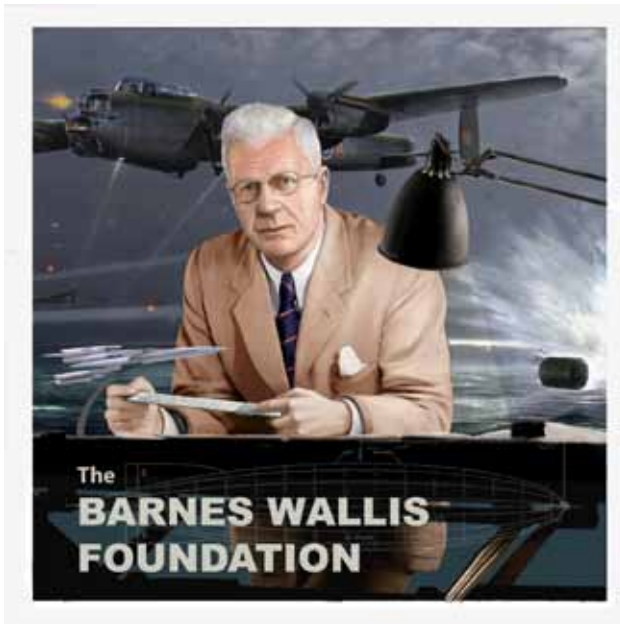




# NEWSLETTER 2015



BARNES WALLIS FOUNDATION  
CHARITY NUMBER 1157723



## Contents

|  |    |
|--|----|
| Editorial  | 2  |
| BWF Annual Report - 2014/15                          | 3  |
| “It’s dogged as does it”                             | 7  |
| Sir Barnes Wallis’ desk to be returned to Brooklands | 9  |
| Professor Cox inspires Barnes Wallis Students        | 10 |
| Students ‘Fly Mission’ at Space Centre               | 11 |
| Rise and Fall of Howden’s High Flyer                 | 12 |

**Cover Photo:** *Sir Barnes Wallis* by Gary Saunt.

---

## Editorial

Welcome to the Barnes Wallis Foundation (BWF) 2015 Autumn Newsletter. This is our first newsletter as a Charitable Incorporated Organisation and under our new name. More information about the Foundation, how it operates and its activities, are included in the Annual Report 2014/15.

The trustees are pleased to report that most of our artefacts are now at Brooklands Museum with just a few models and Exhibition Boards being held near Howden for their use in the locality. Work continues to present exhibitions at various locations around the country; further information will be published when available.

It has been a year of considerable change for the Foundation, which the trustees have embraced with their continued enthusiasm in order to inspire our younger generation to consider engineering as a career and to keep alive the memory and achievements of Sir Barnes Wallis. We have also welcomed several new trustees to the Foundation and look forward to developing the Foundation in the years ahead.

**Chris Henderson**  
**Editor**

---

## Articles for Publication

Contributions of articles and photographs for the Newsletter will be most welcome. Ideally they should be sent by email in Word format for articles and a common image format such as JPEG (.jpg) for photographs. However, typed articles and original photographs can be accepted and will be scanned and returned to the sender as soon as possible. Please email articles to *info@barneswallisfoundation.org*.

The views expressed by contributors of articles do not necessarily reflect the views of the Barnes Wallis Foundation.

# Barnes Wallis Foundation

## Annual Report - 2014/15

### **From the Barnes Wallis Memorial Trust (BWMT) to the Barnes Wallis Foundation (BWF)**

The change of status from a registered charity to charitable incorporated organisation took place the 4th July 2014. The first meeting of BWF was held on the 14th August 2014, when the officers of the Foundation were appointed for a period of three years to ensure continuity of business for the new organisation. An agreement was reached to review administrative and governance issues. Co-incident with this change was the resignations of two trustees of the Barnes Wallis Memorial Trust Richard Morris and Elaine Ward. The new chairman (Robert Owen), in thanking them for their years of service and contribution, also placed on record his grateful thanks to all BWMT trustees, most especially its chairman Gerry Carroll, for their years of service and contributions to keeping alive the memory and achievements of Sir Barnes Wallis. Many of the BWMT trustees are now trustees of the BWF.

The Foundation was pleased to welcome two new trustees in January 2015. Jim Edmondson and Rick Hillum have a strong commitment to encourage and stimulate an interest in aviation and engineering to a new generation. Both are presently involved in business and engineering ventures and their addition to the Foundation will strengthen its connection in these areas.

