
PAO

1
00:00:05,990 --> 00:00:03,110
so joining me now here inside of mission

2
00:00:08,549 --> 00:00:06,000
control the orion program manager mark

3
00:00:10,390 --> 00:00:08,559
guyer now mark you were

4
00:00:12,310 --> 00:00:10,400
working on something else 15 years ago

5
00:00:14,390 --> 00:00:12,320
you were pretty heavily involved in the

6
00:00:17,670 --> 00:00:14,400
first launch of zarya again 15-year

7
00:00:19,029 --> 00:00:17,680
anniversary today what real quick what

8
00:00:20,630 --> 00:00:19,039
was your role back then what were you

9
00:00:22,150 --> 00:00:20,640
doing so with there were a lot of

10
00:00:24,630 --> 00:00:22,160
russian elements there was the fgb

11
00:00:26,310 --> 00:00:24,640
service module progress in soyuz and so

12
00:00:28,230 --> 00:00:26,320
i was the manager of

13
00:00:29,990 --> 00:00:28,240

all those elements and the integration

14
00:00:31,669 --> 00:00:30,000
into space station so it was i think was

15
00:00:33,270 --> 00:00:31,679
called the russian elements integration

16
00:00:35,510 --> 00:00:33,280
team at the time so you had a lot of

17
00:00:37,670 --> 00:00:35,520
spacecraft to kind of look after and

18
00:00:39,430 --> 00:00:37,680
manage and try not to lose track of yeah

19
00:00:41,110 --> 00:00:39,440
and we had good good element leads for

20
00:00:43,510 --> 00:00:41,120
each one so doug drury was actually the

21
00:00:46,549 --> 00:00:43,520
fgb manager at the time so i was

22
00:00:48,229 --> 00:00:46,559
over him in that area okay and you know

23
00:00:49,910 --> 00:00:48,239
normally it start off asking if you

24
00:00:51,510 --> 00:00:49,920
remember how you felt back then you know

25
00:00:54,310 --> 00:00:51,520
the days leading up to launch but we

26
00:00:56,790 --> 00:00:54,320
actually have a clip of you from 1998

27
00:00:59,189 --> 00:00:56,800
why don't we take a quick look

28
00:01:00,630 --> 00:00:59,199
so to see a vehicle actually being moved

29
00:01:02,470 --> 00:01:00,640
to the pad and you know you're only a

30
00:01:03,910 --> 00:01:02,480
couple days away

31
00:01:07,270 --> 00:01:03,920
it's thrilling and i've never been a

32
00:01:09,270 --> 00:01:07,280
part of a um unmanned launch before so

33
00:01:10,469 --> 00:01:09,280
that's it's very exciting

34
00:01:12,630 --> 00:01:10,479
um

35
00:01:14,789 --> 00:01:12,640
so that's really cool the other part of

36
00:01:16,149 --> 00:01:14,799
it is it with station there are so many

37
00:01:19,190 --> 00:01:16,159
launches

38
00:01:20,630 --> 00:01:19,200

before your project is complete

39
00:01:22,950 --> 00:01:20,640
um

40
00:01:24,950 --> 00:01:22,960
so there's still a lot of work ahead

41
00:01:28,550 --> 00:01:24,960
and so we're i'm extremely excited to

42
00:01:30,230 --> 00:01:28,560
get started and i'm ready to continue

43
00:01:31,910 --> 00:01:30,240
the next step but no we've got a lot of

44
00:01:33,030 --> 00:01:31,920
hard work ahead of us

45
00:01:34,789 --> 00:01:33,040
and

46
00:01:36,230 --> 00:01:34,799
that we need to keep focused so it's

47
00:01:37,510 --> 00:01:36,240
kind of a mixed

48
00:01:41,429 --> 00:01:37,520
