
570
SnowEx

1
00:00:00,350 --> 00:00:04,360
In order to put a snow satellite into space,

2
00:00:04,380 --> 00:00:09,580
you need to test the instruments from a plane first.

3
00:00:09,600 --> 00:00:12,730
SnowEx is a five-year NASA airborne campaign to

4
00:00:12,750 --> 00:00:15,400
work towards a future snow satellite mission

5
00:00:15,420 --> 00:00:19,870
and we need to find out what sorts of remote-sensing techniques

6
00:00:19,890 --> 00:00:22,580
will work best for different kinds of snow.

7
00:00:22,600 --> 00:00:26,940
The only way to find that out is to actually take a bunch of different types of sensors,

8
00:00:26,960 --> 00:00:28,440
put them on an airplane,

9
00:00:28,460 --> 00:00:31,590
fly them out in the field under real snow conditions,

10
00:00:31,610 --> 00:00:33,440
and that's exactly what we're doing.

11
00:00:33,460 --> 00:00:36,460
What plane is being used?

12
00:00:36,480 --> 00:00:38,920
The P-3. It's an old military plane.

13
00:00:38,940 --> 00:00:45,790

The military planes are loud, and vibrate, and they're cold.

14
00:00:45,810 --> 00:00:50,310
Think of a commercial airplane. Take all the insides out.

15
00:00:50,330 --> 00:00:52,670
What you have there, what every plane will have,

16
00:00:52,690 --> 00:00:55,660
it’s what’s called seat rails. We use these.

17
00:00:55,680 --> 00:00:57,830
We build our instruments in, what we call, data racks.

18
00:00:57,850 --> 00:00:59,490
That's how we control the instrument.

19
00:00:59,510 --> 00:01:04,460
We will build our racks in such a way that they also attach on to these seat rails.

20
00:01:04,480 --> 00:01:07,260
How else is the plane different?

21
00:01:07,280 --> 00:01:09,780
So the walls of this aircraft, I find pretty interesting.

22
00:01:09,800 --> 00:01:11,650
They’re not solid like on your commercial.

23
00:01:11,670 --> 00:01:15,430
It’s like a piece of cloth you can actually remove and run wires,

24
00:01:15,450 --> 00:01:18,300
and run different instrument things and make it a lot easier to

25
00:01:18,320 --> 00:01:21,430
modify where your things are on the aircraft.

26
00:01:21,450 --> 00:01:25,330
How do you check that the instruments are measuring snow accurately?

27
00:01:25,350 --> 00:01:28,500
We have a lot of people on the ground collecting science data

28
00:01:28,520 --> 00:01:32,820
and they're doing that to compare what we're seeing with our instruments.

29
00:01:32,840 --> 00:01:35,760
It's a data comparison type deal.

30
00:01:35,780 --> 00:01:40,420
These flight lines are planned so that we specifically fly over

31
00:01:40,440 --> 00:01:43,380
wherever the ground truth people are with their instruments

32
00:01:43,400 --> 00:01:44,980
and taking their experiments.

33
00:01:46,170 --> 00:01:49,080
What is the flight like?

34
00:01:49,100 --> 00:01:51,060
So flying on the P-3 is really bumpy.

35
00:01:51,080 --> 00:01:54,110
We do a lot of maneuvers that you would never do on a commercial jet.

36
00:01:54,130 --> 00:01:57,610
High bank angles, sharp turns, really low flying.

37
00:01:57,630 --> 00:01:59,590
The lower you are, the more turbulent it is.

38
00:01:59,610 --> 00:02:03,060

What are you doing on the flight?

39
00:02:03,080 --> 00:02:03,780
So when I’m on a science flight,

40
00:02:03,800 --> 00:02:05,810
I’m checking to make sure the instrument's still running

41
00:02:05,830 --> 00:02:08,000
and taking data the way I want it to.

42
00:02:08,020 --> 00:02:10,220
Everyone's very focused on their instrument.

43
00:02:10,240 --> 00:02:13,860
You're constantly checking to make sure that the data's coming in.

44
00:02:13,880 --> 00:02:17,670
My job is to make sure all the instrument operators are looking at their instruments

45
00:02:17,690 --> 00:02:21,780
and that they’re collecting all the adequate data they need.

46
00:02:21,800 --> 00:02:24,750
What is the goal for the first year?

47
00:02:24,770 --> 00:02:27,380
The best thing that we can get out of SnowEx this year one

48
00:02:27,400 --> 00:02:31,730
is really to collect a multi-sensor data set over a wide range of conditions.