NASA Space Launch System (SLS): Progress Report DRAFT

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SLS Supports NASA's Vision and Mission

To reach for new heights... and reveal the unknown so that what we do and learn will benefit all humankind
Exploring Space for America’s Future

- Inspiration
- Scientific Knowledge
- National Security
- Economic Prosperity
- Global Partnerships
- Technology Development
Initial Capability Stands on the Shoulders of Legacy Systems
SLS Development Schedule

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**PROGRAM PROGRESS**

- **2011**: SLS Design Chosen
- **2012**: Engines Delivered to Inventory
- **2013**: Manufacturing Tooling Installed
- **2014**: Production of First New Flight Hardware
- **2015**: Main Engine Test-Firing
- **2016**: Core Stage Structure Testing
- **2017**: Vehicle Stacking at KSC

**Concept Studies**

- Booster Development Test
- SLS Design Chosen

**Concept & Technology Development**

- Engines Delivered to Inventory
- Manufacturing Tooling Installed

**Preliminary Design & Technology Completion**

- Production of First New Flight Hardware
- Wind Tunnel Testing

**Final Design & Fabrication**

- ICPS Production Begins
- Main Engine Test-Firing

**System Assembly, Integration & Test, Launch & Checkout**

- Core Stage Assembly
- Booster Test-Firings

**Launch**

- Core Stage Test/Firing
- PLAR: Post-Launch Asses. Review

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**MCR**: Mission Concept Review  
**CDR**: Critical Design Review  
**SRR**: System Requirements Review  
**SIR**: System Integration Review  
**SDR**: System Definition Review  
**FRR**: Flight Readiness Review  
**PDR**: Preliminary Design Review  
**PLAR**: Post-Launch Asses. Review
Concept to Preliminary Design in 21 Months

Liquid Engines
Tested selective laser melted part on J-2X at Stennis Space Center (March 2013), and storing RS-25 Core Stage Engines at Stennis Space Center.

Boosters
Conducted Thrust Vector Flight Control Test at ATK in Promontory, UT (Jan 2013).

Core Stage
Completed welding on first confidence barrel section at Michoud Assembly Facility (July 2013).

Completed Vertical Weld Tool at the Michoud Assembly Facility in New Orleans.

Spacecraft & Payload Integration
Performed fit-check of Multi-Purpose Crew Vehicle Stage Adapter for 2014 Exploration Flight Test at the Marshall Space Flight Center (June 2013).

Advanced Development
Conducted F-1 engine gas generator hot-fire testing at Marshall (Jan 2013).

Systems Engineering & Integration
Tested buffet model in Langley Research Center’s Transonic Dynamics Wind Tunnel (Nov 2012).

Low Technical Risk Due to Hardware Maturity
Engaging the U.S. Aerospace Industry

Strengthening Sectors such as Manufacturing

Advancing Technology and Innovation

224 Subcontracts in 30 States

2012–2013 Data
SLS Contracts and Suppliers in AL, MS, LA, and FL

Contracts

Alabama
- Dynetics Technical Services

Florida
- Baker Hill Industries, Inc.
- Bernd Group, Inc.
- Channel Comp., LLC
- Concurrent Computer Corp.
- Honeywell International, Inc.
- Hydraulic House, Inc.
- International Bolting Technologies, Inc.
- United Technologies Corp.

Suppliers

Alabama
- Alabama A&M
- All Points Logistics, Inc.
- Amteck Corp.
- Analytix, LLC
- Avans Machine & Tool
- AZ Technology
- B&B Precision Machine, Inc.
- Barnhart Crane & Rigging Co.
- Concurrent Computer Corp.
- Dynetics, Inc.
- GE Intelligent Platforms, Inc.
- Medtherm Corp.
- Packaging Unlimited
- Watring Technologies, Inc.

Florida
- Baker Hill Industries, Inc.
- Bernd Group, Inc.
- Channel Comp., LLC
- Concurrent Computer Corp.
- Honeywell International, Inc.
- Hydraulic House, Inc.
- International Bolting Technologies, Inc.
- United Technologies Corp.

Louisiana
- Geocent, LLC

To be updated
America’s Rocket for Deep-Space Missions

- National platform for space leadership
- Opens frontiers for commerce and economic expansion
- Unrivaled capability for strategic missions
- On track for first flight in 2017
- Opportunities for large and small businesses

www.nasa.gov/sls