



INVESTMENT CASTING MARKET OVERVIEW NORTH AMERICA

ICI Spring Management Meeting
World Casting Conference
April 15 -18, 2012
Kyoto, Japan

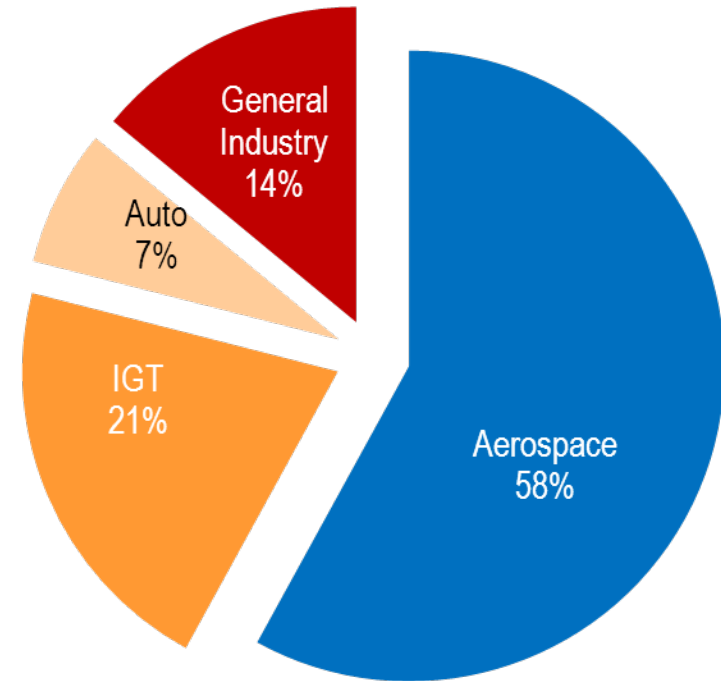
John Marcin
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North American Investment Casting 2011 Sales (\$ Billion - USD)



Aerospace	2.600
IGT	.950
Automotive	.325
General Industry	.600

TOTAL: 4.475



Worldwide Investment Casting 2011 Sales (\$ Billion – USD)



■ North America	4.475
■ Asia	4.160
■ Europe	2.570
■ South America	.150
■ Other	.150
■ Total	11.455



- **Aerospace**
- **Industrial Gas Turbines**
- **Automotive**
- **General Industry**



- **Airline Traffic up 6%**
- **Record aircraft deliveries & new orders**
- **Backlog 8,200 = 8 years of production**
- **Release of 787 & 747-8**
- ***'Early retirements'***
- **New Models:**
 - A320NEO & 737MAX**
 - A350XWB**
- **Growing number of New casting designs**





- **Showing signs of Recovery**
- **Used Aircraft & 'White Tail' inventory declining**
- **High end models selling**
Global Express, Gulfstream
- **Engine Spares on the Rise**
- **Business Travel Increasing**





- **DOD Spending Cuts Underway !**
- **Very Program Specific**
- **F35 LRIP – *will it take a hit?***
- **Growing interest in shipboard equipment & Battlefield Support**
- **Foreign Military Sales (FMS)
*Production Fighter Aircraft***
- **Focus on Drones, RPVs, Target Acquisition, Night Vision, Battlefield Awareness Systems**



- **Power Generation**
- **Standby Power**
- **Emergency Generator**
- **Oil & Gas Platform**





- **Large 60 cycle Frame orders still depressed
*while...50 Cycle Units remain active in
European & Asian markets***
- **Large Installed Base & Turbine Cycles driving
Spare Parts demand**
- **Japan Earthquake / Tsunami effect**
- **Small Turbines setting production records**

Oil & Gas Platforms & Transmission

- **Growing 'After Market' business**
- **Long Term should be Strong !
*Cost & Availability of Natural Gas***




- **2009 market bottomed out**
- **Units ordered up 31% 2010 vs 2009**
- **Approx. 55% of the orders were for Standby Power
59% of units ordered less than 1MW**
- **Gas Turbines are going to W. Europe, N. America, Asia & Middle East**
- **The Energy Information Administration (EIA) forecasts that growth in electricity demand should return to pre-recession rates by 2015.**
- **Industry Forecasts show decreasing unit orders beyond 2013.**
- **Large Continuous Units likely increasing reflecting strengthening world economy. Result: order value increase & units decrease**



- **Passenger Car / Light Trucks Sales & Production up !**
(Approx. 13 Million sold in 2011)

- **Low Interest Rates**
 - + Purchase incentives
 - + 11 year old vehicles
 - + Improving Economy

 **\$Sales**

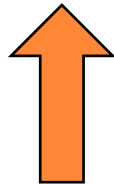
- **Ever tighter Fuel Standards driving new Casting Designs**
 - Advanced Fuel & Exhaust Systems
 - Turbochargers
 - Steering & Transmission Applications

Long Term effect of Hybrids & Plug-ins ?



- **8% Growth Overall !**
- **Re-stocking Inventories**
- **Industrial Production Increase**
- **Several Market Sectors with Increased Activity**

What's Up...



- **Medical, Dairy & Food Processing, Industrial Valves, Pumps**
- **Off-Road Equipment, Shipboard Equipment & Structures**
- **Oil & Gas Drilling, Distribution & Refinement**



- **Implant Business has slowed due to economy**
- **Elective Surgeries postponed**
- **Negative Effect of new Medical Device Excise Tax ?**
- **Downward pressure on Cost**
- ***But...* Still a 5+ % Annual Growth Industry**
- ***More than Implants* – surgical instruments, testing equipment, injury stabilizing appliances**



What's still Down...



- **Commercial Building Equipment**
- **Construction Hand & Power Tools**
- **Recreational Products**

North American Investment Casting 2012 Estimated Sales (\$ Billion - USD)



		<u>% Change</u>
Aerospace	2.775	7
IGT	1.000	5
Automotive	.350	7
General Industry	.625	4
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TOTAL:	4.750	6