1
00:00:07,030 --> 00:00:05,030
good morning and welcome back to the us

2
00:00:08,950 --> 00:00:07,040
army's white sands missile range near

3
00:00:11,030 --> 00:00:08,960
las cruces new mexico this is our

4
00:00:13,030 --> 00:00:11,040
post-launch news conference for the

5
00:00:15,589 --> 00:00:13,040
paddleboard one flight test which is a

6
00:00:17,109 --> 00:00:15,599
test of the orion launch abort system we

7
00:00:18,950 --> 00:00:17,119
are going to introduce our panelists

8
00:00:22,550 --> 00:00:18,960
here who will have some opening remarks

9
00:00:27,429 --> 00:00:23,590
we'll take

10
00:00:29,589 --> 00:00:27,439
reporters in the audience and also on

11
00:00:34,870 --> 00:00:29,599
the line from the johnson space center

12
00:00:38,869 --> 00:00:37,110
with that all introduced uh doug cook

13
00:00:41,110 --> 00:00:38,879

from nasa headquarters he's the

14
00:00:44,790 --> 00:00:41,120
associate administrator of the

15
00:00:47,510 --> 00:00:44,800
exploration system's mission directorate

16
00:00:50,150 --> 00:00:47,520
as well as mark guyer the manager of the

17
00:00:51,910 --> 00:00:50,160
orion project at the nasa johnson space

18
00:00:54,229 --> 00:00:51,920
center in houston

19
00:00:56,310 --> 00:00:54,239
and don reid the manager of the flight

20
00:00:58,069 --> 00:00:56,320
test office in the orion project office

21
00:00:59,990 --> 00:00:58,079
and also served as the test director

22
00:01:02,470 --> 00:01:00,000
this morning

23
00:01:04,149 --> 00:01:02,480
and to the his left is the brigadier

24
00:01:06,070 --> 00:01:04,159
general john reagan who's the commander

25
00:01:07,990 --> 00:01:06,080
here at the white sands missile range so

26
00:01:08,870 --> 00:01:08,000
we'll start out with comments from doug

27
00:01:11,590 --> 00:01:08,880
thank you

28
00:01:13,510 --> 00:01:11,600
um obviously it's a very big day for the

29
00:01:15,590 --> 00:01:13,520
exploration team it looked to be

30
00:01:18,710 --> 00:01:15,600
flawless from my point of view

31
00:01:19,910 --> 00:01:18,720
it was it's a very complex system

32
00:01:22,070 --> 00:01:19,920
it's the first

33
00:01:24,070 --> 00:01:22,080
this first abort system the us has

34
00:01:26,630 --> 00:01:24,080
developed since apollo but it's much

35
00:01:28,310 --> 00:01:26,640
more advanced it has more capability

36
00:01:30,710 --> 00:01:28,320
advanced technologies

37
00:01:31,910 --> 00:01:30,720
that will be of value to us in the

38
00:01:33,910 --> 00:01:31,920

future

39
00:01:36,310 --> 00:01:33,920
we were never able to to put any kind of

40
00:01:38,310 --> 00:01:36,320
a real abort system on shuttle but for

41
00:01:41,429 --> 00:01:38,320
the future vehicles this is this is

42
00:01:44,870 --> 00:01:41,439
capability that that we'll have and have

43
00:01:46,870 --> 00:01:44,880
now demonstrated um and just looked just

44
00:01:49,429 --> 00:01:46,880
looked terrific and i really appreciate

45
00:01:51,510 --> 00:01:49,439
the efforts of the of the the entire

46
00:01:55,190 --> 00:01:51,520
team uh all my management chain from

47
00:01:57,510 --> 00:01:55,200
jeff hanley to mark and don and and i i

48
00:01:59,350 --> 00:01:57,520
really appreciate the work of all the

49
00:02:00,389 --> 00:01:59,360
all the industry team with the lockheed

50
00:02:04,630 --> 00:02:00,399
martin

51
00:02:07,190 --> 00:02:04,640
and atk and aerojet and orbital

52
00:02:09,669 --> 00:02:07,200
with cleon and and all of that all the

53
00:02:11,830 --> 00:02:09,679
industry team

54
00:02:14,070 --> 00:02:11,840
it's a tremendous effort to get to this

55
00:02:16,229 --> 00:02:14,080
point it was a complex system there were

56
00:02:18,949 --> 00:02:16,239
some hurdles and they've been workers

57
00:02:20,390 --> 00:02:18,959
working on this for um

58
00:02:23,110 --> 00:02:20,400
about four years

59
00:02:25,430 --> 00:02:23,120
and so uh is i really appreciate the

60
00:02:27,430 --> 00:02:25,440
amount of uh dedication and focus and

61
00:02:28,309 --> 00:02:27,440
getting to this point today and and

62
00:02:36,550 --> 00:02:28,319
the

63
00:02:38,390 --> 00:02:36,560

can talk more details so i do appreciate

64
00:02:41,589 --> 00:02:38,400
all their work i appreciate the white

65
00:02:43,750 --> 00:02:41,599
sands missile range for for hosting this

66
00:02:46,150 --> 00:02:43,760
and being a part of the team as well

67
00:02:47,830 --> 00:02:46,160
they've done a terrific job appreciate

68
00:02:49,589 --> 00:02:47,840
all the work by everybody who organized

69
00:02:51,750 --> 00:02:49,599
this today

70
00:02:53,589 --> 00:02:51,760
because it's a big effort too to

71
00:02:55,190 --> 00:02:53,599
for all the logistics and everything but

72
00:02:59,110 --> 00:02:55,200
but it's a tremendous team effort all

73
00:03:00,630 --> 00:02:59,120
the way around so appreciate it everyone

74
