
PAO

1
00:00:01,576 --> 00:00:02,866
[Amiko Kauderer] So here with us today,

2
00:00:02,866 --> 00:00:05,256
we're inside the International
Space Station Flight Control Room.

3
00:00:05,256 --> 00:00:06,796
I'm here with Jerry Jason.

4
00:00:06,796 --> 00:00:09,126
He is the lead flight director of ATV-3.

5
00:00:09,426 --> 00:00:10,916
Welcome Jerry, thank you for coming.

6
00:00:10,916 --> 00:00:11,686
[Jerry Jason] Thank you very much.

7
00:00:11,686 --> 00:00:14,146
[Amiko] I think I actually just pulled
you out of a meeting with ATV-3.

8
00:00:14,146 --> 00:00:14,836
Correct? [Jerry] Yeah.

9
00:00:14,836 --> 00:00:16,976
We're getting ready to launch
here in just a couple of days.

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00:00:16,976 --> 00:00:17,976
[Amiko] Lots to talk about.

11
00:00:17,976 --> 00:00:18,276
[Jerry] Yes.

12
00:00:18,746 --> 00:00:21,436
[Amiko] First I wanted to

talk a little about you.

13
00:00:21,616 --> 00:00:23,426
So tell me, how long have you been here at NASA.

14
00:00:23,816 --> 00:00:26,516
[Jerry] I've been at NASA since 1996.

15
00:00:26,516 --> 00:00:28,056
So about 17 years now.

16
00:00:28,596 --> 00:00:31,126
I started out as a space
shuttle flight controller.

17
00:00:31,406 --> 00:00:32,556
Became a group lead over there.

18
00:00:33,096 --> 00:00:36,046
And then I've been a flight director for
about four years on space station side.

19
00:00:36,546 --> 00:00:36,876
[Amiko] Thanks.

20
00:00:37,296 --> 00:00:39,116
Tell me some of your experience.

21
00:00:39,116 --> 00:00:42,056
Where did, how did you get to flight director?

22
00:00:42,216 --> 00:00:46,836
[Jerry] I started out in what is called the
MMACS group which was Mechanical, Maintenance,

23
00:00:46,836 --> 00:00:48,786
Arm and Crew Systems on the space shuttle side.

24

00:00:48,786 --> 00:00:53,986
On the space shuttle side that was responsible
for the auxiliary power units, the landing gear,

25
00:00:54,336 --> 00:00:58,546
some of the crew systems folks, the
escape systems, parachutes, etc...

26
00:00:59,146 --> 00:01:03,996
Got certified fully and worked several
missions about 20, 25 on the shuttle side.

27
00:01:03,996 --> 00:01:09,016
Worked some ascent/entry and then about four
years ago I got selected as flight director.

28
00:01:09,566 --> 00:01:11,456
And I've been working station since then.

29
00:01:11,856 --> 00:01:16,896
My biggest assignment was prior to
ATV, was working increment 23/24.

30
00:01:17,406 --> 00:01:17,676
[Amiko] Okay.

31
00:01:17,836 --> 00:01:18,606
Great. Thank you.

32
00:01:18,836 --> 00:01:22,856
Well, so you are the lead flight director
for the Automated Transfer Vehicle

33
00:01:22,856 --> 00:01:25,076
that we are hoping to send up soon.

34
00:01:25,076 --> 00:01:26,966
I know that there was a delay,
and we're going to get into that.

35
00:01:27,306 --> 00:01:34,336
But just first tell me, what is your role
specifically with regards to that cargo ship?

36
00:01:34,746 --> 00:01:35,246
[Jerry] Okay.

37
00:01:35,246 --> 00:01:37,456
ATV is really a trilateral vehicle.

38
00:01:38,216 --> 00:01:39,986
It's built by the European Space Agency.

39
00:01:39,986 --> 00:01:41,396
It's launched out of French Guiana.

40
00:01:42,106 --> 00:01:43,986
Hopefully, here in the next couple of days.

41
00:01:44,386 --> 00:01:47,756
But the trilateral portion is we
actually dock to the Russian segment.

42
00:01:47,756 --> 00:01:52,986
So the vehicle actually approaches from the
backside and docks to the SMF docking port.

