1
00:00:01,120 --> 00:00:05,880
[Jet Engine]

2
00:00:08,320 --> 00:00:10,320
[Sonic Boom]

3
00:00:10,320 --> 00:00:13,120
[Jet Flying]

4
00:00:13,400 --> 00:00:17,000
[Music]

5
00:00:19,400 --> 00:00:24,960
>>My name is Matthew Berry. I'm Lead Operations
Engineer on DC8. I went to school, got my

6
00:00:24,960 --> 00:00:30,080
Double-E degree, a Bachelor in Science, at
New Mexico State University.

7
00:00:31,160 --> 00:00:36,240
The DC-8 is part of the airborne science program. The importance of airborne science is it gives experimenters

8
00:00:36,250 --> 00:00:43,149
a tool to where they can real time make upgrades
to their equipment, a place to test it out

9
00:00:43,149 --> 00:00:49,189
and see if that's what they really want to
do in the satellite in orbit.

10
00:00:49,189 --> 00:00:51,789
[Music]

11
00:00:54,320 --> 00:00:58,800
It's like a test bed for new equipment, you get a lot
of different experiments, each campaign has

12

00:00:58,800 --> 00:01:05,540
its own unique item that it's searching for-
C02 and O2 emissions within the atmosphere,

13
00:01:05,540 --> 00:01:07,940
biofuel emissions testing,

14
00:01:07,940 --> 00:01:10,380
[Music]

15
00:01:10,380 --> 00:01:13,820
some weather type
stuff like lightning strikes, we'll go into

16
00:01:13,820 --> 00:01:18,180
hurricanes. We get to go everywhere, Houston,
you go to Kansas, you go to Maine, and then

17
00:01:18,180 --> 00:01:22,940
you get to go to Chile, maybe Germany, it's
not really limited. Wherever the science wants

18
00:01:22,940 --> 00:01:23,700
to go.

19
00:01:23,700 --> 00:01:27,500
>>The experiments that are on, we have
the ATM which is the Airborne Topographic

20
00:01:27,500 --> 00:01:31,240
Mapper, ATM Topographic Mapper Sigma.

21
00:01:31,240 --> 00:01:33,240
>>As an OE, you're basically a big coordinator,

22
00:01:33,240 --> 00:01:36,750
you gotta coordinate with all the science
teams, the upper management levels, you have

23

00:01:36,750 --> 00:01:39,980
to coordinate between the mechanics, you have
to coordinate between the avionics techs,

24
00:01:39,980 --> 00:01:44,560
you have to coordinate between all the back
shops for fabrication.

25
00:01:44,560 --> 00:01:46,560
>>...small parts that we can do in house...

26
00:01:46,560 --> 00:01:51,240
[Music]

27
00:01:51,240 --> 00:01:55,080
>>...what housekeeping you working
on right now?

28
00:01:56,360 --> 00:01:58,360
>>You're also the technical representative

29
00:01:58,360 --> 00:02:02,590
for your ground crews. You gotta be able to
talk to all the different shops and know what

30
00:02:02,590 --> 00:02:06,690
they need and what information you gotta get
to them so you can help solve all the problems.

31
00:02:06,690 --> 00:02:09,290
>>Just need some seats in here and we'll be
good.

32
00:02:09,290 --> 00:02:13,640
Hey Terrance- did you guys already do the connector for the iridium?

33
00:02:13,640 --> 00:02:17,920
>>Yeah, here's
the antenna cables are right there, here power

34
00:02:17,930 --> 00:02:22,040
beneath it. So, it's already here.

35
00:02:22,040 --> 00:02:24,040
>>Yeah, so
we'll probably have to take that off.

36
00:02:24,040 --> 00:02:31,040
>>I like getting my hands dirty. I like being there
with the crew, that's the best part.

37
00:02:31,040 --> 00:02:34,120
[Music]

38
00:02:37,720 --> 00:02:42,080
We deal with a lot of outside experimenters and everything, so there are physical people going on our

39
00:02:42,080 --> 00:02:48,080
aircraft that are brining non-aircraft airworthy
instruments on.

40
00:02:48,080 --> 00:02:50,360
[Music]

41
00:02:51,280 --> 00:02:56,069
We'll make sure that all their components, they have a correct layout on all the racks that are on the aircraft, to

42
00:02:56,069 --> 00:03:01,280
make sure that it's structurally sound and can
withstand all the loads. On the DC-8 for one

43
00:03:01,280 --> 00:03:05,720
example there's lasers. And there's a lot
of rules that you gotta follow with lasers.

44
00:03:05,720 --> 00:03:07,880
for safe eye distance that

45

00:03:07,900 --> 00:03:12,280
somebody could look at it with some binoculars
or a camera lens. Each laser has to go through

46
00:03:12,280 --> 00:03:16,459
a process, get evaluated, and we get that
distance. Along with that you have to coordinate

47
00:03:16,459 --> 00:03:18,339
it with the FAA.

