

Young Inventors Win Cash Awards

Students show off prize-winning inventions

by Andrew Burnyeat

If no one bothered to invent anything we'd still be bathing in local streams, walking or riding horseback everywhere and cooking every meal over an open fire. You'd definitely never use a microwave or get your hands on a mobile phone, games console, or even this magazine.

Most people are surrounded by inventions they take completely for granted. It's easy to forget that someone, sometime, had to say, "I'm not happy with doing things like this. I'm going to create something that'll make it easier/quicker/better."

Doing that takes guts, creativity, ingenuity and perhaps a belief that anything you put your mind to is achievable. Maybe that's why young people are so good at it. At this year's Annual Celebration of Engineering, the Young Engineers organisation proved exactly what fantastic inventors teenagers can be.

A-Level Student Turns Lifesaving Inventor

Eighteen-year-old Tanya Budd from Waingels College was named Young Engineer for Britain 2005 with her invention of the Hypo Hoist, a man-overboard recovery system, which in the future could save lives. Her prize was £2,500 and the opportunity to compete internationally.

Tanya was looking for inspiration for her A-level design project when she came upon her idea for the hoist. "I did a lot of sailing with my dad and we did several man-overboard exercises," she told us.

"I noticed that the systems in current use changed the [angle] of the victim. This can lead to hypothermia and other problems. I also noticed I couldn't use any of them on my own. I asked myself, 'What happens if you're sailing alone and you have to rescue someone?'"

So Hypo Hoist was conceived – the first device for rescuing sailors who've fallen overboard which keeps them horizontal whilst bringing them to safety.



Tanya Budd, Hypo Hoist

Moving Full-Speed Ahead

Tanya's inventiveness hasn't ended there. She's also won an award from the British Army's Royal Electrical and Mechanical Engineers for a crane-lifting system which lifts tank engines into place. And she's not about to lay her talent for innovation to rest anytime soon.

Tips to Get You Started...

- Look around. What new invention could improve your life or help other people? Dream up a creative idea to solve a problem.
- Ask people who might use your invention how they'd like it to work.
- Draw a detailed design. Then start building a prototype.
- Create a design portfolio and photograph your project when it's complete or nearly complete. Or use a copy of your GCSE/A-level coursework.
- Get people to test your invention and tell you what they think.
- Consider protecting your intellectual property rights with a patent.

Got an Inventive Streak?

Young Engineers challenges you to design and develop an original device or system to meet an everyday need. Prizes include cash, trips abroad and, most importantly, recognition as a potential future leader in your field.

You must be aged 11-18, a resident of the UK and studying at a school or college. You can enter on your own or as part of a team. Visit the Young Engineers website (www.youngeng.org) for more details and an entry form.

James Malin, Proximity Fire Alarm

"I'm currently in a gap year, working as a health care assistant, and I've noticed many of the systems in use could be improved," Tanya says. "I want to make life easier for people – that's what drives me."

Tanya is also honing the marketing skills she'll need to get her inventions out on the market. "The first step is to have an idea," she says. "The next is to put it to some practical use. After that, translate it into a product which can be easily manufactured and sold."

James's Alarming Invention

James Malin of Oakham School is another young inventor who received recognition from Young Engineers for a lifesaving idea. James won the under-16 Young Engineer of the Year award for his Proximity Fire Alarm – a device to be attached to everyone working in a particular building. In the event of a fire, this alarm enables fire fighters to know how many people are in the building. It also transmits vital information, such as whether someone suffers from asthma or has a physical disability.

James, who's currently studying for his A-levels, received £1,000 in prize money and already has contacts who've expressed strong interest in developing the system. "I see my invention being on the market within five years," he told us.

The Proximity Fire Alarm also scooped James, who is now 17, the

Duke of Edinburgh Award for creative use of electronics, for which he received an additional £1,000.

Musical Innovation

Felicity Milton, also from Oakham School, won the Young Engineer of the Year award in the under-18 category. Her invention, the Sensory Device, is an outdoor percussion instrument which can be played by several children at the same time. It is of particular use to children with disabilities and to autistic children.

The idea came to Felicity when a local school approached her college to request an A-level project dedicated to the needs of disabled children. "It helps these children to focus and involve themselves in group play," Felicity explains. "The funny thing is, I'm not at all musical, and before this project I didn't know much about children with special needs."

"There were times during the project when I wanted to give up," she admits. "But when I saw the children's faces when they were playing with something I'd invented, I was pleased I didn't," says Felicity. She also captured the award for Best Project for a Disability Need and received two prize cheques for £1,000 each.

Rising to the Challenge

Once the prototype was completed, Felicity discovered her work was not over. She was told the instrument

would be difficult to manufacture and would involve a high unit cost. Now she's working to simplify the design.

Felicity, now 18, is currently studying engineering at Durham University and is especially interested in sustainable technology. Never one to aim low, she hopes one day to help resolve the global fuel crisis.

It's easy to see that Tanya, James and Felicity have one thing in common with all great inventors – they enjoy a challenge. After all, if you reach for the moon, you might just land on a star!



Felicity Milton, Sensory Device