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# *Adventures in Time*

Local Study Starter Pack  
Shortstown, Bedfordshire



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# **Teacher's Resource Booklet**

## **Including:**

- **Potted History of Shortstown**
- **Explanation of Images Used**
- **Reference List of Documents Available**
- **The R101**

**Produced by Bedfordshire and Luton  
Archives and Records Service  
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## **Introduction**

This teacher's booklet is intended to give some brief detail into the history of the area (based on material held at Bedfordshire and Luton Archives and Records Service), outline which primary sources are available to support local study and explain the images used in the Local Studies Starter Pack.

Lesson plans or activities are not included as it is expected that teachers will want to incorporate the pack into their own lessons in ways that best meet the needs of their pupils.

Further information, facsimile documents, digital copies and support with using the pack may be obtained by contacting the Archives Learning Support Officer at BLARS.

**Shortstown Timeline**

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**1916:** The site was chosen by the Admiralty for airship construction. The site contract was awarded to the Short Brothers who began work on the buildings and equipment in 1917, this included a factory, airship shed, hydrogen plant, foundry and rolling mill. The site was selected for building airships because it lay in a broad flat east-west valley without obstructions. The site was also within easy reach of London by train and beyond the range of German bombers then known to be based in Belgium. Short Brothers, after numerous difficulties with the Admiralty, terminated their association with them on the 1st April 1919. Shortstown had already been constructed by them in 1917 to house workers at the factory. The designs were in the then new 'Garden City' style and 151 houses had been built by June 1919. The original plan made provision for shops, church, cinema and hall in the centre but all that was built was a social club. Further houses were built some years later with little regard to the original style and layout. By 1917 the original Hanger No.1 had been constructed.

**1919:** The Air Ministry took over the site.

**1926-27:** Following the authorisation by the government to build the R101 Airship at Cardington the existing hanger was enlarged to house the airship.

**1928:** Hanger No.2 intended for the R100 Airship was brought from Pelham, Norfolk and re-erected in enlarged form. Each hanger covers about six acres and each has doors weighing about 500 tons.

**1930:** The R101 Airship crashes near Beauvais, France on its maiden flight to India with the loss of 46 lives on the 5th October. Following this disaster airship construction ceased.

**1938:** The RAF take over Cardington Airfield and it became a major training and recruitment centre, later becoming a demob centre.

**1939-45:** During the war the site was used in the development and manufacture of barrage balloons used as part of the air defences.

**1943:** The last piece of the airship mooring mast, originally intended as the centrepiece of 'Britain's Imperial Air Route Terminus' is cut down.

**1957:** Shortstown Primary School opens in December at a cost of 24,000 with accommodation for 160 children.

**1974:** The Building Research Establishment takes over the site and the hangers are used by the Fire Research Station, their enormous size making them ideal for the testing of alarm systems and fire spread in mocked up buildings.

**1990:** Shortstown's only shop the NAAFI in South Drive closes.

**1999:** The RAF announces that RAF Cardington is to close with the base shutting down in April 2000.

**2000:** The Ministry of Defence to move off the 70 acre site at RAF Cardington that it has owned for 83 years. (Bedfordshire on Sunday, 26th March)

**2001:** The former RAF Camp to become a housing estate. (Bedfordshire on Sunday, 15th July)

**2004:** Developers Bellway plan to build 1,000 new homes on the former RAF Cardington site. (Bedfordshire on Sunday, 6th August)

**2007:** On the 3rd September new 250,000 Health Care Centre opened. (Bedfordshire on Sunday, 26th August)

Sources:

- The newspapers cuttings collection at Bedford Central Library.
- WOOD, J. Cardington and Eastcotts. 1985.

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[http://virtual-library.culturalservices.net/webingres/bedfordshire/vlib/o.digitised\\_resources/shortstown\\_timeline.htm](http://virtual-library.culturalservices.net/webingres/bedfordshire/vlib/o.digitised_resources/shortstown_timeline.htm)

## **Potted History of Shortstown**

### ***Landscape***

Shortstown lies on a ridge above the River Great Ouse originally called Tinkers Hill. This ridge also overlooks the two other parts of the civil parish of Eastcotts – Harrowden to the north and Cotton End to the south. The airship sheds are around 130 feet above sea-level and the former RAF Administration Block higher at nearly 140 feet.

The solid or underlying geology is a mudstone called Oxford Clay Formation. This was laid down between 154 and 164 million years ago in the warm, shallow seas of the Jurassic Period. The northern part of the area has a superficial geology consisting of river terrace deposits of sand, gravel, clay and silt. A similar mixture, called head, lies in the southern part of the community.

### ***Administrative History***

Shortstown was only created from 1916 onwards. The land originally lay in the township of Eastcotts which was itself a part of the ancient parish of Cardington. Eastcotts became a separate civil parish in 1866. Thus Shortstown has always been a hamlet of Eastcotts.



**Shortstown sign March 2011**

### ***Name***

The name is taken directly from Short Brothers. The Admiralty established an airship works for the company here in 1916. Ironically, the company pulled out of airship work just three years later, but the name Shortstown stuck.

### ***Population***

The population of Shortstown has not been extracted from the general figure for Eastcotts in figures held by Bedfordshire and Luton Archives and Records Service. It is fair to say, however, that the majority of Eastcotts residents lived in Shortstown during the heyday of first the Royal Airship Works (1919-1930) and then the Royal Air Force base.

- BLARS Community Archives Pages

## **The Development of Shortstown**

The following article was written by Alan Cox and John Wood of Bedfordshire County Council's Planning Department's Conservation Section in 1983 [CRT130Cardington34]



**Tinkers Hill in 1883**

### ***The Early History of the Site***

Shortstown is built on Tinkers Hill, Harrowden. Harrowden is mentioned in the Domesday Survey of 1086 when it appears as “Herghetone” or “Hergentone”. This comes from the Anglo-Saxon “hearg-dun”: “hearg” means a place of heathen worship with some form of sacred grove or shrine, while “dun” refers to the slight rise in the ground here. Thus, Shortstown may stand on the site of an ancient sacred shrine.

