
PAO

1
00:00:05,110 --> 00:00:03,350
it's a busy summer of spacewalks on

2
00:00:07,430 --> 00:00:05,120
board the international space station

3
00:00:09,990 --> 00:00:07,440
that kicks off next week when fyodor

4
00:00:11,669 --> 00:00:10,000
yurchikhin and alexander misurkin go

5
00:00:13,110 --> 00:00:11,679
outside the russian segment of the

6
00:00:14,709 --> 00:00:13,120
international space station it's the

7
00:00:17,830 --> 00:00:14,719
first of four spacewalks that are

8
00:00:19,670 --> 00:00:17,840
currently on the plan for expedition 36.

9
00:00:21,910 --> 00:00:19,680
to talk more about what is going to

10
00:00:25,109 --> 00:00:21,920
happen on monday i'm joined by lawrence

11
00:00:26,310 --> 00:00:25,119
thomas who is the increment 36 eva

12
00:00:28,230 --> 00:00:26,320
manager

13
00:00:29,669 --> 00:00:28,240

i mentioned a moment ago that fyodor

14
00:00:32,310 --> 00:00:29,679
your chicken has got a great deal of

15
00:00:35,590 --> 00:00:32,320
experience spacewalking misurkin none at

16
00:00:37,270 --> 00:00:35,600
all is that a a routine thing to to put

17
00:00:39,190 --> 00:00:37,280
a very experienced spacewalker with the

18
00:00:41,270 --> 00:00:39,200
rookie yeah i think that's you know

19
00:00:42,709 --> 00:00:41,280
pretty much standard uh as with most

20
00:00:44,549 --> 00:00:42,719
things when you do something for the

21
00:00:47,190 --> 00:00:44,559
first time you tend to make mistakes so

22
00:00:48,549 --> 00:00:47,200
one way to help mitigate that issue is

23
00:00:49,750 --> 00:00:48,559
to do it with somebody who's done it

24
00:00:52,150 --> 00:00:49,760
before

25
00:00:54,389 --> 00:00:52,160
from an eva perspective not only is it

26
00:00:56,389 --> 00:00:54,399
beneficial to have an experienced crew

27
00:00:57,750 --> 00:00:56,399
member there on the day of the eva

28
00:00:59,270 --> 00:00:57,760
but that means they probably trained

29
00:01:01,830 --> 00:00:59,280
together leading up for the increment

30
00:01:03,750 --> 00:01:01,840
itself uh so that allows the senior crew

31
00:01:06,310 --> 00:01:03,760
member to help the new guy learn the

32
00:01:08,789 --> 00:01:06,320
tricks of the trade um you know figure

33
00:01:10,710 --> 00:01:08,799
out the right way to do things and teach

34
00:01:12,550 --> 00:01:10,720
him the pitfalls and

35
00:01:14,390 --> 00:01:12,560
the things that he wants to look out for

36
00:01:16,149 --> 00:01:14,400
when he's doing his evas in this case

37
00:01:18,230 --> 00:01:16,159
they have yet another experienced

38
00:01:20,310 --> 00:01:18,240

spacewalker in pavel vinogradov who's

39
00:01:22,710 --> 00:01:20,320
there as well to help them get help them

40
00:01:24,550 --> 00:01:22,720
get ready absolutely most of the work

41
00:01:26,149 --> 00:01:24,560
here on monday is going to be around the

42
00:01:28,310 --> 00:01:26,159
zarya module

43
00:01:30,630 --> 00:01:28,320
walk us through what is uh what what the

44
00:01:33,190 --> 00:01:30,640
tasks are for monday uh so there's

45
00:01:35,109 --> 00:01:33,200
basically two tasks on zarya as part of

46
00:01:37,670 --> 00:01:35,119
monday's eva uh the first one is going

47
00:01:38,950 --> 00:01:37,680
to be replacing a regulator panel that

48
00:01:40,390 --> 00:01:38,960
has expired

49
00:01:41,590 --> 00:01:40,400
in the russian cooling system so they're

50
00:01:43,270 --> 00:01:41,600
going to change that out and bring the

51
00:01:44,710 --> 00:01:43,280
old one back inside

52
00:01:46,149 --> 00:01:44,720
