The Johnson Space Center Houston

NASA‘s mighty main control centre for manned space exploration and training

Text and photos by Christoph Otto

NASA‘s Johnson Space Center in Houston is the largest and most important centre in the world for manned space flight. It has two objectives. To train astronauts and to bring them back safely to earth. Over 15,000 space technicians, computer engineers and trainers work around the clock like bees in a hive to facilitate this. Every astronaut has years of space survival training. It is here that future expeditions to Moon and Mars are planned.

All space missions are controlled and supervised from here in the Mission Control Center, up to this day more than 200 manned space travels. The command centre of the ISS is housed here, too.

In 1961, the Johnson Space Center was built on an area of 650 hectares, which is size of 910 football fields. More than 150 buildings are distributed singly around the site.

The entrance hall of the Jonny-Carter-Hangar is decorated in honour of the astronaut who crashed with a transportation plane. Up to now more than 25 NASA astronauts lost their lives in accidents.

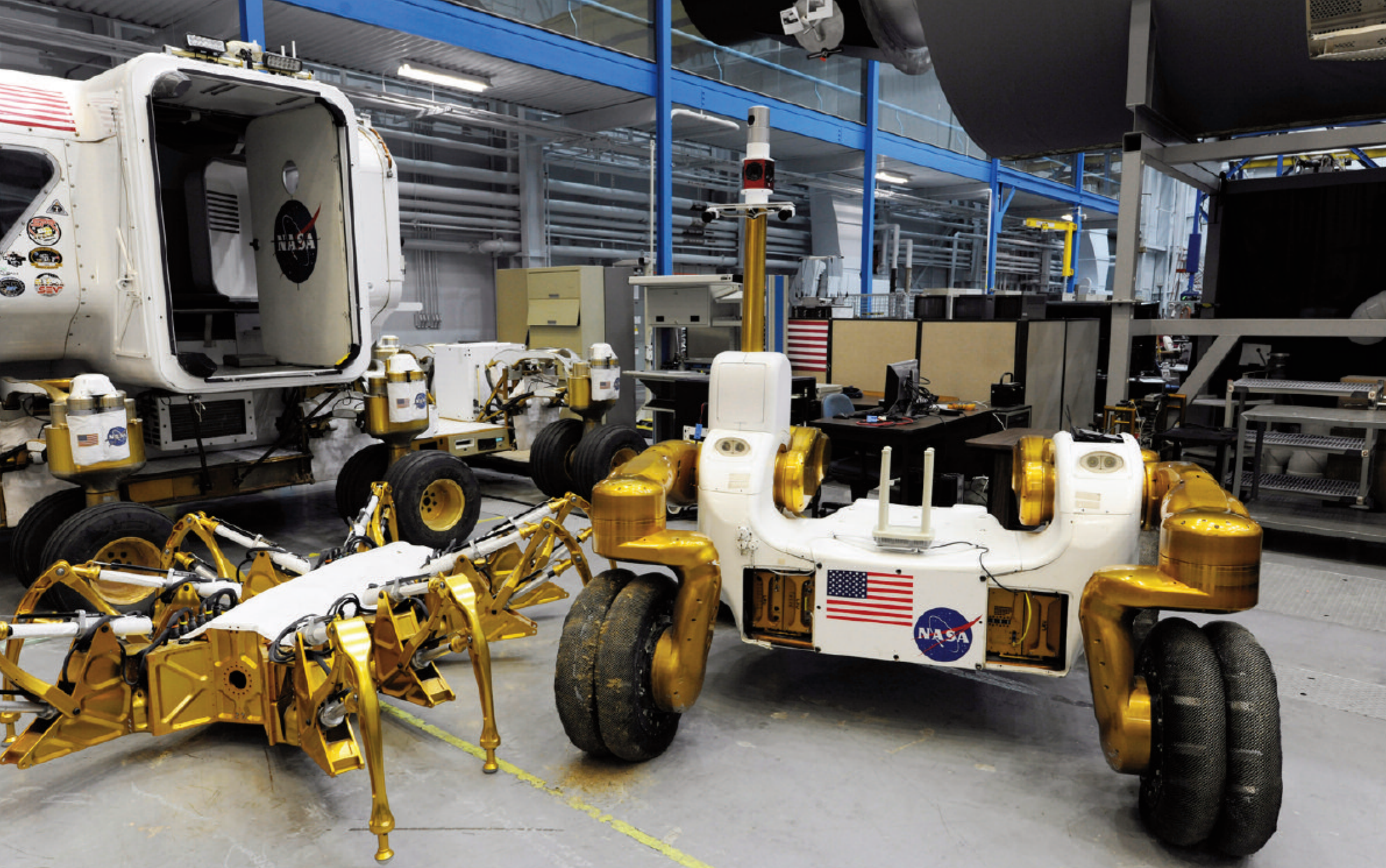
In these trousers fourteen layers of different material from neoprene to aluminium keep the temperature at a constant level, even in case of minus 270 degrees Celsius outside temperature.

