
ARTEMIS ALL ACCESS
Dec. 7, 2022

1
00:00:46,220 --> 00:00:37,370
foreign

2
00:01:07,730 --> 00:01:03,590
[Music]

3
00:01:07,740 --> 00:01:19,290
foreign

4
00:01:19,300 --> 00:01:24,490
[Music]

5
00:01:29,390 --> 00:01:27,830
1.3 million miles Orion knows there's no

6
00:01:31,370 --> 00:01:29,400
place like home when it's time to return

7
00:01:34,130 --> 00:01:31,380
to Earth there are some key steps that

8
00:01:36,350 --> 00:01:34,140
must happen Orion will attempt the first

9
00:01:37,670 --> 00:01:36,360
skip entry ever for human rated

10
00:01:39,649 --> 00:01:37,680
spacecraft

11
00:01:41,510 --> 00:01:39,659
the maneuver is like a thrown Stone

12
00:01:42,770 --> 00:01:41,520
skipping the surface of a pond before

13
00:01:45,109 --> 00:01:42,780

sinking

14
00:01:47,510 --> 00:01:45,119
capsule first uses the upper part of

15
00:01:49,670 --> 00:01:47,520
Earth's atmosphere to reduce speed and

16
00:01:52,670 --> 00:01:49,680
generate lift so it skips back out into

17
00:01:55,190 --> 00:01:52,680
space after the skip Orion will make a

18
00:01:58,249 --> 00:01:55,200
final re-entry experiencing temperatures

19
00:02:00,410 --> 00:01:58,259
around 5000 degrees Fahrenheit and

20
00:02:02,569 --> 00:02:00,420
decreasing speed significantly a system

21
00:02:04,730 --> 00:02:02,579
of 11 parachutes will slow the capsule

22
00:02:07,550 --> 00:02:04,740
down even more before it splashes down

23
00:02:09,589 --> 00:02:07,560
off the coast of California there teams

24
00:02:11,449 --> 00:02:09,599
from the U.S Navy and NASA will inspect

25
00:02:13,369 --> 00:02:11,459
the capsule for hazards before it is

26
00:02:15,110 --> 00:02:13,379
lifted onto the recovery ship for the

27
00:02:17,510 --> 00:02:15,120
journey back to land

28
00:02:19,610 --> 00:02:17,520
what other things about Artemis 1 are

29
00:02:24,170 --> 00:02:19,620
you curious about let us know using the

30
00:02:29,510 --> 00:02:26,449
a series of 11 parachutes will be

31
00:02:31,910 --> 00:02:29,520
deployed in sequential fashion a very

32
00:02:35,449 --> 00:02:31,920
dramatic return to Earth lying ahead for

33
00:02:38,930 --> 00:02:35,459
the Orion spacecraft our design is

34
00:02:41,750 --> 00:02:38,940
almost exactly the Apollo design the the

35
00:02:44,750 --> 00:02:41,760
shape of the mains the shape of the

36
00:02:48,290 --> 00:02:44,760
drugs the only major difference is we

37
00:02:52,309 --> 00:02:48,300
are bigger Apollo weighed roughly 13 000

38
00:02:54,949 --> 00:02:52,319

13 500 pounds and we weigh 22 and change

39
00:02:56,869 --> 00:02:54,959
a thousand pounds and so our parachutes

40
00:02:58,490 --> 00:02:56,879
are larger because we have more energy

41
00:03:01,070 --> 00:02:58,500
to take out of the system and our

42
00:03:03,350 --> 00:03:01,080
parachutes are stronger

43
00:03:05,690 --> 00:03:03,360
so at a fundamental level all around

44
00:03:08,330 --> 00:03:05,700
parachutes are alike the Orion system

45
00:03:10,309 --> 00:03:08,340
has drug parachutes that has initially

46
00:03:11,930 --> 00:03:10,319
decelerate the system and because

47
00:03:14,690 --> 00:03:11,940
they're deployed at a much higher

48
00:03:16,610 --> 00:03:14,700
velocity they're made of ribbons the

49
00:03:18,770 --> 00:03:16,620
ribbons can take the fluttering

50
00:03:21,710 --> 00:03:18,780
Associated of high velocity deployments

51
