



Marshall Space Flight Center

JANNAF PIB Panel Session

June 3, 2015



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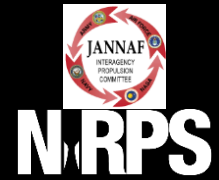


Agenda



- Opening Remarks
 - Dale Thomas, NASA
 - André Gudger, OSD
- Panel Members
 - Kent Rominger, Orbital / ATK
 - Brett Alexander, Blue Origin
 - Julie Van Kleek, Aerojet Rocketdyne
 - Stephanie Bednarek, SpaceX
- Q&A
 - Audience
- Closing

Grand Challenges Facing Rocket Propulsion



Lack of integrated space strategies across Government Agencies and Departments

Lack of multi-Agency vision

Overall decline in aerospace engineer demand

Frequent program starts & cancellations

Shuttle retirement

Uncertainty in future needs

Industrial base decline

Overcapacity of production capability

Rising supplier costs

Large solid rocket motor industrial base decline

Reduce development & sustainment costs

Foster access to facilities & expertise

Support industrial base competitiveness & resilience

Collaborate across Agencies

Implement an integrated Science & technology plan

Invigorate the STEM pipeline

Lack of predictable long-term funding

Lack of sustained technology development

Aging workforce

Lack of defined space missions

Fewer engineers have technology development experience

Difficulty in access to government facilities

Systems infrastructure, supply chain, & skill base challenges

Loss of competitiveness in the global market

The World Is Different



- New vehicles are coming on line or are proposed
 - Space Launch System (SLS)
 - ULA Vulcan
 - SpaceX for EELV missions
 - Blue Origin New Shepherd
 - Others...
- New vehicles challenge the RPIB, but provide opportunity to reinvigorate the industry
 - Manufacturing
 - Test, evaluation, and qualification
 - Launch sites and teams
 - Sustaining engineering

The World Is Different (continued)



- Big decisions are coming up
 - ISS life extension
 - SLS upper stage and advanced booster
 - EELV Phase II and III
- Old challenges still remain
 - Hydrocarbon boost
 - Vehicle failures

Grand Challenges Still Challenge Us



- Continued industry consolidation
- Even more interconnectedness between agencies, sectors, and programs
- Limited USG rocket propulsion budgets
- Increasing need to lower costs while improving performance
- USG needs a way to understand the whole picture of the RPIB
- JANNAF is a trusted, integrated Government-wide forum
- Augmentation of JANNAF with a Programmatic and Industrial Base group allows leveraging of resources and synergy with technical activities

Topics to Consider

- What is your (company's) view of health of the domestic rocket propulsion industrial base?
- How are limited federal budgets showing up in your supply chain and affecting your decision making?
- How is commercial space impacting the rocket propulsion industrial base?
- How can the government act in supporting the rocket propulsion industrial base?
- Is low propulsion system cost really a primary objective, and how does that balance with mission assurance for high-value payloads?



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