1
00:00:08,230 --> 00:00:06,630
hi i'm josh marley a public affairs

2
00:00:09,589 --> 00:00:08,240
officer here at nasa's johnson space

3
00:00:11,509 --> 00:00:09,599
center we're standing inside building

4
00:00:13,110 --> 00:00:11,519
nine which is the space vehicle mockup

5
00:00:14,870 --> 00:00:13,120
facility this is where we have the

6
00:00:16,630 --> 00:00:14,880
mock-ups of the space shuttle and also

7
00:00:18,070 --> 00:00:16,640
the international space station and we

8
00:00:19,590 --> 00:00:18,080
have a new addition it's the orion

9
00:00:21,510 --> 00:00:19,600
spacecraft and here today to give us a

10
00:00:23,429 --> 00:00:21,520
quick tour of it's going to be jeff fox

11
00:00:25,349 --> 00:00:23,439
jeff is a senior engineer who is working

12
00:00:27,189 --> 00:00:25,359
on the inside of the orion spacecraft so

13
00:00:29,990 --> 00:00:27,199

let's go ahead and take a look inside

14
00:00:31,669 --> 00:00:30,000
something john

15
00:00:35,590 --> 00:00:31,679
we're going to walk in through the side

16
00:00:39,270 --> 00:00:37,350
and you might notice this is a little

17
00:00:41,190 --> 00:00:39,280
bit bigger than apollo

18
00:00:43,030 --> 00:00:41,200
it's set up so that we can actually take

19
00:00:45,990 --> 00:00:43,040
six people from the station and get them

20
00:00:48,389 --> 00:00:46,000
down the ground we can take four people

21
00:00:50,069 --> 00:00:48,399
up to lunar orbit

22
00:00:52,790 --> 00:00:50,079
right now you'll see that there's four

23
00:00:54,790 --> 00:00:52,800
of these seat looking devices right here

24
00:00:56,310 --> 00:00:54,800
the one i'm sitting on one next to me

25
00:00:57,830 --> 00:00:56,320
and two right here

26
00:00:59,349 --> 00:00:57,840
there are two seats that aren't in here

27
00:01:01,830 --> 00:00:59,359
right now so this is kind of what it

28
00:01:04,869 --> 00:01:01,840
would look like when you're set up for

29
00:01:06,870 --> 00:01:04,879
uh lunar operations now the obviously be

30
00:01:10,550 --> 00:01:06,880
some other boxes and things in here for

31
00:01:12,469 --> 00:01:10,560
the real vehicle this is a low fidelity

32
00:01:14,789 --> 00:01:12,479
uh mock-up so we're just testing

33
00:01:16,149 --> 00:01:14,799
different concepts in here uh

34
00:01:18,550 --> 00:01:16,159
anyway

35
00:01:20,070 --> 00:01:18,560
we have a docking hatch overhead

36
00:01:22,230 --> 00:01:20,080
and if you take a look up here real

37
00:01:24,149 --> 00:01:22,240
quick that's where when we're docked to

38
00:01:25,990 --> 00:01:24,159

the space station or when we're docked

39
00:01:27,830 --> 00:01:26,000
to the lunar lander that the crew would

40
00:01:31,030 --> 00:01:27,840
actually go through that tunnel and that

41
00:01:33,190 --> 00:01:31,040
hatch to get to the other environment

42
00:01:35,030 --> 00:01:33,200
other things that you see inside here

43
00:01:37,109 --> 00:01:35,040
are these

44
00:01:38,710 --> 00:01:37,119
stowage area which is actually down

45
00:01:39,590 --> 00:01:38,720
where we're standing on it's below our

46
00:01:42,469 --> 00:01:39,600
feet

47
00:01:45,190 --> 00:01:42,479
that's where all the clothing and food

48
00:01:47,270 --> 00:01:45,200
and any portable devices like maybe a

49
00:01:48,630 --> 00:01:47,280
laptop or something like that would be

50
00:01:50,550 --> 00:01:48,640
stowed underneath

51
00:01:52,870 --> 00:01:50,560
now what you're looking at here again is

52
