



A Happy New Year from all at Engineering Your Future

Despite the exceptionally cold weather the Spring Term is well underway and soon we will have longer evenings to look forward to. We are now gathering information from schools wishing to take part in some or all of our challenges. We're pleased to welcome back many long-term participants, but delighted to welcome new recruits including a big presence in North Wales - featured in this Issue. Soon we will have confirmation of the 2010 Race Day venues, so look out for that.

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Silverstone has secured the British F1 Grand Prix for the next seventeen years - great news indeed - and we are looking forward to our continuing partnership. This two-way relationship benefits both of us - we get access to a fantastic venue for the Formula Schools Challenge and they get to meet tomorrow's engineers!

Design and Technology Show at the NEC

We were delighted to meet so many schools from both the Marine and Formula Schools Challenges at the D&T Show last November where we were part of the "Techsoft" stand. We have a long association with Techsoft and they now supply complete kits for the new "Formula Sun" Solar Powered Boat project. Industry partners are vital to supplying high quality help and advice on technical issues and in the case of Techsoft, should schools seek it, they are pleased to give advice regarding CAD/CAM equipment and its use. Judging by the demonstrations on their equipment at the NEC show, we'd strongly advise you take advantage of this offer. They are well briefed on all aspects of **Formula Sun** and we feature in their new catalogue (on page 76). Over three days at the NEC we met some really interesting people eager to see how the Formula Sun project can be used in both Primary and Secondary schools and we look forward to getting progressively more of them on board. The very best advertisements for the projects we deliver are endorsements from those already participating.

For more information, why not check out Techsoft's website:
www.techsoft.co.uk



Formula Sun on the Techsoft stand

Can you help us and others?

We are frequently asked if we can put people in touch with existing participants so they can learn from their experiences. So, would you be willing to speak with potential schools and let them know how you have got on? Alternatively, if you let us know what you are doing, we will be delighted to publish submissions in our future Newsletters - see page 4.



One Vision....Several Initiatives



Formula Sun launches at the London Boat Show

January 12th 2010 saw us powering ahead with the national launch of our exciting new project "Formula Sun" at the London International Boat Show.

Formula Sun is an exciting, flexible and very affordable project suitable for pupils of all ages from Primary to the full delivery of units within the KS4 curriculum. Pupils design, build and race boats powered by solar energy and along the way they develop skills from project marketing and communications to fluid dynamics and electronic design.



The Boat Show was an inspiring venue! Best of all, we were able to secure free tickets for our partner schools. We were supported by Alex from Techsoft who used his CAD/CAM equipment to demonstrate solar boat hull design and build. The schools who braved the atrocious weather conditions saw a presentation by Rob Austin on the main stage followed by an interview with students and a teacher from last year's South East Schools Marine Challenge winners - Leigh Technology Academy. They demonstrated their enthusiasm, skill and expertise and teacher Steve Leahey stressed the huge benefits in terms of curriculum delivery, improved results and generally higher interest levels in Engineering, Maths and Technology. "It's been a great opportunity for us to put what we can do in the shop window and our results have improved in many areas." Year 11 student, Connor, explained what he had got from involvement, "I get to spend a lot more time in the workshops doing fibre glass moulds from scratch, vacuum forming and it's loads of fun".



Andy Simms of Cooney Marine was also present to give his support. When asked how important such schemes were for the Marine Industry in the UK, he couldn't have been clearer; "Training and development is critical for this industry's future, not just the boats, but the complete infra-structure including equipment for the leisure boat industry, and clothing etc." According to Andy, it is one of the country's fastest growing industries, generating an income in excess of £3 billion a year. Rob queried the importance of taking on apprentices. "It's critical," said Andy, "we recognised this 10 years ago and accelerated our Apprenticeship Scheme. We have to invest by training people ourselves if we want them up to a certain standard."



Visiting schools were then taken to the Deck Games area, where they saw the various boats running in the test tank demonstrated by The Leigh Academy. From 12 noon onwards, schools and students were free to have a leisurely look round the rest of the Boat Show. The stands were many and varied with a chance to get involved with some "hands-on" activities too.

So, if you have not yet signed up for our latest challenge **Formula Sun**, please do so as soon as possible by contacting us by phone, e-mail or fax. www.engineeringyourfuture.com

Tudor Grange comes up trumps: Trade secrets revealed

As the Electric Class of Formula Schools becomes ever more popular, schools work increasingly hard to better their personal performances and challenge for first position. We have seen fantastic efforts in the last few years; any one of the top ranking schools has had the "X" Factor and would have been winners in earlier years. They have been kept at bay by Tudor Grange, led by Alan Martin, who frequently seem to be in a class of their own. They have jealously guarded their position and hung on as the winners of the Overall Electric Class many times, including last year. They are taking a break this year—so what is required to fill their shoes? We decided to investigate.

