

Wassana Chanthawong 2011: Study and Simulation of Aircraft Landing Gear Strength Behavior in Various Landing Conditions. Master of Engineering (Aerospace Engineering), Major Field: Aerospace Engineering, Department of Aerospace Engineering. Thesis Advisor: Wing Commander Nattapol Niyomthai, Ph.D. 94 pages.

The landing gear is one of the important components of the aircraft structure, especially when the aircraft is landing. This research aims to study, analyze and compare the critical areas between Tricycle and Tail dragger landing gear of light aircraft that will affect with both landing gear structures when landing in various landing condition reference from FAR 23 - Appendix C: Basic landing condition.

The researcher had statically analyzed both of landing conditions with limit load and ultimate load by used Finite Element Analysis Software method, Which was totally analyzed in 10 cases (6 cases for Tricycle and 4 for Tail dragger).

The results showed that, the highest stress occurred at the corner and lower root of the strut. For Tricycle landing gear, the landing conditions that had the most influential was level landing with nose wheel just clear of ground with ultimate load. For Tail dragger landing gear, the level landing and tail down landing were most influential. In addition, the comparison in landing ability of both landing gears in the same landing condition, tail down landing or landing with highest angle of attack, found that the Tricycle landing gear had a good landing ability than Tail dragger gear, although landing with only main gear.

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Thesis Advisor's signature