



1
00:00:05,610 --> 00:00:04,230
thanks Kyle we're back as he said in the

2
00:00:07,230 --> 00:00:05,620
neutral buoyancy laboratory in this time

3
00:00:09,660 --> 00:00:07,240
we've got Tim Cottard here with us he's

4
00:00:11,490 --> 00:00:09,670
the Lee white lean forward the neutral

5
00:00:13,950 --> 00:00:11,500
buoyancy laboratory or NBL as we call it

6
00:00:15,180 --> 00:00:13,960
here and NASA speak and he's gonna tell

7
00:00:18,029 --> 00:00:15,190
us a little bit at first of all how

8
00:00:19,830 --> 00:00:18,039
about tell us what the MBO is giant

9
00:00:22,050 --> 00:00:19,840
swimming pool obviously I feel okay the

10
00:00:24,359 --> 00:00:22,060
NBL is the neutral buoyancy laboratory

11
00:00:27,029 --> 00:00:24,369
what we do here is to Train astronauts

12
00:00:29,820 --> 00:00:27,039
to do spacewalks so anytime they have a

13
00:00:31,710 --> 00:00:29,830

plan to our contingency EV a extra extra

14

00:00:33,779 --> 00:00:31,720

vehicular activity they'll come here

15

00:00:35,369 --> 00:00:33,789

first they'll do 1g training tabletop

16

00:00:37,020 --> 00:00:35,379

training to learn the tools the pieces

17

00:00:38,369 --> 00:00:37,030

in the parts and then we'll finally get

18

00:00:40,590 --> 00:00:38,379

them in the water and then a first in

19

00:00:43,110 --> 00:00:40,600

scuba they'll learn the work sites learn

20

00:00:44,160 --> 00:00:43,120

the different facets of the specific

21

00:00:46,559 --> 00:00:44,170

tasks are going to do and then they'll

22

00:00:48,059 --> 00:00:46,569

finally get in the suits himself so

23

00:00:50,069 --> 00:00:48,069

soups themselves or downgraded suits

24

00:00:52,079 --> 00:00:50,079

they used to fly most of them and now

25

00:00:53,160 --> 00:00:52,089

they're rated for the NBL and so the

26

00:00:54,869 --> 00:00:53,170

astronauts are on the space station

27

00:00:57,000 --> 00:00:54,879

right now they've been in the infinity

28

00:00:59,160 --> 00:00:57,010

meal and trained for spacewalks and

29

00:01:00,899 --> 00:00:59,170

things like that that's correct and so

30

00:01:02,789 --> 00:01:00,909

now though we're also using it to get

31

00:01:04,350 --> 00:01:02,799

ready for the Orion program which is

32

00:01:06,240 --> 00:01:04,360

again our new spaceship that rebuilding

33

00:01:08,970 --> 00:01:06,250

take humans into space getting ready for

34

00:01:12,060 --> 00:01:08,980

its flight test scheduled for September

35

00:01:14,310 --> 00:01:12,070

2014 and doing rescue and recovery

36

00:01:17,130 --> 00:01:14,320

operations today so what what all is

37

00:01:20,280 --> 00:01:17,140

involved the map so what the NBL part in

38

00:01:23,190 --> 00:01:20,290

rescue and recovery is the port capsule

39

00:01:25,080 --> 00:01:23,200

you have here post orbit type stuff once

40

00:01:27,570 --> 00:01:25,090

they splash down that's where we come

41

00:01:29,610 --> 00:01:27,580

into play once they splashdown Navy

42

00:01:31,200 --> 00:01:29,620

divers are going to be have the primary

43

00:01:33,960 --> 00:01:31,210

means of recovery we're going to use a

44

00:01:35,580 --> 00:01:33,970

surface ship an amphibious ship to motor

45

00:01:37,110 --> 00:01:35,590

up to it we're going to deploy small

46

00:01:39,960 --> 00:01:37,120

boats like you can see right here the

47

00:01:41,880 --> 00:01:39,970

rubber or rating crc combat rubber

48

00:01:44,430 --> 00:01:41,890

rating crap or zodiac as it's commonly

49

00:01:45,960 --> 00:01:44,440

called you're gonna have a couple Navy

50

00:01:47,820 --> 00:01:45,970

diver teams and these things and you

51
00:01:51,420 --> 00:01:47,830
have larger boat which call ribs rigid

52
00:01:52,890 --> 00:01:51,430
inflatable hull inflatable pole rigid

