

## *Company Presentation*





**Positioned Globally**  
**Southeast Asia, China, North America**



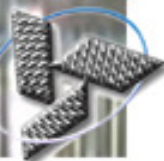
**Composite Solutions  
Corporation.**  
Auburn, WA, USA

**KeenTech Composites  
Technology Corp.**  
Xiamen, China

**TOPKEY Corp.**  
Taichung, Taiwan

**High Technology, Unlimited Product Capacity, Efficient Management**

**GLOBAL CAPABILITIES**



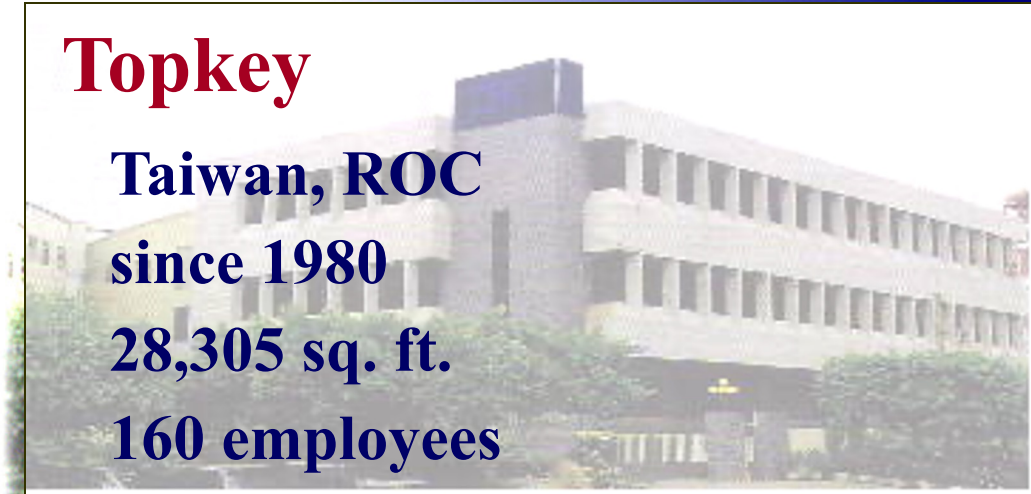
## **Topkey**

**Taiwan, ROC**

**since 1980**

**28,305 sq. ft.**

**160 employees**



## **Keentech**

**Xiamen, China**

**since 1988**

**703,623 sq. ft.**

**3,500 employees**



## **Composite Solutions**

**Seattle, USA**

**since 1995**

**60,000 sq.ft**

**35 employees**





董 事 長  
Chairman/CEO

副董事長 Vice Chairman  
顧問 Consultant  
特助/秘書 Chief Executive Assistant

經營董事會  
Director  
Management  
B o a r d

總 經 理  
President/COO

特別助理  
Chief Executive  
Assistant

人事評議委員會  
Human Resource  
Evaluation Committee  
品質保證委員會  
Quality Assurance Committee

