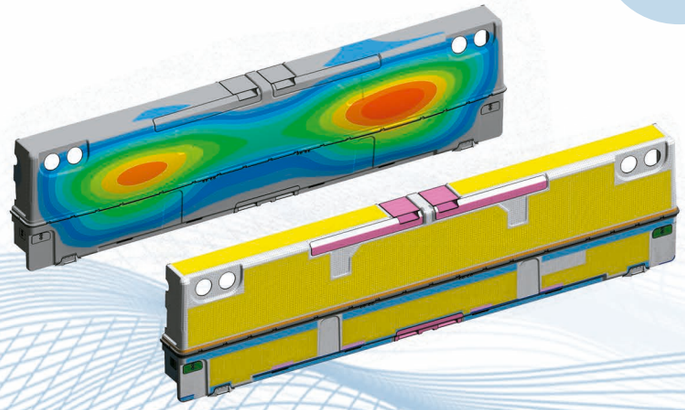
FINITE ELEMENT ANALYSIS

Predictive Engineering

Finite element analysis consulting services, software, training and technical support.

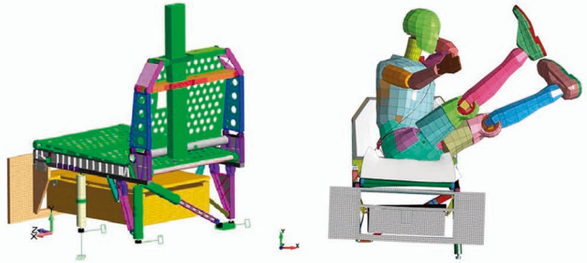
- Composites, Pressure Vessels, Vibration.
- **NASTRAN:** Linear Dynamics.
- **LS-DYNA:** Drop-test, Impact, Burst Analysis.
- **STAR-CCM+:** CFD Thermal/Flow Analysis.

+20 years experience

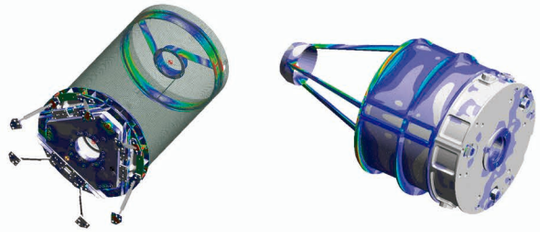


Project Examples

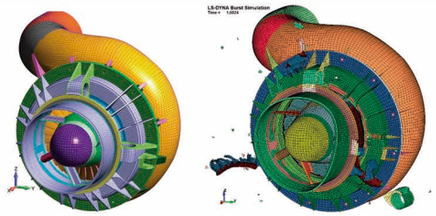
FAA 16G SLED TEST VERIFICATION



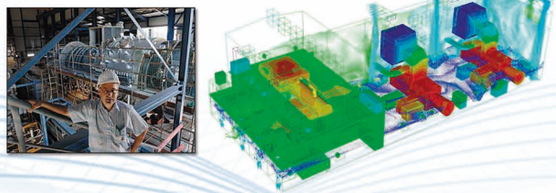
STRESS AND VIBRATION ANALYSIS OF SATELLITES



LS-DYNA TURBINE BURST SIMULATION



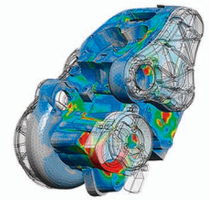
CFD STUDY ON CO-GENERATION POWER PLANT BUILDING



Our Services

FEA

Predictive Engineering brings to bear more than 20 years of finite element analysis FEA consulting experience in solving the most difficult mechanical engineering analysis challenges.
Our validated experience ranges from transmissions to submarines to satellites.



TRANSIENT NONLINEAR

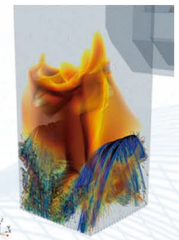
At Predictive Engineering, we pride ourselves on the ability to idealize complex structures and systems into predictive numerical models. Our nonlinear, static and transient dynamic work has been validated against strain-gauges, drop and sled test results, accelerometers, crack growth and fracture and in extreme service environments.

ASME-BPVC

From seismic to buckling to cyclic service (fatigue), Predictive can assist in verifying the most challenging pressure vessel designs. Our hard-earned experience allows us to safely classify tanks and vessels as “fit-for-service” that would typically have required extensive redesign or re-work.

CFD

Our expertise in computational fluid dynamics (CFD) comes from hundreds of thermal-fluid projects in medical, aerospace, marine, HVAC (data centers), civil and automotive. This experience gives us the capability to quickly optimize and provide accurate digital prototypes.



