FILM SCRIPT

FOR

SATURN QUARTERLY FILM REPORT

No. 19

(January, February, March)

1964

4/28/64

FILM	NARRATION
FADE ON:	
SCENE 1--	
NASA Seal	
FADE TO:	
SCENE 2--	
"The George C. Marshall	
Space Flight Center Presents"	
FADE TO:	
SCENE 3--	
Art work depicting Saturn	
vehicle in vertical position	
Vehicle gradually exposed in	
the following manner.	
Red mat wiped from screen	
exposing two different colored	
crescents-gradual opening of	
crescents exposing Saturn	
vehicle. Pop on words over	
vehicle. "Saturn I/IB Quarterly	
Film Report No. 19", Jan., Feb.,	
March, 1964.	

FILM	NARRATION
FADE TO: SCENE 4--	
DISSOLVE TO: SCENE 5 Establishing shot of SA-5 on pad just before launch.	Highlighting this report period, on January 29th, was the successful launching--from Complex 37B at Cape Kennedy--of the fifth Saturn Flight vehicle SA-5.
CUT TO: SCENE 6-- Interior of blockhouse during countdown--follow up with CU's of cracked sleeves and booster stage LOX replenish line.	SA-5 was scheduled for launch in December but was re-scheduled for late January due to a problem with cracked sleeves in vehicle pneumatic lines. On January 27th the launch was scrubbed because a test flange had not been removed in an S-I stage LOX line-which prevented replenishing the stage LOX tank. The flight was rescheduled for January 29.
CUT TO: SCENE 7-- Series of shots depicting countdown--then establishing shot of radar equipment	Late January 28th, the final countdown began. The only hold was called at T-13 minutes because of RF interference on the C-band radar and command destruct frequencies. The count was picked up five minutes later, when range safety gave clearance. At _____ a.m., the stage lifted off.

FILM	NARRATION
The first flight test of the S-IV stage	SA-5 was the first Saturn I vehicle carrying a live S-IV stage. The payload was a Jupiter nose cone ballasted with nine and one-half tons of sand.
CUT TO: SCENE 8-- SA-5 vehicle in flight	During the boost phase of flight the vehicle followed very close to the predicted trajectory. Final booster engine cutoff occurred at 147 seconds of flight, with stage separation four-tenths of a second later. Separation occurred as planned and was recorded by the onboard recoverable camera.
	The payload, and the burned out S-IV stage, weighing 19 tons--heaviest weight ever orbited--were placed in an orbit having a perigee of 164 statute miles and an apogee of 480 miles. The expected lifetime of the orbiting body is 451 days.

FILM	NARRATION
DISSOLVE TO: SCENE 9-- Scenes showing S-1-6 booster and instrument unit aboard the "Promise", show barge leaving the dock-arrival at Cape Kennedy and erection in gantry.	On February 7th, the booster and the instrument unit for the sixth Saturn I flight vehicle, SA-6, were barged from the Marshall Space Flight Center. They arrived at Cape Kennedy on February 18th. S-I-6 erection on the launch pad began the following day.
Shipment of S-IV-6 from SACTO to Cape Kennedy, movement of the stage to the hanger.	On February 22nd, S-IV-6 was flown from DAC's SACTO Facility to Cape Kennedy. The stage was moved to the hanger where the LH_2 and LOX tanks were entered. Leak tests revealed several faulty welds on the LOX side of the common bulkhead. Following repair, the stage was erected on the booster during early March. On March 11, the instrument unit was erected. The Apollo boilerplate spacecraft, the first scheduled for flight, will be placed atop the launch vehicle early next quarter.

FILM	NARRATION
DISSOLVE TO: SCENE 10 Show various scenes of post-static checkout of SA-7 (stock footage) 0-1172-0-1237	At Marshall, replacement of critical tubing assemblies on the booster for the seventh flight vehicle, SA-7, was completed by February 11. Post-static, checkout which resumed after tubing replacement, neared completion by the end of the quarter. The stage is scheduled to arrive at Cape Kennedy in early June.
CUT TO: SCENE 11 Show sequence of pre-static checkout of the booster. 0-1299	Replacement of critical tubing assemblies and pre-static checkout of the booster for the eighth flight vehicle, SA-9, was completed early this quarter.
CUT TO: SCENE 12-- Show installation of stage into tower (0-1299)	The stage was moved to the static test stand in mid-February and prepared for static testing.
CUT TO: SCENE 13-- Static firing of SA-9 booster	On March 13th, the booster was successfully fired for a duration of thirty-five seconds. Later, on March 24th, a successful long duration firing of 145 seconds was accomplished. Test data is being evaluated. Post static checkout of the stage is scheduled to begin in early May.

