



1
00:00:05,720 --> 00:00:03,110
we're honored today to be in the office

2
00:00:07,940 --> 00:00:05,730
here in Moscow with general alexei

3
00:00:11,799 --> 00:00:07,950
leonov general thank you very much for

4
00:00:14,209 --> 00:00:11,809
spending the time with us today 2015

5
00:00:15,680 --> 00:00:14,219
represents two of the most important

6
00:00:19,099 --> 00:00:15,690
anniversaries in human spaceflight

7
00:00:20,990 --> 00:00:19,109
history they both involve you the 50th

8
00:00:24,580 --> 00:00:21,000
anniversary of man's first spacewalk

9
00:00:27,290 --> 00:00:24,590
and the 40th anniversary of Apollo Soyuz

10
00:00:30,490 --> 00:00:27,300
it's hard to believe that this much time

11
00:00:34,130 --> 00:00:30,500
has passed but looking back at that time

12
00:00:36,799 --> 00:00:34,140
what what did those days mean to you

13
00:00:39,319 --> 00:00:36,809

personally and are the memories of those

14

00:00:41,600 --> 00:00:39,329

accomplishments as significant today as

15

00:00:48,229 --> 00:00:41,610

they were when you lived through those

16

00:00:54,680 --> 00:00:48,239

fifty years ago and 40 years ago let me

17

00:00:58,910 --> 00:00:54,690

start with some events that took the

18

00:01:01,970 --> 00:00:58,920

least prior to that how did I happen to

19

00:01:05,870 --> 00:01:01,980

have become a part of this goal of this

20

00:01:08,270 --> 00:01:05,880

task very recently in minutes of one of

21

00:01:12,109 --> 00:01:08,280

the meetings we have found the following

22

00:01:14,390 --> 00:01:12,119

statement and this takes us back to mr.