and also they're going to be

53
00:01:47,749 --> 00:01:46,159
installing some cable clamps and

54
00:01:50,550 --> 00:01:47,759
fairleads in preparation for the next

55
00:01:52,310 --> 00:01:50,560
russian eva during russian eva 34 that's

56
00:01:54,149 --> 00:01:52,320
planned for august 15th

57
00:01:56,149 --> 00:01:54,159
the crew is going to be routing some

58
00:01:57,510 --> 00:01:56,159
cables that will eventually provide

59
00:01:59,429 --> 00:01:57,520
power and data

60
00:02:00,789 --> 00:01:59,439
for the russian mlm module that will

61
00:02:02,950 --> 00:02:00,799
launch later this year so we're going to

62
00:02:05,830 --> 00:02:02,960
need these clamps and fair leads to

63
00:02:08,469 --> 00:02:05,840

secure those cables to station

64
00:02:11,029 --> 00:02:08,479
because zarya is the is the path

65
00:02:12,470 --> 00:02:11,039
for those uh for power and and data and

66
00:02:14,229 --> 00:02:12,480
and other things that are coming from

67
00:02:16,229 --> 00:02:14,239
the u.s segment of the station to this

68
00:02:19,110 --> 00:02:16,239
new module right correct

69
00:02:20,869 --> 00:02:19,120
and the uh the uh the first piece of

70
00:02:22,710 --> 00:02:20,879
hardware that is that they're working on

71
00:02:24,229 --> 00:02:22,720
you said it is expired that doesn't mean

72
00:02:25,750 --> 00:02:24,239
that it doesn't work right correct

73
00:02:27,270 --> 00:02:25,760
correct it's just it's reached the end

74
00:02:28,630 --> 00:02:27,280
of its life and you know it's

75
00:02:30,630 --> 00:02:28,640
preventative maintenance you know they

76
00:02:32,150 --> 00:02:30,640
want to go out there obviously coolant's

77
00:02:33,350 --> 00:02:32,160
very important on the space station so

78
00:02:35,830 --> 00:02:33,360
they want to make sure they take care of

79
00:02:38,229 --> 00:02:35,840
that problem before it becomes a problem

80
00:02:41,589 --> 00:02:38,239
in in all of these tasks is this uh

81
00:02:43,270 --> 00:02:41,599
a lot of uh is is it easy installations

82
00:02:44,949 --> 00:02:43,280
uh comparatively speaking or are these

83
00:02:47,350 --> 00:02:44,959
hard installations well i would say for

84
00:02:48,869 --> 00:02:47,360
the tasks for these uh for this eva in

85
00:02:51,350 --> 00:02:48,879
particular there's not one that's

86
00:02:52,630 --> 00:02:51,360
particularly hard in comparison to other

87
00:02:54,150 --> 00:02:52,640
things that we've done one thing that

88
00:02:55,830 --> 00:02:54,160

i've always admired about

89
00:02:57,430 --> 00:02:55,840
russian eva hardware is they always

90
00:02:59,430 --> 00:02:57,440
design it to where it's very user

91
00:03:02,790 --> 00:02:59,440
friendly very simple

92
00:03:04,149 --> 00:03:02,800
interfaces very intuitive so

93
00:03:05,990 --> 00:03:04,159
i don't see anything on this that's more

94
00:03:07,670 --> 00:03:06,000
complicated if i was to pick anything

95
00:03:09,589 --> 00:03:07,680
out that uh to watch out for for these

96
00:03:11,670 --> 00:03:09,599
evas is just

97
00:03:12,869 --> 00:03:11,680
the amount of

98
00:03:14,710 --> 00:03:12,879
ground they're going to cover during the

99
00:03:16,390 --> 00:03:14,720
cva and also the amount of hardware

100
00:03:17,990 --> 00:03:16,400
they're going to manipulate the crew is

101
00:03:19,670 --> 00:03:18,000
going to be up and down zarya they're

102
00:03:21,110 --> 00:03:19,680
going to be on the pejo they'll be on

103
00:03:22,869 --> 00:03:21,120
