ASSESSING MANOEUVRES

The J2 Universal Tool-Kit's flight modelling engine, J2 Freedom enables users to create trim and response scenarios and use these models together with previously created aircraft to perform static and dynamic analyses.

When static and dynamic analysis takes place early in the development lifecycle, potential problems can be discovered quickly, before valuable time and money has been wasted on an inefficient or faulty concept.

Universal flight dynamic modelling capabilities come as standard for designers using J2 Freedom. An unlimited number of flights and manoeuvres can therefore be predicted and evaluated.

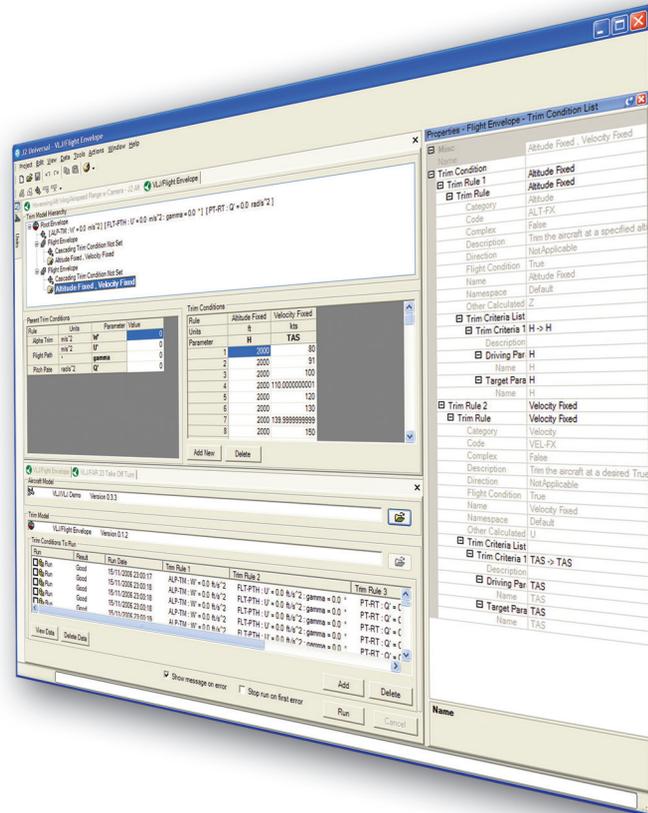### KEY FEATURES AND BENEFITS

1. Universal Flight Dynamic Modelling
- Evaluate the complete flight envelope and beyond
- Investigate areas that can only usually be explored during a flight test

2. Use the System throughout the Design Process
- Re-run existing trims and responses when the aircraft is updated

3. See any Problem Areas as the Analysis Takes Place
- Evaluate the design at any stage to capture problems early

For further information contact **J2 Aircraft Dynamics** on **+44 (845) 052 9489** or email: **sales@j2aircraft.com**

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Predicting Performance

J2 FREEDOM DELIVERS

Features	Advantages and Benefits
Easy-to-use Graphical Interface	Analysis models can be created quickly and easily to cover the complete flight envelope. There's no need to use extensive text files. Single cases or complete flight envelopes can be assessed at the click of a single button
Trim Models are Constructed from a Series of Rules	Investigate the aircraft in any configuration and flight condition: Longitudinal, Lateral and Asymmetric. Configure the system to match your aircraft's structure and account for specific scenarios
Ranges can be Applied to Rules to Create Envelopes	Rapidly construct multiple flight conditions and quickly evaluate the aircraft across the whole flight envelope. Multiple envelopes can be combined into a single trim model to add further refinement to focus on specific regions
Root Solving to Assess Non Linear Trims	Trim the aircraft at any point in the flight envelope to build a complete picture of airspeed altitude capabilities, stall speeds and lift/drag curves
Define Response Inputs as Points or Equations	Create simple manoeuvres quickly and easily and start analysing the design straight away. You can design complex inputs through equations and model pilot intervention as a function of conditions based upon aircraft states to assess flight more accurately. Advanced analysis using flight test data as response input to compare results to flight test data for refining models
User Defined Analysis Time	Improved computing efficiency can be achieved as the user optimises the data rate to suit aircraft and manoeuvre combination
Apply a Manoeuvre to a Complete Trim Model	Reduce analysis timescales by creating results for multiple flight conditions with a single mouse click
Configuration Control Aircraft, Trim and Response Models	Minimise mistakes by ensuring that all analyses performed use the most recent analysis. Quickly compare results from previous cases for aircraft optimisation

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