

# Barrow & District Association of Engineers

TRUSTEES' REPORT

2023 - 2024

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# ***Barrow & District Association of Engineers***

[www.bdae.org.uk](http://www.bdae.org.uk)

**President: Russ Watson – CEng, FIMarEST**

***Hon Vice Presidents: Peter Gillett & Charles Rowntree***

***Programme Secretary: Martin Bates***

***Treasurer: John Sykes***

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## Introduction

### *Charity Registration.*

The Barrow & District Association of Engineers (BDAE) was registered with the Charity Commission on 22nd April 2022 as Charity Number 1198693.

The BDAE income for the year 2023- 2024 exceeds £25,000 and therefore BDAE is required to submit an Annual Trustees Report and an independently checked statement of accounts.

### The objects of BDAE are:

To advance education for the public benefit in Southwest Cumbria in the subjects of Science, Technology, Engineering & Mathematics ('STEM' subjects) through the provision of:

- a) Public lectures discussions and trips to sites of special interest to support education.
- b) Bursaries, Scholarships, Prizes and Awards to children and young people in Primary, Secondary Further and Higher Educational settings designed to assist them in furthering their interest and education in 'STEM' subjects.
- c) Grants of financial assistance to enable educational establishments to invest in technology facilities with the aim of promoting understanding of and interest in 'STEM' subjects for the benefit of their pupils/students.

### The Trustees of BDAE are:

Russel Watson (Chair)  
Joshua Stephen Thomas Ashley  
John Harold Sykes  
Michael Kittley  
Anne Marie Morris

The Trustees endorse this Report as a true reflection of the activities of the Association in the financial year 5th April 2023 to 5th April 2024.

The Trustees also confirm that there were no serious incidents affecting BDAE which should have been reported to the Charity Commission.

## President's Report

As the President of the Barrow and District Association of Engineers (BDAE) I must position our organisation at a period of time when there is so much innovation, change and development taking place, offering both the opportunities and challenges for engineers. Certainly, it is a great time to be involved in engineering. If I look locally there is the Green Hydrogen Project at Kimberly-Clark whilst at BAE Systems growth is the order of the day. For the first time ever three nuclear submarines programmes are being delivered at the same time: the last of the Astute Class in build and commissioning, Dreadnought (the replacement for the Trident Class submarines) in build, and you will have seen the pictures in the press of the mega block moves into the Devonshire Dock Hall plus the SSNR programme is deep into design, the replacement for the Astute Class.

Further under AUKUS, the tripartite agreement between Australia, the United Kingdom and the United States, SSNR will form the basis of the submarines to be built for Australia hence the project nomenclature has changed to SSNA (SSNAUKUS). And just recently we have heard that BAE Systems along with ASC Pty Ltd have been selected to build Australia's nuclear-powered submarines. To support SSNA it will require further development of the BAE Systems Barrow physical site infrastructure (which hopefully will be a subject of a lecture next season) over and above that already occurring for Dreadnought and further expansion in the work force.

All this programme growth of course means continued expansion of the BAE Systems engineering team so it is great to see the developing move of the University of Cumbria into Barrow. The new campus is now coming out of the ground which will form part of the Barrow Learning Quarter along with the existing BAE Systems Submarine Academy for Skills and Knowledge (SASK). Now we have a part to play with our programme of Bursaries and Awards to encourage Science, Technology, Engineering and Maths (STEM) in our local schools and colleges, **'Helping Tomorrow's Engineers Today'** of which more later. All this growth and potential has caught the attention of local, regional and central government (and it was notable the recent joint visit of the Prime Minister and the Chancellor of the Exchequer) and we look forward to the practical measures coming out of the Barrow Transformation Fund.

