MSL
Advanced Materials and Structures Lab.

Aircraft Design and Manufacturing Workshop
Introduction

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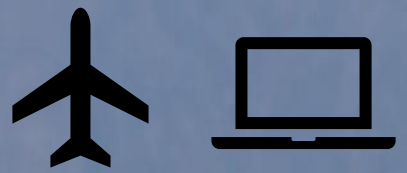
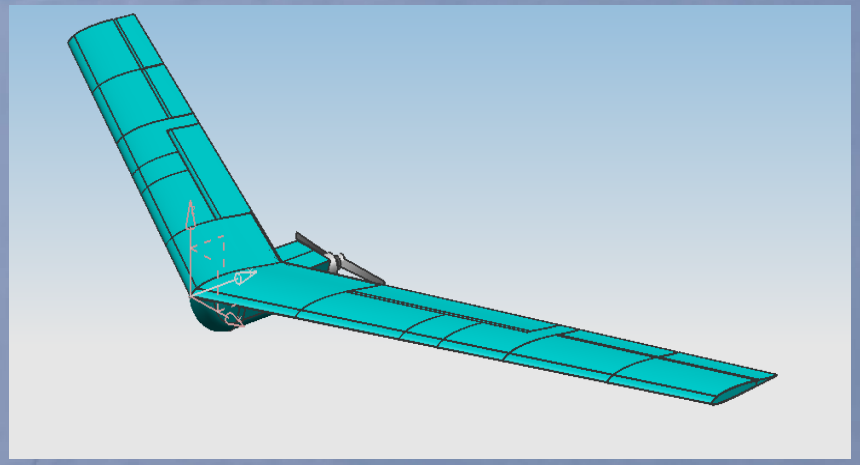


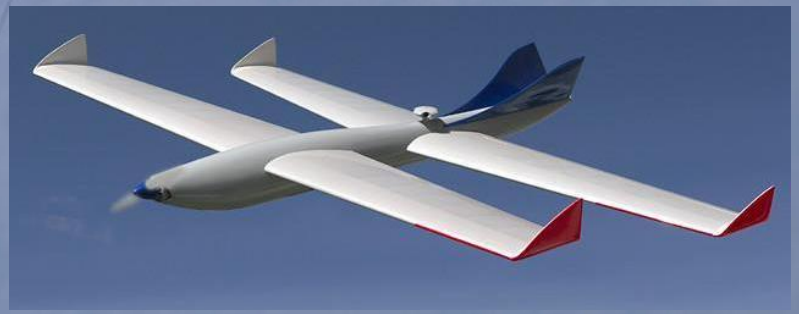
Introduction

Types of aircrafts according to their wing/tail configuration



Tailless aircraft (Flying Wings)