Subsequently a windmill stood on the site from the 13th century to the 16th century, and in the 17th and 18th centuries the area was known as Windmill Hill.

Early in 1916 the Admiralty was seeking a site for an airship works for Messrs. Short Brothers and after a two month search the Naval Director of Air Services reported in March 1916 that a site had been selected at Cardington:

- (a) it was well served by roads and railways, and was in easy reach of London by steam train;
- (b) it was, therefore, easy for the Admiralty to maintain close liaison with the factory;
- (c) there was a broad, flat valley running east-west without any obstructions, thus providing a sufficient manoeuvring area to handle rigid airships;
- (d) Cardington was beyond the range of then known German bombers in Belgium, while “penetration by submarine landed agents was not considered likely due to the distance from the coast which it would be necessary to travel”;
- (e) there was suitable surplus labour available in Bedford;

(f) “the river affords a means of disposing of the effluent from sewage disposal works if such are established”.

The whole site was bought by the Admiralty from the Whitbread Estate for £110,000 and in October 1916 Short Brothers made proposals for housing the employees required at the airship works. They estimated that for 1917 they would require 800 workers, 500 men and 300 women – of which 200 (mainly women) they hoped to obtain in Bedford. The rest would be houses in an entirely new “Garden City” type settlement alongside the works.



**Shortstown when newly built X766/1/50**

### ***The Building of Shortstown***

By June 1919 the first phase of 151 houses had been built. This consisted of 12 six-roomed houses, 39 five-roomed houses, 64 four-roomed houses and 36 flats of three rooms each. The general layout and the design of the houses and airship works were by Cackett & Burns Dick, architects of Newcastle-upon-Tyne. Work was carried out by them under the control of the Director of Works, Admiralty, and no local contractors were used.

The houses in this initial development are in a simplified neo-Georgian style, mainly red brick with dark red tile roofs, and are more reminiscent of Hampstead Garden Suburb in London than the original Garden City at Letchworth. Although the road layout is fairly formal and most of the houses are terraced, regimentation is avoided by arranging groups of houses around curves in a butterfly pattern or by setting some houses back and some forward in a particular terrace.

Further houses were envisaged to the south and west but in the event these were not built until many years later, and then with little regard to the original style and layout. Similarly, the original plan made provision for shops, churches, a cinema and a hall in the centre but all that was built was a social club.

- BLARS Community Archives Pages





**The hangars at RAF Cardington March 2011**

### ***The Royal Airship Works***

As a result of the building of Shortstown the population of Eastcotts rose from 848 in 1911 to 2,065 by 1921. However, in the meantime Short Brothers, who were experiencing various difficulties, withdrew from airship manufacture and the Cardington venture with effect from 1st April 1919 and moved to Rochester in Kent. The Cardington works was, therefore, taken over directly by the government and renamed the Royal Airship Works, but the associated settlement has retained its original name of Shortstown.

During the 1920s the giant airship R101 was built at Cardington, while its sister ship, the R100 was brought to Cardington in December 1929. The R101 set off for its maiden flight to India on the evening of 4th October 1930 but in the early hours of the next morning it crashed into a hillside at Beauvais in France, killing all but six of its fifty four crew and passengers. The shock of this tragedy brought an abrupt end to this phase of British airship manufacture and the R100 was broken up.

### ***RAF Cardington***

The Royal Airship Works was put on a care and maintenance basis until 1938 when it was renamed the Balloon Development Establishment. However, the social club at Shortstown was still known as the Royal Airship Works and Shortstown Club in the 1980s.

In the meantime, in 1936, an RAF station had opened at Cardington, being particularly concerned with producing gas for barrage balloons and training barrage balloon crews as well as more general training of recruits and NCOs. Throughout the 1940s Cardington remained a busy RAF station and from 1953 it became the RAF's main recruitment centre.

After the Second World War, further houses were built at Shortstown as married quarters for RAF personnel. The three avenues off the southern extension of Greycote are named after three prominent victims of the R101 disaster: Brigadier-General Lord Thomson of Cardington, Secretary of State for Air; Air Vice Marshal Sir W. Sefton Brancker, Director of Civil Aviation at the Air Ministry and Major George Herbert Scott, Assistant Director of Airship Development (Flying and Training) at the Royal Airship Works.

The roads of the western half of the site are all named after Second World War bomber aircraft. Finally in 1957 Shortstown got its own school.

With the ending of National Service and cuts in the armed forces the RAF's presence at Cardington began to dwindle and largely disappeared in the 1970s. As a result the population of Eastcotts declined from 3,675 in 1951 to 1,710 in 1981. – BLARS Community Archives Pages

**Shortstown School****Shortstown Lower School April 2011**

Despite houses having been built from 1917 onwards, Shortstown had no school until the mid 1950s. To judge from the admission register for Cardington School [SDCardington14] some children from Shortstown (despite what is said in the article below) seem to have attended that school as well as going to Cotton End School.

The Sites and Buildings Sub-Committee of Bedfordshire County Council Education Committee reported on 4th June 1954 under the

heading Eastcotts/Shortstown proposed C. P. School: “The Ministry of Education has been requested to include a 1-form entry school in the Major Building Programme 1955/56. Sketch plans were submitted”. C. P. stood for County Primary School, schools for children aged 5 to 11 set up under the Education Act 1944.

On 24th September 1954 it was reported under the heading Eastcotts C.P. School: “The provision of an instalment of this School has been included in the Major Building programme 1955-56”. It was recommended: “That 3 acres or thereabouts of land in the parish of Eastcotts, as shown on the plan now submitted, be acquired for educational purposes to provide a site for this school, at a price to be agreed by the District Valuer and otherwise upon conditions to be agreed by the Clerk”.

On 9th September 1955 it was reported: “It was reported that the R. A. F. Authorities would shortly be erecting additional married quarters on land at present used as a children’s playground on the Eastcotts Estate. The Authority had been offered the swings and roundabouts at present on this playground for use by the new C. P. School”. It was resolved: “That the offer be regretfully declined and that the R. A. F. Authorities be recommended to offer the equipment to other Local Authorities”.

