

# DIRIGIBLE

THE JOURNAL OF THE AIRSHIP MUSEUM

Published by Friends of Cardington Airship Station

No. 6 April—June 1991

## OUTLINE PLANNING PERMISSION GRANTED!

*RIGHT: This aerial view gives a good perspective of the airfield. The FOCAS site is the light rectangular area 'above and to the right' of the sheds.*

*BELOW: Announcement of the decision on the front page of the Bedford Times.*



## IT'S LIFT-OFF FOR AIRSHIP MUSEUM

**PLANS for a £1 million international airship museum at Cardington have been given the go-ahead despite North Beds Council attempting to keep the project grounded.**

Her Majesty's inspectorate has overturned the Bedford planning com-

By ALEX FINKENRATH

mittee decision of last January to refuse outline planning permission for the museum at land off Southill Road. Now the project organisers are ready to get to work as soon as possible and will be meeting North Beds chief planner David Edgely on Monday to discuss ideas.

The application was made by the Friends Of Cardington Airship Station who have received massive financial backing to get the project started.

Executive secretary of FOCAS Peter Garth said: "We were surprised and upset when our original plans were rejected by North Beds Council but stuck with it to fight the appeal."

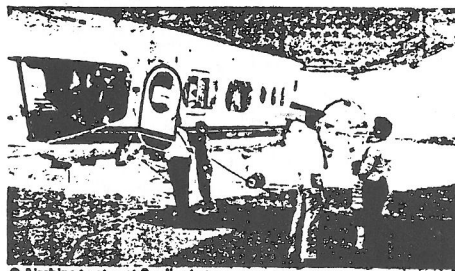
"We feel Cardington is the only place for the museum because of the historical significance."

FOCAS is attempting to maintain Cardington as an airship centre with the museum which will include everything to do with 'lighter-than-air' travel and craft.

The original application was turned down because planning bosses felt the museum would detract from the surrounding landscape, would cause traffic problems and would not be in line with the local plan.

But a Government planning inspector overturned the decision and said Cardington has strong historical associations with airships making it a logical location for the museum.

A spokesman for North Beds Council said: "We were not against having a museum, but did not think the land off Southill Road was appropriate."



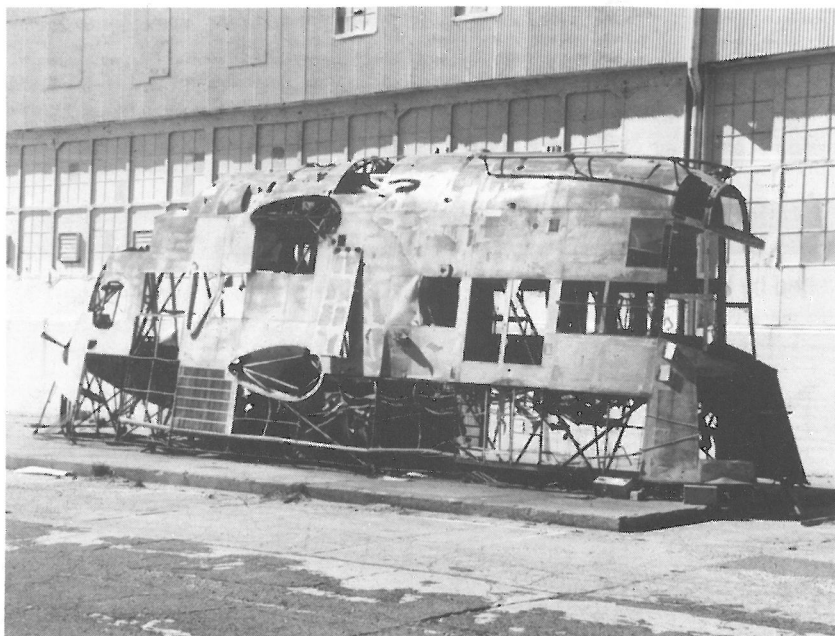
© Airships to stay at Cardington.

Our efforts to establish an Airship Museum at Cardington received a welcome boost during February with the granting of outline planning permission. Granting of permission, by Her Majesty's Inspectorate reverses the original decision of North Bedfordshire Council and agrees to the principle of a museum on our six acre site adjacent to the airfield. The next step will be to finalise the outlay of the museum and necessary services before applying for final detailed permission. We look forward to keeping members abreast of progress.

