



NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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LIQUID HYDROGEN PROGRAM STEPPED UP

Steps to intensify NASA's development program for space use of liquid hydrogen were announced today by Administrator James E. Webb. The steps are:

1. Assign project management of the liquid hydrogen-fueled Centaur launch vehicle to NASA's Lewis Research Center, Cleveland, Ohio.
2. Assign project management of the hydrogen-fueled M-1 rocket engine to the Lewis Center.
3. Initiate studies to determine the merits of the adaptation of the Centaur stage to other boosters for future use in the NASA space exploration program.

Centaur is a liquid hydrogen upper stage powered by two 15,000 pound thrust RL-10 engines. Its prime mission is to furnish the power to soft land the 2,100-pound Surveyor spacecraft on the moon. Future missions include Mariner interplanetary flights and boosting spacecraft into 24-hour synchronous orbits.

The M-1 engine is the largest liquid hydrogen/liquid oxygen rocket engine now under development. It will have 1.2 million pounds of thrust and is being designed to be clustered to power the second stage of a Nova launch vehicle. The development contractor is Aerojet-General Corporation.

Project management of Centaur and M-1 is being transferred to Lewis from the Marshall Space Flight Center, Huntsville, Ala., which is developing NASA's large Saturn launch vehicles for manned flights.

Administrator Webb said, "This transfer will allow the Marshall Center to concentrate its efforts on the Saturn vehicles for the manned lunar landing program. This, I feel, is necessary to achieve our objectives in the time frame that

(over)

we have planned. It will permit the Lewis Center to use its experience in liquid hydrogen to further the work already done on one of the most promising high energy rocket fuels and its application to Centaur and the M-1."

Mr. Webb noted that Lewis was among the pioneers in liquid hydrogen propulsion research. "Lewis engineers started study of liquid hydrogen propulsion in 1950," he said, "and began a series of test firings of a 5,000-pound thrust hydrogen engine in 1953.

"Combining hydrogen propulsion development programs, such as Centaur and the M-1, at Lewis with their on-going liquid hydrogen technology program should benefit both efforts."

Following a failure in Centaur's first test flight on May 8, 1962, a detailed analysis of the stage was undertaken. This analysis supports the concept and design of Centaur as a sound basis for an intensified development effort which will result in a vehicle capable of the high performance missions assigned to it.

The intensified program will concentrate on successful completion of the research and development flights by late 1964 or early 1965, with operational capability available thereafter.

Overall program management of Centaur is a responsibility of NASA's Office of Space Sciences which is directed by Dr. Homer Newell. Vincent L. Johnson is Centaur program manager.

At the Lewis Research Center, a Centaur Project Office will be established under the Center Director, Dr. Abe Silverstein, and will become part of the program under Associate Director for Development Bruce Lundin.

Prime development contractor for Centaur is General Dynamics/Astronautics. The RL-10 engines used in Centaur and the Saturn S-IV stage are being developed by Pratt and Whitney Aircraft.

The M-1 engine development program is under NASA's Office of Manned Space Flight which is directed by D. Brainerd Holmes. A. O. Tischler is assistant director for propulsion.

A separate M-1 office also will be established at Lewis under Mr. Lundin.

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