



SATURN V
QUARTERLY FILM REPORT

NO. 8

SEPT-OCT-NOV-1964

1
00:00:12,860 --> 00:00:10,910
Saturn five quarterly film reports

2
00:00:15,670 --> 00:00:12,870
number eight covers progress during the

3
00:00:20,570 --> 00:00:15,680
period September October and November at

4
00:00:23,290 --> 00:00:20,580
1964 throughout the Porter Boeing and

5
00:00:27,950 --> 00:00:23,300
Marshall continued s1c stage development

6
00:00:30,109 --> 00:00:27,960
manufacturing and testing at Marshall

7
00:00:32,840 --> 00:00:30,119
Boeing successfully completed full

8
00:00:35,750 --> 00:00:32,850
pressure hydrostatic testing of the s1c

9
00:00:37,430 --> 00:00:35,760
test fuel tank after resolving the test

10
00:00:40,040 --> 00:00:37,440
equipment problems encountered last

11
00:00:43,549 --> 00:00:40,050
quarter this was followed by successful

12
00:00:45,380 --> 00:00:43,559
LOX tunnel testing early in the quarter

13
00:00:48,380 --> 00:00:45,390

Marshall personnel during a routine

14

00:00:51,680 --> 00:00:48,390

inspection discovered weld micro cracks

15

00:00:55,580 --> 00:00:51,690

on s1 CT and s-1 CS assemblies

16

00:00:57,830 --> 00:00:55,590

previously manufactured after detailed

17

00:00:59,900 --> 00:00:57,840

investigations and studies Marshall

18

00:01:03,080 --> 00:00:59,910

resolved the problem by micro shaving

19

00:01:04,939 --> 00:01:03,090

all weld beads necessary action is being

20

00:01:09,080 --> 00:01:04,949

taken to prevent recurrence of the

21

00:01:10,940 --> 00:01:09,090

problem despite the welding problem s 1c

22

00:01:13,820 --> 00:01:10,950

stage manufacturing and assembly

23

00:01:17,380 --> 00:01:13,830

continued at a satisfactory pace mating

24

00:01:21,100 --> 00:01:17,390

of the s1 CT forward skirt LOX tank and

25

00:01:24,140 --> 00:01:21,110

entertained section was completed on

26
00:01:25,580 --> 00:01:24,150
November 2nd this major assembly was

27
00:01:27,679 --> 00:01:25,590
moved from the vertical Assembly

28
00:01:30,920 --> 00:01:27,689
Building to the horizontal assembly area

29
00:01:32,440 --> 00:01:30,930
where final s 1ct assembly will take

30
00:01:36,080 --> 00:01:32,450
place

31
00:01:37,850 --> 00:01:36,090
s1 CT thrust structure manufacture was

32
00:01:41,210 --> 00:01:37,860
completed with installation of heat

33
00:01:44,660 --> 00:01:41,220
shield panels and locks and few old duct

34
00:01:46,670 --> 00:01:44,670
supports the structure was then moved

35
00:01:50,420 --> 00:01:46,680
into the vertical Assembly Building and

36
00:01:51,830 --> 00:01:50,430
joined to the s1 CT fuel tank the unit

37
00:01:54,230 --> 00:01:51,840
will be transferred to the horizontal

38
00:01:58,550 --> 00:01:54,240

assembly area for final mating to the

39

00:02:00,950 --> 00:01:58,560

LOX tank assembly early next quarter s1

40

00:02:03,050 --> 00:02:00,960

CS cylindrical skin assembly and

41

00:02:06,679 --> 00:02:03,060

bulkhead fabrication continued this

42

00:02:09,020 --> 00:02:06,689

quarter the forward locks bulkhead for

43

00:02:11,630 --> 00:02:09,030

this ground test stage is now being

44

00:02:13,850 --> 00:02:11,640

built at Marshall the original bulkhead

45

00:02:16,280 --> 00:02:13,860

fabricated by Boeing was rejected

46

00:02:18,680 --> 00:02:16,290

Mishu because of unacceptable welding

47

00:02:20,540 --> 00:02:18,690

Boeing is attempting to improve its

48

00:02:24,200 --> 00:02:20,550

welding techniques to prevent this

49

00:02:27,650 --> 00:02:24,210

problem from recurring the first inner

50

00:02:29,570 --> 00:02:27,660

tank for the s1 CS test program built by

51
00:02:31,790 --> 00:02:29,580