The lowest tender received to build the school was £32,275/6/- by Lindum (Lincoln) Limited. This slightly exceeded the standard cost per place as laid down by the Ministry of Education. Nothing more is mentioned until 26th October 1956 a committee to appoint a headteacher was established. It was also resolved: “That an occasion be organised to mark the opening of the Eastcotts (Shortstown) C. P. School and other schools now in the course of erection”. It was also resolved to include the school in the Elstow Group of County Primary Schools for management purposes. On 21st December 1956 it was resolved to spend £3,187 on furniture and equipment for the new school.

On 1st March 1957 Mr. I Evans. Acting Headteacher at Eastcotts C. P. School (which was the name then used for Cotton End School) was appointed as Headteacher at Shortstown. On 22nd March 1957 the need to complete the school was sent to the Ministry of Education for inclusion in the Major Building Programme 1958/59.

The first attendance registers from the school begin on Monday, 17th June 1957. On 28th June that year the Schools Sub-Committee reported: “that by way of an official opening of the school, it was proposed that the children should arrange an “At Home” during the Autumn Term 1957.

In 1961 Iris Walker wrote a piece on the school for *The Bedfordshire Magazine* (Volume VIII, No. 58, page 55) under the heading A School of Transients. It read as follows: “Shortstown is a school with a problem – a constantly recurring problem: that of educating children who are birds of passage. This September, Shortstown County Primary School (to give it its full title) begins its fifth year. It was built in a village founded by the firm of Short Brothers in 1917 to house the airship-builders and their families. At that time their children went to school at Eastcotts [see above], but with the advent of the Royal Air Force to Cardington the community grew, and with it the need for a new school. Building began in 1956, and in June the following year County Alderman Simms opened it”.

“It is a cleverly designed school, where space has been planned carefully. Classrooms are light and airy; and its hall has a crenellated, sound-absorbing ceiling, and a red-and-white tiled floor, still unmarked by the hundreds of small feet that have trodden it. The spick-and-span air of newness which prevails reflects the pride of Mr. I. W. Evans, the headmaster, who insists on great care and attention being given to the school and all that is in it”.

“In spite of its problem, there is an atmosphere of serenity about the school. Almost three-quarters of its children come from R. A. F. families”.

“In an average primary school with a termly intake of five-year olds who, with few exceptions, remain until they are eleven, the teachers come to know them well, and can supervise them throughout the whole of their primary school life. Shortstown admits new pupils of varying ages almost weekly, and just as often says good-bye to more familiar faces. It caters for two hundred children, yet in four years the figure in the admission register had risen to well over six hundred. A normal school of similar size would take twelve or thirteen years to reach such a total. Of the 190 children on the roll when the school opened, only twenty-two remained at the end of last term. The others are scattered, not only over the British Isles, but in France, Germany, and even as far afield as Hong-Kong and Australia”.

“The paper-work involved by these movements – entries in records, transfer of documents, and so on – is no small consideration; but the main difficulty lies in dealing with children who can never stay long in any one school. Most of them have already been to three or four different schools, some to as many as seven before their eleventh birthday. Teaching methods vary widely in different areas; so do the standards attained. Children coming from hot climates have attended morning sessions only in their former schools. Syllabuses vary, too. Jack, from a school in Germany, has learnt decimals but not areas; Jill, from a school in Singapore, knows how to deal with areas, but has not done fractions; Nigel from Cyprus knows fractions and decimals, but has not started on volume. The task of absorbing these children of disparate standards into Shortstown without disruption is no light one. Much individual attention is necessary, but it must not be allowed to interfere in any way with the progress of the class as a whole, particularly the 11-plus class”.

“Mr. Evans, himself an R. A. F. man, knows the nomadic lives these children live and he and his staff are able to tackle the problem with understanding”.

“Whatever their destination, whether it be Malta, Colombo, Aden , Belfast of Bedford, the “ladies and Gentlemen of Shortstown Academy”, as the Headmaster sometimes calls them, will take with them affectionate memories of Shortstown, the school where so many learned so much in such a little time. The school mail, with its letters postmarked from the four corners of the earth, bears witness to that”.

In the early 1970s Bedfordshire embraced comprehensive education. The pervious system saw children undertake an examination at age eleven – the eleven-plus – which decided their school future. Academically inclined children went to grammar schools; those with a more practical inclination went to county secondary modern schools. The comprehensive system did away with this distinction and introduced a third tier of school. Children now went to lower schools from ages 5 to 9, middle schools from age 9 to 13 and upper school from 13 to 16 or 18. At the changeover to the new system Shortstown became a lower school, which it remains up to the time of writing [2011].

- BLARS Community Archives Pages

Useful Websites:

