

THE FIRST 12 MONTHS

I formed **Light Black Design** late in 2009 to give the marine world an insight into some of the latest developments in advanced composite materials and applications that have been developed by some of the most prestigious design offices in the automotive sector.

Since then we have been working closely with a variety of businesses in both the marine and automotive sectors. We have looked at a wide range of areas where companies can improve the quality and performance of their existing and future product lines, ranging from low volume RIBS to high volume production yachts, from component manufactures to aerospace structures.



Since starting **Light Black Design** I have been to various shows and exhibitions throughout Europe.

Once again I will be attending many of these events in 2010 & 2011 and would be more than happy to arrange a meeting if there is anything you would like to discuss with me.

Here is a brief list of some of the future events and the dates I will be there:

K-SHOW, DUSSELDORF

27th October 2010. www.k-online.de

This composite show is only held every four years and contains more exhibitors and suppliers to the composite industry than most of the other shows put together.

METS, AMSTERDAM

16th and 17th November 2010. www.MetsTrade.com

This is the most important gathering of suppliers to the marine trade.

YACHT RACING DESIGN & TECHNOLOGY SYMPOSIUM, ESTORIL

14th and 15th December 2010. www.yrds.com

Here I will be sitting on a panel discussing "What are the latest developments in automotive technology that could benefit race boat construction?"

LONDON INTERNATIONAL BOAT SHOW

7th January, 2011 www.londonboatshow.com

JEC COMPOSITES SHOW, PARIS

29th to 31st March, 2011. www.jeccomposites.com

The JEC is an annual show with a great collection of composite suppliers from all industries and from all corners of the world.

I have contributed to an article on "...car design versus boat design..." for **SUPERYACHT DESIGN** to be published in December 2010 in their Q5 edition.

www.superyachtdesign.com

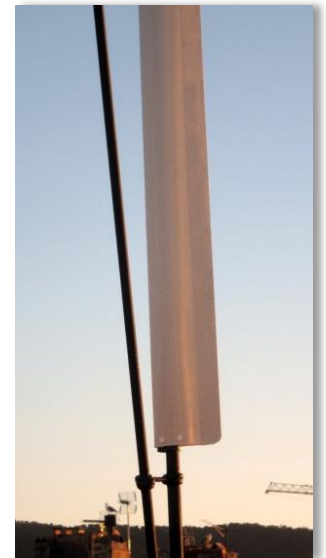
For more information on these and other areas of the company please visit my website at LightBlackDesign.com. Here you can see summaries of my work over the past 13 years. There is also a link to my article that was in Seahorse Magazine, giving a brief insight to some of the advances seen in the automotive industry.

Here are some examples of the type of work we have been involved in throughout the first year:

IMPROVED AERODYNAMICS FOR YACHTS STANDING RIGGING

One of the first companies to take advantage of my design and material knowledge was Future Fibres S.L.U, in Spain.

We worked closely with their engineers to design and manufacture a rotating aerofoil section that can be retrofitted to any standing rigging that could significantly improve the performance of the yacht. Key to the success of these foils is the selection of

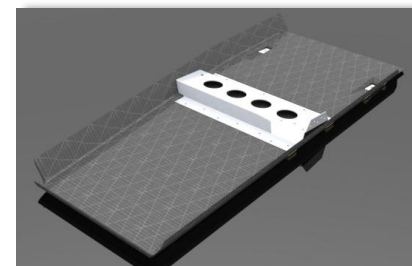


materials and tooling that are typically only used in the automotive sectors. This was backed up by a deep understanding of aerodynamics that I have gained whilst having been part of top- level sailing and automotive teams.

These products are now being eagerly discussed in the sailing press (see November's issue of Yachting World) and are commercially available for any boat through Future Fibres.

CONCEPT CHASSIS DESIGN FOR BENTLEY MOTORS

We were contacted by Bentley Motors, in the UK, to help define the geometry and material specifications for an area of a chassis for one of their concept cars being developed by them in conjunction with the other sports car companies in the Volkswagen group. The baseline materials in this investigation are a further development of my previous work within automotive groups to produce lightweight yet extremely cost effective composite panels, which are viable for current automotive production lines. This technology will be combined with DCFP (Directed Carbon Fibre Preforming) the revolutionary process being developed by Bentley.