總管理處  
General  
Management  
Office

技 術 研 發 中 心  
Corporate R&D Center

球拍運動器材事業部  
Rackets Sport Business Unit

安全產品事業部  
Safety Product Business Unit

輪 業 事 業 部  
Bike/Wheelchair Business Unit

航 太 醫 療 事 業 部  
Aviation/Medical Business Unit

管 理 支 援 中 心  
Logistic & Service Center

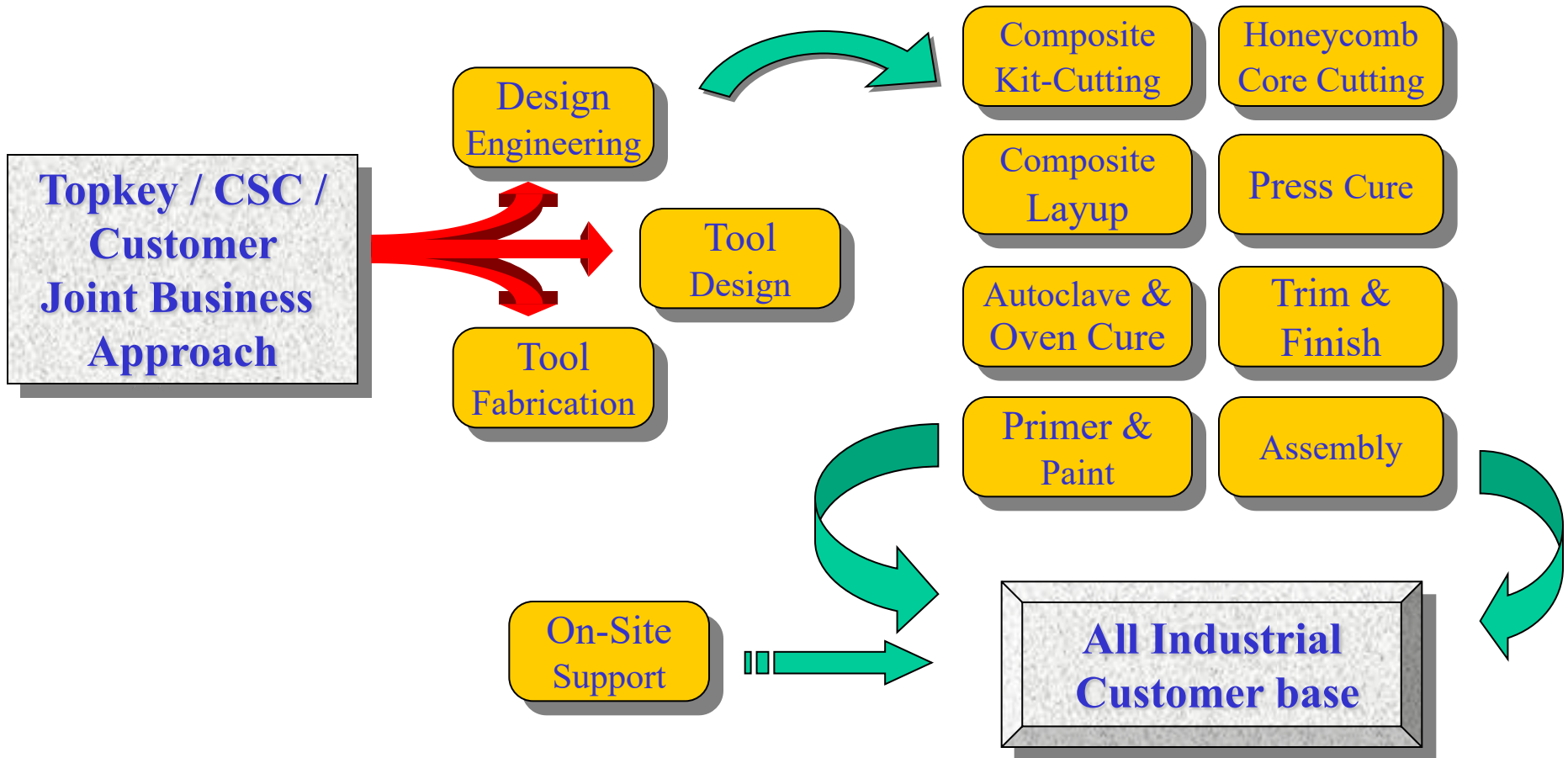
Composite Solutions  
Seattle, U.S.A

轉 投 資 事 業  
TK Invested Company

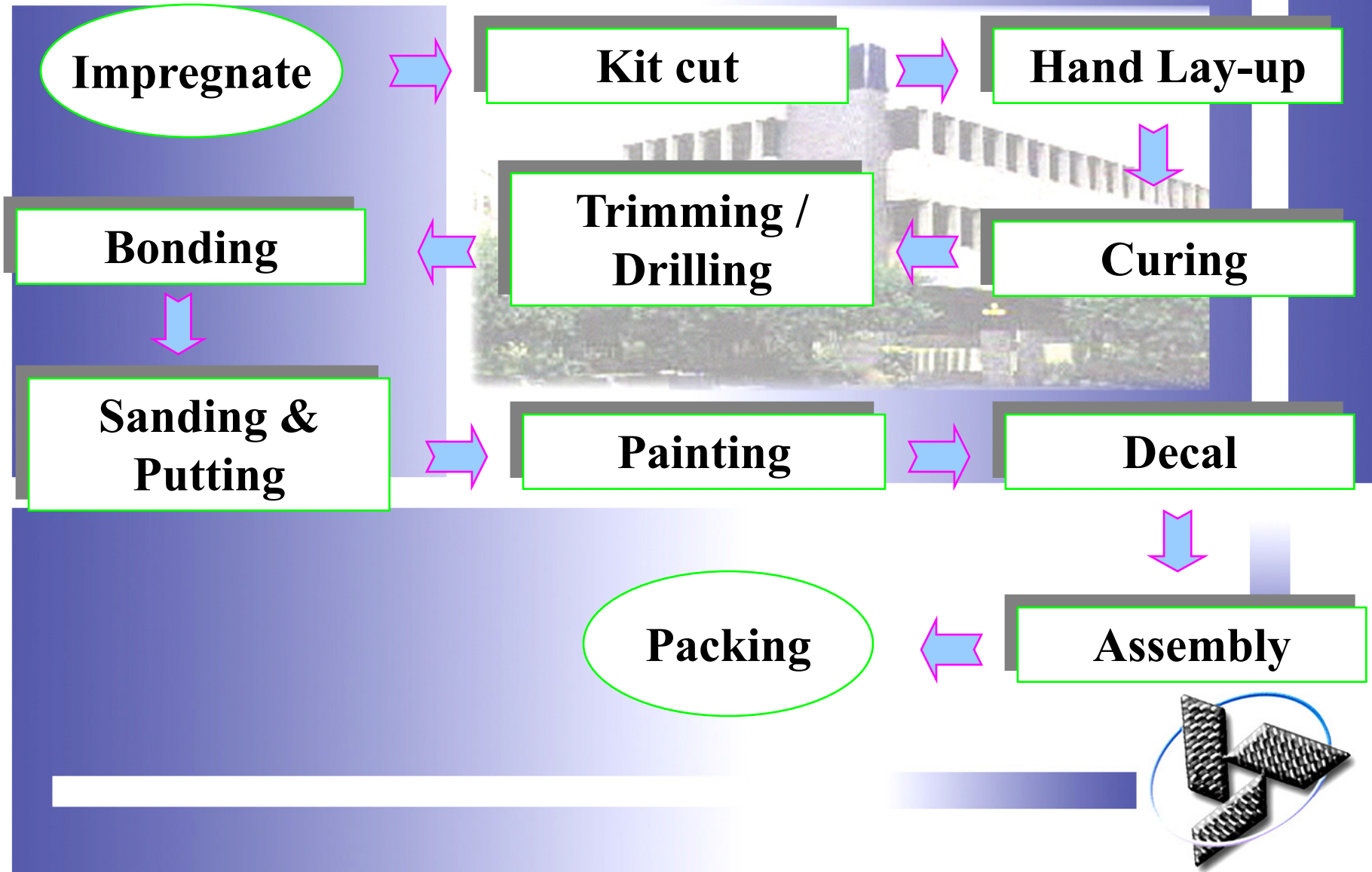




# Value-Added Processes



# Production Process







Impregnate



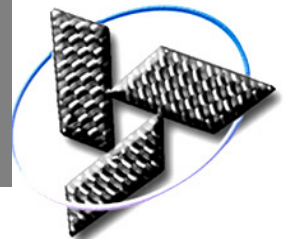
Kit Cut



Curing



Hand Lay-up







**Trimming / Drilling**



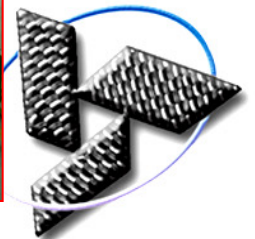
**Bonding**



**Painting**



**Sanding & Putting**







Decal



Assembly



Packing