<http://www.bbc.co.uk/programmes/p0230qp7>

Includes pictures, audio and video on Cardington Sheds

<http://www.airshipsonline.com/sheds/Cardington.htm>

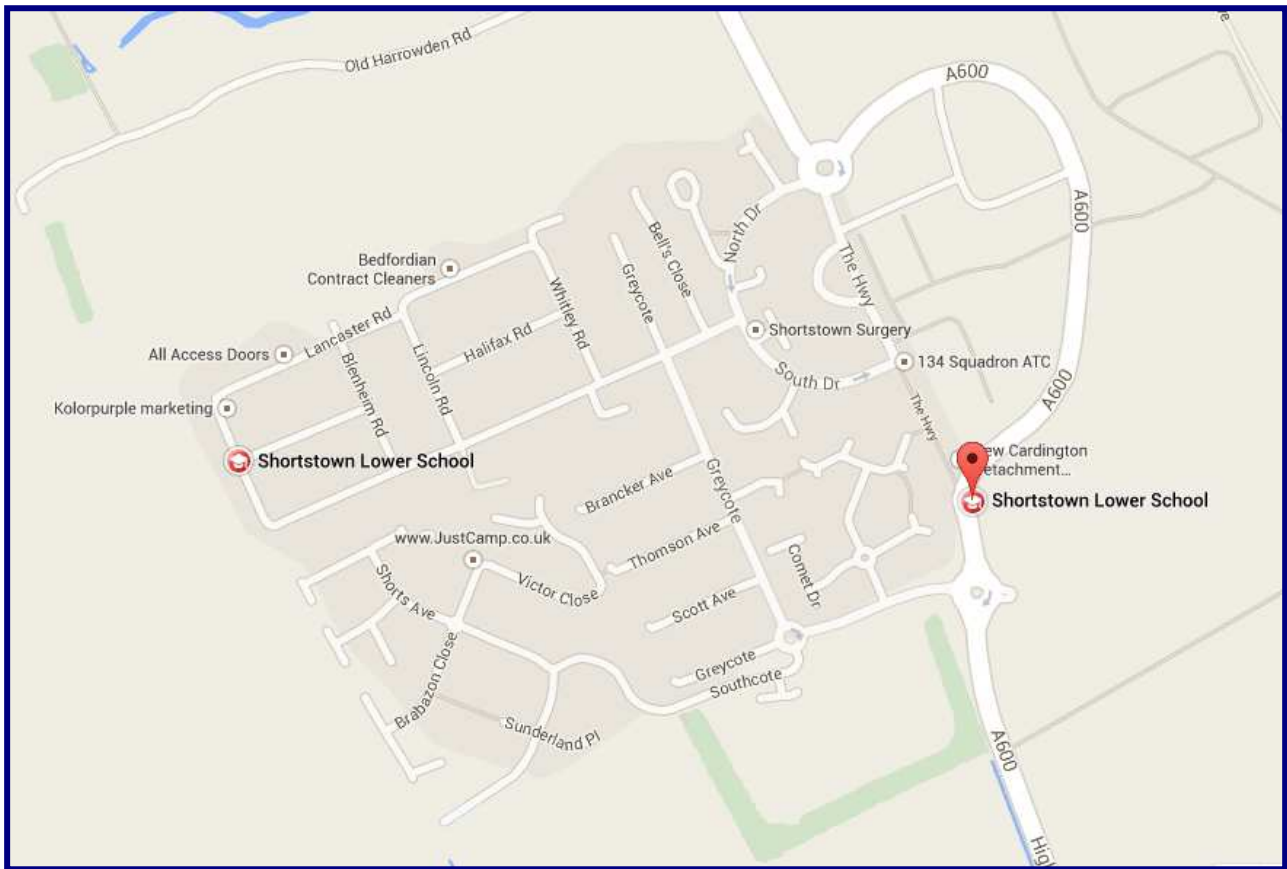
Further information on Cardington Sheds

<http://www.shortstownheritage.co.uk/#>

A very good site, created by a resident of Shortstown. Full of information regarding the history and development of Shortstown.

### Explanation of Images Used

The images included in this Local Study Pack have been selected for their relevance to the area of Shortstown in Bedfordshire.



A range of maps, photo images and text extracts have been selected to highlight the history and geography of the area and are intended to stimulate enquiry based study. The majority of the documents used can be found in the archives. The images are intentionally labelled only with an archives reference, so that students are encouraged to search for clues regarding the nature, age and relevance of each image or document.

A PowerPoint presentation of all of the images can be obtained by contacting the Archives Learning Officer.

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A brief description of each image is given here for reference; more detailed information can be obtained by contacting BLARS.

**Maps**

There are 4 maps included in the pack. All show a similar area to the one indicated on the modern map.



**Image 1:**

Ref: X766/1

Date: 1917

Copy site plan of Naval Air Works at Cardington for Messrs. Short Brothers (drawn by J T Cackett of Pilgrim House, Newcastle-upon-Tyne, 1917), dated (by stamp) 29 Nov 1917, and annotated in pencil, 'On Loan 30.11.1917': shows, inter alia, 'area for houses for employees', 'naval quarters', 'engine testing & timber shed', 'hydrogen plant', 'airship shed' and sidings connected to Midland Railway (Bedford & Hitchin branch) line. Indicates boundary of land owned by Messrs. Short Brothers in red ink.



**Image 2:**

Ref:

[http://www.airshipsonline.com/sheds/images/Cardington/Card\\_plan\\_1916.jpg](http://www.airshipsonline.com/sheds/images/Cardington/Card_plan_1916.jpg)

Date: 1916



**Image 3:**

Ref: DV2/H16

Date: c1926

Extract from 1925 to 1927 Rating Valuation Map, Bedfordshire. (Ref: DV2)

The 1925 Valuation Act required a survey of all property for rating purposes. The records, since deposited at Beds & Luton Archives & Records Service include maps and field books.

The surveyors used 2nd edition [1901] Ordnance Survey maps to record the information. The maps show the boundaries of each property by a colour edging or sometimes an overall colour wash. Each unit of property was assigned an assessment number, usually written in black or red ink, with a reference to the corresponding field book.

These maps were annotated over time, with additions being made up to the 1950s. As a result the original maps are in very fragile condition. We now have the maps scanned and available online.



**Image 4:**

Ref: OS map 6 inch

Date: pub 1884

These ordnance survey maps can be viewed online at

<http://maps.nls.uk/os/6inch-england-and-wales/index.html>



**Image 5:**

Ref: OS map 6 inch  
Date: published 1944

These ordnance survey maps can be viewed online at

<http://maps.nls.uk/os/6inch-england-and-wales/index.html>

### **Postcards and Photographs**

The Archives has a vast collection of postcards and these are valuable both for the images produced and the information on the reverse. The pictures chosen represent places of interest in the Shortstown area.



**Image 6:**

Ref: X766/1  
Date: 1916

1 of 27 photographs (between waxed sheets), dated 26 October 1916 - 17 July 1917 and taken at regular intervals, recording the construction of the two airship sheds (showing derricks, temporary railway tracks, etc.)



**Image 7:**

Ref: X766/1 p50  
Date: c1916/1917

View of East Square, Shortstown  
From Album entitled 'Royal Navy Air Works, Cardington Bedford, 1916-1918: Photos of their construction, J. Mawson Rounthwaite'.



