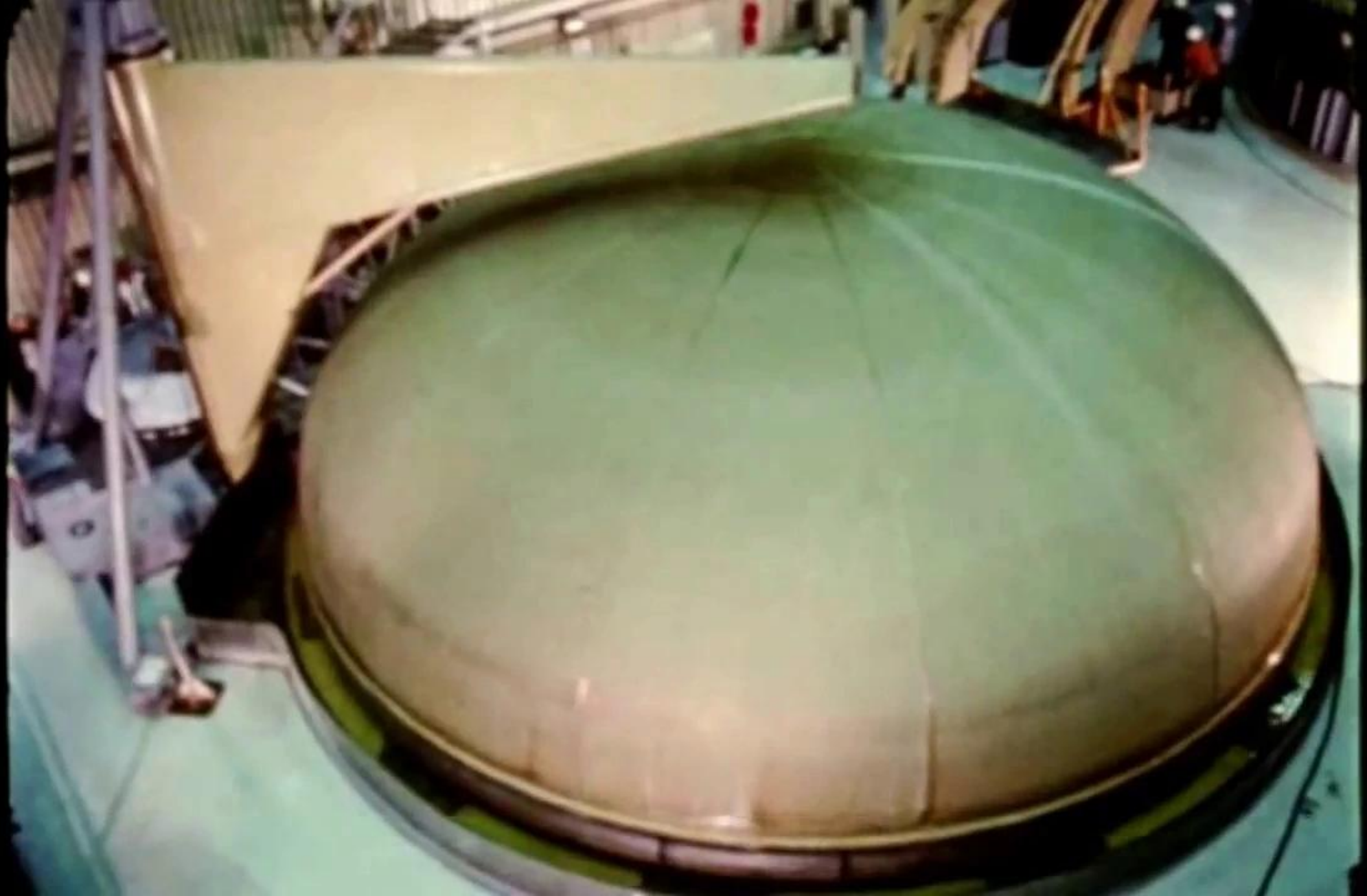

1
00:00:02,250 --> 00:00:12,350
[Music]

2
00:00:17,450 --> 00:00:15,080
Saturn five quarterly film report number

3
00:00:23,440 --> 00:00:17,460
15 covers progress during the period

4
00:00:29,620 --> 00:00:27,010
[Music]

