

Saturn V Stage Status

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SATURN HISTORY DOCUMENT

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HUNTSVILLE, Ala. -- The world's largest known space rocket, the Saturn V which can launch the equivalent weight of 40 Gemini spacecraft with a single shot, is about 90 percent ready for its maiden voyage scheduled next year.

Brig. Gen. Edmund F. O'Connor, director of the NASA-Marshall Space Flight Center's Industrial Operations, reported the status of each stage this week as follows:

* S-IC--95 percent flight ready. This 7.5 million pound first stage, or booster, has been static tested more than 16 minutes at the MSFC Test Laboratory and results were excellent. The first flight booster, S-IC-1 is being checked out and prepared for shipment to the launch site.

* S-II--75 percent flight ready. Second stage of the Saturn V and the most powerful upper stage ever built, it has five engines and produces one million pounds of thrust. A combination of aluminum alloy metals requiring special welding and exotic super cold propellants caused problems earlier with this 81-1/2 foot long stage, which must carry nearly a million pounds of propellant and burn about six and one-half minutes.

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A non-flight model of the S-II stage, which had undergone several static firings at the Mississippi Test Facility, was destroyed during a pressure test recently. The resulting test stand damage will cause a two-week delay in the placement of the first flight stage in the stand. That stage, S-II-1, is scheduled to be placed in the stand August 1.

* S-IVB--95 percent flight ready for Saturn V. This stage has already flown as the upper stage of the current Saturn IB series and has proven its flight capability for Saturn IB missions. It is powered by a single J-2 engine that on Saturn V has to restart in orbit to inject the Apollo into a translunar trajectory.

* Instrument Unit--100 percent flight ready. Like the S-IVB stage, the Instrument Unit has been flown on the IB. It is the guidance system or "brain" of the rocket.

One of the earlier missions of Saturn V is to place three astronauts on the Moon by 1970. NASA scientists are also studying various other payloads for subsequent space missions.

The Saturn V, when operational, can place 140 tons of payload into Earth orbit, or send 45 tons to the Moon.

In fact, the enormous vehicle can place into Earth orbit in one launch more than the weight of all satellites and deep space probes NASA has launched since it was created in 1958. Weight of all of the Mercury and Gemini manned spacecraft that have been launched to date would fill the cargo hold of a single Saturn V to little more than 50 percent of its capacity.

Dr. Wernher von Braun, director of MSFC and head of a team that launched the first U.S. satellite eight years ago, said the Saturn V will become the space truck for years to come.

A government/industry team that stretches across the United States is developing the rockets for NASA. Gen. O'Connor manages this production effort.

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