

The background is a blue-tinted collage of space-related imagery. It includes a satellite with solar panels, a rocket launch, a large cylindrical spacecraft component, and a view of the Earth from space. In the bottom right corner, the US Capitol dome is visible. The MOOG logo is in the top right.

MOOG

# Doing Business with MOOG

Model Based Enterprise  
Supplier Education  
& Training Summit  
May 18, 2011

## Background Information

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- **Founded in 1951 by Bill Moog**
- **Headquarters in East Aurora, NY**
  - **Over 300 Acre Facility**
- **Global Company**
- **Approximately 10,000 employees worldwide**
- **\$2.24 Billion in Revenue (FY 2011est)**
- **Precision Control Systems Solutions and Component Provider**



Bill Moog

## 50 Locations In 27 Countries



*Strong International Network Provides Complete Customer Support*

## Global Locations



Moog England



Moog Japan



Moog - East Aurora, NY



Moog Philippines



Moog Italiana

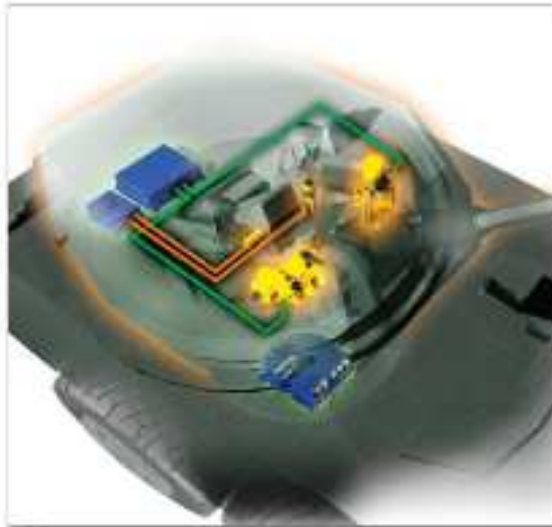
### 50 Locations in 27 Countries – 10,000 Employees

- |                       |                            |                         |
|-----------------------|----------------------------|-------------------------|
| 1. <b>Argentina</b>   | 10. <b>Germany (2)</b>     | 19. <b>Philippines</b>  |
| 2. <b>Australia</b>   | 11. <b>Hong Kong</b>       | 20. <b>Russia</b>       |
| 3. <b>Austria</b>     | 12. <b>India (2)</b>       | 21. <b>Singapore</b>    |
| 4. <b>Brazil</b>      | 13. <b>Ireland</b>         | 22. <b>South Africa</b> |
| 5. <b>Canada</b>      | 14. <b>Italy (4)</b>       | 23. <b>South Korea</b>  |
| 6. <b>China (3)</b>   | 15. <b>Japan (2)</b>       | 24. <b>Spain</b>        |
| 7. <b>England (2)</b> | 16. <b>Luxembourg</b>      | 25. <b>Sweden</b>       |
| 8. <b>Finland</b>     | 17. <b>Netherlands (2)</b> | 26. <b>Switzerland</b>  |
| 9. <b>France</b>      | 18. <b>Norway</b>          | 27. <b>USA (14)</b>     |

Key: **Sales**      **Manufacturing**  
**Sales & Manufacturing**

# Evolution to Systems

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# Advanced Technology Solutions

## Precision Motion & Fluid Controls

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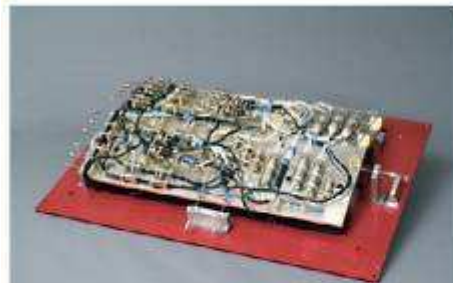
F-35 Flight Control System



