

Aerostructures 2018

The 14th annual review of the world aerostructures market from
Counterpoint Market Intelligence Limited

Why buy this 700-page report?

Because, in this traditionally conservative market, there is lots of revolutionary change. And because we have had discussions with companies at all levels in the supply chain. And we have introduced much greater granularity into our modelling.

In our latest report we observe that: The volume of deliveries is up; aerostructures sales are flat because of pricing pressure; supplier margins in 2017 are down on 2016

- Our 2018 report offers comprehensive market analysis including:
 - The estimated growth in, and segmentation of, this \$61 billion market
 - 10-year growth forecasts composite, titanium and other metallic structures
 - Civil and military: OE production, spares and modifications
 - Generic aircraft type: e.g. large commercial, regional, business, helicopters
 - Aerostructures product type: wings, fuselage, nacelles & pylons, empennage
 - Market tier: super tier-1, tier-1, tier-2; the value of sales at different points in the supply chain
 - Regional production; customer orientation of suppliers; supplier numbers in each tier
- Market trends and its key characteristics
 - Analysis of recent aerostructures contract awards, and the factors leading to successful bids
 - A new deflationary environment for suppliers: causes and consequences
 - Competitive background by segment and sub segment
 - Evolution of composite materials and technology
 - Analysis of the structure of the composites supply chain and assessment of entry barriers
 - The increasing role of China
 - M&A activities
 - Outsourcing to China
 - Comac's aerostructures tier 1s
 - the level of insourcing/outsourcing (including an estimate for each OEM)
- Analysis of financial returns:
 - A reduction in reported 2017 margins vs 2016
 - Determinants of profitability e.g. OEM price downs and level of automation
 - An increase in companies reporting financial challenges
- Key strategies including:
 - the use of low cost countries (including the economic case)
 - establishing a footprint local to customers
 - building a product specialty, and/or a process specialisation
 - consolidation: history and recent deals
 - who's doing what in: automation e.g. AFP/ATL and robotics
 - the fight-back of metal: new alloys; new metal forming/joining; additive manufacturing
 - investing in new manufacturing capacity

The report provides profiles of 185 companies. Our expanded profiles cover;

- Origins and ownership; Our estimate of aerostructures sales, plus financials if obtainable; operations and technologies; customers and contracts; strategy and recent developments; our comments including our categorisation of composites capability

We offer purchasers of our report a free teleconference to discuss any aspects.

CONTENTS

1. Summary
2. What is an aerostructure?
 - 2.1. Primary and secondary structure
 - 2.2. The main aerostructures product segments
 - 2.2.1. Wings and wing components
 - 2.2.2. Fuselage structures
 - 2.2.3. Empennages
 - 2.2.4. Nacelles
 - 2.2.5. Fabricated parts
3. Methodology
 - 3.1. Sources of information
 - 3.2. Our market model
 - 3.3. Company profiles and analysis of trends
4. Market size, growth and shape
 - 4.1. Market size and growth
 - 4.2. Overall industrial structure
5. Competitive background by segment
 - 5.1. Wings and wing components
 - 5.2. Fuselage structures
 - 5.3. Empennages
 - 5.4. Nacelles
6. Market share analysis
 - 6.1. Market share held by aircraft OEMs
 - 6.2. Market share held by Tier 1 suppliers
 - 6.3. Tier 1 sales by region
 - 6.4. Market segmentation by type of structure
 - 6.5. Wing market shares
 - 6.6. Fuselage market shares
 - 6.6.1. Doors
 - 6.7. Nacelle and pylon market shares
 - 6.8. Empennage market shares
7. Aerostructures market split by aircraft sector
8. The composite aerostructures market
 - 8.1. Size of composites aerostructures market
 - 8.2. Who has been getting the business – market shares
 - 8.3. The growth of composites
 - 8.4. Industry structure
 - 8.4.1. Supply chain
 - 8.4.2. Barriers to entry
 - 8.4.3. Opportunities for SMEs
 - 8.4.4. Organisation of composite structures manufacture in aerospace companies
9. Titanium aerostructures
10. Technology
 - 10.1. The historic debate – metal versus composites
 - 10.2. New developments in composite materials
 - 10.2.1. The Challenges that will require new material developments
 - 10.2.2. Developments in composite materials to meet the needs of the next generation of aircraft

