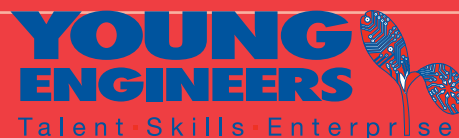


Fulcrum



Leaping forward with LEP

Young Engineers is delighted to be a partner in the brand new London Engineering Project (LEP). This exciting pilot project is centred on Southwark in south London and will be delivered by a mixed partnership of universities,

non-Governmental organisations, charities and engineering companies. There are 14 founding partners with an expectation that more will be added as the project continues.

The overall project is designed to attract groups who are currently under-represented in engineering higher education such as: women, students from minority ethnic groups, students from families with no experience of higher education, and adult learners. The themes of making the LEP culturally relevant and gender appropriate are vital components of this exciting project.

From a Young Engineers perspective, we now have a dedicated Field Worker, David Lakin, who will be working with both Primary and Secondary schools in south London to help them run Young Engineer Clubs and stimulate innovation and creativity in participating students. We will be offering a very wide range of activities for club members, so that there will be something accessible for every student – we'll be including individual and team projects, varied challenges, engineering based visits, a visiting engineer programme and, towards the end of the year, a celebration of achievement. We hope the LEP will eventually lead to the setting up of similar projects all over the country.

For more information about the LEP, please email lep@raeng.org.uk

You got mail?



It is more important than ever that we have your email address! Club Leaders who haven't supplied us with an email are missing out on having a username allocated to them so that they can take advantage of our exciting new online club services. If you don't have your own email account, how about using your school or business' account instead? Email: admin@youneng.org with your email address.

News items and competition launches are now being posted immediately on the What's New area of the website, and those on our emailing list will receive regular updates of the latest stories. So although we will still be producing Fulcrums for you to download, you will be able to read it first by looking at What's New!

These changes have been necessary due to the increases in postal rates starting this summer. We will now only be sending out copies of Fulcrum in exceptional circumstances and ask Club Leaders to set their mail preferences to 'email only' if at all practical. Club Network members can set their mailing preferences by going to their Club Profile page and clicking on their name.

Our Clubs have been busy!

Turn the page to find out about:



How the airfields were kept bird free



How they told time on Mars



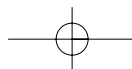
The Execution of Operation Intercept

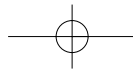
Inside this issue:

- Challenge Final Reports
- Count Down to Operation Enigma
- International Success for Young Engineers
- YEB projects win IKB Awards
- Adults efforts recognised at DATA Awards
- ... and lots more!



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





Young Engineers Impress Brunel ...

At the recent final of the Brunel University IKB Awards, in front of a distinguished audience including Adam Hart-Davis and Professor Heinz Wolff, our young engineers claimed the top prizes in the 14-18 age group. Young Engineer for Britain winners Tanya Budd and Felicity Milten received significant praise for their innovation and creativity as well as their engineering skills.

Tanya, won the 14-18 Innovation Award and received a Special Commendation in the 14-18 Engineering category and Felicity, with her Tuned Percussion Instrument for autistic children, won the 14-18 Engineering Award. Felicity is now studying Mechanical Engineering at Durham University.



YEB still strong at Intel ISEF

In Indianapolis, against a 1500 strong international field, Young Engineer for Britain 2005, Tanya Budd won the United States Coast Guard award for Boating and Water Safety. She won \$5,000 in prize money for her 'Hypo Hoist' device, which enables sailors, who have fallen overboard and may be suffering from hypothermia, to be safely lifted from the water.

After arriving back in the UK this weekend, Tanya said, "This was an awesome occasion with contestants from 47 different countries and all the US states. I was absolutely stunned to have won this award and nearly cried when I was called to the stage. Apparently it is really unusual for someone outside the US to be given a Government prize at this event. I never dreamed when I entered Young Engineer for Britain last year that it would lead to so much. As if winning that title was not reward enough, my device is now being manufactured, I have a place at university, I've won two Brunel awards and now, the ISEF Award. I'm so pleased that I decided to take up engineering for a career, it is so exciting and I feel like I have an amazing opportunity with my life."

The Bid for Bird-free Airfields

Young Engineers certainly impressed BAA's engineering and operational experts at the recent national final of the BAA Airfield Challenge.

Tasked to invent a device that tackled the issue of birds inhabiting an airfield, entrants were required to develop and build an ethical bird deterrent that not only deterred the birds from the airfield in the short term, but would also provide a solution that would keep them away long term.

The final, which took place at the Heathrow Visitors Centre, proved to be very competitive with a great variety of original ideas and solutions showing that enthusiasm and creativity is blooming in Young Engineers clubs.

As well as the actual competition, teams had the opportunity to meet BAA engineers and take a coach tour to the new T5 terminal site. Everyone was impressed by BAA's incredible 'big build' which provided a great example of where a career in engineering may lead you.

The winners, listed on our website, all received cash prizes and a fantastically unique trophy made by Rex Garrod using salvaged parts from the first Concorde, Formula One racing cars and BAA runway landing lights.

The next BAA challenge will be launched in September.



Martian Clock

- Final Report

Tomorrow's innovators showed off their imagination and practical skills at the recent final of the Young Engineers Martian Clock Challenge.

Tasked to build a clock that would work on Mars' unique environment, teams came up with some fantastic solutions that amazed the judges and certainly showed that creativity is alive and well in our clubs.

