1
00:00:13,290 --> 00:00:18,250
The uprated Saturn I Quarterly Film Report
Number 28 covers progress during het period

2
00:00:18,250 --> 00:00:28,849
April, May, June 1966.

3
00:00:28,849 --> 00:00:33,840
In preparation for the launch of AS-203, the
Chrysler-built booster for the second uprated

4
00:00:33,840 --> 00:00:39,410
Saturn I launch vehicle was whipped from Marshall's
Michoud Facility on April 7.

5
00:00:39,410 --> 00:00:42,290
It Arrived at Cape Kennedy five days later.

6
00:00:42,290 --> 00:00:46,750
It was moved into hanger AF for pre-erection
inspection and checkout.

7
00:00:46,750 --> 00:00:52,470
On April 18, the stage was erected on LC 37B.

8
00:00:52,470 --> 00:00:57,740
On April 4, the Douglas-built second stage
was flown from the west coast to Cape Kennedy,

9
00:00:57,740 --> 00:01:03,690
marking the first delivery of flight-type
second stage aboard the Super Guppy.

10
00:01:03,690 --> 00:01:08,060
On April 14, the instrument unit was flown
from Marshall to the Cape aboard the Super

11
00:01:08,060 --> 00:01:10,220
Guppy.

12
00:01:10,220 --> 00:01:17,130
The nosecone was barged from Marshall to KSC
aboard the Poseidon last quarter.

13
00:01:17,130 --> 00:01:22,140
On April 21, the second stage, instrument
unit, and nosecone were attacked atop the

14
00:01:22,140 --> 00:01:23,140
booster.

15
00:01:23,140 --> 00:01:29,360
Prelaunch activities for AS-203 then got underway
and continued through the quarter.

16
00:01:29,360 --> 00:01:34,400
The prime mission of AS-203 will be to place
the second stage with about ten tons of liquid

17
00:01:34,400 --> 00:01:38,670
hydrogen into ta circular orbit of 100 nautical
miles.

18
00:01:38,670 --> 00:01:43,310
This will allow Marshall space scientists
to study the dynamics of liquid hydrogen under

19
00:01:43,310 --> 00:01:48,600
weightlessness and verify that the stage's
engine can be restarted in orbit.

20
00:01:48,600 --> 00:01:54,850
Objectives of the tests include determining
if the continuous venting system and thrusters

21
00:01:54,850 --> 00:01:59,150
will properly seep the liquid hydrogen in
the bottom of the tanks and if the engine

22
00:01:59,150 --> 00:02:06,490
can be adequately chilled down to simulate
Saturn V S-IVB orbital operations.

23
00:02:06,490 --> 00:02:11,040
At Marshall’s System Development Facility,
in unison with Launch Preparations at Kennedy

24
00:02:11,040 --> 00:02:17,069
Space Center, work efforts continued on development
and verification of the computer program tapes

25
00:02:17,069 --> 00:02:18,400
of automatic checkout of AS-203.

26
00:02:18,400 --> 00:02:24,909
AS-203 is scheduled for launch on July 5.

27
00:02:24,909 --> 00:02:31,239
Following completion of vehicle erection at
Launch Complex 34 last quarter, SA-202 continued

28
00:02:31,239 --> 00:02:34,549
in preflight checkout throughout the report
period.

29
00:02:34,549 --> 00:02:37,719
AS-202 launch is planned for next quarter.

30
00:02:37,719 --> 00:02:42,950
Its mission will be to launch the Apollo spacecraft
into suborbital flight ending in the Pacific

31
00:02:42,950 --> 00:02:45,120
Ocean near Wake Island.

32
00:02:45,120 --> 00:02:49,659
During reentry, the spacecraft ablative heat
shield will be tested under the high heat

33
00:02:49,659 --> 00:02:57,239
loads of reentry.

34
00:02:57,239 --> 00:03:01,239
At Marshall’s Michoud Assembly Facility,
Chrysler completed post-static checkout May

35
00:03:01,239 --> 00:03:04,430
25 on the booster for the fourth flight vehicle.

36
00:03:04,430 --> 00:03:09,010
The stage is scheduled for shipment to the
Cape next quarter.

37
00:03:09,010 --> 00:03:13,290
Following he second successful static firing,
a leak was detected inside the thrust chamber

38
00:03:13,290 --> 00:03:17,379
on engine position number four of the fifth
flight booster.

39
00:03:17,379 --> 00:03:21,439
Investigation revealed a horizontal crack
in a tube about ten inches below the injector

40
00:03:21,439 --> 00:03:22,439
face.

41
00:03:22,439 --> 00:03:26,700
The engine was removed and shipped to Rocketdyne
Neosho for a repair.

42
00:03:26,700 --> 00:03:31,400
The booster was shipped back to Michoud on
April 7, arriving six days later.