**Image 8:**

Ref: X766/ p51  
Date: c1916/1917

View of Central Ave, Shortstown  
From Album entitled 'Royal Navy Air Works, Cardington Bedford, 1916-1918: Photos of their construction, J. Mawson Rounthwaite'.



**Image 9:**

Ref: X766/ p52  
Date: c1916/1917

View of Greycote, Shortstown  
From Album entitled 'Royal Navy Air Works, Cardington Bedford, 1916-1918:  
Photos of their construction, J. Mawson Rounthwaite'.



**Image 10:**

Ref: Z1306/24/12  
Date: 1922

Photographic postcard - View down the road towards Shefford with the fence to the RAF station on the left and Shortstown on the right. A woman with a bicycle in stands in the road looking towards the camera.



**Image 11:**

Ref: Z1306/24/13/1  
Date: c1949-1950

Photographic postcard - Christmas design showing the mast, head quarters building (Shorts building), distant view of the sheds and the R80 in flight behind an arrangement of holly spelling the RAW and mock snow. [The inclusion of the R80 is curious as she was not built at and never came to Cardington]



**Image 12:**

Ref: Z1306/24/20/18  
Date: 1930

Photographic postcard - View of the R101 funeral at Cardington, looking over the cemetery with the sheds in the distance. Photograph by E Albone, St Neots.





**Image 13:**

Ref: Z50/142/461; Z1306/24/13/3

Date: 1914-1918; 1919

1) Two girls in overalls at the airship factory, Cardington.  
Copy print from original postcard Photographer unknown. (Scanned)

2) Photographic postcard - Assembling Staff - Fabric Department Messrs Short Bros, Cardington. Group photograph of 21 women in their working clothes.

For further information on local events and experiences every day during WW1, visit our blogs:

[bedsatwar.blogspot.co.uk](http://bedsatwar.blogspot.co.uk) (news from the Front Line)

[bedshomefront.blogspot.co.uk](http://bedshomefront.blogspot.co.uk) (news from the Home Front)

Resources to support using the blogs in school can be obtained by contacting the Archives Learning Officer



**Image 14:**

Ref: Z1306/24/20/4

Date: 1929-1930

Photographic Postcard - R101 at the mast with horses pulling logs in the foreground.

The R101 was built at Cardington by those who lived in Shortstown and was to have a massive impact on their lives.

Further pictures and information regarding the R101 are included.



**Image 15:**

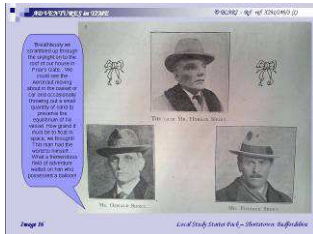
Ref: Z50/24/114

Date: 1928

Photograph - Women preparing the fabric of the R101. Dorse of original stamped as above, but neg: R101/236. 13 Jul 1928)

**Texts**

The majority of documents held in the archives are text based. Reports, records, letters, log books, diaries, newspapers, brochures, the list is lengthy. Possibly millions of written words, documenting hundreds of years of personal history are carefully preserved for future reference. The images included are extracts from documents pertinent to local study. The original documents can usually be viewed at BLARS and facsimiles or further extracts can be obtained from the Archives Learning Officer.



**Image 16:**

Ref: X291/246/3  
Date: 1918

Extract from Volume 1, issue 1 - 'The Gasbag' a magazine being the 'outlet valve' for the members of Messrs Short Bros., Cardington

Oswald Short describing seeing a balloon floating over the City of Derby in 1896 with his brother Eustace. From 'Autobiography of Short Brothers' written for The Gasbag.

In 1897 brothers Eustace (1875-1932) and Oswald Short (1883-1970) began their collective aviation career as self-learned pilots of the coal-gas balloon. After a relatively short amateur ballooning career, in 1905, they provided three balloons by contract to the Indian army; shortly thereafter they found their way into the public sector of aviation, manufacturing balloons for other independent adventurers like themselves.

Then, in 1908, brother Horace Short (1872-1917) joined Eustace and Oswald in the family business and the three officially adopted the company name of Short Brothers.



**Image 17:**

Ref: pceastcotts18/2  
Date: 1985

Correspondence regarding the naming of a new devpt at Shortstown - Mitchell and Bell's Court. Also Compass Drive and Concord Close

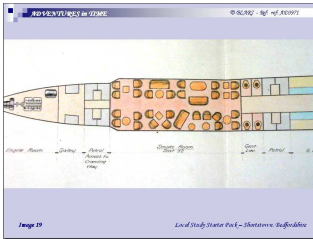


**Image 18:**

Ref: Z1205/239  
Date: 2003 (date of interview)

Transcripts from the Marston Vale Oral History Project - 'Changing Landscapes Changing Lives'

Female. Worked at Shortstown on barrage balloon production during Second World War. b. 23.08.1920. In this extract, she describes living in a house in Shortstown during the early 20s with her 5 brothers and sisters.

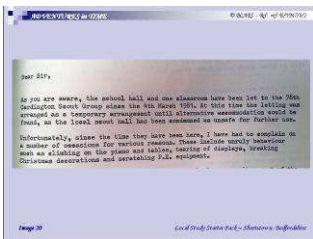


**Image 19:**

Ref: AD3971  
Date: 1919

Short Brothers, Bedford. Design 'A' Airship for Passenger Service. London to New York with 50 passengers.

