

Formula Student UK 2012

Full Blue Racing

In 2012 FBR had one of its most financially difficult years, a lot of new faces a lot of hard work was going to be necessary in order to achieve the aims we had set ourselves at the start. Despite this, the team grew to its largest yet and the available man-power was used to great effect to produce a greater number of new parts on the car than we have seen before, with some major changes (such as the change from spool-drive to a differential drive-train). These new developments were made possible by the hard work of our sponsorship team and the generosity of our partnering companies, who now exceed 30. These projects really made a difference in terms of introducing the new members and getting them 'hooked' on Formula Student. No wonder that so many turned out to competition (22 in total).

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Full Blue racing enter this year's Formula Student UK event, significantly ahead of any point in previous years. That is not to say the team had not had set backs, a couple of days testing had to be cancelled due to a problem with the drive-shafts and a lack of time engine tuning meant the car had limited engine performance.

After a few long nights in the engineering department the team managed to pull together a working car, but this was not done in time for any chance of testing, so unfortunately the team had to attend the event with a car un-tested dynamically. This was disappointing, as testing before FSUK was a key target for the year. The team did however manage to get plenty of engine running time with the car static, ensuring the troubles of failing to get the engine and electricals running in every year hence would not occur in 2012.

Thursday

FBR arrived at Silverstone on Thursday, following an all-night session completing the car ready for running scrutineer. A delay in the bodywork manufacture had meant the team were forced to re-allocate some team members to Newbury in order to get it ready on time, which had a knock on effect with the remainder of the final preparations.

With a lot of hard work (and pizza) from the team, the car was ready and left Cambridge for Silverstone mid-morning on Thursday.

Situated in Pit 9A along the national pit-straight FBR set up for the weekend with the business team leaving in order to present their mock business plan on setting up a company in order to sell single seater racers to the auto-cross market. For this the team developed a plan to setup a car firm in the UAE based on market size predictions made from research by the FIA, analysis of competitors, . FBR came 45th in the business event.

Friday

Friday morning commenced with an attempt on scrutineering, something the team were hopeful they would pass quickly following some hard work prepping the car the previous night. We entered safety inspection first. Unfortunately a few missing lock-nuts on the wishbones had required the dismantlement of the suspension system causing a delay. Following the safety inspection the car was weighed and then went into Chassis inspection. For the FBR12 we targeted at the beginning of the

year a reduction in around 10kg to 230kg. This target was surpassed, with the FBR2 weighing in at 229.8.

Chassis inspection was completed quickly, with on a small adjustment to the clutch position (in order to fit the template) was required. Following this the team headed over to design & cost judging. Unfortunately the team were told that all cars in scrutineering during the design judging should leave their cars there so the organisers could better administer the scrutineering queue. This meant that the judging took place without a car, to the bemusement of some of the other judges and undoubtedly had a negative impact on the design scoring. Cost judging was more successful with the team making a good effort in the discussion of manufacturing costs, sustainability presentation and 'real case scenario' (methods to reduce costs of brake discs for a 100,000 unit/ year production cycle).

Following the design and cost judging we worked through technical inspection. A few changes were required, and the worked over the Friday night in order to scrutineer first thing on Saturday, and hopefully to compete in all the dynamic events that day.

Saturday

The team hit scrutineering as soon as it opened on Saturday, 0830, following the driver's briefing. A couple of changes were still needed, a head-rest adjustment and extra securing to the battery. All done with the inspection parts of scrutineering by 1030, we headed straight to the fuel fill and over to the tilt test.

In the tilt test, a 1g cornering force is simulated with the car tilted to 45 degrees. Leaks are checked for, and then the car is moved to 60 degrees, where roll-over stability is simulated (for 1.7g corner). No wheels must leave the surface of the tilt table at 60 degrees. In the past this test had caused major set-backs for the team, but on this occasion the car passed with no trouble at all.

A noise test is then conducted with the car being limited to 110dB. This test proved more difficult, with the exhaust noise right on the limit, but the team managed to pass with a minimum amount of time held up. This is an improvement on last year (at FSG), where failure of the noise test was a significant setback.

The final part of scrutineering was the brake test. The car must lock all 4 wheels, and be able to restart immediately. Again, in years past this test was a major hurdle in passing scrutineering but locking all 4 wheels posed no problems at all. Unfortunately on the first run the brake over-travel switch was engaged which meant the fuel to the car was cut. This resulted in a car unable to restart, and hence the team failed on the first run out. With a quick adjustment to the switch position, the car passed immediately and scrutineering was complete.

Unfortunately with travelling between the different scrutineering areas and the queues, we were too late to compete in the skid-pan or acceleration test, a shame as the car clearly had good acceleration, clear in the brake test, instead we headed straight to sprint. 4 laps are permitted, with the fastest time being used to score.

Like many teams, we opted for a slow, careful 'banker' lap (completing a lap in sprint, and getting a time is important to ensure entering the endurance the following day), followed by 3 faster laps. On the first lap unfortunately the drive took a wrong turn and stranded in the middle of the track, nearly

an hour was wasted sitting waiting for the track to clear, before being pushed back into the queue for another go. Finally, a very cautious 2m35 was set, which ensured we would score dynamic points (our first ever at FSUK) and entry into endurance the next day. With such a hold up, and an additional delay to switch to dry tyres, we missed out on setting a flying lap by mere seconds we lined up to the start line as the strict 6pm cut-off was enforced.

Sunday

With entry secured into the endurance by completing the sprint the previous day, FBR were due to head out as first car at 9am on Sunday morning, following the driver's briefing. To avoid the problem of going the wrong way encountered on Saturday, we ensured the driver's got a proper walk of the track before this event.

With the car running in 2nd gear (opposed to 1st for sprint), and a much more aggressive approach to the previous day, it was clear the car had the potential to be in a different league of performance to the Saturday and we were hopeful of a strong scoring.

This was short-lived however, at the hairpin of lap one a driver error caused the car to end up in the tyres. The driver was checked over by medics to be declared fine, but it caused considerable damage to the front right and forcing retirement. It was a shame to end the dynamic events this way after the car had so much potential, but we were positive given our first ever dynamic scoring at FSUK and a very competitive looking car in the endurance. By comparison 110 teams entered, 58 teams finished scrutineering to record a sprint lap time and only 28 managed to complete endurance.

Overall the event was a mixed success. Dynamically we finally managed to race and secure points, something the team has not done at the UK before. We didn't however meet the target of competing in every dynamic event, just missing out on meeting this target by taking a little too long getting through scrutineering. Based on the cars performance we saw we believe that (following some extra driver training) we have every chance of a very strong scoring at FSG.

We thanks all our sponsors for helping us make this happen, and congratulations to Chalmers University who won the event!