



1
00:00:00,930 --> 00:00:02,750
"Closeout crew is not special

2
00:00:02,750 --> 00:00:06,520
there's thousands of people out here that have thousands of jobs.

3
00:00:06,520 --> 00:00:09,140
You know, and each one's equally important.

4
00:00:09,140 --> 00:00:12,010
The only unique thing about us is we have the last hands

5
00:00:12,010 --> 00:00:15,570
on job before the bird flies."

6
00:00:15,570 --> 00:00:18,460
The Closeout Crew is the last to shake the gloved hands

7
00:00:18,460 --> 00:00:21,560
of space shuttle astronauts before they rocket into orbit from

8
00:00:21,560 --> 00:00:28,230
NASA's Kennedy Space Center in Florida.

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00:00:28,230 --> 00:00:33,040
"We close the vehicle out for flight, which means we take out anything

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00:00:33,040 --> 00:00:34,100
that doesn't fly.

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00:00:34,100 --> 00:00:36,700
We put in what needs to fly.

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00:00:36,700 --> 00:00:41,630
We put the astronauts in, strap them in, and we close the hatch for flight."

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00:00:41,630 --> 00:00:45,280

The team is made up of NASA and United Space Alliance workers

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00:00:45,280 --> 00:00:49,610

from Kennedy and the Johnson Space Center in Houston.

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00:00:49,610 --> 00:00:53,380

The Orbiter Closeout Crew Chief coordinates launch-day activities

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00:00:53,380 --> 00:00:56,800

and communicates with the Firing Room via radio.

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00:00:56,800 --> 00:01:00,170

He goes by the call sign "OVCC."

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00:01:00,170 --> 00:01:03,920

Two technicians are experts at the shuttle crew module's side hatch,

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00:01:03,920 --> 00:01:07,800

and two insertion technicians specialize in helping the astronauts strap

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00:01:07,800 --> 00:01:09,620

into their seats.

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00:01:09,620 --> 00:01:12,570

An additional astronaut joins the Closeout Crew as the prime

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00:01:12,570 --> 00:01:16,420

astronaut support person -- with the call sign "ASP."

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00:01:16,420 --> 00:01:20,190

A NASA Quality representative rounds out the team.

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00:01:20,190 --> 00:01:22,190

"Three tenths and three tens".

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00:01:22,190 --> 00:01:25,190

Twenty people are certified to work with the Closeout Crew

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00:01:25,190 --> 00:01:28,000

but only a few serve at a time.

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00:01:28,000 --> 00:01:30,890

"So on launch day we all come together to make one team.

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00:01:30,890 --> 00:01:35,210

That's only seven people out of 20 that would support a launch,

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00:01:35,210 --> 00:01:37,700

come up here as a prime team."

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00:01:37,700 --> 00:01:41,920

It all happens at the 195-foot level of the shuttle launch pad,

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00:01:41,920 --> 00:01:46,700

where the orbiter access arm leads to the climate-controlled White Room.

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00:01:46,700 --> 00:01:49,670

The Closeout Crew reports to the launch pad shortly after

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00:01:49,670 --> 00:01:54,860

the shuttle's external fuel tank is filled with propellant several hours before launch.

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00:01:54,860 --> 00:01:58,770

The team sets up its own rescue gear and takes care

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00:01:58,770 --> 00:02:01,440

of some pre-boarding housekeeping duties.

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00:02:01,440 --> 00:02:03,420

Then the astronauts arrive -- and suddenly,

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00:02:03,420 --> 00:02:06,370

the White Room gets a lot more crowded.

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00:02:06,370 --> 00:02:14,650

"Once the crew gets here, naturally, I can't put all six or seven in the ship at one time.

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00:02:14,650 --> 00:02:18,370

The countdown allows 50 minutes to get everyone strapped in,

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00:02:18,370 --> 00:02:20,570

with their gloves and helmets on.

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00:02:20,570 --> 00:02:23,460

The astronauts need help putting on their parachute harness

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00:02:23,460 --> 00:02:27,060

and communication gear before climbing aboard.

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00:02:27,060 --> 00:02:30,490

After a round of communication checks, anything not needed

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00:02:30,490 --> 00:02:34,040

for flight has to come out -- including the Closeout Crew.

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00:02:34,040 --> 00:02:38,040

"Alright we got a go to close the hatch".

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00:02:38,040 --> 00:02:43,020

"So we go to close the hatch, pressurize the cabin, do some last-minute things.

