1
00:00:06,230 --> 00:00:03,830
i'm mike curie at kennedy space center

2
00:00:08,310 --> 00:00:06,240
and i'm here today with scott wilson

3
00:00:10,629 --> 00:00:08,320
manager of orion production operations

4
00:00:11,749 --> 00:00:10,639
for nasa scott thank you for being here

5
00:00:13,749 --> 00:00:11,759
oh thank you

6
00:00:15,509 --> 00:00:13,759
we are in what is called the onc

7
00:00:16,950 --> 00:00:15,519
building can you tell us what that is

8
00:00:18,950 --> 00:00:16,960
yeah the onc building is a building here

9
00:00:20,230 --> 00:00:18,960
at kennedy space center and it's really

10
00:00:22,310 --> 00:00:20,240
where all the parts of the orion

11
00:00:24,150 --> 00:00:22,320
spacecraft come together from around the

12
00:00:25,589 --> 00:00:24,160
country and around the world and it's

13
00:00:27,670 --> 00:00:25,599

where we put those parts together really

14
00:00:29,029 --> 00:00:27,680
to take the vehicle from a piece of

15
00:00:31,509 --> 00:00:29,039
metal all the way up to the full

16
00:00:32,950 --> 00:00:31,519
spacecraft that you see behind us today

17
00:00:34,470 --> 00:00:32,960
it's a really interesting building it's

18
00:00:35,990 --> 00:00:34,480
got a really rich history it goes back

19
00:00:38,310 --> 00:00:36,000
to the days of apollo the apollo

20
00:00:40,150 --> 00:00:38,320
spacecraft were assembled here the lunar

21
00:00:41,830 --> 00:00:40,160
landers the lunar rovers were integrated

22
00:00:43,430 --> 00:00:41,840
and tested here as well as parts of the

23
00:00:45,510 --> 00:00:43,440
space station and the shuttle payloads

24
00:00:47,590 --> 00:00:45,520
for many years so in a lot of ways we've

25
00:00:50,069 --> 00:00:47,600
come full circle to uh going back and

26
00:00:51,510 --> 00:00:50,079
starting exploration from this building

27
00:00:53,110 --> 00:00:51,520
well a lot of exciting things have been

28
00:00:55,510 --> 00:00:53,120
happening and lately you stacked the

29
00:00:57,830 --> 00:00:55,520
crew module on top of the service module

30
00:00:59,750 --> 00:00:57,840
can you tell us what the crew module and

31
00:01:02,150 --> 00:00:59,760
service module are yeah absolutely the

32
00:01:03,910 --> 00:01:02,160
crew module is a cone-shaped capsule

33
00:01:05,429 --> 00:01:03,920
structure in the vehicle behind us and

34
00:01:07,190 --> 00:01:05,439
it's really where the crew lives and

35
00:01:08,789 --> 00:01:07,200
works while they're in space it provides

36
00:01:09,590 --> 00:01:08,799
all the life support systems for the

37
00:01:11,030 --> 00:01:09,600
crew

38
00:01:12,469 --> 00:01:11,040

provides all the command and control

39
00:01:14,630 --> 00:01:12,479
capability that they need to be able to

40
00:01:16,310 --> 00:01:14,640
fly the mission and just as importantly

41
00:01:17,749 --> 00:01:16,320
when the mission is done in space it's

42
00:01:19,270 --> 00:01:17,759
the part of the vehicle that helps to

43
00:01:20,630 --> 00:01:19,280
return them to earth and protects them

44
00:01:22,070 --> 00:01:20,640
from the heat of re-entry as we go back

45
00:01:24,230 --> 00:01:22,080
through the atmosphere so it contains

46
00:01:26,710 --> 00:01:24,240
the heat shield and the back shells

47
00:01:28,149 --> 00:01:26,720
which are essentially tiles that protect

48
00:01:29,749 --> 00:01:28,159
them from the heat as well as the

49
00:01:31,590 --> 00:01:29,759
parachute systems that let us softly

50
00:01:33,670 --> 00:01:31,600
return to earth so it's a very important

51
00:01:35,749 --> 00:01:33,680
part of the service module as the name

52
00:01:37,190 --> 00:01:35,759
implies provides a lot of the services

53
00:01:38,789 --> 00:01:37,200