23

00:01:17,090 --> 00:01:14,400

corridor running one of the meetings

24

00:01:22,130 --> 00:01:17,100

where they were supposed to shape up the

25

00:01:23,990 --> 00:01:22,140

actual first evie a session that I was

26

00:01:27,859 --> 00:01:24,000

supposed to be a part of and what he

27

00:01:33,380 --> 00:01:27,869

said about me yeah I would like to

28

00:01:39,160 --> 00:01:33,390

outline the most important feature his

29

00:01:42,230 --> 00:01:39,170

with his ability to quickly act new kagu

30

00:01:49,639 --> 00:01:42,240

his ability to guess correctly his

31

00:01:54,499 --> 00:01:49,649

ability to accept technical materials in

32

00:02:03,760 --> 00:01:54,509

character he's an artist he's very

33

00:02:13,170 --> 00:02:03,770

sociable he's very he's very courageous

34

00:02:23,130 --> 00:02:17,190

of different and I think that this

35

00:02:26,250 --> 00:02:23,140

person strongly deserves our that's what

36

00:02:31,190 --> 00:02:26,260

mr. konanov talking about me which I

37

00:02:34,949 --> 00:02:31,200

never knew and these words determined my

38

00:02:37,199 --> 00:02:34,959

my destiny and then the issue came up as

39

00:02:44,990 --> 00:02:37,209

to who is going to be the first one to

40

00:02:51,300 --> 00:02:45,000

go Evie a he said we do have this year I

41

00:02:54,059 --> 00:02:51,310

visited mr. Cole's daughter and she let

42

00:03:04,970 --> 00:02:54,069

me listen to recording on the first

43

00:03:11,099 --> 00:03:08,190

he said that in order for us to conquer

44

00:03:14,699 --> 00:03:11,109

the world this space we need to learn

45

00:03:18,720 --> 00:03:14,709

how to operate outside of this space in

46

00:03:21,689 --> 00:03:18,730

order to build space stations to provide

47

00:03:26,580 --> 00:03:21,699

each other with the proper decisions we

48

00:03:30,689 --> 00:03:26,590

need to learn how to work together with

49

00:03:35,129 --> 00:03:30,699

our but with the vehicles belonging to

50

00:03:36,479 --> 00:03:35,139

different countries and back that for

51
00:03:40,409 --> 00:03:36,489
the first time I mean they've heard to

52
00:03:43,979 --> 00:03:40,419
me that I was the one to make it and in

53
00:03:47,009 --> 00:03:43,989
this regard I strongly feel that I'm

54
00:03:53,280 --> 00:03:47,019
very happy because I managed to have

55
00:03:57,449 --> 00:03:53,290
resolved those that had an enormous

56
00:04:00,240 --> 00:03:57,459
impact on the subsequent activities in

57
00:04:04,379 --> 00:04:00,250
space I'm very glad that I was involved

58
00:04:06,599 --> 00:04:04,389
in those activities we are to look back

59
00:04:09,990 --> 00:04:06,609
at what was happening fifty years ago

60
00:04:13,280 --> 00:04:10,000
but I don't think you through anybody

61
00:04:22,290 --> 00:04:13,290
ever would have been able to actually

62
00:04:25,920 --> 00:04:22,300
sign that and this is something that

63
00:04:32,540 --> 00:04:25,930

Boris chair talk very famous engineer

64

00:04:41,010 --> 00:04:32,550

of Russia said once the most vivid

65

00:04:48,110 --> 00:04:41,020

impression of my life was but I found

66

00:04:54,590 --> 00:04:48,120

myself to be surrounded with the Stars

67

00:05:02,909 --> 00:04:58,800

enormous unbelievable silence which is

68

00:05:07,409 --> 00:05:02,919

something that comes back to me as that

69

00:05:10,640 --> 00:05:07,419

reminiscence of my first slide as you

70

00:05:13,320 --> 00:05:10,650

moved outside of the Voskhod spacecraft

71

00:05:16,650 --> 00:05:13,330

Pavel Belyayev your crew mate that was

72

00:05:18,659 --> 00:05:16,660

watching very carefully you wrote in an

73

00:05:21,330 --> 00:05:18,669

article for air and space magazine

74

00:05:23,719 --> 00:05:21,340

several years ago that you felt like a

75

00:05:27,180 --> 00:05:23,729

seagull with its wings outstretched

76
00:05:28,890 --> 00:05:27,190
soaring high above the earth what what

