1
00:00:00,030 --> 00:00:13,940
liftoff in five four three two one zero

2
00:00:18,780 --> 00:00:16,380
NASA probably doesn't make you think

3
00:00:19,890 --> 00:00:18,790
about a conference room but each year

4
00:00:21,390 --> 00:00:19,900
the best and the brightest minds

5
00:00:24,050 --> 00:00:21,400
gathered together for hundreds of hours

6
00:00:26,429 --> 00:00:24,060
sharing ideas and making plans

7
00:00:29,099 --> 00:00:26,439
unassuming rooms like this are the

8
00:00:30,439 --> 00:00:29,109
birthplace of our greatness the same can

9
00:00:33,509 --> 00:00:30,449
be said for the Commercial Crew program

10
00:00:35,460 --> 00:00:33,519
hi I'm Joshua Santora and today I'm

11
00:00:37,410 --> 00:00:35,470
gonna take you on a tour over viewing

12
00:00:39,060 --> 00:00:37,420
the Commercial Crew program what is it

13
00:00:41,160 --> 00:00:39,070

what are its goals and why you should

14
00:00:43,380 --> 00:00:41,170
care I'll be explaining all the places

15
00:00:45,479 --> 00:00:43,390
that we visit but be sure to take a look

16
00:00:49,830 --> 00:00:45,489
around and enjoy the view are you ready

17
00:00:51,930 --> 00:00:49,840
let's go we're here at one of the most

18
00:00:54,240 --> 00:00:51,940
impressively engineered runways on earth

19
00:00:55,830 --> 00:00:54,250
that's right runways aren't just giant

20
00:00:58,619 --> 00:00:55,840
slabs of concrete they're engineered

21
00:01:00,930 --> 00:00:58,629
structures this one in particular was

22
00:01:03,000 --> 00:01:00,940
meticulously engineered to be one of the

23
00:01:05,910 --> 00:01:03,010
flattest straightest and most level

24
00:01:08,040 --> 00:01:05,920
runways on earth but why are we here

25
00:01:09,570 --> 00:01:08,050
this is the space shuttle landing

26
00:01:11,520 --> 00:01:09,580
facility at NASA's Kennedy Space Center

27
00:01:13,859 --> 00:01:11,530
on the east coast of Central Florida

28
00:01:16,169 --> 00:01:13,869
this spot in particular is special

29
00:01:19,680 --> 00:01:16,179
because this marks the end of the space

30
00:01:21,180 --> 00:01:19,690
shuttle program back in 2011 the final

31
00:01:23,490 --> 00:01:21,190
shuttle mission flown aboard Atlantis

32
00:01:26,400 --> 00:01:23,500
landed here and came to rest this very

33
00:01:29,330 --> 00:01:26,410
spot this was the last time we had sent

34
00:01:31,080 --> 00:01:29,340
humans into space from American soil

35
00:01:33,020 --> 00:01:31,090
this is where the story of the

36
00:01:36,510 --> 00:01:33,030
Commercial Crew program really begins

37
00:01:38,699 --> 00:01:36,520
the goal was direct invest in us-based

38
00:01:41,040 --> 00:01:38,709

commercial companies to enable safe and

39
00:01:43,499 --> 00:01:41,050
reliable transportation to and from the

40
00:01:45,449 --> 00:01:43,509
space station this has also freed up

41
00:01:47,880 --> 00:01:45,459
NASA to be able to invest in a heavy

42
00:01:49,380 --> 00:01:47,890
lift capability while maintaining that

43
00:01:52,109 --> 00:01:49,390
valuable research aboard the space

44
00:01:54,059 --> 00:01:52,119
station the early phases of the program

45
00:01:55,770 --> 00:01:54,069
focused on finding out what companies

46
00:01:57,540 --> 00:01:55,780
were out there and who was far enough

47
00:01:59,490 --> 00:01:57,550
along in their development that with

48
00:02:01,100 --> 00:01:59,500
help from us they would be flight ready

49
00:02:03,449 --> 00:02:01,110
in a relatively short amount of time

50
00:02:05,490 --> 00:02:03,459
this is an example of the ultimate

51
00:02:07,279 --> 00:02:05,500
engineering design challenge and at the

52
00:02:10,559 --> 00:02:07,289
heart of any engineering challenge is

53
00:02:12,540 --> 00:02:10,569
solving a problem NASA established an

54
00:02:14,369 --> 00:02:12,550
end goal and the criteria that it would

55
00:02:16,650 --> 00:02:14,379