Extract from booklet with particulars, weights, plans, proposed method of construction



**Image 20:**

Ref: E/YM7/8/2  
Date: 1982-84

File regarding 78th Bedford South Cardington Scout Group, including the following:

- correspondence regarding damage to Shortstown Lower School, caused by the Scout Group, in a letter from the Acting Headmistress, attention is drawn to “unruly behaviour, such as climbing on the piano and tables, tearing of displays, breaking Christmas decorations and scratching P.E. equipment”;
- letter from the secretary of the Scout Group to the County Youth Department, stating that they will no longer be using Shortstown Lower School for meetings due to gaining new premises free of charge

**Documents relevant to local study of Shortstown stored at the archives:**

BLARS Ref	Date	Description
Z50/142/461	1914-1918	Two girls in overalls at the airship factory, Cardington. Copy print from original postcard Photographer unknown. (Scanned.)
X291/246/12	1916-1926	Correspondence (c. 12 letters) mainly from Messrs W. H. Allen and Shorts Brothers concerning Miss Nora Ira-Smith's employment with Allen's, which she left in 1916 to take up a job with Shorts Bros. and then her re-engagement with Allen's after Shorts Bros. closed down, and her resignation from Allen's in 1926.
X766/1	1916-1918	Album entitled 'Royal Navy Air Works, Cardington Bedford, 1916-1918: Photos of their construction, J. Mawson Rounthwaite'.
Z1130/10/19/1	1918	Card showing Airship over De Pary's Avenue, Bedford. Card unused. Publisher unknown. (The Airship is the R31 built at Cardington in 1918 by Short Brothers).
X291/246/3	1918	'The Gasbag' a magazine being the 'outlet valve' for the members of Messrs Short Bros., Cardington, (no. 1 includes a brief autobiography of the Short Brothers).
BorBK2/9/2	1919-1921	23 photographs - R32: Sister ship to the R31, built by Short Brothers at Cardington
AD3971-73	1919	Documents regarding Short Brothers of Bedford
Z1306/24/12	1922	Photographic postcard - View down the road towards Shefford with the fence to the RAF station on the left and Shortstown on the right. A woman with a bicycle in stands in the road looking towards the camera.
Z1169/8/26D	1937-1969	plans - Shortstown, Eastcotts
BR82/7	1942	German aerial view of Bedford showing 'Short Brothers...Britannia Iron Works....Igranic Electric Ltd' (Does not in fact show 'Short Brothers' alias Cardington Aerodrome but does include W H Allen's, Sons Ltd Works)
BTNeg1054/2	1941	glass plate negative - Shortstown employees dance at Corn Exchange
BTNeg5960/7-14	1957	glass plate negative - New School at Shortstown. External views and internal views of class at work
X939/117	1958-1969	Shortstown Women's Institute
E/YM7/8/2	1965-1985	File regarding 78th Bedford South Cardington Scout Group, including the following: - correspondence regarding damage to Shortstown Lower School, caused by the Scout Group, in a letter from the Acting Headmistress, attention is drawn to "unruly behaviour, such as climbing on the piano and tables, tearing of displays, breaking Christmas decorations and scratching P.E. equipment"; - letter from the secretary of the Scout Group to the County Youth Department, stating that they will no longer be using Shortstown Lower School for meetings due to gaining new premises free of charge

<b>BLARS Ref</b>	<b>Date</b>	<b>Description</b>
PCEastcotts18/2	1984-1986	Correspondence Regarding the naming of a new development at Shortstown - Mitchell and Bell's Court. Also Compass Drive and Concord Close
E/TE2/2/L/69	1985	SHORTSTOWN: Shortstown Lower School: Size, accommodation and other general information
PCCardington18/15	1988	Particulars of work to be carried out at Hangar no 1 - erection of block walls and roof within hangar. With plan - 'record of survey' being a plan of Cardington and Shortstown -, 'reconstruction of no 2 shed', a layout plan showing proposed office extension and 2 pictures of airship sheds
PCCardington18/24	1991	Consultation Draft relating to a development brief for land at RAF Cardington, Shortstown. With plan and Parish Councillors' comments
Z746	1992 and 2006	Records of the Royal Airship Works Sports and Social Club, Shortstown, Cardington (established 1925) donated in 1992 and 2006.
HT13/2/13	2000	Harpur Highlights - includes feature on Shortstown Lower School
Z1205/239	2003	Interview transcript - Female. Worked at Shortstown on barrage balloon production during Second World War. b. 23.08.1920
Z1205/222	2003	Interview transcript - Female. Memories of airships at Cardington in the 1920s. b. 29.09.1917
Z997/1/45	2005	Dirigible - The Journal of the Airship Heritage Trust Vol. XVI No.2
Z997/1/65	2012	Dirigible - the Journal of the Airship Heritage Trust. Edition No. 65.
Z55/1/91/12/1-2	ND	Plastic negative - EASTCOTTS - (Shortstown County Primary) School 35mm and 1.5 x 2 inch b/w
SDShortstown		Shortstown School – log book, admission register

## R101

R101 was one of a pair of British rigid airships completed in 1929 as part of a British government programme to develop civil airships capable of service on long-distance routes within the British Empire. It was designed and built by an Air Ministry-appointed team and was effectively in competition with the government-funded but privately designed and built R100. When built it was the world's largest flying craft.

After some trial flights, and subsequent modifications to increase lifting capacity, it crashed on 5 October 1930 in France during its maiden overseas voyage, killing 48 of the 54 people on board. The crash of R101 effectively ended British airship development, and was one of the worst airship accidents of the 1930s.

### Construction and Destruction of the R101



Sir Maurice J. Dean, who was involved in the trials of R101, wrote an article for the May 1966 edition *The Air Force Department Society Journal*. A copy of this article is available in the Bedfordshire and Luton Archives and Records Service Searchroom [CRT160/215]. Sir Maurice noted that in her final form R101 was 770 feet long and 130 feet in diameter, made up from eighteen main frames joined together by longitudinal girders. The main frames divided the craft into seventeen compartments, each of which contained a huge bag filled with hydrogen. This element was used because it is lighter than air and, therefore, made the airship float; unfortunately it catches fire very easily near a heat source. The whole of the balloon section of the airship was covered with doped linen.

The R101 was powered by five diesel engines, two attached to Frame 4, two attached to Frame 9 and one at Frame 11. The engines were carried in pods large enough for mechanics to move about inside.

Being diesel there was less risk of igniting the hydrogen gas than with petrol engines.

The airship carried eight tons of water ballast and thirty tons of fuel for the engines. Beneath the balloon hung the gondola. It had two decks and had fifty passenger cabins with beds for one, two or four people and a dining room for sixty. There were two promenade decks with windows down each side and an asbestos lined smoking room! The asbestos was necessary to keep any tiny spark away from wood, dope or hydrogen. The smoking room was on the lower deck along with crew quarters, kitchens and washing facilities.

