
NASA
Rich Straka
Orbital Sciences Corporation

1
00:00:08,810 --> 00:00:07,070
good morning everyone this is our launch

2
00:00:12,020 --> 00:00:08,820
contingency news conference from

3
00:00:13,820 --> 00:00:12,030
Vandenberg Air Force Base and here to

4
00:00:16,070 --> 00:00:13,830
discuss what happened this morning with

5
00:00:19,880 --> 00:00:16,080
our Taurus launch with the glory

6
00:00:23,560 --> 00:00:19,890
spacecraft is Omar Baez the NASA launch

7
00:00:27,200 --> 00:00:23,570
director from the Kennedy Space Center

8
00:00:29,060 --> 00:00:27,210
Ron gray be the general manager for the

9
00:00:32,990 --> 00:00:29,070
orbital sciences corporation launch

10
00:00:34,700 --> 00:00:33,000
systems group rich Straka

11
00:00:36,549 --> 00:00:34,710
the deputy general manager for

12
00:00:40,000 --> 00:00:36,559
operations from the Orbital Sciences

13
00:00:42,950 --> 00:00:40,010

corporations launch systems group and

14
00:00:44,720 --> 00:00:42,960
Mike Luthor the deputy associate

15
00:00:46,310 --> 00:00:44,730
administrator for programs for the

16
00:00:49,250 --> 00:00:46,320
science Mission Directorate at NASA

17
00:00:53,680 --> 00:00:49,260
headquarters and we'll begin first with

18
00:00:56,990 --> 00:00:53,690
Omar Baez Omar thank you George

19
00:00:59,209 --> 00:00:57,000
it's a very difficult situation we're in

20
00:01:04,100 --> 00:00:59,219
here and I'm going to try to explain to

21
00:01:06,010 --> 00:01:04,110
you what happened last night and into

22
00:01:09,500 --> 00:01:06,020
this morning as far as the countdown and

23
00:01:13,730 --> 00:01:09,510
all the events as we got through them

24
00:01:16,940 --> 00:01:13,740
and what we know to this point the last

25
00:01:19,910 --> 00:01:16,950
night our team came in at 10 p.m. to

26
00:01:24,710 --> 00:01:19,920
open up the checklist for the Taurus t9

27
00:01:27,530 --> 00:01:24,720
glory mission we set up the facilities

28
00:01:31,730 --> 00:01:27,540
in a range powered up the Taurus launch

29
00:01:33,649 --> 00:01:31,740
vehicle we checked out the FTS system we

30
00:01:38,950 --> 00:01:33,659
got through our polls we got into the

31
00:01:42,050 --> 00:01:38,960
hot count we encountered no anomalies

32
00:01:46,359 --> 00:01:42,060
with the spacecraft or the launch

33
00:01:54,289 --> 00:01:49,130
at t-minus five minutes we did our last

34
00:01:59,260 --> 00:01:54,299
poll and we lifted off at 209 43 this

35
00:02:04,260 --> 00:02:02,590
state zero burn nominally for a minute

36
00:02:09,100 --> 00:02:04,270
and 25 seconds

37
00:02:11,710 --> 00:02:09,110
stage 1 then ignited in a millisecond

38
00:02:17,170 --> 00:02:11,720

later we separated from the stage zero

39
00:02:21,430 --> 00:02:17,180
and continued from flight we did that

40
00:02:24,729 --> 00:02:21,440
till 2 minutes and 45 seconds where we

41
00:02:30,790 --> 00:02:24,739
had indication of burnout of the stage 1

42
00:02:35,860 --> 00:02:30,800
and we had ignition of stage 2 about 6

43
00:02:39,390 --> 00:02:35,870
seconds later after stage 2 ignition we

44
00:02:42,670 --> 00:02:39,400
were expecting to see the fairing on the

45
00:02:47,500 --> 00:02:42,680
t9 separate we didn't see the indication

46
00:02:49,300 --> 00:02:47,510
of fairing separation there was other

47
00:02:51,310 --> 00:02:49,310
indications such as performance loss

48
00:02:58,800 --> 00:02:51,320
that we saw a little bit later on and

49
00:03:10,539 --> 00:03:03,330
and all indications are that the

50
00:03:15,729 --> 00:03:10,549
satellite in rocket order is in the

51
00:03:18,580 --> 00:03:15,739
Southern Pacific Ocean somewhere and

52
00:03:19,300 --> 00:03:18,590
that's all I have for you all right

53
00:03:22,390 --> 00:03:19,310
Thank You Omar

54
00:03:24,220 --> 00:03:22,400
and now to ron gray be the general

55
00:03:26,729 --> 00:03:24,230
manager for the orbital sciences

56
00:03:30,520 --> 00:03:26,739
corporation loft Systems Group rod

57
00:03:34,229 --> 00:03:30,530