but it's great to get going to get

49
00:01:46,230 --> 00:01:42,950
mark where where were you when that

50
00:01:47,910 --> 00:01:46,240
video was taken uh let's see i was uh

51
00:01:48,789 --> 00:01:47,920
there was a hotel

52
00:01:51,910 --> 00:01:48,799
um

53
00:01:54,069 --> 00:01:51,920
that kernichev owns in baikonur

54
00:01:55,429 --> 00:01:54,079
and it was uh we were there for a week

55
00:01:57,109 --> 00:01:55,439
and it was really

56
00:01:59,429 --> 00:01:57,119
for the preps there was a there was a

57
00:02:01,270 --> 00:01:59,439
final review a couple days before launch

58
00:02:03,109 --> 00:02:01,280
where they needed nasa and boeing to say

59
00:02:04,789 --> 00:02:03,119
everything was good and if there were

60
00:02:07,030 --> 00:02:04,799
any other issues with

61
00:02:08,550 --> 00:02:07,040
um problems and we were there to deal

62
00:02:09,510 --> 00:02:08,560
with it so we were there for a whole

63
00:02:12,070 --> 00:02:09,520

week

64
00:02:13,670 --> 00:02:12,080
um doug and i and uh jack bacon and some

65
00:02:16,229 --> 00:02:13,680
other folks were there and of course the

66
00:02:17,670 --> 00:02:16,239
boeing folks

67
00:02:20,470 --> 00:02:17,680
ginger and and

68
00:02:22,150 --> 00:02:20,480
and scott wood uh

69
00:02:23,910 --> 00:02:22,160
we were all there for a week to go to

70
00:02:25,670 --> 00:02:23,920
keep working those issues in case we had

71
00:02:27,270 --> 00:02:25,680
a problem so you were you were right

72
00:02:29,350 --> 00:02:27,280
there you were ready and you you

73
00:02:30,949 --> 00:02:29,360
actually got to see that launch and see

74
00:02:33,270 --> 00:02:30,959
you know the international space station

75
00:02:35,190 --> 00:02:33,280
start you know from baikonur i mean what

76
00:02:37,110 --> 00:02:35,200
was that like it i imagine it had been

77
00:02:39,910 --> 00:02:37,120
years of work leading up

78
00:02:41,350 --> 00:02:39,920
and it would be years of work to come

79
00:02:42,710 --> 00:02:41,360
but what was it like you know seeing

80
00:02:45,430 --> 00:02:42,720
that first element get off the ground

81
00:02:47,350 --> 00:02:45,440
yeah it's interesting now we look back

82
00:02:49,030 --> 00:02:47,360
i think to look back on that launch it

83
00:02:51,110 --> 00:02:49,040
was exciting just before that but i

84
00:02:52,630 --> 00:02:51,120
think you need to go back and also think

85
00:02:55,350 --> 00:02:52,640
about the context of what had happened

86
00:02:57,910 --> 00:02:55,360
with freedom space station freedom

87
00:03:00,309 --> 00:02:57,920
um you know freedom passed by one vote

88
00:03:01,910 --> 00:03:00,319

after several years of opera being in

89
00:03:04,869 --> 00:03:01,920
development and then

90
00:03:07,910 --> 00:03:04,879
we had the uh it got changed into iss

91
00:03:09,750 --> 00:03:07,920
and then we in about 96

92
00:03:11,350 --> 00:03:09,760
we were pretty pretty dire straight the

93
00:03:12,869 --> 00:03:11,360
russians weren't getting the funding

94
00:03:14,229 --> 00:03:12,879
they needed we had some delays on the

95
00:03:16,229 --> 00:03:14,239
node in the lab you know because it's

