
NASA

1
00:00:11,310 --> 00:00:08,870
one of NASA's major goals for the ladies

2
00:00:13,560 --> 00:00:11,320
explore the nature of the air that

3
00:00:17,250 --> 00:00:13,570
passes over surfaces of an airplanes

4
00:00:19,380 --> 00:00:17,260
wings and fuselage the smooth flow of

5
00:00:22,620 --> 00:00:19,390
smoke from this burning cigarette is a

6
00:00:31,600 --> 00:00:22,630
good example of laminar air flow when an

7
00:00:37,360 --> 00:00:34,930
the airboat it's debris on the smallest

8
00:00:40,120 --> 00:00:37,370
six thousandths of an inch even bugs

9
00:00:42,360 --> 00:00:40,130
turn with its results the scrubbing

10
00:00:44,770 --> 00:00:42,370
action of the air causes drag

11
00:00:50,660 --> 00:00:44,780
maintaining laminar air flow can reduce

12
00:00:55,069 --> 00:00:52,970
a research team working out of the aim

13
00:00:58,009 --> 00:00:55,079

dryden flight research facility in

14
00:00:59,840 --> 00:00:58,019
California a client against our business

15
00:01:02,299 --> 00:00:59,850
size aircraft with two especially

16
00:01:05,479 --> 00:01:02,309
adapted wing sections as seen in this

17
00:01:09,820 --> 00:01:05,489
model the test sections are designed to

18
00:01:15,040 --> 00:01:12,370
is that airflow can be called laminar

19
00:01:17,440 --> 00:01:15,050
over a very smooth Wayne section if air

20
00:01:20,830 --> 00:01:17,450
is sucked through regularly spaced pores

21
00:01:22,870 --> 00:01:20,840
or slots in the wind both wing sections

22
00:01:26,710 --> 00:01:22,880
have systems that have the wing clean of

23
00:01:29,470 --> 00:01:26,720
bugs ice and others in town the primary

24
00:01:31,300 --> 00:01:29,480
focus of this study is reply to jet star

25
00:01:33,640 --> 00:01:31,310
in typical commercial airline routes

26
00:01:36,210 --> 00:01:33,650
across the country in order to feed both

27
00:01:40,540 --> 00:01:36,220
systems worthiness under US and distance

28
00:01:44,140 --> 00:01:40,550
pilot gone now this really isn't in

29
00:01:45,850 --> 00:01:44,150
general exposure all over the country in

30
00:01:48,810 --> 00:01:45,860
the airline environment get it out of

31
00:01:50,650 --> 00:01:48,820
the test area and put it to work

32
00:01:52,840 --> 00:01:50,660
scientists at the langley research

33
00:01:56,200 --> 00:01:52,850
facility in hampton virginia are also

34
00:01:58,750 --> 00:01:56,210
studying laminar flow they use a Learjet

35
00:01:59,750 --> 00:01:58,760
as a modern wing design incorporating

36
00:02:01,469 --> 00:01:59,760
smooth

37
00:02:03,819 --> 00:02:01,479
which chemicals are

38
00:02:06,099 --> 00:02:03,829

allowing researchers to see natural

39
00:02:08,320 --> 00:02:06,109
laminar and turbulent airflow patterns

40
00:02:15,280 --> 00:02:08,330
as they occur during different

41
00:02:19,780 --> 00:02:15,290
conditions changes color according to

42
00:02:19,790 --> 00:02:24,350
close been seen

43
00:02:29,220 --> 00:02:27,150
since the late 1930s it was believed

44
00:02:31,890 --> 00:02:29,230
that laminar flow couldn't exist on

45
00:02:34,619 --> 00:02:31,900
airplane wings the smoothness of plane

46
00:02:36,540 --> 00:02:34,629
wings today makes the difference Richard

47
00:02:38,870 --> 00:02:36,550
Wagner talks about going a step further

48
00:02:42,150 --> 00:02:38,880
and applying laminar flow is supersonic

49
00:02:45,270 --> 00:02:42,160
applications we intend to a flight test

50
00:02:46,860 --> 00:02:45,280
on f-106 and look to see him this long

51
00:02:48,570 --> 00:02:46,870
before we can get on the wings and on

52
00:02:50,880 --> 00:02:48,580
the vertical tail many people believe

53
00:02:52,740 --> 00:02:50,890
that allowing a flow control at

54
00:02:55,910 --> 00:02:52,750
supersonic speeds could be the answer to

55
00:02:59,190 --> 00:02:55,920
an economical supersonic transport

56
00:03:00,930 --> 00:02:59,200
laminar flow for many years ignored as a

57
00:03:03,990 --> 00:03:00,940
way to reuse Dragon hairodynamic

58
00:03:06,490 --> 00:03:04,000
research now of promising a permission