Working under water in the basin of the NASA Center is preparing the astronauts for the absence of gravity. The training in space suits is assisted by divers.

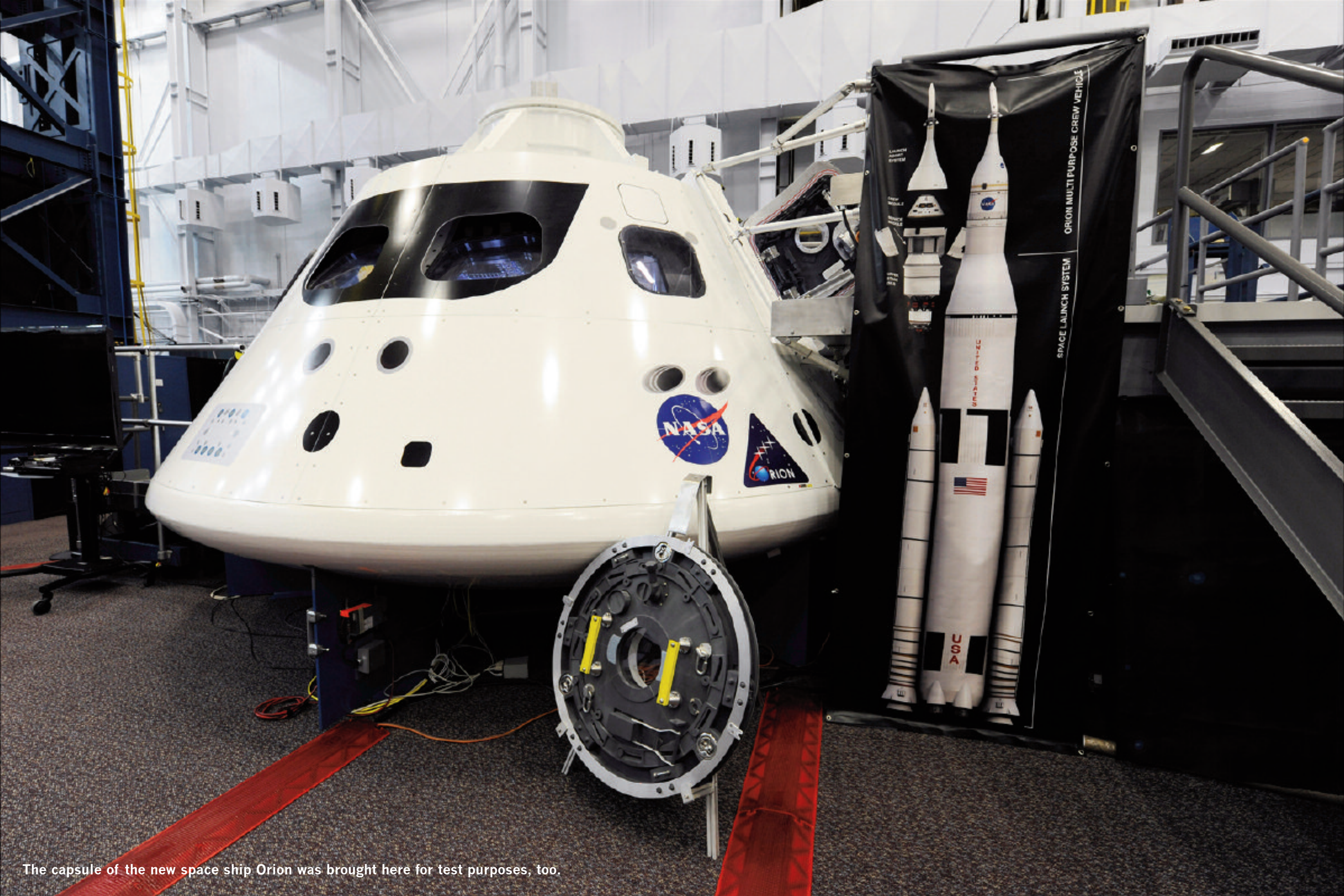
A crane lifts the astronauts into the training basin. The high tech suit worth twenty million US Dollar supplies them with oxygen during training and in the outer orbit.