43
00:03:31,400 --> 00:03:36,790

Modification was performed, including replacement
of the repaired engine, and post-static checkout

44
00:03:36,790 --> 00:03:40,680
began on May 31.

45
00:03:40,680 --> 00:03:44,969
Pre-static checkout of the six flight vehicle
booster was completed early this quarter.

46
00:03:44,969 --> 00:03:49,769
The stage was shipped to Marshall from Michoud
May 19, arriving May 28.

47
00:03:49,769 --> 00:03:53,169
It was installed in the Static Test Stand
May 31.

48
00:03:53,169 --> 00:03:58,819
A short-duration firing was conducted June
23, followed by a long-duration firing June

49
00:03:58,819 --> 00:03:59,819
29.

50
00:03:59,819 --> 00:04:05,040
This test series marks another milestone in
the Saturn IB Program since the Rocketdyne-built

51
00:04:05,040 --> 00:04:09,450
engines have been uprated to 205,000 pounds
thrust.

52
00:04:09,450 --> 00:04:14,559
No problems were encountered except for a
thrust chamber leak on one engine, which necessitated

53
00:04:14,559 --> 00:04:16,800
engine removal for a repair.

54
00:04:16,800 --> 00:04:22,130
A replacement engine was installed to preserve
schedule, and the stage is undergoing preparation

55
00:04:22,130 --> 00:04:26,919
for shipment to Michoud, planned for next
quarter.

56
00:04:26,919 --> 00:04:31,600
Assembly of the first stage for the seventh
flight vehicle was completed in mid-quarter.

57
00:04:31,600 --> 00:04:36,820
Pre-static checkout got underway May 31, about
two and one-half weeks ahead of schedule.

58
00:04:36,820 --> 00:04:41,510
Checkout is scheduled for completion early
next quarter.

59
00:04:41,510 --> 00:04:45,020
Fabrication of the eighth flight booster was
completed early this quarter.

60
00:04:45,020 --> 00:04:52,120
Stage assembly started April 14 and is scheduled
for completion early next quarter.

61
00:04:52,120 --> 00:04:55,220
Fabrication of the ninth flight vehicle was
completed in June.

62
00:04:55,220 --> 00:04:57,090
Assembly is underway.

63
00:04:57,090 --> 00:05:01,750
Also at Michoud, fabrication of the tenth
flight vehicle was started in early April

64

00:05:01,750 --> 00:05:05,810
and continued throughout the report period.

65
00:05:05,810 --> 00:05:10,700
Chrysler has only two more boosters remaining
to be manufactured under the present contract.

66
00:05:10,700 --> 00:05:14,650
All of the long lead time items for these
two have been procured.

67
00:05:14,650 --> 00:05:20,610
First stage LOX tank qualification testing
continued early this quarter by Chrysler at

68
00:05:20,610 --> 00:05:21,690
Michoud.

69
00:05:21,690 --> 00:05:28,120
Both the seventy inch and the 105 inch tanks
were tested to 125 percent design load, meeting

70
00:05:28,120 --> 00:05:32,520
test completion deadline and requirements
for SA-203.

71
00:05:32,520 --> 00:05:38,360
Additional testing is being conducted to qualify
the tanks to 140 percent design load for manned

72
00:05:38,360 --> 00:05:39,430
flight reliability.

73
00:05:39,430 --> 00:05:46,020
The 105 inch LOX tank has been tested to 140
percent of design load under all condition

74
00:05:46,020 --> 00:05:47,370
except two.

75
00:05:47,370 --> 00:05:56,460
The seventy inch tank has been qualified under
all conditions except maximum thin load.

76
00:05:56,460 --> 00:06:04,730
Meanwhile, at Douglas' SACTO Facility, the
second stage for the fourth flight vehicle

77
00:06:04,730 --> 00:06:10,470
underwent modification, rework, and post-static
checkout at the vertical checkout laboratory.

78
00:06:10,470 --> 00:06:14,770
The stage was accepted by Marshall at SACTO
on May 6.

79
00:06:14,770 --> 00:06:18,340
Shipment to Cape Kennedy will be next quarter.

80
00:06:18,340 --> 00:06:22,710
The second stage for the fifth flight vehicle
was shipped from Huntington Beach to SACTO

81
00:06:22,710 --> 00:06:24,030
April 9.

82
00:06:24,030 --> 00:06:29,810
On April 13, the stage was installed in the
Beta 3 Test Stand where pre-static and subsystem

83
00:06:29,810 --> 00:06:32,560
checkout proceeded at scheduled.

84
00:06:32,560 --> 00:06:38,810
Following a successful 440second acceptance
firing on June 2, post-static checkout was

85
00:06:38,810 --> 00:06:43,030
completed June 28.

