1
00:00:15,589 --> 00:00:11,749
[Music]

2
00:00:17,750 --> 00:00:15,599
2014 is off to an amazing start as nasa

3
00:00:22,070 --> 00:00:17,760
rockets towards this year's launch of

4
00:00:27,429 --> 00:00:24,550
the orion program began the year with

5
00:00:29,189 --> 00:00:27,439
several major milestones

6
00:00:31,509 --> 00:00:29,199
the service module was completely

7
00:00:33,270 --> 00:00:31,519
finished in january at kennedy space

8
00:00:34,950 --> 00:00:33,280
center in florida

9
00:00:37,190 --> 00:00:34,960
the service module is the part of the

10
00:00:39,750 --> 00:00:37,200
spacecraft that contains all of the

11
00:00:41,830 --> 00:00:39,760
structural elements spacecraft adapter

12
00:00:44,950 --> 00:00:41,840
payload fairings and crew module

13
00:00:47,270 --> 00:00:44,960

separation systems the eft-1 capsule

14
00:00:50,869 --> 00:00:47,280
needs to conduct its high-altitude

15
00:00:56,470 --> 00:00:53,590
in february the completed service module

16
00:00:58,389 --> 00:00:56,480
was stress tested for the final time

17
00:01:00,709 --> 00:00:58,399
the structural loads test proved that

18
00:01:03,590 --> 00:01:00,719
the vehicle will endure the physical

19
00:01:05,830 --> 00:01:03,600
stresses of its upcoming flight

20
00:01:09,830 --> 00:01:05,840
after the test the service module was

21
00:01:14,630 --> 00:01:12,149
a test of the forward bay cover and

22
00:01:17,190 --> 00:01:14,640
parachute system was successfully passed

23
00:01:18,710 --> 00:01:17,200
in january at the yuma proving ground in

24
00:01:21,030 --> 00:01:18,720
arizona

25
00:01:23,830 --> 00:01:21,040
after the orion mock-up was dropped from

26
00:01:26,149 --> 00:01:23,840
a plane the forward bay cover separated

27
00:01:28,789 --> 00:01:26,159
from the capsule allowing the parachutes

28
00:01:32,390 --> 00:01:28,799
to release as the crew module descended

29
00:01:37,109 --> 00:01:34,710
the capsule parachutes and forward bay

30
00:01:38,950 --> 00:01:37,119
cover were recovered and subjected to

31
00:01:40,550 --> 00:01:38,960
additional testing in the following

32
00:01:43,190 --> 00:01:40,560
months

33
00:01:45,429 --> 00:01:43,200
in february the delta mariner delivered

34
00:01:48,230 --> 00:01:45,439
two of the core and starboard boosters

35
00:01:50,389 --> 00:01:48,240
for the delta iv heavy rocket

36
00:01:52,469 --> 00:01:50,399
after the boosters go through stringent

37
00:01:54,950 --> 00:01:52,479
testing and processing in the horizontal

38
00:01:58,069 --> 00:01:54,960

integration facility they will roll out

39
00:02:00,550 --> 00:01:58,079
to launch complex 37 for eft ones

40
00:02:02,550 --> 00:02:00,560
launched later this year

41
00:02:04,389 --> 00:02:02,560
a full-scale mock-up of the orion

42
00:02:06,870 --> 00:02:04,399
capsule was delivered to langley

43
00:02:08,790 --> 00:02:06,880
research center in march

44
00:02:11,750 --> 00:02:08,800
the mock-up will be used to perform a

45
00:02:14,630 --> 00:02:11,760
variety of static and impact tests to

46
00:02:19,140 --> 00:02:14,640
evaluate various water landing scenarios

47
00:02:22,470 --> 00:02:19,150
in a wide array of different conditions

48
00:02:24,390 --> 00:02:22,480
[Music]