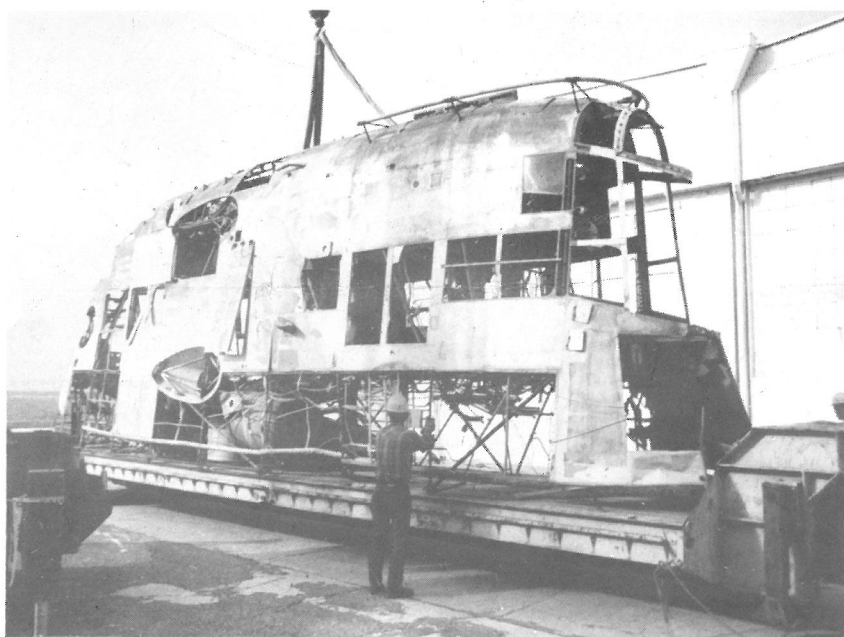
### From the Editor . . .

The past few months have seen FOCAS take a number of major steps forward, bringing the museum that much closer. To those not associated with the day to day workings of the council it might well have appeared as a period of inactivity. Hopefully the reports of progress in this and forthcoming editions of 'Dirigible' will give members some idea of just how

much is happening 'behind the scenes'. As the museum project gathers momentum even more effort will be required and we will need to spread our resources into new areas. Offers of assistance, in any form, are always welcomed by the council. By undertaking much of the work ourselves cost can be kept to a minimum and we bring closer the day we can open our doors. I look forward to hearing from you!



**ABOVE:** The Gondola upside down at its storage site. The open areas-at top (bottom as shown here) were originally fabric covered.  
**BELOW:** Being hoisted onto a trailer by crane so work can begin.

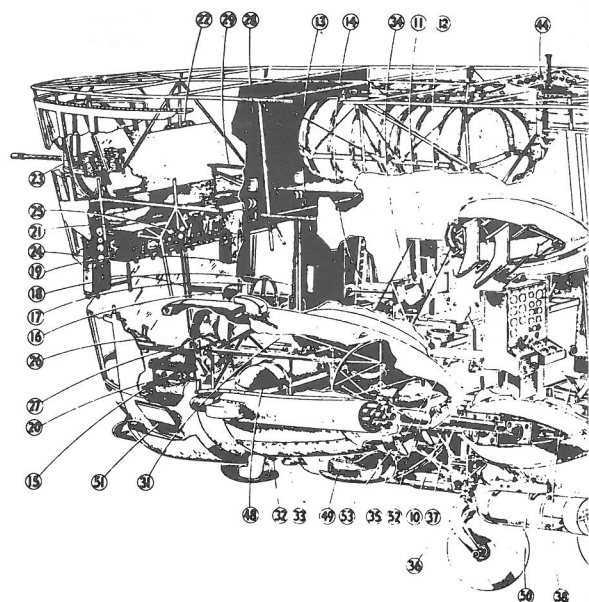


The gondola from K88 arrived in England on March 13 following shipment from the National Museum of Naval Aviation (N.M.N.A.), Pensacola, Florida. Associate member Jonathan Bell and myself travelled to Pensacola mid February to prepare the gondola for shipment and oversee the initial loading operation.

