

# PARACHUTES: BRINGING ORION HOME



1  
00:00:08,150 --> 00:00:05,030  
a series of 11 parachutes will be

2  
00:00:10,549 --> 00:00:08,160  
deployed in sequential fashion a very

3  
00:00:13,970 --> 00:00:10,559  
dramatic return to Earth lying ahead for

4  
00:00:17,510 --> 00:00:13,980  
the Orion spacecraft our design is

5  
00:00:20,330 --> 00:00:17,520  
almost exactly the Apollo design the the

6  
00:00:23,330 --> 00:00:20,340  
shape of the mains the shape of the

7  
00:00:26,870 --> 00:00:23,340  
drugs the only major difference is we

8  
00:00:30,890 --> 00:00:26,880  
are bigger Apollo weighed roughly 13 000

9  
00:00:33,470 --> 00:00:30,900  
13 500 pounds and we weigh 22 and change

10  
00:00:35,450 --> 00:00:33,480  
a thousand pounds and so our parachutes

11  
00:00:37,069 --> 00:00:35,460  
are larger because we have more energy

12  
00:00:39,650 --> 00:00:37,079  
to take out of the system and our

13  
00:00:41,930 --> 00:00:39,660

parachutes are stronger

14

00:00:44,209 --> 00:00:41,940

so at a fundamental level all around

15

00:00:46,850 --> 00:00:44,219

parachutes are alike the Orion system

16

00:00:48,830 --> 00:00:46,860

has drogue parachutes that is initially

17

00:00:50,450 --> 00:00:48,840

decelerate the system and because

18

00:00:53,270 --> 00:00:50,460

they're deployed at a much higher

19

00:00:55,189 --> 00:00:53,280

velocity they're made of ribbons the

20

00:00:57,290 --> 00:00:55,199

ribbons can take the fluttering

21

00:01:00,229 --> 00:00:57,300

Associated of high velocity deployments

22

00:01:01,970 --> 00:01:00,239

much better than a solid canopy can and

23

00:01:05,210 --> 00:01:01,980

once the system slows down it deploys

24

00:01:06,830 --> 00:01:05,220

domains the mains are much closer to a

25

00:01:09,170 --> 00:01:06,840

Personnel shoot they're called ring

26  
00:01:11,390 --> 00:01:09,180  
sales the major difference would be that

27  
00:01:15,469 --> 00:01:11,400  
a Personnel shoot could be 28 to 30 feet

28  
00:01:18,350 --> 00:01:15,479  
in diameter and a sea pass main is 116

29  
00:01:20,450 --> 00:01:18,360  
feet in diameter City Orion parachutes

30  
00:01:23,330 --> 00:01:20,460  
are what we refer to as hybrid

31  
00:01:25,550 --> 00:01:23,340  
parachutes the drag surfaces are nylon

32  
00:01:27,649 --> 00:01:25,560  
but then the structural grid how we take

33  
00:01:29,510 --> 00:01:27,659  
the drag on that nylon surface and

34  
00:01:32,690 --> 00:01:29,520  
transmit it down to the vehicle is made

35  
00:01:35,569 --> 00:01:32,700  
of Kevlar and Kevlar is quite a bit

36  
00:01:37,670 --> 00:01:35,579  
stronger and stiffer and it just

37  
00:01:40,190 --> 00:01:37,680  
completely different material than the

38  
00:01:43,310 --> 00:01:40,200

drag surfaces are so the C pass system

39

00:01:45,530 --> 00:01:43,320

is designed to safely recover the crew

40

00:01:49,249 --> 00:01:45,540

with just two Mains deployed

41

00:01:51,050 --> 00:01:49,259

the problem with deploying the backup

42

00:01:52,730 --> 00:01:51,060

shoot after you deploy the first two

43

00:01:54,649 --> 00:01:52,740

shoots is you have to negotiate the

44

00:01:56,810 --> 00:01:54,659

shoot that's already out there so what

45

00:01:59,330 --> 00:01:56,820

we chose to do and what Apollo chose to

46

00:02:01,969 --> 00:01:59,340

do was to deploy the backup shoot with

47

00:02:04,789 --> 00:02:01,979

the main system itself and as a result

48

00:02:07,130 --> 00:02:04,799

we get a much softer Landing when all

49

00:02:10,130 --> 00:02:07,140

the parachutes work properly but both

50

00:02:13,390 --> 00:02:10,140

systems were designed to land with just

51  
00:02:15,949 --> 00:02:13,400  
two main parachutes functioning

52  
00:02:18,290 --> 00:02:15,959  
when we did the pad abort test at White

53  
00:02:20,510 --> 00:02:18,300  
Sands I was quite scared but I wasn't

54  
00:02:23,210 --> 00:02:20,520  
scared for our system I was scared for

55  
00:02:25,369 --> 00:02:23,220  
the repositioning after the Rockets took

56  
00:02:27,890 --> 00:02:25,379  
off the capsule and repositioned it it

57  
00:02:30,650 --> 00:02:27,900  
was perfect that thing reoriented like

58  
00:02:32,930 --> 00:02:30,660  
it was on Rails and I I swear to you

59  
00:02:34,729 --> 00:02:32,940  
this this huge relief came over me when

60  
00:02:37,070 --> 00:02:34,739  
the cover came off because I thought wow

61  
00:02:40,850 --> 00:02:37,080  
we're not done but we're done I know my