5
00:00:31,720 --> 00:00:29,630
at launch complex 39 of the Kennedy

6
00:00:33,910 --> 00:00:31,730
Space Center where assembly and rollout

7
00:00:36,210 --> 00:00:33,920
of the Saturn 5 facility's checkout

8
00:00:38,799 --> 00:00:36,220
vehicle was accomplished last quarter

9
00:00:40,630 --> 00:00:38,809
checkout of launch facilities and ground

10
00:00:42,850 --> 00:00:40,640
support equipment in connection with the

11
00:00:47,200 --> 00:00:42,860
vehicle was in progress throughout the

12
00:00:49,150 --> 00:00:47,210
report period on June 17th a check-out

13
00:00:51,700 --> 00:00:49,160

milestone was reached with manual

14
00:00:54,189 --> 00:00:51,710
loading of rp1 fuel into the vehicles

15
00:00:56,229 --> 00:00:54,199
first stage the objective was to

16
00:00:58,240 --> 00:00:56,239
checkout loading equipment prior to

17
00:01:00,490 --> 00:00:58,250
testing of the computerized automatic

18
00:01:04,630 --> 00:01:00,500
mode which will be used for flight

19
00:01:06,670 --> 00:01:04,640
stages in mid-july the mobile service

20
00:01:09,370 --> 00:01:06,680
structure which is used primarily for

21
00:01:11,830 --> 00:01:09,380
servicing the Apollo spacecraft was

22
00:01:14,260 --> 00:01:11,840
moved to pad a for mating tests with

23
00:01:17,980 --> 00:01:14,270
paired facilities and then returned to

24
00:01:20,170 --> 00:01:17,990
its parking area for pressurization

25
00:01:22,330 --> 00:01:20,180
tests two operational levels were

26
00:01:25,840 --> 00:01:22,340
performed on all of the Saturn vehicles

27
00:01:28,510 --> 00:01:25,850
propellant tanks to verify LC 39s ground

28
00:01:32,730 --> 00:01:28,520
pressurization system tests were

29
00:01:35,859 --> 00:01:32,740
successfully concluded on August 12th a

30
00:01:38,289 --> 00:01:35,869
rupture of pair days liquid oxygen feed

31
00:01:40,899 --> 00:01:38,299
line between storage tank and replenish

32
00:01:43,810 --> 00:01:40,909
pump during a pump chill down on August

33
00:01:45,489 --> 00:01:43,820
19th caused postponement of a scheduled

34
00:01:48,010 --> 00:01:45,499
series of loading tests with the

35
00:01:50,679 --> 00:01:48,020
cryogenic fuels LOX and liquid hydrogen

36
00:01:53,169 --> 00:01:50,689
an investigation is underway to

37
00:01:54,880 --> 00:01:53,179
determine cause of the accident which is

38
00:01:57,760 --> 00:01:54,890

expected to delay the facilities

39
00:01:59,410 --> 00:01:57,770
checkout program by about a month since

40
00:02:01,660 --> 00:01:59,420
the second stage of the facility's

41
00:02:04,779 --> 00:02:01,670
checkout vehicle will later be used in

42
00:02:14,089 --> 00:02:04,789
the dynamic test vehicle at MSFC the

43
00:02:18,890 --> 00:02:16,819
in first-stage grounds test operations

44
00:02:21,229 --> 00:02:18,900
the upper assembly of the structural

45
00:02:24,199 --> 00:02:21,239
test stage comprising the header tank

46
00:02:26,390 --> 00:02:24,209
locks tank and forward skirt underwent

47
00:02:28,580 --> 00:02:26,400
successful structural testing in the

48
00:02:32,839 --> 00:02:28,590
Marshall centers load tests tower in

49
00:02:34,940 --> 00:02:32,849
late July post firing checkout of the

50
00:02:38,839 --> 00:02:34,950
first flight stage which began last

51
00:02:40,699 --> 00:02:38,849
quarter was completed August 10th the

52
00:02:43,429 --> 00:02:40,709
stage was loaded aboard the barge for

53
00:02:47,720 --> 00:02:43,439
Sidon on August 27th for shipment from

54
00:02:49,759 --> 00:02:47,730
Marshall to KSC a single acceptance

55
00:02:52,250 --> 00:02:49,769