Most importantly the Foundation's trustees wished to mark their ongoing appreciation to Dr Mary Stopes-Roe, daughter of Sir Barnes Wallis for her most tremendous contributions to both the BWMT and the BWF and unanimously agreed to appoint her President of the Foundation. Mary never misses a meeting and takes every opportunity to be involved with all activities of the organisation.

### **How does the new Foundation operate?**

At the Foundation's meeting in November 2014, the trustees agreed a suite of governance papers, which comply with the requirements of the Charity Commission. These papers set out how we conduct our business in this time of change

A key issue emerging in recent years has been the expansion of the trustees' geographical cover. The BWMT was established in 1987 by a group of people in Howden, with the result that past activity was concentrated in the Yorkshire area. Although the intention is to maintain this focus, the presence of a number of new trustees in the southern counties, together with the transfer of archival

material to Brooklands, Surrey, provides new opportunities to extend the Foundation's reach and activities to other areas.

This expansion of geographical reach has resulted in two changes to our administrative procedure. In the past all trustee meetings were held in and around Howden, Yorkshire. Therefore in order to balance trustee travel requirements it has been agreed that for the Foundation's two formal meetings, held during the year, one will be in the North and the other held in the South. All other meetings will be held where appropriate to do so and with the least inconvenience to all. Secondly, the trustees have agreed unanimously to adopt e-voting. This will facilitate more immediate decision making, without the need to wait for the next meeting or indeed increase travel expenses. Such flexibility is essential in order to progress individual projects without undue delay.



### **New ways of raising awareness.**

We must make the most of our new identity to raise awareness and profile of the Foundation. A new website is currently under development and we have a new logo, shown left. In addition trustees are exploring new networking opportunities with organisations, which have complimentary objectives and with whom the trust may work on individual projects. These discussions are already

bearing fruit, which gives us great hope for the future.

### **The Foundation's Annual Day in Howden:**

#### **Howden School Student Awards and Annual Public Meeting**

For many years the trustees of the former Barnes Wallis Memorial Trust and now the Barnes Wallis Foundation have awarded a prize of a model of the R100 to the most promising student of design and Technology. Mary Stopes-Roe leads mainly local trustees, in the judging of the students' work, which had been submitted for their GCSE exams. This year all their work was of a particularly high standard, which



made judging very difficult. After much discussion the judges decided that the award should go to Wes Risebury for his MP3 Mono Amplifier. Not only was Wes' work beautifully finished but he had made tools to assist him in the manufacture of his product:

In the evening the Foundation held its Annual Public Meeting in Howden School hall. This event is mainly attended by Howden people, giving them the opportunity to speak with the trustees about the Foundation's work, and buy books and prints related to the work of Sir Barnes Wallis

### **The Spirit of Goole (TSOG):**

This project is located near the Foundation's spiritual home and was considered initially by the BWMT. The Foundation has taken the project very much to heart as it provides 14-18 year-olds with the opportunity to learn engineering skills, whilst building their own light aircraft under adult supervision and working to the highest standards. This project has a strong affinity with the Foundation's objectives: It is aviation and engineering based through education and learning. It is inspirational and character building, creating opportunities that otherwise would not exist, or would be unaffordable to most young people. It was hoped that the aeroplane would have flown this year but due to unforeseen circumstances there has been a slight delay. The project also has a new home and has been moved from Goole Academy to Robin Hood Airport, Doncaster.

This project has already created opportunities for student successes. The students have raised over £50,000 in cash and sponsorship, a remarkable feat, demonstrating their commitment and dedication to improving their own futures. Two have taken up engineering courses; another is now the Press Officer for the Light Aviation Magazine and is reporting on youth aviation projects from around the country. Four students were entered for TOPNAV 2014 competition and were placed 1st, 2nd and joint 3rd; they received their prizes from Prince Philip at a ceremony in London. Six students have started their pilot training through the TSOG Air Academy to obtain their pilot's licence and the freedom of the skies! If that were not enough, The Royal Aero Club recognise TSOG young people for outstanding achievement and six of the students have been awarded the Breitling Certificate of Recognition, they received their awards at the RAF Club in London on the 12th May 2015. The Foundation feels proud and privileged to be involved with such an exciting project and have provided the funding for the propeller spinner hub. We understand the aircraft is now 50% covered and the avionics and controls have been installed. We look forward to seeing TSOG gracing the skies in the not too distant future.