Sir Maurice stated that the weight of R101 turned out to be much greater than had been specified. She was designed to lift sixty tons but, because of her own weight, could only lift thirty five. Some changes to wiring and other things increased this lifting capacity by six tons; however, the rewiring caused hydrogen gas to be lost due to chafing of wiring on girders. This sounds like a potential cause of the disaster but Sir Maurice, in his article, considered that it did not play any significant part in the tragedy.

**Explanation of Images Used**



**Image 1**

Ref: BorBK2/9/7/7; BorBK2/9/7/4  
Date: c1928-1929

A large collection of photographs of airships and work at Cardington

Portrait photograph: R101 in shed, close up of right side looking towards the tail.  
Head on view showing gas bag within the frame and the slack wiring system.  
The bag was contained like a parachute chute to retain it in its own section. Circumference wires went round as well, but these do not show in the photo even though they are in position.



**Image 2**

Ref: Z1306/245/19  
Date: 1929-30

Photographic postcard - View of the R100 and R101 airships in their sheds at Cardington.



**Image 3**

Ref: Z1306/24/20/3  
Date: 1929-1930

Photographic postcard - "Air Ministry Property" R101 at the mast with boy and dog in the right foreground with an Air Ministry Property No Admittance sign to the left. Published in Bedfordshire Through Times, by Stephen Jeffery-Poulter. Book ref: 120 p.27



**Image 4**

Ref: BorBK2/9/7/14  
Date: c1930

Five men inspecting an engine power car already in place on an airship.



**Image 5**

Ref: Z1306/24/20/12  
Date: 1929-1930

R101 viewing deck. Photograph by G A Gearey, Published by Thomas Illingworth & Co.



**Image 6**

Ref: BorBK2/9/7/22  
Date: c1930

View of two ladies on the top of the mast platform, shed in the distance.



**Image 7**

Ref: BorBK2/9/7/22  
Date: c1930

R101 interior: view of the dining room.



**Image 8**

Ref: BorBK2/9/7/27  
Date: c1930

R101 flying over Bedford, as viewed from Silver Street looking towards Jelley & Clarke's central supply stores



**Image 9**

Ref: BorBK2/9/7/28  
Date: c1930

R101 flying over St Mary's Church viewed from Cauldwell Street.



**Image 10**

Ref: Z1306/24/20/15  
Date: c1930

Photographic postcard - Group photograph of the crew of the R101.





**Image 11**

Ref: Z1306/24/20/14

Date: 1930

Photographic postcard - R101 wreckage, Beauvais, France.

Sent to C Bridgewater Esq, Oxford. Message reads "Beauvais Saturday. We went to see all that was left of the R101; it is pitiful; the ground it struck was hardly what you would call the side of a hill. Hope you are all better. We go on to Versailles tomorrow. Love Mona."



**Image 12**

Ref: Z434/4

Date: c1930

Newspaper cuttings book concerning the R101 crash and memorial service  
Aerial view of the wreck of the R101 at Beauvais



**Image 13**

Ref: Z1306/24/20/25

Date: 1930

Photographic postcard - View of R101 funeral procession at Cardington.  
Published by Thomas Illingworth & Co.



**Image 14**

Ref: Z1306/24/20/30

Date: c1930s

Photographic postcard - Memorial to R101 Heroes, Cardington Cemetery. No. 137723

**Documents relevant to local study of R101 stored at the archives:**

BLARS Ref	Date	Description
Z426/52	1917-1938	Class "AIR 11" (Royal Airship Works, Cardington – correspondence and papers). Including many design memoranda for various airship parts; technical work books for the R101
BorBK2/9	c1918 – c1933, 1977	A large collection of photographs of airships and work at Cardington
Z434/3	1919 - 1970	Loose newspapers cuttings found inside Z434/2 concerning the crash of the R101 airship, previous airship history (e.g. the R 38) etc
Z1003/3/7	c1920	Photograph of workers inside the airship shed at Cardington. Notes made by S.A. Burman identify the following: including [back row, left to right], A. Norcutt, G. Makeham, Sam Church, Jack Armstrong, Radcliffe, [front row], C. Taylor, C. Weight, Tich Mason, A. Franklin, A. Beattie, T. Dutton, J. Richardson, T. Clare, 'Church, Radcliffe, Mason, Taylor, all died in R101 disaster'
Z1003/3/13	c1926	Photograph of first airship shed at Cardington, during enlargement to accommodate the R101, taken from within the structure
Z50/24/112	1927	Photograph - Man assembling a small portion of the airship skeleton, probably of the R101. (Dorse of original has written on it: RAW 4 Oct. 1927 Neg: 101/102)
Z50/24/113	1928	Photograph - Women applying goldbeater's skins to airship fabric stretched out over a large frame (Probably R101). (Dorse of original is stamped: Royal Airship Works, Cardington. 20 Feb. 1928 Drawing Office: Neg R101/171)
Z210/149	16 Nov 1929	Printed menu for the Parliamentary Flight of the airship R101 from the Royal Airship Works, Cardington. Includes photograph of the airship at the mooring mast and photographs of the mooring masts in England, Egypt and India, with dimensions. [The flight was cancelled due to bad weather and was rescheduled for 23 November]
Z1052/11/1	1929	Postcard of R101 tethered at mast, with airship hanger behind; on back "This was taken in Nov. from Hammer Hill side, Cotton End"
X758/1/24	1929-1980	Album of photographs, mostly copy prints, and press cuttings relating to the airship R101, including the wreckage of the airships, survivors, and the funeral of the victims.
X291/246/8/3	c1929	R101 airship on ground. Photographer - A.J.M. Hassall
Z1306/24/19	1929-1930	View of the R100 and R101 airships in their sheds at Cardington.
Z1003/3/16	1929	Three photographs of the R101 airship at Cardington airship sheds, during the instalment of a third section to increase gas bag capacity, due to inadequacies in lift
Z991/23	n.d. c1930	Black and white photograph of the R101 moored at Cardington airship base.
Z239/15	c1930	Postcards of Bedford: Cardington - airship sheds with R101 on mooring mast in the background.
Z1286/6	1930	Photographic postcard showing the coffins of the airship R101 crash victims, each draped with the Union Flag, in the mass grave at Cardington. Photographer unknown. [A copy print of this picture exists at ref: Z 50/24/14]
Z1286	1930	Postcards Z 1286/1-5 depict the drumhead memorial service held in Luton Hoo Park on 27 July 1919 to commemorate the end of the First World War (see Luton: Scene Again, by Ken Cooper on searchroom shelves, book 130LUT plate 134). Postcard Z 1286/6 shows the coffins of the airship R101 victims in the mass grave in Cardington churchyard, 11 October 1930
Z50/24/83	c1930	Photograph of airships in hangers at Cardington (R100, R101) from postcard
Z50/24/101	1930	The R101 at her mooring mast; airship sheds in background.
Z1091/6/26/5	c1930	photograph - Col. V C Richmond designer of the R101 and another man looking up presumably at an airship

