1
00:00:00,000 --> 00:00:04,348
MUSIC

2
00:00:04,383 --> 00:00:07,877
As a Space Shuttle astronaut I

3
00:00:07,912 --> 00:00:08,957
flew the Space Shuttle five

4
00:00:08,992 --> 00:00:10,717
times. Every one of those was on

5
00:00:10,752 --> 00:00:12,828
the redesigned rocket motor that

6
00:00:12,863 --> 00:00:14,420
proved itself to be the most

7
00:00:14,455 --> 00:00:15,893
reliable rocket motor in the

8
00:00:15,928 --> 00:00:17,757
world. So this motor that we

9
00:00:17,792 --> 00:00:18,741
are looking at here is called

10
00:00:18,776 --> 00:00:19,844
the Qualification Motor number

11
00:00:19,879 --> 00:00:21,851
one and it's actually the forth

12
00:00:21,886 --> 00:00:23,628
motor in a series, we had three

13
00:00:23,663 --> 00:00:25,404

development motors. And on the

14
00:00:25,439 --> 00:00:26,772
development motors, they really

15
00:00:26,807 --> 00:00:27,900
are development, where you

16
00:00:27,935 --> 00:00:29,476
start out conservatively, you

17
00:00:29,511 --> 00:00:32,163
do a test firing, you see how we

18
00:00:32,198 --> 00:00:34,051
ll the insulators work, how

19
00:00:34,086 --> 00:00:35,251
much thrust, what was the

20
00:00:35,286 --> 00:00:36,916
performance of the motor really

21
00:00:36,951 --> 00:00:38,411
■and then you start optimizing

22
00:00:38,446 --> 00:00:40,348
it. So QM-1 will be the first of

23
00:00:40,383 --> 00:00:41,884
two tests that will be used to

24
00:00:41,919 --> 00:00:44,275
qualify the motors for flight.

25
00:00:44,310 --> 00:00:45,795
We are actually already

26
00:00:45,830 --> 00:00:47,019
building the pieces of the

27
00:00:47,054 --> 00:00:48,203
second qualification motor

28
00:00:48,238 --> 00:00:49,723
flight. This is a really

29
00:00:49,758 --> 00:00:51,323
exciting time for all of us here

30
00:00:51,358 --> 00:00:53,114
coming off Orion's first

31
00:00:53,149 --> 00:00:54,867
flight test in December. Less

32
00:00:54,902 --> 00:00:56,779
than a month later we had the

33
00:00:56,814 --> 00:00:59,034
new RS 25 engines, which are the

34
00:00:59,069 --> 00:01:00,187
liquid engines that will power

35
00:01:00,222 --> 00:01:02,234
the rocket■have been tested at

36
00:01:02,269 --> 00:01:04,034
Stennis with a brand new state

37
00:01:04,069 --> 00:01:05,466
of the art controller. The

38
00:01:05,501 --> 00:01:07,106

pieces of the rocket itself,

39
00:01:07,141 --> 00:01:09,362
the core, almost thirty feet in

40
00:01:09,397 --> 00:01:11,985
diameter, are all being

41
00:01:12,020 --> 00:01:13,402
manufactured at Michoud as we

42
00:01:13,437 --> 00:01:15,378
speak. There's a company called

43
00:01:15,413 --> 00:01:17,650
Conrad down in south Louisiana.

44
00:01:17,685 --> 00:01:19,770
They took our Pegasus barge,

45
00:01:19,805 --> 00:01:21,754
which is the barge we used to

46
00:01:21,789 --> 00:01:23,217
move the External Tank around

47
00:01:23,252 --> 00:01:24,721
during the Shuttle days. They

48
00:01:24,756 --> 00:01:26,105
had to cut it in half and add

49
00:01:26,140 --> 00:01:27,985
sixty five feet and stiffen it

50
00:01:28,020 --> 00:01:29,681
up to be able to handle the

51
00:01:29,716 --> 00:01:31,033
massive core that will come out

52
00:01:31,068 --> 00:01:32,568
of Michoud near New Orleans to

53
00:01:32,603 --> 00:01:34,145
be shipped down to KSC. Then,

54
00:01:34,180 --> 00:01:36,185
in a few months we'll actually

55
00:01:36,220 --> 00:01:37,569
complete the Critical Design

56
00:01:37,604 --> 00:01:39,129
Review of the Space launch

57
00:01:39,164 --> 00:01:40,641
System. This is where we

58
00:01:40,676 --> 00:01:41,952
actually say we are now done

59
00:01:41,987 --> 00:01:43,369
designing and it's time to

60
00:01:43,404 --> 00:01:44,624
start putting all this hardware

61
00:01:44,659 --> 00:01:46,528
together and running it through

62
00:01:46,563 --> 00:01:47,984
it's tests and verifying that it

63
00:01:48,019 --> 00:01:49,465

actually meets the requirements.

64
00:01:49,500 --> 00:01:51,049
We're going to fly the SLS

65
00:01:51,084 --> 00:01:53,168
system in 2018 and between now

66
00:01:53,203 --> 00:01:54,408
and then were going to fire this

67
00:01:54,443 --> 00:01:55,784
motor. Less than a year from

68
00:01:55,819 --> 00:01:57,096
now we'll fire the second

69
00:01:57,131 --> 00:01:58,879
qualification motor, and then

70
00:01:58,914 --> 00:02:00,192
we'll start assembling that

71
00:02:00,227 --> 00:02:01,720
Space Launch System rocket in

72
00:02:01,755 --> 00:02:03,143
Florida for a launch in 2018.

73
00:02:03,178 --> 00:02:04,887
And the second flight of that

74
00:02:04,922 --> 00:02:06,111
rocket motor will take

75
00:02:06,146 --> 00:02:07,536
astronauts further into space

76
00:02:07,571 --> 00:02:09,048
than we have ever been. From

77
00:02:09,083 --> 00:02:10,463
there, we' re now in the

78
00:02:10,498 --> 00:02:11,783
proving ground where we test

79
00:02:11,818 --> 00:02:13,744
the ability to be distant from

80
00:02:13,779 --> 00:02:15,695
Earth by days and weeks, and

81
00:02:15,730 --> 00:02:17,911
getting ready for the long term

82
00:02:17,946 --> 00:02:19,863
exposure to deep space that gets

83
00:02:19,898 --> 00:02:21,248
us ready for a Mars mission in

84
00:02:21,283 --> 00:02:22,735
the future. The planet's been

85
00:02:22,770 --> 00:02:24,295
through one ice age, history

86
00:02:24,330 --> 00:02:25,654
tells us it will go through

87
00:02:25,689 --> 00:02:27,415
another, so we really do need to

88
00:02:27,450 --> 00:02:28,727

get out there and explore, to

89
00:02:28,762 --> 00:02:30,143
find other planets that are

90
00:02:30,178 --> 00:02:31,471
earth like that we can survive

91
00:02:31,506 --> 00:02:33,102
on. So they say the journey of

92
00:02:33,137 --> 00:02:35,022
a thousand mile begins with the

93
00:02:35,057 --> 00:02:36,390
first step. In this case out

94
00:02:36,425 --> 00:02:37,919
journey is millions of miles

95
00:02:37,954 --> 00:02:39,287
away to Mars, and we are

96
00:02:39,322 --> 00:02:40,567
starting to take these steps.

97
00:02:40,602 --> 00:02:42,342
The next step is going to be

98
00:02:42,377 --> 00:02:44,086
this QM motor firing and we are