53
00:01:55,020 --> 00:01:52,900
haunts are rigid hull inflatable boats

54
00:01:56,280 --> 00:01:55,030
okay so you're having different small

55
00:01:58,110 --> 00:01:56,290
boats in the water they're going to

56
00:02:00,149 --> 00:01:58,120
motor up to the capsule and the

57
00:02:01,770 --> 00:02:00,159
parachutes and the forebay cover and the

58
00:02:04,680 --> 00:02:01,780
different items would have fallen hook

59
00:02:06,270 --> 00:02:04,690
buoy lines on to them stand off once the

60
00:02:07,770 --> 00:02:06,280
hydrazine and the ammonia and all the

61
00:02:10,469 --> 00:02:07,780
stuff is vented out and so safe to

62
00:02:11,770 --> 00:02:10,479
approach they'll go up attach towing

63
00:02:14,640 --> 00:02:11,780

lines on it

64

00:02:17,470 --> 00:02:14,650

towing depressor sea anchors and

65

00:02:18,970 --> 00:02:17,480

handling whines okay and so for the

66

00:02:21,940 --> 00:02:18,980

first despite test it's not going to

67

00:02:23,440 --> 00:02:21,950

have any astronauts in it but in the

68

00:02:25,030 --> 00:02:23,450

future certainly it will and they'll be

69

00:02:26,710 --> 00:02:25,040

coming back from long stays in space so

70

00:02:29,170 --> 00:02:26,720

they're probably a lot of things to take

71

00:02:30,580 --> 00:02:29,180

into account you have to be of course

72

00:02:32,350 --> 00:02:30,590

careful and safe when you've got people

73

00:02:34,270 --> 00:02:32,360

in it right so essentially that that's

74

00:02:36,220 --> 00:02:34,280

why we're here today this is the you

75

00:02:38,350 --> 00:02:36,230

know we use the analogy of crawl walk

76

00:02:40,330 --> 00:02:38,360

run this is the crawl phase of training

77

00:02:42,340 --> 00:02:40,340

evolution so we're bringing active duty

78

00:02:43,360 --> 00:02:42,350

Navy divers out from the east coast

79

00:02:45,220 --> 00:02:43,370

which is where we're going to train

80

00:02:46,690 --> 00:02:45,230

first and then we'll go out to San Diego

81

00:02:49,660 --> 00:02:46,700

and then finally off the coast of Baja

82

00:02:52,240 --> 00:02:49,670

California wow so this is the very slow

83

00:02:54,310 --> 00:02:52,250

procedural development phase of it where

84

00:02:56,050 --> 00:02:54,320

knew everything safely a dirt dive it

85

00:02:57,400 --> 00:02:56,060

you know dive it topside before you

86

00:02:59,110 --> 00:02:57,410

really get in the water and do it how

87

00:03:01,420 --> 00:02:59,120

helpful do you think it is to have this

88

00:03:03,520 --> 00:03:01,430

facility to be able to do do these kind

89

00:03:04,809 --> 00:03:03,530

of practice runs in you know once again

90

00:03:07,630 --> 00:03:04,819

you know we're unique facility in the

91

00:03:09,250 --> 00:03:07,640

world you can't really get provide what

92

00:03:12,220 --> 00:03:09,260

we can provide here the Navy has several

93

00:03:15,640 --> 00:03:12,230

facilities but they can't provide the

94

00:03:17,740 --> 00:03:15,650

water the machine shop next door the we

95

00:03:19,600 --> 00:03:17,750

can tap into NASA technical expertise

96

00:03:22,240 --> 00:03:19,610

right down the street as well as you

97

00:03:23,770 --> 00:03:22,250

know our common video system the HD

98

00:03:24,940 --> 00:03:23,780

cameras and things like that well in

99

00:03:26,680 --> 00:03:24,950

speaking of the Navy tell us a little

100

00:03:28,210 --> 00:03:26,690

bit about that relationship how does

101
00:03:30,569 --> 00:03:28,220
that work so we've been doing this for a

102
00:03:33,580 --> 00:03:30,579
couple years now and up into this point

103
00:03:35,560 --> 00:03:33,590
active duty Navy has it participated too

104
00:03:37,720 --> 00:03:35,570
much so we've had Navy reservist local

105
