

# DIRIGIBLE

THE JOURNAL OF THE AIRSHIP MUSEUM

Published by Friends Of Cardington Airship Station April - June 1989 ■ No1

## Welcome

to the first issue of DIRIGIBLE, the journal of The Airship Museum, published by Friends of Cardington Airship Station. This is the successor to the Bulletin, and will be published quarterly and distributed free to all members and associate members of FOCAS and, because of our close associations, to the Friends of the British Balloon Museum and Library.

DIRIGIBLE serves a twofold function: Firstly, to inform and report on FOCAS's activities - in particular progress with the airship museum - and secondly, to fulfil our aim to "promote the study of the history of airships in *every aspect*, and to present the results of such study to the public." DIRIGIBLE will not report on current airship development generally, as this is already expertly carried out by the Airship Association's journal, neither will its contents be confined to Cardington history alone. However, we will be including brief updates on current airship activities at Cardington itself.

To start us off, the main feature in this issue is an evocative personal account of a boy's life in the age of the great giants. Other experts will be contributing to future issues and we also invite all members to submit their contributions and comments for publication.

## DIRIGIBLE

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Registered office: 4 Goldington Rd,  
Bedford MK40 3NF  
Registered in  
England:  
No 2104681

Design &  
production by  
Designworks

## WHAT IS FOCAS?

When the Royal Airship Works was finally wound up in 1936, L A Speed, who had been a member of the Drawing Office staff engaged on the 1924 airship programme, had the foresight to salvage and store a collection of archives and artifacts which he considered to be of historical value. This formed the basis of a small airship museum at Cardington after the war, which came to be very well known under the voluntary management of Frank Kiernan in the 1970s. Shortly after his retirement from the civil service in 1981 his parent unit at Cardington was closed down and the collection crated and moved to the RAE Bedford for storage until a permanent home could be found for it.

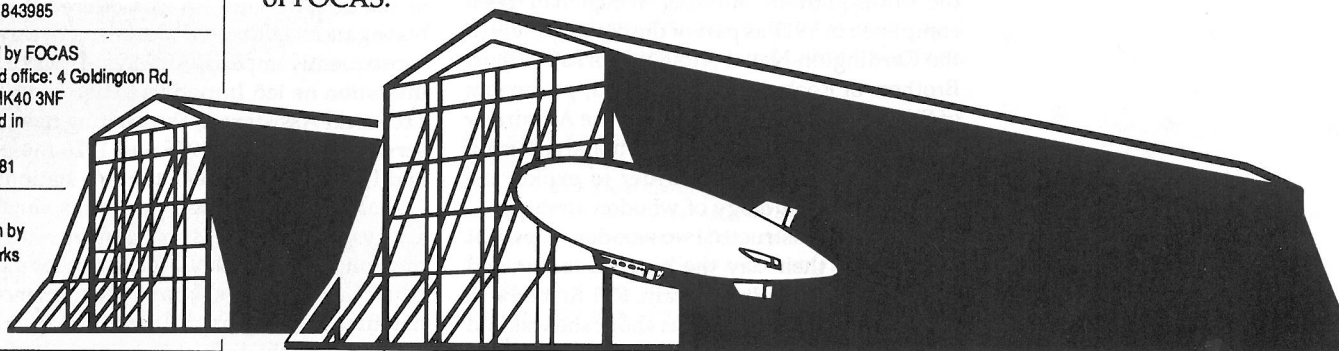
The late Geoffrey Chamberlain, author of *Airships - Cardington* became very concerned about the integrity of this collection, and in 1985 he called a meeting of a few airship enthusiasts, to discuss what could be done to keep the Cardington Collection in one piece and bring it back into public view. Almost entirely as the result of his efforts and enthusiasm, sufficient backing was acquired to set up in 1986 a steering group "Friends of Cardington Airship Station" to work out a plan of campaign for the reformation of an airship museum at Cardington. Again, almost single-handedly Geoffrey set out the bones of a policy and programme before his untimely death in April 1986.

