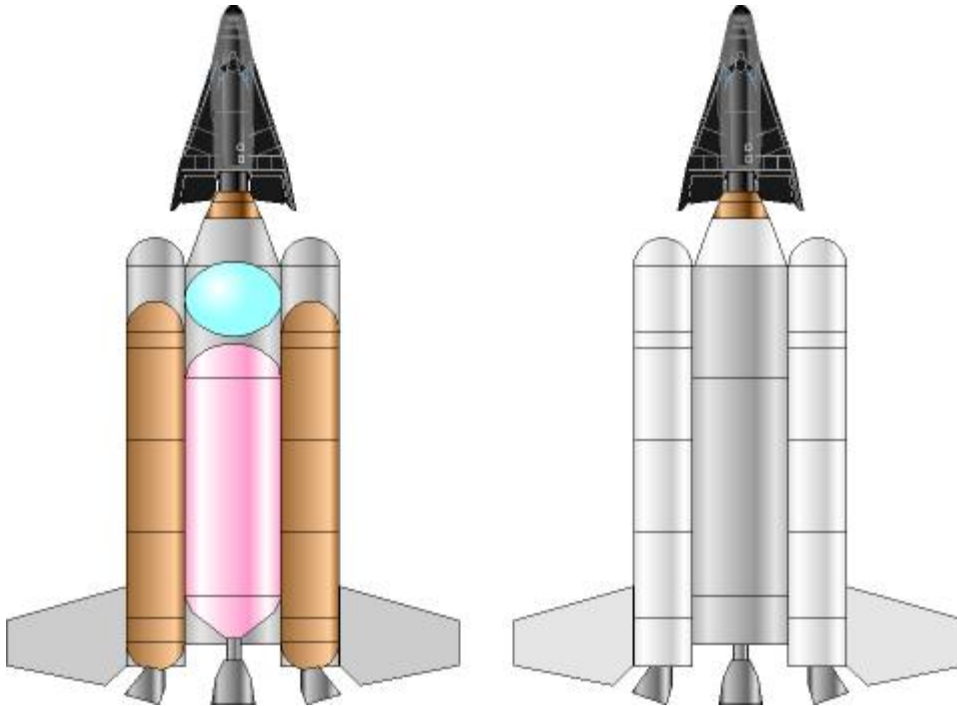


## SLS A-388



Orbital launch vehicle. *Year:* 1959. *Family:* [SLS](#). *Country:* USA. *Status:* Study 1961. *Other Designations:* Space Launching System A-388. *Popular Name:* Phoenix.

The A-388 was the version of the Space Launching System family proposed to fill the SLV-4 requirement - boost to orbit of the Dynasoar manned spaceplane. The booster was dubbed 'Phoenix' - perhaps a hope it could be rescued from the ashes of the manned space program having been turned over to NASA....

With a July 1961 program go-ahead, first flight test was predicted for October 1963 and first operational manned launch in July 1964. Instead an alternative with a marginally lower initial cost, the Titan 2 with solid rocket boosters (Titan 3) was selected. Had the A-388 been selected, the USAF would have fielded an equivalent of the Delta 4 or Atlas 5 EELV's forty years before the fact.

The Space Launching System A-388 was seriously considered as an alternative to the Titan III for the USAF SLV-4 space launch requirement in 1961. In this system there was a single liquid stage using oxygen-hydrogen and a single J-2 engine. The first stage was segmented solids, slightly smaller than in the Titan configuration. Compared to the three-stage Titan, the lift-off gross weight was slightly less, but the inherent reliability was slightly greater -- estimated to be about 87%, due to the greater simplicity in the liquid stage. The vehicle was sized to accommodate an 8500 kg Dynasoar payload, but was capable of putting over 9,000 kg into low earth orbit.

*Manufacturer:* USAF. *LEO Payload:* 9,070 kg (19,990 lb). *to:* 200 km Orbit. *at:* 28.00 degrees. *Liftoff Thrust:* 3,776.500 kN (848,991 lbf). *Total Mass:* 243,000 kg (535,000 lb).

Core Diameter: 4.28 m (14.04 ft). Total Length: 24.70 m (81.00 ft). Span: 9.45 m (31.00 ft).

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### Stage Data - SLS A-388

- *Stage Number: 1. 2 x Stage: [SLS SRB 388](#). Gross Mass: 88,000 kg (194,000 lb). Empty Mass: 13,000 kg (28,000 lb). Thrust (vac): 2,083.900 kN (468,479 lbf). Isp: 260 sec. Burn time: 90 sec. Isp(sl): 235 sec. Diameter: 2.58 m (8.46 ft). Span: 2.58 m (8.46 ft). Length: 16.40 m (53.80 ft). Propellants: [Solid](#). No Engines: 1. Status: Study 1961. Booster for SLS A series launch vehicles.*
- *Stage Number: 2. 1 x Stage: [SLS Stage A](#). Gross Mass: 59,000 kg (130,000 lb). Empty Mass: 6,000 kg (13,200 lb). Thrust (vac): 889.325 kN (199,928 lbf). Isp: 424 sec. Burn time: 250 sec. Diameter: 4.28 m (14.04 ft). Span: 4.28 m (14.04 ft). Length: 15.00 m (49.00 ft). Propellants: [Lox/LH2](#). No Engines: 1. Engine: [J-2](#). Status: Study 1961. Smallest Lox/LH2 stage planned for SLS series. Empty mass estimated. Sized for rail transport within USA.*

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### SLS A-388 Chronology

**1961 July 11** - Launch Vehicle: [Titan 3C](#), [SLS A-388](#).

- **Phoenix A388 space launch system recommended for Dyna-Soar Step IIA booster.** Nation: [USA](#). Spacecraft: [Dynasoar](#). The Dyna-Soar Directorate of the Space Systems Division recommended employment of the Phoenix A388 space launch system for the Step IIA booster.

**1961 October 13** - Launch Vehicle: [Titan 3C](#), [SLS A-388](#).

- **Titan III selected as the space launch system for the Air Force.** Nation: [USA](#). Spacecraft: [Dynasoar](#). The Department of Defense approved the Titan III as the space launch system for the Air Force.