
PAO

1
00:00:04,309 --> 00:00:02,470
so joining me here now in mission

2
00:00:06,070 --> 00:00:04,319
control one of our current nasa flight

3
00:00:07,430 --> 00:00:06,080
directors mike lammers

4
00:00:09,270 --> 00:00:07,440
mike thanks for joining me real quick

5
00:00:11,030 --> 00:00:09,280
and welcome you worked first element

6
00:00:13,030 --> 00:00:11,040
launch so you've been you've been here

7
00:00:14,709 --> 00:00:13,040
longer than me i'm jealous that you were

8
00:00:16,790 --> 00:00:14,719
there you know when everything started

9
00:00:19,269 --> 00:00:16,800
what were you doing back in 1998 for the

10
00:00:21,510 --> 00:00:19,279
program uh back in 1998 i actually

11
00:00:23,349 --> 00:00:21,520
worked in the uh the training division

12
00:00:25,589 --> 00:00:23,359
as was called at the time which was uh

13
00:00:27,750 --> 00:00:25,599

part of you know mission operations that

14
00:00:30,710 --> 00:00:27,760
handles all the flight control and

15
00:00:33,110 --> 00:00:30,720
training for the crews and i was heavily

16
00:00:34,790 --> 00:00:33,120
involved in developing

17
00:00:36,310 --> 00:00:34,800
some of the early simulators for the

18
00:00:38,389 --> 00:00:36,320
space station and getting those to work

19
00:00:40,069 --> 00:00:38,399
with the space shuttle simulators and i

20
00:00:43,670 --> 00:00:40,079
was on the team that was

21
00:00:45,590 --> 00:00:43,680
training the crew of sts-88 which is the

22
00:00:47,830 --> 00:00:45,600
the shuttle mission that delivered node

23
00:00:50,869 --> 00:00:47,840
one that was the first uh us element

24
00:00:52,630 --> 00:00:50,879
attached uh to the fgv the

25
00:00:54,229 --> 00:00:52,640
first element launched

26
00:00:56,549 --> 00:00:54,239
fairly shortly after

27
00:00:58,790 --> 00:00:56,559
uh first element launch so uh you know

28
00:01:01,750 --> 00:00:58,800
there that mission and first element

29
00:01:03,830 --> 00:01:01,760
launch were really um tied at the hip

30
00:01:05,830 --> 00:01:03,840
um obviously first element was where we

31
00:01:07,030 --> 00:01:05,840
did a lot of uh the initial um

32
00:01:09,670 --> 00:01:07,040
integration

33
00:01:11,270 --> 00:01:09,680
um with the with the russians on on

34
00:01:13,270 --> 00:01:11,280
hardware we're going to join our jointly

35
00:01:15,109 --> 00:01:13,280
operate obviously we had been gotten a

36
00:01:17,590 --> 00:01:15,119
lot of really valuable experience with

37
00:01:20,469 --> 00:01:17,600
phase one and mirror but uh but really

38
00:01:22,550 --> 00:01:20,479

uh first element launch was was um where

39
00:01:24,870 --> 00:01:22,560
we were going to actually uh work

40
00:01:27,109 --> 00:01:24,880
together and jointly and in operating a

41
00:01:29,109 --> 00:01:27,119
vehicle um

42
00:01:31,749 --> 00:01:29,119
it was really uh

43
00:01:33,910 --> 00:01:31,759
interesting to work on i think when we

44
00:01:35,910 --> 00:01:33,920
we started there was so much that we

45
00:01:38,469 --> 00:01:35,920
didn't know even though uh first element

46
00:01:40,469 --> 00:01:38,479
gave us a lot of um experience you know

47
00:01:43,749 --> 00:01:40,479
we were still

48
00:01:45,830 --> 00:01:43,759
kind of uh in a monitor mode um uh with

49
00:01:47,670 --> 00:01:45,840
with mir as far as uh what we do which

50
00:01:50,069 --> 00:01:47,680
was systems obviously we had crew

51
00:01:51,670 --> 00:01:50,079
members on board doing doing work then

52
00:01:54,310 --> 00:01:51,680
we were taking care of them both from

53
00:01:55,910 --> 00:01:54,320
houston and moscow but uh it was uh it

54
00:01:57,109 --> 00:01:55,920
was really pretty special because we had

55
00:01:59,350 --> 00:01:57,119
spent

56
00:02:00,630 --> 00:01:59,360
i'd been here for two or three years

57
00:02:02,630 --> 00:02:00,640
before that but there had been a number

58
00:02:04,149 --> 00:02:02,640
of people working space station uh

59
00:02:06,469 --> 00:02:04,159
really in fact i think my manager had

60
00:02:08,710 --> 00:02:06,479
been working it since the 80s oh wow um

61
00:02:11,270 --> 00:02:08,720
and uh and uh to finally get to the

62
00:02:13,990 --> 00:02:11,280
point where where we were going to

63
00:02:16,550 --> 00:02:14,000

launch was uh was was pretty special

64
00:02:19,190 --> 00:02:16,560
after uh after a lot of uh waiting and a

65
00:02:21,430 --> 00:02:19,200
lot of a lot of really um hard work

66