static firing of the second flight stage

56
00:02:55,250 --> 00:02:52,260
was conducted on June 7th in Marshalls

57
00:02:57,379 --> 00:02:55,260
ecstatic test stand after refurbishment

58
00:02:59,990 --> 00:02:57,389
post barring checkout started August

59
00:03:06,020 --> 00:03:00,000
11th with completion due in early

60
00:03:07,909 --> 00:03:06,030
November at Marshalls Michou assembly

61
00:03:09,800 --> 00:03:07,919
facility in New Orleans post

62
00:03:11,990 --> 00:03:09,810
manufacturing checkout of the third

63
00:03:14,179 --> 00:03:12,000

flight stage was completed in late

64
00:03:16,580 --> 00:03:14,189
August by the stage contractor the

65
00:03:19,099 --> 00:03:16,590
Boeing Company the stage will be shipped

66
00:03:22,999 --> 00:03:19,109
to MSFC next quarter for acceptance

67
00:03:25,069 --> 00:03:23,009
static firing horizontal installation

68
00:03:27,110 --> 00:03:25,079
has been completed by Boeing Michou on

69
00:03:30,219 --> 00:03:27,120
the fourth flight stage post

70
00:03:33,020 --> 00:03:30,229
manufacturing checkout is in progress

71
00:03:34,999 --> 00:03:33,030
the fifth flight stage is in the process

72
00:03:38,659 --> 00:03:35,009
of vertical assembly with completion

73
00:03:40,550 --> 00:03:38,669
scheduled for September structural

74
00:03:43,399 --> 00:03:40,560
assembly of major components for the

75
00:03:45,199 --> 00:03:43,409
sixth flight stage and fabrication of

76
00:03:48,550 --> 00:03:45,209
components for the seventh and eighth

77
00:03:51,080 --> 00:03:48,560
flight stages are also underway

78
00:03:53,270 --> 00:03:51,090
installation of a second large boring

79
00:03:55,699 --> 00:03:53,280
mill at Michou for use in Saturn

80
00:03:58,129 --> 00:03:55,709
fabrication work was accomplished in

81
00:04:00,080 --> 00:03:58,139
June obtained from the Watertown

82
00:04:02,149 --> 00:04:00,090
Massachusetts Arsenal for the cost of

83
00:04:04,670 --> 00:04:02,159
dismantling shipping and reassembling

84
00:04:13,290 --> 00:04:04,680
the boring mill has the capability of

85
00:04:18,720 --> 00:04:16,590
repairs 2s2 stage static test stands

86
00:04:21,240 --> 00:04:18,730
number a two at Marshalls Mississippi

87
00:04:24,360 --> 00:04:21,250
test facility were completed in early

88
00:04:27,030 --> 00:04:24,370

August the stand had been damaged May 28

89
00:04:29,700 --> 00:04:27,040
when the s two all system stage was

90
00:04:31,770 --> 00:04:29,710
destroyed due to over pressurization of

91
00:04:34,800 --> 00:04:31,780
the liquid hydrogen tank during a leak

92
00:04:36,900 --> 00:04:34,810
check test program impact was minimized

93
00:04:41,640 --> 00:04:36,910
to do two expeditious handling of

94
00:04:43,140 --> 00:04:41,650
required repairs systems check out of

95
00:04:46,860 --> 00:04:43,150
the initial flight stage was completed

96
00:04:48,600 --> 00:04:46,870
on July 16th by the s2 contractor the

97
00:04:51,270 --> 00:04:48,610
space and Information Systems Division

98
00:04:55,200 --> 00:04:51,280
of North American Aviation at its seal

99
00:04:57,240 --> 00:04:55,210
Beach California facility official

100
00:04:59,640 --> 00:04:57,250
turnover of the stage to NASA was on

101
00:05:01,260 --> 00:04:59,650
July 27th and the stage was shipped

102
00:05:04,290 --> 00:05:01,270
three days later aboard the transport

103
00:05:08,040 --> 00:05:04,300
Point Barrow bound for MTF for

104
00:05:10,170 --> 00:05:08,050
acceptance firing there the first flight

105
00:05:12,510 --> 00:05:10,180
stage arrived on August 12th at the

106
