



AT THE CENTER OF DEFENSE AND DISCOVERY

July 13 2022



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Approved for Public Release

~5,000 Employees 12 Primary Operations Sites



Redmond (WA)

In-Space (Chemical and Electric) Propulsion Mfg., Assembly & Test

Orange (VA)

*Energetics R&D
Energetics Production
Hypersonic Testing*

Carlstadt (NJ)

Pressure Vessels

Jonesborough (TN)

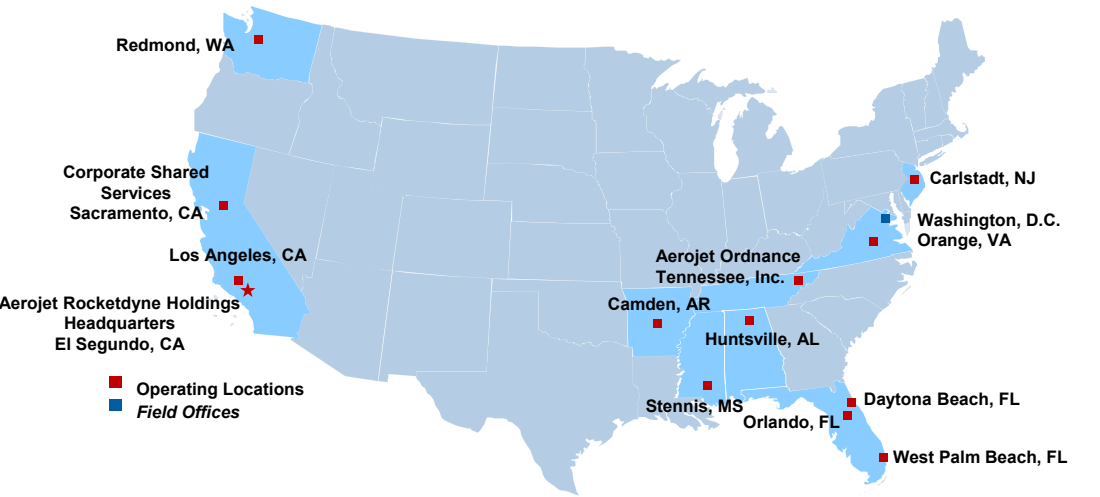
Specialty Metals

Huntsville (AL)

*Defense HQ
Defense Products Design Ctr.
Advanced Mfg. Facility*

Sacramento (CA)

Corporate Shared Services



Daytona Beach (FL)

Additive Manufacturing (3D Printing)

Los Angeles (CA)

*Space HQ
Liquid Boost Engine Design Center
Boost Engine Fabrication*

Camden (AR)

High Rate Solid Rocket Motor Production

Stennis Space Center (MS)

*Large Liquid Engine Assembly & Test
Component Assembly & Test*

West Palm Beach (FL)

*Upper Stage Engine Mfg. & Test
Turbomachinery Assembly
Hypersonics Development*

Orlando (FL)

Missile Defense Targets

Strong Defense Portfolio



- Leader in tactical and missile defense solid rocket propulsion and missile defense divert & attitude control systems
- Leader in hypersonic scramjet, supersonic ramjet and solid rocket motor technology
- Providing advanced technology and capabilities to further protect against increasing Geopolitical instability, proliferation of medium and long-range missiles, and growing threats to U.S. and allied partners



Tomahawk



Standard Missile



THAAD



Patriot

Hypersonics / Supersonics



- Developing a wide range of hypersonic-propulsion system technologies for aircraft and strike weapons that travel at supersonic and hypersonic speeds
- Providing “tip-to-tail” solutions from air inlet to exhaust nozzle
- Leader in fuel-cooled, hydrocarbon technology



**Hypersonic
Propulsion
Test at Mach 5**

Defense Rocket Shop

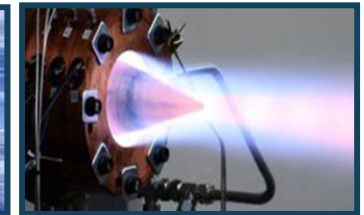


- **Differentiating Technologies for the Warfighter**

- Leader in propulsion technologies: ramjet, scramjet, pulse detonation, boosters, warheads, electric and nuclear power
- Superior capability achieved through advanced solid and liquid propellants, materials and innovative design
- Affordability and faster time-to-market achieved through additive manufacturing and rapid prototyping