BLARS Ref	Date	Description
X291/246/8/2	c1930	R101 airship at mast, with horses pulling carts loaded with tree trunks in foreground. Photographer - A.J.M. Hassall
Z1306/24/20/24	1930	View of floral tributes at the R101 funeral at Cardington close up showing one in the shape of an airship. Photograph by E Albone, St Neots.
Z1306/24/20/32	1930	Memorial card to the officers, crew and passengers of the British Airship R101.
Z824/11	1930	Photograph of the crew of airship R101 at Cardington. Unnamed group. Photograph not by Sadler.
Z426/1/18	1930	R101 at Cardington. Photograph by Royal Airship Works, Cardington.
Z426/1/25	1930	Poem by Joseph Taylor, c/o Edward Johnson, Working Men's Homes, Bedford. Dedicated to "Lady Thompson and Lady Brancker, and all widows, families and relations, and everybody who is left to mourn over the loss of our dead heroes who went down with the R101 Airship on Sunday Morning, 5th October, 1930"
Z1546/3/6	1930	Black and white postcard photograph of funeral procession of R101 airship disaster victims.
Z1546/3/7	1930	Black and white postcard photograph of mourners at funeral service for R101 airship disaster victims.
Z426/88	1930	Minutes of proceedings at public inquiry into the loss of the airship R101
Z160/345	1951	Newspaper cutting 'First Airship flies since the R101'. Probably from "Daily Mail", 20 July 1951
Z160/94	c1966	Newspaper cuttings concerning airships and especially the R100 and the R101
Z1130/24/1	1990	Multi-view postcard showing R101 Airship Memorial, St. Mary's Church, Cardington Village Green and Airship Hangars. Photographs by Gordon Flanagan. Published by Photographic Heritage as No 77 in Bedfordshire Heritage Collectors Cards Series.
Z997/1/4	1990	'Dirigible' - The Journal of the Airship Museum, No.4, including an article regarding Vincent Richmond, the chief designer of the R101 by E.A. Johnston [photocopy]
Z997/1/8	1991	'Dirigible' - The Journal of the Airship Museum, No.8, including an article regarding Christopher Birdwood Thomson, Lord Thomson of Cardington and his involvement in the final flight of the R101 by E.A. Johnston
Z997/1/15	1994	'Dirigible' - The Journal of the Airship & Balloon Museum, Vol. V No.1 R101 Special Edition [reprint],
Z997/1/18	1994	'Dirigible' - The Journal of the Airship & Balloon Museum, Vol. V No.4
Z1205/005	27 Mar 2001	Transcripts from the Marston Vale Oral History Project - 'Changing Landscapes Changing Lives' Wife of brickyard worker. Born 02.04. 1908 Seeing R101 airship; friend's relative killed in R101 crash; viewing public funeral; seeing first aeroplane in field outside Kempston (32 mins)
Z1205/009	1 May 2001	Transcripts from the Marston Vale Oral History Project - 'Changing Landscapes Changing Lives' Brickworker & driver. born 22.12.1915 Airships memories including R101 funeral service.
Z1205/222	2003	Transcripts from the Marston Vale Oral History Project - 'Changing Landscapes Changing Lives' Female. Memories of airships at Cardington in the 1920s. b. 29.09.1917 Father was a test engineer for Shorts brothers building airships at Cardington hangars. She remembers the second airship shed being built ready for the R101. The events of the night before the last fateful flight of the R101: farewell meal at the Swan Hotel. The two crew were in their new uniforms. (10 mins)Premonitions about the flight. Difficult takeoff and bad weather. The next day, the news of the crash in France arrived and the village was told by word of mouth. Wives could be heard screaming, when their husband's death was confirmed.

<b>BLARS Ref</b>	<b>Date</b>	<b>Description</b>
Z1205/203	11 Feb 2003	Transcripts from the Marston Vale Oral History Project - 'Changing Landscapes Changing Lives' Female. Factory worker. Worked for a time on R101 airship at Cardington. b. 19.06.1910 Went to Cardington to work in airship production aged 19. Bought a cycle to travel there. Did machining and pasting on the silver-coloured outer cover. Remembers holding on to a mooring rope and releasing it quickly when it went up. After the airship crashed in France they workers were laid up and had to sign on at the Labour Exchange. (20 mins)Once had a chance to see inside the airship but was frightened of climbing the steep ladder and declined. Went to the mass funeral in Cardington. 48 lorries with two coffins on each. She walked at the back, part of 20 former employees.
Z997/1/46	2005	Dirigible - The Journal of the Airship Heritage Trust Vol. XVII No. 3, R101 75th Anniversary Issue, including: - Article concerning developments of Meteorological Balloons, Kites and Kite Boats in Germany before WW1. - Article concerning the design of H.M.A. R101 entitled 'Revolutionary & Luxurious'. Including description of interior with pictures. - The Cardington Chronicle - Update on Airship Activity. - Article concerning the R101 disaster entitled 'Forced Landing? Disastrous Crash?'