1
00:00:00,920 --> 00:00:03,030
George Diller/NASA Public Affairs: To a space shuttle commander returning with

2
00:00:04,010 --> 00:00:05,883
a crew from orbit, the sight is unmistakable: three miles of straight, smooth concrete

3
00:00:07,870 --> 00:00:13,003
running northwest to southeast on the swampy shores of a triangular island on

4
00:00:13,720 --> 00:00:14,620
Florida's Atlantic Coast. It is NASA's Shuttle Landing Facility, a welcoming expanse

5
00:00:18,420 --> 00:00:18,996
that marked the finish line for space shuttle missions beginning in 1984.

6
00:00:22,710 --> 00:00:24,776
Landing Commentator: Touchdown.

7
00:00:25,380 --> 00:00:26,380
(Cheers)

8
00:00:27,300 --> 00:00:29,499
Stephen Frick/STS-122 Commander: It's a very different experience. I mean, the

9
00:00:29,500 --> 00:00:32,343
shuttle's coming in as a glider, so we're very interested after we do our deorbit burn

10
00:00:32,390 --> 00:00:34,446
on the other side of the world, basically, of tracking our progress very carefully

11
00:00:35,800 --> 00:00:36,136
across the Pacific and then across Mexico and the Caribbean as we come into the

12
00:00:40,730 --> 00:00:41,530
Kennedy Space Center. And then once you get close to the Kennedy Space Center,

13
00:00:45,130 --> 00:00:45,223

coming in on that steep dive, lining up with the runway and getting it touched down

14
00:00:50,570 --> 00:00:55,170
much faster than an airliner or even a tactical jet would touch down.

15
00:00:57,740 --> 00:01:00,393
George Diller/NASA Public Affairs: The largest and smallest airplanes of the day

16
00:01:00,420 --> 00:01:01,863
have used the runway for takeoffs and landings, but it was built for a winged craft in

17
00:01:04,710 --> 00:01:04,880
particular, one returning from space. That craft would become NASA's space
shuttles.

18
00:01:10,140 --> 00:01:12,773
Larry Parker/Air Traffic Controller: When they built this particular runway, the orbiter hadn't

19
00:01:13,840 --> 00:01:14,346
been designed, it was still a concept, so they went about making the absolute best all-weather

20
00:01:19,600 --> 00:01:21,400
runway they possibly could.

21
00:01:21,810 --> 00:01:23,899
George Diller/NASA Public Affairs: At about 15,000 feet long and three hundred feet

22
00:01:23,900 --> 00:01:30,166
across, the Shuttle Landing Facility is among the longest runways ever built. It's also one of

23
00:01:30,230 --> 00:01:34,496
the strongest, thanks to concrete 16 inches thick in the center.

24
00:01:34,660 --> 00:01:37,319
Ken Hooks/Air Traffic Controller: Anything can land here, any aircraft, any weight class

25
00:01:37,320 --> 00:01:38,520
can land out here.

26
00:01:39,170 --> 00:01:40,953
George Diller/NASA Public Affairs: NASA began construction on the runway in April 1974

27
00:01:43,120 --> 00:01:44,320
about two miles northeast of the Vehicle Assembly Building, carving and shaping the strip out

28
00:01:48,120 --> 00:01:53,120
of the swamplands. The Shuttle Landing Facility opened to aircraft in 1976.

29
00:01:54,170 --> 00:01:57,239
Larry Parker/Air Traffic Controller: Yeah, you can see it for a long, long way. In fact, we've

30
00:01:57,240 --> 00:02:00,136
got pictures you can actually see this runway from space without too much problem on a nice

31
00:02:00,410 --> 00:02:01,410
clear day.

32
00:02:01,880 --> 00:02:02,676
George Diller/NASA Public Affairs: A space shuttle returns from orbit as a glider, so

33
00:02:06,750 --> 00:02:08,529
astronauts only get one chance to land the spacecraft.

34
00:02:08,530 --> 00:02:10,899
Ken Hooks/Air Traffic Controller: I had an opportunity to fly with the, what they call the

35
00:02:10,900 --> 00:02:13,829
Shuttle Training Aircraft, which goes up and makes practice approaches for the astronauts to

36
00:02:13,830 --> 00:02:20,163
train. And I had an opportunity to go up into that and actually make a dive as you would in the

37
00:02:20,650 --> 00:02:26,783
orbiter. And it's a normal aircraft is 3 degrees, we were doing anywhere from 19 to about 22

38

00:02:27,080 --> 00:02:27,386
degrees. So, it's just almost like a rock falling at the ground.

39
00:02:31,040 --> 00:02:33,716
George Diller/NASA Public Affairs: That's one reason the shuttle's runway was built with

40
00:02:34,230 --> 00:02:34,863
plenty of room to spare. Another is that the shuttle touches down much faster than an airliner.

41
00:02:39,930 --> 00:02:45,996
Shuttle wheels typically hit the runway at about 230 mph, compared to an airliner's landing

42
00:02:46,470 --> 00:02:48,003
velocity of around 150.