If I look wider there are enormous developments nationally in our moving away from our reliance as a society on carbon. Internationally we have seen significantly greater activity in space with multiple missions to the moon plus the prospect in the relatively near future of the human race returning to our largest satellite. Was it really 1969 when we watched those grainy pictures of the 'first steps' and it is amazing to think how many people today do not have those memories. And then there are the massive opportunities in the development of Artificial Intelligence, definitely in many applications a blessing but there are many knowledgeable voices urging caution.

All this means that it is an exciting time for engineering.

I have written in the past that I consider that our Association has three 'unique selling points' or USPs. The first being that we are an Engineering Association that is not aligned to any Professional Institute, does not require its members to hold any professional engineering qualifications, and is open to all. We only ask that our members have an interest in engineering in its broadest definition. I do ask all members to pro-actively encourage new members to join our Association; to join a forward-thinking engineering organisation and have the 'bragging rights' of being part of an organisation that is making a real difference. For more information about the Association our website is at [www.bdae.org.uk](http://www.bdae.org.uk).

Secondly, we run a series of lectures in the autumn and spring terms. Once again, I would remind employers and those individuals that do hold professional engineering qualifications then our lectures can be claimed against the yearly requirement for Continued Professional Development (CPD). This year again I believe we have had a interesting, challenging and entertaining lecture season and I thank all the lecturers for freely giving up their time. For more detail I will direct you to the Programme Secretary's Report who deserves special thanks for dealing with the many, and varied, challenges of putting on the lecture series.

And our final USP is to run a programme of Bursaries and Awards to encourage Science, Technology, Engineering and Maths (STEM) in our local schools and colleges, **'Helping Tomorrow's Engineers Today'**. This programme of Bursaries and Awards can only be achieved by the tremendous support of our highly valued sponsors, who have our sincere thanks.

I encourage you to read the Bursary Coordinator's Report. Once again, I would highlight the incredible breadth of our Bursaries and Awards covering ever year from Year 6 through to those about to commence a University Degree along with those following the craft route in all our local schools and colleges. Our strategy remains to cover this broad range but also to target Primary Schools and secondly encourage an increased take up of STEM degrees. The focus on Primary Schools due to the need to ignite excitement in STEM at a young age and the attention to those aiming to take a STEM related degree due to the woeful number of young people going to University from the Furness area. This year has seen our overall budget for Bursaries and Awards increase to over £17,000 and following the changes in previous years we have used the additional money to consolidate our strategy.

It is intended, however, that the 2024/2025 Bursary and Awards programme will take another step forward. I hesitate to go into too much detail as the Bursary Sub Committee is yet to give the final 'nod' of approval. That said planning is well advanced. It is hoped to run an Engagement Event targeted at Key Stage 3 children who will come along to the Forum for either a morning or an afternoon 'slot' with a responsible adult. It is timed to occur at the end of the school summer holidays and will be supported by a professional educational organisation. It is aimed to be both informative and entertaining plus help spark children's interest in STEM. We thank BAE Systems who have provided funding for the event. In addition, we thank the University of Cumbria for their enthusiastic positive practical support to this initiative. If, as we hope, it is successful this may form the basis of a yearly event or indeed a much larger event during term time. A full communication plan covering physical and electronic media will be led by the University of Cumbria so watch out for more detail in the coming weeks.

If I turn now to finances these remain on a sound footing. Our Treasurer keeps a close eye to ensure that we only commit to Bursaries and Awards when we have the funds to cover them. Similarly in terms of the Engagement Event which I highlighted before we have ensured that we have considerable risk provision. This prudence is obviously essential due to our charitable status. Our Main Account, after last year's increase in membership fees, is in a slightly improving position. That said I would encourage all members to ensure that their direct debits are up to date.

