1
00:00:32,870 --> 00:00:30,040
[Music]

2
00:00:35,060 --> 00:00:32,880
the highlight this report period was the

3
00:00:37,850 --> 00:00:35,070
successful flight of the fourth Saturn

4
00:00:42,139 --> 00:00:37,860
1b launch vehicle using the overall

5
00:00:44,479 --> 00:00:42,149
flight designation of Apollo 5 the SI

6
00:00:47,770 --> 00:00:44,489
204 launch vehicle had been on the pad

7
00:00:50,510 --> 00:00:47,780
at KSC for approximately 18 months

8
00:00:52,610 --> 00:00:50,520
during this time period corrosion and

9
00:00:55,069 --> 00:00:52,620
electrical inspections were conducted as

10
00:00:59,029 --> 00:00:55,079
well as a complete operational system

11
00:01:03,020 --> 00:00:59,039
safety review the Apollo 5 space vehicle

12
00:01:07,940 --> 00:01:03,030
a s 204 LM 1 was launched on January

13
00:01:11,750 --> 00:01:07,950

22nd 1968 liftoff was scheduled at 1900

14
00:01:15,080 --> 00:01:11,760
GMT with one six-hour built in hold at t

15
00:01:18,230 --> 00:01:15,090
3:30 or true rest and unscheduled work

16
00:01:21,410 --> 00:01:18,240
an unscheduled hold of three hours and

17
00:01:24,620 --> 00:01:21,420
48 minutes duration occurred at t 2:30

18
00:01:26,749 --> 00:01:24,630
because of two problems one hour 28

19
00:01:28,789 --> 00:01:26,759
minutes of this hold was attributed to

20
00:01:30,710 --> 00:01:28,799
ground support equipment associated with

21
00:01:33,890 --> 00:01:30,720
a spacecraft environmental control

22
00:01:36,200 --> 00:01:33,900
system and the remaining hold period was

23
00:01:43,510 --> 00:01:36,210
attributed to failure of a power supply

24
00:01:49,810 --> 00:01:46,490
liftoff was at 5:48 p.m. Eastern

25
00:01:52,819 --> 00:01:49,820
Standard Time from complex 37b

26
00:01:55,940 --> 00:01:52,829
engineering evaluation of the a s 204

27
00:01:58,910 --> 00:01:55,950
Saturn 1b launch vehicle the final R&D

28
00:02:00,859 --> 00:01:58,920
vehicle in the 1b program indicates that

29
00:02:03,340 --> 00:02:00,869
all the primary and secondary mission

30
00:02:06,200 --> 00:02:03,350
objectives were successfully achieved

31
00:02:10,660 --> 00:02:06,210
this launch vehicle performed closer to

32
00:02:12,740 --> 00:02:10,670
nominal than any Saturn vehicle to date

33
00:02:13,640 --> 00:02:12,750
primary launch vehicle mission

34
00:02:15,110 --> 00:02:13,650
objectives

35
00:02:18,050 --> 00:02:15,120
evaluation of the launch vehicle

36
00:02:21,530 --> 00:02:18,060
attitude control system and maneuvering

37
00:02:24,009 --> 00:02:21,540
capability verification of s4b liquid

38
00:02:28,369 --> 00:02:24,019

hydrogen and oxygen tank pressurization

39
00:02:30,619 --> 00:02:28,379
characteristics demonstration of nose

40
00:02:32,420 --> 00:02:30,629
cone separation and evaluation of

41
00:02:34,699 --> 00:02:32,430
operational adequacy of the launch

42
00:02:37,059 --> 00:02:34,709
vehicle systems including guidance

43
00:02:40,130 --> 00:02:37,069
control electrical mechanical and

44
00:02:42,470 --> 00:02:40,140
instrumentation minor performance

45
00:02:44,509 --> 00:02:42,480
deviations were noted and action is

46
00:02:47,899 --> 00:02:44,519
being taken to prevent these in future

47
00:02:50,000 --> 00:02:47,909
vehicles because of the combined success

48
00:02:53,270 --> 00:02:50,010
of both launch vehicle and lunar module

49
00:02:58,509 --> 00:02:53,280
hardware the backup mission of a s 206

50
00:03:04,309 --> 00:03:02,000
all other Saturn 1b stages are on or

51
00:03:06,410 --> 00:03:04,319