00:05:14,730 --> 00:05:12,520
Michou facility in New Orleans where it

107
00:05:18,180 --> 00:05:14,740
was transferred to a barge for the short

108
00:05:21,060 --> 00:05:18,190
trip to MTF the stage was offloaded at

109
00:05:25,710 --> 00:05:21,070
MTF ss2 vehicle service building the

110
00:05:28,020 --> 00:05:25,720
next day on August 19th the stage was

111
00:05:30,150 --> 00:05:28,030
installed in the a2 test stand and

112
00:05:32,700 --> 00:05:30,160
preparations got underway for static

113
00:05:35,400 --> 00:05:32,710

firings of which a minimum of two are

114
00:05:37,350 --> 00:05:35,410
scheduled in late September after post

115
00:05:38,460 --> 00:05:37,360
firing check out the stage will be

116
00:05:43,200 --> 00:05:38,470
shipped to KSC

117
00:05:45,510 --> 00:05:43,210
in November meanwhile at S&I DCO beach

118
00:05:47,550 --> 00:05:45,520
manufacturing facility systems

119
00:05:50,160 --> 00:05:47,560
installation on the second flight stage

120
00:05:53,130 --> 00:05:50,170
was completed and systems checkout began

121
00:05:55,230 --> 00:05:53,140
on July 23rd following completion of

122
00:05:58,400 --> 00:05:55,240
checkout in late September the stage

123
00:06:00,780 --> 00:05:58,410
will be shipped to MTF in October

124
00:06:03,020 --> 00:06:00,790
vertical assembly of the third flight

125
00:06:05,340 --> 00:06:03,030
stage was finished in early July

126
00:06:07,380 --> 00:06:05,350
hydrostatic testing had been completed

127
00:06:10,050 --> 00:06:07,390
by late August and systems installation

128
00:06:12,870 --> 00:06:10,060
is underway with completion due in

129
00:06:15,180 --> 00:06:12,880
October vertical assembly of the fourth

130
00:06:17,909 --> 00:06:15,190
flight stage started in July and is due

131
00:06:19,680 --> 00:06:17,919
to be finished in September fabrication

132
00:06:21,510 --> 00:06:19,690
and sub assembly of structural

133
00:06:25,560 --> 00:06:21,520
components for the fifth flight stage

134
00:06:26,910 --> 00:06:25,570
are in progress starting firing of the

135
00:06:28,950 --> 00:06:26,920
s2 battleship tests

136
00:06:31,980 --> 00:06:28,960
stage was resumed in June at North

137
00:06:34,110 --> 00:06:31,990
Americans Santa Susana tests ain't due

138
00:06:37,050 --> 00:06:34,120

to the loss of the all system stage at

139
00:06:39,690 --> 00:06:37,060
MTF additional firings of the battleship

140
00:06:41,970 --> 00:06:39,700
with flight hardware incorporated for

141
00:06:45,480 --> 00:06:41,980
deems necessary to enhance stage

142
00:06:47,880 --> 00:06:45,490
maturity for full duration firings were

143
00:06:49,980 --> 00:06:47,890
conducted during the quarter and firings

144
00:06:52,110 --> 00:06:49,990
are scheduled to continue on a minimum

145
00:07:01,110 --> 00:06:52,120
sustaining effort phases through

146
00:07:03,210 --> 00:07:01,120
December post firing checkout was

147
00:07:05,220 --> 00:07:03,220
performed during the report period and

148
00:07:07,590 --> 00:07:05,230
the first flight stage which had been

149
00:07:09,720 --> 00:07:07,600
acceptance fired last quarter at Douglas

150
00:07:12,690 --> 00:07:09,730
aircraft companies Sacramento California

151
00:07:16,850 --> 00:07:12,700
test site the stage was shipped to KSC

152
00:07:19,650 --> 00:07:16,860
by super guppy aircraft on August 12th

153
00:07:21,840 --> 00:07:19,660
the second flight stage arrived at SAC

154
00:07:24,000 --> 00:07:21,850
tow on June 1st from da C's

155
00:07:26,880 --> 00:07:24,010
manufacturing facility at Huntington

156