## **David Ross Educational Trust (DRET)**

The Foundation has formed links with the David Ross Educational Trust who are responsible for 36 Academies, located in the East Midlands and North East England. The initial contact was made as DRET had taken over a secondary school at Coningsby, Lincolnshire; they wanted a new name and its pupils voted to call it The Barnes Wallis Academy. The school is located close to two airfields used during WWII by 617 Squadron, the Dambusters, the main users of Sir Barnes' weapons. The Academy was officially given its new name by Dr Mary Stopes-Roe, the daughter of Sir Barnes Wallis.

Following discussions with DRET the Foundation has become involved with a project that will send four students a year for a week at an educational aerospace/engineering "Space Camp" in Alabama, USA. The Foundation has agreed to fund a student place initially from 2016-18. Students will be chosen from an Academy-wide competition with a selection panel comprising a trustee appointed by the Foundation sitting alongside teaching staff and other sponsors' representatives.

This project is very much in accordance with the Foundation's objectives and will benefit students from the Academy.

## **The Transfer of the Foundation's Archive to Brooklands Museum**

This location is most apposite, since Barnes Wallis spent most of his working life at this location, the former site of Vickers Aviation. The re-location of the archive material to Brooklands is enabling it to be professionally sorted, catalogued and placed in purpose-made storage boxes. These will be housed eventually in the Museum's new purpose-built archive and storage facility, currently under construction, where they will be made available for educational use and study by researchers. There will also be opportunity for appropriate items to be displayed in new galleries that will be created, supplementing the Foundation material already on display in galleries in the re-furbished Stratosphere Chamber, opened officially by Dr Mary Stopes-Roe in March 2014. While the Foundation is meeting the cost of necessary materials, the cataloguing of the archive is being carried out by volunteers under professional supervision by Brooklands curatorial staff, the services and expertise of which, the Foundation trustees most gratefully acknowledge.

## **The Future:**

The trustees have recognised through the new developments of TSOG, the David Ross Educational Trust (DRET) and the re-location of our archive, that at this stage the Foundation may best recognise its resources, and generate cost effective returns on monies allocated, by contributing to larger joint projects

meeting the Foundation's education and engineering objectives. To this end the trustees are actively networking to identify potential projects. Consideration is also being given to ways in which the relationships established with the mentioned projects may be continued.

At the same time the Foundation will continue the work initiated by the earlier Trust in holding an Annual Public Meeting at Howden (with the possibility of one at Brooklands) and the provision of a programme of ad-hoc talks to meet the requirements of local specialist interest groups, along with the holding of material enabling the Foundation to mount small exhibitions relating to the life and work of Sir Barnes Wallis at suitable locations.

By doing so, we believe that not only will we be able to maintain and develop our close links with Yorkshire but also raise the profile and awareness of the Foundation and its work to a broader and potentially more influential audience.

*(Edited material taken from the Chairman's Statement 2014/15)* **Helen Varey**

---

## “It's dogged as does it”

Throughout Sir Barnes Wallis' long and wonderfully memorable life, it was his dogged determination that helped him to achieve his goals. We all know about the bouncing bomb and the length of time it took him to persuade the powers-that-be that it would work, along with similar issues with Tallboy and Grand Slam, but it was not until I had the opportunity to read Dr Mary Stopes-Roe's book “Mathematics with Love” did I appreciate that “dogged determination” also ran through his personal life. Barnes met Molly at a family garden party when he was 34 and Molly was 17. It was the start of their three long years of courtship mainly conducted through correspondence. Molly's father Arthur Bloxham didn't really approve of the relationship but did give his permission for Barnes to help Molly with her mathematics hence the title of the book. Below is an extract from “Mathematics with Love”

On September 12th, her 20th birthday, Molly gave Barnes her answer and the two were formally engaged. Later in a little leather-bound notebook, Barnes commemorated the highlights of their history to that time.

*Molly and I met – St George's Day, Sunday April 23rd 1922.*

*I proposed to her Thursday December 21st 1922.*

*Molly accepted me Friday September 12th 1924.*

And later he added:

*And we were married on St George's Day Thursday April 23rd,  
at St Lukes Church Hampstead.*

continued overleaf

And above these entries is a motto, cut out and pasted in:

*IT'S DOGGED AS DOES IT.*

Dogged determination had won the knight his lady, and for the lady the right to declare her love. Auntie Nellie, who cherished both the young people as her own children, had written to Barnes earlier in the year in praise of “doggedness”; her advice had inspired him over the months.

