

# Optimization of Sophisticated Materials Made Simpler

HyperSizer V7 from Collier Research has been fundamentally reconfigured for ease of use by the skilled non-expert.

Composite materials have reached the engineering mainstream. They are in wide use in aerospace, windpower, transportation and a variety of other industries. In most of these settings, optimization traditionally has been the domain of technical specialists.

But now there is a sophisticated, easy-to-use composites (and metal) optimization tool that simplifies the process and can be trusted in the hands of the general engineer. The V7 release of HyperSizer® structural sizing and analysis software has a new interface and other enhanced usability features. These empower the engineers responsible for primary design and analysis of structures in their day-to-day work by delivering consistent, reliable and robust solutions.

To identify optimal lightweight and fuel-efficient designs, HyperSizer V7 self-configures for different loading scenarios, requiring less input from engineers. This added “intel-

ligence,” along with quick, detailed sizing that increases analysis speeds up to 1000X, allows for design decisions to be made in real time throughout the design/analysis workflow. A HyperSizer optimization typically yields weight savings from 20-40%.

Automatically iterating in a continuous loop with finite element analysis (FEA) solvers, HyperSizer software can optimize millions of design candidates while visualizing composite details to the ply, even element, level. The tool defines laminate zones and provides precise details about ply coverage and ply drops, improving manufacturability. Serving as an independent and neutral hub for industry-accepted CAD, FEA, and composites software, HyperSizer automates project data flow from early conceptual design through final certification.



Originally developed at NASA, HyperSizer was the first software allowed to be commercialized and has seen ongoing use at the agency on high-profile, zero-failure-tolerance programs. It is also employed by leading companies involved in commercial aircraft, UAV, space launch, and wind energy projects.

With its new ease-of-use capabilities, HyperSizer V7 puts the power of optimization within the reach of the everyday engineer—and every engineering organization.

## About Collier Research Corporation

One of the early leaders in product optimization software, Collier Research Corporation is the developer of the NASA-originated HyperSizer® structural sizing and design optimization tool for composites and metallic materials. Since 1996, our company provides the engineering community with robust and easy to use software for designing the lightest weight producible structure.

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