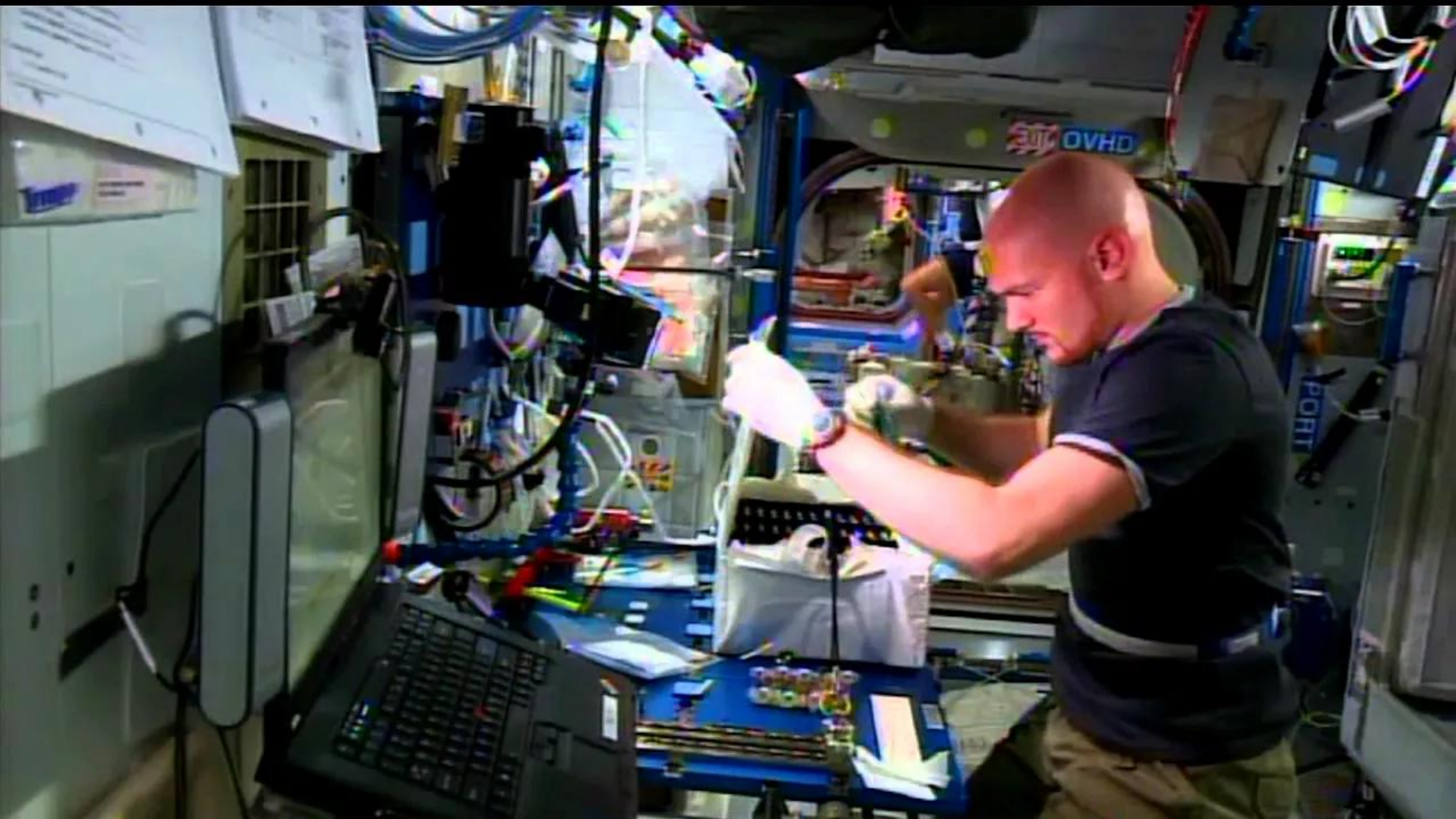
OVHD
PORT

1
00:00:08,790 --> 00:00:06,550
it's part of the mission of the

2
00:00:10,629 --> 00:00:08,800
international space station to educate

3
00:00:12,789 --> 00:00:10,639
and one piece of hardware is educating

4
00:00:14,390 --> 00:00:12,799
not only students but ground teams lori

5
00:00:15,990 --> 00:00:14,400
meigs is at the payload operation

6
00:00:18,150 --> 00:00:16,000
integration center at nasa's marshall

7
00:00:19,510 --> 00:00:18,160
space flight center with more lori

8
00:00:21,189 --> 00:00:19,520
we're in a little different location

9
00:00:22,870 --> 00:00:21,199
today we're actually a floor below the

10
00:00:25,029 --> 00:00:22,880
payload operations integration center

11
00:00:27,670 --> 00:00:25,039
and lisa smith is the mission operations

12
00:00:29,589 --> 00:00:27,680
lab training team lead and lisa let's

13
00:00:31,990 --> 00:00:29,599

set the scene here tell us what we see

14
00:00:34,229 --> 00:00:32,000
behind us okay this is our laboratory

15
00:00:36,470 --> 00:00:34,239
training facility it's a mock-up of

16
00:00:38,950 --> 00:00:36,480
modules just like we have on on space

17
00:00:42,389 --> 00:00:38,960
station and it's filled with payload

18
00:00:44,310 --> 00:00:42,399
facility racks and some payload

19
00:00:46,470 --> 00:00:44,320
equipment and so this is a place where

20
00:00:48,150 --> 00:00:46,480
we train our ground flight controllers

21
00:00:49,510 --> 00:00:48,160
and so they make them familiar with the

22
00:00:51,670 --> 00:00:49,520
different

23
00:00:53,910 --> 00:00:51,680
facilities and the payloads that go on

24
00:00:55,510 --> 00:00:53,920
to space station so we can support the

25
00:00:58,310 --> 00:00:55,520
crew members once they're on board doing

26
00:00:59,670 --> 00:00:58,320
payload activities we talk a lot about

27
00:01:02,069 --> 00:00:59,680
experiments but we have to have

28
00:01:04,149 --> 00:01:02,079
facilities too and really this is timely

29
00:01:06,310 --> 00:01:04,159
that we're talking about let me read

30
00:01:08,950 --> 00:01:06,320
this the general laboratory active

31
00:01:11,429 --> 00:01:08,960
cryogenic iss experiment refrigerator

32
00:01:13,030 --> 00:01:11,439
that's why we have acronyms glacier it's

33
00:01:15,350 --> 00:01:13,040
pretty timely because glacier just

34
00:01:16,630 --> 00:01:15,360
brought back samples on space x5 let's

35
00:01:18,310 --> 00:01:16,640
let's talk about what glacier is and

36
00:01:20,870 --> 00:01:18,320
what it does okay

37
00:01:23,429 --> 00:01:20,880
yes glacier came back on the spacex

38
00:01:26,710 --> 00:01:23,439

dragon with some samples and so this

39
00:01:28,550 --> 00:01:26,720
facility is a freezer and the capability

40
00:01:32,310 --> 00:01:28,560
is from plus four all the way down to

