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fulcrum

YOUNG ENGINEERS
Talent · Skills · Enterprise

Our Young Engineers impress all at Celebration

TRAVELLING from all parts of the UK, over 80 of the top young engineers in the country gathered in London on Monday 11th September to take part in the Young Engineers Annual Celebration of Engineering. In an action packed day, Young Engineer for Britain contestants demonstrated their innovations, Club Members displayed their clubs' activities, Primary School Teams raced to design and build a model of a replacement Tower Bridge – and everyone was tested on their engineering skills!



Club members launching their flying machine constructed on the day in the new Club Awards Engineering Challenge.

This year, in a new venture for Young Engineers, the top nine clubs in the country were challenged to build a model plane with air motor to fly from one of the Old Royal Naval College balustrades. The club leaders also formed two teams and took part in the challenge. All forms of amazing aircraft were built and some even managed to fly, whilst a few bore more resemblance to the man-powered flight attempts from Bognor Regis pier the previous weekend! Individual students also competed to build K'Nex buggies, which were then raced down the college skittle alley.

Once the judging was complete, students had the opportunity to demonstrate their projects to a wide selection of guests, including many senior engineers, educationalists and representatives of the engineering industry. They also had the chance to talk to other competitors and exchange views on their projects, how they were going to develop them and their future plans.

The guests were highly impressed by the quality of the entries and the skill and innovation shown by everyone. As a prelude to the Awards Dinner, the Young Engineer Special Awards and the Shape the Future Photographic Competition Awards were presented.

Over splendid dinner in the magnificent Painted Hall, Kate Bellingham, President of Young Engineers and Linda Sanford, a very senior IBM executive presented a wide variety of prizes to teams and to individuals. The Young Engineer for Britain 2006 was Ruth Amos of Eckington School, Sheffield for her product – StairSteady. This is a device to assist those who have difficulty climbing and descending stairs.

Ruth was absolutely amazed to win this award and even more excited to appear on 'BBC Breakfast' the following day.



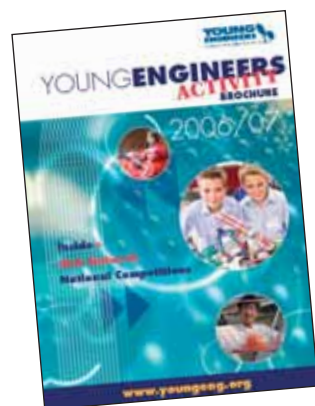
Welcome Airbus!

We are delighted to welcome Airbus as a National Sponsor. As one of the world's leading aircraft manufacturers, Airbus believes it has a vital role to play in informing and inspiring young people about this most innovative and dynamic of industries.

Airbus is already engaged in promoting engineering to young people: student visits are organised to their various aircraft manufacturing sites; Airbus experts regularly visit schools and colleges to give talks and advice; and it has been involved in developing a number of more in-depth programmes for schools, which are designed to meet national curriculum requirements. If you would like to get involved in these schemes, visit www.airbus.com/en/utilities/sitemap.html for more information.

Inside this issue:

- Club Cluster Groups
- Inspirational Club Leaders
- 2006 Day at Sea Report
- 1st Year Activity Programme
- Events Calendar



2006/07 Activity Brochure – have you got your copy?

This year we have released all of our competitions and challenges in one go, making it easier for you to choose which you want to try – although we hope you'll have a go at several! Our year's programme of activities are contained in the 2006/07 Activity Brochure, so make sure you have a copy, so you can find out about the K'Nex Challenge, Royal Navy Challenge, BAA Challenge, Young Engineer for Britain competition and brand new Regional Club Showcases! You can also view all the challenges in the competitions section of www.youngeng.org.



Young Engineers is a member of the Royal Academy of Engineering's BEST programme

Club Cluster Groups

This term Young Engineers is starting to coordinate the setting up of local cluster groups so local clubs can provide support for each other. We recognise that with clubs operating in such a wide variety of circumstances, that the groups themselves will need to decide their own level of involvement, but we will be putting together a guide to help get these groups off the ground.

As with the 'How to Start a Young Engineers Club' handbook, we are looking for club leaders to share their experiences with us to help make this guide as relevant and practical as possible. So if you have ideas of how the cluster groups should work, or have been involved in similar groups, please share your thoughts with us! The Club Leader Forum on www.youngeng.org has a cluster group thread, which is waiting for your contribution! Alternatively you can share your ideas privately by emailing them to clubs@youngeng.org or telephoning Lil on **01428 727265**.



