



1
00:00:16,080 --> 00:00:18,140
>> So growing up here in
(inaudible) Valley there's a lot

2
00:00:18,140 --> 00:00:19,880
of aerospace and
flight research.

3
00:00:19,880 --> 00:00:23,570
We would have sonic booms
all the time; get all kinds

4
00:00:23,570 --> 00:00:25,450
of cool fighter jets
flying overhead.

5
00:00:25,450 --> 00:00:27,790
The B2 Bomber would you
know be flying over.

6
00:00:27,790 --> 00:00:30,340
>> To line him up
for Edward's runway.

7
00:00:30,340 --> 00:00:32,710
>> One of the most unique things
though was whenever the Space

8
00:00:32,710 --> 00:00:33,720
Shuttle would land here

9
00:00:33,720 --> 00:00:36,150
and it had this trademark
double-sonic boom

10
00:00:36,150 --> 00:00:37,789
and that's something
that I will never forget.

11

00:00:37,789 --> 00:00:43,960
>> Two sonic booms signaling its arrival at the California coast.

12
00:00:43,960 --> 00:00:46,910
>> And just the thought that wow, the Space Shuttle came

13
00:00:46,910 --> 00:00:49,590
from space and its landing right here in our own backyard.

14
00:00:49,590 --> 00:00:50,590
And so that's a memory

15
00:00:50,590 --> 00:00:54,049
that I will never forget is how cool it is being in this area

16
00:00:54,049 --> 00:00:56,229
with all of the flight research going on,

17
00:00:56,229 --> 00:01:00,470
the Space Shuttle landing here, and I'm excited for the future

18
00:01:00,470 --> 00:01:03,480
because this is a really unique spot.

19
00:01:03,480 --> 00:01:06,320
So that this would be flutter, that would be flutter,

20
00:01:06,320 --> 00:01:09,659
and then...because it has different tabs so that...

21
00:01:09,659 --> 00:01:13,770

So I went to Cal Poly in San Luis Obispo and I graduated

22

00:01:13,770 --> 00:01:16,080
with a double major in Physics and Aerospace Engineering

23

00:01:16,080 --> 00:01:18,729
and I also got my master's in Aerospace Engineering.

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00:01:18,729 --> 00:01:20,770
So growing up, education was extremely important

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00:01:20,770 --> 00:01:21,770
in my family.

26

00:01:21,770 --> 00:01:24,801
It was almost like not a question about not doing well;

27

00:01:24,801 --> 00:01:28,880
it was very much expected that I was supposed to do well.

28

00:01:28,880 --> 00:01:31,350
My parents, I think they just did a great job

29

00:01:31,350 --> 00:01:32,570
where I didn't feel pressured.

30

00:01:32,570 --> 00:01:33,630
I felt more internally

31

00:01:33,630 --> 00:01:36,380
that I really had high expectations for myself.

32

00:01:36,380 --> 00:01:38,750

(Background Conversation)

I'm Alex Chin;

33

00:01:38,750 --> 00:01:41,060

I'm an Aerospace Engineer

at NASA Armstrong.

34

00:01:41,060 --> 00:01:42,700

I worked in the Aerostructures

Group

35

00:01:42,700 --> 00:01:44,890

at NASA Armstrong

Flight Research Center

36

00:01:44,890 --> 00:01:47,990

and I do research instruction

dynamics which means

37

00:01:47,990 --> 00:01:51,520

that we study the phenomena

of the forces acting

38

00:01:51,520 --> 00:01:53,930

on a structure during motion.

39

00:01:53,930 --> 00:01:56,360

One of the biggest pushes that

NASA Aeronautics is working

40

00:01:56,360 --> 00:01:57,900

on right now is in

green aviation.

41

00:01:57,900 --> 00:02:00,870

So in green aviation we're

trying to look at ok,

42

00:02:00,870 --> 00:02:03,740

how could we make
flight more efficient?

43

00:02:03,740 --> 00:02:05,560

One of the best ways is well
why don't we just make the

44

00:02:05,560 --> 00:02:07,270

aircraft lighter.

