STUDENT COPY

Teaching Office
Lent 2021

Fourth Year Projects

TECHNICAL MILESTONE REPORT: FEEDBACK FORM

NOTES:

This form is to be completed by the supervisor and separately by the assessor for each project, and then returned to the Project Coordinator. Feedback will be sent to students by Monday of week 6.

Students have been advised that the Technical Milestone Report will be assessed for: (i) Professionalism of presentation, (ii) Motivation for the work, (iii) Clarity of explanation, (iv) Achievement in the project so far, (v) Quality of structure and detail in the plan for future work.

Name of Student: Samuel Drury (*PLEASE PRINT*) College: Christs

Brief Title of Project: Propulsion Systems for e-VTOL Aircraft (*PLEASE PRINT*)

Name of Supervisor / Assessor: Dr Sam Grimshaw (*please delete as appropriate*) (*PLEASE PRINT*) Project Group: A

Please indicate:

i) **Professionalism of presentation:**	A
ii) **Motivation for the work:**	B
iii) **Clarity of explanation:**	B
iv) Achievement in project so far:	A
***v)* Plan for future work:**	B

where:

A = Excellent

B = Good

C = Satisfactory

D = In need of improvement

Comments:

Professionalism: The report is well written and presented. Figures and tables are non-dimensionalised and suitably sized and equations are clearly presented. A nomenclature section would be useful but variables are listed in the text and there was no additional space. The report is also well structured and fits in a lot of useful information in a concise format.
Motivation: The introduction section provides suitable discussion of why ducted fan systems might be considered over open propellers, references are also provided. Research questions are not explicitly stated, though the paragraph explaining modifications to the project due to the pandemic indicates that the project will explore efficiency across the ducted fan design space.
Clarity: The report is well written with the discussions on design and results clearly written and quantified where necessary. Some of the design section relies on previous work which is referenced but a bit more detail on where equations 2.1, 2.2 and 2.4 in particular would be welcome. Also the positioning of these equations away from the text where they are discussed make the discussion harder to follow.
Achievement: The TMR demonstrates that a lot was achieved during the first term of work. Picking-up and building upon the design code and experimental methods from a previous project, a quad-copter with four ducted fans was designed, manufactured, assembled and briefly tested, though no quantified results are presented from this test. The ducted fan was compared against open propellers on a static test stand and a fan characteristic measured using different exit ducts.
Future work: The future work section explains that the project will not be able to continue with the flying test bed development due to the pandemic. Instead a case is made for developing the design tool further to include loss models and then coupling and comparing this with CFD simulations. This seems to be an appropriate change of direction for the project though a Gantt chart would have been useful to show in more detail the breakdown of the model and CFD work.

Signed: Sam D Grimshaw Date: 13/2/2021