The gravitation trainer at the Johnson Space Center that helped to prepare flights to the space station "skylab" looks like the interior of a real space ship.

All spacecraft is located in the biggest NASA training hall, the Space Vehicle Mockup Facility. The astronauts train here to be ready for their duty in orbit.



New equipment for future Mars and lunar missions are at the disposal of astronauts and engineers for test methods.



The capsule of the new space ship Orion was brought here for test purposes, too.

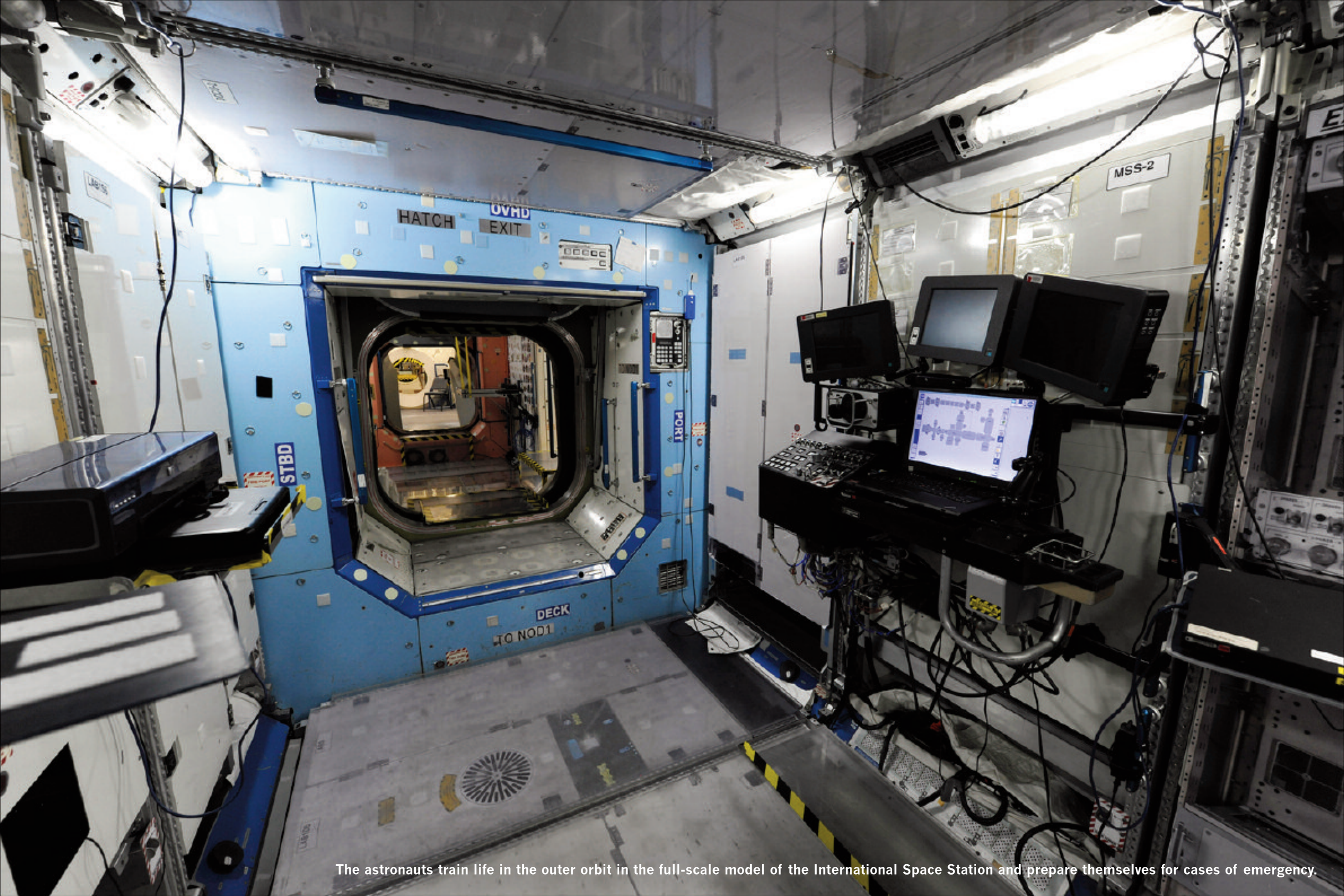
The lavatory of the space ship Orion, somewhat more spacious than its forerunner.

