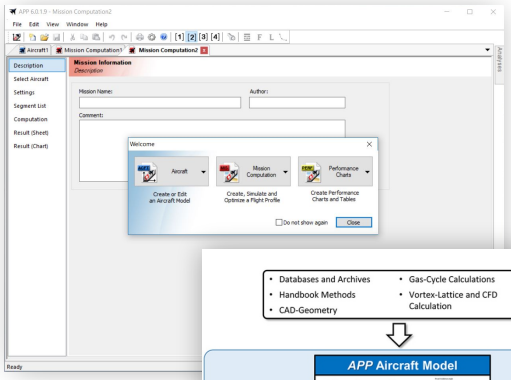
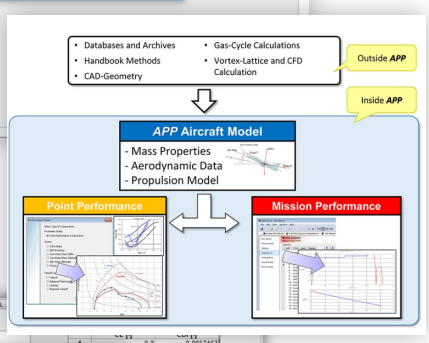
Aircraft Performance Program

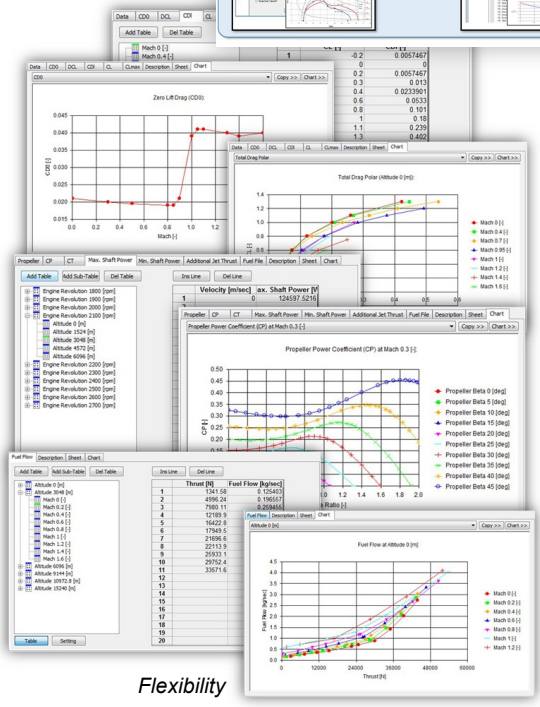
AIRCRAFT PERFORMANCE



Menu



Workflow



Flexibility

Aircraft Performance Program (APP) is a specialized software for aircraft performance analysis that computes the complete range of aircraft performance parameters over a user-specified range of altitudes, speeds and other variables.

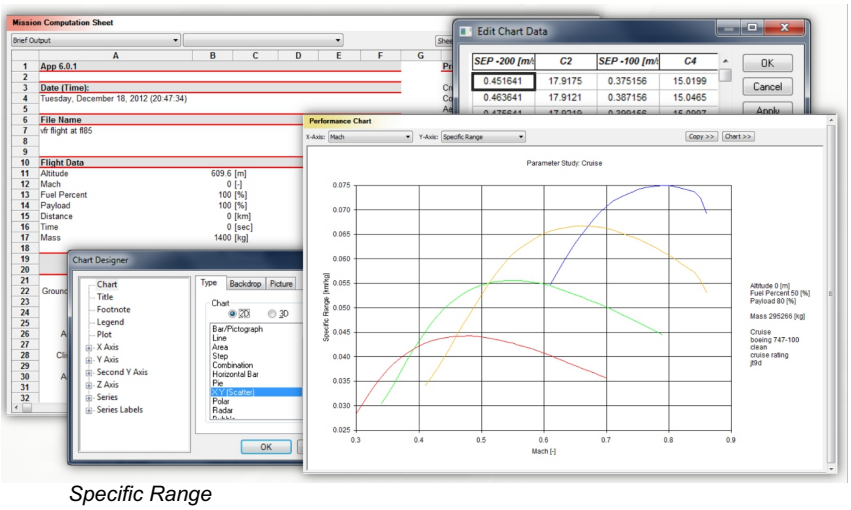
The software is designed for speed, simplicity and flexibility in its use. It provides users with useful quick-look (evaluate) functions for the examination of a wide variety of data (e.g. thrust, fuel flow, lift, drag, SEP, turn rate, etc.)

Other features include the capability to compute and optimize all kind of mission profiles based on defined mission specifications. The types of mission flight phases (e.g. takeoff, climb, cruise, loiter, descent, etc.) are suitable for civil as well as military aircraft.

