



1
00:00:06,550 --> 00:00:03,510
here we are in the columbus module

2
00:00:08,870 --> 00:00:06,560
you can see it's uh also spacious it's

3
00:00:10,790 --> 00:00:08,880
also cluttered uh because it's a great

4
00:00:12,789 --> 00:00:10,800
place to store things or temporarily

5
00:00:14,070 --> 00:00:12,799
stow them it's not gonna be this way

6
00:00:16,950 --> 00:00:14,080
forever we're gonna have it nice and

7
00:00:18,150 --> 00:00:16,960
clean pretty soon and these big bags

8
00:00:20,390 --> 00:00:18,160
right here

9
00:00:22,550 --> 00:00:20,400
are food containers we have a lot of

10
00:00:25,189 --> 00:00:22,560
food on board not all of it's for our

11
00:00:26,950 --> 00:00:25,199
crew it's for the future crews and also

12
00:00:28,790 --> 00:00:26,960
there's still some food left from past

13
00:00:30,470 --> 00:00:28,800

crews so we have to make sorted and make

14

00:00:31,830 --> 00:00:30,480

sure we don't waste anything if we can

15

00:00:34,389 --> 00:00:31,840

help it

16

00:00:36,150 --> 00:00:34,399

this is uh the columbus module it's

17

00:00:37,510 --> 00:00:36,160

again the pride of the european space

18

00:00:39,350 --> 00:00:37,520

agency

19

00:00:40,869 --> 00:00:39,360

there's quite a few experimental racks

20

00:00:42,950 --> 00:00:40,879

in here

21

00:00:45,029 --> 00:00:42,960

this is the microgravity science glove

22

00:00:48,310 --> 00:00:45,039

box that's one of my favorites i've been

23

00:00:51,350 --> 00:00:48,320

working on the sheer experiment

24

00:00:53,350 --> 00:00:51,360

from mit and a few other places

25

00:00:55,590 --> 00:00:53,360

we have the european drawer rack right

26

00:00:57,430 --> 00:00:55,600

over here

27

00:00:58,790 --> 00:00:57,440

this is the

28

00:01:01,670 --> 00:00:58,800

fsl

29

00:01:03,270 --> 00:01:01,680

fluid science laboratory on the ceiling

30

00:01:05,030 --> 00:01:03,280

and we have to be careful not to bump

31

00:01:07,109 --> 00:01:05,040

into it because it has some really neat

32

00:01:09,190 --> 00:01:07,119

experiments going on right now this is a

33

00:01:11,109 --> 00:01:09,200

geoflow

34

00:01:13,429 --> 00:01:11,119

we also have a few american racks in

35

00:01:14,789 --> 00:01:13,439

here like the express three rack right

36

00:01:15,670 --> 00:01:14,799

here

37

00:01:17,830 --> 00:01:15,680

but

38

00:01:20,310 --> 00:01:17,840

at the bottom of the express rack

39

00:01:22,390 --> 00:01:20,320

we have the european modular cultivation

40

00:01:24,230 --> 00:01:22,400

system so we have a really neat system

41

00:01:26,230 --> 00:01:24,240

here where everybody's sharing and

42

00:01:28,149 --> 00:01:26,240

working together

43

00:01:30,630 --> 00:01:28,159

this is bio lab where we're going to

44

00:01:37,670 --> 00:01:30,640

start growing some plants in the next

45

00:01:41,910 --> 00:01:40,390

the european physiology modules facility

46

00:01:45,030 --> 00:01:41,920

we haven't had a chance to use that on

47

00:01:51,350 --> 00:01:47,590

and then the hrf the

48

00:01:54,069 --> 00:01:51,360

human research facility rack number two

49

00:01:55,670 --> 00:01:54,079

and uh that has an ultrasound and a few

50

00:01:57,670 --> 00:01:55,680

other things that we use so we use the

51
00:01:59,590 --> 00:01:57,680
refrigerated centrifuge

52
00:02:01,350 --> 00:01:59,600
also

53
00:02:04,789 --> 00:02:01,360
actually the hrf2 doesn't have the

54
00:02:06,789 --> 00:02:04,799
ultrasound it's this one the hrf

55
00:02:08,070 --> 00:02:06,799
one rack has the ultrasound on it we're

56
00:02:11,270 --> 00:02:08,080
going to use that for the bracelet

57
00:02:11,280 --> 00:02:16,470
columbus

58
00:02:20,869 --> 00:02:18,630
okay we started in node 2 we're flying

59
00:02:22,630 --> 00:02:20,879
back to node 2.