41
00:01:33,830 --> 00:01:32,320
minus uh 160 cryogenic freezing and so

42
00:01:35,990 --> 00:01:33,840
just as a point of reference your

43
00:01:38,550 --> 00:01:36,000
refrigerator is around you know plus two

44
00:01:41,510 --> 00:01:38,560
and your freezer at home would be minus

45
00:01:43,749 --> 00:01:41,520
18. and so experimenters use this to

46
00:01:46,389 --> 00:01:43,759
preserve and to transport

47
00:01:48,389 --> 00:01:46,399
the samples that they take on orbit so

48
00:01:49,910 --> 00:01:48,399
that they can bring them back down to

49
00:01:51,910 --> 00:01:49,920
earth and that

50
00:01:53,670 --> 00:01:51,920
scientists can process them and so we

51
00:01:55,830 --> 00:01:53,680
can get the science from what the

52
00:01:58,149 --> 00:01:55,840
experiments have done on orbit so it's

53
00:02:00,630 --> 00:01:58,159
very important for us to have this

54
00:02:02,469 --> 00:02:00,640
facility here and to train our ground

55
00:02:04,389 --> 00:02:02,479
controllers so that they're familiar

56
00:02:06,230 --> 00:02:04,399
with the activities and so they can

57
00:02:09,029 --> 00:02:06,240
support the crew once they're on orbit

58
00:02:10,710 --> 00:02:09,039
uh running the activities so the glacier

59
00:02:13,670 --> 00:02:10,720
can also be commanded from the ground

60
00:02:15,910 --> 00:02:13,680
which is why it's vital correct oh

61
00:02:17,430 --> 00:02:15,920
absolutely it can the temperature can be

62
00:02:19,350 --> 00:02:17,440
commanded from the ground so if we have

63
00:02:21,670 --> 00:02:19,360

different experiments that require

64
00:02:23,430 --> 00:02:21,680
different different temperature profiles

65
00:02:24,710 --> 00:02:23,440
that we can command that from the ground

66
00:02:26,790 --> 00:02:24,720
and the university of alabama in

67
00:02:29,670 --> 00:02:26,800
birmingham is the

68
00:02:32,309 --> 00:02:29,680
hardware developer and they did this for

69
00:02:35,509 --> 00:02:32,319
the cold stowage group at jsc and so in

70
00:02:37,990 --> 00:02:35,519
collaboration with sharon kapana at jsc

71
00:02:39,990 --> 00:02:38,000
i was able to bring the facility here on

72
00:02:41,509 --> 00:02:40,000
loan for six months i actually worked

73
00:02:44,710 --> 00:02:41,519
for the university of alabama in

74
00:02:46,390 --> 00:02:44,720
birmingham prior to coming to to nasa

75
00:02:48,630 --> 00:02:46,400
and so i have a good relationship with

76
00:02:51,270 --> 00:02:48,640
them and the coast stowage team and so

77
00:02:53,750 --> 00:02:51,280
it just really aids for us to be able to

78
00:02:55,910 --> 00:02:53,760
have this facility here and train our

79
00:02:58,470 --> 00:02:55,920
cadre our flight controllers on the

80
00:03:00,630 --> 00:02:58,480
different operations and the power and

81
