



ADVANCED AEROSTRUCTURES TECHNOLOGIES

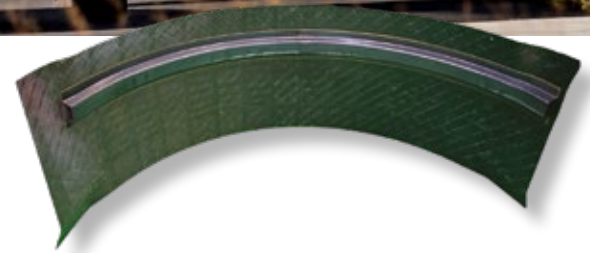
# A PARADIGM SHIFT

## Quieter, lighter, lower cost and easier to repair

For nearly 80 years, Collins Aerospace has pioneered the use of cutting-edge process and material technologies to create nacelle systems and engineered structures for commercial and military aircraft.

Long a leader in advanced metals and composites, we are deeply invested in the research and development of modern materials like composites, ceramics, thermoplastics and titanium that are redefining the industry. Meanwhile, processes like out-of-autoclave curing, lasers and robotic automation are making manufacturing significantly faster, higher quality and more efficient than ever.

The result: aerostructures that provide higher performance in extreme temperatures and increased durability and robustness, along with lower weight and cost.



### RESIN PRESSURE MOLDING

We offer an out-of-autoclave, closed-mold process for fabrication of integrally stiffened composite structures.

- Lowers costs for durable and lightweight control surfaces and doors
- Eliminates fasteners and secondary bonds
- Compatible with toughened resins
- Robust, local fiber volume control, near-net finish

### THERMOPLASTICS

Our thermoplastics materials offer improved performance and significant cost savings through highly automated, out-of-autoclave processing.

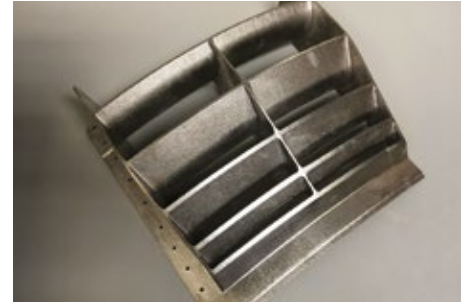
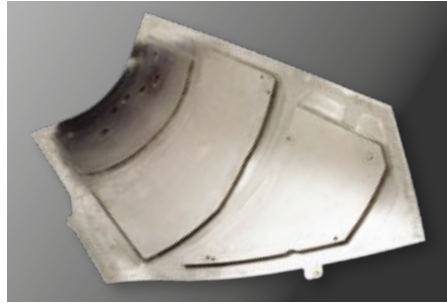
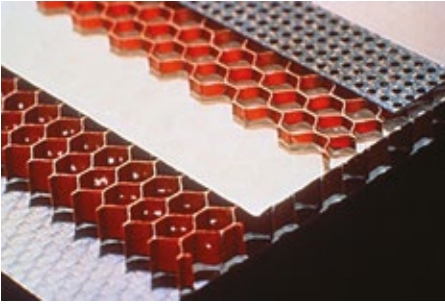
- Up to 30% cost savings and 40% cycle time reductions.

- Stamp forming, Automated Fiber Placement, joining/welding
- Fire and chemical resistance, high temperature, good impact/fatigue

### CERAMIC MATRIX COMPOSITES (CMCS)

Acoustic CMC exhaust for higher-temperature applications.

- 1,600° F capability (oxide-oxide)
- Up to 20% weight reduction compared with titanium
- Equivalent turbine noise attenuation to titanium
- Up to 9 dB noise attenuation for deep cavity configuration
- TRL/MRL6 for hardwall ready now; acoustics in 2026



## ACOUSTICS

Collins Aerospace has a broad portfolio of design and test expertise, materials and processes to meet cost, structural, dynamic, aero, acoustic, thermal and damage tolerance requirements.

- Tailored acoustic structures to minimize noise and drag
- Multiple core types, skin bond and perforation process options
- Layup and assembly automation
- Large autoclave capacity, global original equipment manufacturer (OEM) and maintenance, repair & overhaul (MRO) footprint

## TITANIUM SUPER PLASTIC FORMING/LIDBOND™

Our acoustic titanium honeycomb sandwich structures are unique in the industry, offering our proprietary Liquid Interface Diffusion (LID) bond between core and face skins.

- Production proven process with decades of development
- Exhaust, fan cases, bypass ducts and multi-contoured vehicle panels
- Well-established mechanical properties

## ADDITIVE MANUFACTURING

Advanced, highly efficient component designs optimized for best performance and lightest weight without the constraints of traditional manufacturing methods.

- Next-generation de-icing
- Novel EBU and equipment packaging
- Lightweight generative designs of structural parts

Specifications subject to change without notice.



## COLLINS AEROSPACE

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