Our work can only go ahead due to the tremendous support of our Sponsors who by their generous donations allow us to make a positive impact on the young people in our community. Our thanks (in alphabetical order) go to:

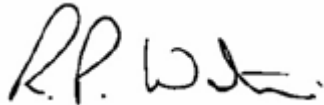
- BAE Systems Maritime – Submarines
- B L Gilbert (Barrow) Ltd
- Furness College
- Furness Engineering & Technology Ltd
- Furness Plastics
- Morgan Sindall Construction & Infrastructure Ltd
- Mr Marcus Cardew
- NHS Foundation Trust University Hospitals of Morecambe Bay
- Oxley Developments Company Ltd
- Sir John Fisher Foundation
- St Jame's Place
- The Barnes Wallis Foundation
- The Institution of Engineering and Technology

In addition, I would like to recognise and thank all the members of the Council who give their time freely in support of the aims of the Association. And lastly to you our members without which we do not have an Association. Feedback is always welcomed along with any offers of support in pursuance of the Association's aims.

But finally, I return to my original thought that it is a great time for engineering, especially in the local area. If I look back in history whoever I pick such as Brunel (the Victorian pioneer), Whittle (inventor of the turbojet engine), Barnes Wallis (of airship and bouncing bomb fame who lectured to our Association) or Berners-Lee (inventor of the World Wide Web) I am certain all of them in their time would have said that it was a 'great time for engineering'. That brings us to the logical conclusion, that we all really know, which is that in our complex evolving society it is always a great time for engineering. It is just rather nice that at the moment engineering is getting the public awareness it deserves.

In conclusion as President of the Association I commend the Secretary's, Bursary Coordinator's and Treasurer's Reports to the membership.

Best wishes to you all.

A handwritten signature in black ink, appearing to read 'R.P. Watson'.

Russ Watson

President, The Barrow and District Association of Engineers

## Secretary's Report

### Programme

We have had another season of entertaining speakers who provided insights into a broad range of subjects. Our thanks go to these speakers who give their time and travel for free. We are always looking out for contacts and subjects for future lecture programmes to augment suggestions made by the Committee; feel free to message me or another committee member. I remain indebted to Mike Kittley for help and advice and to Ian Palmer for liaising with the IMechE lecture series.

21-Sep-23	Building our Future Engineering Capability	Jon Shaw (Engineering Director) & Melissa Thompson-Craig, (Head of Engineering – Strategic Capability) BAE Systems
04-Oct-23	The History of Control Engineering and how it Changed the World	Prof Paul Stewart University of Cumbria
16-Nov-23	Bursary Awards Evening & Lecture "Life at Sea as an Engineering Submariner"	Cdr Chris "Titch" Evans, Senior Naval Officer Dreadnought, Royal Navy
19-Jan-24	UK Tidal Range Energy and Morecambe Bay	Prof. George Aggidis, Lancaster University
16-Feb-24	Planets of Our Solar System	Ian Palmer
20-Apr-24	M.V. Sir John Fisher	Iain Salter, James Fisher Shipping Services

The 2022-23 season finished with a talk given by Paul Wrobel on Waterbird – UK's First Successful Seaplane. This informed us of the amazing bit of local history on Cavendish dock, where early trials of waterborne aircraft were undertaken. Then moving to Waterbird and its early flights in Nottingham. Then following some alterations, moving onto Windermere for final construction and flight of the replica in 2022.

This season opened in September with a lecture by Jon Shaw and Melissa Thompson Craig from BAE Systems on the challenge of developing the engineering capability required to deliver the enormous submarine design and construction programme in Barrow over the next twenty years. Melissa took us through the huge growth in Graduate apprentices, many of whom were in the audience, then onto career paths available covering those who wished to remain purely in the technical domain.

Professor Paul Stewart provided a talk on "The History of Control Engineering" without getting too technical. He explained how control engineering was at the heart of many technologies today. He began by showing the Watt governor employed on steam engines before moving through the Lucas distributor & onto PIDs. He introduced some of the people who had influenced control science McGee, Schmidt & finally Kalman. Giants who are little known outside specialist engineering

The November Bursary Lecture was given by Cdr Chris "Titch" Evans, Senior Naval Officer, Dreadnought. Following the presentation of the awards, Titch gave an interesting and amusing talk covering his career in the Royal Navy to BDAE members, students and their families.