the service module they're going to be

104
00:03:24,470 --> 00:03:22,879
on mrm2 and dc once they're going to

105
00:03:25,910 --> 00:03:24,480
cover a lot of ground during the cva i

106
00:03:28,470 --> 00:03:25,920
think the only module they won't be on

107
00:03:29,670 --> 00:03:28,480
on the russian segments mrm1

108
00:03:30,949 --> 00:03:29,680
in addition there's a lot of hardware

109
00:03:32,869 --> 00:03:30,959
they're going to be manipulating a lot

110
00:03:34,070 --> 00:03:32,879
of things they have to actuate you know

111
00:03:36,229 --> 00:03:34,080
a lot of cable clamps they have to

112
00:03:38,149 --> 00:03:36,239
install so a lot of hand intensive tasks

113
00:03:39,670 --> 00:03:38,159

so if i was going to say if there's

114
00:03:40,470 --> 00:03:39,680
anything to watch out for in this eva is

115
00:03:41,830 --> 00:03:40,480
just

116
00:03:43,110 --> 00:03:41,840
you know to see if the crew start having

117
00:03:45,110 --> 00:03:43,120
some hand fatigue as we start getting

118
00:03:46,869 --> 00:03:45,120
closer to the end of the eva you

119
00:03:49,030 --> 00:03:46,879
mentioned that a big part of this work

120
00:03:50,789 --> 00:03:49,040
here is installing clamps for cables

121
00:03:52,550 --> 00:03:50,799
that are start to come later

122
00:03:55,350 --> 00:03:52,560
there's still more

123
00:03:57,750 --> 00:03:55,360
work after this in order to get ready

124
00:03:59,589 --> 00:03:57,760
for uh not for this eva but there is

125
00:04:01,429 --> 00:03:59,599
additional future work to get ready for

126
00:04:03,429 --> 00:04:01,439
this new module right oh absolutely

127
00:04:05,110 --> 00:04:03,439
there's quite a bit of tasks that need

128
00:04:07,270 --> 00:04:05,120
to be performed by the russian eva crew

129
00:04:08,869 --> 00:04:07,280
members before mlm arrives

130
00:04:11,270 --> 00:04:08,879
not only do they need to route power and

131
00:04:12,470 --> 00:04:11,280
data cables and reconfigure kurz

132
00:04:14,949 --> 00:04:12,480
equipment for

133
00:04:16,150 --> 00:04:14,959
the arrival of the mlm itself

134
00:04:18,629 --> 00:04:16,160
but it's part of a larger

135
00:04:20,629 --> 00:04:18,639
reconfiguration effort because the mlms

136
00:04:22,230 --> 00:04:20,639
can end up going where dc1 is now which

137
00:04:23,909 --> 00:04:22,240
is the russian airlock

138
00:04:26,870 --> 00:04:23,919

so mrm2 is going to become the new

139
00:04:28,710 --> 00:04:26,880
russian airlock once dc1 is deorbited to

140
00:04:29,670 --> 00:04:28,720
make room for mlm so there's a lot of

141
00:04:30,870 --> 00:04:29,680
hardware that we're going to have to

142
00:04:32,950 --> 00:04:30,880
move around

143
00:04:34,550 --> 00:04:32,960
there's eva hardware on the dc1 that

144
00:04:36,150 --> 00:04:34,560
will have to be removed and reinstalled

145
00:04:37,590 --> 00:04:36,160
on mrm2

146
00:04:38,790 --> 00:04:37,600
there are some antennas that we're going

147
00:04:40,550 --> 00:04:38,800
to have to be moved around and there's

148
00:04:41,749 --> 00:04:40,560
also some science equipment on dc1

149
00:04:43,830 --> 00:04:41,759
that's going to have to be relocated

150
00:04:45,670 --> 00:04:43,840
before it deorbits so we look forward to

151
00:04:48,150 --> 00:04:45,680
those things coming up in in russian

152
00:04:49,830 --> 00:04:48,160
spacewalks but but not but not on monday

153
00:04:51,030 --> 00:04:49,840
correct for monday spacewalk they have

154
00:04:53,110 --> 00:04:51,040
work

155
00:04:54,790 --> 00:04:53,120