that you need while you're in space so

54
00:01:40,550 --> 00:01:38,799
it's where we have the main propulsion

55
00:01:42,630 --> 00:01:40,560
systems the main engines

56
00:01:45,109 --> 00:01:42,640
it has the solar arrays that provide the

57
00:01:47,670 --> 00:01:45,119
electricity the large tanks for fuel and

58
00:01:49,109 --> 00:01:47,680
oxidizers as well as the oxygen and

59
00:01:51,109 --> 00:01:49,119
systems that we need to support the

60
00:01:52,789 --> 00:01:51,119
mission it's actually jettisoned in

61
00:01:54,550 --> 00:01:52,799
flight just prior to re-entry and so it

62
00:01:55,670 --> 00:01:54,560
doesn't participate in that part of the

63
00:01:58,149 --> 00:01:55,680

mission

64
00:02:00,230 --> 00:01:58,159
so in terms of the orion milestones and

65
00:02:01,749 --> 00:02:00,240
schedule what does it mean to now have

66
00:02:03,350 --> 00:02:01,759
stacked the two together it's a great

67
00:02:05,590 --> 00:02:03,360
question this is a really big milestone

68
00:02:07,350 --> 00:02:05,600
for us it's been probably over two and a

69
00:02:09,589 --> 00:02:07,360
half years ago we got our first pieces

70
00:02:11,670 --> 00:02:09,599
of metal into our factory in new orleans

71
00:02:13,110 --> 00:02:11,680
and from there we began welding together

72
00:02:14,710 --> 00:02:13,120
what we call the pressure vessel which

73
00:02:16,150 --> 00:02:14,720
is the internal part of the vehicle

74
00:02:17,990 --> 00:02:16,160
which really keeps the atmosphere in

75
00:02:20,390 --> 00:02:18,000
where the crew lives and works

76
00:02:22,150 --> 00:02:20,400
that piece of metal got here about two

77
00:02:23,510 --> 00:02:22,160
years ago now into this building and

78
00:02:25,589 --> 00:02:23,520
ever since then we've been putting on

79
00:02:27,030 --> 00:02:25,599
all the other systems that make that

80
00:02:29,270 --> 00:02:27,040
piece of metal into a full-blown

81
00:02:31,270 --> 00:02:29,280
spaceship and it's all the thrusters the

82
00:02:32,949 --> 00:02:31,280
environmental control systems the

83
00:02:34,790 --> 00:02:32,959
electrical systems and avionics and

84
00:02:36,229 --> 00:02:34,800
power systems and

85
00:02:37,990 --> 00:02:36,239
the parachutes and really everything

86
00:02:39,270 --> 00:02:38,000
that makes it a spacecraft so it's a

87
00:02:40,869 --> 00:02:39,280
it's been a

88
00:02:42,150 --> 00:02:40,879

long time coming we're really excited

89
00:02:43,750 --> 00:02:42,160
that we're finally getting to put the

90
00:02:46,229 --> 00:02:43,760
two pieces together the crew module and

91
00:02:47,910 --> 00:02:46,239
service module into this configuration

92
00:02:50,309 --> 00:02:47,920
and it really marks the first time those

93
00:02:52,550 --> 00:02:50,319
two uh modules are together in the way

94
00:02:54,309 --> 00:02:52,560
they would be in space so it lets us get

95
00:02:57,350 --> 00:02:54,319
into a series of tests now where we test

96
00:02:59,830 --> 00:02:57,360
the spacecraft as though we're flying

97
00:03:01,750 --> 00:02:59,840
so uh what is next now for orion and

98
00:03:03,830 --> 00:03:01,760
what else needs to be done before launch

99
00:03:05,110 --> 00:03:03,840
it's a great question too so we've we've

100
00:03:06,070 --> 00:03:05,120
stacked the vehicles together i

101
00:03:07,589 --> 00:03:06,080
mentioned we're going to go through

102
00:03:09,350 --> 00:03:07,599
about two months of testing where we'll

103
00:03:10,949 --> 00:03:09,360
test the vehicle together we have a

104
00:03:12,070 --> 00:03:10,959
philosophy that says test like you fly

105
00:03:14,470 --> 00:03:12,080
so we'll actually put the vehicle

106
00:03:16,309 --> 00:03:14,480
through simulated flight here and uh