The ever-popular George Aggidis returned in January and reminded us of the world beating, untapped tidal energy potential that is available in the UK. He described how the latest cost models, environmental arguments and rising sea water levels make tidal barrages economic sense. However there remains limited political will with funding limited to cost models.

The planned February lecture on Experiences of Naval Shipbuilding in Canada was cancelled by the speaker. Council member Ian Palmer stepped in, at very short notice, and talked about The Planets in

our Solar System. He promised to inform us of things we did not already know and in my case this certainly proved true. Our thanks to Ian again for standing in at such short notice.

Our planned speaker, Eric Adams, of Carlton Power was not able to afford time to travel to Barrow and the technology foiled the attempt to broadcast this on Teams at the venue. So, we had to cancel this lecture on one the first developments in the country of producing and using green hydrogen.

### *Council*

The usual Council Meetings were held before each lecture and the attendance was good with council members undertaking tasks, especially in improving communications. As reported at the last AGM the new website is available [www.bdae.org.uk](http://www.bdae.org.uk) which will be easier to manage and increase the amount of information available to the membership. Work has also been undertaken in other areas of communication primarily electronic – Facebook, Gmail, etc.

The Association has now been given Charity Status, which imposes a greater rigidity on Council procedures and responsibilities especially in financial reporting. However, the success of the Bursary Scheme has meant registering with the Charity Commission has become a legal requirement.

The Programme for 2024/25 is in hand and the dates for The Forum commencing in September have been booked. The Bursary Award Evening in November is also now scheduled for The Forum

John Sykes has kept the books in order. Our thanks to our auditors Steve Liddicott with the assistance of Carl Swindlehurst. However, Carl will be leaving the area and his place will be taken by Bernard Jackson. Our thanks & good wishes to Carl for undertaking this growing task. Ian Palmer maintained his high standards when giving the vote of thanks and Denis Lidstone's team has again widened the Bursary Scheme. (This is subject to a separate report).

Chris Merritt has now retired from the committee, and we thank him for his help in taking us into the 'Metaverse'. Josh Ashley has taken leave of absence to undertake his PhD but has now returned. Other members of council have taken on board his tasks, hopefully temporarily.

We are very pleased to welcome three new members to the council, TJ Richards, Ryan Wilson & Sally Schofield. This has reduced the Council age profile considerably and their contribution is already having an effect.

### *Council Members for 2023 – 24*

Russell Watson – President	TJ Richards – Web Master
Martin Bates – Hon Secretary	Denis Lidstone – Bursary Award Co-Ordinator
John Sykes – Hon Treasurer	Kath Walley – STEM & School Liaison
Joshua Ashley – Minute Secretary & Comms	Ian Crawshaw – Bursaries
Ian Palmer – PESC liaison	Anne Morris – IET Liaison & Bursaries
Sally Schofield	Charles Rowntree
TJ Richards	Mike Kittley
Ryan Wilson	

We are grateful to the staff at the Forum, who have appreciated our problems. Regrettably support from the local press & radio has not always been available. Most of all we are grateful to our members who have supported the Association by turning up and asking many pertinent & penetrating questions giving us a better insight into Engineering.

*Martin Bates*

Honorary Secretary



## Bursary & Scholarship Report

### *“Helping Tomorrow’s Engineers Today”*

It's been a very successful and rewarding year for the BDAE Bursary Awards Scheme. With additional support from our Sponsors, we have been able to expand the awards to further encourage the adoption of STEM in all our local schools and colleges in accordance with the BDAE Strategy.