FOCAS was incorporated as a registered charity and company limited by guarantee in the spring of 1987; its founding subscribers included L A Speed and F Kiernan, otherwise they were mainly people whose parents had been associated with the great airship programme of 1924-31 who felt keenly that it was desirable to create a national museum commemorating the work of the airship pioneers.

■ The objects of FOCAS are to foster and promote the study of the history of airships in every aspect, and to present the results of such study to the public, and to stimulate public interest in the role of Cardington as an airship base and in the conservation of the principal buildings thereof, and in particular to promote and assist in the formation and operation of a museum and study centre devoted to the airship.

Full Membership of FOCAS is limited to persons who, having a particular interest in or knowledge of airships, are approved by the governing Council, the Trustees, who are elected by the Members from among their number. There is also provision for Associate Membership, which is open to the public generally.

From an early date, FOCAS was able to enjoy a close relationship with the RAF Museum to whom it is grateful for a great deal of advisory support. A senior member of its staff is one of the Trustees of FOCAS.





# A Ship's Boy

*A personal history  
of Cardington  
Airship Station  
by E A Johnston*

Cardington alone of those rigid airship stations constructed during the 1914-18 war still remains in being, not only relatively unchanged from its early days, but also the proud home of modern airship technology and operations.

My earliest recollection of the Royal Airship Works as it came to be called after 1920, was the sight of my father emptying his pockets of smoking materials and matches and handing them to the watchman at the little gatehouse alongside the vast airship shed, some time in the winter of 1924-25. The watchman solemnly asked me, aged all of seven, whether I too had any matches or cigarettes.

A few minutes after this invariable routine in the age of hydrogen ships, I beheld a rigid airship for the first time. It was R33 which, slung from the roof of the shed for some three years under care and maintenance, was being rehabilitated for the experimental flight programme associated with the development of R100 and R101. I was rather disappointed; with much of her outer cover removed and the gasbags taken out, her bare lattice structure might just as well have been a suspension bridge for all it meant to me.

We lived then in Shortstown, just opposite the Headquarters Building which had been completed in 1917 as part of the development of the Cardington Naval Airship Works by Short Brothers of Rochester and Bedford, precursors of Shorts of Belfast. Early in 1916 the Admiralty commissioned them to build the massive airship factory at Cardington, in order to exploit the Shute-Lanz technology of wooden airships.

Shorts constructed two wooden ships, R31 and R32, in their day the biggest, fastest and most advanced built in Britain. R31 first flew in August 1918, but her life was short; she was laid up for the winter in the shed at Howden where

her wooden hull was damaged irreparably by rain coming through the fire damaged roof. R32 had a brief career, mainly training the original rigid airship personnel of the U.S. Navy, before the RAF terminated its airship in 1921.

A joint Admiralty-Shorts design team was next responsible for the construction of R37 and R38 to very high performance specifications for work with the Fleet, but with the end of the war the former went uncompleted and was eventually broken up in the shed in 1924. R38 was sold to the U.S. Navy, but her too light structure failed and she broke up over the Humber in 1921. After this all airship work was terminated; R33 and the uncompleted R37 were laid up at Cardington with R36, R80 and the surrendered Zeppelin L-71 at Pulham.

In April 1920, the whole Cardington establishment had been taken over by the Air Ministry and renamed "The Royal Airship Works". And following the Government's decision in 1924 to institute a major development programme to serve the Imperial air routes, plans were laid to centre development, construction and operations there, using Pulham as a subsidiary for flying operations while the second shed and new mooring mast were being erected. My father, descendant of a long line of Master Mariners and a certified Master himself, had gone into naval airships in 1916, then back to sea in 1921 until he was offered the job of Navigation Officer of Daimler Airways and subsequently Imperial Airways. At Major Scott's invitation he left Imperials to become Scottie's Technical Assistant in the exciting new airship service, and during 1925 and 1926 my parents and I oscillated between the two stations.