43
00:02:48,750 --> 00:02:51,083
James P. Dutton Jr./STS-131 Pilot: Well, yeah, it's a large aircraft, and so I sort of expected

44
00:02:52,750 --> 00:02:53,023
it would be a little bit more sluggish. And, you know, in rule, the STA is a little bit more sluggish

45
00:02:59,210 --> 00:03:00,996
than the actual vehicle was. So, when I took control, I actually got to make a few inputs. The

46
00:03:03,690 --> 00:03:04,446
nose needed to come up a little bit and rolled in a little bit, and during all those inputs, it felt

47
00:03:09,600 --> 00:03:11,293
more like a fighter than a heavy airplane. So, the controls are very responsive in the shuttle.

48
00:03:14,240 --> 00:03:15,303
Landing Commentator: Main gear touchdown.

49
00:03:15,910 --> 00:03:18,523
George Diller/NASA Public Affairs: To the people who watch over a shuttle's return,

50
00:03:18,830 --> 00:03:19,656
there's simply nothing like it.

51
00:03:20,070 --> 00:03:20,863
Larry Parker/Air Traffic Controller: It's surprising how steep and how fast it's moving.

52
00:03:25,210 --> 00:03:25,350
You're used to looking at airplanes that are approaching at typically 120, 140 knots for a

53
00:03:31,070 --> 00:03:31,416
typical jet with a touchdown around 90. The orbiter's coming down on final at about 300 knots,

54
00:03:36,990 --> 00:03:37,166
about 18,000 feet a minute rate of descent and he's crossing the threshold at about 200 knots.

55
00:03:43,080 --> 00:03:45,413
So, it happens really, really fast.

56
00:03:45,530 --> 00:03:47,176
George Diller/NASA Public Affairs: On days when there is not a space shuttle returning, the

57
00:03:49,950 --> 00:03:52,143
airfield, or spaceport, is obviously not as busy, but there seems to always be something going on.

58
00:03:54,290 --> 00:03:57,006
Larry Parker/Air Traffic Controller: Well, obviously we're not as busy as most other

59
00:03:57,240 --> 00:03:58,323
airfields. You know, we're not Chicago-O'Hare out here, but we do things that are totally

60
00:04:02,090 --> 00:04:08,623
unique in the air traffic control field. You don't work shuttle trainers at a normal airport, some

61
00:04:09,400 --> 00:04:11,366
of the experimental things that we've done, the research and development things, are pretty

62
00:04:13,500 --> 00:04:15,100
unique to this facility.

63

00:04:15,610 --> 00:04:17,819
George Diller/NASA Public Affairs: The runway at Kennedy has hosted renowned

64
00:04:17,820 --> 00:04:17,876
aeronautic explorers, including Steve Fossett and his "GlobalFlyer." Fossett took off from the

65
00:04:24,030 --> 00:04:24,783
Shuttle Landing Facility in February 2006 and completed a record-breaking solo flight around

66
00:04:29,410 --> 00:04:35,676
the world and across the Atlantic a second time. Exotic aircraft are not strangers to the ramp

67
00:04:35,850 --> 00:04:39,183
at Kennedy. Nor are strange aircraft combinations.

68
00:04:40,940 --> 00:04:43,856
Ken Hooks/Air Traffic Controller: The 747 with the orbiter is really impressive to me. It's

69
00:04:44,090 --> 00:04:44,586
almost more impressive to watch that land than to watch a launch because an aircraft like that

70
00:04:49,860 --> 00:04:50,806
carrying another aircraft can fly. That's amazing. When you look at the size of that, you just

71
00:04:55,180 --> 00:04:55,896
wonder how in the world that thing can get off the ground.

72
00:04:58,330 --> 00:05:00,296
George Diller/NASA Public Affairs: The runway also is used by vehicles without wings.

73
00:05:02,030 --> 00:05:04,729
Larry Parker/Air Traffic Controller: So, it makes a great testbed for things like NASCAR

74
00:05:04,730 --> 00:05:08,463
who have been out here doing some straight line testing.

75
00:05:11,310 --> 00:05:13,546
Dan Olson/Aerodynamics Engineer: It's really been a nice facility so far for us to use. It's a

76
00:05:15,340 --> 00:05:16,333
very flat surface that works very well for us. The data that we're getting is very good. Not

77
00:05:20,480 --> 00:05:23,480
bumpy like a lot of the tracks we're used to.

78
00:05:29,770 --> 00:05:32,603
George Diller/NASA Public Affairs: For the air traffic controllers at NASA's Shuttle Landing

79
00:05:33,070 --> 00:05:33,306
Facility, the opportunity is one-of-a-kind.

80
00:05:35,700 --> 00:05:36,936
Ken Hooks/Air Traffic Controller: I remember looking across the river, they were getting

81
00:05:40,330 --> 00:05:42,159
ready for a moon shot. And I remember looking over there, thinking about that, never

82
00:05:42,160 --> 00:05:47,560
dreaming that I'd end up working right here and being part of this space program.

83
00:05:47,890 --> 00:05:51,053
Larry Parker/Air Traffic Controller: That was really exciting, the first time you get to see a

84
00:05:51,060 --> 00:05:57,193
shuttle land, and it's something you never really get used to. It never becomes mundane, and

85
00:05:57,670 --> 00:06:03,270
you know, it's always an exciting thing whether it's a day landing, a night landing.

86
00:06:04,120 --> 00:06:07,163
George Diller/NASA Public Affairs: The shuttle's retirement will not end the Shuttle Landing

87
00:06:07,210 --> 00:06:07,903
Facility's career. The runway is already hosting space tourism and research firms conducting