00:03:02,550 --> 00:03:00,640
mark

75
00:03:03,990 --> 00:03:02,560
well gosh okay

76
00:03:06,149 --> 00:03:04,000
i had to write some things down because

77
00:03:07,990 --> 00:03:06,159
it's such a great day i'm having trouble

78
00:03:09,589 --> 00:03:08,000
keeping my brain focused

79
00:03:11,830 --> 00:03:09,599
um

80
00:03:14,149 --> 00:03:11,840
doug mentioned it an escape system is

81
00:03:16,710 --> 00:03:14,159
such a huge part of human rating

82
00:03:18,550 --> 00:03:16,720
for systems in the future as america

83
00:03:20,550 --> 00:03:18,560
continues to lead in space

84
00:03:22,790 --> 00:03:20,560
so testing those systems out is a huge

85
00:03:24,630 --> 00:03:22,800
step of of the for the orion project

86
00:03:25,990 --> 00:03:24,640
itself uh doug mentioned it's been a

87
00:03:27,030 --> 00:03:26,000
long time since we've done that and

88
00:03:29,910 --> 00:03:27,040

today

89
00:03:31,589 --> 00:03:29,920
this uh the highly talented team showed

90
00:03:33,830 --> 00:03:31,599
that we can do it that we can put these

91
00:03:35,830 --> 00:03:33,840
systems together and make them work and

92
00:03:38,149 --> 00:03:35,840
make our systems safer for the crew and

93
00:03:39,990 --> 00:03:38,159
better for the uh for the united states

94
00:03:41,190 --> 00:03:40,000
um doug mentioned already the great team

95
00:03:43,670 --> 00:03:41,200
i also want to

96
00:03:45,830 --> 00:03:43,680
call out cleon lacefield a huge amount

97
00:03:48,869 --> 00:03:45,840
of work leading this commercial industry

98
00:03:50,789 --> 00:03:48,879
team orbital lockheed atk aerojet

99
00:03:53,270 --> 00:03:50,799
honeywell there's a great team on the

100
00:03:55,190 --> 00:03:53,280
nasa side as well across the the major

101
00:03:56,470 --> 00:03:55,200
centers who are a huge part of pulling

102
00:03:58,710 --> 00:03:56,480
this all together

103
00:04:00,390 --> 00:03:58,720
and as well as our work with uh with the

104
00:04:02,309 --> 00:04:00,400
general here at the army great a great

105
00:04:03,509 --> 00:04:02,319
team and what's exciting now about the

106
00:04:05,589 --> 00:04:03,519
success

107
00:04:06,869 --> 00:04:05,599
is that they get to share in that

108
00:04:08,789 --> 00:04:06,879
and they get to look at the great work

109
00:04:10,470 --> 00:04:08,799
they've done and it's it's obvious to

110
00:04:12,149 --> 00:04:10,480
everyone else

111
00:04:14,229 --> 00:04:12,159
one of the things about these tests it's

112
00:04:16,069 --> 00:04:14,239
we do a lot of testing on the ground you

113
00:04:17,430 --> 00:04:16,079

test motors by themselves to see how

114
00:04:20,310 --> 00:04:17,440
they work you test computers by

115
00:04:22,469 --> 00:04:20,320
themselves but what what this test why

116
00:04:24,390 --> 00:04:22,479
it's hard is you put them all together

117
00:04:26,150 --> 00:04:24,400
you take your computers you take your

118
00:04:28,550 --> 00:04:26,160
attitude control motor and you decide to

119
00:04:31,510 --> 00:04:28,560
accelerate them at 15 g's and blare them

120
00:04:33,270 --> 00:04:31,520
with 163 dbs and they all got to work

121
00:04:35,430 --> 00:04:33,280
and the team did such a flawless job

122
00:04:46,790 --> 00:04:35,440
today it worked great and so it's a huge

123
00:04:50,629 --> 00:04:48,870
so so i'm done talking and we'll hand it

124
00:04:52,310 --> 00:04:50,639
over the man of the hour who made it all

125
00:05:00,629 --> 00:04:52,320
come together don reid thank you mark

126
00:05:04,150 --> 00:05:02,230
i'm too tired so i didn't write any

127
00:05:05,909 --> 00:05:04,160
notes down so i'll just add a little bit

128
00:05:08,390 --> 00:05:05,919
here but

129
00:05:09,110 --> 00:05:08,400
i'm very proud of this team

130
00:05:10,950 --> 00:05:09,120
like

131
00:05:13,110 --> 00:05:10,960
doug said we've been working well over

132
00:05:15,670 --> 00:05:13,120
four years to bring this together

133
00:05:17,590 --> 00:05:15,680
it's been a very complex uh

134
00:05:18,870 --> 00:05:17,600
joint team from all across nasa and

135
00:05:21,670 --> 00:05:18,880
industry

136
00:05:23,270 --> 00:05:21,680
and we all came together it's a very

137
00:05:25,990 --> 00:05:23,280
dedicated

138
00:05:29,189 --> 00:05:26,000

professional team that has sacrificed a

139
00:05:33,110 --> 00:05:31,110
so my heart goes out to the

140
00:05:35,110 --> 00:05:33,120
families and the people that that help

141
00:05:36,710 --> 00:05:35,120
make this possible today

142
00:05:38,710 --> 00:05:36,720
it's a great day for the country for

143
00:05:39,749 --> 00:05:38,720
nasa for industry

144
00:05:41,749 --> 00:05:39,759
and then

145
00:05:44,150 --> 00:05:41,759
going back to what doug said yes it was

146
00:05:47,430 --> 00:05:44,160
absolutely successful

147
00:05:48,950 --> 00:05:47,440
from my viewpoint inside the control

148
