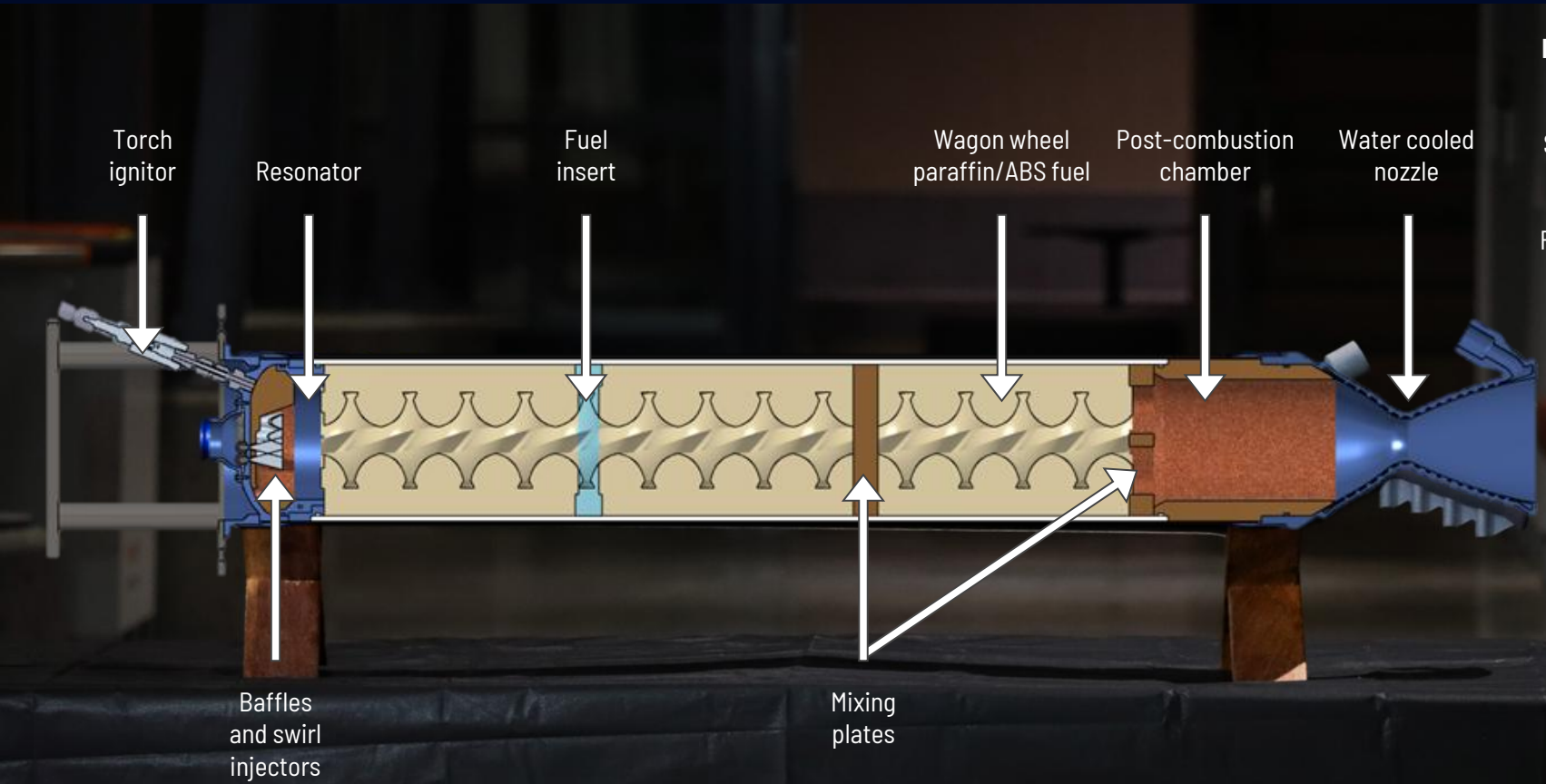
Solaris MkIII - Design and Goals



Project Goals
Reliability
Reusability
Serviceability
Optimised
Innovative
Flight Capable

Race 2 Space Goals
Validate
Characterise
Learn

Solaris MkIII - Performance and Learnings

Aft closure thread failure

- The team does the entirety of its manufacturing in house
- Quality of the thread of the chamber coupler was below specification and thus sheared under load
- Future iterations will need thread micrometres or 3 pin method checks to ensure mating parts are within tolerance

Fuel rich combustion

- The regression rate of the fuel grain was much higher than predicted in modelling
- The delivered oxidiser mass flow was 0.8 kg/s lower than targeted due to supply limitations
- The coupling of this caused the extremely low O/F ratio
- This data means the oxidiser mass flow can be lowered and the fuel grain length changed to achieve the target thrust