Boeing Michou has been placed in

52
00:02:34,340 --> 00:02:31,800
Marshalls new load tests tower and

53
00:02:37,760 --> 00:02:34,350
preparations are underway for structural

54
00:02:41,870 --> 00:02:37,770
testing bulkhead fabrication for the

55
00:02:46,190 --> 00:02:41,880
first two flight stages s1 C 1 and s 1 C

56
00:02:48,920 --> 00:02:46,200
2 is progressing steadily construction

57
00:02:51,800 --> 00:02:48,930
of Marshalls s 1 C static test stand is

58
00:02:55,160 --> 00:02:51,810
virtually complete with hold down arms

59
00:02:57,710 --> 00:02:55,170
installed this quarter at Marshalls

60
00:03:01,460 --> 00:02:57,720
Michou Operations Boeing continued work

61
00:03:04,280 --> 00:03:01,470
on the s-1 cg dynamic test stage thrust

62
00:03:07,810 --> 00:03:04,290
structure base heat shield support for

63
00:03:10,699 --> 00:03:07,820

the thrust structure and inter tank

64

00:03:14,720 --> 00:03:10,709

assembly of the stage bulkheads also

65

00:03:16,940 --> 00:03:14,730

continued other s1 C component worked by

66

00:03:19,360 --> 00:03:16,950

Boeing included assembly of the forward

67

00:03:22,070 --> 00:03:19,370

skirt for the first flight stage and

68

00:03:25,520 --> 00:03:22,080

chemical cleaning of the Y rings for the

69

00:03:27,830 --> 00:03:25,530

second flight stage major facilities

70

00:03:30,770 --> 00:03:27,840

construction at Michou included work

71

00:03:33,710 --> 00:03:30,780

under stage test facility the high

72

00:03:35,900 --> 00:03:33,720

pressure test facility and the vertical

73

00:03:44,570 --> 00:03:35,910

Assembly Building with its hydrostatic

74

00:03:47,150 --> 00:03:44,580

test tower and final assembly tower at

75

00:03:50,509 --> 00:03:47,160

the s2 static test facility at Santa

76
00:03:52,820 --> 00:03:50,519
Susana North American Aviation's space &

77
00:03:55,009 --> 00:03:52,830
Information Systems Division directed

78
00:03:57,229 --> 00:03:55,019
major activity during September and

79
00:03:59,570 --> 00:03:57,239
October toward preparations for the

80
00:04:03,020 --> 00:03:59,580
initial firing of a single engine of the

81
00:04:05,030 --> 00:04:03,030
battleship test stage this activity

82
00:04:07,570 --> 00:04:05,040
included the installation of the center

83
00:04:09,740 --> 00:04:07,580
j2 engine under battleship and

84
00:04:11,270 --> 00:04:09,750
installation and check out of ground

85
00:04:13,580 --> 00:04:11,280
support equipment and systems

86
00:04:17,420 --> 00:04:13,590
development device at the test stand and

87
00:04:19,719 --> 00:04:17,430
in the control center systems check out

88
00:04:22,219 --> 00:04:19,729

and cryogenics testing were completed

89

00:04:23,930 --> 00:04:22,229

continuity checks were made and the

90

00:04:26,779 --> 00:04:23,940

integrated checkout or a sequential

91

00:04:27,770 --> 00:04:26,789

countdown conducted culminating these

92

00:04:31,550 --> 00:04:27,780

months of intense

93

00:04:33,230 --> 00:04:31,560

of preparation on November night the s2

94

00:04:36,560 --> 00:04:33,240

battleship first ignition was

95

00:04:38,750 --> 00:04:36,570

successfully accomplished in the

96

00:04:42,140 --> 00:04:38,760

vertical Assembly Building of s and I DS

97

00:04:45,200 --> 00:04:42,150

C or Beach facility manufacturing of s2

98

00:04:47,840 --> 00:04:45,210

s structural test stage continued during

99

00:04:50,300 --> 00:04:47,850

the report period the common bulkhead

100

00:04:52,700 --> 00:04:50,310

completed last quarter was mated to the

101
00:04:54,110 --> 00:04:52,710
liquid hydrogen tank cylinder and the

102
00:04:56,180 --> 00:04:54,120
assembly was installed in the