Full-Face  
Full-Face



OGK MOTORCYCLE  
ENTER

BICYCLE HELM  
ENTER

オートバイ用ヘルメットはこちら

サイクル用ヘルメットはこちら

OGKブランド「BOB-J」#05から

BOBブランド「BOB-J」はこちら

OGK フルフェイスヘルメット

FF-1 DTRACT FF-3 AEROSLASH FF-4

OGK ジェットヘルメット

JX-Y JX-Z

OGK ウィンターヘルメット

XJ-K XJ-R

OGK ウィンターヘルメット・ハーフヘルメット

DOB-M ND-1 スーパー ND-1 ND-2 DK-K DK-G FF-2

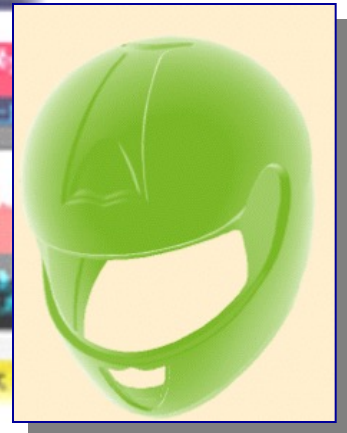
OGK モーターサイクルヘルメット

ス

Enduro Helm FF-1 世界最軽量ジェットヘルメット

ウィンターヘルメットA ウィンターヘルメットB

OGK ダウンヒルフルフェイス

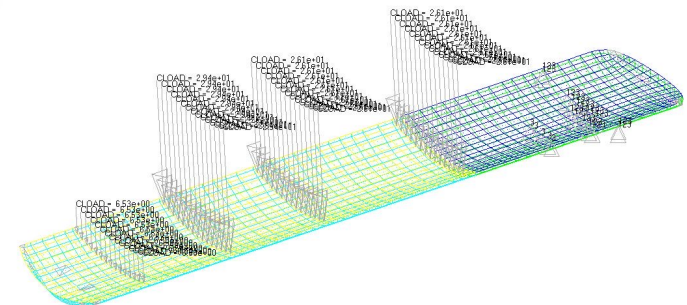
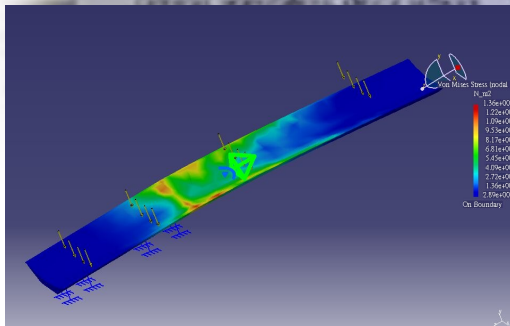




# Computer Tomography



- ✓ 4X Patient Loading
- ✓ Material Uniformity
- ✓ Pure Image Quality





# Cardiology X-ray

GE Medical Systems

HOME Company News Worldwide Community Help

Home > Radiology > X-Ray > Surgery > Products