Tailed aircrafts

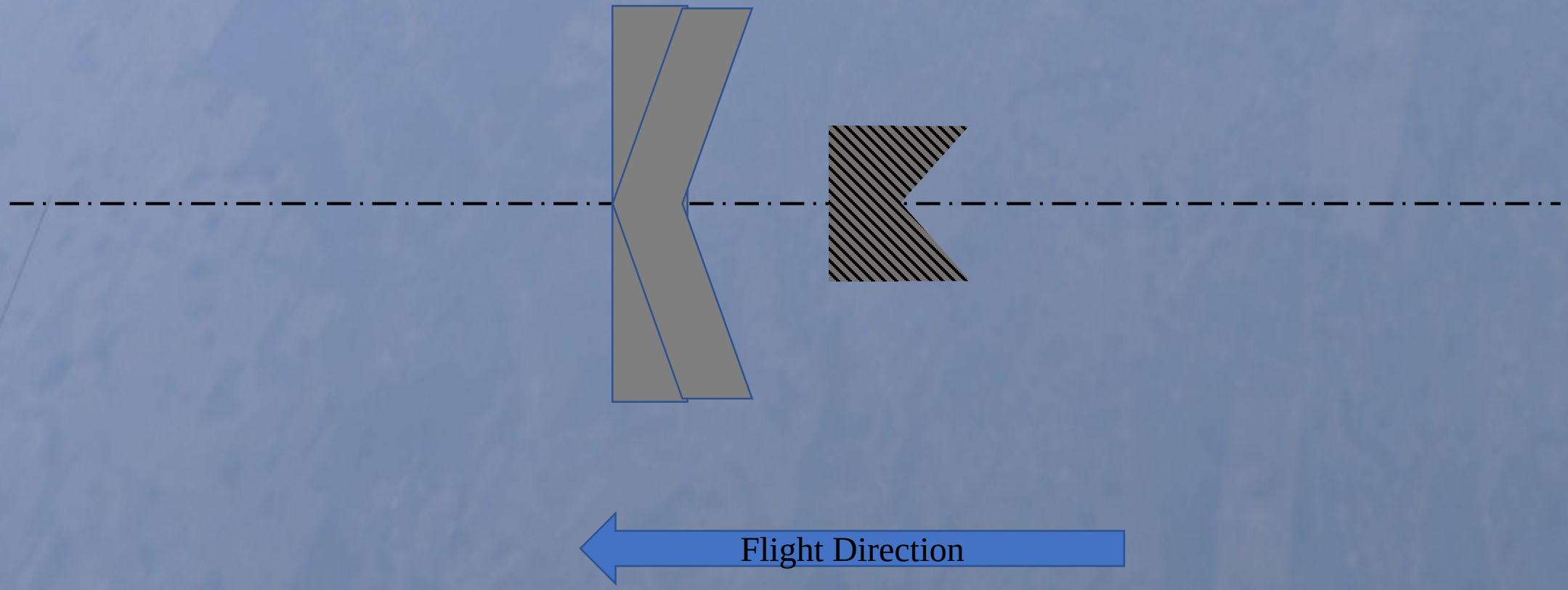


Tandem wing aircraft

Canard aircraft

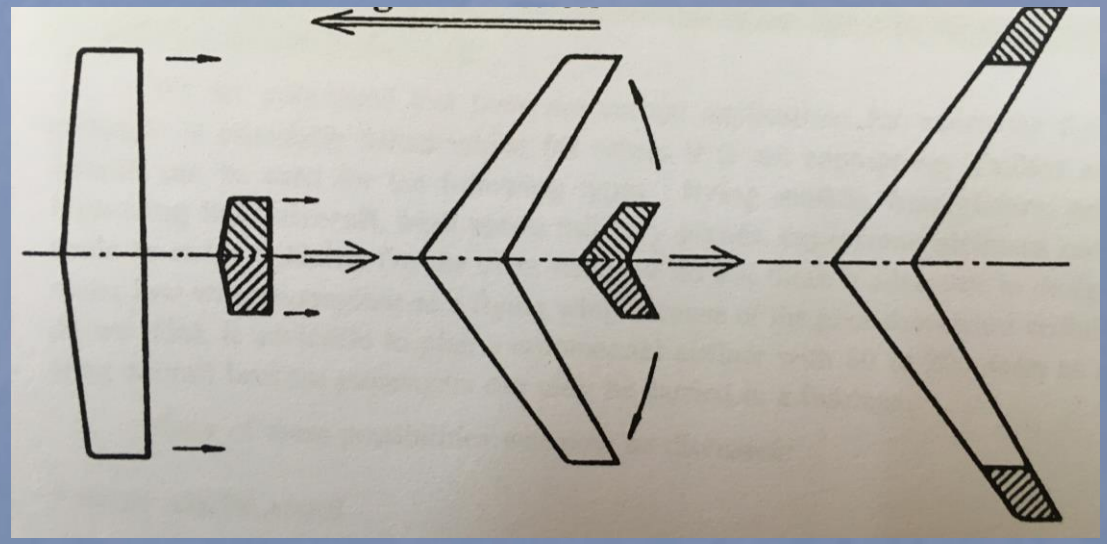
