

# AUTOMATED DYNAMICS®

BUILD • SMARTER

## Solutions for Aerospace & Defense

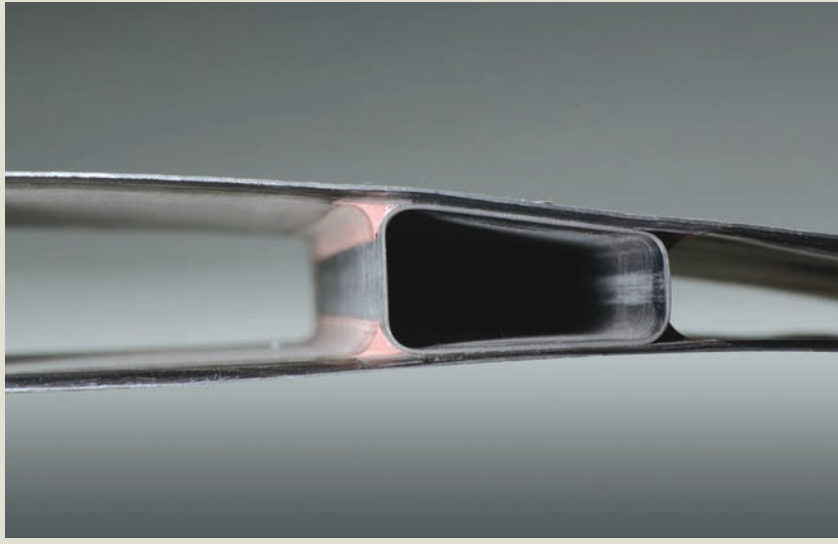
Automated Dynamics' engineered composite structures solve complex problems for aerospace companies and defense contractors.

Automated Dynamics was established in 1984 and has been manufacturing high-performance reinforced thermoplastic composites for more than 20 years. We are an acknowledged world-leader in the science of designing and manufacturing continuous, fiber-reinforced thermoplastic composite structures for defense and aerospace markets, among others.

We operate from a state-of-the-art equipped 40,000 sq. ft. headquarters in the capital region of New York State. Our transformative technologies for composite manufacturing include automated fiber placement (AFP), automated tape laying (ATL), auto-clave processing, stamping and compression molding. We are the originator of the automated fiber placement process for thermoplastic composite structures and have processed tens of thousands of pounds of continuous, fiber-reinforced thermoplastic composite material. We fabricate primary and secondary structures for rotorcraft, unmanned vehicles, fixed wing aircraft, general aerospace and advanced composite components for a host of commercial/industrial markets.



▲ **Complex Composite Tail Boom**  
Graphite/PEEK, (8"-18"Φ, 54"L)



▲ **Internally Stiffened Horizontal Stabilizer**  
Graphite/PEEK

We developed automated fiber placement (AFP) technology and the advanced, proprietary equipment it requires. AFP technology uses uni-directional 'pre-preg' raw material (continuous fiber reinforcement in an engineering grade thermoplastic resin matrix) with ultra-high heat and pressure to consolidate the structure 'in-situ' or as it is being fabricated. There is no post-processing required.

AFP technology allows us to orient the reinforcing fiber from 0 (axial) to 90 (hoop) and anywhere in between. The result is a well-consolidated composite structure with excellent continuous fiber distribution and superior wet out – making for a high quality, high performance part. And our robotic, computer-controlled manufacturing process provides the repeatability and accuracy for production runs.



▲ **Composite I-Beam**  
Graphite/PEEK

Our continuous fiber-reinforced thermoplastic composites have unmatched mechanical properties compared to any conventionally molded thermoplastic part. Our high temperature engineering grade resins like PEEK, PPS, PEI and others have superior impact resistance and damage tolerance. Automated Dynamics' continuous fiber/PEEK and PPS can have up to 5 times the impact resistance of a thermoset (epoxy) composite.

**We make parts  
from .025 in.  
ID to 60.0 in.  
OD and up to  
40 feet long.**



▲ **Helicopter Main Rotor Blade Grip**  
Graphite/Epoxy

Our advanced composite parts can be machined and finished to any shape and detail. Our AFP technology is optimized and versatile to allow us to make a wide variety of shapes (open and closed sections) and sizes. From tubes to cones, flat laminates to rings, triangles to box beams, hex's to octagons, convex or concave, rectangles to ovals, T's to I-beams, thick-wall or thin-wall.