60
00:02:24,630 --> 00:02:22,640
we'll take a quick look

61
00:02:26,470 --> 00:02:24,640
what else we have here

62
00:02:27,430 --> 00:02:26,480
we have my work area it's a little bit

63
00:02:30,630 --> 00:02:27,440

uh

64

00:02:35,270 --> 00:02:32,390

but this is kind of my desk it doesn't

65

00:02:38,229 --> 00:02:35,280

sit out uh horizontally but it's it's

66

00:02:40,309 --> 00:02:38,239

but it has everything i need on it

67

00:02:42,869 --> 00:02:40,319

this is my crew quarters right here you

68

00:02:45,190 --> 00:02:42,879

can tell has my name on it

69

00:02:47,190 --> 00:02:45,200

and on top of it is a radiation monitor

70

00:02:48,949 --> 00:02:47,200

these are new crew quarters

71

00:02:51,589 --> 00:02:48,959

in fact i can give you a tour real quick

72

00:02:53,990 --> 00:02:51,599

of crew quarters

73

00:02:56,309 --> 00:02:54,000

sandy put these crew quarters together

74

00:02:58,149 --> 00:02:56,319

this is what it looks like inside

75

00:03:00,869 --> 00:02:58,159

there's a fair amount of room

76
00:03:02,830 --> 00:03:00,879
we'll get the has a standard uh space

77
00:03:05,670 --> 00:03:02,840
station light on

78
00:03:08,710 --> 00:03:05,680
it gla

79
00:03:32,470 --> 00:03:10,390
i'll uh

80
00:03:39,830 --> 00:03:36,390
sockets and uh outlets for a laptop if

81
00:03:41,750 --> 00:03:39,840
you needed and so in my my uh crew

82
00:03:43,350 --> 00:03:41,760
quarters i have a bracket on here and a

83
00:03:45,270 --> 00:03:43,360
laptop computer

84
00:03:47,270 --> 00:03:45,280
and it's very can it's very convenient

85
00:03:49,990 --> 00:03:47,280
and i can read my books at night it's

86
00:03:54,789 --> 00:03:51,830
so that's the crew quarters it's not

87
00:03:56,550 --> 00:03:54,799
very noisy inside has a nice fan it's

88
00:03:57,990 --> 00:03:56,560

pretty comfortable i get very good sleep

89

00:04:01,190 --> 00:03:58,000

there

90

00:04:03,670 --> 00:04:01,200

so now we're going into the destiny

91

00:04:06,550 --> 00:04:03,680

laboratory headed aft on the space

92

00:04:10,390 --> 00:04:08,390

and uh there's uh

93

00:04:12,710 --> 00:04:10,400

my crewmate sandy magnus she's getting

94

00:04:14,470 --> 00:04:12,720

her exercise in for today

95

00:04:17,110 --> 00:04:14,480

and i'd like to show you a little bit of

96

00:04:19,749 --> 00:04:17,120

our equipment here

97

00:04:22,310 --> 00:04:19,759

uh this rack is the oxygen generation

98

00:04:23,590 --> 00:04:22,320

system and uh we have a few too many

99

00:04:25,749 --> 00:04:23,600

things on this rack and we're in the

100

00:04:27,430 --> 00:04:25,759

middle of cleaning it off not not to

101
00:04:29,590 --> 00:04:27,440
interfere but you can see

102
00:04:31,350 --> 00:04:29,600
oxygen we're making oxygen

103
00:04:33,670 --> 00:04:31,360
and when we make oxygen we're breaking

104
00:04:35,670 --> 00:04:33,680
down water into hydrogen and oxygen and

105
00:04:37,430 --> 00:04:35,680
the oxygen comes right out here

106
00:04:39,189 --> 00:04:37,440
the water we're making it either comes

107
00:04:41,110 --> 00:04:39,199
from the condensate from the air

108
00:04:43,590 --> 00:04:41,120
conditioning system you know the water

109
00:04:46,230 --> 00:04:43,600
that's in the air or urine so this is a

110
00:04:48,390 --> 00:04:46,240
really neat uh bio um

111
00:04:50,070 --> 00:04:48,400
regenerative uh

112
00:04:53,030 --> 00:04:50,080
life support system

113
00:04:53,909 --> 00:04:53,040

this is our toilet number two we haven't

114

00:04:56,790 --> 00:04:53,919

quite

115

00:04:59,270 --> 00:04:56,800

gone there yet so to speak but uh it's