This mission control centre was installed in Houston for further mars and lunar missions. Already the first test flight of the space ship Orion was controlled from here.

The astronauts still train their flight to the ISS in the Russian Sojus capsule. There is room only for three of them. In 2018, however US space ships will start again, provided everything will turn out well.

View into the model of the Japanese research module of the ISS. Among others the growth of plants under weightless conditions in the orbit are analysed in long-term tests.

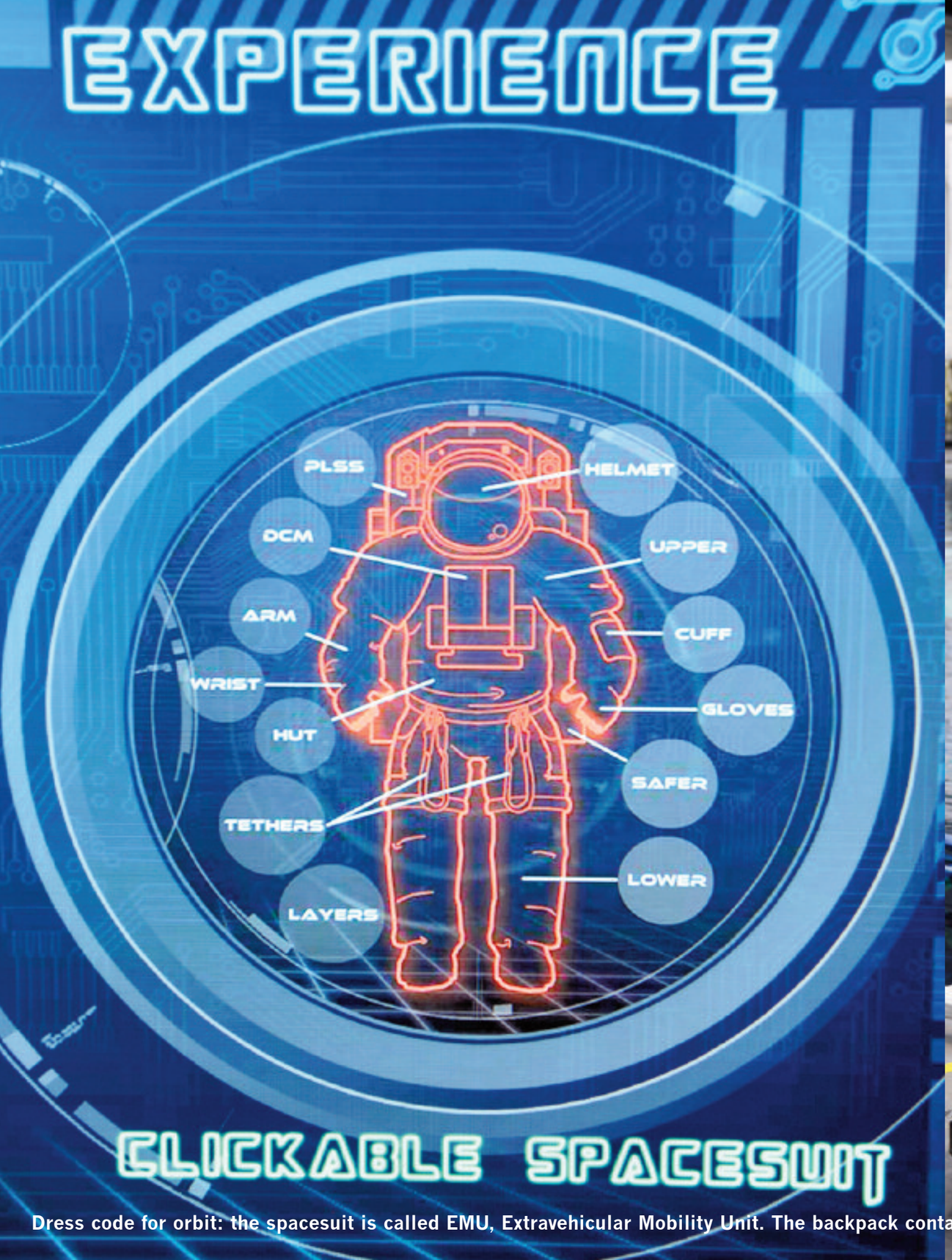
As real as possible is the model of the ISS: even the climate room of the Japanese research module has been reconstructed.



The astronauts train life in the outer orbit in the full-scale model of the International Space Station and prepare themselves for cases of emergency.

These robots called robonauts are to take over extremely dangerous tasks of the astronauts.

EXPERIENCE



CLICKABLE SPACESUIT

Dress code for orbit: the spacesuit is called EMU, Extravehicular Mobility Unit. The backpack contains supply tanks, communication technology and a power unit for an autonomous flight in orbit.

The model of the ISS takes half of the training hall.