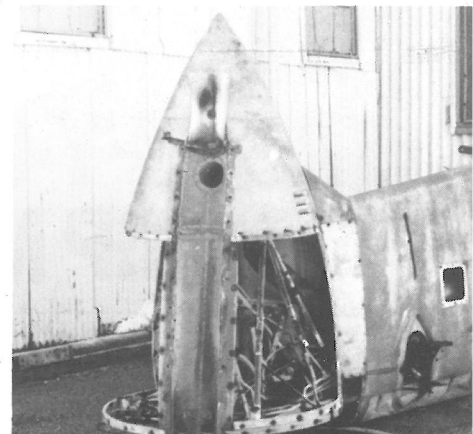
The gondola was built by Goodyear in Akron, Ohio and shipped to Lakehurst on 20 August 1943. The original envelope was fabricated by the Dunlop Rubber Co. in Buffalo, New York under a sub-contract. The gondola was given the number 33480 by the U.S. Navy. She served with Airship Patrol Squadron 41 (ZP 41) based at Forteleza, Brazil begining operations in November 1943. While there she adopted the nickname "88 Keys". From 1946 to 47 she was based at Glynco, Georgia and finally served with Airship Experimental 11 (ZX 11) based at Key West, Florida.

The N.M.N.A. originally purchased the gondolas

## K88: CARDIN



Cutaway drawing of car of the K Airship. (1) Entrance la (5) Fabric ceiling; (6) Bunks; (7) Auxiliary powerplants; (11) Radio operator's station; (12) Bomb-bay door cor releases; (16) Rudder control capstan; (17) Rudder control instrument panel; (20) Bombardier's station; (21) Gunner (24) Flight instrument panel; (25) Pilot's instrument panel with brake; (28) Elevator control cables; (29) Control (31) Navigator's station; (32) Landing light; (33) Car r Landing gear; (37) Battery installation; (38) Mechanic's Handling rail; (42) Fuel fixed tanks; (43) Inlet damper discharge louvres; (46) Air to helium inlet, emergency; (50) External bomb racks; (51) Yaw line box; (52) Engine

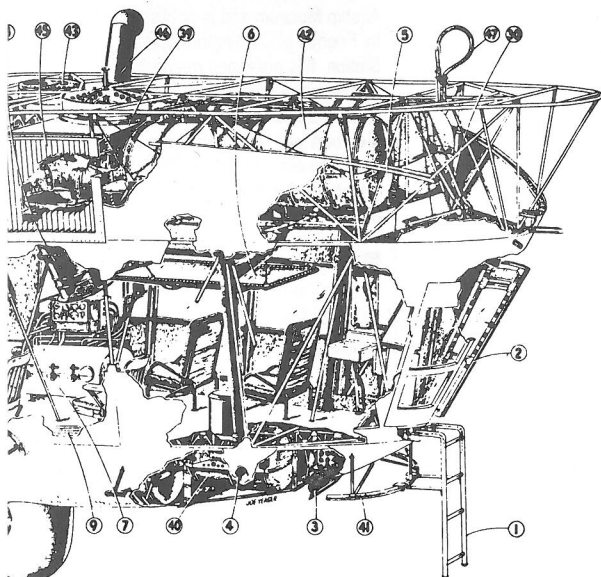


belonging to K88 and K47 from a New Jersey scrapyard in 1988. They were the best of six 'K cars' which had sat, upside-down in a swamp, in the yard for more than thirty years. Initially K88 was condemned to the fate of providing a supply of spare parts for the restoration of K 47. Luckily there proved little to choose between the two and '88' is largely intact. Some items such as engines, seats and instrumentation are missing but hopefully these will be available from other sources.

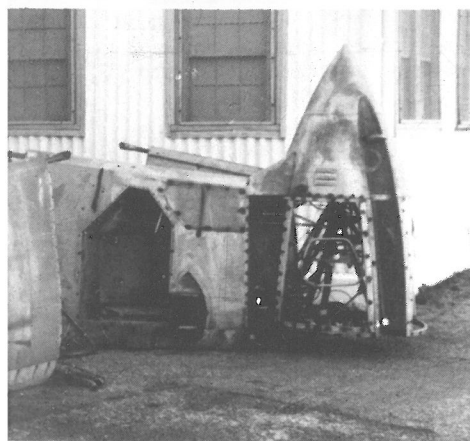
For the journey to England the gondola was transported upside-down. However prior to this it was necessary to remove the upper section of the car. Years of exposure to the swamp water had corroded the top framework to such a degree it was doubtful it would withstand the rigors of the journey and had to be removed. To help facilitate the work the gondola was lifted by crane from its out door resting place onto a 40 foot trailer. The aluminium skin was removed from the framework where it was to be cut.