Introduction – Tailless aircrafts

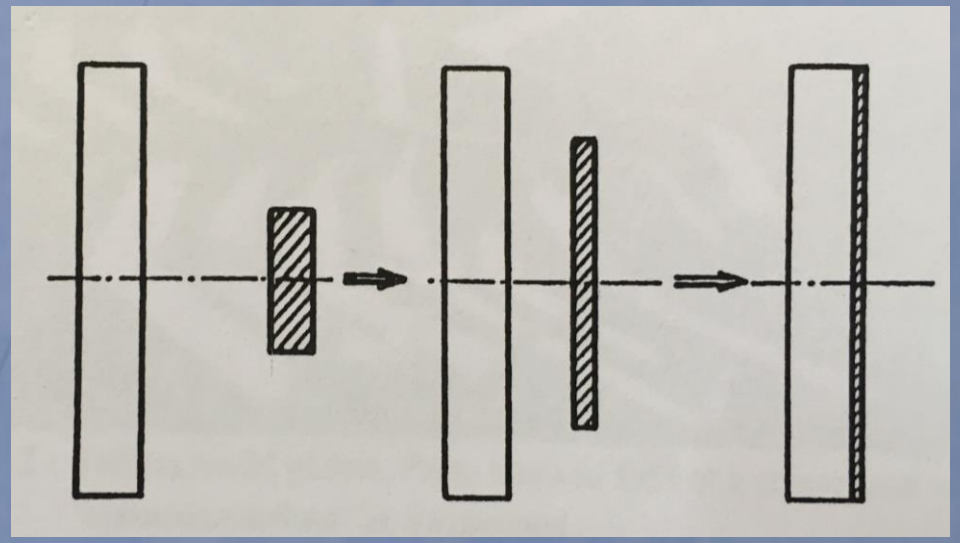
An aircraft with one lifting surface only – Flying wing