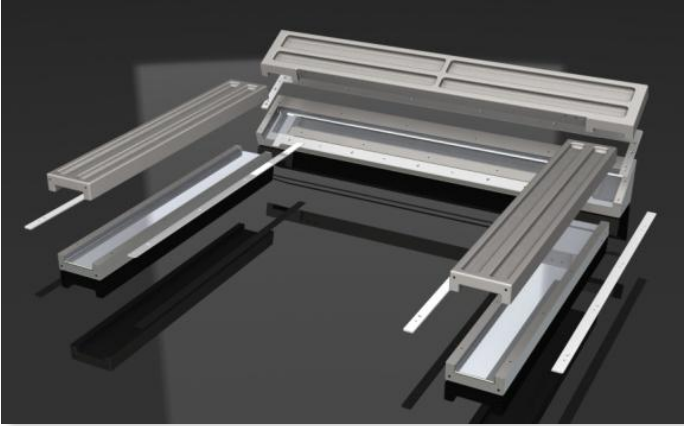
Most importantly, this technology has the potential to transform the way certain composite boats are made and even

drastically reduce the overall costs. It may indeed close the gap between the cost of glass and carbon fibre boats, which will allow the industry to take advantage of the dramatically reduced running costs of the lighter carbon fibre boats.

The main reason I set up **Light Black Design** was to be able to work closely with some of the key boat builders at the "grass root level" and to pass on some of the knowledge from the automotive programmes in terms of tooling, materials and processing.

HIGHER QUALITY PARTS FROM NEW TOOLING METHODS

Light Black Design is currently working with Richard Faulkner Composites in the UK to design and produce tooling to allow



Richard and his team to manufacture multiple carbon fibre parts with an extremely high quality surface finish. To allow them to repeat the quality over and over again I recommended that they machine moulds from aluminium and engaged a machine shop that will produce the tools for a competitive price.

Despite the higher initial investment, the overall cost of producing the 18 carbon parts is lower due to the reduced amount of preparation work required on the tools before each part is made, with very little finishing needed on the parts.



REDUCING THE WEIGHT AND COST OF RIBS

Late in the summer of 2010 we were contacted by a leading manufacturer of RIBs in the UK, Coastline Marine, who are looking to further improve the quality of their current line of boats whilst simultaneously reducing the weight and even the overall costs.

Key to this project is my thorough understanding of "what is appropriate" for this type of business. Together with the key people at Coastline we are looking closely at their current laminates and carefully defining new materials that fit within with the current techniques used there. This will result in a more efficient layup that will reduce the production costs and structural weight of the boats. This weight saving is critical to this type of boat where a 10% reduction can typically save 6% of the fuel costs.

OTHER INDUSTRIES LIGHT BLACK DESIGN ARE WORKING WITH

Light Black Design's work is not limited to just the marine and automotive sectors. Other industries are also interested in learning from the advances made by the automotive industry. We have been contacted from all levels of technology, looking either to reduce cost at the higher end, or improve efficiency at the lower end.

For example, **Light Black Design** has been contacted by a company who design and manufacture satellite systems for global customers.

They have a reputation for producing products for a fraction of the cost of their competitors. I have been asked to look at the traditional methods currently employed in aerospace industry and to define some alternative methods and processes for non critical areas of the projects, while still achieving the same high levels of quality and design. The key objective is to reduce the overall cost for their premier aerospace programmes.

Working closely with companies such as these allows **Light Black Design** to keep abreast of all the latest technology and processes, putting us in the unique position of being able to transfer the knowledge that was once beyond the reach of the marine sector and offer unprecedented guidance in using the advances to their maximum potential.



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Light Black Design Limited was formed in 2009 by Dan Primrose with the principal aim to give the marine industry an insight and access to the latest developments from some of the foremost automotive design offices. We are an independent Design Consultancy with a deep knowledge and understanding of the both marine and automotive sectors which allows us to select and recommend only the most appropriate solutions for both industries.

Our core competency is being able to offer solutions in all areas of the design and manufacture, from concept sketches to 3D CAD, from part design to tool design, from 3D CAD to full FEA optimisation. So whilst **Light Black Design** is in a position to offer simple technical advice, we are also capable of fully engineering and producing the tools and parts, allowing the end-user to simply receive the finished parts if required.

LIGHT BLACK DESIGN – THE ANSWER DOESN'T ALWAYS HAVE TO BE BLACK & WHITE