Radiology

Cardiology

Monitoring Systems

Information Technologies

Education

Healthcare Services

Parts & Accessories

Productivity Solutions

## X-RAY

### Apix CV Imaging Table

Premium Mobile Imaging Table

The APix Cardiovascular table meets the challenge with a compact 9' sophisticated cart/lever design to achieve 84 inches (213 cm) of head-to-toe imaging area.

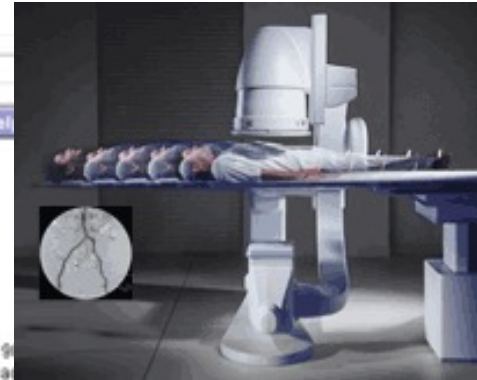
[View video presentation](#)

**Why is head-to-toe imaging important?**  
Stopping a procedure to reposition a patient can be a time consuming and dangerous event. However, due to table base designs and longitudinal travel limits even long 100-inch (259 cm) tabletops may have short 60 inch (154 cm) imaging areas.






