



17  
21  
15  
02  
22  
1

1

00:00:00,470 --> 00:00:03,460

\h Mike Curie/STS-133 Launch Commentator: 2, 1,

2

00:00:03,460 --> 00:00:05,310

\h booster ignition.

3

00:00:05,310 --> 00:00:08,460

\h And the final liftoff of Discovery!

4

00:00:08,460 --> 00:00:11,610

\h Perhaps one of the most impressive images is that of a space shuttle

5

00:00:11,610 --> 00:00:16,090

\h lifting off the launch pad, riding plumes of bright orange flames.

6

00:00:16,090 --> 00:00:20,680

\h But more than just providing an impressive sight, shuttle images play a critical role

7

00:00:20,680 --> 00:00:22,680

\h in launch safety.

8

00:00:22,680 --> 00:00:27,270

\h Each successful launch depends heavily on still and video images that allow the launch

9

00:00:27,270 --> 00:00:32,850

\h team to closely scrutinize the spacecraft both before and during liftoff.

10

00:00:32,850 --> 00:00:37,010

\h Long before the main engines fire and the solid rocket boosters ignite,

11

00:00:37,010 --> 00:00:41,610

\h the entire shuttle stack has been thoroughly photographed and continually monitored

12

00:00:41,610 --> 00:00:45,690

\h by TV cameras as the countdown clock ticks down.

13

00:00:45,690 --> 00:00:49,120

\h Members of a group called the Final Inspection Team play a key role,

14

00:00:49,120 --> 00:00:53,340

\h providing the imagery directly from the launch pad and analysis from the

15

00:00:53,340 --> 00:00:55,860

\h Launch Control Center.

16

00:00:55,860 --> 00:00:59,060

\h Tom Ford, NASA Team Lead: "The images we take on the Final Inspection Team

17

00:00:59,060 --> 00:01:03,230

\h are sent back to the LCC. When we give the report to the Mission Management Team,

18

00:01:03,230 --> 00:01:08,640

\h and to the launch director, to the SPE, they can look at our imagery,

19

00:01:08,640 --> 00:01:11,900

\h and in particular the ones we single out and tell them that we know

20

00:01:11,900 --> 00:01:15,800

\h there is a problem here, they can do analysis of their own on those images."

21

00:01:15,800 --> 00:01:19,800

\h The team members can identify and photograph problems that might go undetected

22

00:01:19,800 --> 00:01:22,490

\h without their on-the-spot inspection.

23

00:01:22,490 --> 00:01:26,190

\h But the launch director and his team aren't limited to just images from the

24

00:01:26,190 --> 00:01:27,950

\h inspection team.

25

00:01:27,950 --> 00:01:31,270

\h Ivan Bush, Engineer United Space Alliance: "In the LCC we have the ice-frost console

26

00:01:31,270 --> 00:01:36,750

\h and we continuously monitor upward to 135 different camera locations.

27

00:01:36,750 --> 00:01:42,310

\h Those assets are controlled by NASA and other contractors, some as far as,

28

00:01:42,310 --> 00:01:48,150

\h I believe, close to 20 miles south and 20 miles north of the launch complex.

29

00:01:48,150 --> 00:01:54,090

\h Some of these assets are basically large telescopes and they are able to film the orbiter

30

00:01:54,090 --> 00:01:57,660

\h several minutes into its flight profile. We also have,

31

00:01:57,660 --> 00:02:01,520

\h I want to say, about 60 cameras within the actual perimeter of the launch pad.

32

00:02:01,520 --> 00:02:05,130

\h Some of the various assets some are infrared, some are HD,

33

00:02:05,130 --> 00:02:08,490

\h some are standard, some are at higher and slower speed.

34

00:02:08,490 --> 00:02:12,360

\h A lot of them are at about 400 frames per second so we can catch a very,

35

00:02:12,360 --> 00:02:17,590

\h very slow behavioral aspect of each vehicle component, because some components we

36

00:02:17,590 --> 00:02:20,860

\h want to watch how they work the moment they are supposed to go to work.

37

00:02:20,860 --> 00:02:24,310

\h And we'll see them frame-by-frame we watch them frame-by-frame."

38

00:02:24,310 --> 00:02:28,630

\h So as the final space shuttle pierces the sky over NASA's Kennedy Space Center