00:05:50,390 --> 00:05:48,960
van there we didn't see anything

149
00:05:52,870 --> 00:05:50,400
anomalous

150
00:05:55,110 --> 00:05:52,880
everything worked as it was expected in

151
00:05:57,510 --> 00:05:55,120
fact we actually touched down that

152
00:05:59,110 --> 00:05:57,520
uh significantly less velocity than we

153
00:06:01,510 --> 00:05:59,120
had predicted so

154
00:06:03,110 --> 00:06:01,520
so the performance was just absolutely

155
00:06:05,749 --> 00:06:03,120
astounding

156
00:06:08,070 --> 00:06:05,759
and we have a lot of relieved and very

157
00:06:09,270 --> 00:06:08,080
happy people out there to see all this

158
00:06:11,830 --> 00:06:09,280
hard work

159
00:06:13,590 --> 00:06:11,840
that they've done come to fruition

160
00:06:15,189 --> 00:06:13,600
now we can go get all the data that

161
00:06:18,150 --> 00:06:15,199
we're able to collect from this flight

162
00:06:19,990 --> 00:06:18,160
go back and look at our models validate

163
00:06:21,749 --> 00:06:20,000

what we predicted and take the lessons

164
00:06:23,990 --> 00:06:21,759
learned here and apply to

165
00:06:26,309 --> 00:06:24,000
whatever the future abort system is to

166
00:06:28,870 --> 00:06:26,319
for the next vehicle so

167
00:06:30,870 --> 00:06:28,880
so thanks to everybody and i'm so proud

168
00:06:41,909 --> 00:06:30,880
of this team it's a great accomplishment

169
00:06:46,710 --> 00:06:44,550
it's been a great honor and a privilege

170
00:06:49,110 --> 00:06:46,720
for our workforce to support this

171
00:06:51,830 --> 00:06:49,120
wonderful team that

172
00:06:54,550 --> 00:06:51,840
is that whose leadership is up here

173
00:06:57,350 --> 00:06:54,560
with me uh but who's out there and made

174
00:07:00,070 --> 00:06:57,360
this great success happen uh we in white

175
00:07:01,990 --> 00:07:00,080
sands have a great history of testing

176
00:07:03,990 --> 00:07:02,000
dating back to

177
00:07:05,990 --> 00:07:04,000
the manhattan project and the first

178
00:07:08,710 --> 00:07:06,000
trinity test site here

179
00:07:11,670 --> 00:07:08,720
v2 rockets and so we know how important

180
00:07:13,990 --> 00:07:11,680
testing is and it's just great to have

181
00:07:16,390 --> 00:07:14,000
this added to our history here and thank

182
00:07:18,230 --> 00:07:16,400
you so much for coming here today

183
00:07:21,430 --> 00:07:18,240
and the department of defense too we

184
00:07:23,589 --> 00:07:21,440
know how important testing uh is uh we

185
00:07:25,990 --> 00:07:23,599
of course test our weapon systems out

186
00:07:28,230 --> 00:07:26,000
here to make sure that they deliver uh

187
00:07:30,309 --> 00:07:28,240
for our soldiers in the field and we're

188
00:07:32,790 --> 00:07:30,319

just pleased to be a part of nasa as

189
00:07:35,589 --> 00:07:32,800
well and supporting this test uh

190
00:07:36,710 --> 00:07:35,599
so that uh your systems uh prove their

191
00:07:39,909 --> 00:07:36,720
metal uh

192
00:07:41,670 --> 00:07:39,919
in this test and can and can be used in

193
00:07:50,869 --> 00:07:41,680
in the future thanks very much for

194
00:07:54,790 --> 00:07:52,710
i just have one go back okay i did want

195
00:07:56,390 --> 00:07:54,800
to say um real quick one quick go back

196
00:07:59,350 --> 00:07:56,400
before we go to questions

197
00:08:00,390 --> 00:07:59,360
um so orion is by itself doesn't have

198
00:08:02,390 --> 00:08:00,400
much meaning right it's part of an

199
00:08:04,309 --> 00:08:02,400
architecture it's part of a system

200
00:08:05,670 --> 00:08:04,319
and and we wouldn't be here today

201
00:08:07,510 --> 00:08:05,680
without the the management and

202
00:08:08,950 --> 00:08:07,520
integration of that total system so i

203
00:08:11,350 --> 00:08:08,960
want to i want to thank jeff hanley for

204
00:08:12,790 --> 00:08:11,360
his leadership of the program and doug

205
00:08:14,309 --> 00:08:12,800
for his leadership at the exploration

206
00:08:16,150 --> 00:08:14,319
level because we wouldn't be here

207
00:08:26,869 --> 00:08:16,160
without their guidance and help

208
00:08:30,790 --> 00:08:28,550
with that we'll start with our questions

209
00:08:33,509 --> 00:08:30,800
here if the media have uh questions you

210
00:08:35,430 --> 00:08:33,519
can come up to the mic

211
00:08:36,790 --> 00:08:35,440
and if you can uh state your first your

212
00:08:38,469 --> 00:08:36,800
name and affiliation and then direct

213
00:08:41,029 --> 00:08:38,479

your question to somebody if you can

214
00:08:44,550 --> 00:08:41,039
yeah leonard david with space.com and

215
00:08:47,030 --> 00:08:44,560
aia aerospace america magazine um just

216
00:08:48,710 --> 00:08:47,040
curious with all the congressional

217
00:08:50,550 --> 00:08:48,720
and political

218
00:08:52,790 --> 00:08:50,560
cloud around

219
00:08:55,190 --> 00:08:52,800
consolation the program to what degree