00:03:23,390 --> 00:03:21,720
much better than a solid canopy can and

52
00:03:26,690 --> 00:03:23,400
once the system slows down it deploys

53
00:03:28,309 --> 00:03:26,700
domains domains are much closer to a

54
00:03:30,589 --> 00:03:28,319
Personnel shoot they're called ring

55
00:03:32,869 --> 00:03:30,599
sales the major difference would be that

56
00:03:36,890 --> 00:03:32,879
a Personnel shoot could be 28 to 30 feet

57
00:03:39,830 --> 00:03:36,900
in diameter and a sea pass main is 116

58
00:03:41,869 --> 00:03:39,840
feet in diameter City Orion parachutes

59
00:03:44,809 --> 00:03:41,879
are what we refer to as hybrid

60
00:03:47,030 --> 00:03:44,819
parachutes the drag surfaces are nylon

61
00:03:49,070 --> 00:03:47,040
but then the structural grid how we take

62
00:03:50,930 --> 00:03:49,080
the drag on that nylon surface and

63
00:03:54,170 --> 00:03:50,940

transmit it down to the vehicle is made

64
00:03:57,050 --> 00:03:54,180
of Kevlar and Kevlar is quite a bit

65
00:03:59,149 --> 00:03:57,060
stronger and stiffer and it just

66
00:04:01,670 --> 00:03:59,159
completely different material than the

67
00:04:04,729 --> 00:04:01,680
drag surfaces are so the C pass system

68
00:04:06,949 --> 00:04:04,739
is designed to safely recover the crew

69
00:04:10,729 --> 00:04:06,959
with just two Mains deployed

70
00:04:12,470 --> 00:04:10,739
the problem with deploying the backup

71
00:04:14,149 --> 00:04:12,480
shoot after you deploy the first two

72
00:04:16,129 --> 00:04:14,159
shoots is you have to negotiate the

73
00:04:18,229 --> 00:04:16,139
shoot that's already out there so what

74
00:04:20,689 --> 00:04:18,239
we chose to do and what Apollo chose to

75
00:04:23,450 --> 00:04:20,699
do was to deploy to backup shoot with

76
00:04:26,270 --> 00:04:23,460
the main system itself and as a result

77
00:04:28,610 --> 00:04:26,280
we get a much softer Landing when all

78
00:04:31,550 --> 00:04:28,620
the parachutes work properly but both

79
00:04:35,270 --> 00:04:31,560
systems were designed to land with just

80
00:04:39,770 --> 00:04:37,370
when we did the pad abort test at White

81
00:04:41,930 --> 00:04:39,780
Sands I was quite scared but I wasn't

82
00:04:44,629 --> 00:04:41,940
scared for our system I was scared for

83
00:04:46,850 --> 00:04:44,639
the repositioning after the Rockets took

84
00:04:49,370 --> 00:04:46,860
off the capsule and repositioned it it

85
00:04:52,129 --> 00:04:49,380
was perfect that thing reoriented like

86
00:04:54,409 --> 00:04:52,139
it was on Rails and I I swear to you

87
00:04:56,150 --> 00:04:54,419
this this huge relief came over me when

88
00:04:58,490 --> 00:04:56,160

the cover came off because I thought wow

89
00:05:02,450 --> 00:04:58,500
we're not done but we're done I know my

90
00:05:02,460 --> 00:05:12,670
oh

91
00:05:23,160 --> 00:05:15,590
tune in to NASA TV for the next live

92
00:05:23,170 --> 00:05:27,110
[Music]

93
00:05:31,189 --> 00:05:28,969
for more on the science of the mission

94
00:05:32,469 --> 00:05:31,199
and resources for students and Educators

95
00:05:38,150 --> 00:05:32,479
head to

96
00:05:42,469 --> 00:05:40,129
follow the mission online on Facebook

97
00:05:44,090 --> 00:05:42,479
Instagram and Twitter

98
00:05:45,730 --> 00:05:44,100
and get the latest updates from the

99
00:05:58,830 --> 00:05:45,740
Artemis blog at

100
00:05:58,840 --> 00:06:04,749
[Music]