed by the wreath bearers, Flanders poppies were much used in the wreaths. The long column was broken twice by other bands, the Bedford Military Band and the Bedford Trades Silver Band. The Buffaloes of Bedford marched behind the last.



This picture of the tomb was taken at the 80th Memorial Service held on Sunday 3rd October 2010 and is reproduced by kind permission of Mr. Tony Margiocchi

The procession came across the great meadow to the gate near Shortstown, down Tinker's Hill and along the lane to Cardington. Thousands saw it as it passed on its way to the great grave, and thousands more were waiting at Cardington. There the ceremony was simple and short, but impressive.

The relatives, the chief officers, and the wreath-bearers were the only people in the procession to be admitted to the cemetery, where members of the R.A.F. provided a guard of honour. The Burial Service of the Order was read, and wreaths were laid on the grave.

The chief officers dropped single ivy leaves upon the grave for remembrance and for brotherhood, and trumpeters of the R.A.F. sounded the "Last Post". The Bedford Town Band played the Dead March in "Saul", and the vast congregation joined in the singing of the hymn of the Order, "Spirit of truth, before we homeward wend." The ceremony concluded with the "Réveille".



This book would not be complete if I didn't include in it a report of the memorial service held at Cardington on Sunday 3rd October 2010 to commemorate the eightieth anniversary of the loss of His Majesty's Airship R101.

The 80th Memorial Service

It was an overcast drab day on Sunday 3rd October 2010 when members of the Royal Antediluvian Order of Buffaloes gathered at the Parish Church of St. Mary, Cardington to celebrate a Service of Thanksgiving and Remembrance on the 80th anniversary of the loss of His Majesty's Airship R101 near Beauvais, France on 5th October 1930.

Most of the members had met earlier at the local Public House for a little refreshment and a chat about the normal things that Buffs do when assembled in a large group.

The Service was scheduled to start at 3.00p.m. but we had to be in our seats in the church by 2.45p.m. So approaching the entrance to the church we were

greeted by the two Standard Bearers and some of the Royal Air Force Cadets, what a grand entrance they made for us, we were then directed to where the



RAOB had been allocated 20 seats. Having arrived at the church early we had time to look around and admire the various bits of history of the R101 and to mingle with other members of the congregation who were from

various walks of life, they ranged from members of the Royal British Legion, Air Force personnel, together with family and relatives of the crew of the R101.

The media were there in various forms, the BBC, Anglia TV and Three Counties Radio were amongst them to record the event which was organised by the Airship Heritage Trust. Photographers were there in various forms with all sorts of photographic equipment on view. When the Grand Primo Brother Hayden Bennett arrived he was interviewed by Three Counties Radio and after the ceremony he was interviewed by BBC Television, unfortunately none of the interviews were used.

At 3.00pm we all sat and awaited the procession of the church choir with Church and Civic Dignitaries, led in by the Standard Bearers of the Royal British Legion and Royal Air Force Cardington Air Cadets. Civic Dignitaries included Air Commodore Peter Ayee, CBE, DL, Deputy Lieutenant for Bedfordshire; Dave Hodgson, Mayor of Bedford; Mr. Paul Ross, Chairman of the Airship Heritage Trust and Group Captain Walcott representing RAF Henlow. The Bedford Diocese was



represented by the Right Reverend Richard Inwood, Bishop of Bedford.

Interviews over, the church, filled to capacity, began the service, we started with the opening hymn 'Rock of Ages', during which the Standards were received at the Altar. It is interesting to note that the first two hymns 'Rock of Ages' and 'Jesu Lover of my Soul' were sung at the Memorial Service at St. Pauls Cathedral on Friday 10th October 1930.

The Scripture reading was given by Air Commodore Peter Ayee and after the second hymn there was a reading by Paul Ross Chairman of the Airship Heritage Trust which was 'Departure' from 'To Ride the Storm' the author being Sir Peter G. Masefield.

The address which was centered on the hymns we had sung was given by The Right Reverend Richard Inwood, Bishop of Bedford.

Prayers were given and other hymns were sung during which a collection was taken to defray the cost of this service and to support the work of The Airship Heritage Trust.

There followed an Act of Remembrance wherein two Cadets of 134 Bedford Squadron, Air Training Corps read out the names of those who died on that tragic flight.

The Last Post was sounded by an R.A.F. Trumpeter with the Exhortation read by William Gardener, Branch President of Cotton End and District Branch of the Royal British Legion;

*They shall not grow old, as we that are left grow old
Age shall not weary them, nor the years condemn
At the going down of the sun and in the morning
We will remember them.*

The RAF Trumpeter then finished his part with 'Reveille' and two verses of the National Anthem were sung, after which we had the Blessing and sung the last hymn, 'Eternal Father Strong to Save'.

