-Current emergency landing procedures

-Emergency landing tech (Jackie)

# An Automated Emergency Landing System for Fixed-Wing Aircraft: Planning and Control

-Accident or problem during emergency landing (reaction time? Too much calculation)

-Reliability of WRAP (Jackie)

# Optimal Path Planning with a Kinematic Airplane Model

OpenAP: An Open-Source Aircraft Performance Model for Air Transportation Studies and Simulations

WRAP: An open-source kinematic aircraft performance model

# Open Aircraft Performance Modeling: Based on an Analysis of Aircraft Surveillance Data

# **Design and Validation of a Detailed Aircraft Performance Model for Trajectory Optimisation**

-Factors and procedures of flight path planning

Horizontal flight trajectories optimisation for commercial aircraft through a flight management system

Vertical flight path segments sets for aircraft flight plan prediction and optimisation

Advanced Flight Planning and the Benefit of In-Flight Aircraft Trajectory Optimization

Multiphase Optimal Control Framework for Commercial Aircraft Four-Dimensional Flight-Planning Problems

Flight trajectories optimization through genetic algorithms for a LNAV and VNAV integrated path

Haptic Support for Aircraft Approaches with a Perspective Flight-path Display

Research on Method of Trajectory Prediction in Aircraft Flight Based on Aircraft Performance and Historical Track Data

Mathematical Models for Aircraft Trajectory Design: A Survey

Constraint Handling in Flight Planning

Multi-objective optimisation of aircraft flight trajectories in the ATM and avionics context

* 1. ***WRAP***
     1. *What is WRAP*

|  |  |
| --- | --- |
| Takeoff | |
| Liftoff speed (  m/s*�/�*  ) | Vlof*����* |
| Takeoff distance ([Equation]) | [Equation] |
| Mean takeoff acceleration ([Equation]) | [Equation] |
| Initial climb | |
| Calibrated airspeed ([Equation]) | [Equation] |
| Vertical rate ([Equation]) | [Equation] |
| Cutoff altitude (fixed at 457m/1500ft) | [Equation] |
| Climb | |
| Range to the top of climb ([Equation]) | [Equation] |
| Constant CAS across altitude ([Equation]) | [Equation] |
| Constant CAS ([Equation]) | [Equation] |
| Vertical rate during constant CAS climb ([Equation]) | [Equation] |
| Constant Mach climb crossover altitude ([Equation]) | [Equation] |
| Constant Mach number | [Equation] |
| Vertical rate during constant Mach climb ([Equation]) | [Equation] |
| Cruise | |
| Cruise range ([Equation]) | [Equation] |
| Maximum cruise range (  km  ) | [Equation] |
| Initial cruise range ([Equation]) | hint,cr*ℎ���,��* |
| Cruise altitude ([Equation]) | [Equation] |
| Maximum cruise range (  km  ) | [Equation] |
| Cruise Mach number | [Equation] |
| Maximum cruise Mach number | [Equation] |
| Descent | |
| Range from the top of descent ([Equation]) | [Equation] |
| Constant Mach number | [Equation] |
| Constant Mach descent crossover altitude ([Equation]) | [Equation] |
| Vertical rate at constant Mach descent ([Equation]) | [Equation] |
| Constant CAS ([Equation]) | [Equation] |
| Constant CAS crossover altitude | [Equation] |
| Vertical rate at constant CAS descent ([Equation]) | [Equation] |
| Vertical rate after constant CAS descent ([Equation]) | [Equation] |
| Final approach |  |
| Calibrated airspeed ([Equation]) | [Equation] |
| Vertical rate ([Equation]) | [Equation] |
| Cutoff altitude (fixed at 300m/1000ft) | [Equation] |
| Path angle | [Equation] |
| Landing |  |
| Touchdown speed ([Equation]) | [Equation] |
| Braking distance ([Equation]) | [Equation] |
| Mean braking deceleration ([Equation]) | [Equation] |