220
00:08:57,350 --> 00:08:55,200
do you think you can dial back or scale

221
00:09:00,949 --> 00:08:57,360
up what you've learned here today how

222
00:09:03,509 --> 00:09:00,959
will it be applied to other systems

223
00:09:04,790 --> 00:09:03,519
yeah i think it's a great question um

224
00:09:06,870 --> 00:09:04,800
so

225
00:09:09,110 --> 00:09:06,880
there are key parts of of launch abort

226
00:09:10,550 --> 00:09:09,120
one you need to get out of the way quick

227
00:09:12,230 --> 00:09:10,560
two you need to make sure that you can

228
00:09:14,070 --> 00:09:12,240
steer it so you safely get out of the

229
00:09:15,590 --> 00:09:14,080
way and three you need to make sure that

230
00:09:17,829 --> 00:09:15,600
you have a chance to get the parachutes

231
00:09:19,590 --> 00:09:17,839
out so no matter what the size is you've

232
00:09:21,269 --> 00:09:19,600
got to integrate that system

233
00:09:24,230 --> 00:09:21,279
so i think the key part about this

234
00:09:26,389 --> 00:09:24,240
regardless of the thrust level is we've

235
00:09:28,310 --> 00:09:26,399
shown you can put those disparate pieces

236
00:09:29,350 --> 00:09:28,320
together in an integrated system with

237
00:09:31,750 --> 00:09:29,360
the computers and everything else and

238
00:09:34,710 --> 00:09:31,760

make them work so i think it's obviously

239
00:09:37,590 --> 00:09:34,720
very much applicable to any other system

240
00:09:40,630 --> 00:09:37,600
yes i i agree uh and the data that we

241
00:09:43,430 --> 00:09:40,640
get back um we get i think there are 700

242
00:09:45,430 --> 00:09:43,440
measurements on on this vehicle and

243
00:09:47,829 --> 00:09:45,440
we'll get data back on the aero aero

244
00:09:49,990 --> 00:09:47,839
acoustics we'll understand how the how

245
00:09:51,509 --> 00:09:50,000
the guidance worked exactly although it

246
00:09:54,150 --> 00:09:51,519
looked like it was rock solid from where

247
00:09:57,030 --> 00:09:54,160
i where i was

248
00:09:58,150 --> 00:09:57,040
and in materials and advancements and

249
00:10:03,190 --> 00:09:58,160
and

250
00:10:05,430 --> 00:10:03,200
being able to drive this vehicle away

251
00:10:06,470 --> 00:10:05,440
from some something you want to get away

252
00:10:08,550 --> 00:10:06,480
from

253
00:10:11,030 --> 00:10:08,560
this is all knowledge we'll be able to

254
00:10:13,269 --> 00:10:11,040
test our models that predict that going

255
00:10:14,710 --> 00:10:13,279
predicting all of these effects

256
00:10:16,949 --> 00:10:14,720
one one big

257
00:10:18,550 --> 00:10:16,959
question in my mind has been

258
00:10:21,030 --> 00:10:18,560
what are the jet interactions with the

259
00:10:23,509 --> 00:10:21,040
flow around the vehicle and

260
00:10:26,069 --> 00:10:23,519
and so we had had the big

261
00:10:30,230 --> 00:10:26,079
we had the big engines blowing and we

262
00:10:34,630 --> 00:10:32,630
guiding it intermittently and so we'll

263
00:10:36,630 --> 00:10:34,640

get a lot of data on understanding uh

264
00:10:37,990 --> 00:10:36,640
that that kind of information that's

265
00:10:40,470 --> 00:10:38,000
that's one of the bigger uncertainties

266
00:10:43,670 --> 00:10:40,480
so that's all data that we now have uh

267
00:10:48,550 --> 00:10:46,870
okay we have another question

268
00:10:51,269 --> 00:10:48,560
seeing that your local oh you have one

269
00:10:55,030 --> 00:10:53,110
could you uh somebody talk about in an

270
00:10:57,030 --> 00:10:55,040
ideal world how many more tests would

271
00:10:59,110 --> 00:10:57,040
you like to carry out before you feel

272
00:11:00,790 --> 00:10:59,120
like the system is completely

273
00:11:03,269 --> 00:11:00,800
ready and operational

274
00:11:04,949 --> 00:11:03,279
and a secondary question for

275
00:11:07,030 --> 00:11:04,959
any of you i was wondering could you

276
00:11:09,590 --> 00:11:07,040
just describe for us uh layman what was

277
00:11:10,949 --> 00:11:09,600
going through your mind or your body

278
00:11:12,310 --> 00:11:10,959
what emotions were you feeling there's a

279
00:11:13,910 --> 00:11:12,320
lot riding on this it all happens

280
00:11:15,590 --> 00:11:13,920
extremely fast and a lot of things have

281
00:11:16,949 --> 00:11:15,600
to fall into place correctly

282
00:11:18,310 --> 00:11:16,959
what was going through your mind as all

283
00:11:20,630 --> 00:11:18,320
this was unfolding

284
00:11:22,389 --> 00:11:20,640
well i was taking a lot of deep breaths

285
00:11:24,389 --> 00:11:22,399
trying to calm myself down in fact i

286
00:11:26,470 --> 00:11:24,399
actually started writing down some data

287
00:11:28,550 --> 00:11:26,480
and the procedures just to kind of calm

288
00:11:30,389 --> 00:11:28,560

myself down and you know we've been

289
00:11:31,910 --> 00:11:30,399
there many times

290
00:11:34,870 --> 00:11:31,920
you know we've gone through this we've