Visit Rapid at the D&T with ICT Education Show

16th -18th November at the NEC Birmingham

Visit Rapid on stand number **C42** where you will have the chance to meet members of the dedicated Secondary team and the opportunity to take away a Rapid bag full of freebies.

For the second year running we will be joined by LEGO® who have just launched their new LEGO®MINDSTORMSTM - the NXT generation and ST, who are a global leader in developing and delivering System-on-Chip (SoC) and Semiconductor solutions across the spectrum of microelectronics.

Also at the show you will have the chance to see and meet the organizers of the Toyota Technology Challenge which has been developed by Toyota Manufacturing UK in partnership with Rapid. Visit us on our dedicated stand **D35 & E24**. We look forward to seeing you.

The Rapid Team

New Royal Academy Stand at Show

Young Engineers will be running a joint stand with our partners from the Royal Academy of Engineering's BEST programme. Come and visit us on stand **D50** and find out about the whole continuum of BEST activities designed to enthuse the next generation of engineers.

Inspirational Club Leaders

These club leaders have recently been awarded our new Club Network Leadership Award for their hard work and dedication to their club. You can find out more about them and their achievements by visiting the Club Leader Hall of Fame on www.youngeng.org.



Rob Smyth
Ravenshall Special
School in Dewsbury



Sarah Smith
Church Crookham
Junior School



Kevin Abel
Dyffryn Taf School
in Whitland



Jim Waddell
Cullompton
Community College

Should someone you know receive this award? The Club Network Leadership Awards are not only for club leaders – they are open to all deserving supporters of Young Engineers Clubs from parent-helpers and link engineers, to local sponsors. Simply send about 150 words explaining why your nominee should gain an award to clubs@youngeng.org. We want to hear about how they are involved in the club and how they stand out in particular. We would also like a photo of them in action! Award winners receive a certificate and small gift to show our appreciation and will be featured in the Club Leader Hall of Fame.

Keeping Active with Gatsby

If you've visited the Activity Bank on www.youngeng.org recently you may have noticed that a lot of the Key Stage 2 activities have been written by Carolyn Bryan. Carolyn is club leader at Uplands Junior School, who over the past year has been funded by a Gatsby Teacher Fellowship which has allowed her time out of the classroom to write up many of the more successful projects that her own club has been involved in. For example, a recently added activity has been the Fire Safe Bin project, which was based on a past BAA challenge. This activity is ideal for

getting the club members working in teams on a challenge that could be of benefit to the community. It also offers the opportunity for links with the local fire service who would be more than willing to host a visit or come into school to talk to the club.

We would like to say a big thank you to Gatsby for their help and support with this project. Gatsby Teacher Fellowships are open to teachers of Maths, Science or Technology. To find out more about the fellowship scheme visit the website at www.gtf.org.uk

THINKING OF UNIVERSITY? GET A GUARANTEED HEADSTART

The first hundred applicants from Young Engineers will be guaranteed places on Headstart's highly popular one-week residential summer school courses. These are held at universities throughout the UK as well as in the USA. Students need to be age 16-17, interested in mathematics & science and planning to go on to a technology-related course in higher education.

The range of courses comprises Broad-based Engineering (exploring 'hands-on' the various disciplines), 'Focus' courses (concentrating on one particular discipline), 'Insight' courses (for girls) and a selection of Science-based courses.

All students gain opportunities to experience under-graduate life – using student facilities and accommodation, attending lectures interspersed with project-based group activities and working alongside recent graduates learning of their

experiences. A visit to a local engineering company and other places of interest are often included during the week.

This year, there are more than thirty courses on offer, but places are limited so it is important to express your interest early. Costs for the week start at £160 excluding travel to & from the university. You can find out more and apply online at www.headstartcourses.org.uk

GCSE Success

Congratulations to the Young Engineers at Sandown High School. All nineteen of the Year 9 club members sat their GCSE in Electronic Products last June. They gained two grade Cs, ten grade Bs and seven grade As.

Tell the network your club's news: email clubs@youngeng.org

Urbis Illumination

In late July, Emily Cummins, winner of the 2005 Young Engineer for Britain Special Award for the Project with the Most Benefit to the Community, who is a former student of South Craven School in Keighley, and her teacher Wendy Banks, were taken on a week long European Engineering Experience. They visited Urbis Lighting in Basingstoke and Schröder S.p.A in Italy, which are sister companies in the worldwide lighting company Schröder Group GIE. Jon Gibb, who is the Product Development Manager at Urbis Lighting was on hand all trip to ensure Emily learnt as much from the experience as possible.