43
00:01:53,606 --> 00:01:57,876
So a lot of the work that we have
to do is on a trilateral nature.

44
00:01:57,876 --> 00:02:00,626
So my responsibilities overall
are for making sure

45
00:02:00,626 --> 00:02:03,896
that the space station is ready to receive ATV.

46

00:02:03,946 --> 00:02:06,896
So that's the coordination that
I've been primarily working with.

47
00:02:06,896 --> 00:02:12,036
And I work with the flight directors in,
at the ATVCC which is Toulouse, France.

48
00:02:12,436 --> 00:02:16,426
And I also work with the SRP which is the
Russian flight director at the MCC-Moscow

49
00:02:16,426 --> 00:02:17,496
and make sure we're all ready to go.

50
00:02:17,776 --> 00:02:18,166
[Amiko] Okay.

51
00:02:18,166 --> 00:02:20,336
So you will actually be here for that launch.

52
00:02:20,546 --> 00:02:22,436
[Jerry] I'll be here for
the launch Thursday night.

53
00:02:22,796 --> 00:02:25,446
And then we'll be docking on the 28th.

54
00:02:25,446 --> 00:02:27,406
And I'll be the on-console
flight director for that as well.

55
00:02:27,646 --> 00:02:27,826
[Amiko] Great.

56
00:02:28,156 --> 00:02:29,326
So let's talk about the delay.

57
00:02:29,736 --> 00:02:32,986

So I know that it was originally
set to launch on March 9th.

58
00:02:32,986 --> 00:02:33,716
Correct? [Jerry] Yes.

59
00:02:33,716 --> 00:02:34,076
That's correct.

60
00:02:34,256 --> 00:02:35,976
[Amiko] So what happened?

61
00:02:37,136 --> 00:02:41,246
[Jerry] Going through the evaluation
of the cargo that was stowed in ATV,

62
00:02:42,036 --> 00:02:44,846
when we close out the vehicle they
go ahead and they take pictures of it

63
00:02:44,846 --> 00:02:48,376
and they did an evaluation and they
realized that the some of the buckles,

64
00:02:48,546 --> 00:02:51,786
the way that they'd been
fastened wasn't appropriate.

65
00:02:51,786 --> 00:02:56,456
So there was a concern that once you
launch the vehicle, that the ascent loads

66
00:02:56,456 --> 00:03:01,076
with the vibrations and the G-Force
that some of the cargo may become loose.

67
00:03:01,076 --> 00:03:05,456
And you don't want cargo whipping around
the vehicle when it's going into space.

68
00:03:06,026 --> 00:03:11,106
So for, therefore, ESA decided that it
was prudent to go ahead and go back in

69
00:03:11,156 --> 00:03:14,426
and roll the vehicle back, take the
fairings off, re-access the vehicle

70
00:03:14,816 --> 00:03:17,866
and re-secure that cargo which they have done.

71
00:03:18,396 --> 00:03:18,486
[Amiko] Okay.

72
00:03:18,716 --> 00:03:24,956
So it's not like, quite like, not packing your
suitcase properly and that delaying your flight.

73
00:03:25,276 --> 00:03:28,306
But, so a bit more to do with that.

74
00:03:28,616 --> 00:03:31,086
Did they have to unpack everything
and then put things back?

75
00:03:31,086 --> 00:03:31,996
Or how did they...

76
00:03:32,236 --> 00:03:34,206
[Jerry] It's just a matter of re-securing it.

77
00:03:34,266 --> 00:03:36,056
They did move some of the cargo bags around.

78
00:03:36,056 --> 00:03:39,576
They are different sizes of bags
that are carrying up our cargo.

79

00:03:39,916 --> 00:03:41,866
They move some of those around
in different slots

80
00:03:41,866 --> 00:03:44,476
to get a little more tension on the buckles.

81
00:03:44,476 --> 00:03:47,676
And they've also went ahead
and taped some of the buckles.

82
00:03:47,676 --> 00:03:49,696
They were a little bit more
concerned about that may come loose.

83
00:03:49,696 --> 00:03:53,196
So they have done a good job of making
sure that we're ready to go here.

84
00:03:53,446 --> 00:03:55,586
[Amiko] We don't want an
exploding suitcase in space.

85
00:03:56,266 --> 00:03:57,256
So thank you.

