



Georgia's Aerospace Industry

Aerospace FDI Expo
October 2015



Aerospace



Agribusiness



Energy
Technology



Information
Technology



Logistics



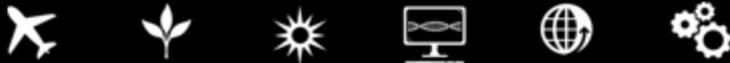
Manufacturing

We SPEAK Business

a division of the Georgia Department of Economic Development

GEORGIA DEPARTMENT OF ECONOMIC DEVELOPMENT:

- **WHO WE ARE:** The Georgia Department of Economic Development (GDEcD) is the marketing and sales arm of the State of Georgia
- **WHAT WE DO:** Strategically deliver economic development throughout the state by:
 - Attracting new business investment
 - Supporting the expansion of existing industry and small businesses
 - Locating new markets for Georgia products
 - Attracting tourists from within and outside the state
 - Promoting Georgia as a desirable location for entertainment businesses and projects
 - Improving the quality of job training in Georgia



GEORGIA CENTERS OF INNOVATION: FUELING INDUSTRY COMPETITIVENESS

- Helping Georgia's strategic industries connect, compete and grow globally
 - Focused, in depth technical industry expertise
 - New markets and business opportunities
 - New product commercialization and development
 - Ground breaking research and collaborations
 - Business, academic, and government partnerships



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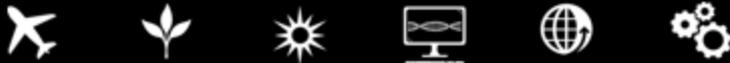
Aerospace



EXPERIENCE GEORGIA: A ROBUST ENVIRONMENT FOR BUSINESS

- Georgia's Key Business Assets:
 - Access to Global Markets
 - First Class Workforce
 - Pro-Business Environment
 - International Business Connections
 - Excellent Quality of Life

- These assets set us apart from the competition!

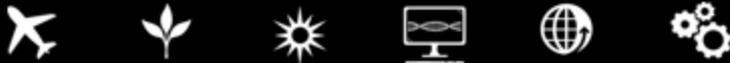


EXPERIENCE GEORGIA:

STRATEGIC LOCATION IN A GROWING REGION



- **Growing Southeast Region**
 - GDP from the 12-state region grew by over \$1.7 trillion between 2003 and 2013 (35%)
 - Population grew by over 12 million people between 2003-2013
- **Georgia: A Growing State**
 - 8th largest state in the U.S. – 10 million people in 2013
 - Grew by 13%, adding over 1.3 million people between 2003 and 2013
 - Added the 5th most number of people between 2003 and 2013



EXPERIENCE GEORGIA: GATEWAY TO THE WORLD

- Atlanta: #1 busiest passenger airport in the world
- Savannah: 4th largest and fastest growing U.S. container port
- Most extensive rail system and largest intermodal hub in the Southeast
- 1,200 miles of a top-ranked interstate highway system