FILM	NARRATION
DISSOLVE TO: SCENE 14-- Establishing shot of S-1-8 followed by shot of booster being prepared for shipment 0-1295 0-1200 R-2	At Marshall's Michoud Operations, replacement of critical tubing assemblies and checkout operations for S-I-8 are complete. At the end of the quarter, the Chrysler built stage was being prepared for shipment to Marshall for static testing. Chrysler assembly of S-I-10 continued throughout the quarter at Michoud.
CUT TO: SCENE 15-- Michoud input related to S-I-10 Establishing shot of S-I-10 stage at Michoud.	Fabrication and installation of critical tubing assemblies was completed during the quarter.
CUT TO: SCENE 16-- Installation of engines OM1327 Scenes 1-through 22	Installation of the H-1 inboard and outboard engines was completed in March.
CUT TO: SCENE 17-- Installation of suction lines in S-I-10 Scenes 24-29	Suction lines for the LOX and fuel containers were attached to the engines. Also, installation of the inboard suction lines forward of the engine area was accomplished. Completion of assembly and start of checkout is scheduled for the next quarter.

FILM	NARRATION
DISSOLVE TO: SCENE 18-- Input from Douglas applicable to narration	The Douglas-built S-IV-7 stage was shipped from Santa Monica to SACTO early in February. Following special modifications and repair, the stage ~~is~~ WAS being prepared for acceptance testing--scheduled for early next quarter.
CUT TO: SCENE 19-- Shows S-IV-9 in assembly area-follow up with a MCU of stage checkout (0-1256)	At Santa Monica DAC completed S-IV-9 assembly in February, and stage checkout ~~is~~ WAS underway. Completion of checkout ~~is~~ WAS scheduled for early next quarter.
CUT TO: SCENE 20-- Supporting scenes from -0-1256	Meanwhile, S-IV-8 assembly ~~is~~ WAS in progress, with installation of the forward and aft telemetry underway. Completion of assembly and initiation of stage checkout are scheduled for April.
CUT TO: SCENE 21-- Supporting scenes of S-IV-10	Also, at Santa Monica, the S-IV-10 stage has been installed in the hydrostatic tower for necessary leak checks. Completion of assembly for this stage is scheduled for late this summer.

FILM	NARRATION
CUT TO:	During this quarter, at Douglas' Sacramento SACTO Test Facility, attempts were made to static -
SCENE 22--	fire the All-Systems Vehicle for the first
Scenes of Explosion	time. Minor difficulties caused delay of
(Douglas Input)	firing on the first two attempts. On the third attempt an explosion occurred caused by overpressurizing the LOX tank. The explosion resulted in the complete loss of the vehicle, plus ~~extensive~~ damage to the test facility. NASA and DAC committees will investigate, then make a final report on the circumstances related to the incident. Meanwhile, Douglas has performed a general clean-up of the test area and, pending further use, has done necessary repair work and painting of the test stand. Marshall recommended accomplishment of major All-Systems objectives during acceptance firing of S-IV-7 and future stages on test stand 2B.

FILM	NARRATION
DISSOLVE TO: SCENE 23-- Establishing shot of S-IU-7 followed by MCU (action) of same.	At Marshall's Manufacturing Engineering Laboratory, assembly of the instrument unit for the seventh flight vehicle, SA-7, was completed early in February. Although some components were not available, checkout, which began during February, and is scheduled to be completed in May.
CUT TO: SCENE 24-- Establishing shot of S-IU-9	Assembly of S-IU-9 began March 2nd and ~~is~~ WAS proceeding satisfactorily. Completion of unit assembly is scheduled for next quarter. Vibration testing of the ~~S-IV-9~~ S-IU-9 vibration test unit began at _____ on February 17th and is on schedule.
CUT TO: SCENE 25-- Establishing shots of S-IU-8 (action) 0-1312	Structural fabrication of the S-IU-8 shell was completed at Marshall in February. The unit will be stored until late next quarter, when assembly is expected to begin.

FILM	NARRATION
CUT TO: SCENE 27-- Show best scenes of Micro-Meteorid Separation test 0-1289, 0-1302	At Marshall's Experimental Structures Branch, separation testing of the boilerplate service Module/Adapter was completed during this report period. The test objectives were to determine if the system provided a reliable and compatible separation and ejection between the adapter module and the Apollo Service Module. Final analysis of the test program, indicated that the present system, using explosive bolts, is highly reliable. Test results also enabled engineers to record the relative velocity during separation of the service module from the adapter module.
CUT TO: SCENE 26-- Sequence of shots showing vehicle in D. T. S.	At Marshall's Test Laboratory, dynamic testing began in March using the SA-9 configuration upper stage, instrument unit, Apollo boilerplate and a water ballasted dummy micro meteoroid capsule. The start of SA-9 Dynamic vehicle testing was delayed to complete Micro-meteoroid service module tests separation. Dynamic testing is scheduled for completion in July.

FILM	NARRATION
FADE OUT: then FADE IN: to artwork and new title-- SATURN I-B	
DISSOLVE TO: SCENE 28-- Setting up and test of IU re-design unit for vibration testing.	At Marshall's Manufacturing Engineering Laboratory, fabrication is in progress on a newly designed Structural Test Unit to be used for structural testing of the instrument unit designed for the Saturn IB and Saturn V vehicles. Assembly is scheduled for early next quarter. Following completion of assembly, the structure and related components will be inspected; then preparation for vibration testing will get underway.

