After shuttle lands, Mission Control to go quiet

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This Thursday, June 23, 2011 picture shows Kwatsi Alibaruho, the lead space shuttle flight director, in NASA's shuttle Mission Control center at Johnson Space Center in Houston. Everything astronauts do from not long after launch _ waking up, eating, and walking in space _ is choreographed by flight controllers in Mission Control. (AP Photo/Pat Sullivan)

(AP) -- In the geeky world of space engineering, this large, high-ceilinged room is close to holy. Inside, people speak in hushed tones and observe time-honored traditions.

The place is Mission Control. Beginning moments after launch, flight controllers here choreograph everything astronauts do, from waking up and eating to walking in space.

"That building, we think of it as a cathedral of spaceflight," said John McCullough, head of NASA's flight director office. Flight controllers are "the keepers and enforcers of traditions" that date back to the Mercury, Gemini and Apollo days.

"You just feel the ghosts when you are in that room," McCullough said.

When Atlantis lands Thursday, the famous room will seem even more ghostly. After 30 years and 135 missions, shuttles will no longer need controlling. NASA plans to turn the space into a training venue, mostly for astronauts going to the International Space Station and flight controllers working with the station.

Over the next couple of months, 800 or 900 people in the mission operations division will be laid off, said Paul Hill, head of that division and a former flight director himself.

"As proud as we are of our success ... I have to keep that in perspective with the 90 percent of the workforce that will no longer be part of that effort," Hill said.

Kwatsi Alibaruho, flight director for this final mission, said the specter of so many flight controllers without jobs is "kind of following us through the halls."

Laura Slovey, a 29-year-old flight controller for contractor United Space Alliance, worked Atlantis' launch and will handle mechanical issues for landing. She got her pink slip, but then it was retracted. Once Atlantis lands, instead of trying to solve last-minute problems like a stuck shuttle hatch, she'll be working on a new docking system for the space station.

Some of Slovey's colleagues also will move to Mission Control for the space station, which operates in a separate room in the same building.

It's a slower pace than controlling the highly choreographed shuttle missions.

The original Mission Control of the Apollo era with its bulky green computer terminals is in another part of the building and is a national historic landmark. The current Mission Control is a special shuttle-oriented control room built 16 years ago to supervise the last 65 missions. When it was unveiled, with its dark blue consoles, giant wall-sized video screen in front and fake ferns in the back, it was lauded for its modern "Star Trek" look.

It is the center of the space world.

"We make the decisions. We make the missions happen," Alibaruho said. "This is a special room."

John Muratore, a former flight controller instrumental in designing the room, laughed when asked about the church-like feel.

"It's not different than a surgical operating room or the command deck of an aircraft carrier," said Muratore, now a professor at the University of Tennessee. "When you take people's lives in your hands, it's a serious business. It's a serious responsibility. And we do it in full public view."

And it's not just anyone's lives. The astronauts are friends with the flight controllers. They socialize. Their kids go to the same schools. Several astronauts used to be flight controllers. And when something goes wrong, as it did with Columbia in 2003 and Challenger in 1986, it's personal.

One of the most searing images from the Columbia tragedy is of landing flight director LeRoy Cain with his head in his hands in Mission Control as he tried to contain his emotions and give orders to his staff.

Alibaruho said: "Every time I walk into this room, I see his face on that day ... as a reminder of how vigilant we have to remain."

Because of that, "it lends itself to being a very solemn place," Muratore said. "You feel the weight of history."

The high priest of Mission Control is Chris Kraft. He created it back in the Mercury days when it was run from Florida. He brought it to Houston in 1965 and hand-picked the people who succeeded him, such as Gene Kranz of Apollo 13 fame.

Early in the space shuttle era, Kraft retired. But he never really left. At age 87, he still talks regularly to everyone from flight controllers to NASA chief Charles Bolden. And on the outside of that building that houses Mission Control, this is what you see from blocks away: Christopher C. Kraft Jr. Mission Control Center.

Yet Kraft has never seen a shuttle launch in person at Cape Canaveral, nor has Alibaruho. Kraft has always been in the control room in Houston.

"It's where the heart of the mission is. It's where decisions are made every day, small and large. Therefore, it's a place where things happen," Kraft told The Associated Press. "Everybody drives by that area. Nobody but people like us realize what's going on in there."

In the Kraft era, the flight controllers were mostly white men in white shirts with cigarettes dangling from their lips. Now Mission Control is as diverse as America - Alibaruho is the agency's first African-American flight director. Smoking was banned in the 1980s because it damaged the computers - reasoning that made it easier for some controllers to accept, Muratore said.

Slovey, who was born after the first shuttle launch, said she has never felt any sense of male clubbiness in this room. More than anything, she said, it's a sense of hyper-focus.

Working the Atlantis' launch, she stared at five computer monitors of data for mechanical systems. Later, she realized something: "I didn't even get to see the launch." She watched a television replay the day after.

During Atlantis' flight, a problem cropped up: a hatch stuck. Slovey was part of a team that convened inside a shuttle mock-up to improvise a solution. They used a pry bar, positioned a mirror and jimmied the latch underneath. It worked, and they had astronauts on Atlantis do the same.

The scene reminded her and others of the movie "Apollo 13."

There's a rhythm to the room. Because of communications satellites and other vagaries, controllers lose contact with the shuttle for a short period every 90 minutes. Veteran controllers use that time to handle the call of nature. After a while, their bodily functions are trained to the 90-minute cycle, some controllers said.

The most noticeable people in Mission Control are the flight director - the brains of the operation who makes the big split-second decisions - and the "capcom," who acts as the voice of Mission Control up to space.

The capcom - short for "capsule communicator" from the Mercury days - is always an astronaut. Jay Apt, who like many astronauts was a flight controller before he got accepted into the astronaut corps, often was the radio go-between in Mission Control. Capcoms are the crew's advocate in the control room, he said, trying to keep flight controllers from overloading them.

"The capcoms keep the tone right and they keep everything moving,"

Apt said.

The traditions of this room range from silly to deeply meaningful. When a shuttle is in flight, a big plastic jar of red-hot Atomic Fireball candies sits atop a console in the middle of the room. It's the job of the flight dynamics officer to make sure the red hots are always at the ready. Communications officers have to keep the coffee pot running. Flight controllers, who are allowed food in the office, bring in food for their colleagues in a tradition called the Food List.

Ever since the Challenger accident, Mark and Terry Shelton have sent a vase of roses to Mission Control. The two live in the Dallas area and have no job connection to the space program. But they like to show their appreciation by including a rose for each crew member plus a single white one to represent astronauts who died in past accidents.

This last bouquet included the note: "Thank you all for sharing it all - the glory and unspeakable pain - with a grateful nation, a grateful planet. Godspeed."

One of the most honored traditions happens at the end of each mission. The flight director chooses a most valuable player from the passel of flight controllers. That person gets to hang that shuttle mission's plaque on the wall. Except for being called "a steely-eyed missile man" it is about the best honor a flight controller can get.

Hill, the boss of the whole operation, is already thinking, even dreading, that moment.

"Imagine the final plaque hanging. There will be a lot of tears. Usually it's a lot of laughter," Hill said. "It'll be a somber event."

More information: NASA's Mission Control Center website:

http://1.usa.gov/nIHDuP