thanks well let me just say this is a

58
00:03:36,759 --> 00:03:34,239
pretty tough night for all of us a

59
00:03:39,280 --> 00:03:36,769
little over two years ago we had a

60
00:03:43,060 --> 00:03:39,290
similar tough night when we conducted a

61
00:03:46,289 --> 00:03:43,070
Taurus launch for the OC o mission that

62
00:03:49,150 --> 00:03:46,299
mission suffered a failure the failure

63
00:03:53,819 --> 00:03:49,160

was a failure of the fairing to to

64
00:03:57,069 --> 00:03:53,829
separate we conducted an extensive

65
00:03:59,740 --> 00:03:57,079
investigation of that anomaly and we

66
00:04:01,150 --> 00:03:59,750
traced the most probable cause to a

67
00:04:05,710 --> 00:04:01,160
failure of the fairing separation

68
00:04:08,949 --> 00:04:05,720
initiation system we spent the last two

69
00:04:10,870 --> 00:04:08,959
years doing the analysis on what went

70
00:04:14,120 --> 00:04:10,880
wrong the last

71
00:04:18,320 --> 00:04:14,130
redesigning the system and testing the

72
00:04:20,120 --> 00:04:18,330
components of the system we went so far

73
00:04:23,690 --> 00:04:20,130
as to completely change out the

74
00:04:25,400 --> 00:04:23,700
initiation system to a system that we

75
00:04:28,970 --> 00:04:25,410
use on one of our other vehicles the

76
00:04:31,220 --> 00:04:28,980
Minotaur for vehicle and in the

77
00:04:35,750 --> 00:04:31,230
intervening two years that that system

78
00:04:37,640 --> 00:04:35,760
has flown successfully three times so we

79
00:04:39,680 --> 00:04:37,650
really went into this flight feeling

80
00:04:42,830 --> 00:04:39,690
confident that we had nailed the fairing

81
00:04:47,920 --> 00:04:42,840
issue and then we came up with the

82
00:04:55,160 --> 00:04:51,950
let me just say that there's a great

83
00:04:58,570 --> 00:04:55,170
deal of emotional investment on the part

84
00:05:01,340 --> 00:04:58,580
of all the players on any spaceflight

85
00:05:05,290 --> 00:05:01,350
but that's probably doubly so on a

86
00:05:08,780 --> 00:05:05,300
return to flight effort like this one

87
00:05:10,610 --> 00:05:08,790
I'll just speak briefly to the you know

88
00:05:12,680 --> 00:05:10,620

this is the emotional state if you will

89
00:05:15,410 --> 00:05:12,690
of the of the team and I mean the broad

90
00:05:18,740 --> 00:05:15,420
team the launch team the spacecraft team

91
00:05:20,480 --> 00:05:18,750
on both the industry and the NASA side I

92
00:05:22,220 --> 00:05:20,490
would I think it's not an understatement

93
00:05:27,770 --> 00:05:22,230
to say that tonight we're all pretty

94
00:05:29,180 --> 00:05:27,780
devastated but we will recover well but

95
00:05:32,540 --> 00:05:29,190
the team will bounce back because

96
00:05:34,040 --> 00:05:32,550
they're all professionals and orbital

97
00:05:38,030 --> 00:05:34,050
sciences will bounce back with the

98
00:05:40,270 --> 00:05:38,040
Taurus vehicle let me turn it over to

99
00:05:42,680 --> 00:05:40,280
rich Straka and rich will go through

100
00:05:44,630 --> 00:05:42,690
some of the differences between the

101
00:05:46,790 --> 00:05:44,640
system that we flew on Osio and what we

102
00:05:48,890 --> 00:05:46,800
flew here tonight all right thank you

103
00:05:50,870 --> 00:05:48,900
rod and which track has the deputy

104
00:05:53,410 --> 00:05:50,880
general manager for operations for

105
00:05:56,390 --> 00:05:53,420
orbital sciences long Systems Group rich

106
00:05:58,040 --> 00:05:56,400
okay to give you an idea of what we

107
00:05:59,750 --> 00:05:58,050
changed I'll just go through a brief

108
00:06:02,570 --> 00:05:59,760
description of how that what the fairing

109
00:06:05,210 --> 00:06:02,580
is and how it works the Taurus uses a

110
00:06:07,040 --> 00:06:05,220
clamshell fairing and the fairing is

111
00:06:09,170 --> 00:06:07,050
held onto the vehicle we're constrained

112
00:06:12,320 --> 00:06:09,180
the vehicle with what we call frangible

113
00:06:14,690 --> 00:06:12,330