- 10.3. Metal fights back against composites mainly with new alloys
- 10.4. State Funding of R&T
- 10.5. State funding of development, capex, and infrastructure
- 11. Characteristics of the aerostructures market
 - 11.1. Deflationary pressures in large commercial
 - 11.2. Financials
 - 11.2.1. Reported aerostructures profitability
 - 11.2.2. Financial performance issues – a new trend?
 - 11.2.3. General factors affecting profitability
 - 11.2.4. Difference between design-and-build and build-to-print
 - 11.3. Contract awards since January 2017
 - 11.4. Historical Consolidation in a Still Very Fragmented Market
 - 11.4.1. Some consolidation but little overall impact
 - 11.4.2. An emerging group of elite suppliers
 - 11.4.3. Some consequences of excessive fragmentation
 - 11.5. Aircraft OEMs' level of outsourcing versus in-house manufacturing
 - 11.5.1. Aircraft OEMs
 - 11.5.2. Airbus
 - 11.5.3. Boeing
 - 11.5.4. Bombardier
 - 11.5.5. Embraer
 - 11.5.6. Lockheed Martin
 - 11.5.7. China and Russia
 - 11.5.8. Other aircraft OEMs
 - 11.6. Trends in design and build
 - 11.7. The effects of government regulation
 - 11.8. Stuffing of airframes
 - 11.9. The role of China
- 12. How do aerostructure firms respond to this marketplace?
 - 12.1. Review of integration strategies
 - 12.2. How much and why manufacture in low cost countries 'LCC'
 - 12.2.1. Which types of structure go to low cost countries?
 - 12.2.2. What's the economic case for using a Low-Cost Country (LCC)?
 - 12.2.3. Can the West compete against low cost countries?
 - 12.2.4. How do suppliers use Low Cost Countries?
 - 12.2.5. Sub-contracting to low cost countries is an alternative
 - 12.3. Gain leverage with Aircraft OEMs from being local
 - 11.3.1. Proximity to Airbus
 - 11.3.2. Proximity to Boeing
 - 11.3.3. Proximity to Bombardier
 - 11.3.4. Proximity to Embraer
 - 11.3.5. Other instances of proximity to aircraft OEMs
 - 12.4. Dollarisation
 - 12.5. Building a product-based business
 - 12.6. Process specialists
 - 12.7. Consolidation and other M&A moves
 - 12.8. Move up the food chain
 - 12.9. New metal forming and joining techniques
 - 12.10. Additive manufacturing (AM OR 3-D printing)
 - 12.11. New composites technologies

- 12.11.1.Out-of-autoclave (OOA) processing including RTM, VARTM and resin infusion
- 12.11.2.Thermoplastics
- 12.11.3.Knitting
- 12.11.4.Integrated composite parts
- 12.11.5.Composite recycling
- 11.12. Fibre Metal Laminates – a third structures material?
- 11.13. Automation
- 11.14. Investment in new capacity
- 12. Profiles of aerostructures companies - aircraft OEMs
 - 36 *profiles*
- 13. Profiles of aerostructures companies - Tier 1s and Tier 2s
 - 13.1 US suppliers
 - 59 *profiles*
 - 13.2 European suppliers
 - 50 *profiles*
 - 13.3 Asian suppliers
 - 28 *profiles*
 - 13.4 Suppliers ROW
 - 6 *profiles*
- 14. Appendix - ATA Chapters
- 15. Appendix - Further notes on composites
- 16. Counterpoint Market Intelligence Limited terms of business

WHY COUNTERPOINT?

Counterpoint Market Intelligence Limited was formed by George Burton and Richard Apps in 2004 to offer original, independent and rigorous research into aerospace markets. Between them, George and Richard have over 40 years of experience in senior positions in aerostructures, engine components, and aerospace equipment.

Counterpoint now has an international business, with 80% of sales outside the UK. Sales of research reports have led to consultancy projects. Two thirds of sales are to the aerospace industry – aircraft and engine prime contractors and first and second tier suppliers. Other clients are private equity funds, investment banks and government organisations.

In addition to this report the following reports are available from Counterpoint Market Intelligence Limited:

- Aerospace composites 2018
- Aero-engine and IGT components 2017
- Aircraft Interiors 2017
- Tooling & automated assembly for aerostructures 2017
- Aerospace Actuation 2016
- Airborne Pods 2016
- Mini reports;
 - Environmental control systems 2018
 - Aircraft Harnesses and Electrical Standard Parts 2018
 - Aircraft Interior Lighting 2018
 - Engine controls and fuel systems 2018
 - Aerospace valves 2017
 - Aircraft fluid conveyance 2017
 - Aerospace Machining 2016
 - Aerospace ball screws 2015
 - Stuffing for airframes 2015

Counterpoint Market Intelligence Limited also undertakes commissioned consultancy studies for its clients in areas including the following:

- Deep-dive market analysis
- Evaluation of the strategic positioning of businesses
- Market and strategy-related due diligence for M&A
- Acquisitions search

How to buy the report

Please contact us using the contact details below or email us on enquiries@cpmil.com.

George Burton	Tel: +44 (0)1747 852805	Richard Apps	Tel: +44 (0)1235 868051
	Mobile: +44 (0)7770 982153		Mobile: +44 (0)7741 035969
	e-mail: georgeburton@cpmil.com		e-mail: richardapps@cpmil.com

Address: Counterpoint Market Intelligence Ltd, Curlew Meadow, Denchworth, Oxfordshire OX12 0EA, UK

Website: www.cpmil.com

COUNTERPOINT MARKET INTELLIGENCE LIMITED TERMS AND CONDITIONS OF TRADING

Limitation on liability of Counterpoint Market Intelligence Limited

Counterpoint Market Intelligence Limited makes no representation or warranty, expressed or implied, as to the accuracy or completeness of the information contained in this report. Counterpoint Market Intelligence Limited shall not be held liable for consequential and indirect losses or loss of profit or revenue resulting from the use of this report. No recommendations are made or should be implied from this report.

Intellectual Property

In so far as any information provided by Counterpoint Market Intelligence Limited is not in the public domain Counterpoint Market Intelligence Limited will retain ownership of any intellectual property in that information but customers will have a right to use the information provided solely within their own companies and subsidiaries. Customers shall not sell nor give this report to companies or persons outside their own company and subsidiaries.

Payment

Payment of Counterpoint Market Intelligence Limited's invoices is to be made within 30 days of the date of invoice.

Governing Law and Jurisdiction

Any dispute or claim arising out of or in connection with this report (including non-contractual disputes or claims) shall be governed by, and construed in accordance with, the Law of England and Wales. The purchaser of this report irrevocably agrees that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with this Report (including non-contractual disputes or claims).