

Chapter 13 Conclusions

The design of the landing gear is one of the more fundamental aspects of aircraft design. The design and integration process encompasses numerous engineering disciplines, *e.g.*, structure, weights, runway design, and economics, and has become extremely sophisticated in the last few decades. These considerations were incorporated in an MDO procedure for use in the conceptual design of large transport aircraft. Accomplishments include:

- Aircraft *cg* estimation methods were studied and a new approach to *cg* estimation in conceptual design was demonstrated.
- An automated landing gear modeling algorithm for large transport aircraft was developed, and conformance with typical FAR requirements was assessed automatically.
- Airfield compatibility considerations associated with pavement thickness and runway and taxiway dimensions were automated.
- An analytical structural weight estimation procedure was developed to complement existing statistical landing gear weight estimation methods.
- A multidisciplinary analyses computer program package for landing gear design and was created for use in large MDO aircraft design programs.
- Results obtained from the analysis package were presented, illustrating the trade-off studies and parametric results available for incorporation into a complete MDO design procedure.