96
00:03:17,750 --> 00:03:16,239
very hard to build these elements so

97
00:03:20,229 --> 00:03:17,760
there was a time there was hard to say

98
00:03:23,270 --> 00:03:20,239
whether we would even fly

99
00:03:25,670 --> 00:03:23,280
um and actually we modified fgb

100
00:03:27,750 --> 00:03:25,680
uh to allow it to have a uh

101
00:03:29,430 --> 00:03:27,760
a satellite bus the icm that could dock

102
00:03:31,350 --> 00:03:29,440
to it in case the service module never

103
00:03:34,149 --> 00:03:31,360
flew we could still build out the usos

104
00:03:36,949 --> 00:03:34,159
yeah we had to modify the fgb

105
00:03:38,869 --> 00:03:36,959
but all that turned around uh in late 97

106
00:03:40,630 --> 00:03:38,879
in 98 and then

107
00:03:42,550 --> 00:03:40,640
once we started flying it was a whole

108
00:03:44,630 --> 00:03:42,560
different feeling it was a huge

109
00:03:46,070 --> 00:03:44,640
relief to get started and of course

110
00:03:47,750 --> 00:03:46,080
there's been a ton of work since then

111
00:03:48,550 --> 00:03:47,760
just to get the station to where it is

112
00:03:50,550 --> 00:03:48,560
so

113
00:03:52,470 --> 00:03:50,560

it was a really important moment at that

114
00:03:54,869 --> 00:03:52,480
time and of course the docking

115
00:03:55,589 --> 00:03:54,879
uh with the node now you actually had

116
00:03:59,910 --> 00:03:55,599
the

117
00:04:02,630 --> 00:03:59,920
i remember when cabana and qrikov

118
00:04:04,710 --> 00:04:02,640
actually went through the hatch together

119
00:04:06,630 --> 00:04:04,720
uh that was a huge huge moment it was a

120
00:04:08,149 --> 00:04:06,640
lot of fun after all that work to get

121
00:04:10,789 --> 00:04:08,159
there so you know being there at the

122
00:04:15,270 --> 00:04:10,799
beginning what was it like to just watch

123
00:04:17,430 --> 00:04:15,280
the station evolve over 15 years

124
00:04:19,830 --> 00:04:17,440
you know it's funny it was a lot of work

125
00:04:22,870 --> 00:04:19,840
it was a lot of hard work and and in the

126
00:04:24,790 --> 00:04:22,880
midst of i i think i actually

127
00:04:26,710 --> 00:04:24,800
caught it pretty well there on the the

128
00:04:28,150 --> 00:04:26,720
videos exciting to be the first one but

129
00:04:31,270 --> 00:04:28,160
we were still working hard to get the

130
00:04:32,790 --> 00:04:31,280
service module ready and folks over here

131
00:04:34,550 --> 00:04:32,800
were working very hard to get the lab

132
00:04:36,790 --> 00:04:34,560
done it was a lot of there was a ton of

133
00:04:37,990 --> 00:04:36,800
work a lot of late nights

134
00:04:39,749 --> 00:04:38,000
and every flight there was something

135
00:04:41,590 --> 00:04:39,759
else right and then we had columbia we

136
00:04:43,030 --> 00:04:41,600
were down for a while

137
00:04:44,550 --> 00:04:43,040
uh we had to learn how to operate

138
00:04:46,150 --> 00:04:44,560

without shuttle and then the shuttle

139
00:04:47,350 --> 00:04:46,160
came back and we finished the finished

140
00:04:49,909 --> 00:04:47,360
assembly

141
00:04:51,430 --> 00:04:49,919
uh and then i left i left around 2005.

