1
00:00:11,150 --> 00:00:08,419
hi I'm JPL Mars rover driver Scott

2
00:00:13,190 --> 00:00:11,160
Maxwell and this is a free-spirit update

3
00:00:14,690 --> 00:00:13,200
I'm sitting here at JPL and one of the

4
00:00:16,279 --> 00:00:14,700
operations rooms we used to drive the

5
00:00:17,779 --> 00:00:16,289
rover and the software you see running

6
00:00:20,179 --> 00:00:17,789
behind me is the software we used to

7
00:00:22,370 --> 00:00:20,189
drive the two Mars rovers now as you

8
00:00:23,929 --> 00:00:22,380
might know back in late May spirit was

9
00:00:26,390 --> 00:00:23,939
traversing Northwest around a feature

10
00:00:28,429 --> 00:00:26,400
called home plate when she broke through

11
00:00:30,320 --> 00:00:28,439
a hard kind of crusty surface layer of

12
00:00:32,089 --> 00:00:30,330
material very much like an ice skater

13
00:00:33,889 --> 00:00:32,099

falling through a crust of ice over the

14
00:00:35,630 --> 00:00:33,899
surface of a pond and spirit became

15
00:00:36,709 --> 00:00:35,640
trapped in the softer looser material

16
00:00:39,080 --> 00:00:36,719
that had previously been hidden

17
00:00:41,630 --> 00:00:39,090
underneath our initial attempts to drive

18
00:00:43,040 --> 00:00:41,640
her out were unsuccessful and so we told

19
00:00:45,260 --> 00:00:43,050
spirit to sit tight for a little while

20
00:00:47,389 --> 00:00:45,270
on Mars while we figured out how to get

21
00:00:49,130 --> 00:00:47,399
her free back here on earth this is an

22
00:00:51,439 --> 00:00:49,140
animation that we put together to help

23
00:00:53,510 --> 00:00:51,449
us understand how spirit got into this

24
00:00:55,279 --> 00:00:53,520
predicament and what happened on our

25
00:00:56,569 --> 00:00:55,289
first attempts to drive her out this is

26
00:00:57,920 --> 00:00:56,579
a very useful tool for us to help

27
00:00:59,209 --> 00:00:57,930
understand what's going on with one of

28
00:00:59,540 --> 00:00:59,219
the rover's at a critical moment like

29
00:01:01,250 --> 00:00:59,550
this

30
00:01:03,080 --> 00:01:01,260
now even though spirits been sitting in

31
00:01:04,939 --> 00:01:03,090
one place all this time she hasn't been

32
00:01:06,590 --> 00:01:04,949
entirely idle she's been using her

33
00:01:07,820 --> 00:01:06,600
scientific instruments to help explore

34
00:01:10,160 --> 00:01:07,830
this material that she ended up getting

35
00:01:11,660 --> 00:01:10,170
trapped in and this stuff turns out to

36
00:01:12,890 --> 00:01:11,670
be very fascinating on a scientific

37
00:01:14,660 --> 00:01:12,900
basis it gives us some of the best

38
00:01:15,890 --> 00:01:14,670

evidence that we found for past water

39
00:01:18,560 --> 00:01:15,900
activity on Mars

40
00:01:19,730 --> 00:01:18,570
from either Rover so for the science

41
00:01:21,880 --> 00:01:19,740
team this has been very much like your

42
00:01:24,499 --> 00:01:21,890
car breaking down in front of Disneyland

43
00:01:26,179 --> 00:01:24,509
even so we'd really like spirit to get

44
00:01:27,649 --> 00:01:26,189
back on the road so we've been

45
00:01:29,120 --> 00:01:27,659
conducting a number of tests in order to

46
00:01:30,740 --> 00:01:29,130
help us understand the best way to do

47
00:01:31,969 --> 00:01:30,750
that in the most recent of these was

48
00:01:34,310 --> 00:01:31,979
something we call an operational

49
00:01:35,569 --> 00:01:34,320
readiness test or ort this is a test

50
00:01:37,460 --> 00:01:35,579
where we try to do everything with the

51
00:01:39,319 --> 00:01:37,470
test rover in exactly the same way as we

52
00:01:42,380 --> 00:01:39,329
would do it with the flight rover rule

53
00:01:43,700 --> 00:01:42,390
number one of an ort is no peeking the

54
00:01:45,260 --> 00:01:43,710
other world where drivers in Iowa kept

55
00:01:46,340 --> 00:01:45,270
strictly away from the test bed weren't

56
00:01:48,230 --> 00:01:46,350
allowed to go down there and look at the

57
00:01:49,940 --> 00:01:48,240
real Rover and instead we had to make

58
00:01:51,469 --> 00:01:49,950
all of our decisions based on data that

59
00:01:52,609 --> 00:01:51,479
was sent back by the test robos it's

60
00:01:54,649 --> 00:01:52,619
very much like the data that would be

61
00:01:57,180 --> 00:01:54,659
sent back by spirit and in the same way

62
00:01:58,710 --> 00:01:57,190
we had to command the test Rover

63
00:01:59,940 --> 00:01:58,720

using only the same kind of software and

64
00:02:01,500 --> 00:01:59,950
the same kind of procedures that we'll

65
00:02:03,320 --> 00:02:01,510
be using to command spirit when we get

66
00:02:05,670 --> 00:02:03,330
ready to do this extrication for real

67
00:02:07,530 --> 00:02:05,680
Mars does not owe us a solution to this

68
00:02:08,850 --> 00:02:07,540
problem and there might not be one but

69
00:02:09,990 --> 00:02:08,860
we are very confident that we have the

70
00:02:11,820 --> 00:02:10,000
best possible plan under the

71
00:02:13,830 --> 00:02:11,830
circumstances and we're ready to begin

72
00:02:15,600 --> 00:02:13,840
implementing it very soon it's going to

73
00:02:17,580 --> 00:02:15,610
be a slow and lengthy process taking

74
00:02:18,960 --> 00:02:17,590
weeks or maybe even months but we'll

75
00:02:19,950 --> 00:02:18,970
keep you posted on spirits progress and

76
00:02:22,320 --> 00:02:19,960
we hope you'll follow along