ahead of schedule highlighting the

52
00:03:09,440 --> 00:03:06,420
booster stages activity during this

53
00:03:13,640 --> 00:03:09,450
quarter was the static testing of s 1b

54
00:03:16,129 --> 00:03:13,650
11 at MSFC as a result of combustion

55
00:03:19,250 --> 00:03:16,139
stability tests on R&D engines at the

56
00:03:20,930 --> 00:03:19,260
neo show test facility it had been

57
00:03:22,490 --> 00:03:20,940
determined that test facility

58
00:03:26,960 --> 00:03:22,500
characteristics could contribute to

59
00:03:28,819 --> 00:03:26,970
undamped engine instability in order to

60
00:03:31,189 --> 00:03:28,829
determine the influence of the s 1b

61
00:03:34,280 --> 00:03:31,199
stage structure on h1 engine combustion

62
00:03:36,680 --> 00:03:34,290
stability the Chrysler Corporation was

63
00:03:40,670 --> 00:03:36,690

directed in late December to perform

64
00:03:42,229 --> 00:03:40,680
engine stability tests on s1 b11 using R

65
00:03:44,990 --> 00:03:42,239
and D engines and BOM induced

66
00:03:49,580 --> 00:03:45,000
instability to determine stage damping

67
00:03:51,710 --> 00:03:49,590
characteristics the first test went for

68
00:03:54,800 --> 00:03:51,720
the full 15 second direction January

69
00:03:58,039 --> 00:03:54,810
25th using one R and D engine for the

70
00:03:59,659 --> 00:03:58,049
test the peak pulse lasted less than 4

71
00:04:05,629 --> 00:03:59,669
milliseconds which was considered

72
00:04:08,809 --> 00:04:05,639
satisfactory to R&D engines were bombed

73
00:04:13,300 --> 00:04:08,819
in the next test on February 6 damping

74
00:04:21,740 --> 00:04:15,710
testing on February 14th gave

75
00:04:24,170 --> 00:04:21,750
essentially the same data the fourth

76
00:04:26,510 --> 00:04:24,180
was terminated after three seconds due

77
00:04:28,850 --> 00:04:26,520
to a failure and fire in the gearcase of

78
00:04:33,170 --> 00:04:28,860
engine number eight which was not under

79
00:04:36,410 --> 00:04:33,180
bomb testing this failure was thoroughly

80
00:04:39,200 --> 00:04:36,420
investigated by MSFC and the contractors

81
00:04:41,270 --> 00:04:39,210
concerned cause of the failure was

82
00:04:44,060 --> 00:04:41,280
attributed to gross leakage of locks

83
00:04:46,970 --> 00:04:44,070
past the lock seal in the h1 engine

84
00:04:49,310 --> 00:04:46,980
locks pump the leakage was attributed to

85
00:04:51,950 --> 00:04:49,320
either a broken carbon seal or a failure

86
00:04:55,670 --> 00:04:51,960
of the caliphs lip seal during engine

87
00:04:57,590 --> 00:04:55,680
start as a result of the failure MSFC is

88
00:05:00,170 --> 00:04:57,600

planning to test both lip seal and

89
00:05:03,650 --> 00:05:00,180
bellows type seals in static tests

90
00:05:05,780 --> 00:05:03,660
during April based on test data from

91
00:05:08,330 --> 00:05:05,790
these future tests determination will be

92
00:05:11,870 --> 00:05:08,340
made as to which type seals will be used

93
00:05:14,240 --> 00:05:11,880
on 205 further as a result of this

94
00:05:16,220 --> 00:05:14,250
failure the decision was made to install

95
00:05:18,820 --> 00:05:16,230
temperature measurement instrumentation

96
00:05:21,320 --> 00:05:18,830
in the locked seal cavity drain lines

97
00:05:23,060 --> 00:05:21,330
this measurement will be interlocked to

98
00:05:25,610 --> 00:05:23,070
launch control to guard against this

99
00:05:28,040 --> 00:05:25,620
failure mode components of the

100
00:05:31,250 --> 00:05:28,050
configuration measurement system will be

101
00:05:34,640 --> 00:05:31,260