77
00:05:32,760 --> 00:05:28,900
was that experience like it was a very

78
00:05:38,580 --> 00:05:32,770
short space walk but you had great

79
00:05:42,960 --> 00:05:38,590
recollections of it well this feeling

80
00:05:47,000 --> 00:05:42,970
it's just the perception of space the

81
00:05:50,210 --> 00:05:47,010
perception of environment and what I saw

82
00:05:57,379 --> 00:05:50,220
and I saw just half of the world

83
00:06:06,240 --> 00:06:00,480
nobody even up until now nobody's flying

84
00:06:10,200 --> 00:06:06,250
that so I saw a radius of half of the

85
00:06:16,350 --> 00:06:10,210
planet of Earth and the ability to see

86
00:06:19,290 --> 00:06:16,360
the whole earth as a globe something

87
00:06:22,890 --> 00:06:19,300
that was extremely attractive and I

88
00:06:28,070 --> 00:06:22,900

could easily recognize the black sea rim

89

00:06:33,120 --> 00:06:28,080

the crime here bukhari

90

00:06:39,400 --> 00:06:33,130

looking baltic sea and it was all within

91

00:07:25,030 --> 00:07:20,540

to do with this the way that I have that

92

00:07:35,900 --> 00:07:25,040

show person with his hands white bread

93

00:07:40,130 --> 00:07:35,910

which is a symbolic presentation in the

94

00:07:46,760 --> 00:07:40,140

free flight this analogy is closer to me

95

00:07:50,180 --> 00:07:46,770

personal but once again these stars were

96

00:07:52,370 --> 00:07:50,190

very bright it was a lot of and it was

97

00:07:59,270 --> 00:07:52,380

interesting if they were everywhere they

98

00:08:13,940 --> 00:07:59,280

were they were beneath stars up in the

99

00:08:16,130 --> 00:08:13,950

sky in space we see smaller stars it was

100

00:08:18,860 --> 00:08:16,140

a very short space walk but in the brief

101
00:08:21,530 --> 00:08:18,870
time you were outside did you have a

102
00:08:24,880 --> 00:08:21,540
sense that you were making history that

103
00:08:27,860 --> 00:08:24,890
you were the the first the Pathfinder of

104
00:08:30,530 --> 00:08:27,870
space walk activity that later would

105
00:08:38,890 --> 00:08:30,540
become a standard and staple and very

106
00:08:47,120 --> 00:08:42,529
prior to the flight but during this life

107
00:08:50,780 --> 00:08:47,130
the only thing I could think was to

108
00:08:52,970 --> 00:08:50,790
concentrate and to perform

109
00:08:55,520 --> 00:08:52,980
everything that I was supposed I was

110
00:08:59,180 --> 00:08:55,530
thinking about this space I was thinking

111
00:09:01,550 --> 00:08:59,190
about the necessity to stay focused but

112
00:09:03,980 --> 00:09:01,560
not only was I thinking about the

113
00:09:07,430 --> 00:09:03,990

immediate step I was supposed to make

114

00:09:10,280 --> 00:09:07,440

but also on the next step but I never

115

00:09:13,430 --> 00:09:10,290

thought that I'm doing anything that is

116

00:09:16,970 --> 00:09:13,440

heroic otherwise it would end it

117

00:09:19,520 --> 00:09:16,980

probably badly well you are outside of

118

00:09:22,790 --> 00:09:19,530

the airlock of your spacecraft your

119

00:09:25,970 --> 00:09:22,800

spacesuit encountered a deformation if

120

00:09:27,530 --> 00:09:25,980

you will that threatened your ability to

121

00:09:30,800 --> 00:09:27,540

get back inside for a while

122

00:09:32,450 --> 00:09:30,810

how did you overcome this problem what

123

00:09:41,680 --> 00:09:32,460

was the problem and how did you overcome

124

00:09:45,740 --> 00:09:41,690

it to successfully in the spacewalk I

125

00:09:49,880 --> 00:09:45,750

was doing a lot of training in the

126
00:09:54,020 --> 00:09:49,890
vacuum chamber imitating the altitude of

127
00:09:57,260 --> 00:09:54,030
60 kilometers which is a deadly area for

128
00:10:06,070 --> 00:09:57,270
an average human being and I was lying

129
00:10:10,520 --> 00:10:06,080
in the chair trying to work out the

130
00:10:17,450 --> 00:10:10,530
belief in what I was wearing as a means

131
00:10:21,800 --> 00:10:17,460