In Basingstoke, they were given a detailed factory tour to observe the assembly of both functional and decorative exterior lighting products for the UK and export markets. The tour covered the aesthetic design of luminaires and also the detailed mechanical design that is involved in bringing a new product to market. The remainder of the trip was spent in Northern Italy, visiting the Schröder lighting factory near Turin, a high pressure aluminium die-casting plant near Brescia and a lighting reflector



Wendy Banks (left), winner Emily Cummins (2nd left) and Jon Gibb of Urbis (right) seen with a body die-casting tool for an Urbis ZXU1 street light, at the plant near Brescia.

manufacturing plant near Milan. The tour took in some local lighting installations and a little time was squeezed into the busy schedule for some sightseeing in Turin, Milan and Brescia!

The trip provided a chance to study the role of Professional Engineers in modern product design and to compare manufacturing methods in two different European countries. Emily enjoyed the trip immensely, and it gave her an insight into the many varied roles of modern Engineers, which should help her with her choice of future career direction.

Shape the Future

The Shape the Future campaign was launched to bring coherence to the multitude of schemes that promote engineering in education. Teachers and hence Young Engineers club leaders are no doubt bombarded with mailings from well meaning organisations offering help with classroom projects and competitions.

With the support of all these organisations, and the DTI, DfES, the major engineering institutions, Learning Grid and the etb, Shape the Future will be producing a directory of initiatives, competitions and schemes that provides you with potted information about those that have national visibility. You will be able to see what they do, how much time they require and which key stage students can benefit from involvement. All Young Engineers competitions and activities will be there alongside all the other Best Programmes plus another 35 engineering and technology programmes that can motivate your students.

Access fund

We realise there are many schools that do not have engineering on their radar screens and for those there will be a small Access fund to start them on the road to engaging with a project such as a Royal Navy competition entry, a much favoured club activity. Hopefully this fund will also mean many more new Young Engineers clubs being set up. For more information contact info@shapethefuture.org.uk

OPERATION INTERCEPT – DAY AT SEA 2006

“Young Engineers, this is the shipping forecast for your Day at Sea ... Wind near gale force 7, sea heaps up, waves 4 to 6 metres, white foam streaks off breakers”

At 0700 on a dry, bright and breezy morning in May, students and staff from Bearsden Academy and Cardinal Newman schools started their Day at Sea by stepping aboard HMS Westminster, a Type 23 Frigate, moored in Portsmouth.

After a safety briefing, they were taken on a complete tour of the main areas of the ship followed by breakfast in the mess. Everyone then went up and outside the bridge to see the ship leave the dock and sail out of the harbour into the Solent.

Once out at sea the wind picked up to over 30 knots (near gale force 7). This made walking about the ship more a case of bouncing off the walls and holding onto everything available! However, everyone wanted to see the rest of the ship and had



tours of the engine rooms, weapons control & communications and logistical areas including fire fighting and damage control procedures. All the officers and crew were knowledgeable and happily answered everyone's questions.

Later in the day, everyone returned to the bridge for the weapons trials. These included the 30mm machine guns and main 114mm gun, which shook the deck when fired. At about 19.30, the ship gathered speed to about 25 knots and headed back to Portsmouth.

It was a true picture of life at sea when the weather is not so agreeable, but everyone agreed that they would do it all over again given the chance!

Bearsden Academy onboard HMS Westminster.

First Year Programme

We now have First Year Activity Programmes, which offer club leaders a ready-made year long programme of hands-on activities to use in club sessions with new members. Two programmes have been developed by experienced club leaders: one for Key Stage 2/Beginners and one for Key Stage 3/Intermediate club members. If you are interested in receiving a copy of either programme, email clubs@youngeng.org.

Can't log in?

To take advantage of the full range of club services, we need to give you a username and password. Simply email clubs@youngeng.org to get yours!

Don't forget to re-register!

It is important that you re-register annually so that we can keep our records up to date. Re-registration is now a simple process – simply go to your club profile page on www.youngeng.org click 'update details' and complete your club numbers for the year. You can also order membership packs for new members.

