BOEING STARTS ASSEMBLY OF 1ST FLIGHTWORTHY STARLINER CREW TAXI VEHICLE AT KENNEDY SPACEPORT

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The next generation of America's human spaceships is rapidly taking shape at the Kennedy Space Center as Boeing and NASA showcased the start of assembly of the first flightworthy version of the aerospace giants Starliner crew taxi vehicle – that will ferry NASA astronauts to and from the International Space Station (ISS) by early 2018.

Boeing is rapidly making tangible progress towards once again flying Americans astronauts to space from American soil as was quite visibly demonstrated when the firm showed off their spanking new Starliner 'clean-floor factory' to the media last week, including Universe Today – and it's already humming with activity by simultaneously building two full scale Starliner crew vehicles.

Starliner is being manufactured in what is officially known as Boeing's Commercial Crew and Cargo Processing Facility (C3PF) at the Kennedy Space Center in Florida under contract with NASA's Commercial Crew Program (CCP).

Formerly known as Orbiter Processing Facility-3, or OPF-3, the facility was previously used as a servicing hanger to prepare NASA’s space shuttle orbiters for flight.

NASA-Boeing Mentor NASA, industry and news media representatives visit the modernized high bay in Bo

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The facility has now been completely renovated and refurbished by removing about 11,000 tons of massive steel work platforms that once enshrouded the space shuttle orbiters for servicing and refurbishment for flight – and been transformed into Boeings gleaming white C3PF Starliner manufacturing facility.

Components for the first Starliner that will actually fly in space – known as Spacecraft 1 – began arriving recently at the C3PF. These include the upper and lower domes, as well as the docking hatch for the spacecrafts pressure vessel.

The honeycombed upper dome of a Boeing Starliner spacecraft on a work stand inside the company’s Co

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Technicians are outfitting these individual components of the pressure vessel with wiring and lines, avionics and other systems, before they are bolted together.

Spacecraft 1 is actually the second Starliner being manufactured at the Kennedy Space Center.

The first full scale Starliner vehicle to be built is known as the Structural Test Article (STA) and is nearing completion.

The lower dome of the Boeing Starliner Spacecraft 1 assembly being outfitted with flight systems like wirin

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Notably Spacecraft 1 will be the first Starliner to fly in the company's pad abort test.

"The test is designed to prove the launch abort system planned for the spacecraft will be able to lift astronauts away from danger in the event of an emergency during launch operations," says NASA.

The Pad Abort test is currently slated for October 2017 in New Mexico. Boeing will fly an uncrewed orbital flight test in December 2017 and a crewed orbital flight test in February 2018.

Engineers bolted together the upper and lower domes of Boeings maiden Starliner crew module in early May to form the complete hull of the pressure vessel for the Structural Test Article (STA).

Altogether they are held together by 216 bolts. They have to line up perfectly. And the seals are checked to make sure there are no leaks, which could be deadly in space.

Boeing expects to finish fabricating the STA by August.

The completed Starliner STA will then be transported to Boeing's facility in Huntington Beach, California for a period of critical stress testing that verifies the capabilities and worthiness of the spacecraft.

"Boeing's testing facility in Huntington Beach, California has all the facilities to do the structural testing and apply loads. They are set up to test spacecraft," said Danom Buck, manager of Boeing's Manufacturing and Engineering team at KSC, during an interview in the C3PF.

"At Huntington Beach we will test for all of the load cases that the vehicle will fly in and land in – so all of the worst stressing cases."

"So we have predicted loads and will compare that to what we actually see in testing and see whether that matches what we predicted."

The Boeing CST 100 Starliner is one of two private astronaut capsules – along with the SpaceX Crew Dragon – being developed under a commercial partnership contract with NASA to end our sole reliance on Russia for crew launches back and forth to the International Space Station (ISS).

The goal of NASA's Commercial Crew Program (CCP) is to restore America's capability to launch American astronauts on American rockets from American soil to the ISS, as soon as possible.

Boeing was awarded a $4.2 Billion contract in September 2014 by NASA Administrator Charles Bolden to complete development and manufacture of the CST-100 Starliner space taxi under the agency's Commercial Crew Transportation Capability (CCtCap) program and NASA's Launch America initiative.

Since the retirement of NASA's space shuttle program in 2011, the US was been 100% dependent on the Russian Soyuz capsule for astronauts rides to the ISS at a cost exceeding $70 million per seat.

Starliners will launch to space atop the United Launch Alliance (ULA) Atlas V rocket from pad 41 on Cape Canaveral Air Force Station in Florida.

A United Launch Alliance (ULA) Atlas V rocket carrying the NROL-61 surveillance satellite for the National

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