**Airbreathing
Supersonic Systems**



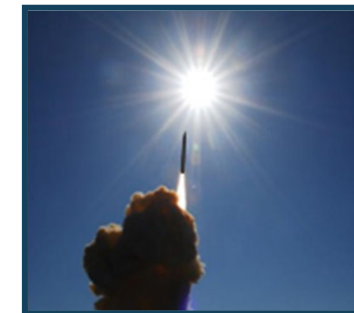
**Rotating Detonation
Engine**

- **Innovative Solutions for National Defense**

- Large and small rocket motors for next generation Minuteman (Ground Based Strategic Deterrent) and tactical systems
- Supersonic and hypersonic propulsion for missiles and aircraft
- Next generation missile defense against emerging threats
- Advanced armaments and specialty warheads enabling selectable effects
- Advanced concepts for rotating detonation engines, torpedo propulsion, and air/land/sea/undersea defense



Hypersonic Systems



**Ground Based
Strategic Deterrent**

Ensuring the Nation's Safety with Next Generation Defense Products

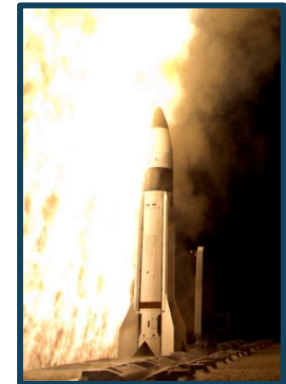
Defense Missile Defense, THAAD & Strategic Systems



- Leader in design, development, test and manufacture of propulsion control systems and boosters
- 100% mission success for THAAD, Standard Missile and Ground-Based Midcourse Defense (GMD)
- Only company offering bipropellant, monopropellant and solid propellant technologies
- Wide range of products ensuring MDA mission success
 - Divert & Attitude Control Systems (DACs)
 - Attitude Control Systems (ACS)
 - Boosters
 - Axial Propulsion stages
 - Maneuverable stages
- Strategic missile propulsion
 - Trident and Minuteman post boost
 - Minuteman stages
 - Advanced stages



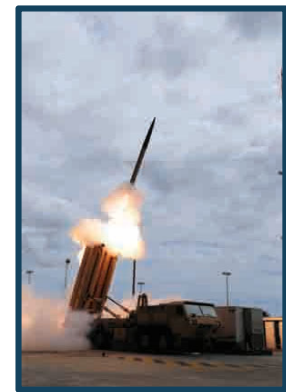
Minuteman III



Standard Missile



SM-3 DACS



THAAD



Leader in Missile Defense & Strategic Systems Propulsion

Defense

Air Defense / Tactical & Armaments



Leader in design, development and production of propulsion and warhead systems for air defense systems and tactical missiles for domestic and international customers

Technologies include controllable thrust, complex warheads, composites, insensitive munitions and highly-loaded propellant grains

- **Air Defense Propulsion Systems**
 - Advanced Air Launch
 - PAC-2 GEM-T
 - PAC-3 MSE
 - Nulka
 - Stinger
- **Tactical & Armament Propulsion Systems**
 - ATACMS
 - BLU-129/B
 - GMLRS
 - GMLRS-IM
 - Griffin
 - Javelin
 - JSOW
 - RRPR
 - Standard Missile
 - Tactical Tomahawk
 - TOW
 - WDU



Stinger



Tomahawk

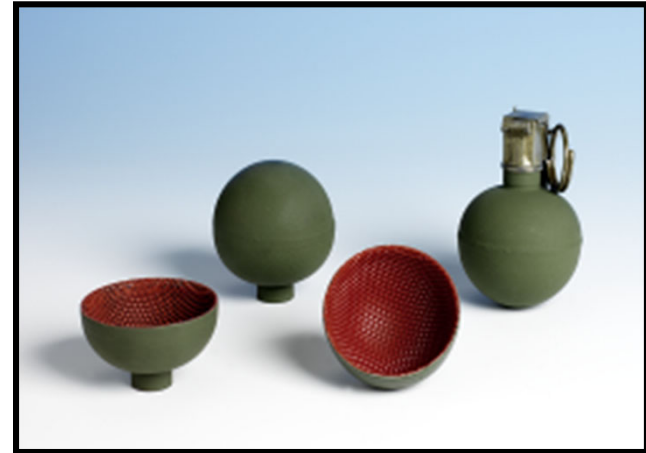
**Affordable and Reliable Rocket Motors and Warheads
for the Warfighter**

Defense Aerojet Ordnance Tennessee



Industry leader in the design, development and production of specialty metal components for munitions, aeronautical and commercial products:

- **Kinetic Energy Devices**
Uniquely engineered materials for highest armor penetration, launch survival and behind armor effects
- **Fragmentation Devices**
Up to six times greater lethality demonstrated
- **Warhead Liners and Cases**
Unique processing methodology to achieve the highest performance at the lowest cost
- **Counterweights and Shielding**
High density materials for increased mass per volume and shielding performance



