



1
00:00:06,230 --> 00:00:04,070
my name is tara radke and i'm the system

2
00:00:07,909 --> 00:00:06,240
manager for orion integrated landing

3
00:00:09,910 --> 00:00:07,919
systems

4
00:00:12,070 --> 00:00:09,920
so even though orion has performed the

5
00:00:14,150 --> 00:00:12,080
majority of its mission of taking humans

6
00:00:15,669 --> 00:00:14,160
to space and then returning back home we

7
00:00:18,070 --> 00:00:15,679
still have to do the last really

8
00:00:19,750 --> 00:00:18,080
important part slowing down so they can

9
00:00:21,029 --> 00:00:19,760
safely land and be recovered onto the

10
00:00:22,710 --> 00:00:21,039
ship and back home

11
00:00:24,310 --> 00:00:22,720
orion's coming back from deep space and

12
00:00:26,550 --> 00:00:24,320
re-enters the atmosphere going really

13
00:00:27,910 --> 00:00:26,560

fast the guidance navigation control

14

00:00:30,230 --> 00:00:27,920

system does some maneuvering to help

15

00:00:31,910 --> 00:00:30,240

slow down the vehicle and at that point

16

00:00:33,670 --> 00:00:31,920

start looking for the right conditions

17

00:00:35,030 --> 00:00:33,680

to deploy the parachutes the first

18

00:00:36,549 --> 00:00:35,040

parachutes that come out are the four

19

00:00:38,150 --> 00:00:36,559

big cover parachutes they're mortar

20

00:00:40,150 --> 00:00:38,160

deployed so they're fired basically with

21

00:00:43,030 --> 00:00:40,160

cannons out the back of the vehicle at a

22

00:00:45,510 --> 00:00:43,040

125 feet per second after those are

23

00:00:47,430 --> 00:00:45,520

inflated pyrotechnic piston thrusters

24

00:00:48,709 --> 00:00:47,440

push the cover off and jettison it away

25

00:00:49,910 --> 00:00:48,719

and that exposes all the other

26

00:00:51,350 --> 00:00:49,920

parachutes that are on the top of the

27

00:00:53,189 --> 00:00:51,360

vehicle that can so they can perform

28

00:00:55,430 --> 00:00:53,199

their job the next parachutes in the

29

00:00:57,670 --> 00:00:55,440

sequence are the drug parachutes the

30

00:01:00,310 --> 00:00:57,680

drug parachutes again are also mortar

31

00:01:01,670 --> 00:01:00,320

fired out into the clean air so they can

32

00:01:03,990 --> 00:01:01,680

properly deploy

33

00:01:06,390 --> 00:01:04,000

and they actually open in stages so they

34

00:01:08,630 --> 00:01:06,400

slowly open up so that they don't have a

35

00:01:10,390 --> 00:01:08,640

hard force on the vehicle or on the

36

00:01:12,230 --> 00:01:10,400

parachute themselves and damage them at

37

00:01:13,910 --> 00:01:12,240

that point we actually cut the drug

38

00:01:16,149 --> 00:01:13,920

parachutes so that those parachutes are

39

00:01:18,070 --> 00:01:16,159

able to leave and the next parachute the

40

00:01:20,070 --> 00:01:18,080

pilot parachutes are able to deploy at

41

00:01:22,390 --> 00:01:20,080

that point the pilot parachutes are

42

00:01:24,630 --> 00:01:22,400

small shoots they're actually 11 feet in

43

00:01:26,630 --> 00:01:24,640

diameter and are actually used to

44

00:01:28,230 --> 00:01:26,640

pull the main parachutes out of the bay

45

00:01:31,270 --> 00:01:28,240

the main parachutes are the large ones

46

00:01:34,469 --> 00:01:31,280

those are 300 pounds and when they are

47

00:01:36,390 --> 00:01:34,479

fully inflated 116 feet in diameter

48

00:01:38,469 --> 00:01:36,400

the main parachutes do the majority of

49

00:01:40,789 --> 00:01:38,479

the job of slowing down the vehicle

50

00:01:42,469 --> 00:01:40,799

all three main parachutes deploy they

51
00:01:44,389 --> 00:01:42,479
also open in stages to protect the

52
00:01:47,429 --> 00:01:44,399
structure in the parachutes and the crew

53
00:01:49,670 --> 00:01:47,439
on board and at that point slow the

54
00:01:51,510 --> 00:01:49,680
vehicle down to about 25 feet per second

55
00:01:53,990 --> 00:01:51,520
when it lands in the water

56
00:01:55,910 --> 00:01:54,000
working in the decent landing phase is

57
00:01:57,350 --> 00:01:55,920
really challenging you're coming from

58
00:01:59,590 --> 00:01:57,360
extreme environments that you've had to

59
00:02:01,190 --> 00:01:59,600
go along on the ride the entire way as

60
00:02:02,870 --> 00:02:01,200
we work with the parachutes as we work

61
00:02:05,109 --> 00:02:02,880
with the gnc team and how all these

62
00:02:07,030 --> 00:02:05,119
pieces fit together it feels like a very

63
00:02:08,389 --> 00:02:07,040

important job to make sure that we're

64

00:02:10,309 --> 00:02:08,399

taking care of the crew that we're

65

00:02:11,830 --> 00:02:10,319

bringing them back safely and that we