00:02:23,510 --> 00:02:21,440
um so we all i remember in particular

67
00:02:25,190 --> 00:02:23,520
what i was doing is i came in and i

68
00:02:27,350 --> 00:02:25,200
think i i watched from one of the back

69
00:02:29,750 --> 00:02:27,360
rooms in mission control and and we sat

70
00:02:31,910 --> 00:02:29,760
around and we watched the launch and we

71
00:02:33,350 --> 00:02:31,920
we hung around for a few ground passes

72
00:02:35,670 --> 00:02:33,360
afterwards and it was

73
00:02:37,509 --> 00:02:35,680
um it was really pretty special to do oh

74
00:02:38,630 --> 00:02:37,519
i'd imagine it'd be really exciting you

75
00:02:40,470 --> 00:02:38,640
know because

76
00:02:41,830 --> 00:02:40,480
i've heard it described you know it was

77
00:02:43,589 --> 00:02:41,840
the start you knew there was going to be

78
00:02:45,190 --> 00:02:43,599
a lot of really hard work in the years

79
00:02:47,350 --> 00:02:45,200
to come but it was really good to you

80
00:02:48,550 --> 00:02:47,360
know get things started yeah and you

81
00:02:50,229 --> 00:02:48,560
know one of the interesting things about

82
00:02:53,910 --> 00:02:50,239
working you know not just for nasa but

83
00:02:55,750 --> 00:02:53,920
anyone that deals with uh launches is uh

84
00:02:57,670 --> 00:02:55,760
there is that you know all this work

85
00:02:59,030 --> 00:02:57,680
that you do it's pretty unique where you

86
00:03:01,910 --> 00:02:59,040
come up to one

87
00:03:04,149 --> 00:03:01,920
kind of moment of about 10 minutes where

88
00:03:06,710 --> 00:03:04,159

it's over so quick yeah where everything

89
00:03:08,390 --> 00:03:06,720
is kind of focused on that moment and

90
00:03:11,350 --> 00:03:08,400
then 10 minutes later

91
00:03:13,509 --> 00:03:11,360
um there you are and uh oh my gosh now

92
00:03:16,550 --> 00:03:13,519
we've got a we've got got to actually

93
00:03:18,710 --> 00:03:16,560
operate this thing so it's a lot of fun

94
00:03:20,790 --> 00:03:18,720
well and i mean you guys have been

95
00:03:23,030 --> 00:03:20,800
operating it for the last 15 years tell

96
00:03:25,509 --> 00:03:23,040
me a little bit i mean how how has how

97
00:03:27,509 --> 00:03:25,519
has it been to watch this whole program

98
00:03:29,509 --> 00:03:27,519
evolve and see see how far it's come in

99
00:03:31,270 --> 00:03:29,519
the last 15 years it's you know it's

100
00:03:32,390 --> 00:03:31,280
been pretty amazing just when you look

101
00:03:35,270 --> 00:03:32,400
back at

102
00:03:37,190 --> 00:03:35,280
how much we've learned on on operating

103
00:03:39,589 --> 00:03:37,200
in space of course it's not quite 15

104
00:03:41,990 --> 00:03:39,599
years but pretty close since that we've

105
00:03:43,270 --> 00:03:42,000
had a permanent occupation of space

106
00:03:44,789 --> 00:03:43,280
station i mean there's you know

107
00:03:46,390 --> 00:03:44,799
teenagers alive today that don't

108
00:03:47,589 --> 00:03:46,400
remember a time where there weren't

109
00:03:49,350 --> 00:03:47,599
americans

110
00:03:51,990 --> 00:03:49,360
orbiting the earth which is which is

111
00:03:53,750 --> 00:03:52,000
pretty unique um we have gotten

112
00:03:56,869 --> 00:03:53,760
i i remember

113
00:03:58,470 --> 00:03:56,879

back when i was younger when we'd watch

114
00:04:00,630 --> 00:03:58,480
space shuttle missions and this is

115
00:04:03,030 --> 00:04:00,640
during the early 80s where you know we

116
00:04:04,390 --> 00:04:03,040
do spacewalks that

117
00:04:06,550 --> 00:04:04,400
essentially put a couple of pieces of

118
00:04:08,149 --> 00:04:06,560
metal together yeah that was just a you

119
00:04:09,990 --> 00:04:08,159
know a precursor for what we were doing

120
00:04:12,229 --> 00:04:10,000
on space station and now we've gotten to

121
00:04:15,990 --> 00:04:12,239
the point on space station that we do

122
00:04:17,909 --> 00:04:16,000
um just amazingly complex activities and

123
00:04:19,509 --> 00:04:17,919
they're almost uh i won't say that

124
00:04:21,830 --> 00:04:19,519
they're routine but

125
00:04:25,909 --> 00:04:21,840
but but they're very um

126
00:04:28,790 --> 00:04:27,510
not routine but they're they're

127
00:04:30,070 --> 00:04:28,800
something that we've done and we've got

128
00:04:32,790 --> 00:04:30,080
a lot of experience with we can do with

129
00:04:34,550 --> 00:04:32,800
confidence like yeah last year i ran a

130
00:04:35,990 --> 00:04:34,560
space walk and you know i remember