Similar to advanced fixed room tables, the APix control panel offers comprehensive table functions including:



- Super Low AI Equivalent
- Low Dose Rate
- Full Scan Area







## • Seat Back

- All Support Tooling Designed & by TOPKEY
- 3-D Design Build-up by TOPKEY
- Graphite, Fiberglass hybrid / Phenolic materials
- Construction: Hollow tube

### Requirements

- FST: Far 25,855
- Static Load: 300 lbs
- Fatigue load: 150 lbs / 200,000 cycles
- 16G



# Facilities & Processes



7000 Sq. Ft. Environmentally Controlled Clean Room  
Meets All Aerospace Composite Mfg. Requirements



Autometrix - Automated Kit Cut Machine  
Automated Material Shape and Orientation Nesting  
Interfaces with CATIA and IGES Data



# Facilities Overview



Two Full Temperature Range Autoclaves  
Baron 9'D x20' - 450°F, 150 psi  
Baron 4'D x7' - 450°F, 90 psi  
Automated Cure Cycle & Recording



Two Heated Presses  
500 ton and 50 ton



Three Curing Ovens  
8'x 16' & 5'x 8' - 500°F;  
9'x 40' - 375°F

# Quality and Process Approvals

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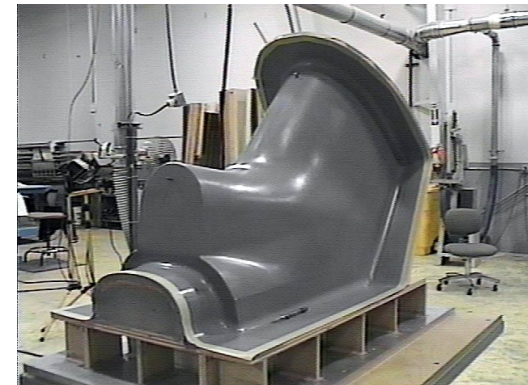
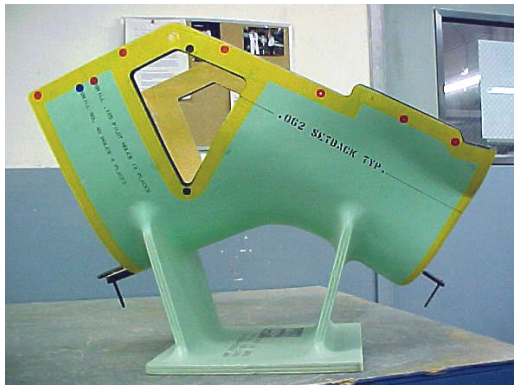
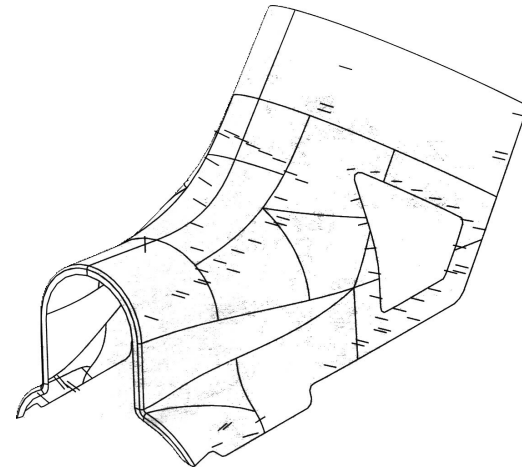
- ISO 9001 Quality Standard
- Boeing/DPD Preferred Supplier Program
  - Gold Supplier
  - Preferred Supplier Inspection Delegation (PSID) Authority
- Multiple Bell Helicopter Composite Fabrication Process Approvals
- Multiple MD Helicopters Composite Fabrication Process Approvals
- Boeing Processes Approvals - Sample Selection
  - Boeing/DPG DPS 1.670 - Laminate Fabrication of Bismaleimide (BMI) / Carbon
  - Boeing/DPG DPS 1.624 - Autoclave Processing of Graphite Epoxy Components
- Sikorsky S2000 Quality and Process Approvals



# Tooling Experience

- **CSC Tooling Fabrication - Composite Tool Systems**
  - Master Models, Plastic-Faced Splashes
  - High-Temperature Layup Molds
  - Ply Layout Templates
  - Hand Router Fixtures and CNC Holding Fixtures
  - Sub-Assembly and Final Assembly Jigs
- **CSC Tool Design Coordinates Outside Tool Machining Operations**
  - CNC Master Models and Headers
  - Invar Layup Molds