use to evaluate the ideas and concepts

56
00:02:17,970 --> 00:02:16,660
that were submitted from there it's up

57
00:02:20,100 --> 00:02:17,980
to the commercial companies to prove

58
00:02:21,360 --> 00:02:20,110
they had a realistic and achievable path

59
00:02:23,220 --> 00:02:21,370
to success

60
00:02:24,930 --> 00:02:23,230
we knew there would be iterations of

61
00:02:27,360 --> 00:02:24,940
design and iterations of construction

62
00:02:28,790 --> 00:02:27,370
that's engineering and those iterations

63
00:02:31,640 --> 00:02:28,800

will ultimately lead us back to

64
00:02:33,990 --> 00:02:31,650
american-based crew launch capabilities

65
00:02:36,330 --> 00:02:34,000
let's go find out more about our

66
00:02:37,979 --> 00:02:36,340
destination we've now traveled about a

67
00:02:40,320 --> 00:02:37,989
thousand miles west of the Kennedy Space

68
00:02:42,809 --> 00:02:40,330
Center to NASA's Johnson Space Center in

69
00:02:45,300 --> 00:02:42,819
Houston Texas this is the white flight

70
00:02:47,640 --> 00:02:45,310
control room this is one of several

71
00:02:48,900 --> 00:02:47,650
control rooms that we use here to

72
00:02:50,910 --> 00:02:48,910
interact with the astronauts while

73
00:02:52,320 --> 00:02:50,920
they're in space whenever we have people

74
00:02:55,020 --> 00:02:52,330
up there they need our help and support

75
00:02:56,550 --> 00:02:55,030
from down here and we've been providing

76
00:02:59,580 --> 00:02:56,560
that support from this building for more

77
00:03:01,710 --> 00:02:59,590
than 50 years the International Space

78
00:03:04,170 --> 00:03:01,720
Station is a platform for improving life

79
00:03:06,330 --> 00:03:04,180
here on earth astronauts on board are

80
00:03:07,619 --> 00:03:06,340
conducting research to better understand

81
00:03:09,869 --> 00:03:07,629
human health and how to deal with

82
00:03:12,089 --> 00:03:09,879
diseases more effectively they're also

83
00:03:14,400 --> 00:03:12,099
mapping out the earth to aid in disaster

84
00:03:16,949 --> 00:03:14,410
response they're improving physical

85
00:03:19,369 --> 00:03:16,959
processes for manufacturing and they're

86
00:03:22,140 --> 00:03:19,379
demonstrating future space technology

87
00:03:23,330 --> 00:03:22,150
since 2011 we've relied on our

88
00:03:25,099 --> 00:03:23,340

partnership with Russia for

89
00:03:27,930 --> 00:03:25,109
transportation to the space station

90
00:03:30,780 --> 00:03:27,940
we've been able to procure seats for our

91
00:03:32,759 --> 00:03:30,790
astronauts aboard the Soyuz rocket we're

92
00:03:34,170 --> 00:03:32,769
so grateful for that partnership but we

93
00:03:37,710 --> 00:03:34,180
really like to pour those same resources

94
00:03:40,229 --> 00:03:37,720
into the US economy and diversify the

95
00:03:43,349 --> 00:03:40,239
global capability of getting astronauts

96
00:03:45,210 --> 00:03:43,359
humans to space eight US companies join

97
00:03:47,490 --> 00:03:45,220
NASA's Commercial Crew program effort in

98
00:03:50,129 --> 00:03:47,500
the early phases of development as they

99
00:03:53,670 --> 00:03:50,139
design subsystems like breathing systems

100
00:03:55,470 --> 00:03:53,680
spacecraft and rockets in 2012 NASA

101
00:03:57,750 --> 00:03:55,480
selected three companies to refine

102
00:03:59,550 --> 00:03:57,760
integrated systems to launch astronauts

103
00:04:01,620 --> 00:03:59,560
to low-earth orbit this includes

104
00:04:04,170 --> 00:04:01,630
spacecraft rockets and the ground

105
00:04:06,780 --> 00:04:04,180
support systems needed ultimately NASA

106
00:04:07,500 --> 00:04:06,790
selected Boeing and SpaceX in September

107
00:04:09,180 --> 00:04:07,510
2014

108
00:04:10,680 --> 00:04:09,190
for the final development and

109
00:04:13,830 --> 00:04:10,690
certification contract to launch

110
00:04:15,569 --> 00:04:13,840