GEORGIA AEROSPACE: DIVERSE & GROWING

Aerospace Product Economic Life Cycle

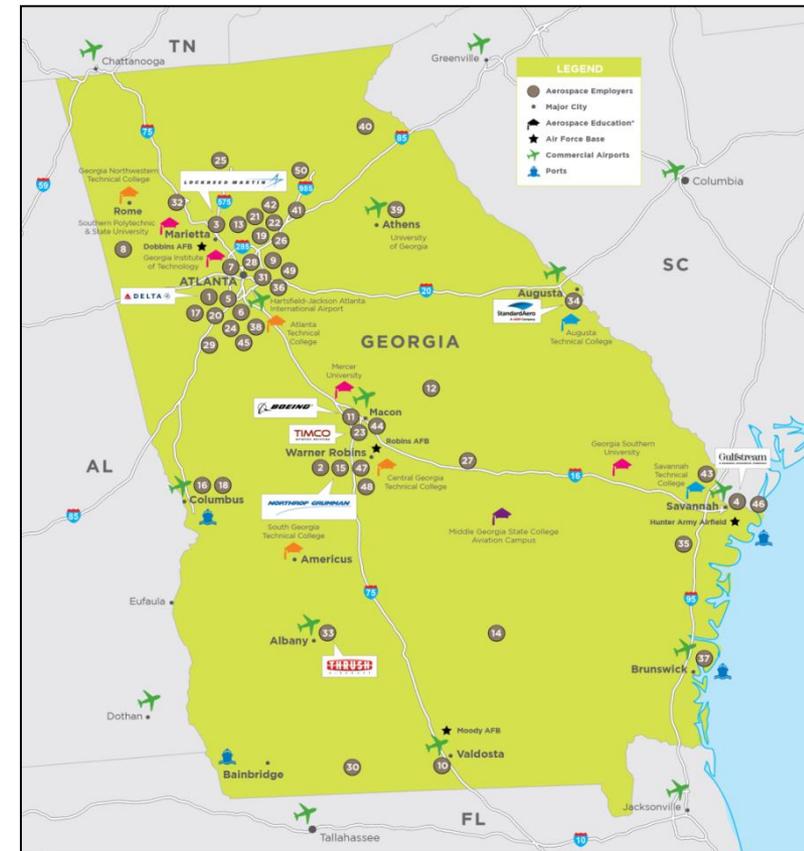


Georgia uses “**Aerospace**” as inclusive term covering the lifecycle of activities for vehicles that fly in the air or in space.



GEORGIA AEROSPACE: FOUNDATIONS FOR SUCCESS

- **Georgia #1 State for Business***
- Diverse aerospace industrial base – 500+ companies
- \$500+ Million in university engineering research
- Highly ranked university and technical college education system
- Ports & airports to move people & products globally
- Hub of growing aerospace cluster in Southeast



* Site Selection Magazine Nov 2014
CNBC July 2014



GEORGIA AEROSPACE: ECONOMIC IMPACT

- **Total Economic Impact of \$50.8 billion** in 2013
- Aerospace payroll of \$9.1 billion with over 88,000 employed at over 500 companies
- 5.3% of state GDP related to aerospace

Each job in the aerospace industry supports 1.5 additional jobs in Georgia

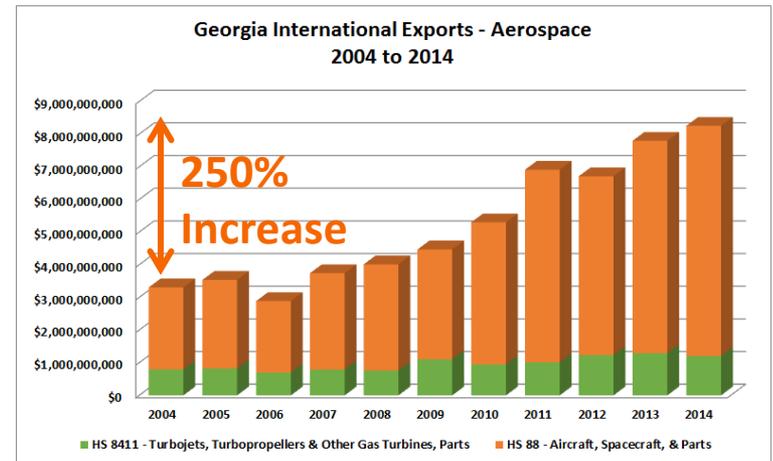


Source: "Economic Impact Analysis of Georgia's Aerospace Industry", Georgia Tech Enterprise Innovation Institute, March 2015

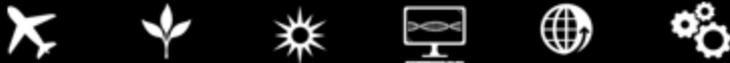


GEORGIA AEROSPACE: MANUFACTURING

- Aerospace international exports of **\$8.25 billion in 2014**
 - **#1 international export of state**
 - Ranked **#4 in U.S.**
- Aircraft & parts manufacturing for global aerospace programs
 - Aircraft Assembly – *Gulfstream, Lockheed Martin, Maule, Thrush*
 - Aerostructures & Components - *Boeing, Meggitt, EMS Technologies, Triumph*
 - Aircraft Engines - *Pratt & Whitney, PCC Airfoils, PCI, TECT, Firth Rixson-Alcoa*



Source: U.S. Dept. of Commerce

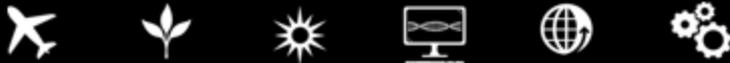


GEORGIA AEROSPACE: MAINTENANCE REPAIR AND OVERHAUL (MRO)

- Major civilian MRO operations
 - Ranked **#4** among US States
 - Over 20,000 employees
 - Major employers – *Delta TechOps*, *Bombardier*, *Standard Aero*, *TIMCO/HAECO*
- Warner Robins Air Logistics Complex
 - F-15, C-5, C-17, C-130 depot level support
 - 13,000 civilian employees



