1
00:00:01,630 --> 00:00:05,240
NARRATOR: One of the most recognizable landmarks at Kennedy Space Center is

2
00:00:05,240 --> 00:00:09,420
the giant digital display clock located near the News Center.

3
00:00:09,420 --> 00:00:13,380
The clock was specially made to mark the time to liftoff.

4
00:00:13,380 --> 00:00:16,570
This clock and the American flag are positioned so that

5
00:00:16,570 --> 00:00:20,590
they are featured in every broadcast of a space shuttle launch.

6
00:00:20,590 --> 00:00:23,710
The countdown clock and other clocks around the center,

7
00:00:23,710 --> 00:00:26,720
including those in the Launch Control Center Firing Rooms,

8
00:00:26,720 --> 00:00:30,550
precisely count down the days, hours, minutes and seconds

9
00:00:30,550 --> 00:00:34,570
leading up to and after spectacular shuttle liftoffs.

10
00:00:34,570 --> 00:00:36,260
Steve Payne, NASA Test Director: For a shuttle launch the

11
00:00:36,260 --> 00:00:39,740
countdown clock timing is absolutely critical.

12
00:00:39,740 --> 00:00:43,360
We are in effect trying to hit an orbiting space station

13
00:00:43,360 --> 00:00:48,310

that is traveling at some 17,500 miles an hour with a space vehicle.

14
00:00:48,310 --> 00:00:51,020
We time the launch countdown to the second.

15
00:00:51,020 --> 00:00:54,440
The times that are provided to us by Houston flight and

16
00:00:54,440 --> 00:00:56,830
by the flight dynamics folks are down to the second,

17
00:00:56,830 --> 00:00:59,590
and that's exactly where we try to get it.

18
00:00:59,590 --> 00:01:02,470
NARRATOR: The clocks are maintained and exactly set by

19
00:01:02,470 --> 00:01:06,320
QinetiQ's Timing and Imaging Technical Support Group.

20
00:01:06,320 --> 00:01:09,120
The group is located in the Launch Control Center,

21
00:01:09,120 --> 00:01:13,540
in a room that dates back to the era of Apollo rocket launches.

22
00:01:13,540 --> 00:01:19,630
During launch countdown and preflight tests, the timing room is manned 24/7.

23
00:01:19,630 --> 00:01:24,030
The group, led by Robert Wright, who is the lead electronic technician,

24
00:01:24,030 --> 00:01:27,880
sets and monitors several panels of timer controls.

25
00:01:27,880 --> 00:01:32,290
Above the panels are digital clocks that display various times,

26
00:01:32,290 --> 00:01:35,650
including the launch window remaining, hold time remaining,

27
00:01:35,650 --> 00:01:40,390
the countdown clock time and Greenwich Mean Time, or GMT time.

28
00:01:40,390 --> 00:01:44,190
The Timing Group receives the countdown and count hold signals

29
00:01:44,190 --> 00:01:47,240
from the Launch Processing System in the firing room and

30
00:01:47,240 --> 00:01:51,330
redistributes the signals to various users including the Firing Rooms,

31
00:01:51,330 --> 00:01:56,210
Launch Complex 39, and the Vehicle Assembly Building, among others.

32
00:01:56,210 --> 00:02:02,740
Even the Eastern Range, and all off-site NASA Centers requiring the countdown receive the signals.

33
00:02:02,740 --> 00:02:04,450
Steve Payne, NASA Test Director: There's a triple check on the time to

34
00:02:04,450 --> 00:02:08,260
make sure that everything is just so and we hit it exactly where we should.

35
00:02:08,260 --> 00:02:11,320
NARRATOR: Timing signals also are sent to a predetermined number

36
00:02:11,320 --> 00:02:13,980
of universal camera sites located near and around the

37
00:02:13,980 --> 00:02:19,630
launch pads and the Banana Creek viewing site near the Saturn V center

38
00:02:19,630 --> 00:02:20,460

Steve Payne, NASA Test Director: For the public,

39
00:02:20,460 --> 00:02:22,500
that's how they get the cue that it's about to happen.

40
00:02:22,500 --> 00:02:27,790
There's a lot of expectation. And a lot of status going along the way.

41
00:02:27,790 --> 00:02:30,430
And the countdown clock will count, and it'll hold,