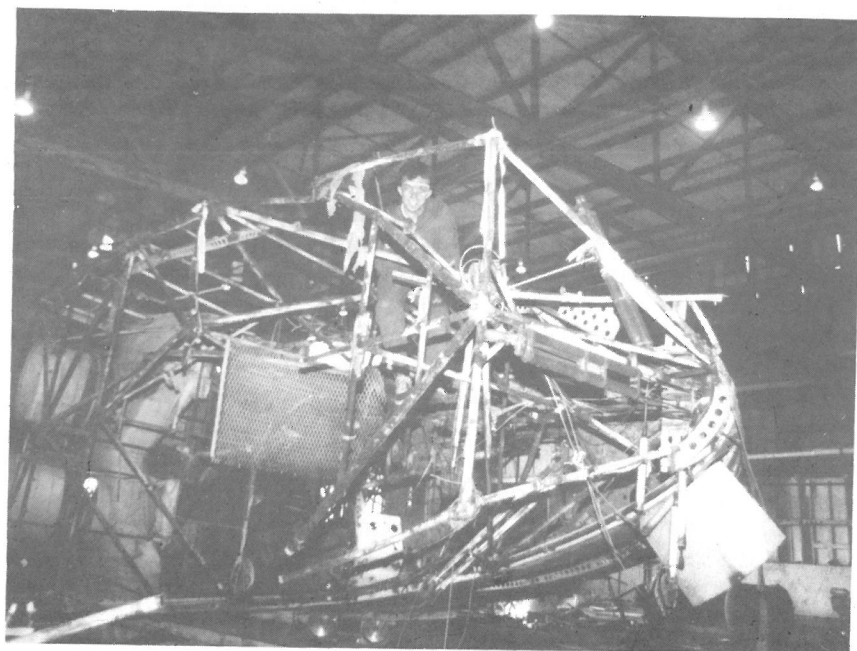
# PORTSMOUTH BOUND



1. Bomb bay door; (2) Aft doors; (3) Drag rope box; (4) Fuel pump duct; (5) Auxiliary blower; (6) Hot air register; (7) Hot air duct; (8) Control cable slack take-up; (9) Sliding door; (10) Emergency door; (11) Bomb bay door; (12) Bomb bay door; (13) Bomb bay door; (14) Bomb bay door; (15) Bomb bay door; (16) Bomb bay door; (17) Bomb bay door; (18) Bomb bay door; (19) Bomb bay door; (20) Bomb bay door; (21) Bomb bay door; (22) Bomb bay door; (23) Bomb bay door; (24) Bomb bay door; (25) Bomb bay door; (26) Bomb bay door; (27) Bomb bay door; (28) Bomb bay door; (29) Bomb bay door; (30) Bomb bay door; (31) Bomb bay door; (32) Bomb bay door; (33) Bomb bay door; (34) Bomb bay door; (35) Bomb bay door; (36) Bomb bay door; (37) Bomb bay door; (38) Bomb bay door; (39) Bomb bay door; (40) Bomb bay door; (41) Bomb bay door; (42) Bomb bay door; (43) Bomb bay door; (44) Bomb bay door; (45) Bomb bay door; (46) Bomb bay door; (47) Bomb bay door; (48) Bomb bay door; (49) Bomb bay door; (50) Bomb bay door; (51) Bomb bay door; (52) Bomb bay door; (53) Bomb bay door.



**LEFT:**  
The Engine  
Outriggers



**ABOVE:** Jonathan Bell preparing the upper framework for cutting and removal.

**BELOW:** The trailer used for the journey to Virginia is reversed into position under the Gondola.



Once this was completed the gondola was again lifted and with a second crane repositioned on its side on the trailer.

The entire setup was then moved into a nearby hanger.

The next task was to prepare the top section for removal. The amount of wiring, cables, pipes and other items which had to be removed was quite staggering. Once stripped the upper framework was cut and removed in sections, each one being carefully labelled. The fuel tanks, ballonnet ducting and air valves were removed as they became accessible. Some of the structure was surprisingly complex and proved quite a headache finding the best place to cut.

With the top section cleared wooden bracing was installed inside the gondola as a precaution and planks strapped transversely into position to act as feet. Finally ready to be transported the gondola was rolled outside and once more transferred by crane to

the trailer which would take it to Portsmouth, Virginia. From there a seven day sea voyage brought it to Liverpool.