My father treated me as his ship's boy, always at his heels to run messages or, metaphorically, to hold the longboat's painter while he ran ashore. I have vivid memories of habitually clambering all over the bare frame of R33 in the early days at Cardington before she



was reconditioned, and also, at Pulham R36, which was kept on until 1927 as backup to R33 for pioneering the route to Egypt - a programme that was scrapped for lack of funds, with disastrous results. There was a special sort of springiness in the catwalk along the keels which was wholly missing in the more solid later ships. The climb up to the "crow's nest" in the tail was gentle, but the steep approach up the bluff of the nose to the mooring platform was somewhat alarming to a kid of seven. R33, perhaps because I knew every nook and cranny in her, was my favourite ship by which I judged all others.

The great mooring mast at Cardington, the prototype for others at Montreal, Ismailia and Karachi, was commissioned in October 1926 by the visiting R33 on her penultimate flight. This cantilevered mast was an impressive improvement over the guyed lattice pole mast at Pulham where you had to climb nearly 100 feet of vertical ladder to reach the narrow platform. At Cardington you had not only a passenger lift with a man operating it, but for the pleasure of a child a grand stairway going up almost 200 feet. The count of the number of steps differed each time I went up or down. At the top, surrounded by the control platform with its winching controls, was a great dome containing the massive mooring post with three-dimensional movement, largely the fruits of Scottie's inventive brain.

The erection of R101 took two years, during which I got to know her from stem to stern. The first and most lasting impression was of the complete test bay, fully rigged with Roney's magic suspension system and inflated with its gasbag, at the west end of No.1 shed in 1927. The unbraced deep-framed rings with the large fuel tanks in groups of four contained within them were a novel sight in comparison with the slender latticework of R33 and R36.

During the autumn of 1929 I went with my father to Howden and scrambled over the hull of R100 for the first time, noting keenly the difference between the two ships. R100 did not have a "crow's nest" in her tail, which I thought was a big mistake, as it was a claustrophobic climb up the ladder between the gasbags to reach my father's cockpit up on the top of the ship where he went to use his sextant. By comparison with the palatial lounge, dining room and promenade decks of R101, the passenger accommodation of R100 seemed to me to be stingy. The apparently simple girder

construction of her bare hull lacked the grandeur of R101's deep frames, but the control car seemed to me to be of a much more sensible size and shape than the overcrowded tiddler on R101. The elevator and rudder wheels in R101 were small; in R100 they would have graced a Tea Clipper.

At dawn on 12 October 1929 the whole airship community turned out onto the airfield to watch R101 being walked out of her shed for the first time. By comparison R100, almost it seemed without notice, simply appeared in the sky over Bedford one gloriously sunny, crisp December day. She had a lean and hungry look, whilst R101 before her lengthening looked somewhat corpulent. A few days later we all turned out - and half the County too - to watch the Graf Zeppelin arrive in a wide, low sweep over the hills to the south and turn onto a westerly final approach, gradually descending and reducing speed to make a feather-light touchdown in the middle of the landing ground. It was an astonishing piece of professionalism.

Cardington reached its peak of activity in 1930, not only with flying operations by both ships but also with the enlargement of R101, preparation for a similar enlargement of R100, and detailed planning and costing of an ambitious programme to construct four even larger airships. In the middle of a beautifully clear night at the end of July we turned out to watch R100 set off for Canada, and when she returned full of glory from her successful trans-Atlantic flight the future of airships seemed assured. We all watched R101 leave the mast somewhat laboriously on that dismal evening of 4 October, bound for India. At 6am the following morning I opened the door to Squadron Leader Nixon and Mrs Uren who had come to inform my mother that the ship had crashed at Allonne, killing my Father and 47 of his colleagues. The State Funeral in our little parish churchyard took place a year, all but a day, from the launch of R101 and was in effect the end of my personal involvement with airships, which had started with my birth on the Naval Airship Station at Luce Bay in 1918.

The great airship endeavour was over; the programme was cancelled and R100 was ignominiously broken up. Cardington went into hibernation until 1936, when it became a RAF Station with the dual function of training barrage balloon operators and basic recruit training. The title Royal Airship Works was abandoned in 1938; the Balloon Development Establishment took its place, and balloon work continued in one form or another until 1984. In the 1970s there was a strong resurgence of interest in airships culminating in the construction of the non-rigid AD500 and the formation of Airship Industries.