103
00:04:58,250 --> 00:04:56,190
hydrostatic test station where

104
00:05:02,300 --> 00:04:58,260
hydrostatic testing was successfully

105
00:05:05,120 --> 00:05:02,310
accomplished in late October the after

106
00:05:07,430 --> 00:05:05,130
locks bulkhead for s2 s failed during

107
00:05:09,980 --> 00:05:07,440
its in process component hydrostatic

108
00:05:12,409 --> 00:05:09,990
testing prior to being welded to the LOX

109
00:05:14,480 --> 00:05:12,419
tank the character of the failure was a

110
00:05:16,940 --> 00:05:14,490
fracture which propagated through the

111
00:05:19,730 --> 00:05:16,950
apex sections of eight of the 12 gore

112
00:05:22,150 --> 00:05:19,740
segments of the bulkhead an extensive

113
00:05:24,440 --> 00:05:22,160

investigation by Marshall and s NID

114

00:05:27,159 --> 00:05:24,450

revealed that the failure was caused

115

00:05:30,379 --> 00:05:27,169

primarily by manufacturing defects and

116

00:05:32,390 --> 00:05:30,389

inadequate detail inspection corrective

117

00:05:34,909 --> 00:05:32,400

action has been initiated and a

118

00:05:38,540 --> 00:05:34,919

replacement bulkhead for s2 s will be

119

00:05:41,570 --> 00:05:38,550

available in December Assembly of the

120

00:05:43,159 --> 00:05:41,580

first s2 stage transporter was completed

121

00:05:45,310 --> 00:05:43,169

at the American machine and foundry

122

00:05:47,060 --> 00:05:45,320

corporation at York Pennsylvania

123

00:05:49,550 --> 00:05:47,070

acceptance testing was completed

124

00:05:52,310 --> 00:05:49,560

satisfactorily and the vehicle shipped

125

00:05:54,380 --> 00:05:52,320

to s and IDs seal Beach facility where

126
00:05:56,840 --> 00:05:54,390
functional testing and mobility runs

127
00:06:04,930 --> 00:05:56,850
were performed the transporter will be

128
00:06:10,219 --> 00:06:07,700
Douglas Aircraft Company Sacramento

129
00:06:12,980 --> 00:06:10,229
tests aerial preparations for the first

130
00:06:16,040 --> 00:06:12,990
s4v battleship hot firing were underway

131
00:06:19,000 --> 00:06:16,050
during September fuel leak checks and

132
00:06:21,409 --> 00:06:19,010
pneumatic lines checks were performed

133
00:06:24,260 --> 00:06:21,419
technicians checked engine bleed gas

134
00:06:27,440 --> 00:06:24,270
igniters and the water and propellant

135
00:06:32,719 --> 00:06:27,450
distribution complex and engine diffuser

136
00:06:34,760 --> 00:06:32,729
water tests was also run j2 engine

137
00:06:37,630 --> 00:06:34,770
thrust chamber chill down tests were

138
00:06:41,089 --> 00:06:37,640

successfully conducted in early October

139

00:06:41,600 --> 00:06:41,099

on November 7th the first hot firing was

140

00:06:44,179 --> 00:06:41,610

cut

141

00:06:47,300 --> 00:06:44,189

prior to mainstage by a gas generator

142

00:06:50,059 --> 00:06:47,310

over-temperature command a second firing

143

00:06:53,209 --> 00:06:50,069

on November 24th was a successful one

144

00:06:56,230 --> 00:06:53,219

second duration test ten and fifty

145

00:06:59,899 --> 00:06:56,240

second firings are scheduled in December

146

00:07:02,659 --> 00:06:59,909

at SAC tous gamma complex the attitude

147

00:07:04,909 --> 00:07:02,669

control engines for the s4v auxiliary

148

00:07:08,330 --> 00:07:04,919

propulsion system were installed in

149

00:07:10,550 --> 00:07:08,340

September a series of single and

150

00:07:12,740 --> 00:07:10,560

multiple engine first phase development

151
00:07:14,679 --> 00:07:12,750
firings was successfully conducted

152
00:07:18,529 --> 00:07:14,689
during October

153
00:07:20,659 --> 00:07:18,539
also at Sacto DAC continued preparing