00:01:54,469 --> 00:01:52,880
the launch and landing configuration so

53
00:01:56,310 --> 00:01:54,479
when we get to orbit we're going to have

54
00:01:57,990 --> 00:01:56,320
to move some of this out of the way so

55
00:01:59,990 --> 00:01:58,000
we can get access to that equipment and

56
00:02:02,469 --> 00:02:00,000
then spread it around the cabin and we

57
00:02:04,389 --> 00:02:02,479
can take things like clothes and laptops

58
00:02:07,190 --> 00:02:04,399
and things and we can stick them to the

59
00:02:09,589 --> 00:02:07,200
wall because we're in 0g there is no

60
00:02:11,510 --> 00:02:09,599
real ceiling or no floor so we have the

61
00:02:13,589 --> 00:02:11,520
ability to spread things out and use up

62
00:02:15,990 --> 00:02:13,599
all the space in here

63
00:02:18,470 --> 00:02:16,000

now one of the other key areas is over

64
00:02:20,309 --> 00:02:18,480
this displaying control area right and

65
00:02:22,070 --> 00:02:20,319
the prime operators of the vehicle

66
00:02:23,990 --> 00:02:22,080
actually sit up underneath here and i'll

67
00:02:25,510 --> 00:02:24,000
lay down the seat in just a minute but

68
00:02:27,030 --> 00:02:25,520
let me first point out that there's some

69
00:02:28,630 --> 00:02:27,040
windows up here

70
00:02:30,790 --> 00:02:28,640
now there's four of them

71
00:02:32,949 --> 00:02:30,800
there's a there's two side windows which

72
00:02:34,949 --> 00:02:32,959
are indicated with this black here and

73
00:02:37,030 --> 00:02:34,959
one on the opposite side

74
00:02:39,030 --> 00:02:37,040
and there's two forward windows

75
00:02:41,030 --> 00:02:39,040
now those are primarily used you know

76
00:02:43,430 --> 00:02:41,040
for your rendezvous and docking

77
00:02:45,670 --> 00:02:43,440
operations to your other vehicles or

78
00:02:47,589 --> 00:02:45,680
just to look out when you're in a launch

79
00:02:49,030 --> 00:02:47,599
or landing configure type of situation

80
00:02:51,430 --> 00:02:49,040
where you want to see where the horizon

81
00:02:53,830 --> 00:02:51,440
is and you know what angles the horizon

82
00:02:54,710 --> 00:02:53,840
my vehicle is my my vehicle and their

83
00:02:57,030 --> 00:02:54,720
right

84
00:02:59,110 --> 00:02:57,040
configuration for flying in and those

85
00:03:00,630 --> 00:02:59,120
kind of things why don't i lay in the

86
00:03:02,710 --> 00:03:00,640
seat here and i'll give you a feel of

87
00:03:04,390 --> 00:03:02,720
what the displaying controls look like

88
00:03:06,470 --> 00:03:04,400

you're able to swing the camera around

89
00:03:09,750 --> 00:03:06,480
here

90
00:03:12,070 --> 00:03:09,760
basically what we have is three displays

91
00:03:13,190 --> 00:03:12,080
basically what your computer model

92
00:03:16,710 --> 00:03:13,200
you're probably looking at this right

93
00:03:18,710 --> 00:03:16,720
now looks like if you have a flat panel

94
00:03:20,869 --> 00:03:18,720
it might be turn where it's more like a

95
00:03:23,110 --> 00:03:20,879
landscape on the side ours are just

96
00:03:24,869 --> 00:03:23,120
turned up and down like a piece of paper

97
00:03:26,470 --> 00:03:24,879
and that's about the size of a piece of

98
00:03:28,070 --> 00:03:26,480
paper inside

99
00:03:30,949 --> 00:03:28,080
we have we when we interface with the

100
00:03:32,949 --> 00:03:30,959
displays there's several ways to do it

101
00:03:35,030 --> 00:03:32,959
one of the concepts is to have some push

102
00:03:38,309 --> 00:03:35,040