00:07:29,400 --> 00:07:26,890
Beach California following installation

157
00:07:31,410 --> 00:07:29,410
in beta test stands number one the stage

158
00:07:34,430 --> 00:07:31,420
underwent pre firing checkout in

159
00:07:38,040 --> 00:07:34,440
preparation for its acceptance firing on

160
00:07:40,650 --> 00:07:38,050
July 29th a successful acceptance firing

161
00:07:42,990 --> 00:07:40,660
was conducted following data evaluation

162
00:07:44,970 --> 00:07:43,000
the stage was removed from the stand for

163
00:07:47,640 --> 00:07:44,980

post firing checkout in the vertical

164
00:07:52,590 --> 00:07:47,650
checkout lab turn over to NASA is

165
00:07:54,840 --> 00:07:52,600
expected in late September factory

166
00:07:57,300 --> 00:07:54,850
checkout of the third flight stage began

167
00:07:59,940 --> 00:07:57,310
in late July at Huntington Beach with

168
00:08:02,250 --> 00:07:59,950
completion due in September and shipment

169
00:08:06,000 --> 00:08:02,260
to SEC toe in October for acceptance

170
00:08:08,190 --> 00:08:06,010
testing structural fabrication and

171
00:08:10,170 --> 00:08:08,200
assembly is continuing on the fourth and

172
00:08:15,270 --> 00:08:10,180
fifth flight stages at Huntington Beach

173
00:08:17,640 --> 00:08:15,280
and a DEA seized santa monica plant the

174
00:08:19,650 --> 00:08:17,650
high force vibration test program was

175
00:08:21,840 --> 00:08:19,660
begun in June and continued throughout

176
00:08:24,180 --> 00:08:21,850
the quarter at the Thiokol chemical

177
00:08:27,120 --> 00:08:24,190
corporations watch division near Brigham

178
00:08:29,220 --> 00:08:27,130
City Utah purpose of the program is to

179
00:08:31,590 --> 00:08:29,230
provide information regarding the low

180
00:08:34,410 --> 00:08:31,600
frequency sensitivity of major weight

181
00:08:45,870 --> 00:08:34,420
carrying structures testing is scheduled

182
00:08:51,720 --> 00:08:49,079
in June the two f-1 engines destined for

183
00:08:52,379 --> 00:08:51,730
use in the quad 2 test program later in

184
00:08:54,809 --> 00:08:52,389
the quarter

185
00:08:57,749 --> 00:08:54,819
came off rocky dines production line at

186
00:08:59,730 --> 00:08:57,759
its Canoga Park California plant while

187
00:09:02,430 --> 00:08:59,740
two configuration engines are those

188
00:09:04,740 --> 00:09:02,440

qualified for manned flight reliability

189
00:09:07,319 --> 00:09:04,750
and designed to meet the additional

190
00:09:12,059 --> 00:09:07,329
payload requirements of the 4th Saturn 5

191
00:09:14,400 --> 00:09:12,069
and subsequent vehicles at 1/4 retinas

192
00:09:16,199 --> 00:09:14,410
evaluation review held in Rocketdyne in

193
00:09:18,210 --> 00:09:16,209
June it was determined that

194
00:09:20,759 --> 00:09:18,220
qualification testing would begin in

195
00:09:23,490 --> 00:09:20,769
August at the rocket engine test site at

196
00:09:27,030 --> 00:09:23,500
Edwards California to prove engine

197
00:09:29,009 --> 00:09:27,040
performance and design parameters the

198
00:09:32,069 --> 00:09:29,019
first in the series of firings was held

199
00:09:32,699 --> 00:09:32,079
on August 1st the program is expected to

200
00:09:35,220 --> 00:09:32,709
be finished

201
00:09:37,860 --> 00:09:35,230
during September one engine is being

202
00:09:40,290 --> 00:09:37,870
used for safety limits testing and the

203
00:09:42,210 --> 00:09:40,300
other for duration testing requiring a

204
00:09:52,590 --> 00:09:42,220
total of two thousand two hundred fifty

205
00:09:54,569 --> 00:09:52,600
seconds firing time the quoi to test

