Hochschule für Angewandte Wissenschaften Hamburg
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DEPARTMENT OF AUTOMOTIVE AND AERONAUTICAL ENGINEERING

Maximum Glide Ratio of Turboprop Driven Aircraft

Background

The estimation of the maximum glide ratio is an important part of the preliminary sizing of an aircraft and has massive influence on the design results. A simplified analysis (by **Niţă 2008**) had the result that the glide ratio of turboprop aircraft is considerably lower than that of turbofan aircraft. This work aims at a review of the results of **Niţă 2008** and **Schlüter 2006** (who analyzed the glide ratio of turbofan aircraft) and a more detailed analysis of the glide ratio of turboprop driven aircraft.

Task

- Literature review and summary on the glide ratio of turboprop aircraft
- Review of the methods and results of **Schlüter 2006** and **Niţă 2008** and (if necessary) development of a better approach
- Calculation of the wetted areas and maximum glide ratios of existing turboprop aircraft
- Development of an equation for the estimation of the glide ratio of turboprop aircraft using the approach of **Scholz 1999** and **Schlüter 2006**

The report has to be written in English based on German or international standards.

Niţă 2008 NIŢĂ, Mihaela: Aircraft Design Studies Based on the ATR 72. Hamburg, Hamburg University of Applied Sciences, Aero – Aircraft Design and Systems Group, Projekt, 2008. URL: http://www.fzt.haw-hamburg.de/pers/Scholz/arbeiten/TextNita.pdf

Schlüter 2006 SCHLÜTER, André John: *Maximale Gleitzahl, Streckung und benetzte Fläche*. Hamburg, Hamburg University of Applied Sciences, Aero – Aircraft Design and Systems Group, Projekt, 2006. URL: http://www.fzt.haw-hamburg.de/pers/Scholz/arbeiten/TextSchlueter.pdf

Scholz 1999 SCHOLZ, Dieter: *Skript zur Vorlesung Flugzeugentwurf*, Hamburg, Fachhochschule Hamburg, FB Fahrzeugtechnik, Abt. Flugzeugbau, Vorlesungsskript, 1999