of protecting up until now nowhere on

132
00:10:27,470 --> 00:10:21,810
the planet Russia worn in the United

133
00:10:30,620 --> 00:10:27,480
States we have any vacuum chambers to

134
00:10:37,250 --> 00:10:30,630
actually test the spacesuit to be flown

135
00:10:40,730 --> 00:10:37,260
on the elevations of 400 kilometers so

136
00:10:44,720 --> 00:10:40,740
we could expect almost anything the

137
00:10:49,360 --> 00:10:44,730
design of the spacesuit was rated as far

138
00:10:54,500 --> 00:10:49,370

as pressure for a nominal pressure of

139

00:10:56,990 --> 00:10:54,510

760 and then half of this pressure and I

140

00:10:59,850 --> 00:10:57,000

did have a device that would allow me to

141

00:11:02,819 --> 00:10:59,860

drop the pressure had it begin

142

00:11:05,790 --> 00:11:02,829

and I knew how to do that but I had to

143

00:11:11,400 --> 00:11:05,800

understand that if I decide to draw the

144

00:11:14,400 --> 00:11:11,410

pressure I could actually pose myself in

145

00:11:18,930 --> 00:11:14,410

two very deadly situation because the

146

00:11:21,480 --> 00:11:18,940

nitrogen in my blood would come to boil

147

00:11:25,139 --> 00:11:21,490

but once again I was trained to do that

148

00:11:29,850 --> 00:11:25,149

was I knew how to do it and then during

149

00:11:33,389 --> 00:11:29,860

the eighth I always Adhan realized that

150

00:11:37,290 --> 00:11:33,399

my fingers got loose and they kinda came

151

00:11:40,889 --> 00:11:37,300

off the glove that's and inside the

152

00:11:43,620 --> 00:11:40,899

glove I immediately realized that I have

153

00:11:46,860 --> 00:11:43,630

got to do something because I cannot go

154

00:11:49,769 --> 00:11:46,870

on with this spacesuit and particularly

155

00:11:54,780 --> 00:11:49,779

I will not I will not be able to return

156

00:11:57,840 --> 00:11:54,790

the vehicle because I had a tether which

157

00:12:01,710 --> 00:11:57,850

was five and a half meters long and I

158

00:12:07,590 --> 00:12:01,720

was supposed to roll it out and every 40

159

00:12:15,000 --> 00:12:07,600

minutes I had which I was supposed to

160

00:12:18,930 --> 00:12:15,010

actually put on I will not be able to

161

00:12:23,639 --> 00:12:18,940

get back to the airlock but with the

162

00:12:29,189 --> 00:12:23,649

gloves like this I was never able

163

00:12:32,579 --> 00:12:29,199

eventually I also need to remove the

164

00:12:36,319 --> 00:12:32,589

camera is a porridge and what's

165

00:12:39,210 --> 00:12:36,329

important that I was just levitated

166

00:12:43,340 --> 00:12:39,220

these days it's very very simple

167

00:12:46,920 --> 00:12:43,350

we put a crew member on a foot restraint

168

00:12:50,579 --> 00:12:46,930

with both hands available he can do it

169

00:12:52,949 --> 00:12:50,589

but back then there was no such a

170

00:12:56,550 --> 00:12:52,959

technique and we just didn't have

171

00:12:59,519 --> 00:12:56,560

guessed that this is something so I my

172

00:13:03,630 --> 00:12:59,529

one hand was always occupied with

173

00:13:05,640 --> 00:13:03,640

actually grabbing something in order to

174

00:13:08,610 --> 00:13:05,650

stay

175

00:13:13,530 --> 00:13:08,620

and during the eighth minute rest of the

176

00:13:17,850 --> 00:13:13,540

easy I've realized that the space suit

177

00:13:20,610 --> 00:13:17,860

was behaving in such a way that I cannot

178

00:13:22,490 --> 00:13:20,620

continue like this anymore and I will

179

00:13:27,420 --> 00:13:22,500

not be able to get back to the airlock

180

00:13:29,910 --> 00:13:27,430

something needed so what should i do

181

00:13:33,540 --> 00:13:29,920

what should I have done drop the

182

00:13:37,050 --> 00:13:33,550

pressure in five minutes I was supposed

183

00:13:40,019 --> 00:13:37,060

to be in English Eclipse

184

00:13:43,470 --> 00:13:40,029

with the gloves like that I will not be

185

00:13:48,630 --> 00:13:43,480

