

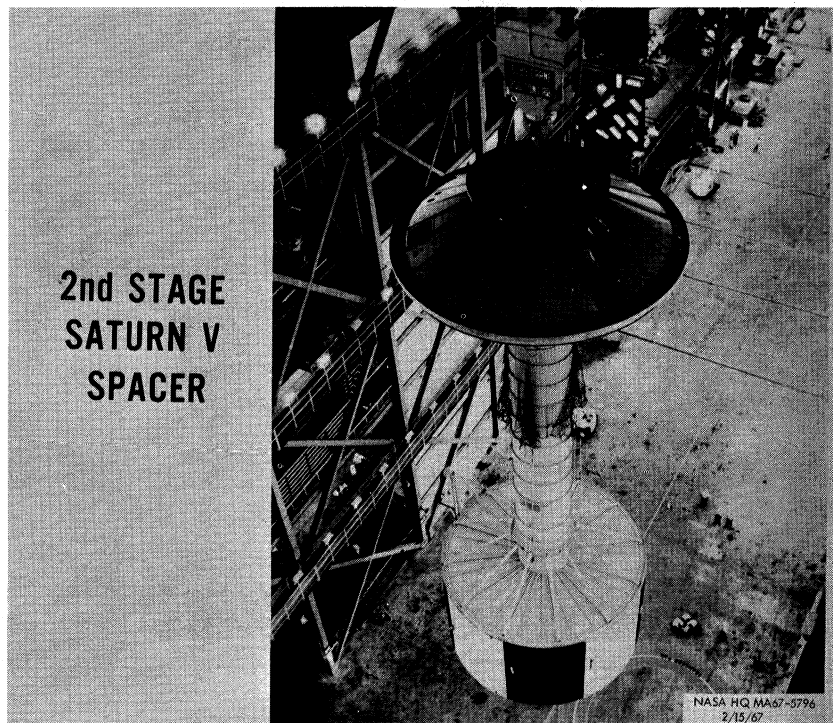


FIGURE 37

There is no impact on the early phases of our current launch schedule since the production schedule is at a point where it can accommodate an advancement of the stages to the next earlier flight.

Saturn launch vehicle engines

In 1966 we completed the qualification of our launch vehicle engines—the H-1, J-2, and F-1 (fig. 39, MA66-9215). The H-1 engine is used in a cluster of 8 on the uprated Saturn I 1st stage. The J-2 engine is used singly in the S-IVB stage, which serves as the 2nd stage for the uprated Saturn I and the 3rd stage for Saturn V, and in a cluster of 5 on the 2nd stage for Saturn V. The F-1 engine is used in a cluster of 5 on the Saturn V 1st stage.

H-1 engine

The H-1 engine was uprated to 205,000 pounds thrust and completed requalification at this level in June 1966. This uprating, accomplished with minimum modification to the engine, provides additional payload margin on the uprated Saturn I vehicle. Our flight worthiness verification testing is continuing under the sustaining engineering effort together with the flight program. H-1 production engine deliveries for the first stage of the uprated Saturn I were completed in 1966.

J-2 engine

Qualification of the uprated J-2 engine was completed in September 1966. Thrust of the uprated J-2 varies from 205,000 to 230,000 pounds depending upon the fuel mixture ratio. This uprated engine will be used in the upper stages of both the uprated Saturn I (effective on AS-207) and Saturn V (effective on AS-504), providing greater payload margins for these manned vehicles. Sustaining engineering and flight support will continue through 1967.