tested on s1 b11 and the full system

102
00:05:40,130 --> 00:05:34,650
will be tested on s1 b12 and will be

103
00:05:42,670 --> 00:05:40,140
installed on a s 205 the status of other

104
00:05:46,130 --> 00:05:42,680
s 1b stages is as follows

105
00:05:48,680 --> 00:05:46,140
s1 b5 the first scheduled man Saturn

106
00:05:51,890 --> 00:05:48,690
flight booster was shipped from issue on

107
00:05:56,510 --> 00:05:51,900
March 25th and arrived at the KSC Saturn

108
00:06:00,530 --> 00:05:56,520
dock March 28th as of the end of the

109
00:06:02,030 --> 00:06:00,540
quarter s 1b stages 6 8 9 10 and 12 were

110
00:06:06,860 --> 00:06:02,040
in storage at the Michoud assembly

111
00:06:10,310 --> 00:06:06,870
facility modifications started in

112
00:06:13,310 --> 00:06:10,320
January on s1 b7 in preparation for the

113
00:06:15,800 --> 00:06:13,320

206 207 dual launch rendezvous mission

114
00:06:18,710 --> 00:06:15,810
if such a mission is required for the

115
00:06:20,090 --> 00:06:18,720
Apollo program several components have

116
00:06:23,030 --> 00:06:20,100
been removed during the quarter for

117
00:06:28,159 --> 00:06:23,040
updating electrical power was applied to

118
00:06:31,310 --> 00:06:28,169
the stage March 15 the status of the

119
00:06:33,640 --> 00:06:31,320
second or s4b stages of the Saturn 1b as

120
00:06:35,660 --> 00:06:33,650
of the end of the quarter is as follows

121
00:06:37,880 --> 00:06:35,670
s4 B 205

122
00:06:40,760 --> 00:06:37,890
completed post storage tests and check

123
00:06:46,510 --> 00:06:40,770
out during the quarter shipment to KSC

124
00:06:54,980 --> 00:06:51,920
s4b stages 206 207 208 and 209 are in

125
00:06:57,200 --> 00:06:54,990
storage at Sacto stages 210 and two

126
00:07:02,600 --> 00:06:57,210
eleven are in storage at Huntington

127
00:07:04,160 --> 00:07:02,610
Beach s4b 212 presently designated as

128
00:07:06,530 --> 00:07:04,170
the stage for use in the orbital

129
00:07:11,030 --> 00:07:06,540
workshop mission was undergoing Apollo

130
00:07:13,640 --> 00:07:11,040
modification work during the quarter the

131
00:07:17,000 --> 00:07:13,650
s4b orbital workshop mock-up was shipped

132
00:07:22,880 --> 00:07:17,010
to MSFC by a super guppy from McDonnell

133
00:07:25,070 --> 00:07:22,890
Douglas on January 16 1968 extensive

134
00:07:26,900 --> 00:07:25,080
crew station and documentation reviews

135
00:07:29,630 --> 00:07:26,910
were conducted on the workshop mock-up

136
00:07:32,630 --> 00:07:29,640
during this period taking part in these

137
00:07:34,460 --> 00:07:32,640
reviews were several astronauts the

138
00:07:36,650 --> 00:07:34,470

astronauts were well satisfied with the

139
00:07:38,420 --> 00:07:36,660
mock-up and their participation in the

140
00:07:41,120 --> 00:07:38,430
reviews allows incorporation of

141
00:07:44,450 --> 00:07:41,130
operational aspects into the design in a

142
00:07:46,460 --> 00:07:44,460
timely and efficient manner evaluation

143
00:07:49,160 --> 00:07:46,470
of data resulting from the review is

144
00:07:52,100 --> 00:07:49,170
continuing at the end of the quarter

145
00:07:55,010 --> 00:07:52,110
approximately 285 engineering drawings

146
00:07:57,020 --> 00:07:55,020
of a total of 1100 have been released

147
00:08:00,170 --> 00:07:57,030
for the orbital workshop modification

148
00:08:03,970 --> 00:08:00,180
kit workshop modifications are scheduled

149
00:08:06,770 --> 00:08:03,980
to start early in the next quarter

150
00:08:10,490 --> 00:08:06,780
