

**CTU**CZECH TECHNICAL
UNIVERSITY
IN PRAGUEFACULTY OF TRANSPORTATION SCIENCES
DEPARTMENT OF AIR TRANSPORTCzech Technical University in Prague
Faculty of Transportation Sciences
Department of Air Transport
Horská 3, 128 03, Prague 2

e-mail: hanakle1@fd.cvut.cz, sochavla@fd.cvut.cz

Study programme: Technology in Transportation and Telecommunications

Study field: Air Transport

REPORT OF BACHELOR'S THESIS ADVISOR

Student: Jiaxing Wang

Thesis: FRAM Analysis of Aircraft Accidents With Respect to Flight Procedures

Thesis assignment:

- Thesis does not violate CTU methodological instructions (link) Minimum report length is met (min. 35 pages)
- Thesis assignment fulfilled with each assignment point clearly addressed

	Bachelor's thesis evaluation criteria	Score
1.	Formal and technical aspects. (0 – 30) Evaluate meeting the thesis goal and overall quality of the report with respect to the assigned topic. Excellently addressed assignment evaluate with maximum points. Reduce evaluation proportionally to the extent of the assignment not being addressed properly.	20
2.	Theoretical part and literature review. (0 – 30) Evaluate the relevance of theoretical part with respect to the assignment, extent of the literature review and systematic presentation of the information. If directly copied information dominates (given no violation of citation ethics), reduce at least by 15 points. Another reason for reduction is insufficient choice and presentation of theoretical background, literature, and resources.	20
3.	Extent of implementation works (SW, HW), application of knowledge, methodology appropriateness and thesis conclusion. (0 – 30) A complex and flawless report suitable for publication receives total of 30 points. This aspect is evaluated in terms of contribution to the theoretical knowledge with practical implications. Especially positively perceived are created models, SW products, technical implementations and validated methodologies. Minor methodological flaws may reduce evaluation by maximum of 5 points. Methodological inconsistency with theoretical background, unclear or only partly adequate technical approach reduce evaluation by minimum of 15 points. Further reduction of evaluation can be due to insufficient discussion and conclusions.	20
4.	Formal aspects and thesis structure (writing, text structure, graphs, figures, citations, references etc.). (0 – 10) Evaluated are formal requirements with respect to the rules of writing and thesis attributes, i.e. text formatting, report structure, reference list, inclusion of graphs and tables, citation style. Violating individual requirements evaluate by reduction of 2 points for each violated aspect. Grammar errors, typos or inadequate stylistics or terminology leads to reduction of 2 to 4 points. The report shall include only standard and technical terminology (evaluate the capability to use technical terminology – 2 points), graphs follow standard rules (2 points) and, similar to tables, include legend and are clearly readable (2 points). ISO690 and ISO690-2 citation rules are obeyed (2 points).	9
5.	Total score:	69

Comments:

If more space is needed, attach to this report additional text on separate pages.

The thesis presents a study of Piper PA-44 Seminole aircraft accidents by means of FRAM analysis. The student analyzed 5 accidents of this aircraft type and modelled respective flight procedures that were executed at the time of each accident. By this, several FRAM models were established and, by their means, the contribution of the flight procedures to the occurrence was analyzed. The student identified the link between current flight procedures and FRAM analysis, making it possible to maintain and evolve flight procedures based on the resonance analysis in FRAM. In general, I find the results of the thesis useful for the aviation industry. On the other hand, the thesis is limited by the number of analyzed accidents (only 5) and validation of the work based on FRAM Model Visualizer and expert assessment of the student only. In addition, active guidance by the advisor was needed to complete the work.

Overall thesis grading:

	A (excellent)	B (very good)	C (good)	D (satisfactory)	E (sufficient)	F (failed)
Score:	100 - 90	89 - 80	79 - 70	69 - 60	59 - 50	< 50
				X		

Note: Please justify your evaluation with your comments above

Bachelor's thesis overall evaluation is D and I do recommend the thesis for defence.

Name: doc. Ing. Andrej Lališ, Ph.D.

Organization: CTU in Prague

Signature:



Date: 10. 12. 2021