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00:02:43,020 --> 00:02:48,440

Takes us roughly an hour after we close the hatch to get out of here."

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00:02:48,440 --> 00:02:52,830

But before they go, the White Room must be partially taken apart so it can swing back

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00:02:52,830 --> 00:02:55,960

into position beside the shuttle if there's an emergency

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00:02:55,960 --> 00:02:59,180

even if the astronauts have already opened the hatch.

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00:02:59,180 --> 00:03:01,700

"You can see these billows behind me.

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00:03:01,700 --> 00:03:09,760

We deflate those. And this White Room has hinges, and so we would swing one door out,

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00:03:09,760 --> 00:03:12,710

swing this piece -- comes this way.

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00:03:12,710 --> 00:03:15,550

So there's a big, gaping hole right there."

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00:03:15,550 --> 00:03:18,500

When everything is cleaned up and strapped down,

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00:03:18,500 --> 00:03:23,560

it's time for the Closeout Crew to leave the astronauts alone at the launch pad.

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00:03:23,560 --> 00:03:27,240

They've got it down to a science -- but with so many tasks involving

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00:03:27,240 --> 00:03:29,980

so many pieces of shuttle and ground hardware,

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00:03:29,980 --> 00:03:33,040

things don't always go according to plan.

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00:03:33,040 --> 00:03:37,360

From burned-out light bulbs on cockpit switches to problems with the hatch,

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00:03:37,360 --> 00:03:41,500

the Closeout Crew has seen it all -- and had to fix it fast.

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00:03:41,500 --> 00:03:44,410

So they bring two boxes of tools to the White Room,

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00:03:44,410 --> 00:03:47,660

with even more in their truck down by the elevator.

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00:03:47,660 --> 00:03:49,580

"You know, you can't always think of everything,

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00:03:49,580 --> 00:03:52,400

but these guys are very good at improvising."

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00:03:52,400 --> 00:03:54,990

When the shuttle is fully loaded and ready to fly,

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00:03:54,990 --> 00:03:59,400

everyone in or near the vehicle is working in a hazardous area.

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00:03:59,400 --> 00:04:03,130

The Closeout Crew and the astronauts practice escaping the launch pad,

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00:04:03,130 --> 00:04:05,910

in case there's ever an emergency.

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00:04:05,910 --> 00:04:08,470

Everyone has to learn how to move from the White Room

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00:04:08,470 --> 00:04:11,720

to the slidewire baskets that would whisk them away from the pad,

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00:04:11,720 --> 00:04:13,790

down to a nearby bunker.

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00:04:13,790 --> 00:04:17,920

In an emergency, a series of overhead sprinklers -- called the Firex system

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00:04:17,920 --> 00:04:20,690

would activate, and lights would come on, showing everyone

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00:04:20,690 --> 00:04:23,920

on the 195-foot level the way out.

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00:04:23,920 --> 00:04:27,740

"So we have this painted yellow with black chevrons.

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00:04:27,740 --> 00:04:31,430

We call it the Yellow Brick Road. And that's because you basically can't see anything

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00:04:31,430 --> 00:04:32,560

but your feet.

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00:04:32,560 --> 00:04:38,130

So you follow the chevrons out to your primary egress route to the slidewire baskets."

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00:04:38,130 --> 00:04:42,080

One of the benefits to being part of the Closeout Crew is working closely

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00:04:42,080 --> 00:04:44,210

with the astronauts.

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00:04:44,210 --> 00:04:49,470

"It's a unique gift, I think, that we get to know them personally.

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00:04:49,470 --> 00:04:52,490

We get to shake their hand right before they go in.

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00:04:52,490 --> 00:04:57,960

Some of the astronauts on the Closeout Crew actually fly.

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00:04:57,960 --> 00:05:02,380

So you know, one time supporting a mission they'll be wearing a white uniform with us,

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00:05:02,380 --> 00:05:06,570

and the next time they'll be wearing an orange uniform, getting ready to fly themselves."

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00:05:06,570 --> 00:05:12,130

As the program draws to a close, many space shuttle team members are making the most

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00:05:12,130 --> 00:05:13,870

of the final flights.

89
00:05:13,870 --> 00:05:16,810
And of course, that includes the Closeout Crew.

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00:05:16,810 --> 00:05:20,610
"I'll probably just stand over there in the corner and soak it in,