86
00:03:57,646 --> 00:04:00,936
So now let's talk some about the launch.

87
00:04:00,936 --> 00:04:06,996
Now I know countdown begins at
10 hours and then we have launch.

88
00:04:06,996 --> 00:04:09,596
So then can you tell me about what happens next?

89
00:04:10,086 --> 00:04:15,006
[Jerry] For the most part, as we
get ready to launch the vehicle

90
00:04:15,176 --> 00:04:17,926
and ATV Control Center is really is
going to be responsible for that,

91
00:04:18,356 --> 00:04:20,256
once again that's in Toulouse, France.

92
00:04:20,356 --> 00:04:24,046
They'll be monitoring the vehicle
as it gets ready to launch.

93
00:04:24,446 --> 00:04:32,056
And then once it launches it gets, it has
an orbit that is basically elliptical,

94
00:04:32,516 --> 00:04:37,716
and then about 40 minutes, 45 minutes later they
actually do a re-ignition in the second stage

95
00:04:37,716 --> 00:04:39,146
which is actually unique for a vehicle.

96
00:04:39,146 --> 00:04:43,036
As you don't re-ignite a second stage
and that will circularize the orbit.

97
00:04:43,446 --> 00:04:47,746
And then, it's gradually going
to be approaching station.

98
00:04:47,996 --> 00:04:51,106
We'll be in a little bit of a lower orbit.

99
00:04:51,446 --> 00:04:54,926
So we'll be going a little bit faster so
we'll actually be catching up to station.

100
00:04:56,446 --> 00:05:00,096
And then as we get closer to the

actual docking day were going

101
00:05:00,096 --> 00:05:02,526
to do several maneuvers that'll
bring is into the docking.

102
00:05:02,776 --> 00:05:03,086
[Amiko] Okay.

103
00:05:03,196 --> 00:05:09,316
So five days, or 5-1/2 days before
the docking and is that quick?

104
00:05:09,316 --> 00:05:12,516
[Jerry] That's actually quicker than
we have done in the past for ATV

105
00:05:12,516 --> 00:05:15,156
and the original launch had
about an eight day phasing.

106
00:05:15,156 --> 00:05:16,566
So we're doing it a little bit faster.

107
00:05:16,946 --> 00:05:21,096
So that means we're just going to, doing our
burns a little bit sooner and we'll be staying

108
00:05:21,656 --> 00:05:23,836
in a lower orbit a little bit longer.

109
00:05:23,836 --> 00:05:26,436
So we're actually moving
faster than the station is.

110
00:05:26,436 --> 00:05:26,686
[Amiko] Okay.

111
00:05:27,066 --> 00:05:30,036

And so, let's talk about the cargo.

112
00:05:30,556 --> 00:05:31,786
What's in there?

113
00:05:32,326 --> 00:05:33,136
[Jerry] There's lots of cargo.

114
00:05:33,556 --> 00:05:36,826
There's quite a bit of U.S. cargo.

115
00:05:36,826 --> 00:05:39,596
We have, of course we have food supplies.

116
00:05:39,596 --> 00:05:41,316
You have crew return items.

117
00:05:41,316 --> 00:05:43,136
You have crew personal preference items.

118
00:05:43,516 --> 00:05:46,776
You have a lot of replacement pieces
for the International Space Station.

119
00:05:46,776 --> 00:05:50,126
We're taking up a bunch of
regenerative ECLSS equipment.

120
00:05:50,606 --> 00:05:55,206
They're called RFTAs, which are used for
recycling our water onboard the station.

121
00:05:55,266 --> 00:05:55,426
[Amiko] Yes.

122
00:05:55,646 --> 00:05:56,696
We just replaced one yesterday.

123

00:05:57,066 --> 00:06:01,816
[Jerry] So, but part of it is to is, not
only are we taking all that cargo off,

124
00:06:01,816 --> 00:06:04,936
we're going to be putting a lot
of stuff in to the vehicle as far

125
00:06:04,936 --> 00:06:06,886
as trash that is no longer need to.

126
00:06:06,886 --> 00:06:12,566
So overall there's about 2,200 kilograms
of dry cargo we're transferring up.

127
00:06:12,676 --> 00:06:15,086
And we're going to fill that back
up pretty much when we leave.