joints and those joints are meant to

114
00:06:18,020 --> 00:06:14,700
explosively fracture when commanded to

115
00:06:19,830 --> 00:06:18,030
do so when the joints explosively

116
00:06:23,730 --> 00:06:19,840
fracture

117
00:06:26,040 --> 00:06:23,740
the fairing is then in two halves and

118
00:06:30,600 --> 00:06:26,050
there are piston pushers that push the

119
00:06:33,570 --> 00:06:30,610
fairing off in the OCO vehicle and

120
00:06:35,820 --> 00:06:33,580
previous tourist vehicles we use what

121
00:06:39,390 --> 00:06:35,830
was called a hot gas system to do that

122
00:06:42,210 --> 00:06:39,400
pushing job so there was a pyro

123
00:06:45,270 --> 00:06:42,220
technically initiated combustion process

124
00:06:48,030 --> 00:06:45,280
that generated hot gas and the pressure

125
00:06:50,970 --> 00:06:48,040
of that hot gas pushing the Pistons

126
00:06:54,920 --> 00:06:50,980
pushed the fairing halves apart

127
00:06:57,480 --> 00:06:54,930
as Ron said in the investigation we

128
00:07:01,320 --> 00:06:57,490
identified the most probable cause of

129
00:07:05,760 --> 00:07:01,330
the OCO failure as a failure to initiate

130
00:07:08,220 --> 00:07:05,770
that hot gas combustion process so what

131
00:07:10,320 --> 00:07:08,230
we did in response to that is we swapped

132
00:07:13,080 --> 00:07:10,330
out or we changed out redesigned the

133
00:07:16,350 --> 00:07:13,090
deployment system to use a cold gas

134
00:07:19,940 --> 00:07:16,360
system which is a pressurized bottle of

135
00:07:22,470 --> 00:07:19,950
nitrogen that then when commanded

136
00:07:24,360 --> 00:07:22,480
functions by pressurizing those same

137
00:07:28,050 --> 00:07:24,370
Pistons and pushing the fairing halves

138
00:07:29,909 --> 00:07:28,060

apart it uses a completely different a

139
00:07:32,400 --> 00:07:29,919
Nisshin system and a completely

140
00:07:35,340 --> 00:07:32,410
different pressurization methodology

141
00:07:37,409 --> 00:07:35,350
than the OCO system and as Ron said we

142
00:07:40,980 --> 00:07:37,419
we really felt like we had the problem

143
00:07:44,130 --> 00:07:40,990
nailed and that particular system has

144
00:07:46,770 --> 00:07:44,140
flown three times last year a very

145
00:07:48,900 --> 00:07:46,780
similar system almost identical system

146
00:07:54,140 --> 00:07:48,910
flew and our Minotaur four product lines

147
00:07:58,230 --> 00:07:54,150
successfully three times last year so

148
00:08:00,480 --> 00:07:58,240
right now we're crunching the data but

149
00:08:02,370 --> 00:08:00,490
there was really not enough data that's

150
00:08:05,460 --> 00:08:02,380
been processed so far to really tell any

151
00:08:08,340 --> 00:08:05,470
more than the fairing didn't didn't

152
00:08:11,760 --> 00:08:08,350
deploy and that's about all I have to

153
00:08:13,409 --> 00:08:11,770
say thank you rich and Mike Luthor the

154
00:08:15,090 --> 00:08:13,419
deputy associate administrator for

155
00:08:16,680 --> 00:08:15,100
ministration for programs for the

156
00:08:20,550 --> 00:08:16,690
science Mission Directorate and NASA

157
00:08:21,930 --> 00:08:20,560
headquarters Mike well clearly the

158
00:08:24,300 --> 00:08:21,940
science Mission Directorate and the

159
00:08:27,690 --> 00:08:24,310
Earth Science Division is extremely

160
00:08:30,149 --> 00:08:27,700
disappointed in the loss tonight we had

161
00:08:32,189 --> 00:08:30,159
worked closely at all levels of

162
00:08:35,430 --> 00:08:32,199
the agency and with our industry

163
00:08:38,069 --> 00:08:35,440

partners to evaluate this risk and we

164
00:08:40,189 --> 00:08:38,079
felt going in that we believed we had an

165
00:08:44,189 --> 00:08:40,199
acceptable level of risk

166
00:08:46,439 --> 00:08:44,199
clearly we missed something so we've now

167
00:08:48,780 --> 00:08:46,449
got to go off find out what that is

168
00:08:54,900 --> 00:08:48,790
fix it and that is in fact what we will

169
00:08:56,400 --> 00:08:54,910