291
00:11:37,110 --> 00:11:34,880
done these countdowns numerous times and

292
00:11:38,870 --> 00:11:37,120
the reality sinks in and so the old

293
00:11:40,949 --> 00:11:38,880
blood pressure goes up and

294
00:11:42,470 --> 00:11:40,959
and you you really yeah it took a lot to

295
00:11:43,910 --> 00:11:42,480
say okay i can do this

296
00:11:49,430 --> 00:11:43,920
you know

297
00:11:51,430 --> 00:11:49,440
and so but very exciting time and it

298
00:11:53,030 --> 00:11:51,440
actually was relatively calm which we

299
00:11:55,509 --> 00:11:53,040
had hoped it would and the reason is is

300
00:11:56,790 --> 00:11:55,519
because we practice this over and over

301
00:11:59,190 --> 00:11:56,800
and so

302
00:12:01,190 --> 00:11:59,200
so yeah then the nerves were really

303
00:12:05,750 --> 00:12:01,200
uptight and

304
00:12:10,790 --> 00:12:07,990
yeah so i can speak to that i can talk

305
00:12:13,030 --> 00:12:10,800
to the plan that we had we we had

306
00:12:15,350 --> 00:12:13,040
two ascent aborts that we had planned to

307
00:12:17,990 --> 00:12:15,360
do we we wanted to do the transonic

308
00:12:19,990 --> 00:12:18,000
abort that's where we really

309
00:12:22,150 --> 00:12:20,000
challenged the thrust capability of the

310
00:12:23,910 --> 00:12:22,160
board motor that get back gets back to

311
00:12:25,590 --> 00:12:23,920
what mark said that's your maximum drag

312
00:12:28,550 --> 00:12:25,600
condition so you have to have maximum

313
00:12:30,310 --> 00:12:28,560

thrust to get the separation distance

314
00:12:32,069 --> 00:12:30,320
so that's how you size the thrust of the

315
00:12:34,389 --> 00:12:32,079
abort motor then the next one is the

316
00:12:36,629 --> 00:12:34,399
maximum dynamic pressure

317
00:12:38,310 --> 00:12:36,639
is where you challenge the structure as

318
00:12:40,550 --> 00:12:38,320
well as the ability of the attitude

319
00:12:42,710 --> 00:12:40,560
control motor to uh to control the

320
00:12:44,870 --> 00:12:42,720
launch port vehicle

321
00:12:46,870 --> 00:12:44,880
and then we would do another pad abort

322
00:12:49,430 --> 00:12:46,880
with the actual production systems to

323
00:12:51,350 --> 00:12:49,440
validate the design in a production

324
00:12:54,470 --> 00:12:51,360
in a paddle board scenario that drives

325
00:12:56,389 --> 00:12:54,480
the total impulse of the motor to

326
00:12:59,030 --> 00:12:56,399
guarantee you get appropriate altitude

327
00:13:00,870 --> 00:12:59,040
and downrange distance to a lot's got to

328
00:13:02,790 --> 00:13:00,880
happen as you saw so you'd want to

329
00:13:04,870 --> 00:13:02,800
validate with the production system that

330
00:13:10,150 --> 00:13:04,880
in fact you can do everything in the

331
00:13:15,590 --> 00:13:13,509
okay were there any more follow-ups here

332
00:13:17,430 --> 00:13:15,600
hi there daniel novik with k-fox tv in

333
00:13:19,110 --> 00:13:17,440
el paso i guess a follow-up to that

334
00:13:20,790 --> 00:13:19,120
question so now

335
00:13:23,110 --> 00:13:20,800
is all that up in the air

336
00:13:26,389 --> 00:13:23,120
you know are we are we on schedule to do

337
00:13:28,069 --> 00:13:26,399
those uh other tests and second of all

338
00:13:30,470 --> 00:13:28,079

for our viewers back in el paso who

339
00:13:32,870 --> 00:13:30,480
aren't scientists and engineers um just

340
00:13:35,030 --> 00:13:32,880
explain how difficult it is to have a

341
00:13:37,590 --> 00:13:35,040
success uh to have a test this

342
00:13:38,470 --> 00:13:37,600
successful

343
00:13:41,350 --> 00:13:38,480
um

344
00:13:43,590 --> 00:13:41,360
let's see i'll try okay all right i can

345
00:13:46,550 --> 00:13:43,600
i can start off okay um

346
00:13:49,030 --> 00:13:46,560
this year uh we we have guidance in our

347
00:13:51,509 --> 00:13:49,040
appropriations language that we are that

348
00:13:53,670 --> 00:13:51,519
we are executing the program on track

349
00:13:56,230 --> 00:13:53,680
with the work that's underway so our

350
00:13:58,949 --> 00:13:56,240
our uh this test is a part of that we

351
00:14:01,750 --> 00:13:58,959
have other tests that are going on and

352
00:14:04,150 --> 00:14:01,760
we're we're operating the program

353
00:14:05,750 --> 00:14:04,160
and and planning the planning is in

354
00:14:08,069 --> 00:14:05,760
place for tests

355
00:14:10,790 --> 00:14:08,079
so that is that is our direction we we

356
00:14:14,470 --> 00:14:10,800
do have a the the president's budget

357
00:14:17,590 --> 00:14:14,480
request for fy11 that would change

358
00:14:19,590 --> 00:14:17,600
our programs so um you know we're

359
00:14:21,910 --> 00:14:19,600
working right now between the

360
00:14:24,069 --> 00:14:21,920
administration and congress on on what

361
00:14:27,430 --> 00:14:24,079
resolution is on on

362
00:14:29,670 --> 00:14:27,440
on the path forward so that's that's yet

