1
00:00:00,000 --> 00:00:02,050
Christopher Hummel, Public Affairs Specialist:
Hello, welcome to the Kennedy Space Center.

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00:00:02,050 --> 00:00:06,980
This is the SSPF high bay. We're here to talk
to you about a very important milestone in

3
00:00:06,980 --> 00:00:08,109
the lifespan of

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00:00:08,109 --> 00:00:09,440
the International Space Station,

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00:00:09,440 --> 00:00:13,880
and with me I've got Center Director Bob Cabana
and the director of the Exploration,

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00:00:13,880 --> 00:00:17,390
Research and Technology Programs organization,
Josie Burnett.

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00:00:17,390 --> 00:00:21,949
And the first thing I'd like to really talk
to you two about is what it took to build,

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00:00:21,949 --> 00:00:26,640
and what it's taking us to maintain, an international,
orbiting laboratory in space.

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00:00:26,640 --> 00:00:32,940
Cabana: Wow. You know, I can remember -- I
think first off, to put it in perspective,

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00:00:32,940 --> 00:00:34,030
it was the KSC team

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00:00:34,030 --> 00:00:39,350
that put the ISS on orbit. And I remember

every module coming through this high bay.

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00:00:39,350 --> 00:00:40,180
And Josie,

13
00:00:40,180 --> 00:00:44,410
you were a part of it. And at one point we
had so much hardware in here, we couldn't

14
00:00:44,410 --> 00:00:45,329
even fit it all.

15
00:00:45,329 --> 00:00:49,410
We had to move stuff into the high bay in
the O&C (Operations and Checkout) Building.

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00:00:49,410 --> 00:00:54,300
They had solar arrays and truss structure
in there because they wouldn't all fit in

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00:00:54,300 --> 00:00:55,010
here.

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00:00:55,010 --> 00:01:01,300
And what an amazing job the team did, you
know, processing all that hardware and getting

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00:01:01,300 --> 00:01:02,739
it into space.

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00:01:02,739 --> 00:01:04,960
What are your thoughts on seeing all that
come through here?

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00:01:04,960 --> 00:01:09,450
Burnett: Boy, it was just an amazing time.
An amazing time in my career.

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00:01:09,450 --> 00:01:15,150

The way I like to look back on it and think
about it, assembling the International Space

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00:01:15,150 --> 00:01:16,100
Station was -- is

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00:01:16,100 --> 00:01:20,619
the greatest human achievement as it relates
to, like, a construction site. If you think

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00:01:20,619 --> 00:01:20,939
of it like

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00:01:20,939 --> 00:01:25,720
construction, think about the pyramids -- people
created the pyramids many, many years ago.

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00:01:25,720 --> 00:01:29,189
That was a huge accomplishment for the technology
that they had at the time.

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00:01:29,189 --> 00:01:36,840
For ISS, it was the pyramids on steroids.
We were assembling a piece of a living quarters

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00:01:36,840 --> 00:01:37,640
in microgravity,

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00:01:37,640 --> 00:01:43,490
in low-Earth orbit, and the last place all
of the U.S. elements saw on Earth was this

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00:01:43,490 --> 00:01:44,000
building.

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00:01:44,000 --> 00:01:49,770
The very last place that that hardware was
on the ground, available for everyone to see,

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00:01:49,770 --> 00:01:54,899
other than the crew that has seen it, was
here, in the SSPF. And what an amazing time.

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00:01:54,899 --> 00:01:58,930
Cabana: And not just the U.S. elements. Everything
but the Russian elements -- Kibo,

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00:01:58,930 --> 00:02:04,030
the Japanese laboratory; Columbus, the European
laboratory; Node 2 that was build by Alenia

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00:02:04,030 --> 00:02:05,460
in Italy;

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00:02:05,460 --> 00:02:08,239
the MPLMs (Multipurpose Logistics Modules),
which we have one here, Raffello, Leonardo

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00:02:08,239 --> 00:02:08,800
and

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00:02:08,800 --> 00:02:12,480
Donatello -- all that hardware flowed through
here before it went to space.

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00:02:12,480 --> 00:02:16,020
Burnett: Absolutely. And each element that
came through, each international partner element

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00:02:16,020 --> 00:02:16,140
that

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00:02:16,140 --> 00:02:19,910
came through, it was really kind of cool.
We gave them a little piece of space, a little

43
00:02:19,910 --> 00:02:20,540
spot here in the

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00:02:20,540 --> 00:02:26,040
SSPF high bay, and it became their sovereign
territory. They used whatever processes they

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00:02:26,040 --> 00:02:26,410
wanted to

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00:02:26,410 --> 00:02:31,349
use, and I do remember coming down here and
just taking a look at all the different hardware

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00:02:36,379 --> 00:02:31,510
and the

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00:02:36,379 --> 00:02:36,950
you spell

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00:02:36,950 --> 00:02:41,599
'wrench' in Japanese, right?" It was just
a really hopping place.

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00:02:41,599 --> 00:02:46,640
Hummel: Speaking of the construction of the
ISS, right, talking about the story of, I

51
00:02:46,640 --> 00:02:48,019
believe, STS-88, is

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00:02:48,019 --> 00:02:51,489
that correct? You've got a lights-on story,
a light switch story.

