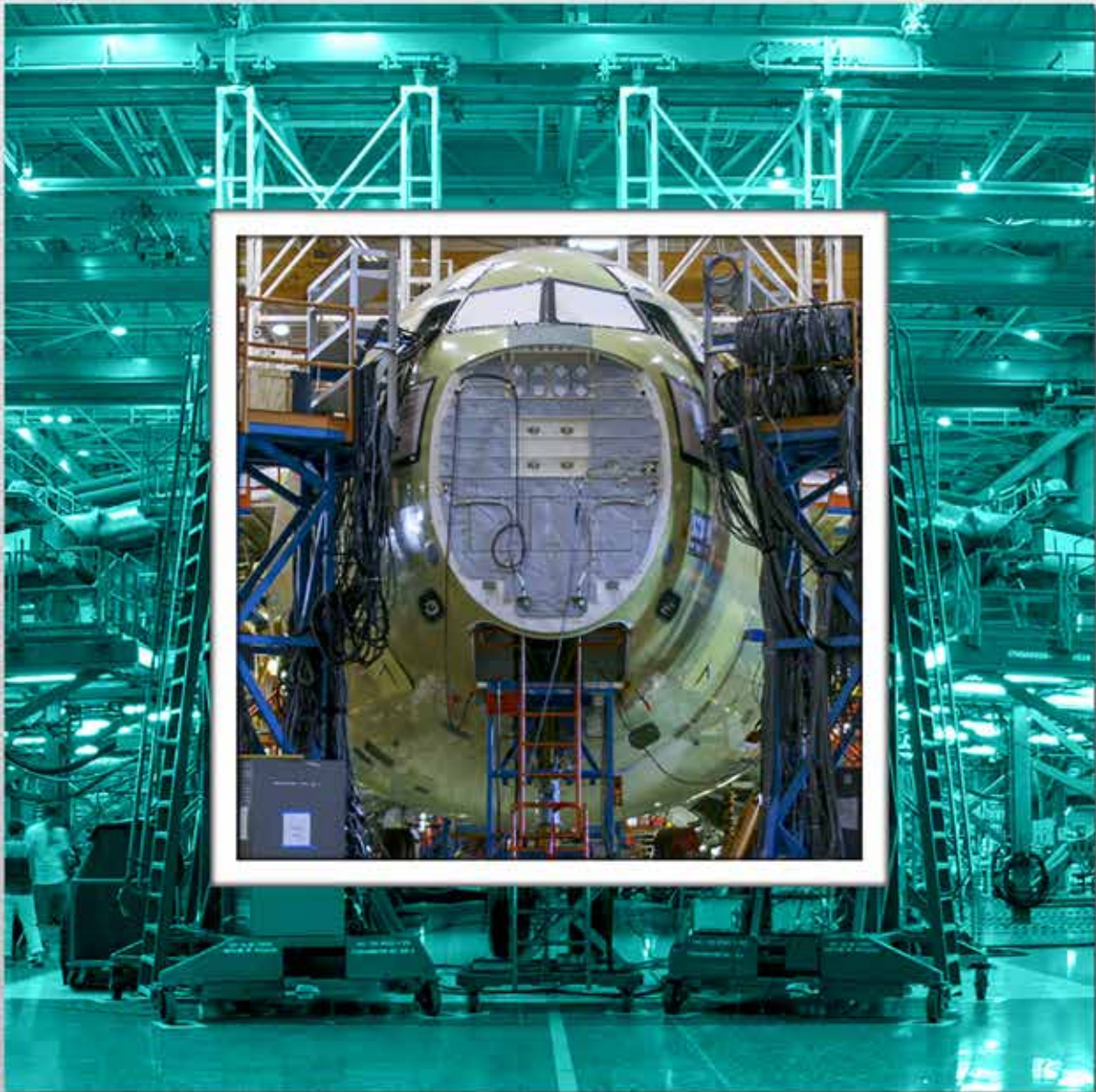


# Aerospace Engineering

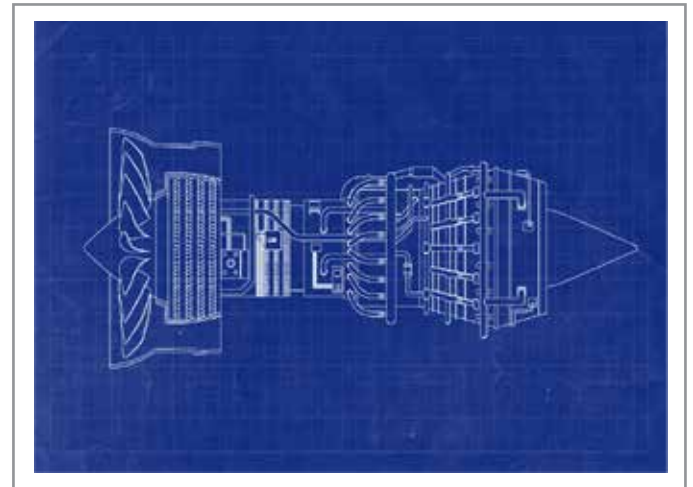


DESIGN | ANALYSIS | TESTING

## Design

### **Optimizing function**

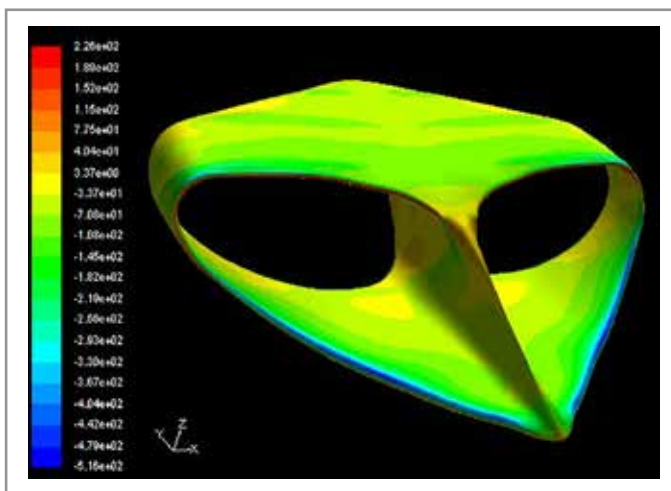
At Stress Engineering Services, we believe that a thorough understanding of function, reliability, cost and manufacturing should drive successful aerospace system and structure designs. Our client-focused approach to design projects means that we are fully committed to getting you what you need. With a deep understanding of what works in the real world, informed by more than 45 years of first-hand experience, we can identify and incorporate key technical requirements in the conceptual phase. Our physics-driven design process means that SES-designed