363
00:14:32,069 --> 00:14:29,680

to be uh seen but the planning is in

364
00:14:34,710 --> 00:14:32,079
place um all these types of tests are

365
00:14:36,870 --> 00:14:34,720
very important um the various conditions

366
00:14:39,030 --> 00:14:36,880
that that don talked about you want to

367
00:14:42,629 --> 00:14:39,040
test in all the critical conditions uh

368
00:14:45,110 --> 00:14:42,639
going down the road um in in developing

369
00:14:46,710 --> 00:14:45,120
uh launch launch systems in the future

370
00:14:47,910 --> 00:14:46,720
and

371
00:14:49,829 --> 00:14:47,920
you're going to need to do those kind of

372
00:14:50,629 --> 00:14:49,839
tests

373
00:14:54,949 --> 00:14:50,639
one

374
00:14:57,750 --> 00:14:54,959
doing the test at ground zero

375
00:14:59,829 --> 00:14:57,760
ground zero or from the ground

376
00:15:00,949 --> 00:14:59,839
and getting the crew back under shoots

377
00:15:03,350 --> 00:15:00,959
um

378
00:15:05,670 --> 00:15:03,360
it's uh that's a big test this condition

379
00:15:19,189 --> 00:15:05,680
that you saw today was is really a very

380
00:15:24,790 --> 00:15:22,790
that's it's hard to predict how how well

381
00:15:26,389 --> 00:15:24,800
tests will go that's why you do them

382
00:15:30,629 --> 00:15:26,399
you're testing out things in order to

383
00:15:33,189 --> 00:15:30,639
make sure you understand them and so

384
00:15:35,670 --> 00:15:33,199
but a test like this that that goes this

385
00:15:37,910 --> 00:15:35,680
well is just a tribute to the hard work

386
00:15:39,910 --> 00:15:37,920
and and thinking of every possible angle

387
00:15:41,670 --> 00:15:39,920
of things that might go wrong and and

388
00:15:43,749 --> 00:15:41,680

that's a tribute to the team that has

389
00:15:45,910 --> 00:15:43,759
worked through this and worked out bugs

390
00:15:48,550 --> 00:15:45,920
in the system worked out

391
00:15:51,350 --> 00:15:48,560
hardware issues along the way

392
00:15:52,870 --> 00:15:51,360
and it's just it's just preparation but

393
00:15:54,550 --> 00:15:52,880
there are still unknowns in testing and

394
00:15:57,110 --> 00:15:54,560
that's why you do the test so you can't

395
00:16:00,150 --> 00:15:57,120
predict but you see what you see what a

396
00:16:00,160 --> 00:16:03,590
anymore

397
00:16:06,470 --> 00:16:05,509
steve ramirez with the las cruces sun

398
00:16:08,470 --> 00:16:06,480
news

399
00:16:10,230 --> 00:16:08,480
just wanted to ask particularly don i

400
00:16:11,910 --> 00:16:10,240
was interested in this the wind seemed

401
00:16:14,150 --> 00:16:11,920
to be up here a little bit today and i

402
00:16:15,430 --> 00:16:14,160
remember in a briefing about a week ago

403
00:16:18,470 --> 00:16:15,440
10 days ago

404
00:16:21,030 --> 00:16:18,480
someone had mentioned that wind is uh

405
00:16:24,310 --> 00:16:21,040
is the worst enemy want to know how that

406
00:16:26,150 --> 00:16:24,320
factored into into today's test at all

407
00:16:27,590 --> 00:16:26,160
uh secondary question for for for the

408
00:16:29,829 --> 00:16:27,600
panel is

409
00:16:32,069 --> 00:16:29,839
if you could can you try to put it into

410
00:16:34,150 --> 00:16:32,079
into perspective how

411
00:16:35,269 --> 00:16:34,160
monumental i guess uh

412
00:16:37,509 --> 00:16:35,279
this type of

413
00:16:40,230 --> 00:16:37,519

success was for the test today and and

414
00:16:42,550 --> 00:16:40,240
what it means to the nasa program

415
00:16:44,230 --> 00:16:42,560
okay so so on the weather steve we we've

416
00:16:46,310 --> 00:16:44,240
had the weather working against us from

417
00:16:49,189 --> 00:16:46,320
day one you know being out here you've

418
00:16:50,949 --> 00:16:49,199
seen the snowstorms you guys have gotten

419
00:16:53,269 --> 00:16:50,959
you know the wind storms that we had a

420
00:16:55,670 --> 00:16:53,279
cat level a category one level hurricane

421
00:16:57,749 --> 00:16:55,680
here i mean we had winds in excess of 80

422
00:16:58,629 --> 00:16:57,759
not so so the weather has not been our

423
00:17:03,110 --> 00:16:58,639
friend

424
00:17:04,789 --> 00:17:03,120
and so yeah we had some challenges early

425
00:17:06,630 --> 00:17:04,799
this morning in terms of getting our

426
00:17:08,069 --> 00:17:06,640
thermal protective cover off we were

427
00:17:10,069 --> 00:17:08,079
right at the limit that we were able to

428
00:17:11,590 --> 00:17:10,079
successfully do that

429
00:17:13,990 --> 00:17:11,600
and then for some reason i mean the

430
00:17:16,150 --> 00:17:14,000
winds right about about an hour before

431
00:17:19,829 --> 00:17:16,160
launch the upper level winds just almost

432
00:17:22,069 --> 00:17:19,839
went calm up to about 12 000 feet

433
00:17:24,150 --> 00:17:22,079
and so we had rehearsed this quite a bit

434
00:17:25,110 --> 00:17:24,160
the last couple days and we've had many

