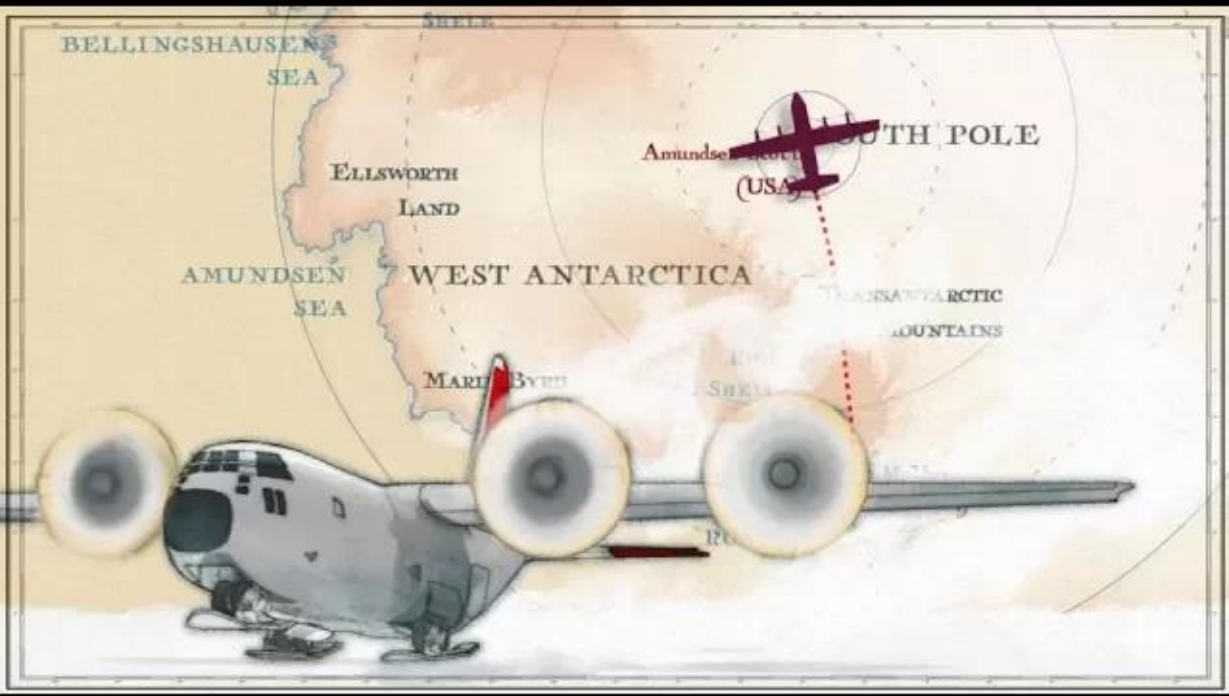
BELLINGSHAUSEN
SEA
ELLSWORTH
LAND
AMUNDSEN
SEA
WEST ANTARCTICA
SOUTH POLE
(USA)

1
00:00:00,020 --> 00:00:04,090
This winter NASA is sending two scientists all the way to the South Pole to measure

2
00:00:04,110 --> 00:00:08,110
the ice sheet elevation along a route no one has previously

3
00:00:08,130 --> 00:00:12,130
documented. The elevation data gathered is needed to improve the accuracy

4
00:00:12,150 --> 00:00:16,170
of the upcoming global laser-altimeter mission, ICESat-2,

5
00:00:16,190 --> 00:00:20,200
which will measure the height of Earth from orbit. Accompanied by only two other

6
00:00:20,220 --> 00:00:24,220
crew members, the NASA scientists will slowly trek along 300

7
00:00:24,240 --> 00:00:28,260
kilometers around the 88-South latitude, traversing through

8
00:00:28,280 --> 00:00:32,300
a remote and relatively unknown icescape. But first,

9
00:00:32,320 --> 00:00:36,340
they need to pack.
Neumann: This thing is a new ground-penetrating

10
00:00:36,360 --> 00:00:40,370
radar, and we're going to first unpack it and see that we got everything we're supposed to have.

11
00:00:40,390 --> 00:00:44,390
Neumann: And that's the main control system--
Brunt: Two sets of two, I think, so there's four--

12
00:00:44,410 --> 00:00:48,480
Neumann: The reason that we're going to have one of these along is that we're going to

13
00:00:48,500 --> 00:00:52,530
Antarctica in support of the 88-South Calibration Project for ICESat-2, and it's a new

14
00:00:52,550 --> 00:00:56,590
part of the continent where people really haven't been before--we certainly haven't been before--

15
00:00:56,610 --> 00:01:00,630
and for safety reasons, you bring along one of these systems.

16
00:01:00,650 --> 00:01:04,710
This will measure layers underneath the snow and if we measure the depth of

17
00:01:04,730 --> 00:01:08,760
those layers and how those depths change, we'll learn about how much snowfall we get in that

18
00:01:08,780 --> 00:01:12,840
area, which, again, a place that hasn't really been studied much before, kind of a question mark.

19
00:01:12,860 --> 00:01:16,900
Brunt: This is also an area where we have very little satellite data. It's one of the reasons why

20
00:01:16,920 --> 00:01:21,000
we're going there. It's the southernmost extent of where we have data for ICESat-2,

21
00:01:21,020 --> 00:01:25,040
even though it's the southernmost limit, it's also the most dense area for our dataset.

22
00:01:25,060 --> 00:01:29,060
But, a lot of satellites are kind of blind to this area,

23
00:01:29,080 --> 00:01:33,080
there's very little information. So even though our expectations are that it's thick and slow-

24
00:01:33,100 --> 00:01:37,110
moving ice and we shouldn't have a problem, better safe than sorry.

25
00:01:37,130 --> 00:01:41,120

Brunt: So we'll leave here, you lose a day in transit because you go over the

26
00:01:41,140 --> 00:01:45,160
International Date Line. We'll arrive in Christchurch, and, you know,

27
00:01:45,180 --> 00:01:49,200
roughly a day or two later. From there there's a couple of just logistical

28
00:01:49,220 --> 00:01:53,240
busy things to do, and then we'll fly via military to McMurdo Station,

29
00:01:53,260 --> 00:01:57,290
which is on the edge of the continent. So at sea level, roughly.

30
00:01:57,310 --> 00:02:01,350
And that's a really large base, roughly a thousand beds,

31
00:02:01,370 --> 00:02:05,380
so it's very active, but you need that number of people to run the runways, make the food,

32
00:02:05,400 --> 00:02:09,450
make sure people have housing. So we'll fly eventually to the South Pole,

33
00:02:09,470 --> 00:02:13,500
and that's kind of cool because you'll have to fly on aircraft that have skis to

34
00:02:13,520 --> 00:02:17,580
get into the South Pole because there isn't any rock exposed at the South Pole.

35
00:02:17,600 --> 00:02:21,650
South Pole is actually at about 10,000 feet above sea level, so

36
00:02:21,670 --> 00:02:25,700
rather than just hit the ground and go out and set everything up and start running,

37
00:02:25,720 --> 00:02:29,770
we'll spend some time acclimatizing to the altitude.

38
00:02:29,790 --> 00:02:33,850
But we'll fly into the South Pole, we'll get our gear all set up, put it onto PistenBullys

39
00:02:33,870 --> 00:02:37,910
with big sleds, then we'll start driving. And our drive is about

40
00:02:37,930 --> 00:02:41,970
750 kilometers roundtrip to get back to South Pole.

41
00:02:41,990 --> 00:02:46,110
Neumann: Do we want to ship this?
Brunt: No.