*“Now put your longing in your pocket, and remember no abstaining is too hard for her sake. And if Arthur is a wet blanket – you know and we know that neither many wet blankets nor many waters can quench love.*

*As I told you long ago – doggedness does it. True, valiant, patient – I’m sure you are made of all three – but the last is the almost impossible virtue, and only the nobility in love have it. It means the “possession of one’s soul” – what a jewel of a thing one’s soul is to possess!*

*Keep your jewel well cut and polished to put on her fair white neck, after the ordeal is over. Won’t she wear it proudly? And, I truly believe, worthily.*

*Goodbye, you poor, roughly treated piece of gold – keep your brightness for her, and through her, for the world.”*

~

Molly and Barnes continued to write to one another whenever they were apart and Molly’s father came to appreciate Barnes’ qualities and to accord him respect and affection and he and his daughter were never estranged.



Molly and Barnes at Howden

The Barnes Wallis Foundation trustees are proud and privileged to be associated with such a great man, whose inventions arguably changed the outcome of the Second World War and who was and still is a huge inspiration to the young and the not so young. It’s through the trustees’ doggedness that we continue to keep alive the legacy of Sir Barnes Wallis through inspiring and promoting education, training and research in aeronautical and general engineering design.

**Helen Varey**



## Sir Barnes Wallis' Desk to be returned to Brooklands

Since the Barnes Wallis Foundation re-located all its artefacts to Brooklands, the trustees have held some of their meetings in Sir Barnes' Office, now known as the Ford Room. Although we sit round a table with a bust of the great man looking down on us, we are aware that the desk used by Sir Barnes is no longer there.



Sir Barnes' Desk

The mystery of its whereabouts now seems to be resolved. Robert Owen, the Foundation's chairman, has been contacted by the nephew of one of Sir Barnes' colleagues at Brooklands, George Benzies, who, on his retirement in the mid-eighties, was allowed to take the desk with him. Mr Benzies has since died and the desk is at present, in the ownership of his nephew David Benzies, who has offered the desk as a gift to the Foundation and to pay for its removal to a suitable location. The Foundation has since had confirmation from Brooklands that they would be delighted to receive the desk and will place it in the Ford Room. What better place could there be than Sir Barnes' former office at Brooklands?

We are told that the provenance for the desk exists in a copy of the British Aerospace House Journal, from the 1980's, which contains an article about Mr Benzies and refers to the desk. Brooklands are currently trying to locate this reference to confirm the story. The Foundation, in accepting Mr Benzies most generous offer, wish to place on record its sincere thank you to him and look forward to seeing the desk returned to its home.

**Helen Varey**

**Note:** Another desk used by Sir Barnes is also displayed at the RAF Museum Hendon

## Professor Brian Cox inspires Barnes Wallis students

Students at the Barnes Wallis Academy were delighted to meet Professor Brian Cox at a STEM\* Inspiration Day held at RAF Coningsby.

In addition to listening to a talk from the world-renowned scientist, the Year 10 students had the chance to meet the Station Commander at RAF Coningsby and find out more about career opportunities in aviation, engineering and science.

Amelia, one of the 10 lucky students selected for the trip, said: “It was really fascinating to hear Professor Cox talk about science. We asked him lots of questions about space and he told us all about how he developed his career.”



The Inspiration Day, organised by the Jon Egging Trust in partnership with the RAF, was designed to inspire young people to aim high to achieve their ambitions. Students also took part in workshops to develop their teamwork and leadership skills.

Miss Day, Assistant Principal and Head of Science at the Barnes Wallis Academy, commented: “This was a fantastic opportunity for our students to put their questions to such an inspirational, and well respected scientist. Everyone had a really memorable day, and it has really given the students the boost they needed as they begin their GCSE studies.”

**Simon Northcott**

**David Ross Educational Trust**

\* **STEM** - Science, Technology, Engineering and Mathematics

## Students ‘fly mission’ at NASA Space Centre

Four students from the Barnes Wallis Academy have their feet firmly on the ground after the trip of a lifetime to the NASA space centre in America.

Ethan Kolberg, Shannon Cadwallader, Carla Butterley and Kane Partridge – all Year 10 – spent an incredible week at the world-renowned Space and Rocket Centre in Alabama.

The students, who were selected for the trip through an academy competition, had the opportunity to pilot a multi-billion dollar space rocket in a special simulator and experience what it is like to walk in space.

