

Mistress of test stands and steam generators – Anja Frank

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Anja Frank is head of the test facilities at the DLR Lampoldshausen site

As a child, she preferred to watch the first launch of an Ariane rocket on 24 December 1979 instead of eating cookies by the Christmas tree. At 10, her wish was to become an astronaut. Today, Anja Frank ensures that the rocket engines that carry launchers into space are sound; the 40-year-old is head of department for the test facilities at the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) in Lampoldshausen – and therefore manages test stands, tank farms, steam generators, cooling water systems and the whole team.

P1.0, P3.2, P4.1, P4.2, P5. One test facility after another lies along the road that runs through the DLR site. Anja Frank points at all her different work places. “That is where we are testing the Vinci engine. Over there is control room M8 for the P4.1 test facility.” Finally, an enormous, slim building rises towards the sky – P5. “That one is for the Vulcain 2 engine.” The facility in which the aerospace engineer and her team are testing the engine that launches Ariane 5 at the Kourou spaceport in French Guiana is more than 60 metres high. The large tank on the right next to the entrance holds 600 cubic metres of liquid hydrogen. Another tank for 200 cubic metres of liquid oxygen is positioned above, on the test facility. Inside, the Vulcain 2 engine being prepared for the next tests looks like a monster consisting of cables, valves and tubing.

Space enthusiasm in the genes

“Well? Everything OK?” Two workers look up from their task on the engine, up to their elbows in cabling. Anja Frank joins them. One of the workers tells her something was wrong with a valve and a flap,. The man points to somewhere in the tangle of the engine. “Is it all sorted now?” The engineer bends closer and looks behind the front components of the engine – such technical talk is no problem for her. After studying aerospace engineering at Stuttgart University, she joined DLR in 1997 as the person responsible for the Vulcain 2 engine. Its development had only just started and Anja Frank learnt ‘her’ engine inside out. “Women mostly ask me how I got this job, men always want to know something about technology,” she says, laughing. She can easily explain the technology, but the way into the job “that’s in my genes”. This is because, on 24 December 1979, she was not sitting alone in front of the television watching the Ariane launch. Her father was next to her, bursting with excitement, having worked on the engine tests at the DLR facility. “Enthusiasm for space travel was something I experienced at home from the very beginning.”

Outside the test stand, a traffic light has turned red. Another test is due at one of Anja Frank’s facilities. When that happens, all areas of the site are off limits to anyone not involved, while a team monitors the test in the control room. This moment is sometimes missed by the head of department: “In the past, I sat in the control room as test manager and experienced the excitement in person. Today, my job of course entails a lot of office work,” she says with a tinge of regret. ‘Bumf’ is what she calls the work that her job now largely consists of – planning test campaigns, negotiating agreements with international clients, organising maintenance work or allocating the teams for the different test beds. She is much happier being on site, crawling under the large engines or watching from the control room when hydrogen and oxygen combust in the engine at 3,500 degrees. A pure desk job is not an option for the bubbly engineer. “Banking would definitely not be the right job for me,” she emphasises and forcefully shakes her head.

“Fodder for the engineers”

With the management of the test facilities in the small village of Lampoldshausen she is located at a lynchpin of international space travel. She says proudly: “If we did not carry out engine and combustion chamber tests, the Ariane launcher, for example, would not fly.” Some of the test stands are unique in Europe with regard to their structure and capabilities. “With our test data, we provide the fodder for engineers throughout the whole of Europe.” Clients include the European Space Agency. The advantage of such a niche position is that Anja Frank and her team know that there is almost no competition for their research work. The disadvantage is that there are hardly any other experts to discuss things with. “We have to work everything out for ourselves because there is no one else we can ask about how things work.” A challenge, but one that Anja Frank visibly relishes. Here it is an advantage that she knows about the work on the engine just as much as the work on the test stands. “A very special moment in the last few years was the first test on the new P4.1 facility. A brand new test facility with the brand new Vinci engine – we sweated blood and tears,” she says with a smile.

Now her work has also earned her an award; the German Engineering Federation selected her as one of the 25 most influential female engineers in Germany. Anja Frank blushes. Of course, the award was something special for her, but ultimately it was a success for the whole team. Her department has 75 staff. “We all connect,” she says. She sees the result of her work when another rocket is launched into space with its payload – many an engine has received its qualification for space in Lampoldshausen, much data that has been collected on the test stands has driven the development of the engines. Experiencing the launch of one of the engines tested by her team, for example in French Guiana, is right at the top of this engineer’s wish list. Since May, however, another ‘hobby’ has been added to that of space travel; Anja Frank became the mother of a daughter. So whether spaceflight really does reside in the genes of the engineer and has been passed on to the next generation will become clear in the coming years.

Contacts

Manuela Braun
German Aerospace Center (DLR)
Media Relations, Space Research
Tel.: +49 2203 601-3882
Fax: +49 2203 601-3249
Manuela.Braun@dlr.de

Anja Frank
German Aerospace Center (DLR)
DLR Institute of Space Propulsion
Tel.: +49 6298 28-488
Fax: +49 6298 28-2298
Anja.Frank@DLR.de

Anja Frank at the test facility



Aerospace engineer Anja Frank manages the test facilities department at the DLR Lampoldshausen site.

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Moving between the test stands



Test stands, steam generators and cooling water systems are Anja Frank's work places. The aerospace engineer at the DLR Lampoldshausen site is responsible, among other things, for testing engines and combustion chambers.

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Planning work at her desk



For Anja Frank the 'bumf' is also part of her daily job. Planning the test campaigns and allocating the team are an important component of the work as head of department for the test facilities at DLR Lampoldshausen.

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