116

00:05:04,230 --> 00:04:59,280

all set up and it is ready to go

117

00:05:13,670 --> 00:05:05,350

and don't worry i won't show you

118

00:05:18,390 --> 00:05:15,270

and

119

00:05:20,070 --> 00:05:18,400

there's a place for number two

120

00:05:21,670 --> 00:05:20,080

and number one goes into big funnel

121

00:05:24,150 --> 00:05:21,680

right here

122

00:05:25,510 --> 00:05:24,160

now we're say well there's no privacy

123

00:05:27,430 --> 00:05:25,520

here and there isn't because we haven't

124

00:05:29,189 --> 00:05:27,440

put out put at the cabin the cabin's

125

00:05:30,950 --> 00:05:29,199

going to stick out really far

126
00:05:32,710 --> 00:05:30,960
speaking out sticking out far because

127
00:05:35,189 --> 00:05:32,720
the cabin's going to stick out far we've

128
00:05:37,430 --> 00:05:35,199
actually moved the sevis over with the

129
00:05:39,350 --> 00:05:37,440
brackets called crab brackets because it

130
00:05:42,550 --> 00:05:39,360
actually moved the crowd it crabs it off

131
00:05:47,110 --> 00:05:43,990
for my friend

132
00:05:50,310 --> 00:05:47,120
this is the

133
00:05:51,670 --> 00:05:50,320
wrs rack number one

134
00:05:54,950 --> 00:05:51,680
and it works

135
00:05:57,670 --> 00:05:54,960
closely in in conjunction with wrs rack

136
00:05:59,189 --> 00:05:57,680
number two wrs stands for water recovery

137
00:06:03,670 --> 00:05:59,199
system

138
00:06:06,629 --> 00:06:03,680

number two we have the total organic

139

00:06:07,510 --> 00:06:06,639

carbon analyzer the toca and we have a

140

00:06:11,110 --> 00:06:07,520

spot

141

00:06:12,710 --> 00:06:11,120

to take a urine tank and a yet

142

00:06:17,510 --> 00:06:12,720

using a compressor

143

00:06:22,390 --> 00:06:20,390

and then it goes into the into the urine

144

00:06:24,870 --> 00:06:22,400

processing assembly which is uh not

145

00:06:27,670 --> 00:06:24,880

working perfectly right now

146

00:06:30,469 --> 00:06:27,680

so also that's for the urine that comes

147

00:06:32,950 --> 00:06:30,479

from the russian uh segment from the our

148

00:06:34,469 --> 00:06:32,960

main toilet but this other toilet that

149

00:06:36,710 --> 00:06:34,479

we just saw

150

00:06:38,629 --> 00:06:36,720

the the urine can come from there

151

00:06:41,270 --> 00:06:38,639

directly to here it gets

152

00:06:43,590 --> 00:06:41,280

distilled and processed to pure water

153

00:06:47,510 --> 00:06:43,600

which we can drink or it can be made

154

00:06:50,070 --> 00:06:47,520

into oxygen or used for other things

155

00:06:52,790 --> 00:06:50,080

here's a new thing also that we got was

156

00:06:55,430 --> 00:06:52,800

the express rack number six

157

00:07:07,749 --> 00:06:55,440

which one of my favorite things on this

158

00:07:12,790 --> 00:07:10,070

hold drinks inside and keep things cold

159

00:07:14,150 --> 00:07:12,800

which is the first time in a long time

160

00:07:15,430 --> 00:07:14,160

that we've had something like this on

161

00:07:17,110 --> 00:07:15,440

station

162

00:07:18,309 --> 00:07:17,120

so you can see it's not very much room

163

00:07:32,070 --> 00:07:18,319

but it's enough

164

00:07:37,029 --> 00:07:34,710

also we have a glacier freezer

165

00:07:38,309 --> 00:07:37,039

that's not for food is for biological

166

00:07:39,110 --> 00:07:38,319

samples

167

00:07:42,390 --> 00:07:39,120

and

168

00:07:45,189 --> 00:07:42,400

we also have a potable water dispenser

169

00:07:47,510 --> 00:07:45,199

which isn't certified for use yet but uh

170

00:07:49,270 --> 00:07:47,520

in the future this is what we're going

