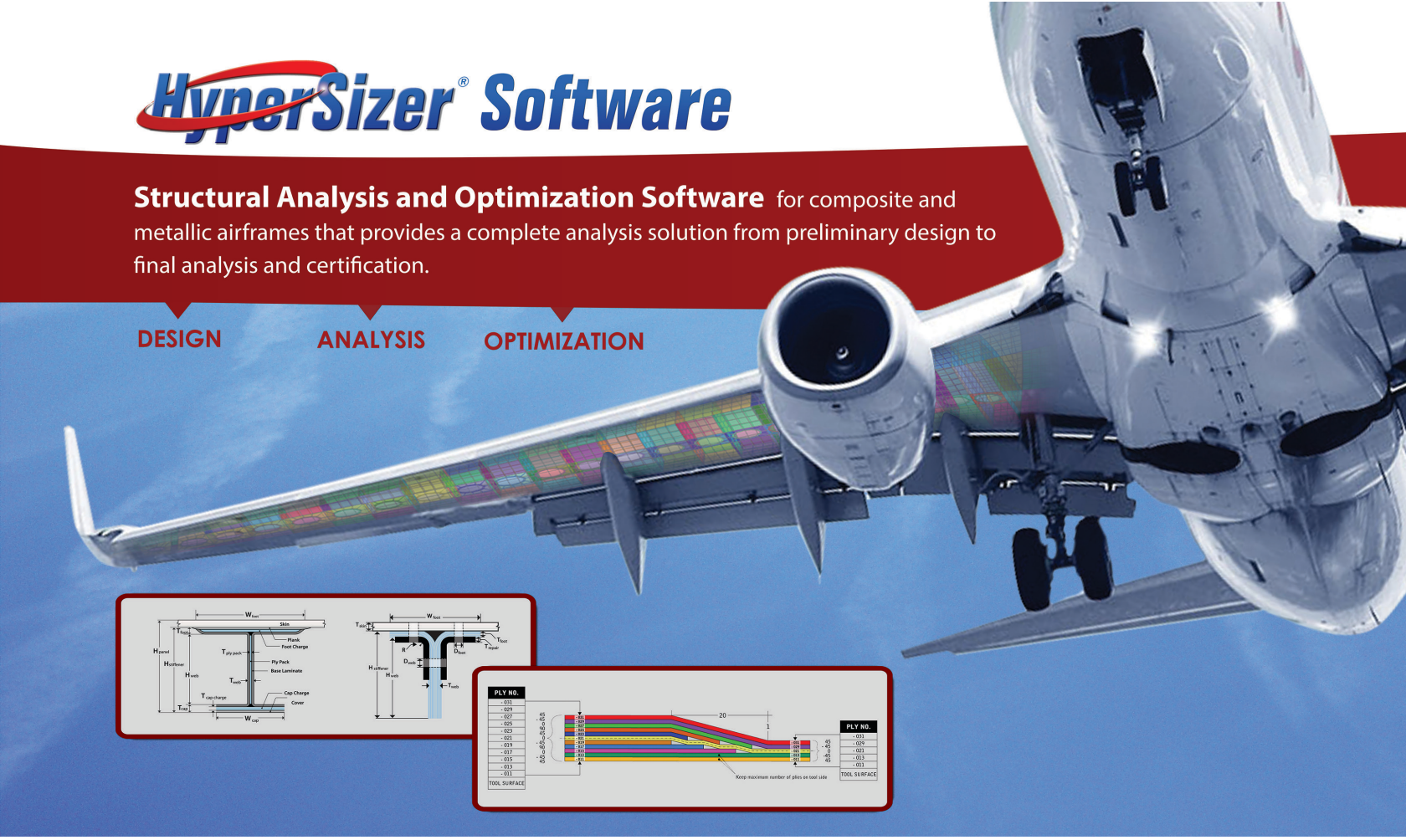
HyperSizer® Software

Structural Analysis and Optimization Software for composite and metallic airframes that provides a complete analysis solution from preliminary design to final analysis and certification.

DESIGN ANALYSIS OPTIMIZATION



Aircraft Structural Design, Analysis, and Optimization

Originally developed specifically for airframes, HyperSizer software performs 80% of the analyses required right out of the box. From preliminary design optimization for weight savings and manufacturability to final FAA certification, the software uses the same analysis methods from beginning to end of the project - avoiding unexpected negative margins and weight growth. HyperSizer simultaneously analyzes and optimizes structural panel cross sectional dimensions, materials, and layups; substantially reducing weight and getting your design back on track with positive margins of safety for all load cases and failure modes. The analysis margins along with integrated test database correlation are documented in Stress Reports.

Optimize Aircraft Components

- Wing box: skins, spars, ribs
- Fuselage: panels and ring frames
- Empennage, flooring, bulkheads
- Engine nacelles, cases, IFS
- Composite or metallic material
- Stiffened panels, honeycomb sandwich, and solid laminates
- All design variables optimized
- Less ply drops
- Complete part laminate sequencing
- Reduce structural weight 20%

Automate Analysis Process

- Integrated materials database
- Integrated test data database
- Vehicle layout and concept trades
- HyperFEA® automatic iteration with FEA for load path convergence
- Supports Nastran, Abaqus & ANSYS
- HyperFEMgen™ for FEA verification

Certify with Analysis & Test Data

- Detailed analysis stress reports
- Summary tables of controlling margin of safety, load cases, and failure modes
- Correlation of failure predictions to tests
- Damage tolerant composite strength BVID/CAI/OHC etc.
- Discrete Source Damage Analysis
- Extensive material allowable correction factors
- Stiffener buckling and crippling
- Compression and shear IDT postbuckling
- Interlaminar stresses/bonded joints
- Bolted joints including BJSFM

Lower Fabrication & Engineering Cost

- Eliminate costly hours of manual calculations
- Eliminate spreadsheets and model remeshing
- Standardize analyses
- Optimize for manufacturability
- Generate detailed stress reports for certification
- Tracking of global plies to CAD part numbers
- Export/import laminate specs to CATIA/Fibersim

www.HyperSizer.com
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