1
00:00:00,460 --> 00:00:03,980
Music

2
00:00:03,980 --> 00:00:05,160
Old film projector

3
00:00:05,170 --> 00:00:10,030
>>Narrator: We stand forever at a point in
time called 'now'.

4
00:00:10,980 --> 00:00:12,980
The past we can only remember,

5
00:00:14,120 --> 00:00:16,540
the future we can only surmise.

6
00:00:16,540 --> 00:00:19,520
Airplane flyby

7
00:00:19,520 --> 00:00:22,800
Wind

8
00:00:22,800 --> 00:00:24,800
Prop plane

9
00:00:24,800 --> 00:00:26,800
Rocket ignition

10
00:00:26,800 --> 00:00:30,740
Music

11
00:00:30,740 --> 00:00:34,660
Jet aircraft

12
00:00:38,680 --> 00:00:40,680
Music

13

00:00:40,680 --> 00:00:41,920
Oxygen hiss

14
00:00:41,920 --> 00:00:42,680
Sonic boom

15
00:00:42,680 --> 00:00:44,120
X-15 ignition

16
00:00:44,500 --> 00:00:49,960
>>Hugh Dryden: NASA must be like NACA in the
qualities of strength and character that make

17
00:00:49,960 --> 00:00:52,320
an organization great.

18
00:00:53,260 --> 00:00:54,760
Cockpit hum

19
00:00:56,060 --> 00:00:57,100
>>Pull!

20
00:00:57,100 --> 00:00:58,600
Applause

21
00:00:58,600 --> 00:01:00,320
>>While we are changing
our name,

22
00:01:00,320 --> 00:01:02,460
the work we do remains
consistent.

23
00:01:02,460 --> 00:01:06,700
We fly, we explore, we measure,
we reveal, and we discover

24
00:01:06,710 --> 00:01:09,530
the overlooked and unexpected

for the benefit of the nation,

25
00:01:09,530 --> 00:01:11,200
and for the benefit of human
kind.

26
00:01:11,200 --> 00:01:14,340
>>I'm going to ride off into
the sunrise.

27
00:01:14,340 --> 00:01:17,000
Jets taking off

28
00:01:19,300 --> 00:01:21,080
>>836, left 3 degrees.

29
00:01:21,080 --> 00:01:22,220
Camera shutter

30
00:01:22,220 --> 00:01:24,100
Jet airplane

31
00:01:24,100 --> 00:01:25,430
>>.95 run complete.

32
00:01:25,439 --> 00:01:28,109
>Copy .95 shown here,
run complete.

33
00:01:28,109 --> 00:01:30,840
>>High speed research, is
hopefully at one point

34
00:01:30,840 --> 00:01:33,999
in time, going to allow
supersonic flight

35
00:01:33,999 --> 00:01:36,919
commercially over the U.S. and

throughout the world.

36
00:01:36,920 --> 00:01:40,300
Jet plane flying

37
00:01:41,800 --> 00:01:46,520
Aircraft taking off

38
00:01:46,520 --> 00:01:48,679
>>12 o'clock, 5
miles northbound, Navajo, 8,500

39
00:01:48,679 --> 00:01:52,399
November 02 Sierra, traffic
2 o'clock

40
00:01:52,399 --> 00:01:53,640
Radio chatter

41
00:01:53,640 --> 00:01:55,509
>>Visual about 3.2

42
00:01:55,509 --> 00:01:57,850
>>He's spot on

43
00:01:57,850 --> 00:02:00,390
>>Lift off initial climb
mission phase.

44
00:02:00,390 --> 00:02:02,490
>>Pilot, monitor and verify
guidance,

45
00:02:02,490 --> 00:02:04,010
>>Passing through 10,000.

46
00:02:04,010 --> 00:02:04,640
>>Perfect!

47
00:02:04,640 --> 00:02:07,260
Music

48
00:02:08,560 --> 00:02:10,360
Wind

49
00:02:10,360 --> 00:02:11,120
Radio telemetry clicks

50
00:02:11,120 --> 00:02:13,040
>>You guys made history
today.

51
00:02:13,040 --> 00:02:15,989
No one has ever proven that
vortices go anywhere

52
00:02:15,989 --> 00:02:17,640
except at the wing tip.

53
00:02:17,640 --> 00:02:18,300
Music

54
00:02:18,300 --> 00:02:19,160
Clacking

55
00:02:19,160 --> 00:02:21,500
>>The fiber optic systems tells
us how much the wing

56
00:02:21,510 --> 00:02:25,420
is bending in real time. This
technology eventually should

57
00:02:25,420 --> 00:02:28,970
be applied to completely
flexible wings,

58

00:02:28,970 --> 00:02:29,840
that's the future.