Who we are

We are experienced simulation engineers that have successfully analyzed and validated hundreds of structures and systems. With more than two decades of experience, we know how to optimize your design and ensure that it will meet your service requirements whether in Aerospace, Marine, Mining, Energy, Automotive, Medical or Consumer Products.

Why it will be right

When tackling a tough simulation problem, whether fluid (CFD) or structural (FEA) mechanics, there is very little that beats experience. It is our competitive edge and our differentiator to our clients. Our hard-won experience means that your simulation will be accurate and cost-effective.

We can work for you

We'll let our case studies speak for themselves (PredictiveEngineering.com/Consulting). Our business is helping our clients build better products from submarines, to ships, to planes and to satellites. Our depth of experience means you will get the right answer with design confidence.

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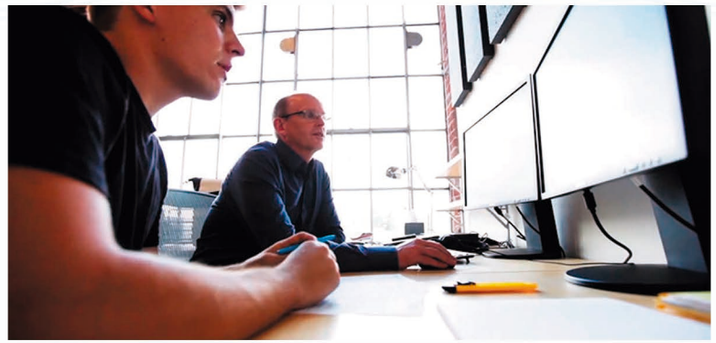

Our Story

Since 1995, Predictive Engineering has continually expanded its client base. Our clients include many large organizations and industry leaders such as SpaceX, Nike, General Electric, Navistar, FLIR Systems, Sierra Nevada Corp, Georgia-Pacific, Intel, Messier-Dowty and more.
Over the years, Predictive Engineering has successfully completed more than 800 projects, and has set itself apart on its FEA, CFD and LS-DYNA consulting services.

Our mission

Our mission is to be honest brokers of information in our consulting services and the software we represent. We strive to exceed client expectations for accuracy, timeliness and knowledge transfer. Our process is both cost-effective and collaborative, ensuring all clients are reference clients.

View our portfolio of consulting projects

Next to our customers, our work is our biggest advocate. Please view our portfolio at

PredictiveEngineering.com/Consulting

Our ANSYS LS-DYNA expert George Laird

George Laird, PhD, PE, is our Principal Mechanical Engineer and Managing Partner. Author of over 40 publications on fracture and fatigue mechanics, materials science and experimental mechanics. Dr. Laird is well known for combining his theoretical background in FEA with several decades of hands-on experience with validating models in the laboratory and in service. He is also our lead engineer for nonlinear mechanics and teaches our "LS-DYNA Analysis for Structure Mechanics" short-course.

Our Simcenter Femap and Nastran expert Adrian Jensen

Adrian Jensen, PE, MBA is the Director of Engineering at Predictive Engineering. Adrian has over 10 years of experience idealizing engineering systems and structures into predictive mathematical models. His CV covers the full spectrum of FEA, from linear dynamics to explicit transient analysis. The applications include composite-laminate structures, ASME VIII pressure vessels, aerospace electronics, gearboxes/transmissions, VTOL vehicles, wind turbines, and next-generation satellite design for the U.S. Air Force.

Our STAR CCM+ CFD, Heeds, Amesim expert Clay Hearn

Clay Hearn, Phd, is Staff Mechanical Engineer at Predictive Engineering with over 20 years' experience in modeling, simulation, and machine design. Clay is our resident CFD expert and gained his initial experience in applied R&D with a focus on liquid cooling of pulse power alternators, electromagnetic analysis of magnetic bearings, structural design of composite flywheels for energy storage, and system modeling of fuel cell hybrid electric vehicles. Clay has also worked in the aerospace industry on thermal management and vibration analysis of advanced power generation and power conversion products.

Our Simcenter 3D, Simcenter Femap, API and Simcenter Nastran expert Nathan Anderson

Nathan Anderson, PE, is a Staff Engineer at Predictive Engineering with 8 years of experience. Starting his engineering career as a design engineer for a large equipment manufacturer, he quickly gravitated toward simulation and analysis to solve his engineering challenges. After a couple of years as a design engineer, he joined our team and made the switch to a simulation engineer. With his background in industrial equipment, he specializes in stress, vibration and fatigue analysis.