48
00:03:18,339 --> 00:03:21,219
[Music]

49
00:03:21,760 --> 00:03:23,680
>>Morning, Karen

50
00:03:23,680 --> 00:03:25,560
>>So a typical
non-flight day, you're kinda just making

51
00:03:25,560 --> 00:03:27,360
sure you have all your paperwork in order, so

52
00:03:27,360 --> 00:03:29,350
making sure the aircraft maintenance items are

53
00:03:29,350 --> 00:03:33,890
care of, working with the ground crew, see
what issues have come up and how we're gonna

54
00:03:33,890 --> 00:03:38,200
work to address them. Our favorite thing as
Ops Engineers now is working in NAMIS and

55
00:03:38,200 --> 00:03:43,319
keeping that up to date with all the maintenance
items and making sure that everything stays

56

00:03:43,319 --> 00:03:47,459
on track. And if I'm working something in
the backshop, I'm kinda coordinating with

57
00:03:47,459 --> 00:03:51,870
them for getting the parts fabricated and
making sure they have all the materials. I

58
00:03:51,870 --> 00:03:58,870
do a lot of preplanning for upcoming missions.
A flight day for me gets really busy. If I'm

59
00:03:58,880 --> 00:04:02,630
not flying, I'm kinda there early,
right when the crew gets there, and just start

60
00:04:02,630 --> 00:04:06,709
prepping it, doing the preflight items, you're
finalizing all the weight and balance numbers,

61
00:04:06,709 --> 00:04:10,709
just running around making sure everything
is good to go there and the paperwork is signed

62
00:04:10,709 --> 00:04:15,099
off appropriately. And then usually on a day
that I fly, I'm usually just getting myself

63
00:04:15,099 --> 00:04:21,040
ready with whatever the flight plan is and
what the experimenters are wanting to do that day.

64
00:04:21,040 --> 00:04:27,720
>>So science we've got Stuart Wu? Here.
Mike Rodriguez? Here. We got Sven? You go

65
00:04:28,389 --> 00:04:32,539
>>You go to the pre-flight briefing, you give the
briefing to the scientists and everything,

66

00:04:32,539 --> 00:04:36,139
as a Mission Director, so their safety brief
and everything, you just kinda reiterate,

67
00:04:36,139 --> 00:04:41,339
get a feel for what they're trying to do and
what their main goals are for that mission.

68
00:04:41,339 --> 00:04:43,539
[Music]

69
00:04:43,539 --> 00:04:46,339
[Jet Engine]

70
00:05:01,439 --> 00:05:05,719
>>You sit on the aircraft and control the mission
and interface with all the pilots and the

71
00:05:05,719 --> 00:05:07,679
scientists at the same time.

72
00:05:07,679 --> 00:05:09,909
>>All right everybody
we're getting ready for the taxi, so make

73
00:05:09,909 --> 00:05:15,629
sure you got all your seat belts on and belted
and ready for taxi and take off.

74
00:05:15,629 --> 00:05:21,389
[DC-8 taking off]

75
00:05:21,389 --> 00:05:24,989
[Music]

76
00:05:29,320 --> 00:05:33,880
[Radio Chatter]

77
00:05:38,360 --> 00:05:44,640

>>Tonight's mission has us flying out to go over the Indianapolis area, and they'll be taking the laser

78
00:05:44,640 --> 00:05:47,520
measurements for CO2 and O2.

79
00:05:47,520 --> 00:05:52,360
Today my role is mission director,
and what you do is, for this campaign we're

80
00:05:52,360 --> 00:05:57,650
monitoring the TCAS system up there because
we have lasers onboard so we have to watch

81
00:05:57,650 --> 00:06:02,360
out for planes underneath. Normally your'e
communicating with the scientists on what

82
00:06:02,360 --> 00:06:07,349
changes they need to do, so if we're, like
for this mission, kinda worried about clouds

83
00:06:07,349 --> 00:06:11,909
and stuff like that, if we're close to a cloud
area, the scientists will kinda redirect us

84
00:06:11,920 --> 00:06:15,800
and say "Hey, let's move over a little bit
to the East or the West or North/South". A

85
00:06:15,819 --> 00:06:20,439
lot of it is just doing the coordination and
re-coordination of flight routes and making

86
00:06:20,439 --> 00:06:24,279
sure that the scientists are following the
rules that we set up and that they're getting

87
00:06:24,280 --> 00:06:26,440
all the data that they need.

88
00:06:26,440 --> 00:06:29,520
[Music]

89
00:06:31,400 --> 00:06:33,400
>>You don't realize
how fun it is to be flying 500 feet off the

90
00:06:33,400 --> 00:06:38,869
ground until you're doing it. And especially
in this big tanker, a DC-8, because you know,

91
00:06:38,869 --> 00:06:43,039
you kinda see all the smaller aircraft and
you think this big DC-8, that kinda scares

92
00:06:43,039 --> 00:06:44,999
everybody in the neighborhood.

93
00:06:44,999 --> 00:06:46,999
[Music]

94
00:06:56,480 --> 00:06:58,080
>> Ok, mission, O2 is off.

95
00:06:58,080 --> 00:07:02,560
>>All right, thank you. Ready to close your shutter, right?

96
00:07:02,560 --> 00:07:05,840
>>Yes, go ahead and close the CO2 shutter.

97
00:07:05,840 --> 00:07:07,840
>>Thank you.

98
00:07:07,840 --> 00:07:10,480
[Radio Chatter- Approach & Landing]

99
00:07:17,800 --> 00:07:22,160
>>All right, everybody, the seatbelt sign is now officially

on, we'll be landing here shortly.

100
00:07:22,160 --> 00:07:25,320
[DC-8 Landing]

101
00:07:25,320 --> 00:07:27,320
[Music]

102
00:07:31,840 --> 00:07:35,520
>>CO2 sounder, how was your flight?

103
00:07:35,520 --> 00:07:37,520
>> I had a good flight,
thanks.

104
00:07:37,520 --> 00:07:39,520
>>LAS, how was your flight?

105
00:07:40,000 --> 00:07:44,379
>>After it lands, you kinda come back just to see if
there's any aircrew discrepancies, go through

106
00:07:44,379 --> 00:07:47,909
the post flight debrief, and just see what
they bring up so you work any issues if there

107
00:07:47,909 --> 00:07:53,069
are any issues, and help make the decision
whether it's gonna be a go, no-go for the next day.

108
00:07:53,069 --> 00:07:55,069
[Music]

109
00:07:55,080 --> 00:07:58,960
>>I truly love my job, like it's never
a dull moment, it's always gonna be something