on other modules besides zarya what what

156
00:04:56,870 --> 00:04:54,800
are the other tasks that they're looking

157
00:04:59,430 --> 00:04:56,880
at so they have a couple of tasks on

158
00:05:01,430 --> 00:04:59,440
mrm2 they have a new piece of science

159
00:05:03,029 --> 00:05:01,440
hardware called the indicator which is

160
00:05:04,469 --> 00:05:03,039
part of a larger experiment that's going

161
00:05:06,390 --> 00:05:04,479
to be

162
00:05:07,590 --> 00:05:06,400
measuring different aspects of the iss

163
00:05:09,110 --> 00:05:07,600

environment so they'll be installing

164
00:05:10,950 --> 00:05:09,120
that piece of hardware they're also

165
00:05:13,350 --> 00:05:10,960
going to be uh retrieving of the no

166
00:05:15,029 --> 00:05:13,360
slovos panel that has a bunch of uh

167
00:05:16,469 --> 00:05:15,039
science samples on it so they'll be

168
00:05:18,550 --> 00:05:16,479
bringing that back inside another one of

169
00:05:19,830 --> 00:05:18,560
those exposure experiments exactly

170
00:05:21,110 --> 00:05:19,840
exactly there are several of those on

171
00:05:23,990 --> 00:05:21,120
the russian segment and this is another

172
00:05:25,510 --> 00:05:24,000
one they want to bring back inside

173
00:05:27,909 --> 00:05:25,520
on the service module they're going to

174
00:05:29,830 --> 00:05:27,919
be reconfiguring some careers

175
00:05:32,070 --> 00:05:29,840
connections they want to do a coors

176
00:05:33,749 --> 00:05:32,080
hardware test on the pe heyo in

177
00:05:35,350 --> 00:05:33,759
preparation for mlm arrival make sure

178
00:05:37,029 --> 00:05:35,360
it's working properly

179
00:05:39,189 --> 00:05:37,039
they're also going to be

180
00:05:41,830 --> 00:05:39,199
installing some cable or some gap

181
00:05:43,749 --> 00:05:41,840
spanners around the service module to

182
00:05:45,749 --> 00:05:43,759
just help in crew translation for future

183
00:05:47,029 --> 00:05:45,759
eva tasks and they're also going to be

184
00:05:47,909 --> 00:05:47,039
retrieving

185
00:05:49,590 --> 00:05:47,919
another

186
00:05:51,430 --> 00:05:49,600
payload which is called the photon gamma

187
00:05:53,029 --> 00:05:51,440
experiment bringing that back inside and

188
00:05:55,110 --> 00:05:53,039

that's just making room for another

189
00:05:56,629 --> 00:05:55,120
activity will be coming later so that's

190
00:05:59,189 --> 00:05:56,639
uh

191
00:06:01,990 --> 00:05:59,199
to make room for that's a future task

192
00:06:03,189 --> 00:06:02,000
future spacewalk absolutely absolutely

193
00:06:05,350 --> 00:06:03,199
are there

194
00:06:07,510 --> 00:06:05,360
as you look at it as an eva

195
00:06:10,070 --> 00:06:07,520
professional are there tasks here that

196
00:06:11,590 --> 00:06:10,080
are particularly difficult or uh or

197
00:06:13,350 --> 00:06:11,600
particularly easy

198
00:06:15,749 --> 00:06:13,360
for space walkers i mean not for you and

199
00:06:16,950 --> 00:06:15,759
me right absolutely you know they go

200
00:06:18,710 --> 00:06:16,960
through a lot of training for all this

201
00:06:20,550 --> 00:06:18,720
stuff so a lot of times a lot of these

202
00:06:22,390 --> 00:06:20,560
items are second nature before they uh

203
00:06:23,510 --> 00:06:22,400
they get on orbit um

204
00:06:24,710 --> 00:06:23,520
you know as i said earlier i don't think

205
00:06:26,469 --> 00:06:24,720
there's any one particular thing on

206
00:06:29,270 --> 00:06:26,479
these evas that i would specify is

207