435
00:17:27,189 --> 00:17:25,120
meetings

436
00:17:28,150 --> 00:17:27,199
with uh mark and his mission management

437
00:17:29,750 --> 00:17:28,160
team

438
00:17:31,590 --> 00:17:29,760

going through and rehearsing you know

439
00:17:33,190 --> 00:17:31,600
you know what is an acceptable risk for

440
00:17:35,270 --> 00:17:33,200
these wins because we knew

441
00:17:37,350 --> 00:17:35,280
it was going to be a challenge and

442
00:17:40,150 --> 00:17:37,360
we had a few exceedances in our wind

443
00:17:42,310 --> 00:17:40,160
placard when we first started and by the

444
00:17:44,549 --> 00:17:42,320
time we got the launch we were green all

445
00:17:46,870 --> 00:17:44,559
the way up

446
00:17:50,470 --> 00:17:46,880
so so the weather

447
00:17:54,789 --> 00:17:52,150
i could say relative to the to the

448
00:17:59,190 --> 00:17:54,799
importance of the test um

449
00:18:01,029 --> 00:17:59,200
so relative to the launch abort um

450
00:18:02,789 --> 00:18:01,039
technology obviously was very important

451
00:18:04,470 --> 00:18:02,799
for that it got us the next step of

452
00:18:06,710 --> 00:18:04,480
saying we can put these complex systems

453
00:18:10,230 --> 00:18:06,720
together under high loads

454
00:18:12,549 --> 00:18:10,240
high acoustics and they perform so it it

455
00:18:14,470 --> 00:18:12,559
reduces the test we need to do forward

456
00:18:15,669 --> 00:18:14,480
relative to that but i think it's bigger

457
00:18:18,310 --> 00:18:15,679
than that

458
00:18:19,990 --> 00:18:18,320
there's a lot going on in orion uh and

459
00:18:22,150 --> 00:18:20,000
in constellation that you don't see

460
00:18:24,390 --> 00:18:22,160
because there's no fire and smoke

461
00:18:26,390 --> 00:18:24,400
all right we're welding a crew module at

462
00:18:27,669 --> 00:18:26,400
michoud in louisiana right we're flying

463
00:18:29,029 --> 00:18:27,679

an air

464
00:18:31,029 --> 00:18:29,039
rendezvous and docking sensor on the

465
00:18:32,390 --> 00:18:31,039
shuttle later this year we're

466
00:18:33,830 --> 00:18:32,400
firing a

467
00:18:36,470 --> 00:18:33,840
first stage

468
00:18:37,830 --> 00:18:36,480
later this year we're going to do

469
00:18:40,150 --> 00:18:37,840
we finished our preliminary design for

470
00:18:41,190 --> 00:18:40,160
software all those are key things that

471
00:18:43,110 --> 00:18:41,200
people are

472
00:18:45,190 --> 00:18:43,120
killing themselves working hard every

473
00:18:46,710 --> 00:18:45,200
day because they believe america should

474
00:18:49,029 --> 00:18:46,720
be a leader in space

475
00:18:50,549 --> 00:18:49,039
so a test like this

476
00:18:53,029 --> 00:18:50,559
which goes great

477
00:18:55,110 --> 00:18:53,039
and and is visible

478
00:18:57,270 --> 00:18:55,120
i think really is a is a great uh

479
00:19:00,710 --> 00:18:57,280
encouragement for the team

480
00:19:02,870 --> 00:19:00,720
and uh and talking about a very visible

481
00:19:05,750 --> 00:19:02,880
success for the team so it helps in that

482
00:19:10,470 --> 00:19:05,760
as far as morale in that sense too

483
00:19:14,390 --> 00:19:12,310
i'll need the phone

484
00:19:16,390 --> 00:19:14,400
uh steve i may add to that one of my

485
00:19:17,590 --> 00:19:16,400
favorite quotes is from uh

486
00:19:21,669 --> 00:19:17,600
lillian

487
00:19:24,310 --> 00:19:21,679
that actually died flying one of his own

488
00:19:26,310 --> 00:19:24,320

planes and he said to design something

489
00:19:27,990 --> 00:19:26,320
is nothing to build it is not much the

490
00:19:29,029 --> 00:19:28,000
flight is everything

491
00:19:31,510 --> 00:19:29,039
and so

492
00:19:33,510 --> 00:19:31,520
like i said the proof is in the pudding

493
00:19:34,789 --> 00:19:33,520
and this is where it all comes together

494
00:19:36,470 --> 00:19:34,799
and that's what makes this such a

495
00:19:38,070 --> 00:19:36,480
monumental success

496
00:19:40,470 --> 00:19:38,080
because this system survived in the

497
00:19:43,590 --> 00:19:40,480
flight environment and everything worked

498
00:19:45,430 --> 00:19:43,600
as we predicted that it would

499
00:19:47,110 --> 00:19:45,440
so that that goes to that's a testament

500
00:19:50,230 --> 00:19:47,120
to our ability to

501
00:19:52,549 --> 00:19:50,240
use our analytical tools to predict

502
00:19:53,750 --> 00:19:52,559
uh what we expect to happen the testing

503
00:19:55,909 --> 00:19:53,760
that we do

504
00:19:57,510 --> 00:19:55,919
all comes together and gives us high

505
00:19:59,430 --> 00:19:57,520
confidence that it's all going to work

506
00:20:00,950 --> 00:19:59,440
as a system

507
00:20:03,029 --> 00:20:00,960
so we get a lot of confidence in our

508
00:20:06,470 --> 00:20:03,039
ability to to

509
00:20:09,510 --> 00:20:06,480
make sure we're successful

510
00:20:13,029 --> 00:20:11,110
with none here locally we'll take a