Aircraft Training Simulator with Electromechanical Technology



Atlas Electromechanical Thrust Vector Control Actuation System

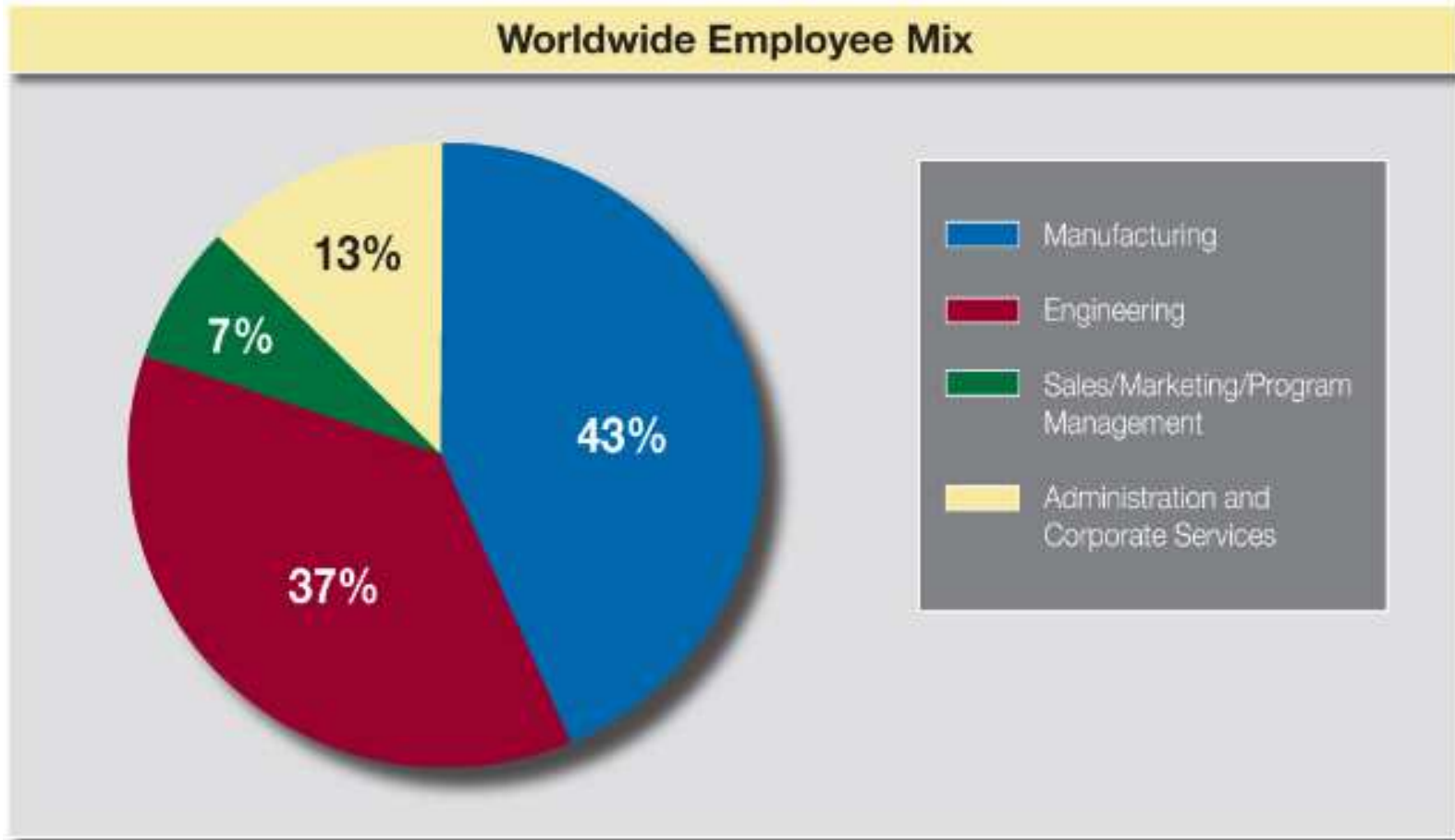


DAWN Satellite Xenon Propulsion Feedsystem



Curlin 4000 Clinical Management System with PDA

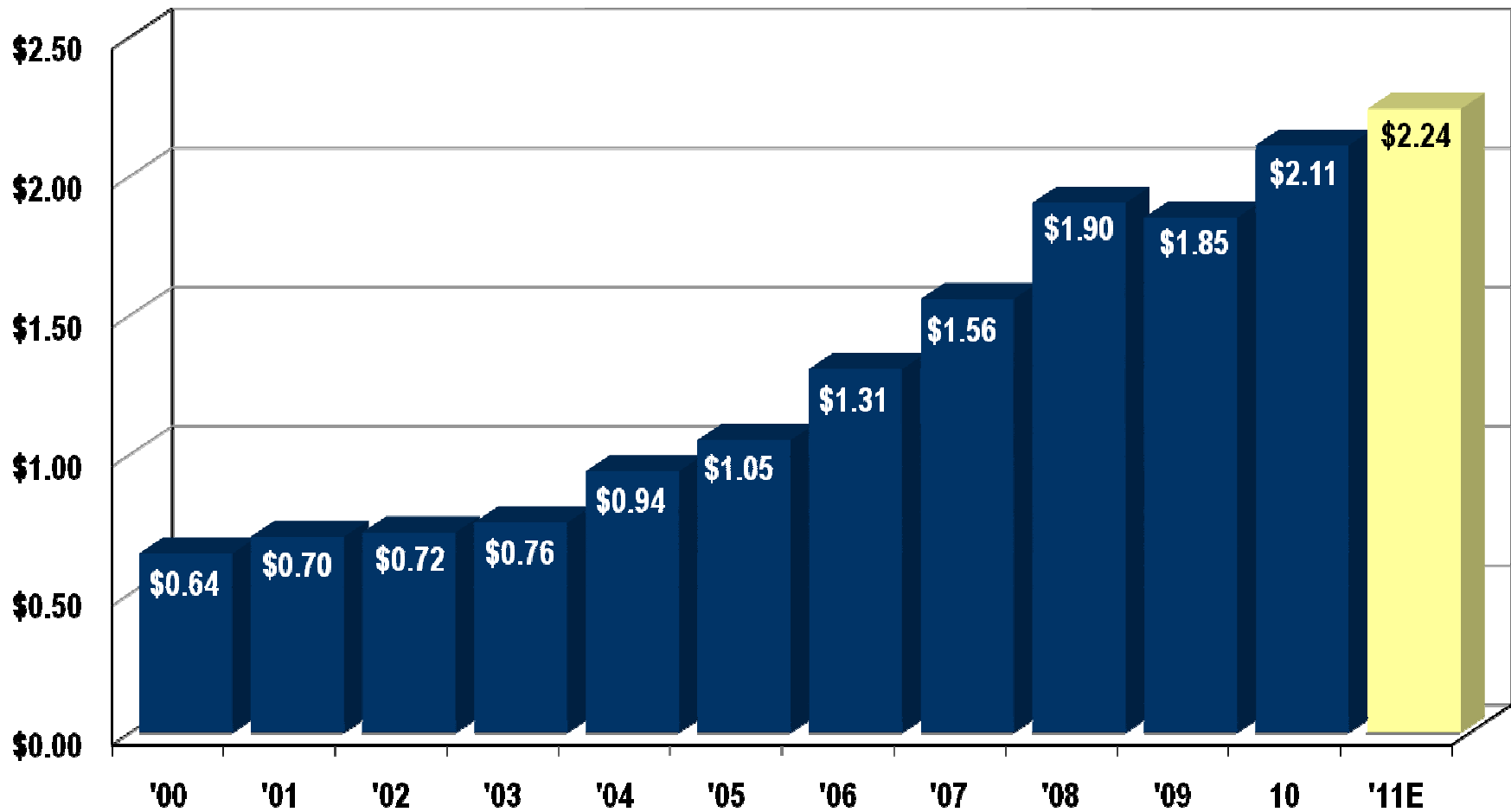
# Competent Workforce



*Highly Skilled Engineering with a Customer Focus*



# Strong and Consistent Performance



**Moog Total Sales (CAGR = 12%)(\$B)**

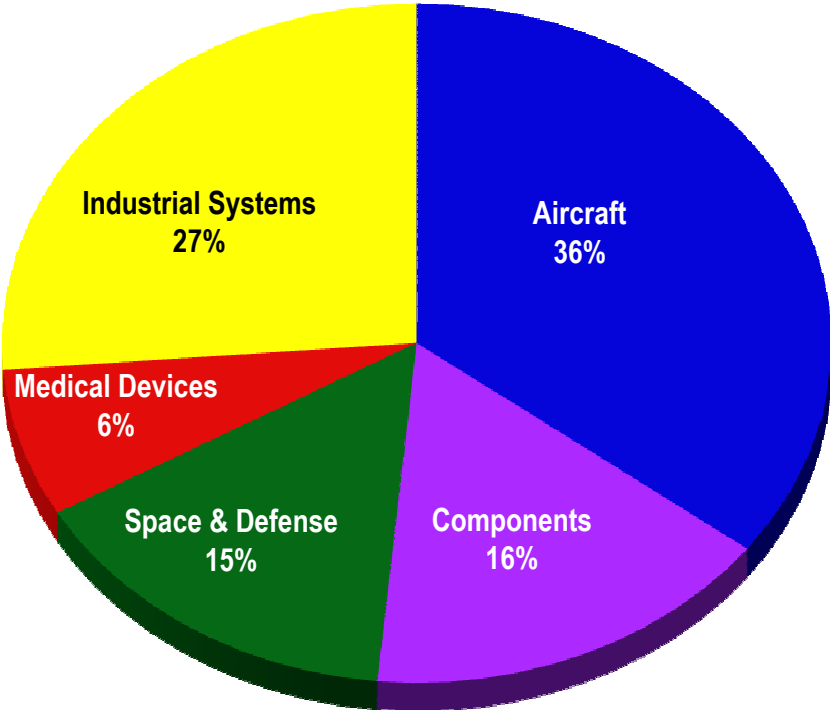
As of 11/4/10



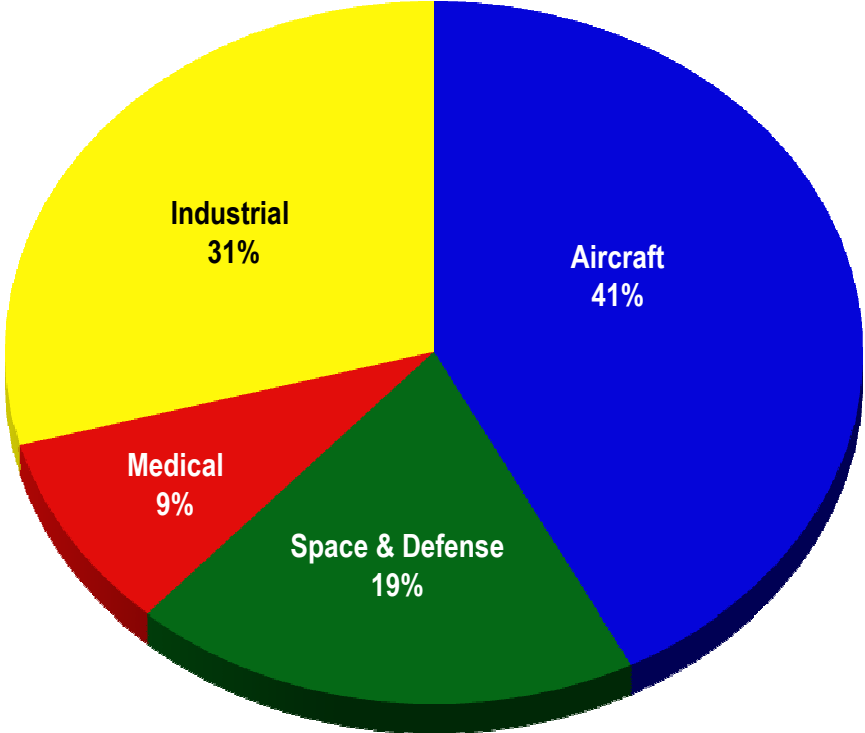
# 2011E Revenue

Total = \$2,240 MM

By Segment



By Market



# Why Moog

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- Moog is a large company with the resources to support all our customers' needs yet we have maintained the flexibility of a small business organization
- Moog's world wide network of engineering, manufacturing, sales offices, and repair and overhaul facilities that provide total product life cycle support