154
00:07:22,399 --> 00:07:20,669
beta test stands number three for

155
00:07:25,070 --> 00:07:22,409
installing the facilities check out

156
00:07:28,879 --> 00:07:25,080
stage four propellant loading tests in

157
00:07:31,429 --> 00:07:28,889
early March at Douglass's Huntington

158
00:07:33,980 --> 00:07:31,439
Beach facility assembly and check out of

159
00:07:35,990 --> 00:07:33,990
the s4v dynamic test stage has been

160
00:07:37,820 --> 00:07:36,000
completed and the stage is being

161
00:07:41,600 --> 00:07:37,830
prepared for shipment to the Marshall

162
00:07:43,459 --> 00:07:41,610
Center in early December the original

163
00:07:45,649 --> 00:07:43,469

all system stage which has been

164

00:07:47,749 --> 00:07:45,659

redecorated the facilities checkout

165

00:07:50,269 --> 00:07:47,759

stage underwent cleaning and

166

00:07:52,279 --> 00:07:50,279

installation this quarter the stage will

167

00:07:54,559 --> 00:07:52,289

be used for propellant loading tests at

168

00:07:58,790 --> 00:07:54,569

SEC tow and facilities checkout at

169

00:08:01,129 --> 00:07:58,800

Kennedy Space Center components from the

170

00:08:04,010 --> 00:08:01,139

original facilities checkout stage have

171

00:08:06,379 --> 00:08:04,020

been reallocated for use on an s4v

172

00:08:08,899 --> 00:08:06,389

sectional mock-up which will be shipped

173

00:08:13,010 --> 00:08:08,909

to Marshall for use on an overall Saturn

174

00:08:16,040 --> 00:08:13,020

5 simulator fabrication and assembly of

175

00:08:19,999 --> 00:08:16,050

components for the first Saturn 5 s4b

176
00:08:23,329 --> 00:08:20,009
flight stage 501 got underway at Douglas

177
00:08:25,129 --> 00:08:23,339
Santa Monica this quarter at the air

178
00:08:27,920 --> 00:08:25,139
research test facility in Phoenix

179
00:08:31,010 --> 00:08:27,930
Arizona pressure testing to failure of

180
00:08:41,140 --> 00:08:31,020
s4b propellant loading flex hoses was

181
00:08:46,610 --> 00:08:44,060
at the edward's rocket engine test site

182
00:08:48,830 --> 00:08:46,620
in California Rocketdyne began flight

183
00:08:51,770 --> 00:08:48,840
rating tests of the f1 engine on

184
00:08:54,290 --> 00:08:51,780
November 16th the tests are progressing

185
00:08:58,280 --> 00:08:54,300
satisfactorily and will be completed by

186
00:09:01,070 --> 00:08:58,290
December 31st operational readiness of

187
00:09:03,170 --> 00:09:01,080
the two new f1 production engine test

188
00:09:05,270 --> 00:09:03,180

stands at Edwards was marked by

189

00:09:07,520 --> 00:09:05,280

ceremonies held on October 9th

190

00:09:29,550 --> 00:09:07,530

the event was climaxed by a full

191

00:09:37,510 --> 00:09:33,700

as part of the continuing effort to

192

00:09:40,240 --> 00:09:37,520

improve f1 engine reliability Rocketdyne

193

00:09:43,270 --> 00:09:40,250

has designed and tested a new tight fit

194

00:09:45,490 --> 00:09:43,280

locks impeller spline coupling test

195

00:09:48,340 --> 00:09:45,500

results indicate the new design with

196

00:09:52,660 --> 00:09:48,350

reduction of turbo pump rpm will

197

00:09:55,120 --> 00:09:52,670

eliminate LOX pump explosions testing of

198

00:09:57,790 --> 00:09:55,130

the mark 10 turbo pump with shot peened

199

00:10:00,070 --> 00:09:57,800

locks impellers indicated a tenfold

200

00:10:03,250 --> 00:10:00,080

increase in the number of cycles to

201
00:10:04,990 --> 00:10:03,260
failure as a result all existing turbo

202
00:10:08,830 --> 00:10:05,000
pumps have been retrofitted with the

203
00:10:10,740 --> 00:10:08,840
shot peened impeller production of f1

204
00:10:13,360 --> 00:10:10,750