00:03:40,240 --> 00:03:37,730
Navy reservist divers seals and EOD

106
00:03:42,370 --> 00:03:40,250
folks it will bring into the NBL they've

107
00:03:43,630 --> 00:03:42,380
been evaluating the hardware this is the

108
00:03:46,390 --> 00:03:43,640
first time we've actually got active

109
00:03:47,949 --> 00:03:46,400
duty to bring into an activity master

110
00:03:50,289 --> 00:03:47,959
diver as well as diving warrant officer

111
00:03:52,360 --> 00:03:50,299
and they're the hands-on so these aren't

112
00:03:54,880 --> 00:03:52,370
the two folks that are going to actually

113
00:03:55,930 --> 00:03:54,890

go recover the astronauts or the capsule

114

00:03:57,849 --> 00:03:55,940

but these are the ones who are in charge

115

00:03:59,020 --> 00:03:57,859

of the training plan and a charge the

116

00:04:01,090 --> 00:03:59,030

sailors who are actually go out to it

117

00:04:02,500 --> 00:04:01,100

okay so we're getting getting closer and

118

00:04:03,819 --> 00:04:02,510

closer to the point of actually training

119

00:04:05,860 --> 00:04:03,829

people to go do it we're getting there

120

00:04:07,480 --> 00:04:05,870

hopefully sometime coming up in this

121

00:04:10,150 --> 00:04:07,490

summer we'll have

122

00:04:11,650 --> 00:04:10,160

a troop of mud sea divers mobile diving

123

00:04:13,600 --> 00:04:11,660

salvage unit divers coming out here and

124

00:04:15,700 --> 00:04:13,610

doing a training class great maybe we'll

125

00:04:18,850 --> 00:04:15,710

come back for that oh so um so we've got

126

00:04:21,010 --> 00:04:18,860

the port mock-ups behind us right that's

127

00:04:23,290 --> 00:04:21,020

what we use here for the testing in the

128

00:04:26,770 --> 00:04:23,300

NBA oh that's great and what what could

129

00:04:28,270 --> 00:04:26,780

be going on here today yesterday we had

130

00:04:30,220 --> 00:04:28,280

the for debate cover which you can't see

131

00:04:31,600 --> 00:04:30,230

unfortunates behind the port that's just

132

00:04:34,720 --> 00:04:31,610

a section of it that will come off

133

00:04:36,640 --> 00:04:34,730

during when it went during descent we

134

00:04:38,920 --> 00:04:36,650

did recovery operations on that and make

135

00:04:40,900 --> 00:04:38,930

sure that we can motor up to it hook up

136

00:04:42,370 --> 00:04:40,910

to it flip it over put lift bags on and

137

00:04:44,560 --> 00:04:42,380

put a towing line on and actually tow it

138

00:04:46,210 --> 00:04:44,570

with these boats today what we're doing

139

00:04:48,640 --> 00:04:46,220

is we're doing attachment systems on on

140

00:04:52,390 --> 00:04:48,650

the capsule itself so there's three

141

00:04:54,970 --> 00:04:52,400

attacks points1 primary to secondary the

142

00:04:57,520 --> 00:04:54,980

primary is a towing point we're trying

143

00:04:59,380 --> 00:04:57,530

to verify that the systems that we have

144

00:05:00,940 --> 00:04:59,390

that can attach to it along what we were

145

00:05:03,850 --> 00:05:00,950

calling the octopus with several

146

00:05:05,170 --> 00:05:03,860

different attach points is viable so the

147

00:05:07,510 --> 00:05:05,180

active duty guys are coming in here

148

00:05:09,190 --> 00:05:07,520

they're making sure that a spur you know

149

00:05:11,500 --> 00:05:09,200

Navy standards this is going to work

150

00:05:13,030 --> 00:05:11,510

it's nice and safe and now going well so

151

00:05:14,620 --> 00:05:13,040

far it's all going great so far all

152

00:05:16,180 --> 00:05:14,630

right well thanks so much for talking

153

00:05:18,250 --> 00:05:16,190

with us again this is tim daughter the

154

00:05:19,510 --> 00:05:18,260

NBL flight leave here at the neutral

155

00:05:21,580 --> 00:05:19,520

buoyancy laboratory that's the M deal