M67 Hand Grenade



Kinetic Energy Projectiles

**Leader in the Development and Production of
High Performance Specialty Metals**

Defense

Aerojet Rocketdyne Coleman Aerospace



Leader in design, development, test, manufacture and operation of ballistic and advanced missile defense target systems

- Launch Vehicles
- Ballistic and Advanced Front-Ends
- Mission Execution

Air-launched, Ground-launched and Sea-launched Capability

Programs include:

- Short Range Air Launch Target (SRALT)
- Long Range Air Launch Target (LRALT)
- Extended Long Range Air Launch Target (E-LRALT)
- Medium-Range Ballistic Missile (MRBM)

C-17 Air Launch System

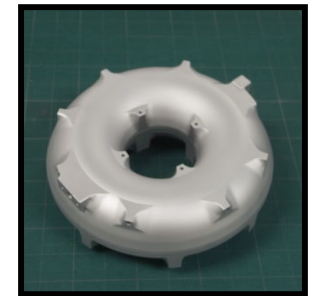
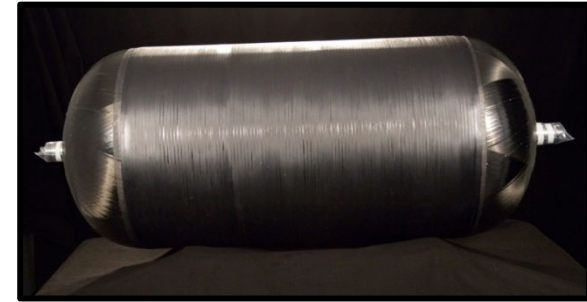


Ballistic missile target being loaded and launched from a C-17 aircraft

Leading Provider of Launch Vehicles Used to Test U.S. Missile Defense Systems

Preferred supplier in customized design, development and production of pressure vessels for spacecraft, satellite, launch vehicle and missile applications:

- **Composite Overwrapped Pressure Vessels**
 - Existing designs from 60 to 88,000 in³
 - Flight qualified designs up to 10,000 psi
 - Multiple qualified human spaceflight designs
 - Demonstrated mission life of 25+ years
- **Positive Expulsion Propellant Tanks**
 - Ring stabilized and contoured metal diaphragm PMDs
 - High CG control, gas-free propellant management
 - >99% expulsion efficiency
- **All Metal Pressure Vessels**
 - Supported crewed space flight since Gemini
 - Provide ECLSS/portable breathing apparatus for crewed missions
- **World Leader**
 - >60 years flight heritage
 - >6,000 pressure vessels delivered
 - Special level NDT certifications
 - **100% mission success**

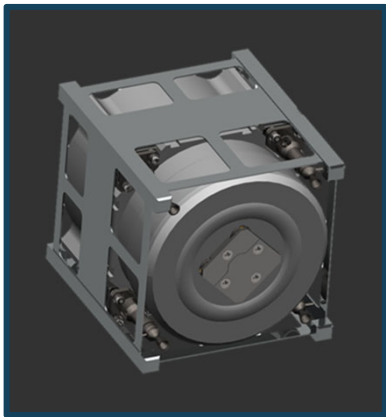


Leading Provider of Pressure Vessels to the Aerospace Community

Additive Manufacturing



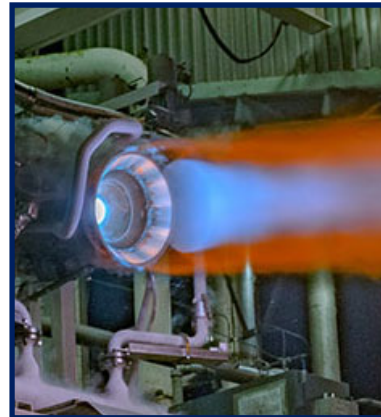
- Over 20 years experience evolving additive manufacturing technology to meet the stringent requirements for space and defense systems
- Establishing AM Standards for the A&D industry
- Committed to remaining at the forefront of this emerging technology in order to deliver high-performing, affordable propulsion systems to our customers for more decades to come



CubeSat Propulsion



Bantam Engine



RL10C-X



Hypersonics

Summary Highlights



- At the forefront of innovation and technological advancements in propulsion for defense and space
- Investing in next-generation systems and technologies to deliver greater value and performance to our customers
- Well-positioned and balanced program portfolio made up of key programs necessary to protect our nation and explore deep space
- Strong contract backlog and revenue visibility
- Improved financial flexibility and cash flow
- Unprecedented legacy and capabilities serving as this nation's propulsion provider, designing, developing and operating complex systems that operate in the most extreme environments