engines at rocky dines canoga park

205
00:10:14,650 --> 00:10:13,370
manufacturing area progressed steadily

206
00:10:17,050 --> 00:10:14,660
during the quarter

207
00:10:19,720 --> 00:10:17,060
this facility is capable of handling the

208
00:10:23,680 --> 00:10:19,730
final assembly and check out of six f-1

209
00:10:25,990 --> 00:10:23,690
engines simultaneously progress is

210
00:10:28,390 --> 00:10:26,000
continuing toward an early 1965

211
00:10:35,260 --> 00:10:28,400
completion of rocky Dynes manufacturing

212
00:10:38,140 --> 00:10:35,270
building number four Santa Susana the

213
00:10:40,000 --> 00:10:38,150

two position tests turned Bravo one has

214

00:10:42,820 --> 00:10:40,010

been converted to an f1 engine

215

00:10:44,890 --> 00:10:42,830

components test facility providing for

216

00:10:47,410 --> 00:10:44,900

longer duration tests than were formerly

217

00:10:50,140 --> 00:10:47,420

possible one position would be used for

218

00:10:58,390 --> 00:10:50,150

gas generator testing and the other for

219

00:11:00,700 --> 00:10:58,400

heat exchanger tests at the Marshall

220

00:11:03,340 --> 00:11:00,710

Center propulsion system testing of the

221

00:11:05,740 --> 00:11:03,350

second f1 production engine began last

222

00:11:08,110 --> 00:11:05,750

quarter continued during this report

223

00:11:10,930 --> 00:11:08,120

period the first production engine is

224

00:11:14,050 --> 00:11:10,940

undergoing minor rework in preparation

225

00:11:17,380 --> 00:11:14,060

for installation in Marshalls new f1

226

00:11:19,450 --> 00:11:17,390

engine static test and in January the

227

00:11:28,780 --> 00:11:19,460

first firing in the new stand is

228

00:11:32,410 --> 00:11:28,790

scheduled for early 1965 during a static

229

00:11:34,600 --> 00:11:32,420

firing of engine j2 mm on September 19th

230

00:11:38,280 --> 00:11:34,610

at Santa Susana a gas generator

231

00:11:41,079 --> 00:11:38,290

explosion occurred as a result

232

00:11:41,920 --> 00:11:41,089

Rocketdyne built this mock-up of the j2

233

00:11:44,139 --> 00:11:41,930

new matte

234

00:11:47,019 --> 00:11:44,149

control system including the gas

235

00:11:50,829 --> 00:11:47,029

generator to evaluate possible solutions

236

00:11:53,290 --> 00:11:50,839

to the problem analysis of test data on

237

00:11:55,450 --> 00:11:53,300

one proposed solution connecting the gas

238

00:11:57,820 --> 00:11:55,460

generator valve cast to the control

239

00:11:59,889 --> 00:11:57,830

pressure point indicated this would be

240

00:12:03,310 --> 00:11:59,899

successful in preventing one possible

241

00:12:04,930 --> 00:12:03,320

cause of the explosion other research

242

00:12:06,850 --> 00:12:04,940

and development activity and the j2

243

00:12:09,670 --> 00:12:06,860

engine by rocky day in this quarter

244

00:12:11,410 --> 00:12:09,680

included flame resistance testing of the

245

00:12:14,680 --> 00:12:11,420

connector for the flexible armored

246

00:12:16,780 --> 00:12:14,690

harness now used for all j2 electrical

247

00:12:19,660 --> 00:12:16,790

control and instrumentation harness

248

00:12:22,360 --> 00:12:19,670

wiring in this test the system did not

249

00:12:34,540 --> 00:12:22,370

short out for 6 and 1/2 minutes under a

250

00:12:39,650 --> 00:12:37,790

J two-engine preliminary flight rating

251
00:12:42,860 --> 00:12:39,660
tests were successfully completed

252
00:12:45,980 --> 00:12:42,870
November 25th by Rocketdyne at its santa

253
00:12:48,559 --> 00:12:45,990
susana test site the j2 flight rating

254
00:12:52,639 --> 00:12:48,569
test is scheduled to be conducted early