206
00:09:58,769 --> 00:09:54,579
series for a qualification of the

207
00:10:01,410 --> 00:09:58,779
upgraded 230,000 pounds thrust j2 engine

208
00:10:03,900 --> 00:10:01,420
was initiated by Rocketdyne in early

209
00:10:06,780 --> 00:10:03,910
August and in Santa Susana California

210
00:10:09,389 --> 00:10:06,790
test site testing will continue next

211
00:10:14,069 --> 00:10:09,399
quarter the series will comprise 30

212
00:10:16,620 --> 00:10:14,079
tests totaling 3750 seconds an R&D

213
00:10:19,920 --> 00:10:16,630

program simulating the form of Wow -

214
00:10:22,319 --> 00:10:19,930
testing was completed in July with 34

215
00:10:24,090 --> 00:10:22,329
firings performed for a total of four

216
00:10:27,990 --> 00:10:24,100
thousand three hundred thirty-five

217
00:10:29,850 --> 00:10:28,000
seconds at the air force's Arnold

218
00:10:32,009 --> 00:10:29,860
engineering development center at tella

219
00:10:35,040 --> 00:10:32,019
home at Tennessee the first in a series

220
00:10:38,309 --> 00:10:35,050
of j2 engine environmental verification

221
00:10:40,620 --> 00:10:38,319
test firings was held on August 27th

222
00:10:42,509 --> 00:10:40,630
after successful completion of several

223
00:10:45,840 --> 00:10:42,519
months efforts to overcome all problems

224
00:10:48,150 --> 00:10:45,850
of environmental control the test

225
00:10:51,210 --> 00:10:48,160
program is presently planned to extend

226
00:10:53,550 --> 00:10:51,220
through June 1967 with an estimated

227
00:10:56,040 --> 00:10:53,560
three firings per month including

228
00:10:59,550 --> 00:10:56,050
several altitude restarts of the engine

229
00:11:01,739 --> 00:10:59,560
the huge test cell largest of its type

230
00:11:05,550 --> 00:11:01,749
can simulate altitude and thermal

231
00:11:08,340 --> 00:11:05,560
environment at 125,000 feet about 25

232
00:11:10,889 --> 00:11:08,350
miles tests will duplicate conditions of

233
00:11:20,579 --> 00:11:10,899
the j2 on the ground and during boost

234
00:11:22,920 --> 00:11:20,589
first burn Coast and second burn ground

235
00:11:24,769 --> 00:11:22,930
testing of Saturn 5 instrument units

236
00:11:26,670 --> 00:11:24,779
moved into its final phases

237
00:11:29,519 --> 00:11:26,680
environmental tests on the flight

238
00:11:31,679 --> 00:11:29,529

systems I you were completed August 10th

239
00:11:34,769 --> 00:11:31,689
at Douglas aircrafts Huntington Beach

240
00:11:37,230 --> 00:11:34,779
facility the IU was mated to a third

241
00:11:39,360 --> 00:11:37,240
stage forward stage simulator and a

242
00:11:41,939 --> 00:11:39,370
lunar module thermal simulator for the

243
00:11:45,869 --> 00:11:41,949
tests which simulated orbital thermal

244
00:11:47,910 --> 00:11:45,879
vacuum conditions testing of the third

245
00:11:50,069 --> 00:11:47,920
structural test I you which was

246
00:11:52,829 --> 00:11:50,079
delivered to Marshall by IBM Huntsville

247
00:11:56,090 --> 00:11:52,839
in June got underway in mid-august with

248
00:11:59,309 --> 00:11:56,100
completion scheduled early next quarter

249
00:12:02,519 --> 00:11:59,319
check out of the first Saturn 5 flight I

250
00:12:04,619 --> 00:12:02,529
you was finished by IBM on August 19th

251
00:12:08,460 --> 00:12:04,629
and the unit was shipped to Kennedy

252
00:12:10,679 --> 00:12:08,470
Space Center on August 25th structural

253
00:12:12,990 --> 00:12:10,689
fabrication and component installation

254
00:12:15,389 --> 00:12:13,000
for the second flight hi you have been

255
00:12:23,509 --> 00:12:15,399