All in all a very moving Service with everyone joining in with the singing and the prayers, during the service we could hear thunder outside and an announcement was made that if the weather had turned for the worse the wreath laying would take place in the church rather than at the graveyard which was some 300 yards down the road.

We emerged from the church to a glorious afternoon, the weather had cleared giving us plenty of sunshine and blue skies. The RAF Cadets formed up and led the march to the cemetery where the congregation gathered around the tomb of the R101 victims. The Buffs were given the front row surrounding the tomb and the service was conducted by the clergy, after which, with everyone still



surrounding the tomb the Bedford and District Funeral Marshal Bro. Bert Shipp ROH DPGP gave a rather impressive RAOB Funeral Service culminating with the



broken link and the singing of the Absent Brethren Hymn.

The wreath laying then proceeded with many wreaths being

laid including one by the Grand Primo and others from the Bedford Province. An impressive sight by the members of the Royal Antediluvian Order of Buffaloes giving maximum exposure of the Order to the public.

After the wreath laying ceremony, those who had tickets were invited to the Village Hall for light refreshments, several of our members went along to have a cup of tea and a chat, once again giving excellent publicity to the Order.

Another very good day for the Order while not forgetting what we were there for, it is interesting to note however that two of the hymns that were sung were those that had been sung at the original RAOB Funeral Service held in the number two shed at Cardington on Sunday 16th November 1930, being 'Eternal Father Strong to Save' and 'Abide with Me'.

Another interesting fact was that the number of RAOB members attending this particular service equalled the estimated number of our members who were on that fateful flight, that number being 27, also the Minister who conducted the first Memorial Service in 1930 was Bro. The Reverend F. W. Bennitt, the spelling is different but the pronunciation is the same as our Grand Primo.

Those that I recalled as being at the service were (in no particular order):

Bro. Hayden Bennett ROH Grand Primo
Bro. Terry Billingham ROH Deputy Grand Primo
Bro. Bob Gale ROH Grand Registrar
Bro. Tim Henshaw ROH Grand Alderman of Juniper
Bro. Chris McMahon ROH Grand Primo 2002, Grand Secretary
Bro. Norman York ROH Grand Primo 2004, Grand Treasurer
Bro. Mick Walker ROH Grand Primo 2006
Bro. Keith Illingworth ROH Grand Chamberlain 2002
Bro. Cliff Payne ROH Grand Chamberlain 1999
Bro. Tony Allen ROH Grand Chamberlain 1996
Bro. Bill Hall ROH Grand Constable 1995
Bro. Phil Sharman ROH Lowestoft
Bro. Colin Newman ROH Lowestoft

Bro. Chris Buckle ROH P.G. Secretary Bedford
Bro. Graham Shipp ROH PGP Bedford
Bro. Bert Shipp ROH DPGP & Funeral Marshal Bedford
Bro. Dave Walker ROH IPPGP Bedford
Bro. Pete Young ROH Bedford
Bro. Charles Dillingham ROH Bedford
Bro. Herman Mittelstaedt ROH Bedford
Bro. Les Brown ROH Bedford
Bro. John Harris CP Bedford
Bro. Jim Barr ROH (standing in as Church Warden) Bedford
Other members of the Order were represented and should receive recognition but alas, I do not have their names.

This very moving Service of Thanksgiving and Remembrance is an event that was well worth attending, I'm sure other members who were there will give their own account of the proceedings but for me it was an experience that I shall never forget.

REST IN PEACE BROTHERS



That then ends the story as far as this booklet is concerned. Much has been related in other books by various authors and some has been captured on film, most of it by British Pathe News.

Bro. Stan Stirman the R.A.O.B., G.L.E Museum Curator has collected much information and pictures since researching the history of the members of the Order who were involved, either in working on the airship or who died in the tragedy. His work is displayed in the museum at Grove House and has been graphically recorded in a folder which can be viewed by any visitor to the same.

I finish with a few more pictures, some of which were taken at the 80th Memorial Service and some which try to show the enormous size of the R101 and a few of the survivors who were members of the Order, unfortunately I cannot incorporate all of the pictures in my possession into this particular booklet due to retaining a sensible size, however, I do recommend reading some of the other books which have much historical content and pictures, I am sure that Bro. Chris Buckle of the Bedfordshire Province will point you in the right direction for the purchase of the said books.

I can only hope that you have enjoyed reading this book as much as the enjoyment I received in writing and compiling it, it was, to say the least, an interesting adventure into research of one of the most famous of all airships of the time.