## Black Hawk Intermediate Gearbox Fairing Tooling Family





# Program Experience

## C-17 Lavatory Design Technology

- Designed and Tested by CSC for:
  - Design Loads
  - Shock and Vibration
  - Environmental Criteria
  - Flammability
- New Design Engineered 25% Weight Reduction
  - Fiberglass/Phenolic/ Nomex Sandwich Panels redesigned to Graphite/phenolic /Nomex panels.
  - Weight reduction from 190 lbs to 142 lbs
  - Delta Costs: ~10%
- Fully Integrated Assembly
  - Mortise and Tenon Construction
  - Fully Bonded Assembly
  - Integrates Electrical, Thermoplastic, Metallic and Composite Components
- **Delivered Fully Ready for Installation**





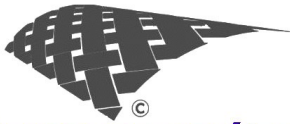
# Program Experience

## MD Helicopter

- Tail Boom Assemblies for MD900, MD600N, MD520N
- Includes:
  - Tail Boom Assembly
  - Horizontal Stabilizer Assy
  - Thruster / Rotating Cone Assy
  - Vertical Stabilizers (MD900)
- Graphite/Epoxy Honeycomb Primary Structures
- Delivered as Entire Shipsets
  - Ready for Installation







**Composite Solutions**  
A Subsidiary of Topkey Group

PRODUCTS

TRAINING

CONTACT SALES

E-COMMERCE

EMPLOYMENT

ENCYCLOPEDIA

CUSTOMER SUPPORT

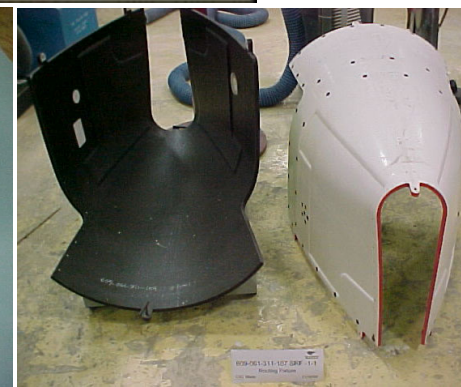
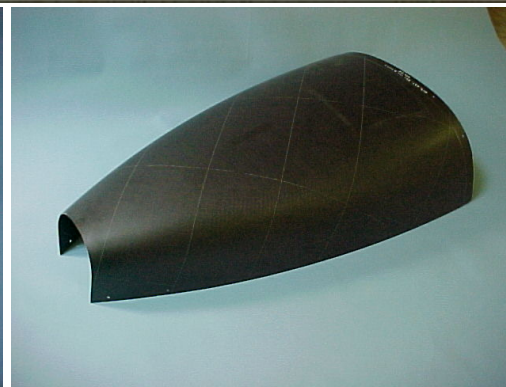
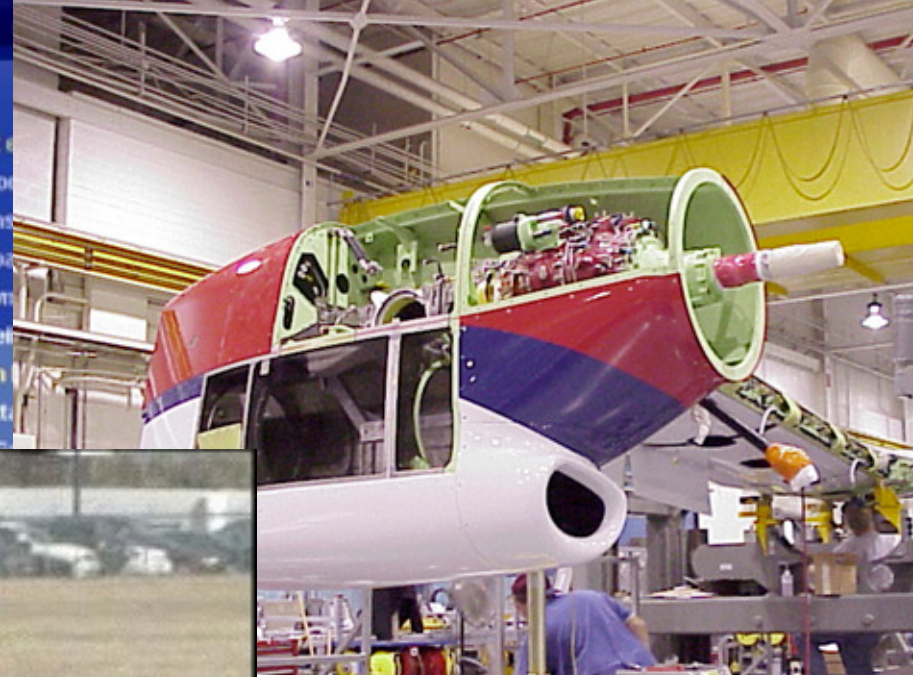
COMPANY STORE