Sources: Aeronautical Repair Station Association & U.S. Air Force

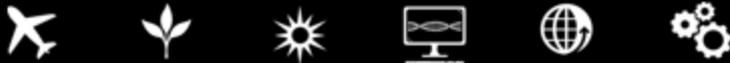


GEORGIA AEROSPACE: AIR TRANSPORTATION

- 104 public airports
- Hartsfield-Jackson Atlanta International Airport
 - **#1 passenger airport in world** – 96 million passengers in 2014
 - #10 cargo airport in U.S.
- Home to major airline facilities for Delta Air Lines, Express Jet, Southwest



Source - ICAO



GEORGIA AEROSPACE: AIR TRANSPORTION - GENERAL AVIATION

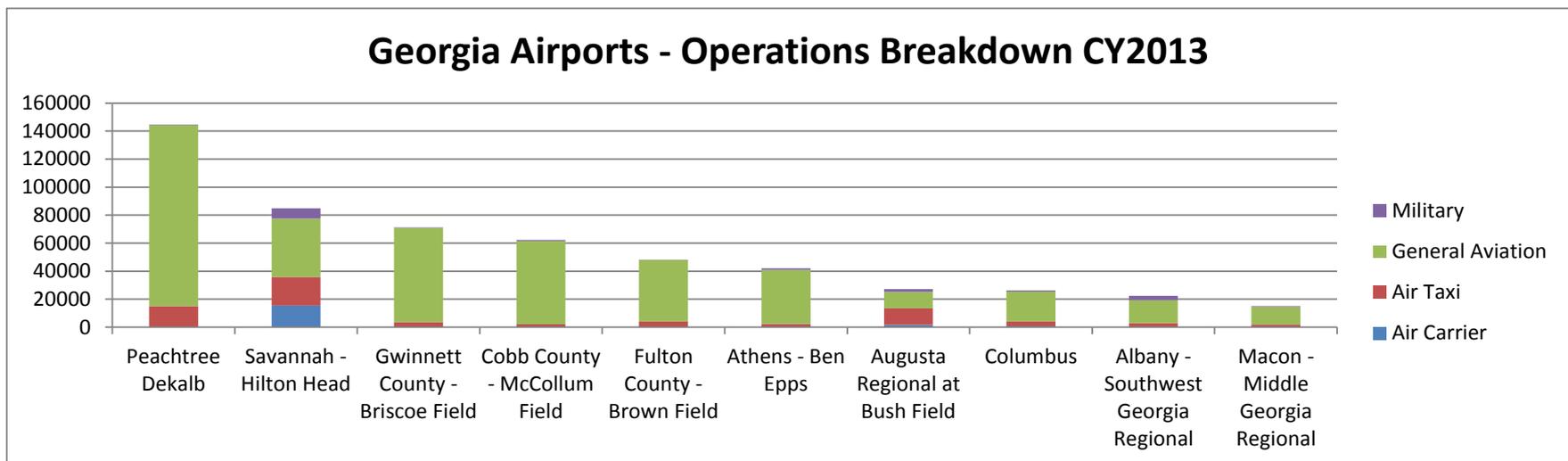
- Key part of Georgia's aerospace industry

General Aviation's Contribution to Georgia's Economy, 2013

Item	Direct	Indirect & Induced	Enabled	Total	U.S. State Rank
Employment (jobs)	13,600	34,700	3,000	51,300	4th
Labor Income (\$M)	\$1,414	\$1,838	\$119	\$3,370	4th
Output (\$M)	\$8,245	\$5,121	\$365	\$13,731	3rd
Contribution to GDP (\$M)	\$1,691	\$2,987	\$207	\$4,885	4th

Source: Contribution of General Aviation to the US Economy in 2013, PWC

Georgia Airports - Operations Breakdown CY2013



Source: FAA



GEORGIA AEROSPACE: DEFENSE

*130,000+ Personnel
in Georgia*

- **Air Force**
 - Moody AFB
 - Robins AFB
 - Dobbins ARB
- **Army**
 - Ft. Benning
 - Ft. Gordon
 - Ft. Stewart
 - Hunter Army Airfield
- **Navy**
 - Kings Bay

- **Marines**
 - Marine Logistics Base
- **Coast Guard**
 - Kings Bay
 - Savannah