APP works in metric and British units and is able to switch during program execution to either system. This feature allows a rapid conversion of results into either system of units. Due to its optimized numerical capabilities, the program solves performance calculations within seconds.

APP will compute most mission profiles based on defined mission specifications. The types of mission flight phases (take-off, climb, cruise, loiter, descent, etc.) are suitable for Commercial, Civil and Military Aircraft, Turboprops, Gliders, Trainers, Business Jets and UAVs.

APP is a valuable tool for small design teams and large aerospace companies. APP will produce quick assessments without having to resort to internal, and very expensive, computer programs. Operators, research establishments, universities, government agencies and air forces will use it as a very cost-effective tool by avoiding expensive and lengthy subcontracting in many phases of their work.



Specific Range

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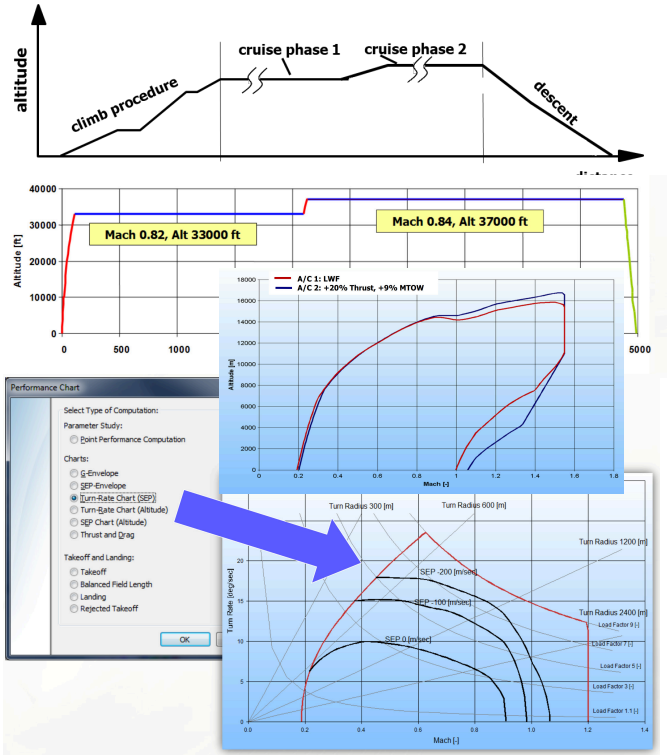
Aircraft Performance Program

AIRCRAFT PERFORMANCE

Available Flight Segments

APP provides you with a multitude of flight segments that allow you to define specific mission analyses. It enables both, a very fast and easy “first shot” solution up to very detailed missions for complex analyses. A selection of available segments includes:

- Acceleration
- Climb; Climb at Best Angle; Climb at Best Rate; Climb at CAS; Climb at EAS; Climb at Constant Mach
- Cruise; Cruise at Best SR; Cruise at Mach; Cruise at Optimum Altitude and Mach
- Deceleration
- Descent, Descent at No Credit (at best FF or best SR), Descent at CAS, Descent at EAS, Descent at Mach
- Energy Exchange
- Ground Operation
- Landing Roll
- Loiter & Loiter at Best FF
- Maneuver at Constant or Maximum Load Factor
- Refuel
- Reset Altitude or Reset Mach
- Store Drop
- Take-off



Available Mission Optimizers

The mission module includes a set of fast optimizers to help you refine your analyses. Using the mission-optimizers, APP users are able to define segments that shall be maximized along with inputs on required reserves. Available optimizations are:

- Range Optimization
- Endurance Optimization
- Radius of Action Optimization

Point Performance

APP features a multitude of standard performance charts for aircraft point performance analysis. Furthermore a comparison feature for different results is readily available. Available pre-defined point performance-analysis charts are highly customizable, they include:

- SEP-Envelopes
- G-Envelopes
- Turn-Rate Charts (constant SEP)/Energy-Maneuverability Charts
- Turn-Rate Charts (constant Altitude)
- SEP vs. Altitude Charts
- Point Performance Parameter Computation
- Required Thrust and Drag Chart for Different Load-Factors

Take-off and Landing Computation

APP incorporates a unique 2.5-dimensional method to obtain takeoff- and landing- distances with respect to different certifications and environmental conditions:

- Take-off, Rejected Take-off, Balanced Field Length, Landing
- Calculations respect military and civil airworthiness regulations: MIL-STD-3013, FAR Part 23 & 25, EASA CS 23 & 25
- All Engines Operative (AEO) and One Engine Inoperative (OEI) calculations
- Respecting runway dimensions as: Runway Length, Runway Altitude, Runway Slope
- Different runway conditions are available: Dry, Wet, Snow, Ice
- Calculations possible with or without afterburner

DARcorporation
Design • Analysis • Research

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