255
00:12:55,850 --> 00:12:52,649
in 1965 following a final test vertical

256
00:12:59,119 --> 00:12:55,860
test stand 3a at Santa Susana was closed

257
00:13:01,429 --> 00:12:59,129
for extensive renovation close coupling

258
00:13:03,829 --> 00:13:01,439
of propellant tanks and improved vacuum

259
00:13:05,960 --> 00:13:03,839
jacketing under hydrogen lines are

260
00:13:08,090 --> 00:13:05,970
expected to provide a better engine

261
00:13:11,049 --> 00:13:08,100
start condition and more effective

262
00:13:13,999 --> 00:13:11,059
altitude simulation for a flight rating

263
00:13:16,100 --> 00:13:14,009

at the Marshall Center construction of

264

00:13:18,889 --> 00:13:16,110

the j2 engine test facility is

265

00:13:27,259 --> 00:13:18,899

approximately 95% finished with

266

00:13:29,809 --> 00:13:27,269

completion due in January the first

267

00:13:32,150 --> 00:13:29,819

redesigned Saturn 5 instrument unit

268

00:13:34,519 --> 00:13:32,160

structure was delivered to Marshall by

269

00:13:36,920 --> 00:13:34,529

General Dynamics Fort Worth Texas this

270

00:13:40,639 --> 00:13:36,930

quarter the structure will be used for

271

00:13:43,240 --> 00:13:40,649

the dynamic test unit vibration testing

272

00:13:46,639 --> 00:13:43,250

for evaluation of IU cold plates

273

00:13:49,220 --> 00:13:46,649

manufactured by four vendors fgo North

274

00:13:51,499 --> 00:13:49,230

American solar aircraft and air angka

275

00:13:53,629 --> 00:13:51,509

was in progress at Marshall during the

276
00:13:55,939 --> 00:13:53,639
quarter vendor selection will be made

277
00:13:59,689 --> 00:13:55,949
following completion of evaluation

278
00:14:01,639 --> 00:13:59,699
testing as negotiations continued with

279
00:14:04,999 --> 00:14:01,649
International Business Machines for the

280
00:14:07,129 --> 00:14:05,009
IU mission contract IBM personnel are

281
00:14:11,059 --> 00:14:07,139
already at work in their new Huntsville

282
00:14:13,549 --> 00:14:11,069
engineering laboratories one of the most

283
00:14:15,980 --> 00:14:13,559
significant activities in which IBM is

284
00:14:18,710 --> 00:14:15,990
participating is preparation for the

285
00:14:21,410 --> 00:14:18,720
flight systems test program a thermal

286
00:14:23,840 --> 00:14:21,420
vacuum test of the entire IU under

287
00:14:26,179 --> 00:14:23,850
simulated space flight conditions to be

288
00:14:27,980 --> 00:14:26,189

performed in an environmental chamber at

289

00:14:31,369 --> 00:14:27,990

Douglas aircrafts Huntington Beach

290

00:14:33,530 --> 00:14:31,379

facility to reduce costly duplication of

291

00:14:35,569 --> 00:14:33,540

testing facilities special test

292

00:14:37,939 --> 00:14:35,579

equipment which will be required both at

293

00:14:40,189 --> 00:14:37,949

Huntsville and Huntington Beach is being

294

00:14:44,780 --> 00:14:40,199

installed in trailers which can be air

295

00:14:47,180 --> 00:14:44,790

transported between these locations IB

296

00:14:49,790 --> 00:14:47,190

personnel this quarter also performed

297

00:14:53,360 --> 00:14:49,800

functional testing of the IU radar

298

00:14:57,080 --> 00:14:53,370

altimeter using an MSF C furnished test

299

00:14:59,810 --> 00:14:57,090

set another test involved a circuit

300

00:15:02,690 --> 00:14:59,820

analysis of the I use remote digital sub

301
00:15:04,940 --> 00:15:02,700
multiplexer breadboard circuit modules

302
00:15:07,910 --> 00:15:04,950
which duplicate production hardware in

303
00:15:10,250 --> 00:15:07,920
component utilization and location are

304
00:15:12,320 --> 00:15:10,260
tested in a temperature chamber to