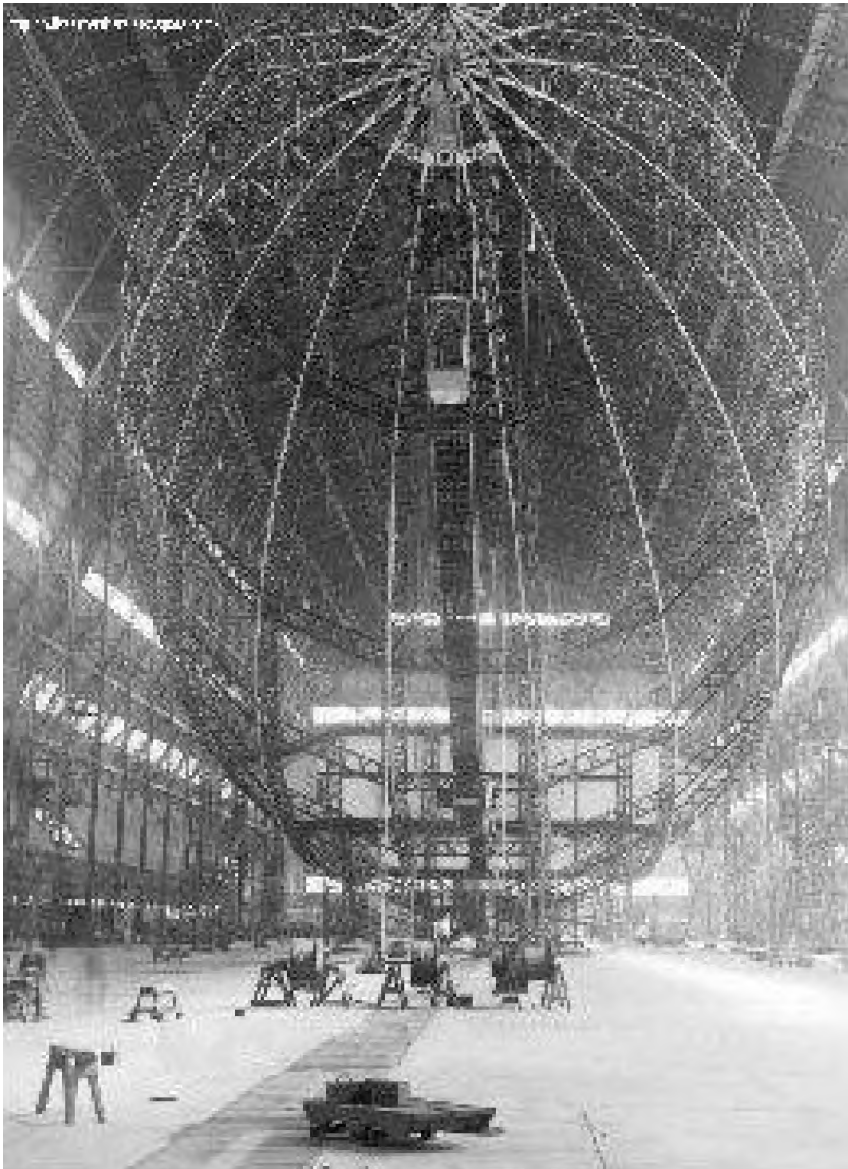
The Standards being presented at the Altar