products are smarter, more reliable, faster to market and ultimately more profitable, as the resulting form is optimized to its function.



## Analysis

### **Predicting performance**

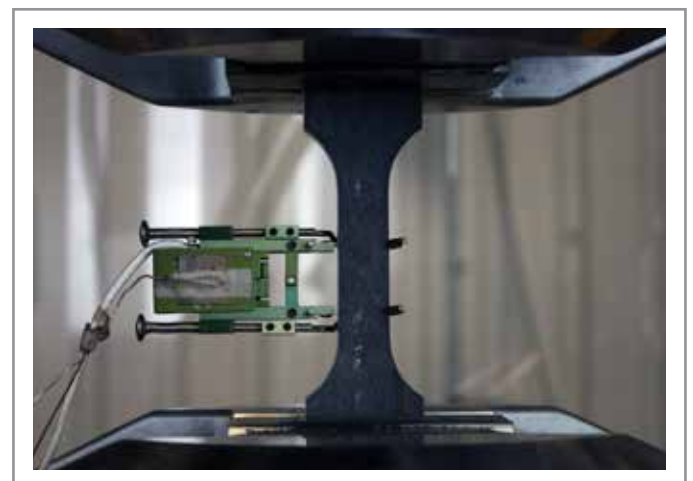
We specialize in computer-based process modeling and simulation technologies to predict performance and optimize design, including Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD) and Global Structural Analysis. Our engineers routinely apply these technologies to process fluid mechanics, heat, and mass transfer analysis. Harnessing this advanced technology serves to build the understanding necessary to mitigate the failure of products, machinery and processes, which in turn provides unique opportunities to propose and test design changes.