Saturn 1b instrument unit status and

151
00:08:13,190 --> 00:08:10,500
progress is as follows SIU 205 has

152
00:08:15,470 --> 00:08:13,200
completed modifications and is scheduled

153
00:08:19,880 --> 00:08:15,480
for shipment to KSC early in the next

154
00:08:24,980 --> 00:08:19,890
quarter Saturn 1b instrument units

155
00:08:28,720 --> 00:08:24,990
numbers 206 207 208 209 and 211 are in

156
00:08:32,000 --> 00:08:28,730
storage at IBM's Huntsville facility I

157
00:08:34,490 --> 00:08:32,010
you 210 after a month and a half in

158
00:08:37,190 --> 00:08:34,500
temporary storage reentered assembly in

159
00:08:39,950 --> 00:08:37,200
early february at the close of the

160
00:08:44,780 --> 00:08:39,960
report period satisfactory progress was

161
00:08:47,600 --> 00:08:44,790
being made in assembly operations due to

162
00:08:49,430 --> 00:08:47,610
the long lead time for IU 212 no

163
00:08:53,540 --> 00:08:49,440

activity was scheduled for

164
00:08:55,760 --> 00:08:53,550
this period progress on storage

165
00:08:58,240 --> 00:08:55,770
enclosures for all stages has been very

166
00:09:01,970 --> 00:08:58,250
satisfactory during this report period

167
00:09:05,000 --> 00:09:01,980
initial tests performed at MSFC on the

168
00:09:07,000 --> 00:09:05,010
s-1 b enclosure indicated this type of

169
00:09:09,980 --> 00:09:07,010
protection would be satisfactory

170
00:09:12,230 --> 00:09:09,990
following testing production of the s-1

171
00:09:15,890 --> 00:09:12,240
b enclosures was initiated by the

172
00:09:18,200 --> 00:09:15,900
Technical Services office at MSFC the

173
00:09:20,240 --> 00:09:18,210
first production storage enclosure was

174
00:09:23,390 --> 00:09:20,250
completed late in the report period a

175
00:09:27,890 --> 00:09:23,400
total of seven s1 t enclosures will be

176
00:09:29,810 --> 00:09:27,900
produced and shipped to masu during this

177
00:09:31,820 --> 00:09:29,820
period a change order was issued to

178
00:09:33,970 --> 00:09:31,830
McDonnell Douglas to cover design

179
00:09:37,190 --> 00:09:33,980
fabrication and installation of

180
00:09:42,790 --> 00:09:37,200
protective enclosures for 8s 4b second

181
00:09:46,190 --> 00:09:42,800
stages may 31st completion was specified

182
00:09:48,410 --> 00:09:46,200
meanwhile IBM is already designed tested

183
00:09:50,690 --> 00:09:48,420
and initiated procurement of protective

184
00:09:53,780 --> 00:09:50,700
storage enclosures for 1b instrument

185
00:09:56,720 --> 00:09:53,790
units the IBM enclosure is a reusable

186
00:09:59,740 --> 00:09:56,730
container made of a water vapor barrier

187
00:10:02,120 --> 00:09:59,750
plasticized non flammable material a

188
00:10:05,390 --> 00:10:02,130

mechanical compression type closure is

189
00:10:07,670 --> 00:10:05,400
used to affect final sealing to control

190
00:10:09,530 --> 00:10:07,680
humidity conditions the enclosure is

191
00:10:11,900 --> 00:10:09,540
purged and desiccants absorb the

192
00:10:14,390 --> 00:10:11,910
moisture the desiccants are replaced

193
00:10:16,820 --> 00:10:14,400
every 30 days or as required

194
00:10:18,800 --> 00:10:16,830
since the IU's are stored in an

195
00:10:21,770 --> 00:10:18,810
air-conditioned area no temperature

196
00:10:23,780 --> 00:10:21,780
control is required this container is

197
00:10:28,370 --> 00:10:23,790
designed to effectively protect a unit

198
00:10:30,950 --> 00:10:28,380
for up to three years present plans are

199
00:10:33,580 --> 00:10:30,960
the Thistle Saturn wonderly found early