00:03:03,830 --> 00:03:00,640
data and the connectors so for the young

82
00:03:06,309 --> 00:03:03,840
engineers and the new to nasa and iss

83
00:03:07,270 --> 00:03:06,319
it sort of puts a face with a name if

84
00:03:08,790 --> 00:03:07,280
you will

85
00:03:10,790 --> 00:03:08,800
you can read about the payload and

86
00:03:13,110 --> 00:03:10,800
facilities but it's really good to have

87
00:03:15,270 --> 00:03:13,120
the hardware so that we can go and do

88
00:03:18,070 --> 00:03:15,280

hands-on training so they get a feel for

89
00:03:20,470 --> 00:03:18,080
the connectors and opening of the door

90
00:03:21,830 --> 00:03:20,480
the inside and how you can reconfigure

91
00:03:23,509 --> 00:03:21,840
it to to meet the needs of the

92
00:03:24,949 --> 00:03:23,519
scientists throughout the world so

93
00:03:26,710 --> 00:03:24,959
training ground crews here but it's

94
00:03:28,789 --> 00:03:26,720
training astronauts in houston right oh

95
00:03:30,789 --> 00:03:28,799
absolutely okay and there's really

96
00:03:31,830 --> 00:03:30,799
another cool story about

97
00:03:34,149 --> 00:03:31,840
pretty much

98
00:03:36,949 --> 00:03:34,159
most of this lab and and who built it

99
00:03:39,350 --> 00:03:36,959
tell us about hunch okay hunches high

100
00:03:41,430 --> 00:03:39,360
schools united uh with nasa to create

101
00:03:43,509 --> 00:03:41,440
hardware and this was an innovative

102
00:03:46,630 --> 00:03:43,519
approach that an engineer

103
00:03:48,949 --> 00:03:46,640
and nasa had and it started in 2003 with

104
00:03:51,030 --> 00:03:48,959
with three high schools and so we

105
00:03:53,589 --> 00:03:51,040
partnered you know with the high schools

106
00:03:56,149 --> 00:03:53,599
to develop the hardware and prototypes

107
00:03:58,869 --> 00:03:56,159
for us to have for the training it's

108
00:04:00,949 --> 00:03:58,879
just a cost effective way for nasa uh to

109
00:04:02,949 --> 00:04:00,959
have the hardware which we might not

110
00:04:05,270 --> 00:04:02,959
have otherwise and it gives the high

111
00:04:08,229 --> 00:04:05,280
school students an opportunity they may

112
00:04:10,390 --> 00:04:08,239
not otherwise have to you know partner

113
00:04:13,110 --> 00:04:10,400

with nasa and develop hardware you know

114
00:04:14,710 --> 00:04:13,120
they've a lot of different areas

115
00:04:17,830 --> 00:04:14,720
that they can

116
00:04:20,710 --> 00:04:17,840
go into whether it's soft stowage and

117
00:04:23,270 --> 00:04:20,720
sewing whether it's soldering whether

118
00:04:25,510 --> 00:04:23,280
it's 3d printing it's just a real good

119
00:04:27,830 --> 00:04:25,520
way for them to partner and learn the

120
00:04:29,350 --> 00:04:27,840
engineering and design phases that nasa

121
00:04:30,790 --> 00:04:29,360
goes through and let's talk about the