do in the meantime we we have lost the

170
00:08:58,499 --> 00:08:56,410
glory mission it would have made

171
00:09:02,040 --> 00:08:58,509
important measurements for the

172
00:09:04,340 --> 00:09:02,050
understanding of earth as a system and

173
00:09:08,490 --> 00:09:04,350
of the impacts of climate change

174
00:09:09,689 --> 00:09:08,500
however the earth SMD science Mission

175
00:09:12,540 --> 00:09:09,699
Directorate and the Earth Science

176
00:09:15,329 --> 00:09:12,550
Division will continue to contribute and

177
00:09:18,710 --> 00:09:15,339
make significant contributions to the

178
00:09:21,629 --> 00:09:18,720
understanding of the earth with its 13

179
00:09:25,980 --> 00:09:21,639
existing operating missions and a cadre

180
00:09:29,129 --> 00:09:25,990
of aircraft and ground networks and data

181
00:09:32,670 --> 00:09:29,139
systems contributing to our science

182
00:09:35,280 --> 00:09:32,680
research in addition we'll continue to

183
00:09:40,319 --> 00:09:35,290
plan the path forward into the next

184
00:09:41,850 --> 00:09:40,329
decade with a CAD Dre of more than a

185
00:09:45,720 --> 00:09:41,860
dozen missions to be launched in the

186
00:09:47,629 --> 00:09:45,730
next 10 years all right

187
00:09:50,009 --> 00:09:47,639
thank you Mike and we're ready now for

188
00:09:52,079 --> 00:09:50,019

questions please give your name and

189
00:09:53,579 --> 00:09:52,089
affiliation when the microphone comes to

190
00:09:55,740 --> 00:09:53,589
you we'll start in the front with Nora

191
00:09:57,660 --> 00:09:55,750
Thank You Nora Wallace at the Santa

192
00:09:59,579 --> 00:09:57,670
Barbara News Press Omar you said

193
00:10:01,920 --> 00:09:59,589
something about other indications of

194
00:10:06,720 --> 00:10:01,930
performance loss can you expand on that

195
00:10:09,650 --> 00:10:06,730
at all yeah what you see is since we

196
00:10:12,870 --> 00:10:09,660
didn't jettison the fairing you see

197
00:10:16,019 --> 00:10:12,880
we're we're expecting to shed weight as

198
00:10:18,150 --> 00:10:16,029
a fairing comes off and obviously

199
00:10:20,429 --> 00:10:18,160
wouldn't shed that way and the rocket

200
00:10:27,370 --> 00:10:20,439
just can't carry you into orbit with

201
00:10:32,120 --> 00:10:29,810
Janine's skully santa maria times Lompoc

202
00:10:34,100 --> 00:10:32,130
record can you I know it's still early

203
00:10:36,790 --> 00:10:34,110
and you haven't thoroughly gone through

204
00:10:40,460 --> 00:10:36,800
the data but can someone explain how

205
00:10:42,830 --> 00:10:40,470
similar this is to the OSI Oh failure

206
00:10:46,930 --> 00:10:42,840
do you have indication of partial

207
00:10:49,130 --> 00:10:46,940
separation is there any kind of

208
00:10:53,360 --> 00:10:49,140
assessment that you can give in terms of

209
00:10:55,370 --> 00:10:53,370
Oh coz I guess I can take that we really

210
00:10:57,950 --> 00:10:55,380
don't have any of the data processed yet

211
00:11:00,650 --> 00:10:57,960
it's going to be several hours before we

212
00:11:03,260 --> 00:11:00,660
get a good look at the data so it's too

213
00:11:05,240 --> 00:11:03,270

early to tell whether it's it's the same

214
00:11:08,150 --> 00:11:05,250
thing as we faced last time in terms of

215
00:11:10,000 --> 00:11:08,160
the you know the symptoms and the data

216
00:11:13,130 --> 00:11:10,010
pattern we just don't know right now

217
00:11:15,110 --> 00:11:13,140
what I can say is that we did put

218
00:11:16,670 --> 00:11:15,120
additional telemetry points and we do

219
00:11:21,100 --> 00:11:16,680
have additional instrumentation

220
00:11:25,010 --> 00:11:21,110
on this flight so we do have a leg up on

221
00:11:26,840 --> 00:11:25,020
determining root cause this time and but

222
00:11:31,850 --> 00:11:26,850
it's too early to tell if it if it is in

223
00:11:34,190 --> 00:11:31,860
fact the same cause Omar are you going

224
00:11:37,100 --> 00:11:34,200