107
00:03:18,229 --> 00:03:16,319
once it's done here we'll go to another

108
00:03:19,750 --> 00:03:18,239
building where we'll we'll um fuel the

109
00:03:21,910 --> 00:03:19,760
spacecraft put in all the hazardous

110
00:03:23,670 --> 00:03:21,920
fuels and the cooling commodities uh

111
00:03:25,509 --> 00:03:23,680
we'll go to a third building where we'll

112
00:03:27,670 --> 00:03:25,519
put the launch abort system on the top

113
00:03:29,670 --> 00:03:27,680

and the launch abort system is a solid

114
00:03:31,430 --> 00:03:29,680
rocket motor or series of motors that's

115
00:03:33,430 --> 00:03:31,440
built in a different building

116
00:03:35,030 --> 00:03:33,440
gets put on the top of this rocket and

117
00:03:36,710 --> 00:03:35,040
it actually pulls the capsule away in

118
00:03:38,550 --> 00:03:36,720
the event of an emergency so we'll stack

119
00:03:40,789 --> 00:03:38,560
that on there and go out to the launch

120
00:03:43,190 --> 00:03:40,799
pad and be ready for launch in december

121
00:03:45,589 --> 00:03:43,200
okay so launches in december and what

122
00:03:47,830 --> 00:03:45,599
exactly will be happening on the flight

123
00:03:49,350 --> 00:03:47,840
the this is our first uh in space

124
00:03:50,949 --> 00:03:49,360
mission it's actually the second flight

125
00:03:52,470 --> 00:03:50,959
of orion we did a flight in white sands

126
00:03:54,470 --> 00:03:52,480
new mexico a few years ago to test the

127
00:03:56,149 --> 00:03:54,480
launch abort system this is our first in

128
00:03:57,589 --> 00:03:56,159
space flight and we'll go up and we'll

129
00:03:59,509 --> 00:03:57,599
launch on the delta iv heavy as i

130
00:04:01,030 --> 00:03:59,519
mentioned uh we'll do two orbits of the

131
00:04:02,470 --> 00:04:01,040
earth one of those is what we call

132
00:04:04,869 --> 00:04:02,480
highly elliptical and so it goes out

133
00:04:06,630 --> 00:04:04,879
about 3 600 miles from earth which is

134
00:04:08,710 --> 00:04:06,640
really the farthest that a human capable

135
00:04:10,869 --> 00:04:08,720
spacecraft has gone uh since the apollo

136
00:04:12,869 --> 00:04:10,879
days and we do that because we want to

137
00:04:14,789 --> 00:04:12,879
be able to come back at the speeds you

138
00:04:17,270 --> 00:04:14,799

would see if you came back from a deep

139
00:04:19,110 --> 00:04:17,280
space mission so we come back in about

140
00:04:21,270 --> 00:04:19,120
over 20 000 miles an hour when we hit

141
00:04:23,270 --> 00:04:21,280
the atmosphere just before we hit it

142
00:04:25,189 --> 00:04:23,280
we'll separate the crew module we'll go

143
00:04:27,110 --> 00:04:25,199
in for re-entry

144
00:04:28,870 --> 00:04:27,120
we'll the heat shield and the thermal

145
00:04:30,230 --> 00:04:28,880
protection will protect the capsule down

146
00:04:31,909 --> 00:04:30,240
until it gets close to the earth and the

147
00:04:33,749 --> 00:04:31,919
parachutes will come out and we'll

148
00:04:34,629 --> 00:04:33,759
settle down for a splashdown pacific

149
00:04:37,510 --> 00:04:34,639
ocean

150
00:04:39,110 --> 00:04:37,520
about 600 miles southwest of san diego

151
00:04:40,629 --> 00:04:39,120
and the navy is working with us to do

152
00:04:43,110 --> 00:04:40,639
our recovery there and we'll return the

153
00:04:45,430 --> 00:04:43,120
vehicle here so it's a pretty exciting

154
00:04:47,590 --> 00:04:45,440
time for us very exciting times well

155
00:04:49,110 --> 00:04:47,600
scott thank you for making time for us

156
00:04:49,909 --> 00:04:49,120
and we look forward to talking to you

157
00:04:52,469 --> 00:04:49,919
soon

158
00:04:54,230 --> 00:04:52,479
scott wilson manager of orion production