DRAFT SCRIPT

for

SATURN I/IB QUARTERLY FILM REPORT

NO. ~~14~~ 25

(Covering July, August, September, 1965)

FILM	NARRATION
Scene 1-- NASA Seal	
Scene 2-- "The George C. Marshall Space Flight Center Presents"	
Scene 3-- Artwork, the pop-on words over artwork, "Saturn I/IB"	Saturn I/IB Quarterly Film Report No. ~~24~~ 25 covers progress during the period July, August, September, 1965.
Scene 4-- Preparations for launch of SA-10. Show delivery, inspection, checkout, and assembly of components for SA-10.	Highlighting this quarter was the successful launch and flight of the tenth Saturn I, SA-10, ~~and~~ successful closing out the Saturn I launch vehicle ~~the third successful orbiting of~~ program with 10 successes out of 10 scheduled. ~~a Meteoroid Technology Satellite.~~ Late last quarter, launch vehicle had been erected ~~erection was completed~~ at the pre-launch testing started. Cape and ~~was being tested~~. The spacecraft (consisting of Pegasus C within the Boilerplate ~~plate~~ Service Modules plus the and Command Modules) was erected atop SA-10. on July 2.

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The overall flight objectives of SA-10 were to: ~~provide and evaluate meteoroid data in near-earth orbit;~~ continue development of the launch vehicle iterative guidance mode; ~~and~~ continue evaluation of system accuracy; and place the Pegasus Meteoroid Technology satellite in near Earth orbit. The function of the Pegasus is to provide meteoroid data on near-earth space.

Scene 5---

Show SA-10 on pad.

Show countdown demonstration scenes, then back to SA-10 ~~on pad.~~ activity (Blockhouse Scenes)

Pre-launch checkout of SA-10 progressed satisfactorily. Following checkout, countdown demonstration testing was successfully completed. Countdown began within the scheduled time frame.

Scene 6---

Show SA-10 on launch pad prior to engine ignition, ~~show brief countdown activity; then back to SA-10 on pad.~~

SA-10 liftoff occurred July 30th at 8 a.m., Eastern Standard Time.

Scene 7---

Engine ignition, vehicle release, liftoff, tracking sequence.

SA-10, the second ~~vehicle~~ Saturn I to use an industry-produced booster marked a record of ten-out-of-ten highly successful flights.

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NARRATION

the second manufactured by Chrysler Corp.

The first stage burned for 148 seconds, separated and fell away.

Scene 7---

Show first stage burnout, then follow-up with second stage ignition and flight.

Douglas-built

The second stage burned about 480 seconds, obtaining programmed cutoff velocity. Stage performance was nominal, placing the Pegasus in the required orbit.

Scene 8---

Kinescope on Pegasus B sequence (Note: no onboard camera footage for Pegasus C).

(The following scenes are from Pegasus C kinescope)

The Apollo Command and Service Module jettisoned mechanically, and, like its predecessors, Pegasus C's wings were deployed. Pegasus C is presently obtaining information concerning quantity and penetrating ability of meteoroids in near-earth space.

Scene 9---

Use time effect to dissolve to Saturn I in flight.

The successful launch of the tenth and final Saturn I launch vehicle, SA-10, closed out one of the most successful R&D programs in the history of rocketry. The ~~brough to a close NASA's most successful rocket program - a~~ program, conceived to develop a second generation vehicle, ~~program which started this nation~~ An unprecedented ~~on the road to the moon with ten~~ of 10 scheduled launches.

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The Saturn program has provided more than a history straight successes. Saturn I has launch vehicle. It has provided the technological recorded an enviable list of ac- base now being used in developing Saturn IB and complishments in its five-year launch Saturn V. history having its beginning....., possibly at the Army Ballistic Missile Agency

Scene 10---

ABMA film showing Dr. von Braun and General Medaris looking over blueprints and drawings related to Saturn rocket.

The Saturn I program began in late .....in September 1958, under the leadership of Dr. Wernher von Braun and General John Medaris, Major The purpose of the program, under ARPA Order 14-59, was to develop a 1½ million-pound-thrust, clustered-engine first program was started within a little more than a year, including the stage. Shortly thereafter, the program was expanded development of a 1½ million-pound- to the development of a possible first launch vehicle thrust, clustered-engine first stage. for scientific payloads. 3-stage

Scene 11----

Footage showing men examining blueprints, existing facilities, equipment and models of vehicles.

During the next few months, a studies was made to determine the most expeditious manner for using existing tooling, hardware and facilities; the new facilities needed for and to formulate a plan to meet testing of even larger vehicles and future requirements - which would the upper stages. One of the results include the technical knowledge of of these studies was the decision to award various contractors. to the Douglas Aircraft Co. to develop and manufacture the second stages. Douglas immediately began work.

development the first stage. The stage consisted of a cluster of nine tanks and eight H-1 engines. The engines were an improved version of the engine used for the Jupiter and other military missiles. The first stage manufactured was a static firing test stage.