171

00:07:51,350 --> 00:07:49,280

to be able to have uh

172

00:07:54,070 --> 00:07:51,360

fill our drink bags and rehydrate our

173

00:07:59,430 --> 00:07:56,150

that's on the ceiling by the way we can

174

00:08:01,589 --> 00:07:59,440

definitely use uh three dimensions

175

00:08:03,029 --> 00:08:01,599

in space so even though this is a big

176

00:08:03,990 --> 00:08:03,039

space station it's even bigger because

177

00:08:06,469 --> 00:08:04,000

we use

178

00:08:08,790 --> 00:08:06,479

you know the ceiling and the floors also

179

00:08:10,309 --> 00:08:08,800

this is the robotics workstation for the

180

00:08:12,469 --> 00:08:10,319

laboratory module this is where we do

181

00:08:14,550 --> 00:08:12,479

our robotics from

182

00:08:16,469 --> 00:08:14,560

you can see that

183

00:08:18,390 --> 00:08:16,479

we have

184

00:08:20,790 --> 00:08:18,400

our monitors here

185

00:08:23,029 --> 00:08:20,800

uh we even have a potential to put out

186

00:08:25,909 --> 00:08:23,039

two more monitors when the shuttle comes

187

00:08:27,670 --> 00:08:25,919

so we have a lot of a lot of use

188

00:08:28,790 --> 00:08:27,680

eventually in the next year or so we're

189

00:08:32,790 --> 00:08:28,800

going to have

190

00:08:34,790 --> 00:08:32,800

the cupola on on our next node node 3

191

00:08:36,949 --> 00:08:34,800

and the cupola will be able to look

192

00:08:38,469 --> 00:08:36,959

outside it has a lot of very beautiful

193

00:08:40,630 --> 00:08:38,479

windows and then we have a robotics

194

00:08:42,709 --> 00:08:40,640

workstation this one the cupola robotics

195

00:08:44,470 --> 00:08:42,719

workstation that'll fit there

196

00:08:46,070 --> 00:08:44,480

we have a lot of computers everywhere we

197

00:08:48,150 --> 00:08:46,080

have a printer

198

00:08:49,829 --> 00:08:48,160

old fashioned but it works

199

00:08:52,389 --> 00:08:49,839

and now we're going to go back into one

200

00:08:57,829 --> 00:08:52,399

of the first modules node 1

201
00:09:00,470 --> 00:08:59,590
this thing that's kind of blocking our

202
00:09:02,389 --> 00:09:00,480
view

203
00:09:04,710 --> 00:09:02,399
is the

204
00:09:06,550 --> 00:09:04,720
advanced resistive exercise device and

205
00:09:08,150 --> 00:09:06,560
it's we put it together recently and

206
00:09:09,910 --> 00:09:08,160
we're still checking it out still needs

207
00:09:11,829 --> 00:09:09,920
to be calibrated but once it gets

208
00:09:14,710 --> 00:09:11,839
calibrated we'll be exercising here

209
00:09:17,750 --> 00:09:14,720
every day and it's big this is a really

210
00:09:19,269 --> 00:09:17,760
huge device but it also can

211
00:09:22,870 --> 00:09:19,279
twice as much

212
00:09:24,630 --> 00:09:22,880
chances to work out i think uh most

213
00:09:27,269 --> 00:09:24,640

people would say that the

214

00:09:29,829 --> 00:09:27,279

i read the interme interim resistive

215

00:09:31,750 --> 00:09:29,839

exercise device you can maybe go up to

216

00:09:34,470 --> 00:09:31,760

two or three hundred pounds this one has

217

00:09:37,430 --> 00:09:34,480

the potential to go up to 600 pounds

218

00:09:39,990 --> 00:09:37,440

so uh it's uh you can get much

219

00:09:41,110 --> 00:09:40,000

bigger loads it works by using a vacuum

220

00:09:42,870 --> 00:09:41,120

system so

221

00:09:46,070 --> 00:09:42,880

uh you can see these two big vacuum

222

00:09:48,870 --> 00:09:46,080

canisters right up here

223

00:09:53,590 --> 00:09:48,880

and you can see as i float backwards

224

00:09:55,829 --> 00:09:53,600

in the node one here you can see how big