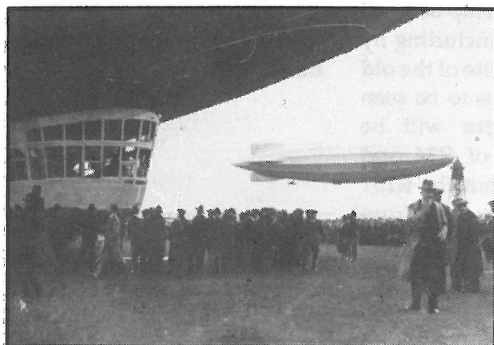
*"We all watched R101 leave the mast somewhat laboriously on that dismal evening of 4 October, bound for India."*

Top left : Contemporary postcard of R101, riding at the mast, 1929.

Bottom left : Graf Zeppelin at Cardington with R100, in the background.



As well as at Cardington, mooring masts were also constructed at Montreal, Ismailia and Karachi (above).



*One day, I happened quite by chance to meet a man who introduced himself to me as Geoffrey Chamberlain. He had written a book about Cardington, he told me, and he had a vision that included a great national airship museum there, and the preservation of some of the more important buildings. Out of this vision FOCAS was born shortly before his death, and because of him my connection with Cardington was renewed more than fifty years after I thought I had left it forever.*

Pulham airship station was established in 1916 as one of an east coast chain to protect allied shipping lanes from submarines. All were sited beyond range of possible bombardment from German warships, and initially received non-rigid SS ships and the larger *Coastals*. Following the loss of two of Pulham's *Coastals*, C17 and C27, to German floatplanes this sector was handed over to aeroplanes. Pulham became a staging post for ships enroute between Kingsnorth (Kent) and the more northerly stations, whilst it awaited delivery of the longer range rigids.

Pulham's first c/o was the redoubtable General Maitland, who as early as 1908, had taken part in a balloon flight of 1,000 miles which had ended in Russia!

Pulham's "rigid" sheds were both erected from huge timber stagings running on two standard gauge railways 35ft apart.

A 120ft mooring mast (originally built by Vickers for their own use at Barrow) was then erected and became the focus of mooring experiments. Haulage for the steel mooring cable was provided by a Fowler Steam Ploughing engine. Mooring to an alternative three-wire system was also developed at

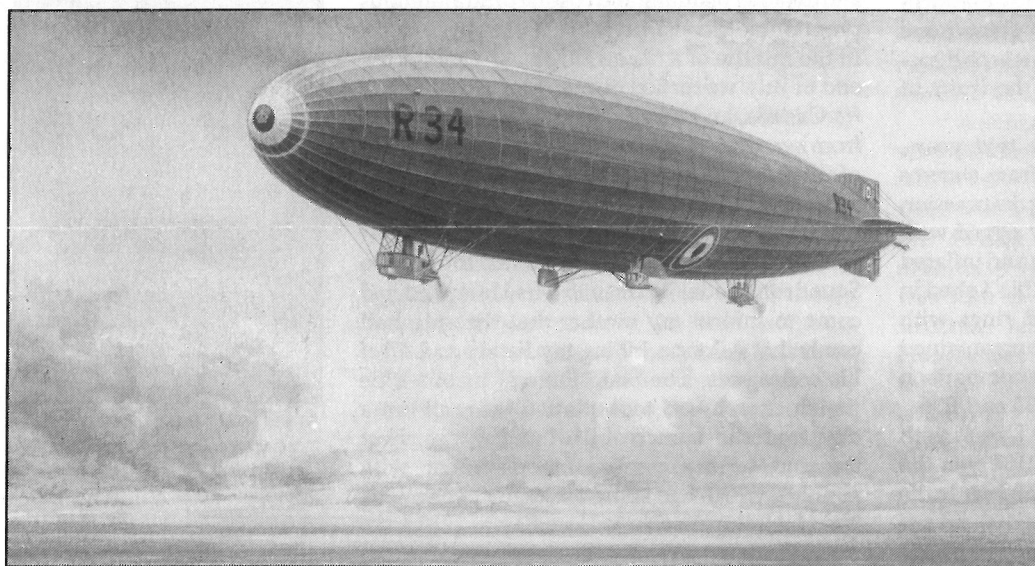
Pulham, as was a single-wire system using a dumping drogue attached to a buoy moored in The Wash. The much-loved No 9, and the later No 23, featured in those experiments whilst the latter became the first airship to carry and launch aeroplanes.