Kane said: “As soon as we arrived, there were rockets everywhere. It was amazing. We learnt lots of new skills and it gave us a great practical understanding of the things we had learnt in lessons.”

The centre covers a huge site and is ‘home’ to more than 1,500 exhibits that are open to the public, but the Barnes Wallis students had unique access to off-limit areas.

Shannon added: “The trip was incredible. It has given us all a lot of confidence and now I am thinking about careers in science.”



Space and Rocket Centre Training

Thanks to the support of Northrop Grumman, the Barnes Wallis Foundation, Woodhall Spa Rotary Club, the Horncastle Health and Wellbeing Fund and the David Ross Education Trust, Barnes Wallis was the only English school represented at the camp, which featured students from all over the world.

Mr Lancaster, Principal, commented: “This trip was a fantastic opportunity for our students. It is all about taking students out of their comfort zone, enriching their learning experiences and inspiring them to achieve their personal best. I know that they will remember their time there and strive to work hard this year.”

**Simon Northcott**  
**David Ross Educational Trust**

## Rise and Fall of Howden's High Flyer

Through the autumn of 1929 a group of aeronautical boffins at a factory surrounded by flat potato fields in East Yorkshire became obsessive about the daily weather forecasts.

For more than three years they had been in serious head-to-head competition with another team of designers and engineers more than 100 miles away at Cardington in Bedfordshire.

The rival sides were each hoping to become the first to finish work on separate airships, crafts that were three times the size of today's jumbo jets and would be the fastest and most luxurious means of air travel – the Concorde of their day. With aircraft then having a range of little more than 500 miles, airships were the best hope for long-haul flights.

But the Yorkshire team lost the race. Their spectacular R100 airship was on the verge of completion three miles outside the town of Howden when news came through that its southern competitor, the R101, had beaten it into the sky.

At Howden they didn't remain deflated for long. On paper the Yorkshire airship was still on course to be significantly faster than the R101.

It would take less time to reach distant corners of the British Empire like India and Canada, for which both craft had been designed. Once in flight, the R100 would be a superior airship.

But as autumn passed into winter, the outlook at Howden began to look bleak. The weather had to change soon...

That the weather did finally change is, of course, a matter of history, and much of that history has been researched by one man. Ken Deacon, a former systems analyst with British Aerospace at Brough, near Hull, has written three books about the R100 and more than anyone else knows what happened the day it finally took to the air.

Monday, December 16, 1929, was cold, frosty and – more importantly says Ken – pretty calm. “For almost a month it had been too windy, and wind was the last thing they needed because the airship was very light and it took 500 people to walk it out of the shed and hold it down. A gust of wind could have caused serious problems.”

When the base's own meteorological officer declared that a calm spell would last for a few days, arrangements were immediately made for the flight and the leader of the design team, Barnes Wallis – later to achieve immortality as inventor of the “bouncing bomb” used in the Dambuster Raids of the Second

World War – cut short a stay at Harrogate’s Cairn Hydro Hotel with his wife Molly.

“Barnes Wallis had been stressed up to hell for weeks, waiting for favourable conditions,” says Ken.

“He thought Harrogate would be a good change of scene from their cramped bungalow on the airship station. He suffered migraines, insomnia and a lack of appetite, plus he hated being trapped indoors while waiting for the telephone to ring. When it finally did ring on that Sunday evening, Wallis’s migraine just disappeared. He and his wife ate a large dinner and then they drove back to Howden through the night.”

The second famous name to be associated with the R100 and that historic day was Nevil Shute, who combined his successful career as an aeronautical engineer with writing more than 20 best-selling novels including *On The Beach* and *A Town Like Alice*.

Shute had previously worked as an engineer with the de Havilland Aircraft Company and then Vickers.

He arrived at Howden in the spring of 1926 to become the project’s chief calculator, also known as stress engineer, and lived in a simple three-storey house in the town at 78 Hailgate.

Ken says: “Nevil Shute got up really early for the launch. It was two in the morning when he set off to walk to the airship station. The roads were already blocked with traffic, much of it lorries and coaches bringing the 500 soldiers who were needed to hold down the airship. Also, news must have spread fast because thousands of people came to watch the R100 take off, taking up positions on nearby roads and fields.

“Some even brought breakfast to cook, and wind-up gramophones to pass the time while waiting for the airship to appear. It must have been like one of those rocket launches you see at Cape Canaveral.”

