66-32

NEWS

NASA

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546

TELS. WO 2-4155
WO 3-6925

FOR RELEASE: IMMEDIATE

FEBRUARY 1, 1966

RELEASE NO: 66-22

APOLLO / SATURN IB MISSION (SA-20)

NASA TO LAUNCH

SAF APOLLO PROJECT FIRST UNMANNED

SATURN IB LAUNCH VEHICLE

APOLLO/SATURN

SF SA-209

The National Aeronautics and Space Administration announced plans today to launch the first unmanned Apollo/Saturn IB mission from Cape Kennedy, Fla., Feb. 22.

The first Saturn IB launch vehicle will boost production-model Command and Service Modules of the Apollo spacecraft from Launch Complex 34.

The cone-shaped command module, 12 feet high and 13 feet in diameter at its base, is the segment of the spacecraft in which three astronauts will leave the Earth and return during the Apollo manned lunar landing mission before the end of this decade.

The 22,000-pound-thrust rocket engine contained in the service module will provide propulsion enroute to the Moon, braking into lunar orbit, return to Earth and other operations in space. The service module also contains the electrical power system and other equipment to support the command module.

Principal objectives of the first Apollo/Saturn IB mission are evaluation of launch vehicle performances and test of the spacecraft command module heat shield.

-more-

1/27/66

The heat shield is an ablative coating on the outer surface of the spacecraft. During reentry into the Earth's atmosphere this coating ablates or burns off. This action dissipates heat and therefore prevents destructive high temperatures from reaching the metal surface of the spacecraft. The ablative material on the Apollo command module is an epoxy resin. Similar ablative heat shield materials were used on Mercury and Gemini spacecraft.

Other mission objectives include verification of spacecraft propulsion system performance, including restart capability of the service module main engine; performance of the spacecraft environmental system reaction and stabilization systems, and partial performance of the communications and power systems.

The spacecraft will be launched on a suborbital flight over the South Atlantic Ocean of about 39 minutes' duration. About half-way into the mission a peak altitude of approximately 300 statute miles is to be achieved.

During the descending flight the main rocket engine of the service module will be fired twice. After the second engine burn, the service module will be jettisoned. The command module will reenter and impact about 5,300 statute miles from the launch pad. The planned point of impact is in the Atlantic Ocean approximately 200 miles east of Ascension Island.

Department of Defense recovery units will recover the spacecraft for technical evaluation by NASA and North American Aviation, Inc. engineers.

The two-stage Saturn IB vehicle is an improved version of the Saturn I which was a 100% success. There were 10 launches from October 1961 to July 30, 1965. These included unmanned tests of Apollo command and service module "boilerplate" spacecraft (engineering test models) and three Pegasus meteoroid technology satellites.

The Saturn IB first stage is almost identical to that of Saturn I, employing a cluster of eight H-1 kerosene liquid oxygen propellant engines. However, the Saturn IB engines have been uprated to produce 200,000 pounds of thrust each, for a total booster thrust of 1.6 million pounds. (The Saturn I engines were 188,000 pounds thrust.)

Saturn IB will utilize a new second stage (S-IVB) which is propelled by a single 200,000 pound thrust, liquid hydrogen/oxygen J-2 engine. (The S-IV, second stage of Saturn I, was powered by a cluster of six 15,000 pound thrust RL10 A3 liquid hydrogen/oxygen engines).

Saturn IB, with a combined thrust of 1.8 million pounds in its two stages, is capable of placing more than 18 tons in Earth orbit.

APOLLO MISSION (SA-201)

-End-

SATURN IB LAUNCH VEHICLE (SA-201)

APOLLO/SATURN IB MISSION (SA-201)

SATURN IB MISSION (SA-201)