45

00:02:07,270 --> 00:02:09,200

But by making it
lighter, we're looking

46

00:02:09,200 --> 00:02:14,080

at the wings becoming you
know longer, more flexible,

47

00:02:14,080 --> 00:02:15,150

and yes we get better
efficiencies,

48

00:02:15,150 --> 00:02:18,480

but then we get all these
structural dynamic consequences.

49

00:02:18,480 --> 00:02:20,890

So what we're working on
right here is the X-56A.

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00:02:20,890 --> 00:02:22,629

>> Ready for takeoff structures?

51

00:02:22,629 --> 00:02:24,159

>> Structures is ready.

52

00:02:24,159 --> 00:02:25,159

>> Systems?

53

00:02:25,159 --> 00:02:28,450

>> And we're trying to actually actively suppress flutter

54

00:02:28,450 --> 00:02:29,450

and play.

55

00:02:29,450 --> 00:02:30,450

>> ...we are ready for your calls.

56

00:02:33,450 --> 00:02:31,450

>> Airborne.

57

00:02:33,450 --> 00:02:34,860

>> (Background Conversation)
So what that means is that ok,

58

00:02:34,860 --> 00:02:37,370

we're going to keep the flexible wings, we're going to still have

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00:02:37,370 --> 00:02:38,841

in the flight envelope, but what

60

00:02:38,841 --> 00:02:42,400

if we can use you know our existing control flaps

61

00:02:42,400 --> 00:02:44,980

to actually suppress flutter?

62

00:02:44,980 --> 00:02:46,780

Instead of saying, "Ok, we don't want our wing to twist,"

63

00:02:46,780 --> 00:02:47,870

because that...you don't understand

64

00:02:47,870 --> 00:02:49,030
that could be a bad thing.

65

00:02:49,030 --> 00:02:51,720
What if we intentionally
twist the wing to try

66

00:02:51,720 --> 00:02:54,069
and get you know
better flight dynamics?

67

00:02:54,069 --> 00:02:55,930
Originally we thought, "Ok,
we're designing that out,"

68

00:02:55,930 --> 00:02:58,760
but we have to reconsider
it and instead of trying

69

00:02:58,760 --> 00:03:02,660
to avoid these problems,
we want to exploit it.

70

00:03:02,660 --> 00:03:06,300
So turning a bad guy into a good
guy is what we're trying to do.

71

00:03:06,300 --> 00:03:07,790
>> 'A' on condition.

72

00:03:07,790 --> 00:03:08,790
>> 162 select.

73

00:03:08,790 --> 00:03:09,790
>> Selected.

74

00:03:09,790 --> 00:03:10,790
>> First strut.

75

00:03:10,790 --> 00:03:11,790

>> Strutting.

76

00:03:11,790 --> 00:03:15,220

>> If it's down, up, 1
over, shoot, and back.

77

00:03:15,220 --> 00:03:16,520

>> So one of the cool
things about working

78

00:03:16,520 --> 00:03:18,099

at NASA Armstrong
Flight Research Center

79

00:03:18,099 --> 00:03:22,020

that keeps me coming back every
day is seeing how the projects

80

00:03:22,020 --> 00:03:23,020

are worked on.

81

00:03:23,020 --> 00:03:25,709

You see start from concept
all the way to flight.

82

00:03:25,709 --> 00:03:27,091

A lot of times you'll only look

83

00:03:27,091 --> 00:03:29,340

at one certain part
of a test program.

84

00:03:29,340 --> 00:03:31,570

You'd become the expert in
doing this type of analysis,

85

00:03:31,570 --> 00:03:33,320

but then you'd never
actually see that aircraft

86

00:03:33,320 --> 00:03:35,680

or flight article that
you're working on.

87

00:03:35,680 --> 00:03:37,099

So it's a great experience
working here

88

00:03:37,099 --> 00:03:40,400

that you do analysis,
you work with a vehicle,

89

00:03:40,400 --> 00:03:42,570

you staff the control
room, you're right there

90

00:03:42,570 --> 00:03:44,410

with the crew briefs,
you work with the pilots,

91

00:03:44,410 --> 00:03:46,129

you see your program
from beginning to end

92

00:03:46,129 --> 00:03:50,120

and it really helps bring
a strong appreciation

93

00:03:50,120 --> 00:03:53,879

for what goes on into the
life cycle of a program.