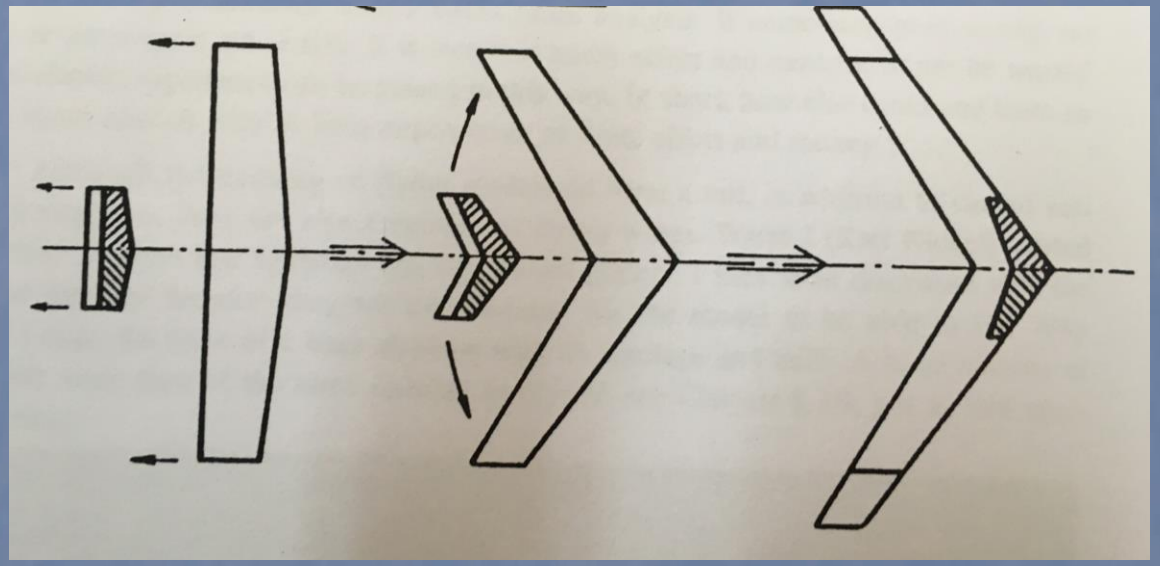


Introduction

Flying wing configurations







Introduction

Comparison between conventional and tailless aircrafts

Conventional aircrafts

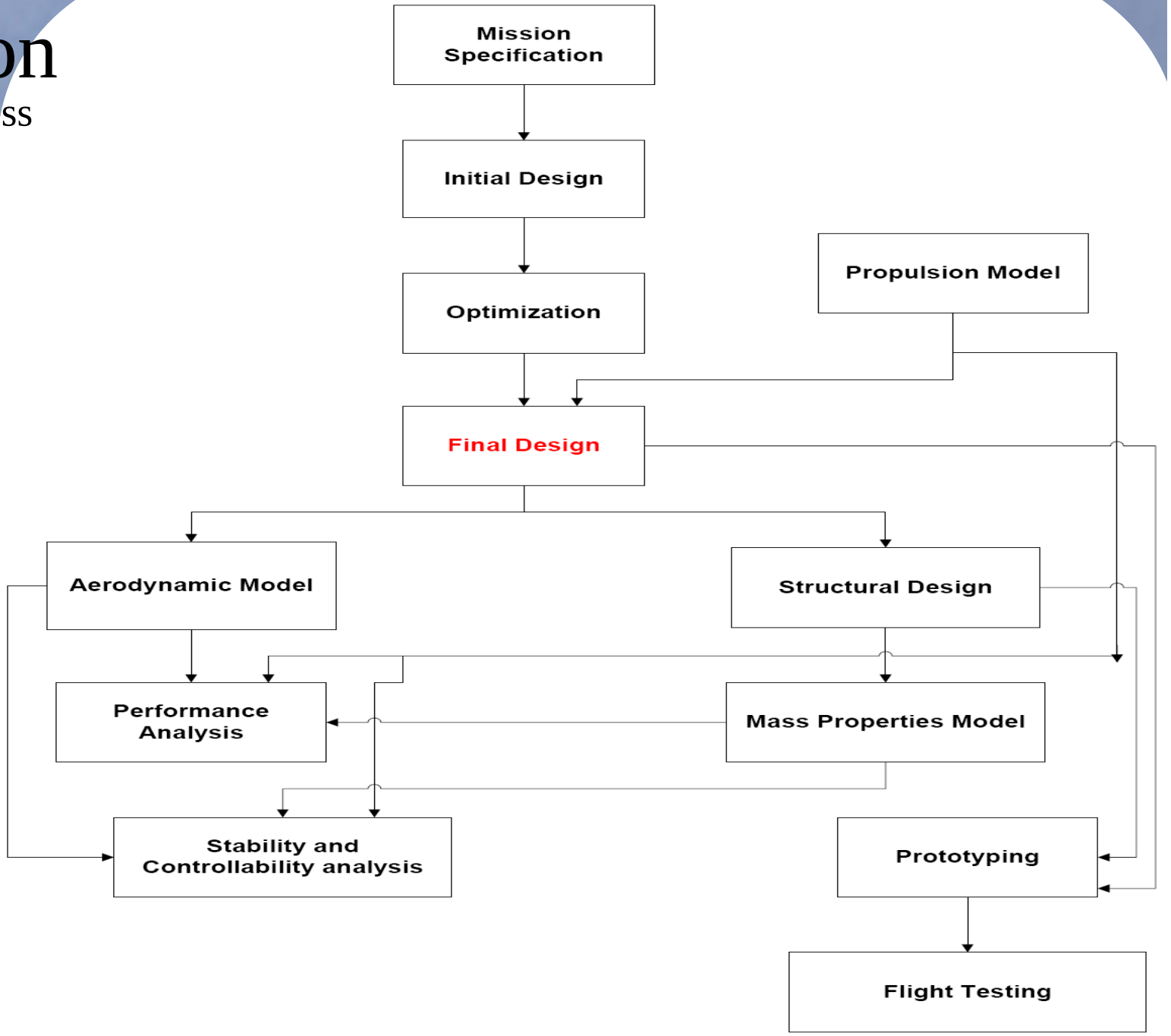
- Aircraft with horizontal and vertical tail.
- Give relatively high drag (not always) and more expensive.
- A pusher Propeller more difficult to install.
- The Permissible CG-limits higher.

Flying-Wing aircrafts

- Aircraft without horizontal tail and sometimes without vertical tail.
- Theoretically the flying wings give low drag coefficient and should be less expensive.
- A pusher Propeller easier to install.
- The permissible CG-limits are smaller.

Introduction

Aircraft design process



Facts

Keep this in your mind:

There is no perfect aircraft, but do your best to make your design perfect.

Nearly every design can be made fly, but do your best to make your design optimum.

African Hawk

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