128
00:06:15,536 --> 00:06:18,826
We're also bringing up some
oxygen, some air and then some water

129
00:06:19,226 --> 00:06:24,716
and we'll also provide propellant
oxidizer as well.

130
00:06:24,716 --> 00:06:27,866
That goes into the Russian segment
and we pump that in directly.

131
00:06:27,936 --> 00:06:34,756
So it supplies us with lots of cargo, lots of
air, food and we also get propellant out of it.

132
00:06:35,086 --> 00:06:40,206
[Amiko] So about 7.2 tons of cargo
is supposedly going up, right?

133
00:06:40,766 --> 00:06:42,366

And very critical items.

134
00:06:42,366 --> 00:06:49,246
We have air and water and also things like the
recycle filter assembly which is used to recycle

135
00:06:49,246 --> 00:06:52,276
that water and that's pretty
important there on space station.

136
00:06:52,516 --> 00:06:55,256
[Jerry] Yes ma'am it is.

137
00:06:55,336 --> 00:06:56,686
[Amiko] So, let's go to docking.

138
00:06:56,686 --> 00:07:01,196
We said 5-1/2 days before it actually docks
and so when it does come up there is it,

139
00:07:01,286 --> 00:07:03,516
is that automated, the rendezvous and docking?

140
00:07:03,736 --> 00:07:04,656
How is the approach?

141
00:07:04,946 --> 00:07:05,126
[Jerry] Yeah.

142
00:07:05,436 --> 00:07:08,996
As you point out before ATV is
Autonomous Transfer Vehicle.

143
00:07:08,996 --> 00:07:10,836
So most of it is automated.

144
00:07:11,286 --> 00:07:16,796
ATVCC has a lot to do with monitoring
the progress of the vehicle.

145
00:07:17,686 --> 00:07:21,416
They do uplink certain parameters
as we do the approach to make sure

146
00:07:22,246 --> 00:07:25,766
that ATV is getting all the data it needs.

147
00:07:25,766 --> 00:07:29,616
But for the, for the final portion
of it, it's pretty much all ATV

148
00:07:29,616 --> 00:07:32,536
in communication with the space station.

149
00:07:32,536 --> 00:07:38,706
So, the ATV is, has what's called a prox
link between itself and the space station,

150
00:07:38,766 --> 00:07:41,936
specifically the Russian segment,
so they're always comparing data

151
00:07:41,936 --> 00:07:44,956
where ATV is relative to space station.

152
00:07:45,396 --> 00:07:51,316
It also uses a laser targeting system as we get
closer in to it to make sure that we're matching

153
00:07:51,316 --> 00:07:52,956
up exactly with the docking port.

154
00:07:53,256 --> 00:07:56,956
Of course, you have ATVCC on the
ground monitoring ATV performance.

155
00:07:57,386 --> 00:08:00,826
You have MCC-Moscow monitoring

the Russian segment performance.

156
00:08:00,976 --> 00:08:02,966
You have Houston watching the U.S. segment.

157
00:08:03,496 --> 00:08:07,966
But you also have the crew involved
monitoring, making sure the ATV approaches.

158
00:08:07,966 --> 00:08:10,526
[Amiko] Now I know it's going to be
docking to the aft port of the Zvezda.

159
00:08:10,896 --> 00:08:14,476
So you're not, where there's not going to
be a window where they can actually look

160
00:08:14,476 --> 00:08:16,326
and see the approaching vehicle,
is that correct?

161
00:08:16,646 --> 00:08:17,126
[Jerry] That's correct.

162
00:08:17,126 --> 00:08:19,286
[Amiko] And so how will they
monitor its arrival?

163
00:08:19,386 --> 00:08:24,106
[Jerry] We actually have cameras that
look out the back of the aft port

164
00:08:24,566 --> 00:08:26,126
and it's actually displayed on a monitor.

165
00:08:26,126 --> 00:08:27,816
So the crew has several things that they get.

166
00:08:28,246 --> 00:08:35,606

They have data from the proximity
sensors and the Kurs system

167
00:08:35,606 --> 00:08:38,126
that are displaying the range,
and range rate of the system.

168
00:08:38,536 --> 00:08:44,236
But they'll also have the video cameras as well
and they actually have a overlay that they put

169
00:08:44,236 --> 00:08:47,976
on the monitor that shows the approach
corridor that ATV is supposed to be in.