astronauts a lot of that hard work is

111
00:04:18,180 --> 00:04:15,579
put in in places just like this

112
00:04:19,589 --> 00:04:18,190
this is Michelle greens office she's the

113
00:04:21,180 --> 00:04:19,599

lead for policy planning and strategic

114
00:04:23,520 --> 00:04:21,190
communication for the Commercial Crew

115
00:04:25,320 --> 00:04:23,530
program again this isn't a fancy place

116
00:04:27,990 --> 00:04:25,330
but it's places like this where

117
00:04:30,180 --> 00:04:28,000
excellence happens from communication to

118
00:04:32,610 --> 00:04:30,190
business functions to engineering to

119
00:04:34,800 --> 00:04:32,620
mission integration every detail must be

120
00:04:36,000 --> 00:04:34,810
meticulously accounted for

121
00:04:38,070 --> 00:04:36,010
when we get to launch rockets our

122
00:04:40,140 --> 00:04:38,080
payoffs four years of hard work put in

123
00:04:42,480 --> 00:04:40,150
right here from those final three

124
00:04:44,520 --> 00:04:42,490
companies we announced in late 2014 that

125
00:04:46,340 --> 00:04:44,530
Boeing and SpaceX would be the official

126
00:04:48,450 --> 00:04:46,350
partners of the Commercial Crew program

127
00:04:50,580 --> 00:04:48,460
we're also providing some unfunded

128
00:04:52,680 --> 00:04:50,590
assistance to Sierra Nevada and Blue

129
00:04:55,350 --> 00:04:52,690
Origin as they continue to develop their

130
00:04:56,970 --> 00:04:55,360
human spaceflight capability after that

131
00:04:58,580 --> 00:04:56,980
announcement was made we've been able to

132
00:05:01,560 --> 00:04:58,590
work side by side with Boeing and SpaceX

133
00:05:03,780 --> 00:05:01,570
as we help them develop their rockets

134
00:05:05,840 --> 00:05:03,790
and spacecraft to be able to fly

135
00:05:08,040 --> 00:05:05,850
astronauts to low-earth orbit safely

136
00:05:10,080 --> 00:05:08,050
we've assigned astronauts to be onboard

137
00:05:11,129 --> 00:05:10,090
those first few missions and the process

138
00:05:14,550 --> 00:05:11,139

of testing is ongoing

139
00:05:16,440 --> 00:05:14,560
everything from parachutes to recovering

140
00:05:18,300 --> 00:05:16,450
capsules to launch abort systems

141
00:05:20,190 --> 00:05:18,310
mechanisms to actually attach to the

142
00:05:21,750 --> 00:05:20,200
international space station how to get

143
00:05:23,909 --> 00:05:21,760
an astronaut into and out of a

144
00:05:25,320 --> 00:05:23,919
spacecraft and all their gear the actual

145
00:05:27,270 --> 00:05:25,330
spacesuits that they'll wear designing

146
00:05:29,550 --> 00:05:27,280
and developing those and so much more

147
00:05:31,860 --> 00:05:29,560
our collaborations have continued to

148
00:05:33,270 --> 00:05:31,870
grow and expand and we're able to

149
00:05:35,310 --> 00:05:33,280
celebrate each other's triumphs and

150
00:05:36,180 --> 00:05:35,320
victories we're also able to be there to

151
00:05:38,810 --> 00:05:36,190
support each other when there are

152
00:05:41,490 --> 00:05:38,820
challenges these long years of

153
00:05:42,960 --> 00:05:41,500
exhaustion have been overwhelming but

154
00:05:44,760 --> 00:05:42,970
we've really been able to rise above

155
00:05:47,070 --> 00:05:44,770
that and rise to the level that's needed

156
00:05:48,960 --> 00:05:47,080
to succeed that's the legacy of NASA

157
00:05:51,060 --> 00:05:48,970
that we continue to strive for every

158
00:05:53,570 --> 00:05:51,070
single day we don't do these things

159
00:05:55,920 --> 00:05:53,580
because they're easy but it's worth it

160
00:05:57,210 --> 00:05:55,930
that's all for today this tour

161
00:05:58,920 --> 00:05:57,220
overviewing the Commercial Crew program

162
00:06:01,279 --> 00:05:58,930
we look forward to having you out next

163
00:06:04,170 --> 00:06:01,289

time as we prepare to launch America

164
00:06:06,480 --> 00:06:04,180
hello I'm Cathy leaders Commercial Crew