



Monthly Brief

January 2025

TEAM PRINCIPAL OVERVIEW

It's been a slow but strong start of the year for us with people getting back into the swing of things after holidays and an exam period. January always means two things for Formula Student teams, payment to the IMECHE to confirm our entry into FSUK2025, and more importantly, choosing the competition number. I can now reveal that for the 2025 season UoL Racing will be competing under the number 6!

Our sim racing team competed once again on the 18th taking the 1971 Nascar's around Watkins Glen. We managed to achieve our best result to date, achieving a P3 and P2 in race 1 and 2 respectively vaulting us up the standings to 16th in the championship. Round 4 of the sim racing championship is on the 15th February and will also mark the submission of the second Engineering Challenge.

January has been a month of finalising a lot of components and finally getting these sent off for manufacture. This is always a big moment both for the team and the engineer who has spend the last few months designing often their first major component. To make the step from final design to manufacture the component must go through a design review. This is where the component is presented to Dylan and I, as well as all relevant team leads along with all design decisions, simulations, relevant FSUK rules and manufacture drawings.



Design reviews are integral to the success of any component as this is where every part is broken down and referred back to the original design requirements. Although Design reviews may seem daunting to new members it is a great learning opportunity and gives a major sense of accomplishment when your part is finally given the go-ahead.

Aside from all the technical progress, a lot of work has gone into preparations for the static events and submissions. Our SES (Structural Equivalency Spreadsheet) is all but ready to go with the submission deadline closing in on 7th February. A lot of focus has also been put on the Costings event and Business Plan Presentation. With both of these events contributing a good amount of points at competition it is important they are given appropriate attention. Headed by our Business team, a fully functional assistance spreadsheet has been created to assist with costings which allows team members to input components and processes and receive a costed figure along with carbon emissions. Drafts for the Cost Explanation File and Business Plan Presentation are also being created allowing plenty of time for review and fine tuning.

Callum Howes
UoL Racing Team Principal

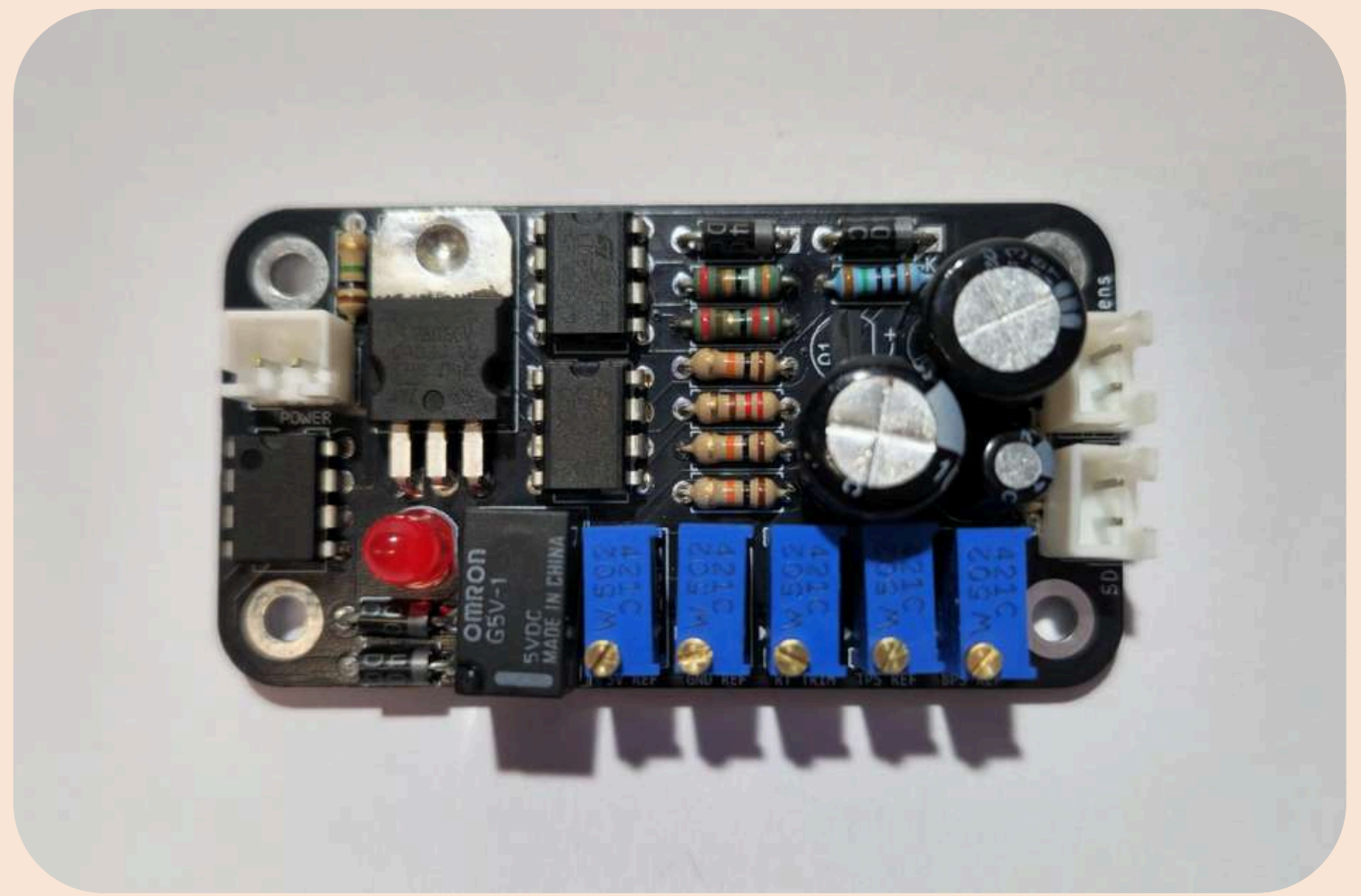


CHIEF ENGINEERS DEBRIEF

This year began with the team getting the new redesigned front hubs in for manufacture. The team identified the need for new front hubs due to the introduction of a new regulation enforcing a clearance of 5mm between any rotating part of the wheel and the static components within. This has been the culmination of a long investigation and redesign project which has seen the team work with a plethora of different departments within the University. A personal highlight of this was working with the archeology department to utilise their 3D scanner to accurately model the inside geometry of the wheel.

Final designs for the bracketry which attach to the upright has been designed and is currently undergoing 3D printing to ensure they allow for the correct tooling access. This was a major design aim of these new brackets due to the previous generation of components being a rather tight fit with all the spacers and fasteners.

The new differential hangers are in for manufacture with the main upgrade on the previous design is the use of 7071-T6 aluminium which has provided the ability for us to shed the weight of the component whilst maintaining the factor of safety. The manufacture of these can be seen in the image (seen below).



The team has also completed the manufacture and testing of the Brake System Plausibility Device (BSPD) this device is part of the safety system and will shut the car down when both the throttle pedal and the brake pedal are pressed (seen above). This is a really important component as it is required in the regulations. Having this component completed this early in the year allows for ample time for the Controls sub-team to test this component thoroughly for bugs and reliability.

The chassis team are gearing up to install the harness mounts. This will include an added layer of complexity due to LR04 being the first of UoL Racing's cars to feature a reclined seating position. This is one of the main areas the team will look to address within the next few weeks.

The final design for the nosecone has been through the design review process with this component now in the process of gathering quotations for manufacture.

Finally, at the end of the month the new revision of the FSUK rule book was released with only minor rule clarifications effecting the team.

Dylan Crawford
UoL Racing Chief Engineer



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