142
00:04:52,790 --> 00:04:51,440
but

143
00:04:53,909 --> 00:04:52,800
it's funny that you're in the midst of

144
00:04:55,670 --> 00:04:53,919
this exciting thing but you're always

145
00:04:57,270 --> 00:04:55,680
thinking about okay i gotta work these

146
00:04:58,629 --> 00:04:57,280
next issues because we got this next

147
00:05:00,790 --> 00:04:58,639
flight you don't have a lot of time to

148
00:05:01,990 --> 00:05:00,800
be excited no you're excited for a few

149
00:05:03,110 --> 00:05:02,000
seconds when you see it off the ground

150
00:05:04,870 --> 00:05:03,120
and then you're like okay you know

151
00:05:06,710 --> 00:05:04,880
what's next yeah yeah yeah there's not a

152
00:05:08,629 --> 00:05:06,720
lot of time to enjoy it because you're

153
00:05:10,390 --> 00:05:08,639
off to the next thing but that's part of

154
00:05:12,870 --> 00:05:10,400
working on stations yeah

155
00:05:14,230 --> 00:05:12,880
well and you you mentioned you know you

156
00:05:16,070 --> 00:05:14,240
left station you moved on to other

157
00:05:17,990 --> 00:05:16,080
programs now you're the head of you're

158
00:05:19,749 --> 00:05:18,000
overseeing orion you know nasa's next

159
00:05:21,510 --> 00:05:19,759
generation space vehicle it's going to

160
00:05:23,909 --> 00:05:21,520
go further than we've ever gone a lot of

161
00:05:25,909 --> 00:05:23,919
really exciting stuff how important you

162
00:05:27,990 --> 00:05:25,919
know has the station been

163
00:05:29,909 --> 00:05:28,000

in the lead up to this you know building

164
00:05:32,070 --> 00:05:29,919
vehicles in space the international

165
00:05:33,830 --> 00:05:32,080
partnerships things like that i i think

166
00:05:35,990 --> 00:05:33,840
there's a couple things that station's

167
00:05:37,670 --> 00:05:36,000
been essential to do right or to learn

168
00:05:39,670 --> 00:05:37,680
from

169
00:05:41,749 --> 00:05:39,680
the obvious one is that it's the most

170
00:05:42,950 --> 00:05:41,759
recent development program we've had and

171
00:05:44,550 --> 00:05:42,960
and the development program is

172
00:05:46,710 --> 00:05:44,560
significantly different than

173
00:05:49,029 --> 00:05:46,720
what i would call an operational program

174
00:05:50,150 --> 00:05:49,039
like we were in the shuttle meaning that

175
00:05:51,670 --> 00:05:50,160
the shuttle was hard and there were a

176
00:05:53,590 --> 00:05:51,680
lot of issues this course especially

177
00:05:55,510 --> 00:05:53,600
recovering from the accident but a lot

178
00:05:57,749 --> 00:05:55,520
of the flow a lot of the subcontractor

179
00:05:59,909 --> 00:05:57,759
base was known so you're working on

180
00:06:01,590 --> 00:05:59,919
deltas it was still very hard to do

181
00:06:03,510 --> 00:06:01,600
but when a development program you're

182
00:06:04,309 --> 00:06:03,520
starting from nothing you're building up

183
00:06:06,150 --> 00:06:04,319
this

184
00:06:07,590 --> 00:06:06,160
subcontractor group you're building on

185
00:06:09,110 --> 00:06:07,600
this factory you're changing your

186
00:06:10,710 --> 00:06:09,120
processes

187
00:06:12,870 --> 00:06:10,720
and those of us that are around i tell

188
00:06:15,189 --> 00:06:12,880

people orion is a lot like station was

189
00:06:16,950 --> 00:06:15,199
in 96

190
00:06:19,110 --> 00:06:16,960
and if people remember what the node was

191
00:06:20,950 --> 00:06:19,120
like how hard it was to get that going

192
00:06:23,270 --> 00:06:20,960
and some of the issues we had in the lab

193
00:06:24,550 --> 00:06:23,280
and that's very similar to ryan so if

194
00:06:25,510 --> 00:06:24,560
you have experience with it and you've

195
00:06:26,629 --> 00:06:25,520
done it

196
00:06:27,909 --> 00:06:26,639
um

197
00:06:29,270 --> 00:06:27,919
you don't get discouraged you know

198
00:06:31,430 --> 00:06:29,280
here's the things we need to keep our

199
00:06:32,830 --> 00:06:31,440
our minds on and our and what we need to

200
00:06:35,029 --> 00:06:32,840
work hard on so it's good really good

201
00:06:36,230 --> 00:06:35,039
background i also think the political

202
00:06:38,070 --> 00:06:36,240
environment

203
00:06:39,670 --> 00:06:38,080
people that didn't work on station don't

204
00:06:41,749 --> 00:06:39,680
remember that we had a lot of ups and

205
00:06:43,350 --> 00:06:41,759