A pre-final private visit to the Royal Observatory allowed the contestants to see how timekeeping had developed over the

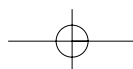
past millennium and to meet the experts.

The actual event, held during 'Science Week' and at the National Maritime Museum had entries from all parts of the country and the quality of the finished clocks was outstanding. Professor Sir Arnold Wolfendale (the 14th Astronomer Royal) praised all entrants for their superb appreciation of the many complex issues, their imagination and skill and their obvious enthusiasm in their clocks.

The results of the competition are listed on our website.



Young Engineers is supported by the SETPOINT Network



Young Engineers join in the Navy on the water and in the air

Teams from the Young Engineers club network, representing schools across Britain, competed in the final of the Royal Navy sponsored 'Operation Intercept' drug busting challenge, which took place at HMS Sultan in Gosport, Hants last week. All the teams taking part had to pitch their skills against each other in intercepting make-believe Caribbean drug runners in collaboration with HMS Westminster and in recovering any booty abandoned by the would-be criminals in the chase.

The 33 finalists were chosen by the Royal Navy from nearly sixty original design submissions, with teams coming from as far as Thurso in north Scotland to Bridgemary School, within a couple of miles of HMS Sultan. Some teams arrived on the day before the event and spent the night on HMS Bristol, a RN training ship moored at Portsmouth.

The challenge was mounted against the clock in three specially adapted open tanks at HMS Sultan. The tanks had islands to be avoided; a crosscurrent of water and the drug running vessel, which circled a central island at varying speeds. Most of the model vessels had to be radio controlled, but umbilical cord control was also allowed in the junior age group. As well as competing in the tanks, the teams were judged on design & construction; the best turned out vessel & crew (corporate ID) and each team gave a presentation on their engineering & design research and application.

During the day finalists also had the opportunity to witness diesel and gas turbine engine ground runs, see aircraft simulators and finally, take a flight aboard a Royal Navy Sea King helicopter, which proved overwhelmingly popular. There was also the time to visit a large number of exhibition stands representing a range of marine related and technical organisations, the majority of which were members of SeaVision, a major supporter of the event.

In total about 700 people attended the day including over 100 Royal Navy personnel, acting as organisers, judges and guides,



and 450 local primary and secondary pupils as invited guests. VIPs included Royal Navy Admirals and Commodores, senior figures from engineering institutions & sponsoring organisations and local council officials.



Prizes were given in each of three age categories including a Day at Sea on a Royal Navy ship and a flight in a Lynx helicopter. The results are listed on our website.

Next year's 'Operation Enigma' launches in September.



The count down has begun....

September 2006

www.youngeng.org

DATA Awards Success

At the recent Design and Technology Association Excellence Awards held at the Royal Society a number of teachers who support Young Engineers were recognised for their outstanding contributions to the deliver of D&T in our schools.

Our congratulations go to Chris Canavan from Foremark Hall for winning the Outstanding Teacher of Design and Technology Award and Tim Weston from Oakham School for winning the The IED Design and Technology Awards for post-16 Teaching.

Chris Canavan is a highly motivational and creative influence in the development of Technology Enhancement Programme (TEP) curriculum materials. His consistent enthusiasm for trialling project ideas which embed new materials and technologies has been fundamental to the successful development of TEP resources. He runs a Young Engineers Club, which he uses to introduce students to manufacturing and engineering knowledge.

Tim Weston has brought the teaching of design at Oakham School to national attention. The links he has fostered with industry have driven innovation and inspired students. His own teaching is highly valued by students and it is not surprising that examination results are exceptional and build year on year, or that these students win prizes: both under 18 and under 16 Young Engineer for Britain Awards and regular Arkwright scholarships.

Keen to forge links, he is creating a resource base for regional schools to use Oakham's facilities.

Rapid

Toyota Technology Challenge



Above: National winners:
The Pink Ladies, Dunbar Grammar School & the Fabulous Four, Belmont House School.

Below: A member of Gravesend Grammar gets ready for action.



Each year a number of Young Engineers clubs take part in the Rapid sponsored Toyota Technology Challenge. The Challenge engages students with electronics, while encouraging them to consider the environment and the potential use of recycled materials. Now in its fourth year, this very exciting Toyota Challenge has proved to be as successful and popular as ever.

King Edward VI Grammar School in Chelmsford is one such club that took part this year and reached the regional finals – a wonderful achievement. They utilised Rapid's project kits to introduce engineering concepts and develop skills such as soldering. (You can now find Rapid projects listed in your club's new online Activity Bank – a new resource which allows you to search for activities that appeal to your interests and are compatible with your budget and resources).

Each year teams of students are challenged to design and build an environmentally friendly model vehicle using solar power technology which races along a straight track, or uses PIC microcontroller technology so it can avoid obstacles on a track more challenging. Each school is given their starting kit free to help them on their way.

The teams who manage to successfully build a vehicle compete at seven regional finals around the country and the winners go onto a national final where the top prize is £1,000 for the school and an Activity Holiday in France for the whole team.

If you would like to enter next year's Challenge, contact Rapid via email sales@rapidelec.co.uk

View all sorts of club project ideas, including a selection of Rapid projects, in the brand new Activity Bank at

www.youngeng.org

View the complete range of Rapid projects at www.rapidonline.com

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 BRAND NEW 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, Joanne Phillips, Emily Meckiffe, 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



www.youngeng.org