



DEPARTMENT OF AUTOMOTIVE AND AERONAUTICAL ENGINEERING

Family Concepts of Box Wing Aircraft

Task for a *project*

Background

For an aircraft project to be successful it is mandatory to have a family of aircraft based on one basic version. In industry it is standard practice to add/remove fuselage sections to/from the basic fuselage, thus stretching/shrinking the aircraft. It is desired to use the same wing for all of the family members so that development and production costs can be kept minimal. The same should apply to box wing aircraft.

Furthermore it is important that ground handling requirements are taken into account from the very beginning in aircraft design activities. The aircraft needs to be designed such to allow for sufficient space around the aircraft for all ground service equipment.

Task

Concepts for stretched/shrunk family members of box wing aircraft have to be investigated together with their ground handling implications. The following subtasks are to be treated:

- Propose stretched/shrunk family members of box wing aircraft in *twin* aisle layout.
- Propose stretched/shrunk family members of box wing aircraft in *single* aisle layout.
- Investigate the situation for the placement of ground support equipment during turn around for above family members of the *twin* aisle aircraft layout.
- Investigate the situation for the placement of ground support equipment during turn around for above family members of the *single* aisle aircraft layout.

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