170
00:08:47,976 --> 00:08:52,536
If they get outside that approach corridor,
if ATV hasn't already automatically retreated

171
00:08:52,536 --> 00:08:55,366
or escaped, they have the capability
to do that onboard as well.

172
00:08:55,996 --> 00:08:56,226
[Amiko] Okay.

173
00:08:56,846 --> 00:08:57,186
Thank you.

174
00:08:57,676 --> 00:09:02,076
So, and do you know exactly which
crew members are going to be involved

175
00:09:02,076 --> 00:09:03,776
in the, or is it all of them or...

176
00:09:04,026 --> 00:09:08,786
[Jerry] No, but specifically two crew members
that are trained for that and that's Kuipers

177
00:09:08,786 --> 00:09:13,086
and Kononenko are going to be our prime crew
members for monitoring the ATV approach.

178
00:09:13,386 --> 00:09:15,646
They actually get all their
training way before we launched.

179
00:09:15,726 --> 00:09:15,976
[Amiko] Okay.

180
00:09:15,976 --> 00:09:19,256
Yeah and we actually had a
picture just up now of the pair

181
00:09:19,436 --> 00:09:23,986
who will be actually doing the
monitoring of the approach of ATV-3.

182
00:09:23,986 --> 00:09:26,226
So, again I pulled you out of meeting.

183
00:09:26,226 --> 00:09:27,516
Anything juicy to tell us?

184
00:09:28,036 --> 00:09:29,576
Nothing. Nominal.

185
00:09:29,576 --> 00:09:30,786
[Jerry] Well, were just monitoring.

186
00:09:30,886 --> 00:09:31,036
[Amiko] Okay.

187
00:09:31,136 --> 00:09:33,966
[Jerry] I think you probably already
talked about, there's been a little

188

00:09:33,966 --> 00:09:36,386
of the issue with the two-alpha BGA.

189
00:09:36,386 --> 00:09:42,826
And we're kind of monitoring that to make
sure that isn't an issue for ATV approach

190
00:09:42,826 --> 00:09:49,166
because of using the GPS that it
uses between the two vehicles.

191
00:09:49,576 --> 00:09:53,206
We want to make sure that the arrays
are in a very specific position.

192
00:09:53,206 --> 00:09:57,386
So if we're having a problem with the BGA we
want to make sure that we have a plan in place.

193
00:09:57,386 --> 00:09:59,206
So we spent a lot of time discussing that.

194
00:09:59,616 --> 00:10:03,936
Doing what we normally do, we do a lot of
"what-iffing" as part of mission operations,

195
00:10:03,936 --> 00:10:07,546
saying "okay if it fails what do we want to
do with the array in the interim approach."

196
00:10:08,126 --> 00:10:08,396
[Amiko] Okay.

197
00:10:08,586 --> 00:10:11,236
Great and so you'll be on
console Thursday night.

198
00:10:11,506 --> 00:10:13,306
Back here for a long night.

199
00:10:13,396 --> 00:10:15,076
So you'll have to do a little sleep shifting.

200
00:10:15,076 --> 00:10:18,846
How much longer after launch
that, do you stay here to monitor?

201
00:10:18,976 --> 00:10:22,466
[Jerry] Yeah, I'll stay here until
we get the second stage reignited

202
00:10:22,466 --> 00:10:25,636
and get the orbit circularized and
then we'll be in a good configuration.

203
00:10:25,786 --> 00:10:25,996
[Amiko] Okay.

204
00:10:25,996 --> 00:10:27,426
Great. A good, long late night for you.

205
00:10:27,736 --> 00:10:30,586
Thank you so much for coming
by and talking with us.

206
00:10:30,906 --> 00:10:32,536
So if it's juicy enough we're all good.

207
00:10:33,016 --> 00:10:33,246
[Jerry] Yes.

208
00:10:33,426 --> 00:10:35,046
We're all good, ready to go for Thursday.

209
00:10:35,046 --> 00:10:35,406
[Amiko] Okay.

210
00:10:35,476 --> 00:10:36,266

Thank you very much.

211
00:10:36,426 --> 00:10:36,706
[Jerry] Thank you.