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Scene 12--- Footage showing official transfer of Saturn program from Department of Defense to NASA.	During March 1960 technical and administrative control of the Saturn Program was transferred from ARPA to NASA. In July, the George C. Marshall Space Flight Center was activated. The nucleus of the Center was the Von Braun team of rocket experts. The Saturn I development program, begun by the Department of Defense, was transferred to NASA in 1959. In early 1960, the Marshall Space Flight Center was formed.
Scene 13---- Footage showing various stages of first Static Test Vehicle.	Under the direction of Marshall, fabrication and assembly of a ground test first stage was started.
Scene 14---- Show static firing of first Static Test Vehicle.	In April 1960, successful static testing was performed on the stage. Started with the static firing Throughout the program the stage was constantly used to static test modified and design changes Modifications, design changes, and additional firings were conducted to insure a more reliable vehicle. A final acceptance firing was held in late 1962.
Scene 15--- Assembly of SA-1 (Stock footage) follow-up with flight qualification testing of stage.	A year month earlier During May 1961, the Saturn I was separated from a 3-stage Juno V booster to test a 2-stage vehicle to support the Apollo program. The design changes caused this booster would be identical with the first stage of the vehicle. Two months later, assembly of the first stage, SA-1, got underway during June 1960 Following final assembly and flight qualification testing, the first Marshall-built booster was shipped to Cape Canaveral, August 1961. It was followed by barges specially built or modified to move the large first stage.

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	At Cape Canaveral SA-I was ~~then~~ erected on the pad with ~~using~~ ~~dummy~~ upper stages, water ballasted.
Scene 16---- Flight of SA-I (Stock footage)	At 10:06 a.m., October 27, 1961, the first Saturn I was launched. The flight lasted eight minutes and was considered highly successful.
Scene 17--- Flights of SA-2, 3, and 4. (Stock footage)	Another Saturn I was launched April 25, 1962; a third, November 16, 1962; and a fourth, March 28, 1963. all were successful. Flight testing of these vehicles allowed for the continual development of the first stage, including testing of stage/ engine-out capabiliby, ~~testing of guidance and instrumentation and verification of launch support equipment.~~ (A developed engine out capability would allow the Saturn to complete its mission with the loss of one engine by directing propellant to the remaining engines.)
Scene 18--- Footage on assembly and testing Douglas' S-IV stage, shipment of stage and erection atop S-I-V. (Stock footage)	Meanwhile, the Douglas Aircraft Co. continued assembly on a live upper stage, called the S-IV. Following testing and acceptance Douglas shipped the Marshall-ordered second stage to

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	the Cape to be placed on top of the fifth Saturn booster.
Scene 19--- Flight of SA-5 (Stock footage)	SA-5 was launched January 29, 1964. It made a near perfect flight, placing more than 37,000 pounds into earth orbit.
Scene 20--- Flight of SA-6 (Stock footage)	A sixth Saturn was launched May 28, 1964, again with the first and second stages live; and again with a payload exceeding 37,000 pounds. Part of this orbiting package was ~~on~~ an early model of an Apollo spacecraft. The flight of SA-6 terminated the Saturn I R&D flights.
Scene 21--- Flight of SA-7 (Stock footage)	SA-7, the first operational flight vehicle, was launched September 18, 1964, and was highly successful. All major test objectives were met.
Scene 22--- Flight of SA-9 (Stock footage)	SA-9, launched on February 16, 1965, placed into orbit a Pegasus Meteoroid Satellite, designed to obtain

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	information concerning quantity and penetrating ability in the near-earth orbit. The satellite was developed by Fairchild-Hiller, under MSFC management, for NASA's Office of Advanced Technology.
Scene 23--- Show assembly, checkout and test of the booster for SA-8. Follow-up with launch of SA-8	The SA-8 booster was assembled, checked out, and tested at Marshall's Michoud Facilities. The Chrysler-built booster was the first industry produced first stage.
Scene 24--- Flight of SA-8	SA-8 was launched May 25, 1965. It was the ninth straight successful Saturn - placing the second meteoroid satellite in near-earth orbit. SA-10's flight closed the Saturn I program with a completely successful record. The Saturn I program enabled great strides in guidance, instrumentation and aerodynamic capabilities already proved useful in the Saturn IB program.