Alan Martin has kindly shared some thoughts and has come up with ten "top tips" to set you on the road to success.



1. Planning - Essential for success. Think of it in three ways:

Short term - planning what you will do each week with pupils making sure they are all fully occupied. *Medium term* - define precisely what you wish to achieve over the Formula School's season. *Long term* - have a two or three year plan. You cannot do everything in one year.

2. Design - Keep your team's design simple and follow the rules. Make sure you cover all the areas and use the 'points criteria sheet' to help you.

3. Sponsorship - If your school has contacts, then use them. If you have a community-links person or a bursar, ask them to assist. Help can come in two forms: *Money* to help get all the bits you need and help fund your Race Day and *Practical Help* for the manufacture of difficult parts, sourcing unusual materials, helping with displays and demonstrating to pupils how industry can work with them to produce a finished product.

You will often find that industry is trying to get into schools to achieve targets and Formula Schools is an ideal way for them to do this.

4. The Car - Make sure you use an electronic speed control, a good motor and the correct tyres.

5. Reliability - Build two reliable cars.

6. Practice - Make sure you have plenty of driving practice. Mark a track onto the playground or use cones. If the driver goes off the track or hits a cone then swap to another driver; they will soon learn to keep on the track and the cars will not get damaged. Let the pupils select the best driver. If you can go to a local model race track you will get advice and can practice against others.

7. Continuity - If you involve pupils from two different years, it will assist continuity and the transfer of skills.

8. Corporate Identity - Make sure you have T-shirts etc. and a stand that gives your team a sense of identity. This pulls the team together and gives pupils pride in what they are doing.



9. Pre-Race Judging - Be ready; make sure all the pupils understand all bits of the car. Produce a presentation that follows the 'points criteria sheet'.

10. Race day - Be prepared for all emergencies. Make sure your stand is manned all day!

Trevor Tennant who is well known for sorting out demanding technical issues with the I.C class became involved with the Tudor Grange Electric car development last year. Trevor believes in "working from first principles" as he puts it, and also wisely acknowledges that "there is no short cut to success if you want to win". Once you accept this as your guiding principle, you can work on things knowing that the more you put in, the more thoroughly you prepare, the better the end result.

Watch out more tips on both electric and I.C in the near future

A Welsh flavour for Formula Sun

We are delighted to be working on our **Formula Sun** project with a number of North Wales schools. Rob recently did three inset days for several schools in the region and they have wasted no time in getting stuck in. We received an e-mail from Holyhead High School telling us what the students had been up to. The Year 8s are doing an eight week Marine Challenge Module and the first group of students have already completed this with a fastest time of 9.7 seconds down an 8 metre course. The next group hopes to modify the craft used previously and improve on the time.



Well done Holyhead! Keep up the good work and rest assured you are having more success building and racing solar boats than Rob is at mastering the Welsh Language!

Around the Regions

Anecdotally we hear what schools are up to and we want to share this information with everybody! With this in mind, we would like to feature more schools and all we ask is that you send us information about what you are doing on Formula Schools, Schools Marine Challenge or Formula Sun. In fact, any of our projects you want to comment on or discuss. Some ideas of what to include:

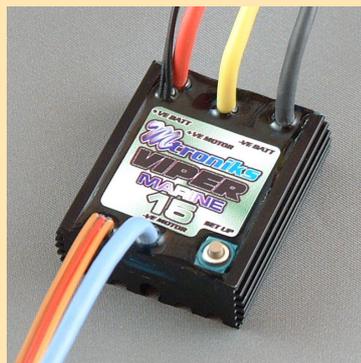
- ☞ Tips and advice on what you have found to work well with the build.
- ☞ News on any new Sponsors who are supporting your school.
- ☞ Trips or activities that have enhanced your project development.
- ☞ Thumbnail portraits of your team members and their particular strengths.

There are no restrictions or hard and fast rules; all we ask is that you keep your article concise, interesting and innovative! Anything from a paragraph to a full article will be considered. Your submission can include photos etc. and articles featured in subsequent Newsletters will receive a prize!

Remember: being featured in an article is good publicity for your school, especially if you are hoping to impress potential sponsors!

Thanks this term go to The Leigh Technology Academy and Holyhead High School

Spare Parts Bargains



We have been getting requests for spare parts, especially speed controllers. We have several of these at the bargain price of **£15 for 15 AMPS...** That's a mere £1 per AMP, so make sure you don't miss out! These are

water-proof ones normally used for the Marine Challenge, but they are great for the Formula Schools Challenge too; particularly on wet days!

I.C Marine Engines

We also have Marine I.C Engines complete with exhaust - come to that, we have never seen a liquid-cooled car at Formula Schools. Could it be a winning formula?? **£50 each.**



ASP Engine