The value of the Bursary Awards has increased to just over £17,000 with the major areas of change being as follows:

- We wanted to encourage more local students to take STEM related degrees and therefore increased the two previous awards to six bursaries at £1,000, using a different selection criterion changing from “excellence” to “need” and accepting that the cost to undertake a degree can be an inhibitor. All applicants were required to submit a 500-word essay entitled *“Why I need the BDAE Engineering Scholarship to support me in studying for a STEM Degree”*
- To enhance the awards to secondary schools Year 10 students, “The Engineering Design Technology Competition”. This award raises the visibility of the excellent STEM work within schools that recognises and promotes good practice in delivering engineering design and associated practical skills.  
The Bursary was increased to the winning school awarded £1,000 and two runners-up receiving £500 each.
- For the first time, awarding bursaries to students undertaking the two new STEM related T Level Courses at Furness College. T Levels are two-year full-time courses that effectively run in parallel with A Levels, with students spending 45 days in an industry placement. [It is equivalent to 3 A Levels]  
A winning student from each of the two courses was awarded £300.

Over 80 Certificates were awarded to students and 9 certificates to individual schools. However the bursary awards impacted on many hundreds of students as for example, STEM equipment purchased by Primary Schools were utilised by many year groups. The highlights of the years Bursary Awards can be summarised as follows:

### *Primary Schools*

#### Year 6 STEM Prize Winners

This was the third year of awarding STEM Prizes to Primary Schools in an identical way to Secondary Schools, in recognition of their interest and involvement in STEM.

Twenty-seven schools nominated a winner from their Year 6 students in recognition of their interest and involvement in STEM, with each student being awarded a BDAE Certificate and an Amazon voucher for £20.00.

The Awards Celebration Evening in June 2023 was attended by over 100 students, families, teachers and supporters when a programme of presentations, showing the various stages of a journey to engineering, was outlined and Furness Education and Skills Partnership, FESP, also showed their breadth of activity in the local area.

A keynote speech was made by Dr Michael Jeschke, Siemens Energy. He talked the audience through his own journey into engineering, from an interest in how things work at a young age, to his first steps into an engineering career, a PhD in Polymer Science and on to his current role as Materials Expert at Siemens Energy.

A second keynote speech was made by Leah Clough, a young Wind Turbine Technician at Orsted. Leah had the audience enthralled with her description of a day on the job. The students really enjoyed hearing about Leah's journey to work on a boat, the safety clothes and harness Leah wears, how high up she works on the wind turbines and how she secured the job she really loves. Leah reassured the students

by saying, all the way through school she, had no idea what she wanted to do as a career. She advised the children to look for jobs in things that really interest them.

As in previous years the feedback from parents was excellent, including, *“as a parent really proud that the enthusiasm and commitment had been recognised”, I enjoyed hearing all the inspiring words that were spoken on the night”, the event made the young people feel special”*.

### STEM Awards for Primary Schools

All local Primary Schools, 42, were asked how they would use a bursary of £500.00 to enhance their STEM activities and the BDAE Bursary Committee selected 6 winners.

The Bursary Committee was again impressed by the level and scope of the work undertaken and the quality of the submissions. These included; an outdoor weather station to be used by several year groups, a “Click and Grow” Smart 9 System that replicates having a garden for pupils within a school that has no outdoor space; the purchase of ICT/STEM materials to save borrowing from other schools and the purchase of a Micro: bit STEM System for an after-school club that runs for individual year groups from year 2 to year 6.

The winners were:

- Dalton St Mary's Primary School
- Askam Village School
- George Hastwell School
- Coniston CE School
- Ormsgill Nursery and Primary School
- Flookburgh CE Primary School

## *Secondary Schools*

### STEM Prizes

STEM Prizes were awarded to all years, 7 to 11, in our local Secondary Schools. The individual year winners were selected by the schools on both academic and general interest in engineering. Winners received a BDAE Certificate for their portfolio, in an identical way to the Primary School STEM Prize Winners and Vouchers from £25.00 year 7, £30 year 8, £35 year 9, £40 year 10 and £50.00 year 11.