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Scene 26--- S-IV-201 component assembly and checkout	Component ~~assembly~~ installation for the first flight Saturn IB Instrument Unit, designated 201, was completed August 26th.
Scene 27--- IV Checkout Station at IBM.	Activation of IBM's Checkout Station was accomplished with checkout of ~~IV~~ IU-201. Checkout continued through September with shipment to KSC scheduled for October.
Scene 28---- Input from Douglas on S-IVB-201	On August 4th, at Douglas' SACTO Facility, S-IVB-201 underwent two unsuccessful long-duration firings. Four days later, the stage was successfully fired for a period of 453 seconds. Post-static operations were then conducted through August 15th. The stage was removed from the Test Stand August 28th and preparations for shipment begun. On September 3rd, the stage was barged from SACTO and later shipped by sea to KSC, arriving September 18th.

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	It was housed in Hangar AF where structural modifications and repair of debonded insulation is in process.
Scene 29--- Chrysler input showing final checkout of S-IB-1, shipment from Michoud and arrival at KSC.	S-IB-1 post-static checkout, started last quarter, was completed July 19th. Preparation for stage shipment from Chrysler-Michoud to KSC continued from mid-July through August 9th. It was shipped the same day arriving at the Cape August 14th.
Scene 30--- Cape input showing S-IB-1 in Hangar AF. Followup with stages of erection into tower on L.C. 34.	The stage was moved into Hangar AF for fin installation. On August 11th it was erected on Launch Complex 34. About ten days later, stacking of the second stage, instrument unit and Boilerplate Apollo was completed in preparation for facilities check-out to prove compatibility of both the launch vehicle and launch facilities.

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Scene 31---- Show modifications and re-installation of upper stages on Saturn IB Dynamic Test Stand	At Marshall's Saturn IB Dynamic Test Area, modifications to the Test Stand, changeover to upper stage configuration, and re-installation of upper stages was completed July 29th.
Scene 32---- Saturn IB Dynamic testing	Upper stage dynamic testing continued through the quarter with completion of testing September 11th.
Scene 33--- Conversion from Saturn IB hardware to Saturn V hardware configuration.	Following successful IB dynamic testing, conversion to Saturn V hardware configuration for use in Saturn V Dynamic test Program got underway.
Scene 34--- Stock footage of structural testing of S-IV-200/500S at MSFC	Structural testing of the first three instrument units built by General Dynamics was successfully completed July 22nd.

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Scene 35--- IBM input on NAA, built structural test unit	The second in a series of structural test units assembled by IBM/Huntsville - using segments manufactured by North American Aviation, was rejected by MSFC due to discrepancies. Following necessary re-tooling, a second unit was assembled and delivered September 30th. Preparation for testing and structural testing will start next quarter.
Scene 36--- Static firings at Marshall on S-IB-2. Input from Chrysler.	At Marshall, S-IB-2 underwent two successful routine static firings, the first on July 9th, the second on July 20th. The stage was then shipped to Michoud August 1st, arriving August 6th. Modification and repair to the stage continued throughout the quarter, until post-static checkout began date September. Delivery to KSC is scheduled for mid-December.

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Scene 37--- Input from Chrysler on S-IB-3.	Also, at Chrysler, Michoud, S-IB-3 checkout, started late last quarter, was completed August 14th. Preparations for stage shipment to Marshall continued to September 9th. It was shipped by barge the same day arriving September 16th. Static testing is scheduled for October.
Scene 38--- Input from Chrysler on S-IB-4	S-IB-4 assembly was completed in September. Pre-static checkout of the stage got underway September 13th and continued through the quarter.
Scene 39--- Input from Chrysler on S-IB-5	Stage fabrication for S-IB-5 was completed July 15th. Tank clustering started the same day and was completed in mid-August. Stage assembly continued through remainder of quarter.
Scene 40--- Input from Chrysler on S-IB-6 and S-IB-7	S-IB-6 Stage fabrication, started last quarter, continued through this period with tank clustering expected to begin next quarter.

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	S-IB-7 fabrication started August 19th with fabrication of the lower thrust ring. Fabrication of the upper thrust ring began August 26th. All work effort continued through the remainder of the quarter.
Scene 41--- Input from Douglas on S-IVB/202.	At Douglas' Huntington Beach Facility, S-IVB/202 checkout was terminated August 12th. It was shipped aboard the NASA barge "ORION" August 28th; arriving Courtland Dock 3 days later. The stage was offloaded and installed in Beta Test Stand No. 3 the morning of September 2nd. Pre-firing operations are in process - with static firing and delivery to Cape Kennedy scheduled for next quarter.
Scene 42--- Input from Douglas on S-IVB/203	S-IV-B/203 checkout, begun August 14th was terminated August 28th. The stage underwent final component installation through September 17th. The next day it was returned to the tower for combined manufacturing and checkout.