To transport a 40 foot long, 41 year old gondola more than 5000 miles over land and sea is quite an accomplishment, one which would not have been possible without the efforts of many individuals. In particular I would like to acknowledge the generous help given by a number of people in Pensacola; Captain R. L. Rasmussen U.S. Navy (ret.), Director of the museum and the person who made it all possible. Bill Johnson and his crew for all their help. Lester Schnyder Jr., Lakehurst engineer, who answered our many questions. Commander Bob Duff U.S. Navy (Ret.), L.T.A. pilot and leader of the K47 restoration project and finally, but by no means least, Robert Macon, Deputy Director of the museum and without doubt the most american American I have ever met!

Paul A. Adams, *Editor*

# CORRESPONDENCE

From Mr. Donald E. Woodward, Editor AEROSTATION, San Diego, California

"I have taken a great interest in the narratives of his youth at Cardington by E.A. Johnston, but I believe I must take issue with two statements in "Richmond of R101". The first is his description of Paul Jaray as the designer of the later Zeppelins. Jaray was fine aerodynamicist and made valuable contributions to the streamlining of the later Zeppelins, but he had no interest or expertise in either air loads on the structure, or structural design. He left Luftschiffbau Zeppelin in the early 1920s as a result of running off to live in Switzerland with a colleague's wife! I have to admit this is all hearsay, told by Karl Arnstein (who was the designer of the later Zeppelins) to Dr. A.D. Topping, editor of *Buoyant Flight* and a co-worker with Arnstein at Goodyear.

The other statement is that "(R101's) structure weight was much the same as that of R100." In 1981, I was a member of the AIAA Technical Committee on LTA Systems, when we were asked to prepare an AIAA position paper of LTA through time and space, and I undertook a section on rigid airships, under the rubric "Lessons Learned: Classical Airships of the Past." In this, I took the quotient of structure weight by gas volume as an index of structural design success. Including all primary strength

members of the hull, but not fins or control surfaces, and using the nominal 100% volume, I found these values: R100, 300 g/cu.m. and R101, 316. When Sir Peter Masefield's *To Ride The Storm* was published, with authentic weights for the two airships, I had to revise my value for R100 down to 262, and that for R101 up to 317, i.e., 21% greater. The R101 value is based on its latest state, as initially flown, the value would be 335, or 28% greater than R101. The respective structural weights, as originally built, were 46,402 kg for R101 and 38,283 kg for R100, 17% less.

As a matter of interest, the weight/volume quotients for the other "classical" rigid airships in the paper were: LZ-126, 168; LZ-127, 214; LZ-129, 221; and ZRS-4/5, 191. The conclusion seems clear; the two British rigids were substantially heavier-framed than the others, and in particular R101 was much heavier than R100. The reason is certainly to be found in the crash of R38, which enjoined on British designers safety factors that precluded truly lightweight framing. Considering the three contemporary rigids of 1929, it is interesting that R101 was about as much heavier than R100, as R100 was heavier than LZ-127."

**DIRIGIBLE** is the journal of the Airship Museum and is published by Friends of Cardington Airship Station. It is published quarterly and distributed free to all members and associate members of FOCAS and, through our close associations, to the Friends of the British Balloon Museum and Library.

■ 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 members from among their number. There is also provision for Associate Membership, which is open to the public generally. Further information and application forms can be obtained from:

Norman Pritchard, Windsor Loft, 75 Albany Rd, Old Windsor, Berks SL4 2QD. Tel 0753-862977.

## DIRIGIBLE

Editor:  
Paul Adams  
41 Barnes Wallis Way  
Churchdown  
Glos  
GL3 2TR  
Tel: (0452) 856858

Published by  
FOCAS  
Registered Office:  
4 Goldington Rd,  
Bedford MK40 3NF  
Registered in England:  
No 2104681  
FOCAS is a  
registered charity

**LEFT:**  
*The AD500 Gondola  
at its outdoor  
'storage' site  
where it had sat  
for seven years.*

## SKYSHIPS

Bringing our growing collection of gondolas right up to date FOCAS has recently acquired the cars from the AD 500, the first of the skyships and SK 500-002. Along with the gondolas come a full set of fins and other items such as propeller ducts and helium valves. The next edition of 'Dirigible' will contain an in-depth account of the history, and future, of these important additions.