511
00:20:16,789 --> 00:20:13,039
couple calls on the line i understand

512
00:20:32,149 --> 00:20:20,310
hi can you hear me yes

513
00:20:32,159 --> 00:20:41,830

okay go ahead try again mark

514
00:20:41,840 --> 00:20:46,630
mark are you on the line there

515
00:20:51,909 --> 00:20:48,470
let's go ahead and try the next person

516
00:20:59,750 --> 00:20:53,669
according to the target mouse and

517
00:21:04,390 --> 00:21:01,430
go ahead tarek

518
00:21:06,070 --> 00:21:04,400
thank you my question is mr reed uh you

519
00:21:09,110 --> 00:21:06,080
mentioned that

520
00:21:11,669 --> 00:21:09,120
uh the the capital landed uh uh at a

521
00:21:13,110 --> 00:21:11,679
lower uh rate than you expected i was

522
00:21:16,789 --> 00:21:13,120
just curious if you go over those

523
00:21:18,710 --> 00:21:16,799
numbers for us at this time um

524
00:21:20,789 --> 00:21:18,720
you know how uh how long was the point

525
00:21:23,350 --> 00:21:20,799
how far down the lane

526
00:21:25,029 --> 00:21:23,360
uh what was that race of landing on

527
00:21:26,149 --> 00:21:25,039
parachutes and how did that stack up to

528
00:21:27,190 --> 00:21:26,159
your

529
00:21:29,669 --> 00:21:27,200
thank you

530
00:21:32,390 --> 00:21:29,679
yeah so in terms of the performance and

531
00:21:33,909 --> 00:21:32,400
the trajectory we went about 6 900 feet

532
00:21:35,669 --> 00:21:33,919
down range so we actually went a little

533
00:21:37,270 --> 00:21:35,679
further down range a little higher than

534
00:21:39,029 --> 00:21:37,280
we predicted

535
00:21:42,870 --> 00:21:39,039
in terms of the uh the touchdown

536
00:21:45,669 --> 00:21:42,880
velocity we had predicted out to uh 97

537
00:21:48,789 --> 00:21:45,679
percent probability that we'd landed 33

538
00:21:51,350 --> 00:21:48,799

feet per second on on the 97th percent

539
00:21:52,789 --> 00:21:51,360
high side we actually touched down at 24

540
00:21:55,029 --> 00:21:52,799
feet per second

541
00:21:58,070 --> 00:21:55,039
and so that that's good performance it

542
00:22:00,149 --> 00:21:58,080
shows good performance of the parachutes

543
00:22:02,630 --> 00:22:00,159
and uh i think that answers your

544
00:22:04,230 --> 00:22:02,640
question was there one other part there

545
00:22:07,510 --> 00:22:04,240
how long was the fight

546
00:22:09,669 --> 00:22:07,520
oh yeah the flight was uh just it was a

547
00:22:11,909 --> 00:22:09,679
minute and 35 seconds to touch down and

548
00:22:12,870 --> 00:22:11,919
we had predicted a minute and 39 seconds

549
00:22:17,110 --> 00:22:12,880
so

550
00:22:21,190 --> 00:22:18,950
do you have another question tara

551
00:22:22,710 --> 00:22:21,200
i think he is my follow-up was just i'm

552
00:22:25,350 --> 00:22:22,720
curious

553
00:22:28,390 --> 00:22:25,360
given the performance that you saw today

554
00:22:31,190 --> 00:22:28,400
what an astronaut or a crew would feel

555
00:22:34,070 --> 00:22:31,200
uh i guess how how top of a

556
00:22:36,470 --> 00:22:34,080
an escape it would be on on them given

557
00:22:38,549 --> 00:22:36,480
the g-forces as you saw today thank you

558
00:22:40,950 --> 00:22:38,559
and so i'll caveat that by saying that

559
00:22:42,630 --> 00:22:40,960
this this is a high thrust motor the

560
00:22:44,710 --> 00:22:42,640
design we were going to is actually

561
00:22:46,549 --> 00:22:44,720
going to be a lower thrust motor but for

562
00:22:48,149 --> 00:22:46,559
today's test

563
00:22:50,710 --> 00:22:48,159

given the temperatures that we launched

564
00:22:52,070 --> 00:22:50,720
this motor at they would have seen 16

565
00:22:53,990 --> 00:22:52,080
g's

566
00:22:56,630 --> 00:22:54,000
so somebody like myself that weighs

567
00:23:00,390 --> 00:22:56,640
about 200 pounds would have weighed 3

568
00:23:02,549 --> 00:23:00,400
200 pounds under that 16 g load

569
00:23:05,029 --> 00:23:02,559
and so we hope to get that down to

570
00:23:07,590 --> 00:23:05,039
closer to 10 to 11 g's in the next

571
00:23:08,950 --> 00:23:07,600
generation abort motor

572
00:23:10,950 --> 00:23:08,960
it's like that's the design we've gone

573
00:23:13,909 --> 00:23:10,960
to reduce thrust to boat runner to get

574
00:23:19,029 --> 00:23:13,919
those g's down again right

575
00:23:22,710 --> 00:23:21,029
thank you very much okay thank you we'll

576
00:23:30,310 --> 00:23:22,720
try back is mark kirkman back on the

577
00:23:30,320 --> 00:23:34,630
mark are you there

578
00:23:40,230 --> 00:23:36,390
okay are there any follow-ups here

579
00:23:40,240 --> 00:23:42,870
all right

580
00:23:47,430 --> 00:23:44,789
sir

581
00:23:51,430 --> 00:23:47,440
steve ramirez with the sun use again uh

582
00:23:56,149 --> 00:23:53,590
soon i hope

583
00:23:58,230 --> 00:23:56,159
we're working on working the plan okay

584
00:23:59,990 --> 00:23:58,240
thank you gentlemen for joining us today