00:06:30,309 --> 00:06:29,280
particularly difficult it's just

208
00:06:31,590 --> 00:06:30,319
the amount of work that they're doing

209
00:06:34,150 --> 00:06:31,600
the amount of ground they're covering

210
00:06:35,510 --> 00:06:34,160
and just making sure that uh you know

211
00:06:37,590 --> 00:06:35,520
they take their necessary breaks when

212
00:06:39,029 --> 00:06:37,600
they need to to keep from getting hand

213
00:06:40,150 --> 00:06:39,039

fatigue and worn out towards the end of

214
00:06:41,749 --> 00:06:40,160
the eva

215
00:06:43,270 --> 00:06:41,759
hopefully we get interesting to see a

216
00:06:45,430 --> 00:06:43,280
lot of these areas too because they're

217
00:06:47,990 --> 00:06:45,440
both going to be wearing uh us helmet

218
00:06:50,469 --> 00:06:48,000
cameras absolutely you know it's you

219
00:06:52,390 --> 00:06:50,479
know the the russian side borrows a lot

220
00:06:53,990 --> 00:06:52,400
of our us hardware for evas on a

221
00:06:56,550 --> 00:06:54,000
periodic basis and the helmet cameras

222
00:06:58,469 --> 00:06:56,560
are one uh that sometimes they use it

223
00:07:00,629 --> 00:06:58,479
sometimes they don't um on a lot of

224
00:07:01,990 --> 00:07:00,639
recent evas they've been uh both crew

225
00:07:03,749 --> 00:07:02,000
members will be using helmet cameras but

226
00:07:05,510 --> 00:07:03,759
sometimes uh there's a window in the top

227
00:07:06,550 --> 00:07:05,520
of the orlon suit and so

228
00:07:07,830 --> 00:07:06,560
uh

229
00:07:09,589 --> 00:07:07,840
sometimes they want to be able to use

230
00:07:11,589 --> 00:07:09,599
that window and the helmet cameras block

231
00:07:13,589 --> 00:07:11,599
that view so you know if they know that

232
00:07:14,950 --> 00:07:13,599
they're gonna need to use that uh window

233
00:07:16,469 --> 00:07:14,960
on the top of the ore line then they

234
00:07:18,230 --> 00:07:16,479
they will not use the helmet cameras for

235
00:07:20,309 --> 00:07:18,240
that eva and the russian suit is not

236
00:07:22,550 --> 00:07:20,319
designed with with lights or cameras on

237
00:07:25,670 --> 00:07:22,560
it as the us suit is exactly exactly

238
00:07:28,150 --> 00:07:25,680

we've made some adaptations so that uh

239
00:07:30,230 --> 00:07:28,160
they can fit on the orlon for these evas

240
00:07:31,909 --> 00:07:30,240
they found it beneficial and we like to

241
00:07:33,830 --> 00:07:31,919
have it on the orlan's too so that we

242
00:07:35,589 --> 00:07:33,840
can get a sneak peek of what's going on

243
00:07:37,589 --> 00:07:35,599
i mentioned earlier too that there are a

244
00:07:39,909 --> 00:07:37,599
couple of u.s spacewalks that are on the

245
00:07:41,110 --> 00:07:39,919
plan currently for the month of july can

246
00:07:43,189 --> 00:07:41,120
you can you give us

247
00:07:45,110 --> 00:07:43,199
just the the reader's digest version of

248
00:07:47,189 --> 00:07:45,120
what are we looking for chris cassidy

249
00:07:48,790 --> 00:07:47,199
and luca parmitano to be doing

250
00:07:50,950 --> 00:07:48,800
absolutely um

251
00:07:53,029 --> 00:07:50,960
i think that uh the upcoming us evas are

252
00:07:54,390 --> 00:07:53,039
very similar to this next russian eva in

253
00:07:56,070 --> 00:07:54,400
the aspect that

254
00:07:57,670 --> 00:07:56,080
there's not one major task that we're

255
00:07:59,110 --> 00:07:57,680
doing that's going to you know keep us

256
00:08:01,909 --> 00:07:59,120
at one worksite for a long period of

257
00:08:03,270 --> 00:08:01,919