buttons and some knobs that allow us to

103
00:03:39,990 --> 00:03:38,319
maneuver inside the display to execute

104
00:03:42,149 --> 00:03:40,000
something that's in the display like

105
00:03:43,750 --> 00:03:42,159
turn a pump on or a fan

106
00:03:45,670 --> 00:03:43,760
when we're in the launch and landing

107
00:03:48,070 --> 00:03:45,680
configuration we're all strapped in our

108
00:03:49,990 --> 00:03:48,080
seats and our spacesuits we can't really

109
00:03:52,470 --> 00:03:50,000
be reaching up here doing that kind of

110
00:03:55,350 --> 00:03:52,480
thing so we're grabbing a device down by

111
00:03:56,869 --> 00:03:55,360
our side probably allows us to maneuver

112
00:03:58,630 --> 00:03:56,879
you know something like your mouse or

113
00:04:00,949 --> 00:03:58,640

something in your display and we're

114
00:04:02,630 --> 00:04:00,959
still working out the details of that

115
00:04:04,470 --> 00:04:02,640
now one interesting thing about this

116
00:04:07,030 --> 00:04:04,480
cockpit is there's very few switches

117
00:04:09,270 --> 00:04:07,040
like you see on any airplane

118
00:04:11,990 --> 00:04:09,280
most of the controls for this vehicle

119
00:04:13,910 --> 00:04:12,000
are embedded inside the display so we

120
00:04:15,670 --> 00:04:13,920
have to be able to turn something off

121
00:04:17,189 --> 00:04:15,680
and on in the software

122
00:04:18,949 --> 00:04:17,199
another area that's really unique to

123
00:04:20,550 --> 00:04:18,959
this is a procedure you've probably had

124
00:04:22,310 --> 00:04:20,560
a procedure you've read directions when

125
00:04:24,150 --> 00:04:22,320
you're trying to put something together

126
00:04:25,909 --> 00:04:24,160
well that's on paper today and probably

127
00:04:28,629 --> 00:04:25,919
everything you're used to

128
00:04:31,430 --> 00:04:28,639
but we're going to put that inside

129
00:04:33,990 --> 00:04:31,440
software and that's represented by this

130
00:04:36,230 --> 00:04:34,000
text you see up here so all our displays

131
00:04:37,990 --> 00:04:36,240
are electronic so it gets rid of a lot

132
00:04:39,830 --> 00:04:38,000
of paper that's right gets rid of a lot

133
00:04:41,830 --> 00:04:39,840
of paper but it is a challenge to do

134
00:04:43,590 --> 00:04:41,840
because unlike a book you could just put

135
00:04:46,550 --> 00:04:43,600
on your lap and put a dog here on the

136
00:04:48,629 --> 00:04:46,560
page or a yellow sticky or right in you

137
00:04:50,870 --> 00:04:48,639
know it's not as easy when it's fixed in

138
00:04:52,710 --> 00:04:50,880

this monitor up here right

139
00:04:54,469 --> 00:04:52,720
so hopefully that gives you some feel

140
00:04:57,670 --> 00:04:54,479
for how the displaying control station

141
00:04:59,430 --> 00:04:57,680
is laid out you know also have a

142
00:05:01,510 --> 00:04:59,440
some kind of electronic keypad with

143
00:05:03,670 --> 00:05:01,520
numbers on it as a backup to allow us to

144
00:05:06,710 --> 00:05:03,680
enter things we'll have some control

145
00:05:09,029 --> 00:05:06,720
devices to to fly the vehicle

146
00:05:10,390 --> 00:05:09,039
when we're doing rendezvous

147
00:05:13,270 --> 00:05:10,400
um

148
00:05:14,469 --> 00:05:13,280
that should help give you a good

149
00:05:16,469 --> 00:05:14,479
overview any

150
00:05:17,990 --> 00:05:16,479
any other questions josh i think that's

151
00:05:19,430 --> 00:05:18,000
it if we appreciate your time and we