The original Mission Control Center at the Johnson Space Center in Houston, Texas, was used from 1964 to 1998 and is now on the National Register of Historic Places. In this photograph from August 1965, flight controllers monitor the Gemini 5 mission. Photo courtesy NASA

Inside the Launch Control Center at the Kennedy Space Center, all eyes are riveted on the luminous trail of the Space Shuttle Columbia as it lifts off from Launch Pad 39A in February 1990. Photo courtesy NASA

Most of us are familiar with the final five-second countdown just before a Space Shuttle lifts off from Florida’s Kennedy Space Center. What we may not know, however, is that the actual countdown starts forty hours earlier at Kennedy’s Launch Control Center, where computers automatically monitor most assembly, checkout, and launch procedures, and NASA engineers oversee the operation.

Seven seconds after liftoff, when the Shuttle clears the service tower on the launch pad, command shifts immediately to the Mission Control Center at the Johnson Space Center in Texas, often known simply as “Houston.” In this facility, roughly thirty flight controllers constantly monitor the crew’s activities and the spacecraft’s systems, helping to ensure that all operations proceed as planned.

The Mission Control Center remains ever vigilant until the Shuttle orbiter rolls to a stop, typically on the Kennedy’s paved Shuttle Landing Facility—15,000 feet long and 300 feet wide. At that point, the Kennedy Space Center once again assumes control.