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Scene 43--- Input from Douglas on S-IVB/204	S-IVB/204 assembly operations, started last quarter, continued with joining of the forward and aft skirt and thrust structure in early September. On September 20th a J-2 engine was installed. System checkout started last quarter and will continue next period.
Scene 44--- Input from Douglas on S-IVB/205	LOX and LH_2 tank installation for S-IVB/205 was completed this quarter. Insulation of the stage's LH_2 tank was completed in early September. Modifications and repair are in process.
Scene 45--- Input from Douglas on S-IVB/206	S-IVB/206 work progress continued with joining of the forward and aft common dome to form the common bulkhead. Assembly of the LOX tank was completed in mid-September. The stage was then shipped from Santa Monica to Huntington Beach for assembling the LH_2 and LOX tanks in the tower.

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Scene 46--- Input from Douglas on S-IVB/207	Stage fabrication, for S-IVB/207 began early this quarter. Contractor efforts showed that by mid-September welding of the forward and aft common dome was completed. The domes went to the insulation bonding room for honeycomb insulation and bonding to form the commong bulkhead.
Scene 47-- Douglas input showing work on Beta Stand No. 1.	Following completion of Saturn V S-IV-B Battleship testing August 20th, preparations began for converting the stand for checkout and static firing S-IVB flight stages. Additional checkout equipment will be installed on the stand prior to the erection of the first flight stage, S-IVB/203.
Scene 48-- Stock footage showing component assembly of an IV.	At IBM, Huntsville, S-IV/202 component assembly, started last quarter, continued through September, with completion and checkout scheduled for next quarter. Shipment to the Cape is scheduled in December.

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Scene 49-- Stock footage showing structural and component assembly of an IV	S-IV-203 structural assembly was completed in early September. Component assembly is in process with completion of assembly and unit checkout scheduled for next quarter. S-IV-204 structural segments furnished by North American Aviation were received at IBM September 15th and are now in receiving inspection.
Scene 50-- Cape input on Ground Support Equipment for VLF-34	At KSC, mechanical system equipment was delivered during this quarter for use at VLF-34. Most electrical system equipment has been received to date. Installation of GSE is scheduled for completion next quarter.
Scene 51-- Static firing of J-2 eninge in MSFC's S-IVB Battleship Test Stand.	At Marshall, the second J-2 engine delivered by Rocketdyne underwent initial static firing during August in the Center's new S-IVB Battleship Test Stand.

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Scene 52--- J-2 engine static firing at Sanata Susana (Stock footage)	Rocketdyne's J-2 Engine Flight Rating Test series, begun last quarter, was completed July 21st at Santa Susana. Twenty-five firings were conducted for a total performance of 46 minutes. Deficiencies will be corrected prior to completion of engine qualification. FRT Engine Nr.2003 was disassembled for engineering inspection in August.
Scene 53--- Additional J-2 engine firings	Engine Nr.2032 was acceptance-tested and 200K Qualification Test Series began at Delta Two Test Stand in August. Qualification tests are due to be completed late next quarter.
Scene 54--- J-2 Product-improvement program OM-1869 (Confidential)	Rocketdyne's J-2 product-improvement program included the manufacturing of a new canted-choke ring to offset the opening towards the turbine inlet, with the desired effect of reducing skin temperatures. A test run with the standard ring produced skin temperatures up to 1700 degrees Fahrenheit in the combustion zone. A test

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	run with the re-designed ring produced no apparent overheating. Maximum temperature was reduced approximately 870 degrees in each of more than 100 tests.
Scene 55-- OM-1849	A new device, called a four-axis numerical control measuring-inspection machine is being used by Rocketdyne in connection with J-2 injector assembly. It permits time reduction as well as increased reliability of measuring data, and fulfills Rocketdyne's integrated systems approval of using numerical control from design intent to finished component.
Scene 56--- Input showing damage caused by Hurricane Betsy.	At Michoud, clean-up of the facility is still underway as a result of Hurricane Betsy's strike September 9th. The wind and high water forced barges onto land at the Michoud Dock. Superficial damage was experienced by structures, roads and grounds. No impact in schedule is expected as a result of the hurricane.

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Scene 57-- Flight of Super Guppy to MSFC.	The Super Guppy was flown into MSFC September 17th. NASA announced the selection of Aero Spacelines, Inc. of Van Nuys, California for negotiation of a contract to provide air transportation for large cargoes. The Super Guppy is capable of carrying both an S-IV-B and an instrument unit from Marshall to Cape Kennedy.
Scene 58--- Summary	In summary, the months, July, August, and September witnessed the close of the highly successful Saturn I program and major milestones within the IB program: Preparations for the flight of Saturn IB...., ...continued Saturn IB stage buildup....., ...activation of Marshall's Battleship Stage Facility..., ...Assembly, delivery and testing of Ground Support Equipment..., ...and new methods of transportation.