86
00:06:43,030 --> 00:06:47,470
Following installation of the J-2 engine in
April for the sixth flight vehicle second

87
00:06:47,470 --> 00:06:52,810
stage and factory checkout completion in late
May, final inspection was made and the stage

88
00:06:52,810 --> 00:06:55,340
was shipped to SACTO June 30.

89
00:06:55,340 --> 00:07:01,050
In April, Douglas completed joining of the
thrust structure and forward and aft skirts

90
00:07:01,050 --> 00:07:06,600
of the second stage of the seventh flight
vehicle and installed the engine in May.

91
00:07:06,600 --> 00:07:10,620
Factory checkout was started and continued
through the report period.

92
00:07:10,620 --> 00:07:14,720
Completion of checkout is scheduled for early
next quarter.

93
00:07:14,720 --> 00:07:19,080
The second stage of the eighth flight vehicle
was removed from the insulation chamber on

94
00:07:19,080 --> 00:07:20,330
June 6.

95
00:07:20,330 --> 00:07:25,590
Necessary cleaning and miscellaneous parts
installations were completed in June.

96

00:07:25,590 --> 00:07:30,280
Factory checkout will take place next quarter.

97
00:07:30,280 --> 00:07:33,650
Manufacturing was completed on the common
bulkhead for the second stage of the ninth

98
00:07:33,650 --> 00:07:35,900
flight vehicle at Santa Monica.

99
00:07:35,900 --> 00:07:40,950
Welding of the liquid hydrogen tank segments
and LOX tank assemblies was completed and

100
00:07:40,950 --> 00:07:44,840
the LOX tank was shipped to Huntington Beach
June 16.

101
00:07:44,840 --> 00:07:49,680
Stage assembly will be completed next quarter.

102
00:07:49,680 --> 00:07:53,740
Fabrication of the tenth flight vehicle's
second stage was started last quarter and

103
00:07:53,740 --> 00:07:58,139
was drawing to a successful close at the end
of this report period.

104
00:07:58,139 --> 00:08:03,180
Assembly and miscellaneous testing is planned
for next quarter.

105
00:08:03,180 --> 00:08:09,139
On April 13 at SACTO during S-IVB structural
testing, the common bulkhead and LOX tank

106
00:08:09,139 --> 00:08:10,340
failed.

107
00:08:10,340 --> 00:08:14,740
The failure is being thoroughly investigated
by Marshall and Douglas personnel.

108
00:08:14,740 --> 00:08:20,360
However, subsequent structural testing on
the hydrostatic test tank specimen qualified

109
00:08:20,360 --> 00:08:28,960
the design.

110
00:08:28,960 --> 00:08:33,729
At IBM Huntsville, component installation
in the fourth flight instrument unit, started

111
00:08:33,729 --> 00:08:37,450
last period, was completed the first week
in May.

112
00:08:37,450 --> 00:08:39,940
Checkout began in May and was completed on
June 28.

113
00:08:39,940 --> 00:08:46,240
The unit will be shipped from IBM to the Cape
early next quarter.

114
00:08:46,240 --> 00:08:52,449
The fifth flight IU structural fabrication
started last quarter was completed May 4.

115
00:08:52,449 --> 00:08:59,290
Component installation was begun ten days
later with completion planned for next quarter.

116
00:08:59,290 --> 00:09:04,009
Also at IBM Huntsville, structural fabrication
was started for the sixth flight instrument

117

00:09:04,009 --> 00:09:11,170
unit.

118
00:09:11,170 --> 00:09:18,180
At Marshall, work effort is underway for in-house
manufacture of four uprated Saturn I nosecones.

119
00:09:18,180 --> 00:09:24,850
These units will be carried atop the vehicles
which will place lunar modules into orbit.

120
00:09:24,850 --> 00:09:28,959
In late April, ten astronauts visited the
Marshall Center for briefings on the uprated

121
00:09:28,959 --> 00:09:30,709
Saturn I Program.

122
00:09:30,709 --> 00:09:36,370
Among the group are the three men who will
fly the first manned Saturn, Apollo 1B Mission,

123
00:09:36,370 --> 00:09:42,639
Virgil Grissom, Command Pilot, Edward White,
and Roger Chaffee.

124
00:09:42,639 --> 00:09:47,870
The astronauts were given briefings, including
primary hardware description and design philosophy

125
00:09:47,870 --> 00:09:51,110
by Saturn engineers and management officials.

126
00:09:51,110 --> 00:09:55,470
The astronauts also studied flight data on
the performance of the first uprated Saturn

127
00:09:55,470 --> 00:10:01,970
I, which launched an unmanned Apollo spacecraft
last quarter.

128
00:10:01,970 --> 00:10:07,350
A summary of the Saturn IB program through
the months April, May, and June shows major

129
00:10:07,350 --> 00:10:15,559
accomplishments in all areas, continued buildup
of Saturn IB stages and equipment, acceleration