A Snapshot of Today’s Global Aerospace Distribution Challenges
Contents

• Aerospace Supply Chain Initiatives
• Today’s Materials Management
• Lingering Commodity Risks
• Regional Inventory Dynamics
• Tomorrow’s Evolving Value Proposition
• A Look Forward (and Backward)
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Today’s Aerospace Supply Chain Initiatives

THE OEMS ARE AGGRESSIVELY PUSHING FOR

- Reduced Buy-to-Fly
- Cost Out Initiatives
- Closed Loop Recycling
- Global Readiness
- Commercial Stability
- Transparency of Data
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# Today’s Materials Management

## Stockist
- From Spot to Program Management

## Flow
- From One Way to Close Loop Recycling

## First Stage
- From Cut-to-Length to Near Net Shape

## Products
- From Specialist to Full BOM / SOW Support

## Scope
- From Regional Relationships to Global Customer Needs

## Collaboration
- From Independent to Risk Sharing Partner
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Congratulations to the OEM’s

Market Stability Obtained

- Strong Buying Power Renewed
- Existing Inventory is an Asset
- Improved Information Flows
- Improved BOM Models
- Controlled Build Rate Increases
- Strategic Mill Capacity Increases
- Supply Chain Management
- Use Resources to Control Lead-Times
- Determination
- Service Provider Model

Result

Predictable Stable Titanium Market

Sources: metalprices.com, Wikipedia
Lingering Commodity Risks

Questions about the Future

• When will demand ultimately start pushing lead-times out?
• Will mill capacity & utilization stay at or below 87.5% loads?
• Will predictable rate increases preserve market dynamic stability?
• How much material should be stocked for the mid-term?
• At which stages in the Supply Chain should this inventory be held?
• How long should we go on stock level commitments
• What are the optimal deal structures for managing risk in long term agreements?
• What will additional consolidation do to the Supply Chain?

Result  Distribution hampered by recent false starts are cautiously optimistic yet remain conservative with stocking levels

Titanium

Large Commercial Aircraft Deliveries per Year

SOURCES: metalprices.com, Wikipedia
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Regional Titanium Inventory Levels

- N. America high driven by premature B787 ramp
- Europe lower yet looking to grow A350
- Asia lower and unsure about EIS and supply chain requirements

Assuming Competitive Parity, Markets Should Tend Toward an Equilibrium in the Long Term

SOURCE: T.I. Analysis, Research, and Market Feedback
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## Tomorrow’s Value Proposition

<table>
<thead>
<tr>
<th>Stockist</th>
<th>Range</th>
<th>Value Add</th>
</tr>
</thead>
</table>
| - Inventory Management  
- Set to Build Rates | - Service Provider and Subtier Integrator | - 3D Printing  
- Pre-Machining |

<table>
<thead>
<tr>
<th>Products</th>
<th>Scope</th>
<th>Collaboration</th>
</tr>
</thead>
</table>
| - Tailored per OEM  
- LCA, SA, RJ, BJ | - Lean Forward Stocking Locations  
- Low Capex | - Extended Risk Sharing Partnerships  
- More LTA’s |
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Two Important Questions:

1) Who has held the titanium inventory in the supply chain? (And were will it be held going forward?)

2) Given the current and future build rates, the prospective total titanium inventory profile, and the relative stability of the titanium market, how are the commercial properties of titanium likely to develop?
Titanium Inventory in the Supply Chain

With Titanium-rich New Airframe and Engines, OEM’s Will Likely Continue to Maintain Inventory as an Insurance Policy

SOURCE: T.I. Analysis, Research, and Market Feedback
Market Forces & Supply Chain Management

A Range of Market Forces and Uncertainties In Play

To what extent will upward pressures on the titanium market materialize?


Plus 2 - 3 New Airplanes Entering Into Service
Summary

- Information Flow is Better than Ever
- OEM’s are Managing and Extracting Value from the Supply Chain
- Titanium Dynamics and Lead-Times are Stable
- Increasing Build Rates for 8 Years
- Increasing Ti Content in New Airplanes
- 3 New Airplanes EIS in the Next Four Years
- Innovation, Value Add, and Program Management will be some of the Keys to Success
- The Service Provider Role Will Continue to Evolve as a Key Player supporting the OEM’s and their Global Aerospace Supply Chains
Thank you

Titanium Industries Inc.
18 Green Pond Road
Rockaway, NJ 07866 USA

+1 973 983 1185

www.titanium.com
Forward Looking Statements

Disclaimer: This presentation contains forward-looking statements regarding the titanium industry generally. Actual results may differ materially from results anticipated in these forward-looking statements.

About the Speaker

Greg Himstead, +1 862 209 0614, ghimstead@titanium.com

With 25 years in the precision, high performance metals industry Greg has built a consistently interesting, demanding, growth oriented, and successful career path on top of an engineering degree from Columbia University and an MBA from New York University. Greg has worked on both sides of the mill and distribution fence in GM, Director, and VP roles in Sales, Marketing, Trading, and Executive management. Greg’s work experiences in a range of high-tech industries such as aerospace, power generation, electronics and telecommunications, consumer products, transportation, etc. have provided the opportunity to travel intensively across N. America and around the world spending significant time in China, Korea, Japan, Australia, The Philippines, Brazil, and India as well as a 3-year European based assignment managing sales, marketing and trading teams in France, Germany, Italy, Switzerland, and the UK. Greg speaks both French and German at an intermediate level and enjoys physical fitness and recreational sports especially, running and tennis.
GLOBAL REACH  
FLEXIBILITY  
BEST VALUE

ALLOYS  
PRODUCTS  
VALUE ADD  
SUPPLY CHAIN  
PROGRAM SUPPORT  
QUALITY  
LOCATIONS  
TAILORED SOLUTIONS  
INCENTIVE REBATES

STAINLESS NICKEL TITANIUM ALUMINUM ALLOY STEEL CARBON STEEL COPPER BERYLLIUM COPPER NICKEL HIGH PERFORMANCE  
ROD BAR PLATE SHEET WIRE TUBE BULK FORGINGS PARTS SEMI-FINISHED  
WATER JET CUTTING PLATE SAW BAR SAW SHEET SHEARING CONVERSION INSPECTION COATINGS LASER CUTTING BAR CHAMFER  
SUBTIER INTEGRATOR JIT SUPPLY INVENTORY OPTIMIZATION CLOSED LOOP RECYCLING  
INVENTORY MANAGEMENT TO MATCH BUY WEIGHT, STATEMENT OF WORK, & BUILD RATES OF AIRFRAME OEM & ENGINE OEM  
16 SITES IN EUROPE CANADA USA TAIWAN CHINA SOUTH AMERICA (AEROSPACE CLUSTERS)  
NEAR NET SHAPE JIT KITTING VENDOR MANAGED INVENTORY (VMI) WEB PORTAL  
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- EXTREMELY COMPETITIVE FEES FOR VOLUME LTA'S
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- EFFECTIVE LEADERSHIP
- DEEP KNOW-HOW ON INDUSTRY, ALLOYS, AND APPLICATIONS
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- FOCUSED ON GLOBAL JIT AND EVOLVING CUSTOMER SUPPLY CHAIN NEEDS:
  - READY TO ADD LOCATIONS, CAPABILITIES, AND PEOPLE
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and ready to add stocking locations to meet customer’s supply chain needs