49
00:02:27,030 --> 00:02:24,400
at nasa's kennedy space center in

50
00:02:29,190 --> 00:02:27,040
florida upgrades and modernization of

51
00:02:31,670 --> 00:02:29,200
the multi-payload processing facility

52
00:02:33,990 --> 00:02:31,680
continue as the building is readied for

53
00:02:37,350 --> 00:02:34,000
orion processing support

54
00:02:39,350 --> 00:02:37,360
by april of next year the mppf will have

55
00:02:41,750 --> 00:02:39,360
updated structural elements like

56
00:02:45,350 --> 00:02:41,760
environmental control systems high bay

57
00:02:47,270 --> 00:02:45,360
doors and emergency systems

58
00:02:49,830 --> 00:02:47,280
the facility is also upgrading

59
00:02:52,470 --> 00:02:49,840
spacecraft preparation elements such as

60
00:02:54,710 --> 00:02:52,480
fuel and breathable gas systems time

61
00:02:58,309 --> 00:02:54,720
critical installation equipment and

62
00:03:01,110 --> 00:02:58,319
ground support equipment storage

63
00:03:03,589 --> 00:03:01,120

in january the crawler transporter 2

64
00:03:05,430 --> 00:03:03,599
completed a test drive on new traction

65
00:03:07,509 --> 00:03:05,440
roller bearings in two of its truck

66
00:03:09,270 --> 00:03:07,519
sections

67
00:03:10,869 --> 00:03:09,280
the new roller bearings are one of

68
00:03:12,630 --> 00:03:10,879
several upgrades to the crawler

69
00:03:14,790 --> 00:03:12,640
transporter which will carry the

70
00:03:18,630 --> 00:03:14,800
significantly heavier space launch

71
00:03:20,550 --> 00:03:18,640
system out to launch pad 39b

72
00:03:22,869 --> 00:03:20,560
the other two truck sections of the

73
00:03:24,949 --> 00:03:22,879
crawler transporter will also receive

74
00:03:28,149 --> 00:03:24,959
new roller bearings and complete a

75
00:03:30,869 --> 00:03:28,159
follow-up test drive in november

76
00:03:33,190 --> 00:03:30,879
in february nasa and the navy tested

77
00:03:35,110 --> 00:03:33,200
procedures to be used during orion

78
00:03:37,990 --> 00:03:35,120
recovery operations

79
00:03:40,070 --> 00:03:38,000
after launch and re-entry simulations

80
00:03:42,229 --> 00:03:40,080
the forward bay cover and parachutes

81
00:03:45,350 --> 00:03:42,239
were successfully retrieved from rough

82
00:03:47,589 --> 00:03:45,360
waters off the california coast

83
00:03:49,910 --> 00:03:47,599
the ocean turbulence in the well deck of

84
00:03:53,110 --> 00:03:49,920
the recovery ship made it difficult to

85
00:03:55,350 --> 00:03:53,120
secure the orion test article

86
00:03:57,910 --> 00:03:55,360
the challenges experienced during this

87
00:04:05,350 --> 00:03:57,920
test reinforced the necessity of

88
00:04:09,750 --> 00:04:07,509

the circumferential dome weld tool

89
00:04:12,149 --> 00:04:09,760
produced a second liquid oxygen tank

90
00:04:13,589 --> 00:04:12,159
confidence article at the machu assembly

91
00:04:15,589 --> 00:04:13,599
facility

92
00:04:17,749 --> 00:04:15,599
the confidence tank verified that the

93
00:04:20,229 --> 00:04:17,759
weld tool is capable of producing the

94
00:04:22,230 --> 00:04:20,239
core stage tank up to the exacting

95
00:04:24,550 --> 00:04:22,240
standards the space launch system will

96
00:04:27,030 --> 00:04:24,560
require

97
00:04:29,030 --> 00:04:27,040
a composite cryotank for liquid hydrogen

98
00:04:31,110 --> 00:04:29,040
was also produced and delivered to

99
00:04:35,590 --> 00:04:31,120
marshall space flight center aboard

100
00:04:37,909 --> 00:04:35,600
nasa's super guppy cargo plane in march

101
00:04:40,310 --> 00:04:37,919
the advanced composite cryo tank which

102
00:04:42,950 --> 00:04:40,320
could benefit many of nasa's deep space

103
00:04:45,110 --> 00:04:42,960
exploration spacecraft will undergo a

104
00:04:47,189 --> 00:04:45,120
series of structural pressure tests

105
00:04:49,830 --> 00:04:47,199
later this year

106
00:04:52,150 --> 00:04:49,840
a scale model of the sls was used in

107
00:04:55,030 --> 00:04:52,160
acoustic testing to see what effects

108
00:04:57,510 --> 00:04:55,040
high and low frequency sound waves will

109
00:04:59,990 --> 00:04:57,520
have during launch

110
00:05:02,070 --> 00:05:00,000
the model's core stage fired for five

111
00:05:04,790 --> 00:05:02,080
seconds while an array of microphones

112
00:05:06,710 --> 00:05:04,800
collected the acoustic data

113
00:05:08,870 --> 00:05:06,720

a full assembly test with the scale

114
00:05:12,629 --> 00:05:08,880
rocket motors will be conducted later

115
00:05:17,189 --> 00:05:15,029
in march nasa administrator charles

116
00:05:19,430 --> 00:05:17,199
bolden visited marshall after the

117
00:05:22,150 --> 00:05:19,440
software integration team powered up the

118
00:05:25,029 --> 00:05:22,160
flight avionics which includes hardware

119
00:05:27,270 --> 00:05:25,039
software and operating systems for space

120
00:05:29,430 --> 00:05:27,280
launch system

121
00:05:31,990 --> 00:05:29,440
known as first light the flight

122
00:05:34,150 --> 00:05:32,000
computers of the sls simulated the

123
00:05:38,070 --> 00:05:34,160
flight path the vehicle will experience

124
00:05:43,110 --> 00:05:40,469
nasa's exploration systems development

125
00:05:47,110 --> 00:05:43,120
division is flying through production

126
00:05:49,029 --> 00:05:47,120
testing and launch as 2014 promises to