downs it's hard and so if you're young

206
00:06:44,950 --> 00:06:43,360
and coming to ryan go why isn't this

207
00:06:47,270 --> 00:06:44,960
easy why aren't we just building a

208
00:06:48,710 --> 00:06:47,280
spacecraft to go to the moon well

209
00:06:50,710 --> 00:06:48,720
the the political environment is part of

210
00:06:52,309 --> 00:06:50,720
what nasa lives in and if you've gone

211
00:06:54,309 --> 00:06:52,319
through station you remember that's how

212
00:06:55,749 --> 00:06:54,319
it goes and so you can

213
00:06:57,589 --> 00:06:55,759

you can also say look that we've gone

214
00:06:59,270 --> 00:06:57,599
through this before we've been canceled

215
00:07:01,350 --> 00:06:59,280
we survived

216
00:07:03,350 --> 00:07:01,360
um and we just need to keep focused on

217
00:07:04,629 --> 00:07:03,360
our job and it helps a lot i think to

218
00:07:07,110 --> 00:07:04,639
have that background the third thing

219
00:07:08,469 --> 00:07:07,120
would be the partnership you know

220
00:07:10,390 --> 00:07:08,479
working with the russians was was

221
00:07:13,670 --> 00:07:10,400
difficult um but they were terrific

222
00:07:15,430 --> 00:07:13,680
partners yeah uh and uh in the europeans

223
00:07:17,990 --> 00:07:15,440
as well the japanese canadians i had the

224
00:07:20,070 --> 00:07:18,000
honor to work with all of those folks

225
00:07:22,070 --> 00:07:20,080
and now issa is a part of the of the

226
00:07:25,029 --> 00:07:22,080
service of they're actually building the

227
00:07:27,270 --> 00:07:25,039
service module of orion for us

228
00:07:28,710 --> 00:07:27,280
um in fact mr gerstenmaier and i are

229
00:07:30,469 --> 00:07:28,720
meeting with thomas ryder here in about

230
00:07:32,950 --> 00:07:30,479
15 minutes so

231
00:07:34,870 --> 00:07:32,960
it's very similar kind of things we got

232
00:07:36,469 --> 00:07:34,880
issues we have issues that we need to

233
00:07:37,670 --> 00:07:36,479
work together and how do we get through

234
00:07:39,189 --> 00:07:37,680
with both of us have different

235
00:07:41,189 --> 00:07:39,199
constraints and how do we meld those

236
00:07:43,029 --> 00:07:41,199
constraints and our talents and make the

237
00:07:44,390 --> 00:07:43,039
vehicle come together so in that sense

238
00:07:46,070 --> 00:07:44,400

it's a lot of

239
00:07:47,749 --> 00:07:46,080
commonality

240
00:07:48,869 --> 00:07:47,759
well yeah station must have been a great

241
00:07:50,550 --> 00:07:48,879
learning experience and i bet you're

242
00:07:52,950 --> 00:07:50,560
really looking forward to that first

243
00:07:54,790 --> 00:07:52,960
orion launch too and kind of have a lot

244
00:07:55,990 --> 00:07:54,800
of the same feelings it is and i can see

245
00:07:57,430 --> 00:07:56,000
the team too

246
00:07:58,869 --> 00:07:57,440
it's great to have that focus of the

247
00:08:01,350 --> 00:07:58,879
launch coming up

248
00:08:03,270 --> 00:08:01,360
and that sense of accomplishment too and

249
00:08:04,230 --> 00:08:03,280
then getting on to the next one so eft

250
00:08:05,749 --> 00:08:04,240
one

251
00:08:08,150 --> 00:08:05,759
now that we're on the plan to launch in

252
00:08:09,670 --> 00:08:08,160
september next year right so ten months

253
00:08:11,510 --> 00:08:09,680
uh it's the same kind of excitement

254
00:08:12,629 --> 00:08:11,520
after all that time after all the

255
00:08:14,950 --> 00:08:12,639
struggles

256
00:08:16,070 --> 00:08:14,960
um to about seeing the vehicle coming

257
00:08:18,790 --> 00:08:16,080
together

258
00:08:20,869 --> 00:08:18,800
uh overcoming obstacles technical and

259
00:08:22,629 --> 00:08:20,879
and others and about to fly is very

260
00:08:25,029 --> 00:08:22,639
similar feeling yeah

261
00:08:27,029 --> 00:08:25,039
all right well again mark guyer orion

262
00:08:29,189 --> 00:08:27,039
program manager 15 years ago russian

263
00:08:31,189 --> 00:08:29,199

elements manager for nasa there when the

264
00:08:33,430 --> 00:08:31,199
first element zarya was launched 15

265
00:08:34,709 --> 00:08:33,440
years ago from kazakhstan mark thanks

266
00:08:37,110 --> 00:08:34,719
for coming on really appreciate your

267
00:08:38,709 --> 00:08:37,120
insight and in the past and you know how

268
00:08:40,709 --> 00:08:38,719
it's really going to help push the