- Moog's emphasis on long-term relationships that are based on mutual trust and open communication with
  - Our customers
  - Our suppliers
  - Our partners and team mates
- We possess the proven technology and experience to provide both systems and component solutions
- Skilled and empowered workforce with a focus on innovative and cutting edge solutions in various markets



# Corporate Organization

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**Chairman of the Board  
& CEO**  
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**Robert T. Brady**

**Executive VP & Chief  
Administrative Officer**  
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**Joe C. Green**

**Chief Financial Officer  
Vice President**  
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**John Scannell**

**Vice Chairman, VP  
Strategy & Technology**  
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**Richard A. Aubrecht**

<p><b>President Aircraft Group</b>          --- --- ---  <b>Warren C. Johnson</b></p>	<p><b>President International Group</b>          --- --- ---  <b>Steve Huckvale</b></p>	<p><b>President Space and Defense Group</b>          --- --- ---  <b>Jay Hennig</b></p>	<p><b>President Components Group</b>          --- --- ---  <b>Larry Ball</b></p>	<p><b>President Medical Group</b>          --- --- ---  <b>Marty Berardi</b></p>
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# Presence in Multiple Industries



*Multiple Operating Groups Functioning Under the Moog Umbrella*



# Aircraft Group



- Actuation Systems
  - Primary and Secondary Flight Control Systems Integration & Certification
    - Control Electronics
    - Redundancy Management Software
    - Loop Closure
    - Valve / Motor Power
    - Servoactuators



# Industrial Group

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## Products

- **Hydraulics/Hybrid**
  - Servovalves, Actuation packages, Servocontrollers and software
- **Electromechanical:**
  - Brushless motors, Digital servodrives, Electromechanical servoactuators, Electronic controls, Electrically-actuated motion simulators



