

Full Blue Racing Season Report – 2015

Overview

2015 was a fantastic year for Full Blue Racing. The FBR15 was one of the best cars the team has ever produced, and the team's hard work throughout the year was rewarded with our highest ever finishing position at the Formula Student competition at Silverstone. Many kilometres of hard testing and development work over the summer leave the team in a strong position for the new year, and we believe we can build on our successes to make the FBR16 even better again.

Preparations and Development

Full Blue Racing entered the 2015 Formula Student competition in one of the best positions it has been in in recent years. After a slightly disappointing end to the 2014 season, the team was determined to make 2015 a success. Boosted by winning the prestigious RBS ESSA competition for the most enterprising student society, and support from **Accenture**, design work on the new car began early.

Our experiences in 2014 allowed development of the 2015 chassis to proceed rapidly, taking care to avoid the simple oversights which had caused delays in previous years. Use of **PTC Creo's** tubing extension allowed the transition between a wireframe design and fully profiled tubing to be fast and error free.

The design of the suspension system was also completely overhauled for 2015. After careful simulation and design work in **Matlab**, a new suspension layout was developed. At the core of this new system was a set of custom spring dampers, which the team worked in partnership with **LEDA components** to produce exactly to our requirements.

On the powertrain side a brand new intake and exhaust system were developed using **Ricardo Wave**. The intake was then produced using 3D printing, which allowed the plenum shape to be optimised to improve performance.

Time and budget constraints towards the end of the year lead to certain components being carried over from the previous car, including parts of the carbon fibre seat and bodywork, which was carefully produced with help and support from **Global Composites**.

Formula Student Silverstone 2015

Hard work from the team throughout the year allowed development and manufacture to progress rapidly, resulting in an almost completely finished car being delivered to Silverstone race circuit in July. Upon arrival the only work required was minor set-up tasks and cosmetic finishing, allowing the core team to focus on the forthcoming static judging and presentations.

Full Blue performed very strongly in the static events at competition, massively improving our design and costing scores compared to previous years. The judges praised our cost-effective design and practical component choices.

With the FBR15 in such a complete state coming into competition the team was one of the first to enter the technical scrutineering process, where the car is thoroughly examined to ensure every component meets the technical and safety regulations. Unlike in previous years, this began as a very

simple affair. The scrutineers found no major issues with the car, and the few minor objections were rapidly corrected by the team.

Just as Full Blue was ready to enter the endurance event on the final day of competition, we stumbled at the final hurdle. The newly introduced noise restrictions had caused huge issues for many teams this year at Silverstone, and we too discovered the exhaust of the FBR15 was slightly louder than the new regulations allowed. Despite our best efforts, as torrential rain brought the final days running to a close, we were unable to alter the exhaust system to bring our car below the threshold.

Despite this setback, Full Blue Racing finished the competition in our highest ever position, coming 54th out of 96 teams.

At summer testing the FBR15 managed many dozens of kilometres of successful running, and we start the new year in good spirits, confident we can build on our successes to improve even further with the FBR16!

We would like to thank all of our sponsors for all of their help and support, without which Full Blue Racing could not exist. We would also like to thank all of the workshop staff from the Engineering Department, whose hard work and advice is invaluable in making the team a success.