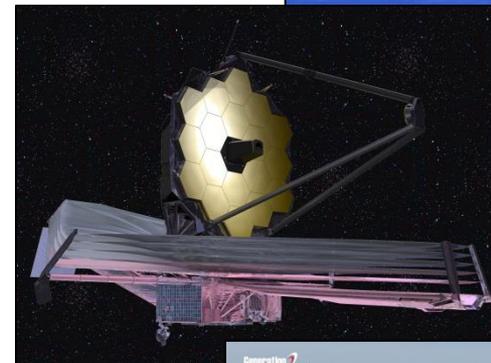
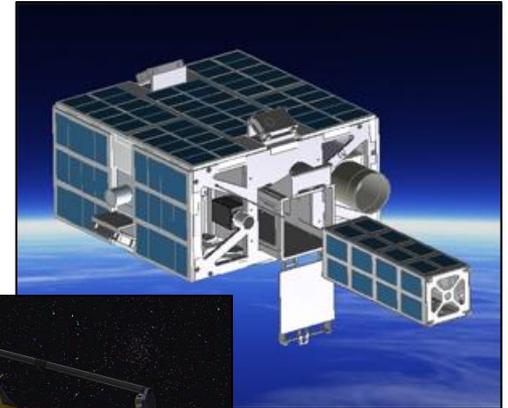
GEORGIA AEROSPACE: UNMANNED AIRCRAFT SYSTEMS (UAS)

- Commercial operations starting in 2015
- Georgia UAS Working Group
- Strong university R&D programs
- Innovation Projects – GST & Area-I
- Emerging UAS sectors in Georgia
 - Film/media/photography services
 - Agriculture
 - Infrastructure inspection
 - Public safety
- AUVSI forecasts **1,900 jobs and \$379M economic impact** for Georgia by 2017



GEORGIA AEROSPACE: SPACE LAUNCH & OPERATIONS

- Growing commercial Space market presents new opportunities
- Georgia Space Working Group
- Georgia Tech Center for Space Technologies and Resources
- Georgia Tech CubeSat programs
- Middle Georgia State University composite structures for NASA James Webb Space Telescope
- Innovation Projects - Generation Orbit
- Potential Spaceport in coastal Georgia



GEORGIA AEROSPACE: ENERGY EFFICIENT AEROSPACE

- Next emerging sector for growth
 - Next generation fuel efficient aircraft
 - Biofuels
 - Electric aircraft
- Alternative Fuels for Aerospace Working Group
- Innovation Projects – Lockheed Martin
- National Collaborations with NASA, FAA, & industry groups



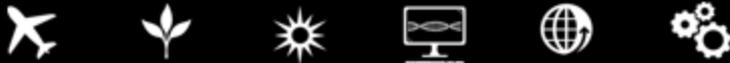
GEORGIA AEROSPACE: EDUCATION & TRAINING

- Engineering Programs
 - Georgia Tech - Largest engineering university in U.S. with 1,900+ degrees awarded in 2014
 - Largest Aerospace Engineering program in U.S with ~1,500 undergrad & graduate students
 - Georgia Southern (Statesboro)
 - Kennesaw State (Marietta)
 - Mercer University (Macon)
 - University of Georgia (Athens)



GEORGIA AEROSPACE: EDUCATION & TRAINING

- Aviation & Technical Training
 - Middle Georgia State University School of Aviation (Eastman & Macon)
 - Degrees in Aviation, Aircraft Structural Technology, Aircraft Maintenance, Air Traffic Management, numerous certificates
 - Technical College System of Georgia
 - 23 Technical Colleges State-Wide
 - 5 Technical Colleges with FAA approved aviation programs
 - Certificate programs tailored to local industry needs



GEORGIA AEROSPACE: EDUCATION & TRAINING



- #1 Rated workforce development program in the U.S.



Department of Labor

- Screens applicants to project standards



Retraining
Tax Credits

- Offset training costs with tax credits



Grants &
Scholarships

- Advantageous for families and employees seeking training



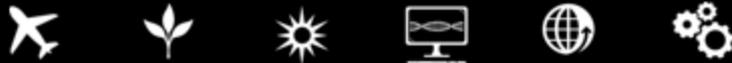
GEORGIA AEROSPACE: UNIVERSITY RESEARCH

- Georgia Tech / GT Research Institute
 - \$500M annual Engineering Research
 - Top Ranked Aerospace Research Program
 - Manufacturing Institute with Aerospace Focus
- Middle Georgia State University Applied Aerospace Research Institute
 - Composite Technology & UAVs
- Mercer Engineering Research Center
 - Aircraft Support/Sustainment Technology
- Georgia Southern & Herty Foundation
 - Aerospace Fabrics & Biofuels