BACK EMPLOYMENT DOWNLOADS LINKS

**TEXTRON**

**YOUR MISSION IS OUR MISSION**

BellNet  
Bell Pro  
Bulletin  
Downloa  
Employ  
EMS Hel  
Neiman  
New Att  
Photo C

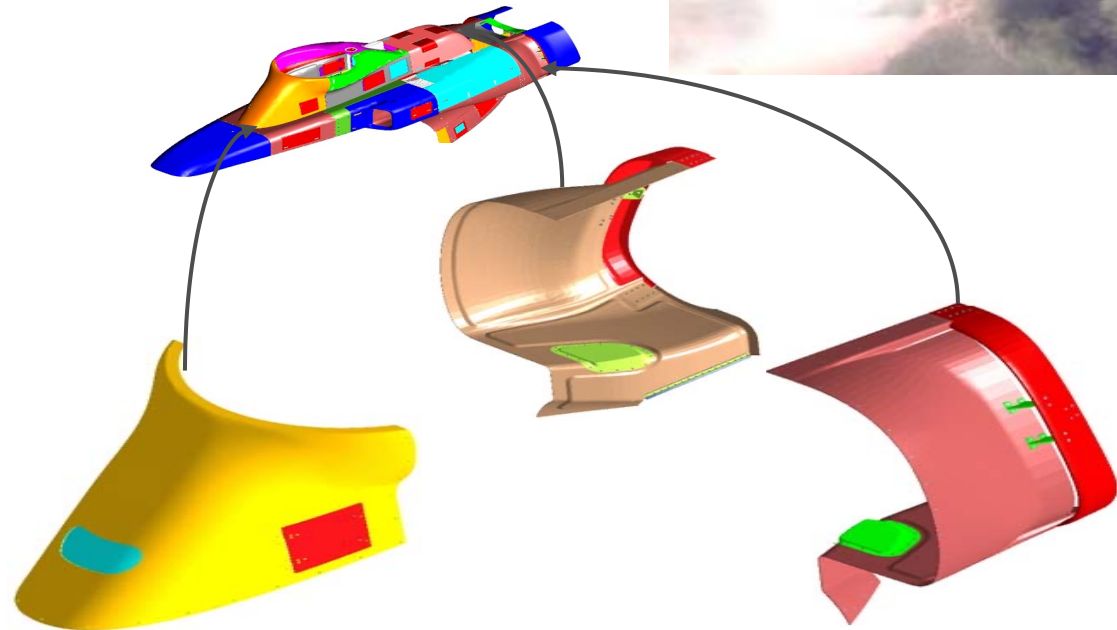




# Program Experience

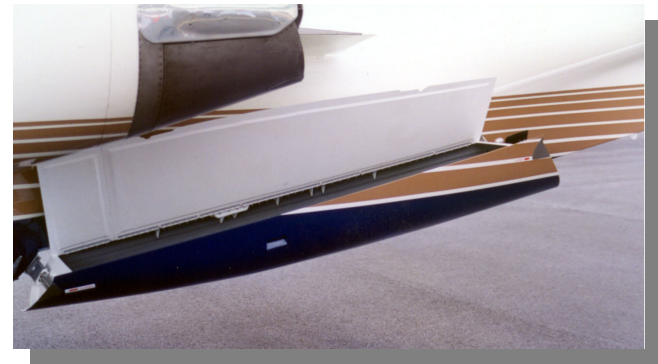
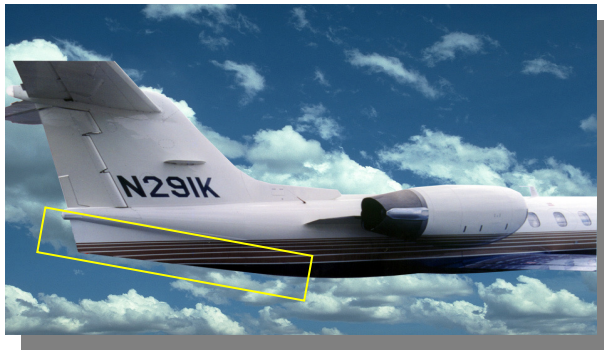
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- Bell UH-1Y / AH-1Z Upper Cowling Components
  - Graphite/Epoxy & Graphite/BMI Fairings
  - Honeycomb Stiffened, Complex Curvature
- Requirements:
  - UH-1Y Huey
    - 2 Prototype S/S
  - AH-1Z Super Cobra
    - 3 Prototype S/S
  - Production Contracts Pending



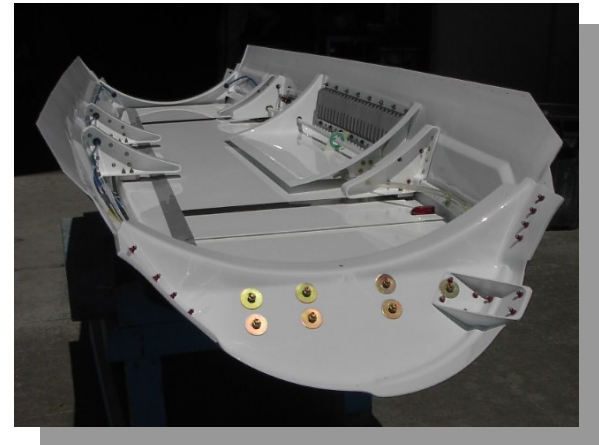