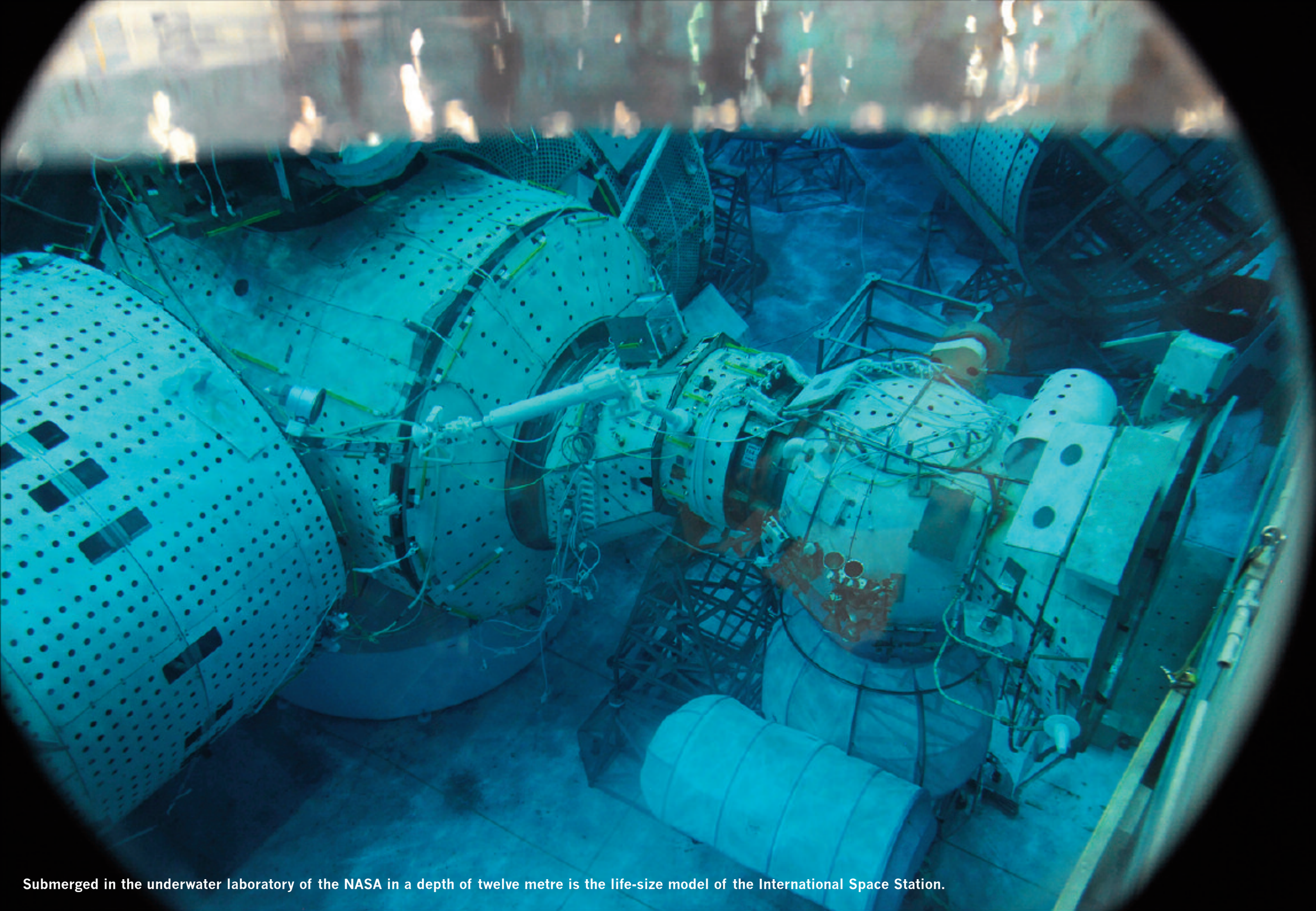
Every astronaut who has been in the outer orbit after 1980, passed his survival training in this hall.

Intelligent help for future lunar and Mars missions: these robotic spiders can cope with any terrain.

Since 1965, the building Number 30, also called Christopher C. Kraft Junior, is housing the Mission Control Center. All outer orbit flights have been controlled from here.

NASA rocket engineer Lee Norbraten on his way to the hall where a Saturn V rocket constructed by Wernher von Braun is kept. All Apollo missions to the moon were carried out by these rockets.

Since the Apollo programme was stopped prematurely for financial reasons, this Saturn V rocket could not start anymore. With a length of 110 metre the Saturn V still is the highest rocket worldwide.



Submerged in the underwater laboratory of the NASA in a depth of twelve metre is the life-size model of the International Space Station.

Accurately laid out special gloves worth 150 000 US dollar and the helmets of the astronauts on a side table are ready for the test operation.

This computer animation shows the extra vehicular activity for educational purpose.

EXTRACT

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