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00:02:51,489 --> 00:02:57,640
Cabana: Well the first thing we did was, Nancy
Currie was my arm operator, and she grabbed

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00:02:57,640 --> 00:02:58,120
Unity and

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00:02:58,120 --> 00:03:03,250
lifted it out of the payload bay, and she
had about an inch or less of clearance on

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00:03:03,250 --> 00:03:04,099
either side.

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00:03:04,099 --> 00:03:09,430
And I did not know you could move the arm
that slow. It was like watching grass grow,

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00:03:09,430 --> 00:03:10,790
but she was very,

59
00:03:10,790 --> 00:03:15,200
very precise. You know, we got it out of the
payload bay, attached it to the docking station,

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00:03:15,200 --> 00:03:15,680
and that set

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00:03:15,680 --> 00:03:20,790
us up for the rendezvous with Zarya. And so
we went through our whole rendezvous profile,

62
00:03:20,790 --> 00:03:21,080
flew it

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00:03:21,080 --> 00:03:25,930
down into the payload bay. Eventually we grabbed
Zarya, lifted it up and attached it to the

64
00:03:25,930 --> 00:03:27,299
other end of

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00:03:27,299 --> 00:03:34,170
the node to PMA 2, and at that point, we had
a space station. When it came time to actually

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00:03:34,170 --> 00:03:34,459
open the

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00:03:34,459 --> 00:03:39,349
hatch to go in, Jerry Ross was going through
all the procedures and I was up there with

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00:03:39,349 --> 00:03:40,409
him, and I said,

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00:03:40,409 --> 00:03:45,870
Sergei, come up here. And I grabbed Sergei
Krikalev, who was our Russian crewmate, and

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00:03:45,870 --> 00:03:46,909
if you watch

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00:03:46,909 --> 00:03:52,280
any video or pictures of us ingressing into
the space station, every hatch that we went

72
00:03:52,280 --> 00:03:52,860
through,

73
00:03:52,860 --> 00:03:57,590
Sergei and I went through side by side. Because
it was an international space station, and

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00:03:57,590 --> 00:03:58,330
I felt it really

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00:03:58,330 --> 00:04:05,950
important that we enter as an international
crew. But I will never, never forget that.

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00:04:05,950 --> 00:04:07,430
It was really special.

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00:04:07,430 --> 00:04:12,069
Hummel: What else is your team looking for
over the next couple of years? ISS is going

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00:04:12,069 --> 00:04:12,480
to be extended

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00:04:12,480 --> 00:04:15,480
through 2024, you're going to be busy for
some time. What are you looking at?

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00:04:15,480 --> 00:04:19,470
Burnett: The team that we have here at KSC,
we are continuing to resupply station.

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00:04:19,470 --> 00:04:26,110
We're flying spares. Not just spares but essentials
-- nitrogen, oxygen, eventually resupplying

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00:04:26,110 --> 00:04:26,570
the cooling

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00:04:26,570 --> 00:04:32,460
system -- so we're doing a lot of continuous
sustainment of the station. We're leading

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00:04:32,460 --> 00:04:33,530
the agency when

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00:04:33,530 --> 00:04:37,840
it comes to plant research. We're using space
station as a microbial observatory.

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00:04:37,840 --> 00:04:42,300
Hummel: What is the space station doing currently
to get us to Mars? And I'd really like to

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00:04:42,300 --> 00:04:42,550
hear what

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00:04:42,550 --> 00:04:42,900
you have to say.

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00:04:42,900 --> 00:04:50,540
Cabana: It is a stepping stone to exploration beyond planet Earth. As fantastic a scientific

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00:04:50,540 --> 00:04:51,680
laboratory as it

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00:04:51,680 --> 00:04:56,190
is, to me, one of the great purposes of the International Space Station is serving as

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00:04:56,190 --> 00:04:56,780
an engineering

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00:04:56,780 --> 00:05:03,180
testbed to prove those systems that we need for a long-duration space flight to Mars or

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00:05:03,180 --> 00:05:03,600
anywhere

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00:05:03,600 --> 00:05:07,410
beyond planet Earth. Right now with current propulsion technology, you're talking a year

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00:05:07,410 --> 00:05:07,840
and a half to

97
00:05:07,840 --> 00:05:12,160
two years to go to Mars and back. I think it's really neat that Scott Kelly's up there

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00:05:12,160 --> 00:05:13,110
right now on his one-

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00:05:13,110 --> 00:05:18,270
year mission, critical to our exploration
beyond planet Earth. The ultimate goal, of

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00:05:18,270 --> 00:05:19,100
course, is boots on

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00:05:19,100 --> 00:05:24,270
Mars. But we've got a lot that we need to
learn in order to be able to do that, and

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00:05:24,270 --> 00:05:24,960
I believe the

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00:05:24,960 --> 00:05:30,680
capability-based architecture that we are
developing with SLS, with Orion, eventually

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00:05:30,680 --> 00:05:31,530
leading to a hab

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00:05:31,530 --> 00:05:37,199
module, eventually leading to a lander, it
is the right architecture to allow us to explore