to be able to pinpoint more where the

225
00:11:39,890 --> 00:11:37,110
satellite might have ended up yeah like

226
00:11:42,740 --> 00:11:39,900
we should be able to it's just too

227
00:11:45,650 --> 00:11:42,750
preliminary to get the trajectory of

228
00:11:49,850 --> 00:11:45,660
word ended up but seeing that it's

229
00:11:53,030 --> 00:11:49,860
similar weight to what oka was and the

230
00:11:55,460 --> 00:11:53,040
same launch vehicle performance it's

231
00:11:59,320 --> 00:11:55,470
likely physics says it's likely in the

232
00:12:04,790 --> 00:12:02,960
can you explain is there any kind of

233
00:12:08,390 --> 00:12:04,800
difference between the system that's

234
00:12:10,940 --> 00:12:08,400
been used on glory versus what's flown

235
00:12:16,130 --> 00:12:10,950
successfully on Minotaur and in terms of

236
00:12:20,570 --> 00:12:16,140
trying to figure what what happened the

237
00:12:22,610 --> 00:12:20,580
the fairing system itself is is very

238
00:12:26,990 --> 00:12:22,620

similar but they are different fairings

239
00:12:28,760 --> 00:12:27,000
between the two vehicles the there are

240
00:12:31,300 --> 00:12:28,770
different sizes for one thing the

241
00:12:33,590 --> 00:12:31,310
Minotaur fairing is quite a bit larger

242
00:12:35,780 --> 00:12:33,600
but it does use the same basic

243
00:12:38,960 --> 00:12:35,790
mechanisms the same frangible joint

244
00:12:39,380 --> 00:12:38,970
system for for the separation or the

245
00:12:42,380 --> 00:12:39,390
frack

246
00:12:45,100 --> 00:12:42,390
during process and the jettison system

247
00:12:48,650 --> 00:12:45,110
the piston system is is almost identical

248
00:12:52,010 --> 00:12:48,660
so but but there are differences in

249
00:12:58,460 --> 00:12:52,020
terms of the fairing size and and the

250
00:13:01,130 --> 00:12:58,470
geometry of the fairing from NASA

251
00:13:03,830 --> 00:13:01,140
standpoint if you can speak maybe expand

252
00:13:05,390 --> 00:13:03,840
a little bit on how the earth science

253
00:13:07,550 --> 00:13:05,400
group and the scientists here who've

254
00:13:11,090 --> 00:13:07,560
spent decades on this mission rebound

255
00:13:13,370 --> 00:13:11,100
from this and how how the crew might

256
00:13:18,290 --> 00:13:13,380
bond together in this to recover from

257
00:13:21,920 --> 00:13:18,300
this loss well as as as you mentioned

258
00:13:25,280 --> 00:13:21,930
the these missions are developed as you

259
00:13:29,980 --> 00:13:25,290
well know over a course of a number of

260
00:13:34,400 --> 00:13:29,990
years by some very dedicated people

261
00:13:37,730 --> 00:13:34,410
overcoming great odds and develop that

262
00:13:42,260 --> 00:13:37,740
really as a family and and so they

263
00:13:45,230 --> 00:13:42,270

respond to disappointments as a fan as a

264
00:13:49,640 --> 00:13:45,240
family would quite frankly and so I

265
00:13:53,630 --> 00:13:49,650
think you know if you can imagine how

266
00:13:56,450 --> 00:13:53,640
any family responds to a loss that might

267
00:13:57,500 --> 00:13:56,460
occur they've overcome other obstacles

268
00:13:59,270 --> 00:13:57,510
previously

269
00:14:02,840 --> 00:13:59,280
I'm sure they'll overcome this one

270
00:14:04,610 --> 00:14:02,850
although it is quite painful after

271
00:14:11,510 --> 00:14:04,620
having dedicated so many years of your

272
00:14:14,810 --> 00:14:11,520
life can you comment on the status of

273
00:14:18,950 --> 00:14:14,820
co2 will it still use the current plan

274
00:14:20,900 --> 00:14:18,960
is to fly on a Taurus XL is that what's

275
00:14:24,800 --> 00:14:20,910
the plan now

276
00:14:26,870 --> 00:14:24,810
is is in development and a couple of

277
00:14:29,450 --> 00:14:26,880
years away from launch yet we'll have to

278
00:14:32,270 --> 00:14:29,460
evaluate you know the outcome of this

279
00:14:42,860 --> 00:14:32,280
investigation and and we'll adjust our

280
00:14:47,990 --> 00:14:45,200
all right in that event saying millon