FILM	NARRATION
DISSOLVE TO: SCENE 29 Fabrication and component testing of units (S-IB-I) 0-1250-R-2 0-1295	On March 18th, at Chrysler Michoud, work was begun on fabrication of the first S-IB stage---with pre-drilling of the spider beam center hub, hub fittings, and spline plates. Assembly of spider beam parts started within a week--with qualification testing of the beam, ~~for S-IB-I~~, to be completed early next quarter. On February 24th Chrysler began outrigger modification of S-I-III and 112 tail sections to the S-I-B configuration. The S-I propellant tanks were shipped from Michoud to the subcontractor for modification to S-IB configuration--using hardware made available through the cancellation of Saturn I production vehicles.

FILM	NARRATION
DISSOLVE TO: SCENE 30-- Related scenes to narration 0-1301 0-1304	At Marshall, installation of insulation of the Liquid Hydrogen Test Tank is underway. The ~~stage~~ Tank will be used in Marshall's J-2 engine test program. A fiberglass-plastic shroud was placed over the horizontally positioned stage to allow work to continue regardless of the weather.
DISSOLVE TO: SCENE 31-- Latest input from Douglas	Fabrication continued on the first S-IV B/IB flight stage at Douglas' Santa Monica facility. The common bulkhead bonding operation has been completed. Also, fabrication of the second began on the first of March.
DISSOLVE TO: SCENE 32-- 0-1260-Scenes 38-45	At DAC's Huntington Beach Facility joining of the Structural Test Stage LH_2 tank in the assembly tower was delayed because of a faulty weld repair area in the dome. Marshall directed Douglas to substitute the S-IVB Dynamics Test Stage forward dome. Later, in February, the Structural Test Stage major assemblies were mated at Assembly Tower No. 1, and moved to tower No. 2 for additional aft skirt machinery.

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CUT TO: SCENE 33 S-IVB Dynamics Test Stage	The LH_2 forward dome, originally allocated to the Structural Test Stage, has been repaired and is being used on the Dynamics Test Stage. The stages LH_2 and LOX tanks have been joined and the thrust structure assembly started.
DISSOLVE TO: SCENE 34-- Show S-IV-B Battleship Test Stage in Test Stand	At SACTO, work continued on the S-IV-B Battleship Test Stage. Installation of instrumentation, fill and drains-valves, vent assemblies, and other related components is underway. Cold flow testing is scheduled for late next quarter.
CUT TO: SCENE 35-- S-IV-B Test Complex construction at SACTO	Also, at SACTO, construction is well underway at the BETA Test Complex. Supporting facilities, power supplies, instrumentation tunneling and evacuation systems are complete . Data reduction support equipment is being installed in the test control center. Components and instrumentation on the Beta One Stand continued during the quarter and checkout of the various systems is in progress

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CUT TO: SCENE 36-- O-1342 Scenes 10 and 11	Meanwhile, construction of the All Systems Test Stand, Beta 3, continued during this period, with installation of structural steel and building of propellant storage tanks.
CUT TO: SCENE 37-- O-1342, Scenes 16-23	Initial Ground Support Equipment for the Beta Control Center arrived during the report period and was installed. Completion of GSE installation is scheduled next quarter. This manual GSE will be converted to automatic for acceptance-firing of S-IVB stages early next year.
DISSOLVE TO: SCENE 38-- J-2 Thrust chamber assembly OM-1281	At Canoga Park, in Rocketdynes's Structures Laboratory a hydraulic gimbal test fixture has been placed in use to test the J-2 engine gimbal bearing assembly in cycling operations.
CUT TO: SCENE 39-- OM-1281	Testing of the J-2 Thrust chamber assembly determines thrust chamber and component deflection under given load conditions.

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CUT TO: SCENE 40-- OM-1281	In Rocketdyne's vertical alignment stand, J-2 thrust chamber alignment is calibrated through a series of optical and circumferential measuring guides.
CUT TO: SCENE 41 J-2 Vertical Installer O-1323 Scenes 1-4	Also during this quarter, at Rocketdyne, Ground Support Equipment personnel proof load tested a proto-type J-2 vertical installer. The unit will be used to facilitate the installation of the J-2 engine into a test facility or vehicle stage.
CUT TO: SCENE 42 O-1323	The vertical assembler is controlled by a remote electrical panel..,
SCENE 5 CUT TO: Scene 43 Scenes 6&9	and is self propelled in both the vertical and horizontal position.

FILM	NARRATION
CUT TO: SCENE 44 Orthomat Numerically Controlled Drafting Machine O-1323 Scenes 12 thru 15	An Orthomat Numerically Controlled Drafting Machine is being used in connection with the J-2 liquid oxygen turbopump inducer development program. The machine is able to translate a punched tape into a graphic display of the computation.
DISSOLVE TO: SCENE 45 J-2 static firing O-1276, Scenes 15-20	Static firing tests of the J-2 engine were continued by Rocketdyne at its Santa Susana test Area during this quarter. Test objectives included evaluation of a new pressure control valve used to close the main LOX valve, heat transfer data and data on engine performance repeatability. Test results proved satisfactory.

THE END