# Program Experience

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- **Learjet Model 31/35 Stowage Locker**

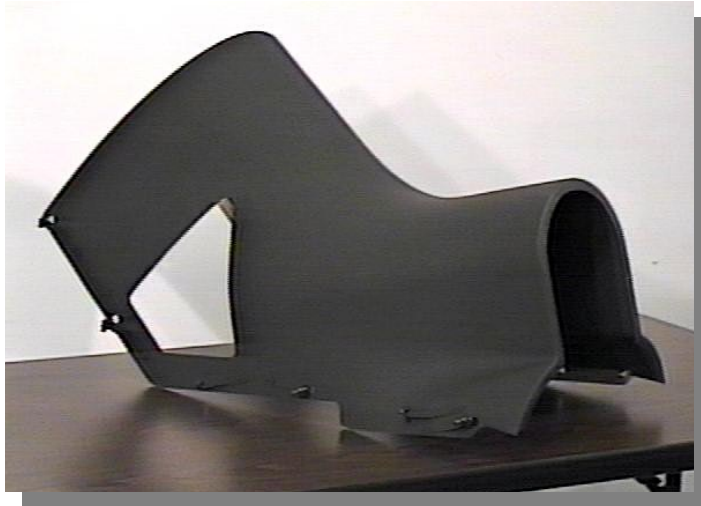
- Graphite/Fiberglass/Epoxy Design
- Coordinated Production Tooling Development
- Multi-Year Contract





# Program Experience

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- Sikorsky Helicopter - Black Hawk
  - Intermediate Gearbox Fairing
  - Tail Rotor Driveshaft Covers
    - Kevlar/Epoxy Integral Stiffened
    - CNC Machined Master Model
    - Complete Tool Design and Fabrication from CATIA Datasets
    - Peripheral Trim and Hole Locations from Customer-Supplied Transfer Media