**Power Generation**



**Simulation Systems**



**Metal Forming**



**Heavy Industry –  
Steel Mills**



**Plastics Machinery**



**Aerospace & Automotive Test  
Market**

## Components Group

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- Slip Rings, Twist Capsules, & Slip Ring Assemblies
- Brush & brushless DC Motors & Resolvers
- Fiber optic Multiplexers, Transmitters, Receivers, Modems, Rotary Joints, & Bypass Switches
- Solenoids
- Aircraft Displays & Avionic instruments
- Electromechanical servo and utility Actuators – Rotary and Linear
- Integrated Motion Assemblies
- Air Moving Solutions





# Medical Devices

- **Electronic Ambulatory Infusion Pumps** for home care, specialty infusion, and PCA applications
- **Enteral Feeding Pumps** used in acute care, ambulatory care, and long-term care markets
- **Elastomeric Disposable Infusion Pumps** for wound perfusion, regional pain management, and general surgery
- **Sensors** used in dialysis, bubble detection and air in line sensing
- **Surgical Handpieces** used in cataract surgery for lens removal



# Space & Defense Group



**Electromechanical Actuation Systems for Manned & Unmanned Booster Stages, Upper Stages**



**PRISMA Hydrazine Propulsion System**



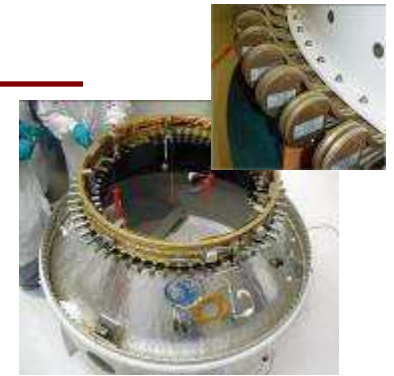
**Redundant Electrohydraulic Actuators for Space Shuttle**



**Divert and Attitude Control Propulsion System Hardware**



**Divert and Attitude Control System Thruster Valves and Assemblies**



**SoftRide Spacecraft Interfaces**



**Flight Computer with Integrated Actuation Control**



**Electromechanical Gimbal Mechanism for Spacecraft**

- Launch Vehicle, Tactical Missile, Ground Vehicle Controls
- Propulsion Systems and Components
- Spacecraft Mechanisms, Vibration Controls
- Sensors & Surveillance Systems





# How to do business with MOOG

## Moog's Global Supply Chain

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- Moog is currently developing a limited, high performance supply base that will be able to produce high quality products on-time at a competitive price.
- Currently over 3500 approved suppliers accounting for avg 70% of cost of material/services/program need.
- Very active small business program
  - Particularly interested in adding Woman, Veteran-Owned & Service-Disabled Veteran-Owned Small Business suppliers
- Visit the Website on [www.moog.com](http://www.moog.com)
- Determine if your products or services might be applicable to Moog and if your company is capable of supporting our published requirements.
- If you feel your company is a match and can offer Moog and it's customers a new or distinct competitive advantage, you are encouraged contact us.

## Competitive Differentiators to consider

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- High volume of inquiries received thus responses only to those seen to have potential benefit to Moog.
- Be prepared to compete on “Best Value”.
- Being ITAR registered is preferred.
- Moog prefers to work with franchised distributors and commodity suppliers.
  - This is especially important for electronic components

## Initial Point Of Contact (POC)

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- SBLO is Mr. Joe Brem, Email: [jbrem@moog.com](mailto:jbrem@moog.com)
  - Please provide the following information
    - Put “Small Business Opportunity” in the Subject line
    - Company Name, address, and phone number
    - Primary POC and email address
    - Describe your product offering and capabilities
    - What differentiates you from other suppliers
    - Small Business classification and if you are ITAR registered
    - Quality system information / certifications / approvals e.g. ISO, AS9100, etc.
    - Major customers
    - Link to your company web site

## Engagement

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- Moog will log your POC data into its “Small Business Opportunity” database.
- Your information will be reviewed and where appropriate, forwarded to the responsible Buyer (s).
- Don’t automatically assume you will be contacted.
- Moog reserves the right to provide the Buyer’s POC information.
- Email is the preferred method of communication.
- There are limited opportunities for indirect spend companies (IT, office supplies, etc.)

## World Class Team

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- Moog supports multiple industries, markets
- Maintains market leadership positions in most areas
- Technical Excellence, Proven Performance, High Reliability are key
- Moog's Supply Chain is considered part of the team and an extension of us
- Expectations are no higher than we expect of ourselves



## Points of Contact

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### **Joe Brem**

Small Business Liaison Officer

Email: [jbrem@moog.com](mailto:jbrem@moog.com)

### **Mary Chambers**

Site Manager, Moog Huntsville

Email: [mchambers@moog.com](mailto:mchambers@moog.com)