122
00:04:32,469 --> 00:04:30,800
high school that actually built this one

123
00:04:34,710 --> 00:04:32,479
it was one of the first in the program

124
00:04:36,550 --> 00:04:34,720
oh right it was in league city texas it

125
00:04:38,310 --> 00:04:36,560
was clear creek school and they

126
00:04:40,830 --> 00:04:38,320
partnered with two alabama schools to

127
00:04:42,230 --> 00:04:40,840
build this it was huntsville

128
00:04:44,469 --> 00:04:42,240
technology um

129
00:04:46,070 --> 00:04:44,479
center here and then brewer high school

130
00:04:48,070 --> 00:04:46,080
and so they partnered and built the

131
00:04:50,230 --> 00:04:48,080
hardware and delivered it to the to the

132
00:04:52,150 --> 00:04:50,240
jsc and it was used for crew training to

133
00:04:53,830 --> 00:04:52,160
start with and now we've uh we're able

134
00:04:55,670 --> 00:04:53,840
to borrow it for six months so that we

135
00:04:56,870 --> 00:04:55,680
can train our flight controllers here

136
00:04:58,070 --> 00:04:56,880
how cool is that for high school

137
00:05:01,029 --> 00:04:58,080
students to be building this type of

138
00:05:03,110 --> 00:05:01,039

hardware oh it is it's just a real new

139
00:05:05,430 --> 00:05:03,120
unique opportunity for them and for us

140
00:05:07,510 --> 00:05:05,440
too and we provide our requirements to

141
00:05:09,029 --> 00:05:07,520
the coordinator here and he goes and

142
00:05:10,550 --> 00:05:09,039
sees throughout

143
00:05:12,390 --> 00:05:10,560
the southeast the different schools that

144
00:05:14,870 --> 00:05:12,400
we have we partner with 23 schools in

145
00:05:16,550 --> 00:05:14,880
the southeast and over 600 students and

146
00:05:20,150 --> 00:05:16,560
we have an end of the year program and

147
00:05:21,670 --> 00:05:20,160
they provide their hardware or their

148
00:05:23,990 --> 00:05:21,680
whatever they're providing to us it may

149
00:05:26,469 --> 00:05:24,000
be drawings it may be videos and then

150
00:05:28,230 --> 00:05:26,479
they get to see and tour nasa and talk

151
00:05:30,390 --> 00:05:28,240
to the engineers here so it's just a

152
00:05:32,629 --> 00:05:30,400
real cool opportunity well lisa thank

153
00:05:35,110 --> 00:05:32,639
you so much for this opportunity and i'm

154
00:05:36,310 --> 00:05:35,120
going to go put my hands in the glacier

155
00:05:37,270 --> 00:05:36,320
i won't put my lunch there though i

156
00:05:38,629 --> 00:05:37,280
promise

157
00:05:40,230 --> 00:05:38,639
and let's take a live look into the

158
00:05:42,629 --> 00:05:40,240
payload operations integration center

159
00:05:44,390 --> 00:05:42,639
today busy at work and that will do it

160
00:05:46,070 --> 00:05:44,400
for us from the payload operations

161
00:05:48,230 --> 00:05:46,080
integration center at nasa's marshall