The Royal Air Force Trumpeter

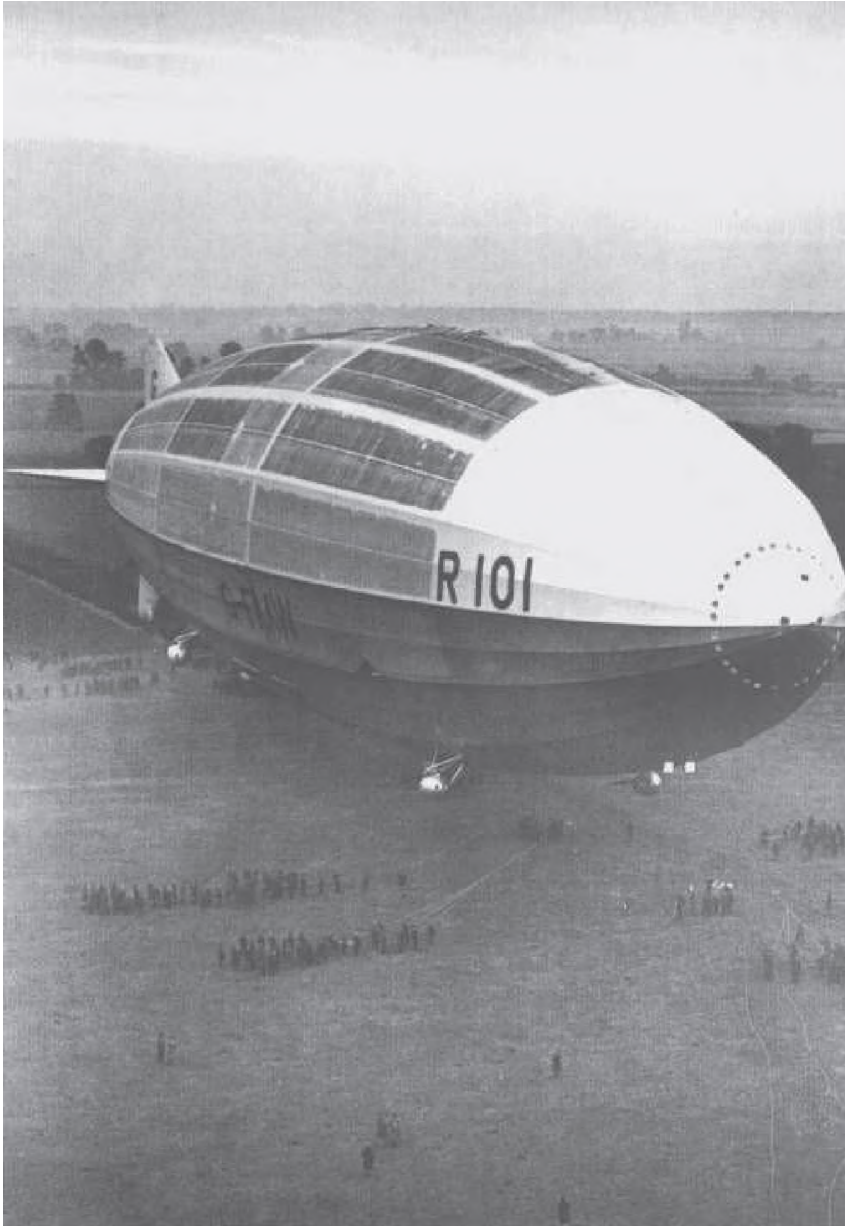


The Bishop of Bedford giving his address

Construction of the R101



Out of the shed but not yet complete





AT THE HOSPITAL.—The eight survivors escaped because they were in a back cabin of the airship when the crash occurred. Two of the survivors outside the hospital at Beauvais.



Mourners lining the route



2 Survivors, Ginger Bell and Joe Binks at the 1969 memorial service



The survivors in hospital



Brig. J. H. Binks and A. V. Bell, survivors of the R 101 Disaster, playing cards at our Convalescent Home, "Rose Vale," Brighton. Matron is interested in the game.



part of the museum exhibition (top centre is part of one of the propellers)



the scorched ensign, used on the altar at the service in St. Pauls

The following 2 photographs by kind permission of Tony Margiocchi who gave his services freely for the cause and continued remembrance of those who lost their lives in the R101 disaster.



*Memorial Service Third October 2010
Showing members of the R.A.O.B., G.L.E. in solemn tribute gathered around the tomb*



*Memorial Service Third October 2010
The Grand Primo 2010 Brother Hayden Bennett R.O.H. together with members of the Bedfordshire Province ready to lay their wreaths.*

Also available in the Museum Collection series

- No.1 General Laws of the Royal Antediluvian Order of Buffaloes.
- No.2 Minutes and Proceedings of the Finance Committee August 1895.
- No.3 Culshaws Story of the Royal Antediluvian Order of Buffaloes.
- No.4 Claims and Fantasy Part One.
- No.5 Minutes of the first meeting of the Grand Primo Lodge of England.
- No.6 Changi Prisoner of War Lodge No.1.
- No.7 Abridged History of Grove House.
- No.8 Ceremony and Chorus.
- No.9 World War One Ambulances.
- No.10 The Nine Lectures.
- No.11 Dowlings Origin of the Royal Antediluvian Order of Buffaloes.
- No.12 The Royal Lights.
- No.13 The Mystic Ring.
- No.14 The Old Ritual.
- No.15 League of Light.
- No.16 The York Weston Super Mare.
- No.17 The Seminars.
- No.18 Benevolence.
- No.19 Peter the Hermit.
- No.20 Light.
- No.21 Gradus
- No.22 Mystic Buffaloism
- No.23 Symbology

Copies of these and other publications by the Royal Antediluvian Order of Buffaloes Grand Lodge of England can be obtained from the Grand Secretary, Grove House, Skipton Road, Harrogate, North Yorkshire, HG1 4LA