Local Secondary School awarding STEM Prizes:

- Cartmel Priory
- Millom
- John Ruskin
- St Bernard's
- Dowdales
- Ulverston Victoria
- Furness Academy
- Walney

### Engineering Design Technology Competition

BDAE are always impressed with the work undertaken within the Secondary School which follows the life cycle of a product. From project planning, initial design, normally in 3D CAD, the practical elements in material selection, environmental impact, costing etc through to the manufacturing that can include 3D printing. The bursaries awarded was increased to a winner receiving £1,000 and each of the two runners-up, £500.

#### **Winner**

- St Bernard's Catholic High School

#### **Runner-ups**

- John Ruskin School Coniston
- Ulverston Victoria High School

### Student Bursaries

The Student and Engineering Scholarship winners were awarded at the Bursary Awards and Lecture Evening in November 2023 by Cdr Chris "Titch" Evans, Senior Naval Officer Dreadnought who then gave a fascinating insight into the role of an engineering officer at sea in a Nuclear Submarine

The winners were:

#### **Furness College Bursaries** [Each awarded £300]

- **Ashton Hugill** Craft Engineering
- **Jody Wall** Technical Engineering
- **Issac Stewart** "T Level" Digital Production Design & Development
- **Reece Anderson** "T Level" Design & Development for Engineering & Manufacturing

#### **Student Bursaries** ["A Level" Year 1, each awarded £300]

- **Ben Pollard** Ulverston Victoria High School
- **Jack Patel** Barrow Sixth Form College
- **Oberon Simpson** Millom School
- **William "Billy" Bell** Barrow Sixth Form College *[who also received the "best of the best" student award by the BDAE Bursary Committee and an extra bursary of £100]*

#### **Engineering Scholarship Winners** [Each awarded £1,000]

- **Theo Kirkham** Ulverston Victoria High School
- **Rory Day-Sketcher** Barrow Sixth Form College
- **Amelia Mardel** Ulverston Victoria High School
- **Daniel Watson** Barrow Sixth Form College
- **Jenny Lyle** Ulverston Victoria High School
- **Charlotte Swallow** Ulverston Victoria High School

### *In Summary*

The BDAE plans for 2024/5 is to continue the support to local schools and colleges but also to further strengthen the activities with Primary Schools and encouraging more local sixth form students to take a STEM related degree.

***Finally, the BDAE wishes to thank all our sponsors who make the Bursary Awards possible.***

Denis Lidstone

BDAE Bursary Coordinator

April 2024

## Treasurer's Report

The Association has no assets (other than money held in bank accounts) and no employees. The Association had no liabilities when the accounts were drawn up.

The Association has two accounts:

- the **Main Account** which receives Membership fees and supports the lecture programme arranged by the BDAE Secretary.
- the **Bursary Account** which receives support from Bursary sponsors and provides Bursary awards to schools and students in accordance with recommendations from the Bursary Committee.

Although the two accounts are separate money may be transferred between the two accounts at the discretion of the Trustees and Council Members.

A summary of transactions in the two accounts are provided as part of this report. Our two Hon. Auditors, Steve Liddicott and Bernard Jackson have backgrounds in finance and are independent of BDAE so are suitably qualified to check them. They have checked all the accounts and confirm that they are satisfactory.

## Barrow & District Association of Engineers. Summary of Main and Bursary Accounts. Session 2023/2024

Income			Expenditure			
	Item	Totals		Item	Sub-totals	Totals
Brought Forward	£12,699.90	£12,699.90				
Member Subscriptions	£529.00		Lecture Costs	£514.80		
Sponsorship	£25,863.60		Bursary Expenses	£735.65		
			Total Expenses		£1,250.45	
			Bursary Awards	£13,850.00		
					£13,850.00	
Total Income		£26,392.60				
			Total outgoings			£15,100.45
			Carried forward			£23,992.05
Total		£39,092.50		Total		£39,092.50