time or is going to be uh you know

258
00:08:04,550 --> 00:08:03,280
taking up the majority of the eva

259
00:08:05,510 --> 00:08:04,560
there's a lot of smaller tests that

260
00:08:07,510 --> 00:08:05,520
they're going to be doing the crews can

261
00:08:09,670 --> 00:08:07,520
be doing a lot of translation they'll be

262
00:08:11,430 --> 00:08:09,680
covering most of the us segment during

263
00:08:12,629 --> 00:08:11,440

these two evas

264
00:08:13,510 --> 00:08:12,639
just kind of hitting the highlights on

265
00:08:14,950 --> 00:08:13,520
some of the tasks we're going to be

266
00:08:16,469 --> 00:08:14,960
doing they're going to be replacing a

267
00:08:17,589 --> 00:08:16,479
space to ground

268
00:08:18,869 --> 00:08:17,599
transceiver

269
00:08:21,029 --> 00:08:18,879
controller

270
00:08:23,749 --> 00:08:21,039
to help provide redundancy back to that

271
00:08:25,589 --> 00:08:23,759
system they're going to be deploying two

272
00:08:27,029 --> 00:08:25,599
radiator grapple bars that arrived on

273
00:08:28,070 --> 00:08:27,039
spacex 2 they're currently sitting on

274
00:08:29,430 --> 00:08:28,080
the poa

275
00:08:30,869 --> 00:08:29,440
so they're going to have to go and put

276
00:08:33,029 --> 00:08:30,879
them in their permanent storage location

277
00:08:34,709 --> 00:08:33,039
one on p1 one on s1

278
00:08:36,149 --> 00:08:34,719
and those will be used if we have a

279
00:08:38,230 --> 00:08:36,159
radiator failure in the future so we can

280
00:08:40,149 --> 00:08:38,240
change out the radiators

281
00:08:41,909 --> 00:08:40,159
they're going to be retrieving two

282
00:08:44,070 --> 00:08:41,919
science experiments the missy eight and

283
00:08:45,430 --> 00:08:44,080
the ormate off of elc2 and they'll bring

284
00:08:46,949 --> 00:08:45,440
bringing that back inside so it can be

285
00:08:49,910 --> 00:08:46,959
returned to the ground or those exposure

286
00:08:52,310 --> 00:08:49,920
experiments like the russians exactly um

287
00:08:54,630 --> 00:08:52,320
they're going to be routing the u.s side

288
00:08:57,030 --> 00:08:54,640

or completing routing the u.s side of

289
00:08:59,670 --> 00:08:57,040
the mlm power and data cables

290
00:09:01,590 --> 00:08:59,680
um and they'll also be

291
00:09:04,230 --> 00:09:01,600
retrieving a

292
00:09:05,750 --> 00:09:04,240
a camera that has failed on the ssrms

293
00:09:07,110 --> 00:09:05,760
mobile base system

294
00:09:08,630 --> 00:09:07,120
that's kind of the highlights and the

295
00:09:10,310 --> 00:09:08,640
the big big ticket items that we're

296
00:09:11,829 --> 00:09:10,320
going to be doing over the two evas and

297
00:09:13,590 --> 00:09:11,839
it shows the connection too who say

298
00:09:16,310 --> 00:09:13,600
they're going to be routing the cables

299
00:09:18,470 --> 00:09:16,320
from the u.s segment up to zarya so that

300
00:09:20,790 --> 00:09:18,480
later russian space walkers can get them

301
00:09:22,150 --> 00:09:20,800
and string them along through the clamps

302
00:09:23,750 --> 00:09:22,160
that are being installed on monday

303
00:09:25,590 --> 00:09:23,760
absolutely so it all ends up tying

304
00:09:27,590 --> 00:09:25,600
together all one big space station

305
00:09:30,070 --> 00:09:27,600
exactly lawrence thanks very much it's

306
00:09:32,790 --> 00:09:30,080
uh i look forward to uh seeing what uh

307
00:09:34,630 --> 00:09:32,800
fielder and sasha have as what they get

308
00:09:36,389 --> 00:09:34,640
to do on monday absolutely thanks for