When the Zeppelin L33 came down at Little Wigborough in Essex, Maitland established himself there directing a team of experts to record her every detail. From that work R33 and R34 were constructed, although just too late to see wartime service. Thereafter, as Britain's postwar Airship Experimental Establishment, under Major G H Scott, much work was carried out with the R33 and the R36 towards obtaining data for the Imperial Airship Programme. On 13 July 1919, R34 returning from her double crossing of the Atlantic, went to Pulham in case cross-winds prevented her being shedded. In 1921, the ill-fated R38 had also been due to moor there.

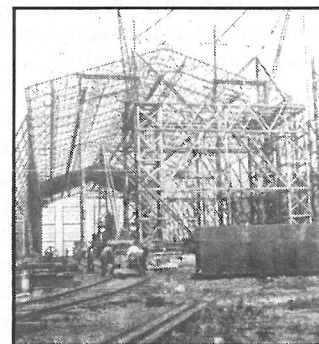
In 1928, Pulham's No 2 shed was moved to Cardington and in 1939, Pulham's Steam-Iron hydrogen plant was also transferred there, whilst her No 1 shed became an ammunition depot. Slightly damaged by the Luftwaffe, it was finally demolished in 1948, and is now farmland.

## Pulham Celebrates

*To mark the 70th Anniversary of the historic double crossing of the Atlantic by R34 in 1919, Pulham hosts its own Airship Festival in July. Norman B Peake outlines Pulham's role in the history of British airships, and previews some of the festival's attractions.*



Left : R34 over the Atlantic. Watercolour by aviation artist Gordon F Wright.



Above : No 2 shed at Pulham during construction. The timber construction platform on rail tracks, the steam cranes, and the 3,000 gallon water tank which supplied the water ballast for the ships, are all visible in this computer enhanced photograph. This shed is now at Cardington.

### Airship Museum landmark

FOCAS is pleased to announce an important landmark in the establishing of **The Airship Museum**: A site, with views of Cardington's historic sheds, has now been obtained. And with the funds for construction, already made available, it is intended that building work should start soon with the aim of opening phase one some time next year.

Plans are now being laid to launch a campaign to raise the further funding needed to build upon this significant first step. One part is the introduction of the **Associate Membership** scheme. Anyone with an interest in airships is invited to join. (Application forms may be obtained from: Norman Pritchard, 75 Albany Road, Old Windsor, Berks SL4 2QD).

### Pulham Airship Festival 13-16 July

To mark the 70th anniversary of R34's historic achievement, an Airship Festival is being staged in the grounds of Rainthorpe Hall just three miles south of Norwich and six miles to the north of the Pulham site. Several thermal airships and the Virgin Atlantic Challenger balloon will be present, and it is hoped that Skyship 600 will also make an appearance. Flights, including by helicopter, will take place over the site of the old airship station where much remains to be seen from the air. At Pulham itself there will be photographs, a scale model of R34 and memorabilia including a girder from the R101 fabricated in Norwich and recovered from Beauvais. Other events include vintage cars, Brough Superior motorcycles, a Grand Ball with period uniforms and civilian dress, and dedication of a plaque commemorating R34.

FOCAS's presence at the festival will be in the form of a small exhibition with many of our members on hand to discuss the plans for the airship museum project and to encourage further membership recruitment to our cause.

*What's in a name? – DIRIGIBLE : a steerable, navigable balloon.*