finished by IBM and check-out is in

256
00:12:28,559 --> 00:12:26,309
at Marshalls Mississippi test facility

257
00:12:30,929 --> 00:12:28,569
construction continued on second stage

258
00:12:33,600 --> 00:12:30,939
static tests and number two designated

259
00:12:36,569 --> 00:12:33,610
a1 with brick and mortar work over 80%

260
00:12:39,299 --> 00:12:36,579
finished direction of Steel for the load

261
00:12:41,129 --> 00:12:39,309
platform is essentially complete and the

262
00:12:43,799 --> 00:12:41,139
engine removal platform has been in

263
00:12:45,329 --> 00:12:43,809

placed piping for the water manifolds

264
00:12:48,269 --> 00:12:45,339
and the flame deflector is being

265
00:12:50,340 --> 00:12:48,279
installed installation of conduit and

266
00:12:52,639 --> 00:12:50,350
wiring for technical systems is in

267
00:12:54,780 --> 00:12:52,649
progress above the seventh floor level

268
00:12:57,989 --> 00:12:54,790
construction of the stand is scheduled

269
00:13:01,160 --> 00:12:57,999
for completion early in 1967 with

270
00:13:03,989 --> 00:13:01,170
activation due by the middle of the year

271
00:13:06,150 --> 00:13:03,999
the center pier of the duo position

272
00:13:08,819 --> 00:13:06,160
first stage static test stand is

273
00:13:11,189 --> 00:13:08,829
structurally complete installation of

274
00:13:13,500 --> 00:13:11,199
partitions insulation of water lines and

275
00:13:15,090 --> 00:13:13,510
touch-up painting are in progress

276
00:13:17,760 --> 00:13:15,100
elements of the ground support equipment

277
00:13:21,870 --> 00:13:17,770
have been installed and check out in the

278
00:13:23,880 --> 00:13:21,880
manual mode is underway the stands be

279
00:13:26,190 --> 00:13:23,890
one position made steady progress during

280
00:13:28,620 --> 00:13:26,200
the quarter fabrication of the mounting

281
00:13:32,670 --> 00:13:28,630
ring support structure rolling deck and

282
00:13:34,530 --> 00:13:32,680
engine removal platform is underway the

283
00:13:36,330 --> 00:13:34,540
stands be to position the first

284
00:13:39,210 --> 00:13:36,340
scheduled for completion is well

285
00:13:41,310 --> 00:13:39,220
advanced before hold down arms and

286
00:13:43,980 --> 00:13:41,320
actuators were installed this quarter

287
00:13:46,020 --> 00:13:43,990
the engine removal platform and rolling

288
00:13:48,080 --> 00:13:46,030

deck are complete and finished work on

289
00:13:50,880 --> 00:13:48,090
the flame deflector is well underway

290
00:13:53,310 --> 00:13:50,890
piping for the liquid oxygen system is

291
00:13:55,170 --> 00:13:53,320
in progress and installation of conduit

292
00:13:58,340 --> 00:13:55,180
and wiring for technical systems

293
00:14:02,580 --> 00:13:58,350
throughout the position is also underway

294
00:14:04,530 --> 00:14:02,590
in summary June July and August 1966

295
00:14:07,200 --> 00:14:04,540
were months of steady achievement along

296
00:14:09,420 --> 00:14:07,210
a broad front of activity flight stages

297
00:14:12,210 --> 00:14:09,430
for the first saturn v flight vehicle

298
00:14:14,280 --> 00:14:12,220
have now all been delivered to KSC with

299
00:14:16,170 --> 00:14:14,290
the exception of the second stage which

300
00:14:20,190 --> 00:14:16,180
is being readied for acceptance firing

301
00:14:22,110 --> 00:14:20,200
at MTF manufacturing of subsequent

302
00:14:24,840 --> 00:14:22,120
flight stages is continuing at the

303
00:14:27,480 --> 00:14:24,850
various contractor plants and grounds

304
00:14:30,260 --> 00:14:27,490
tests of engines stages and instrument