131
00:04:37,350 --> 00:04:36,000
watching it

132
00:04:38,390 --> 00:04:37,360
you know where you see the crew going on

133
00:04:40,230 --> 00:04:38,400
one of the first things that we got to

134
00:04:43,430 --> 00:04:40,240
do when we send the crew out the door is

135
00:04:45,270 --> 00:04:43,440
the time it was a sunny williams was was

136
00:04:47,510 --> 00:04:45,280
the ev crew member she actually had to

137
00:04:49,590 --> 00:04:47,520
go hand over hand

138
00:04:51,110 --> 00:04:49,600

almost a good chunk the length of a

139
00:04:53,030 --> 00:04:51,120
football field to get out to the end of

140
00:04:55,030 --> 00:04:53,040
the truss and just to think that one of

141
00:04:57,030 --> 00:04:55,040
the one of the challenges that we have

142
00:04:59,350 --> 00:04:57,040
when we do spacewalks is how far the

143
00:05:01,590 --> 00:04:59,360
crew actually needs to translate outside

144
00:05:02,710 --> 00:05:01,600
just to get to the work site yeah

145
00:05:04,790 --> 00:05:02,720
whoever would have thought that our

146
00:05:07,749 --> 00:05:04,800
spaceship is too big yeah i mean it's

147
00:05:09,510 --> 00:05:07,759
it's it's massive and uh just uh you

148
00:05:12,430 --> 00:05:09,520
know the amount of focus that we had on

149
00:05:15,430 --> 00:05:12,440
first element and the fgb which you know

150
00:05:16,710 --> 00:05:15,440
comparatively it's a simple

151
00:05:18,070 --> 00:05:16,720
vehicle

152
00:05:20,390 --> 00:05:18,080
compared to a lot of the other things

153
00:05:22,870 --> 00:05:20,400
like the service module and some of the

154
00:05:24,870 --> 00:05:22,880
vehicles we send up in the u.s lab

155
00:05:27,110 --> 00:05:24,880
it's really amazing that we've uh we've

156
00:05:28,469 --> 00:05:27,120
we've built this machine and and you

157
00:05:30,469 --> 00:05:28,479
know to this day we're still learning a

158
00:05:32,390 --> 00:05:30,479
great deal about the machine itself and

159
00:05:34,629 --> 00:05:32,400
running it and also keeping people on it

160
00:05:37,670 --> 00:05:34,639
full time and i mean excited about

161
00:05:38,950 --> 00:05:37,680
what's to come still oh yeah um you know

162
00:05:42,230 --> 00:05:38,960
the neat thing about working on the

163
00:05:44,629 --> 00:05:42,240

space station is uh it's never quite the

164
00:05:47,110 --> 00:05:44,639
same right every year we do something

165
00:05:49,670 --> 00:05:47,120
different something big that's different

166
00:05:52,469 --> 00:05:49,680
um just recently i worked uh in the last

167
00:05:55,270 --> 00:05:52,479
few months as a cygnus which was the

168
00:05:57,510 --> 00:05:55,280
commercial cargo mission that uh that

169
00:05:59,590 --> 00:05:57,520
orbital launched and uh you know that

170
00:06:01,350 --> 00:05:59,600
was a whole new learning curve another

171
00:06:02,469 --> 00:06:01,360
vehicle to learn another set of people

172
00:06:03,670 --> 00:06:02,479
to work with

173
00:06:05,189 --> 00:06:03,680
and um

174
00:06:07,350 --> 00:06:05,199
you know we had that that was just this

175
00:06:08,790 --> 00:06:07,360
month next next year i'm sure there's

176
00:06:11,350 --> 00:06:08,800
going to be some more we've certainly

177
00:06:13,029 --> 00:06:11,360
got some new um

178
00:06:14,710 --> 00:06:13,039
elements in the in the pipeline that are

179
00:06:15,909 --> 00:06:14,720
on the drawing board the russians have a

180
00:06:17,510 --> 00:06:15,919
number that they're going to they're

181
00:06:18,230 --> 00:06:17,520
going to put up in the next few years

182
00:06:20,550 --> 00:06:18,240
and

183
00:06:22,790 --> 00:06:20,560
you know the space station of uh

184
00:06:24,390 --> 00:06:22,800
you know five years from now is is going

185
00:06:26,550 --> 00:06:24,400
to look different in ways than the ones

186
00:06:28,790 --> 00:06:26,560
that today does and probably in ways

187
00:06:31,510 --> 00:06:28,800
that we uh we haven't quite yet

188
00:06:33,430 --> 00:06:31,520

anticipated well yeah never a dull day

189
00:06:35,510 --> 00:06:33,440
no all right well again international

190
00:06:37,749 --> 00:06:35,520
space station 15 years and

191
00:06:39,670 --> 00:06:37,759
going strong and a lot more to come um

192
00:06:41,270 --> 00:06:39,680
get mike lammers nasa flight director

193
00:06:43,029 --> 00:06:41,280
thanks so much for being here mike

194
00:06:45,029 --> 00:06:43,039
you're welcome congratulations on all