59
00:02:29,840 --> 00:02:32,240
>>The new flaps
have promised to be lighter,

60
00:02:32,250 --> 00:02:34,540
more efficient, quieter. More like a bird,

61
00:02:34,540 --> 00:02:37,930
morph without any use of hinges
and joints and things like that.

62
00:02:37,930 --> 00:02:40,890
Jet plane taking off

63
00:02:41,240 --> 00:02:42,160
>>We are going to continue
ahead here

64
00:02:42,170 --> 00:02:43,380
for about another couple
of miles,

65
00:02:43,380 --> 00:02:45,460
just to check out the airplane,
before we make a turn.

66
00:02:45,460 --> 00:02:47,200
>>Steady heading side
slip to the left first,

67
00:02:47,200 --> 00:02:49,940
we will hold for 10 seconds
and try to get about half over.

68
00:02:49,940 --> 00:02:52,200
Our pitch
stability is good, roll and yaw.

69
00:02:52,200 --> 00:02:55,200
Mini-UAV taking off

70
00:02:56,000 --> 00:02:58,540
>>That's pretty stable, right there.

71
00:02:58,980 --> 00:03:00,880
>>Runway is clear, you
are go for takeoff.

72
00:03:00,880 --> 00:03:02,680
>>All of the airborne science
aircraft; from the ER-2,

73
00:03:02,680 --> 00:03:06,510
to the C-20, to DC-8, to
Global Hawk, they all play

74
00:03:06,510 --> 00:03:07,170
an important role.

75
00:03:07,170 --> 00:03:08,360
>>Are you guys ready?

76
00:03:08,360 --> 00:03:09,480
>>Ready.

77
00:03:09,480 --> 00:03:11,020
>>What are our temperatures?

78
00:03:11,020 --> 00:03:13,180
>>34, 33, 38...

79
00:03:13,180 --> 00:03:15,780
Jet plane taking off

80
00:03:15,780 --> 00:03:16,980

Music

81
00:03:16,980 --> 00:03:18,980
Airplane cabin ambience

82
00:03:19,780 --> 00:03:21,360
>>Hopefully we
will get some really good

83
00:03:21,360 --> 00:03:24,040
science data from this that
will help the community.

84
00:03:24,040 --> 00:03:27,060
>>I have got rising
terrain, 12o'clock, 7 miles from...

85
00:03:27,060 --> 00:03:29,700
>>Tally-ho, and I am
going to start climbing here.

86
00:03:29,700 --> 00:03:31,700
Wind

87
00:03:33,060 --> 00:03:36,280
>>Alright it looks like it is at
wings level and we're on course

88
00:03:36,280 --> 00:03:38,280
Jet airplane

89
00:03:39,360 --> 00:03:43,620
High altitude airplane

90
00:03:43,620 --> 00:03:46,860
Cockpit ambience

91
00:03:46,860 --> 00:03:50,260
Music

92
00:03:50,260 --> 00:03:52,220
Global Hawk taking off

93
00:03:52,220 --> 00:03:53,520
>>Woo-hoo!

94
00:03:53,520 --> 00:03:58,800
747 taking off

95
00:03:58,800 --> 00:04:01,720
>>I, myself, have learned so
much just about the process

96
00:04:01,720 --> 00:04:04,599
of science, and that in
itself is something

97
00:04:04,599 --> 00:04:07,039
you can bring back to
the classroom.

98
00:04:07,040 --> 00:04:08,190
Music

99
00:04:08,190 --> 00:04:11,629
Background hangar maintenance

100
00:04:11,629 --> 00:04:14,680
Music

101
00:04:14,680 --> 00:04:18,079
>>Inflatable systems allow us to
build bigger heat shields

102
00:04:18,079 --> 00:04:21,230
that decelerate larger masses so
that we can support

103
00:04:21,230 --> 00:04:24,860
the systems that are required
for human space exploration.

104
00:04:24,860 --> 00:04:27,040
Radio chatter/Hydraulics

105
00:04:27,040 --> 00:04:28,400
Prop plane taking off

106
00:04:28,410 --> 00:04:31,780
>>Tower, NASA UAS airborne,
UAS work area surface to

107
00:04:31,780 --> 00:04:33,220
2,000 feet.

108
00:04:33,220 --> 00:04:34,380
Radio chatter

109
00:04:34,380 --> 00:04:35,840
>>Release!

110
00:04:35,840 --> 00:04:37,300
Music

111
00:04:37,300 --> 00:04:39,300
Rocket launch

112
00:04:42,060 --> 00:04:44,600
Rocket landing

113
00:04:45,040 --> 00:04:47,220
>>Green light, green light,
green light, nearest 1 0

114
00:04:47,780 --> 00:04:51,320
Music

115
00:04:51,840 --> 00:04:53,720
Prop plane flying

116
00:04:53,720 --> 00:04:58,140
>>And lift off at dawn,
the dawn of Orion

117
00:04:58,140 --> 00:04:59,400
Ikhana flying