GEORGIA AEROSPACE: BUSINESS ENVIRONMENT

- Enhancing Aerospace Awareness
 - Regional aerospace clusters/alliances
 - State-Wide Working Groups
 - Focused events with State Leaders & Legislators
- Forums & Conferences
 - Major international aerospace conferences routinely come to Georgia (AIAA Aviation 2014, AUVSI 2015, AIAA P&E 2017)
 - Supplier Opportunities & Aerospace Resources (SOAR) Conference
 - Regional & segment focused aerospace forums



GEORGIA AEROSPACE: GDECD - GLOBAL COMMERCE DIVISION

- The Aerospace, Defense & Advanced Manufacturing (ADAM) Team assists aerospace businesses by coordinating:
 - Site Location Services
 - Market Research
 - Business Incentives Analysis
 - Employee Training
 - Innovation and R&D Services
 - Export Assistance
 - International Office Assistance

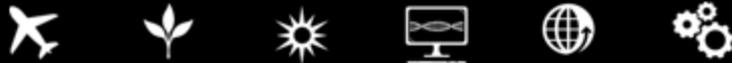


GEORGIA AEROSPACE: GDECD STATEWIDE CONNECTIONS



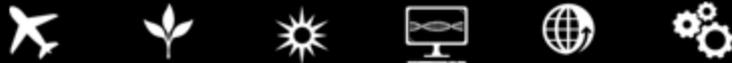
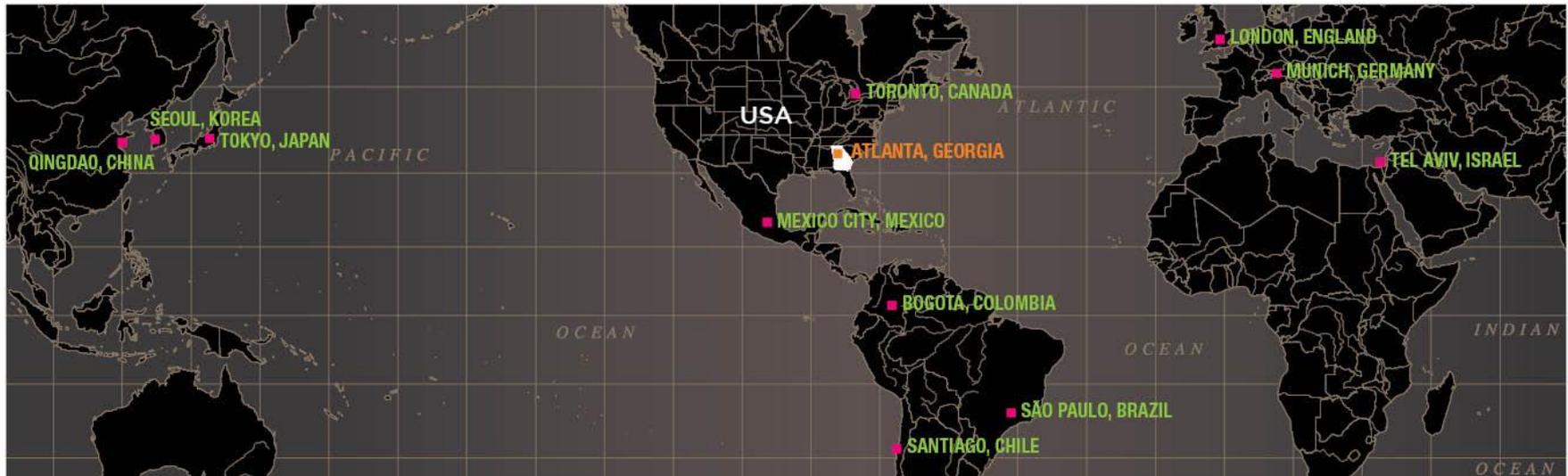
Regional Project Managers

- Work with existing companies on expansion projects
- Recruit new companies targeted for their region
- Provide regional expertise and local connections



GEORGIA AEROSPACE: GDECD INTERNATIONAL OFFICES

11 International Offices



GEORGIA AEROSPACE: WORKING TOGETHER TO GROW TOGETHER

- Georgia's diverse aerospace community well positioned to **Connect, Compete & Grow** in the global aerospace market:
 - Airports
 - Industry
 - Industry Organizations
 - Universities
 - Technical Colleges
 - Economic Development
 - Local/State Government
 - Investor Groups



**Growing
Aerospace
Industry!**

www.georgia.org ***Aerospace.georgiainnovation.org***

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