## Testing Services

### **Delivering certainty**

With no margin for error, our clients need to be absolutely certain about the safety and security of their technologies when in flight. This level of certitude can only be achieved with rigorous field or laboratory testing. With more than 45 years of test experience, we have the expertise to design custom tests to your specifications, or work with you to develop those specifications. With more than 160,000 ft<sup>2</sup> of state-of-the-art laboratory space, we can simulate a wide range of aerospace-related operational conditions, so you can push your equipment to the limit and get the answers you need.



## Materials Science and Engineering

### **Engineering insight**

Our materials science capabilities span a very broad range of materials, ranging from advanced metal alloys to composites and polymers. Leveraging an extensive array of in-house design, analysis and testing resources, our materials science experts and engineers can recommend materials choices for particular applications, predict material life and reliability in harsh environments and perform root cause analysis of structural failures.

Our extensive experience with advanced materials engineering and metallurgy makes us a leading partner to aerospace clients that want to discover and solve potential problems before they arise.



*Operating at the outer reaches of engineering excellence, the aerospace sector demands skilled staff, serviceable systems and state-of-the-art equipment. With an emphasis on delivering service with integrity, we work closely with our aerospace clients to provide advanced aerospace design, analysis and testing services. We give clients peace of mind that their systems can be relied upon to perform as expected, when needed, in the world's most demanding applications.*



## Computational Modeling and Simulation

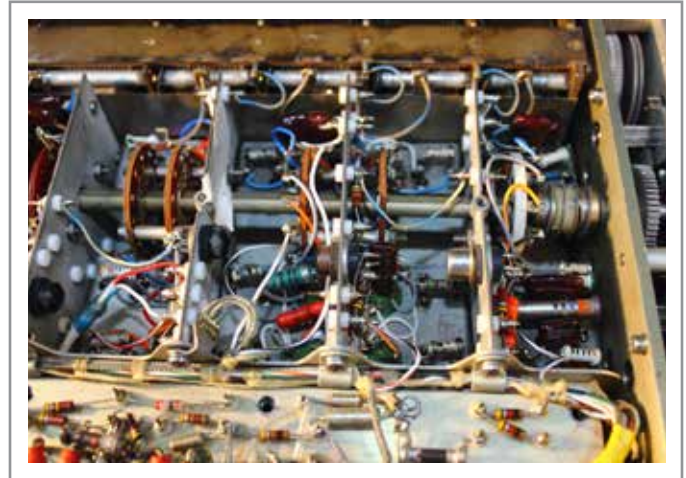
### **Pushing the boundaries of technology**

Stress Engineering Services is a leader in computational modeling and simulation. Within Earth's atmosphere, cislunar space and deep space, our aerospace clients are working in conditions that push the boundaries of technology and human endurance. Our engineers use powerful computational methods including mathematical modeling, finite element analysis, computational fluid dynamics, multi-body dynamics and multi-physics simulation to examine a very wide range of aerospace events. We also apply these tools to modeling human physiology related to adaptation and performance in extreme high altitude or space flight environments.

## Instrumentation, Data Acquisition and Avionics

### ***Delivering actionable information***

We create systems that are designed to provide more than just sensor measurements – we deliver actionable information via manipulation and analysis of measured data. From data acquisition to integrated systems, we specialize in a variety of measurement and control needs including system design and development, instrumentation and software development. We work with you to develop specifications and integrate brand new systems for enhanced design performance, while deploying electrical, hydraulic, pneumatic and optical control systems to address measurement goals and solve your engineering challenges.



*Our most vital attribute is our client-focused approach – we are committed to getting you what you need. The close relationship forged between our engineers, technicians, and laboratories, is the key to our engineering success. We are armed with the culmination of over 45 years' worth of design, testing and analytical experience and real first-hand knowledge of what works.*



## Unmanned Systems and Robotics

### ***Supporting complex systems***

From modeling the kinematics and dynamics of unmanned and robotic systems; to the design, analysis and testing of these systems' components; selection and integration of sensors and actuators; and development of complex unmanned and robotic systems, we are experienced in providing in-depth engineering support to unmanned, autonomous and robotics-related projects.



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