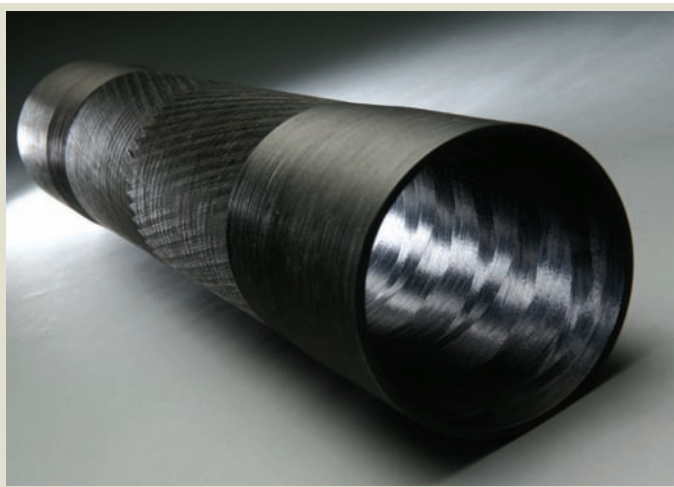
- High strength and stiffness
- Exceptional fatigue resistance
- Lightweight
- Extreme toughness
- Hydrolytic stability
- Superior solvent and chemical resistance
- High damping
- Repairable and recyclable

Automated Dynamics' core manufacturing competencies include: automated fiber placement (AFP), automated tape laying (ATL), auto-clave processing, stamping/thermoforming and compression molding. These processes enable us to fabricate a wide range of thermoplastic composite structures in the most cost-effective manner possible. Our services include: full engineering, proof-of-concept, material selection, development, prototyping, initial order and full production rate capabilities.

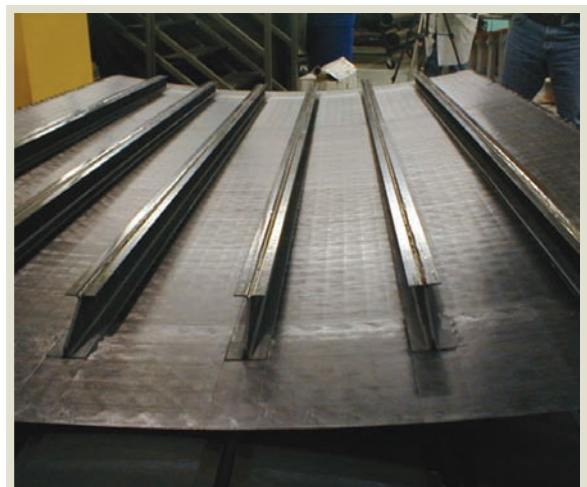


▲ **Composite I-Beam Stiffened Cylinder Section**

Graphite/PEEK, (55"Φ)



▲ **Helicopter Driveshaft** Graphite/PEEK, (4.5"Φ, 24"L)



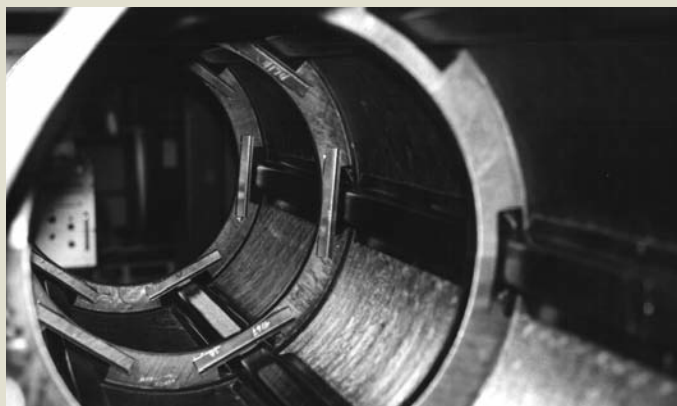
▲ **Stiffened Fuselage Skin Section**

Graphite/PEEK, (60"W, 84"L)



▲ **Internally Stiffened Helicopter Structure**

Graphite/PEEK, (72"W, 120"L, 6"t)



▲ **Internally Stiffened Tail Boom**

Graphite/PEEK, (24"Φ, 60"L)

**Contact::**

**Chip Quinn** – *Director of Business Development*

p: 401.682.1362 e: [cquinn@automateddynamics.com](mailto:cquinn@automateddynamics.com)



**AUTOMATED DYNAMICS**<sup>®</sup>   
B U I L D • S M A R T E R