Dates to Remember

13th-19th November 2006

Enterprise Week

11th December 2006

Royal Navy 2007 Entry closing and Submission date for design solution

18th December 2006

BAA 2007 Entry and Design submission Closing Date

9-18th March 2007

National Science and Engineering Week

29th March 2007

Royal Navy 2007 National Final

30th April 2007

BAA 2007 National Final
K'Nex Challenge 2007 Entry Closing date

31st May 2007

Young Engineer for Britain Closing Date

View the full Events Calendar on www.youngeng.org to see information on other schemes, holiday engineering courses for club members, seminars for club leaders etc.

Get involved!

Why not raise your club's profile by getting involved in Enterprise Week or National Science and Engineering Week (NSEW)? To organise an event or view events in your area go to:

Enterprise Week:

www.starttalkingideas.org/enterpriseweek/2006

NSEW: www.the-ba.net/nsew

Do you have a Science and Engineering Ambassador (SEA) supporting your club?

Your local Setpoint has a register of SEAs who will be able to help you with club activities. For further details – www.setnet.org.uk

Join the Young Engineers Club Network

The Club Network supports the setting up of extra-curricula engineering clubs and enriches the activities of existing clubs. We act as an information hub providing details on all the current quality UK youth engineering initiatives. The network is FREE to join, largely due to the generous support of our sponsors.

The benefits of membership:

Membership packs for club members, including a drawstring bag, pin badge, ruler/calculator, pen, pencil, membership card and welcome letter. Club leaders also receive a badge, club certificate and club handbook.

Club Handbook – giving practical advice on how to maximise the success of your engineering club.

Activity Bank – ready made ideas for club sessions. Most also provide details on the cost of the activity, worksheets, extension ideas, technical explanations and curriculum links.

Discounts – helping ease the financial burden on clubs, network members are entitled to discounts kindly provided by some of our sponsors.

National Challenges and Competitions – stretch your members with one of our national club challenges or with one of the many other regional and national competitions we give you easy access to.

Events Calendar – allowing club leaders to easily view what engineering youth initiatives are happening and when in their area.

Club Leader Forum – enabling club leaders to enter discussions and pick up advice, hints and tips to help them with the running of their club.

Support Pages – an extensive, thoughtfully laid out directory of club support pages, enabling club leaders to easily locate the services they need without wading through long lists of links.

Recognition and Rewards – enter the **Club Awards** and the **Leadership Awards** – 2 competitions which are our way of recognizing and rewarding the hard work that goes on all year round and all over the country! The Club Awards is also a good opportunity to earn extra funds for your club!

Fulcrum Newsletter and relevant email updates – keeping you up to date.

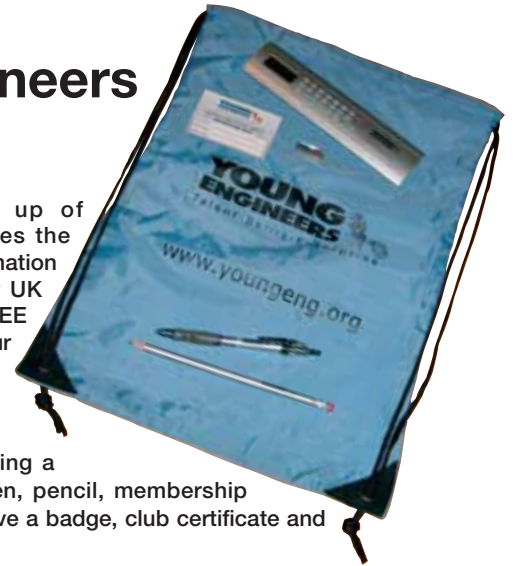
Media coverage – gain media exposure for your club and parent organisation (i.e. your school or youth group), by publicising photos of club activities on our website, linking your club website to our own, and gaining local and national media coverage through entering your club into competitions.

Remember joining is FREE and there is no obligation to commit yourself to any further involvement, allowing you the freedom to run your club the way that suits you and your club members' interests, safe in the knowledge that you are now part of a national network, who you can call on for support when you need it.

To join, apply online at: www.youngeng.org or contact the office for an application form. To ease staff pressures, we strongly encourage you to apply online if at all possible.

Young Engineers would like to thank all contributors to this addition of Fulcrum. Fulcrum's writing team include Colin Barry, Stuart Ellins and Editor Lil Grafton.

We would also like to thank Rapid Electronics for supplying the graphics and printing resources for this edition.



Our national sponsors are