Nevil Shute himself would later recall the scene, writing in *Slide Rule*, his autobiography: “It was a wonderful moonlit night, clear and frosty without a cloud or a breath of wind.”

Barnes Wallis and Shute made a rendezvous in the airship shed sometime shortly after 3am to start preparations for the launch, and the atmosphere was electric as the huge building began to fill up, first with relatives and friends of the R100’s engineers and crew and then the soldiers who would make up the so-called handling party.

The crew went aboard at 5am to begin checks for the flight, culminating 90 minutes later with a nervous switching on of the six Rolls-Royce petrol engines for a short time to warm them up.

Now came the most potentially hazardous part of the operation: moving the R100 out of its hangar.

At about 7.20am, the airship was ballasted up with water and the shed fell silent. The 500 handlers had to be able to hear every single instruction shouted to them as they lifted the airship, some clinging on to handgrips attached to the base of the engine power cars and control cabin. Others held onto ropes, keeping the airship aligned with a white-painted guide line which extended down the centre of the shed and all the way out to the launch area.

“It was essential the handlers held the airship steady,” Ken says, “because there was only a couple of feet clearance between it and the shed. If the R100 had been allowed to hit any part of the building, all the planning and work which had gone into it for the best part of five years would have been wasted.”

A shouted command of “Go!” brought all that waiting to an end, and the soldiers began to walk the airship – tail-first – out into the cold Yorkshire morning. Deacon says there was one heart-stopping moment when a sudden gust of wind, on what had until then been a completely calm dawn, started to blow the R100 off the white line.

But the soldiers manhandled her back on course, some being lifted off their feet in the process.

The operation took just eight minutes, and then Squadron Leader E L Johnson announced it was out of the shed when he shouted: “All clear forrard...”

There was a huge cheer and a cacophony of car horns from those who had come to watch.

For the first time, the public could gauge the immensity of the R100.

She was moved well away from the shed and given final ballasting. With minutes to go before launch, some of the crowd couldn't contain their excitement any longer, surging forward into the launch field itself although keeping a respectful distance. Just before 8am the command was given to “let go”. The airship rose gently into the sky, emptying half a ton of water ballast from bow and stern to gain height, drenching many of the soldiers.

“At 500 feet,” says Ken, “two of the six engines were increased to slow-ahead and the R100 gathered speed. Two aircraft which took off to act as her escort looked like fleas flying around an elephant.”



R100 about to leave Howden

After several test manoeuvres at 1,000 feet, she circled Howden to give all the residents a full view of her, then headed first to York to make sure she was flying satisfactorily. She was then set on a course for Cardington in Bedfordshire, home of her slightly larger sister, the R101.

She was everything Barnes Wallis, Nevil Shute and the rest of the team had dreamed of, but it was to be the southern-built airship which would eventually determine the R100's fate.

Howden's R100 successfully flew to Canada and back in the summer of 1930, putting pressure on the R101 team to achieve a similar long-haul flight. Sadly, the R101 crashed and burst into flames in France on October 5, 1930, on its way to India, with the loss of 48 lives. The Air Ministry immediately grounded the R100 and hurriedly abandoned its ambitious plans for this form of transport. Just as Concorde's Paris crash a couple of generations later spelt the end of the era of supersonic travel, so the R101 disaster effectively ended Britain's involvement with passenger airships. Ken Deacon records that Howden's R100 was deflated on December 11 1930, just five days short of the first anniversary of its maiden flight.

A year later work began on cutting her up and she was sold for £450-worth of scrap.

*Reproduced from an article by Roger Ratcliffe in the Yorkshire Post published on 1st December 2009*

Kenneth Deacon's books are:

Howden's Airship Station

Howden Airship Station 1915-1930 (with Tom Asquith)

The Men and Women Who Built and Flew the R100.

# Barnes Wallis Foundation

## Trustees

(at 20 October 2015)

Dr Mary Stopes-Roe (President)

Dr Robert Owen (Chairman)

James Holland (Vice Chairman)

Wg Cdr Chris Henderson RAF (Retd) (Treasurer)

Helen Varey (Secretary)

Gerry Carroll

Kenneth Deacon

Jim Edmondson

Professor Rick Hillum

Peter Rix

Jonathan Stopes-Roe

Humphrey Wallis



Published by the Barnes Wallis Foundation

© Barnes Wallis Foundation 2015

**Charity Number 1157723**