able to roll out this tether moocher and

186

00:13:52,560 --> 00:13:48,640

then I silently violating every single

187

00:13:56,310 --> 00:13:52,570

regulation without reporting anything to

188

00:14:03,450 --> 00:13:56,320

the ground I drop the pressure 2.27

189

00:14:06,030 --> 00:14:03,460

atmosphere at that point I realized that

190

00:14:10,470 --> 00:14:06,040

I'm gonna be in real trouble you're real

191

00:14:13,079 --> 00:14:10,480

sorry that I'm getting closer to the

192

00:14:16,920 --> 00:14:13,089

area where the nitrogen is supposed to

193

00:14:18,990 --> 00:14:16,930

come to boil or maybe not but I didn't

194

00:14:28,230 --> 00:14:19,000

have any choice yeah I didn't have any

195

00:14:31,199 --> 00:14:28,240

recourse and the way we do used to do

196

00:14:32,490 --> 00:14:31,209

this pressure in differential it was not

197

00:14:37,980 --> 00:14:32,500

a smooth process

198

00:14:43,170 --> 00:14:37,990

it was step by step so I've decided to

199

00:14:48,480 --> 00:14:43,180

go ahead and drop the pressure I was

200

00:14:51,420 --> 00:14:48,490

pure oxygen but everything came back to

201
00:14:56,090 --> 00:14:51,430
the gloves went back to normal and I

202
00:14:58,740 --> 00:14:56,100
felt different looks like the danger

203
00:15:02,730 --> 00:14:58,750
associated with this inadequate space

204
00:15:08,100 --> 00:15:02,740
suit was taken here and what I have done

205
00:15:11,430 --> 00:15:08,110
I removed and I tried to kind of break

206
00:15:35,460 --> 00:15:11,440
this place in order to get back to the

207
00:15:41,760 --> 00:15:35,470
air first went back into the airlock

208
00:15:48,690 --> 00:15:41,770
with my head first and I went inside I

209
00:15:53,850 --> 00:15:48,700
was supposed because in eventually I had

210
00:15:59,630 --> 00:15:53,860
to go to the vehicle with my legs if I

211
00:16:06,120 --> 00:15:59,640
would not have managed I was supposed to

212
00:16:16,110 --> 00:16:06,130
actually secure but before doing that I

213
00:16:27,019 --> 00:16:16,120

needed to make sure that nothing was the

214

00:16:31,110 --> 00:16:27,029

most difficult thing with the head and I

215

00:16:35,160 --> 00:16:31,120

really don't know how I managed to turn

216

00:16:38,310 --> 00:16:35,170

window with my lens first and I was

217

00:16:41,069 --> 00:16:38,320

running a field and I was sweating I

218

00:16:44,240 --> 00:16:41,079

could not see much because they would

219

00:16:49,850 --> 00:16:44,250

sweat and then when I eventually made it

220

00:16:59,060 --> 00:16:49,860

so without even closing the internal

221

00:17:07,620 --> 00:17:04,260

because sweat was common I mean if I

222

00:17:09,900 --> 00:17:07,630

decide to run 10 kilometers in my

223

00:17:14,699 --> 00:17:09,910

clothes I probably wouldn't have been

224

00:17:19,740 --> 00:17:14,709

sweating me I was running fever like I

225

00:17:25,140 --> 00:17:19,750

said so no everything happened the way

226

00:17:26,819 --> 00:17:25,150

it should and after that I was thinking

227

00:17:30,300 --> 00:17:26,829

for a long time

228

00:17:35,560 --> 00:17:30,310

what kind of sequences I would have to

229

00:17:43,860 --> 00:17:35,570

deal with violation of those rules and I

230

00:17:48,550 --> 00:17:46,960

but the most important thing that on the

231

00:17:51,580 --> 00:17:48,560

ground we've been doing a lot of

232

00:17:54,250 --> 00:17:51,590

rigorous training so I was prepared how

233

00:17:56,380 --> 00:17:54,260

to draw pressure I've done that because

234

00:17:58,960 --> 00:17:56,390

I'll pick the forelady of training

235

00:18:02,320 --> 00:17:58,970

although we never assume something like

236

00:18:06,130 --> 00:18:02,330

that is in fact going to but we have got

237

00:18:08,440 --> 00:18:06,140

to be prepared lexically enough you are

238

00:18:11,680 --> 00:18:08,450

a great man we appreciate your time