305
00:15:14,540 --> 00:15:12,330
detect possible circuit malfunctions

306
00:15:17,930 --> 00:15:14,550
resulting from components tolerance

307
00:15:20,420 --> 00:15:17,940
accumulations also in progress this

308
00:15:23,090 --> 00:15:20,430
quarter were desired evaluation Studies

309
00:15:26,150 --> 00:15:23,100
on a newly designed channel unit for the

310
00:15:29,180 --> 00:15:26,160
IU telemetry system all these operations

311
00:15:31,250 --> 00:15:29,190
are providing valuable experience as IBM

312
00:15:34,340 --> 00:15:31,260
phases into complete responsibility for

313
00:15:42,290 --> 00:15:34,350

a mission qualified Saturn 5 instrument

314

00:15:44,810 --> 00:15:42,300

unit the construction phase of the

315

00:15:47,270 --> 00:15:44,820

Saturn 5 dynamic test stand at Marshall

316

00:15:49,430 --> 00:15:47,280

is complete except for installation of

317

00:15:53,450 --> 00:15:49,440

small items such as bracket tray and

318

00:15:55,670 --> 00:15:53,460

grating components of the second s1c

319

00:15:58,280 --> 00:15:55,680

transporter delivered by frou Hoff of

320

00:16:02,000 --> 00:15:58,290

Los Angeles in early November have been

321

00:16:04,010 --> 00:16:02,010

assembled at Marshall at the Saturn 5

322

00:16:06,170 --> 00:16:04,020

ground support equipment test facility

323

00:16:08,660 --> 00:16:06,180

construction is virtually complete

324

00:16:11,450 --> 00:16:08,670

except for installation of cryogenic

325

00:16:13,520 --> 00:16:11,460

lines all technical systems equipment

326

00:16:16,250 --> 00:16:13,530

has been delivered and installation is

327

00:16:20,210 --> 00:16:16,260

about 50% finished with completion due

328

00:16:22,910 --> 00:16:20,220

in January overall construction of the

329

00:16:24,950 --> 00:16:22,920

Saturn 5 barge dock and loading facility

330

00:16:28,670 --> 00:16:24,960

on the Tennessee River is practically

331

00:16:31,100 --> 00:16:28,680

complete at Marshalls Mississippi test

332

00:16:34,520 --> 00:16:31,110

facility construction proceeded under

333

00:16:37,940 --> 00:16:34,530

test complex comprising the s 1 C dual

334

00:16:42,110 --> 00:16:37,950

position static test stand and the 2 s 2

335

00:16:44,420 --> 00:16:42,120

static test stands the laboratory and

336

00:16:47,630 --> 00:16:44,430

engineering complex which contains the

337

00:16:50,960 --> 00:16:47,640

office and administration building the

338

00:16:55,340 --> 00:16:50,970

data handling center and the telephone

339

00:16:57,620 --> 00:16:55,350

and terminal building and the support

340

00:16:58,730 --> 00:16:57,630

services complex including such

341

00:17:02,180 --> 00:16:58,740

facilities as

342

00:17:07,240 --> 00:17:02,190

emergency services building MTF

343

00:17:11,000 --> 00:17:07,250

warehouse site maintenance building and

344

00:17:15,260 --> 00:17:11,010

central heating plant in summary

345

00:17:16,850 --> 00:17:15,270

September October and November 1964 were

346

00:17:19,329 --> 00:17:16,860

months of highly significant

347

00:17:22,309 --> 00:17:19,339

achievements in the Saturn 5 program

348

00:17:25,010 --> 00:17:22,319

Assembly of s1c stages progressed

349

00:17:27,260 --> 00:17:25,020

steadily major milestones were reached

350

00:17:29,810 --> 00:17:27,270

in the upper stage programs with both

351

00:17:33,310 --> 00:17:29,820

the first s - battleship Hut firing and

352

00:17:35,660 --> 00:17:33,320

the first s4b battleship Hut firing

353

00:17:38,419 --> 00:17:35,670

significant progress was also achieved

354

00:17:41,030 --> 00:17:38,429

on the engine programs the instrument