

Individuals reach their limits relatively quickly

Setting the course

Aerospace scientist Dr Dirk Hilberg almost pursued a career at a freight forwarding company. Now he organises research projects in future technologies, both for his employer, Rolls-Royce, as well as at FVV. He is convinced that there is more than one way forward in life. But at some point, decisions have to be made.

Text: Johannes Winterhagen | Pictures: Dirk Lässig

Individuals reach their limits relatively quickly // While this applies to many walks of life, it is particularly true for model train enthusiasts whose homes are too small for the planned setup. Therefore, fans – primarily men – of model trains from ten European countries have been meeting up and developing modules that fit together since the 1980s. They connect their individual models to create a single set, which can reach up to 12,000 m² in size, before re-enacting realistic train operations following timetables agreed in advance. One of these men is Dirk Hilberg, who works for Rolls-Royce as a technology manager. His love for the railway harks back to his early childhood, when he regularly asked his mother to push his pram to a railway crossing so he could observe the trains. »I'm still a huge model train enthusiast today,« Hilberg admits. Despite this, he chose his career in aircraft engine construction.

At the age of sixteen, with maths and physics his favourite subjects, Hilberg realised: »I want to become an engineer.« Throughout his entire career, he has been fascinated by the fact that he is the link between the scientific and practical worlds. Once faced with choosing a specific degree, Hilberg selected aerospace engineering, a discipline that was synonymous with technological progress in the years following the moon landing. »I intuitively knew that this area held the most exciting tasks for engineers,« he comments. »And this generally still applies today.«

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Back in 1980, only a few German universities offered this degree. Hilberg decided to go to TU Berlin, a choice with the very welcome benefit that residents of West Berlin were not conscripted for military service. A student apartment in the back of a courtyard, coal heating, a shared bathroom on the corridor and a large, seemingly impersonal university – for Hilberg, who had a sheltered upbringing in Marburg, finding his way in the capital city was an almost shocking experience. He struggled to get started in university life and took a part-time job as a driver in a small forwarding company.



Hilberg was subsequently promoted to the head of the Berlin subsidiary and worked 40 to 50 hours per week, earning a decent salary but barely progressing in his studies.

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It took several years until Hilberg realised that now was the time to set the course for the future. He quit his job and completed his entire degree, including diploma thesis, at the engine institute within four semesters. Hilberg turned down an offer to work at Lufthansa Technik, instead deciding to complete a doctorate at TU Berlin, where he focussed on turbulent flows, analysed structures and developed calculation methods. This fundamental scientific research helped Hilberg receive a post-doctorate scholarship from the Alexander von Humboldt Foundation in 1994, first taking him to the Stony Brook University before he returned to TU Berlin.

By now, Rolls-Royce had opened a site for developing engines for business aircraft just outside Berlin, initially in collaboration with BMW. By 1997, almost 1,000 people worked at the site in Dahlewitz. Hilberg, who was now married and the father of two children, began to doubt the potential of a career in academia, and took a job as a development engineer for air systems. »I was immediately plunged into the middle of the development for the BR715 series,« remembers the engineer.

Moving from academia to practical work came easy to him. »Taking responsibility for a safety-critical product, and therefore for human lives, drives me on every day and gives me at least as much joy as academic awards,« says Hilberg. And his approach to economic aspects, developed during his time



he Dahlewitz site south of Berlin started production 25 years ago in June 1995. As a centre of excellence for business aircraft engines, the plant plays an important role in Rolls-Royce's global network of manufacturing and development facilities.

at the forwarding company, is once again invaluable. What could be regarded as a diversion actually proved to be great training for his subsequent positions, both as a programme manager for core engines and for his current role in research and technology management, for which Hilberg has been re-

sponsible since 2018.

As a member of a working group, Hilberg first came into contact with the Research Association for Combustion Engines (FVV) shortly after joining Rolls-Royce. The high

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academic level at the association came as a positive surprise to him from the very first meeting, and he has since been closely involved in its work. As Deputy Chairman of the Scientific Advisory Committee of FVV, Hilberg is responsible for the general direction of Industrial Collective Research on turbomachines. The fact that a single planning group covers completely different turbomachines, ranging from small exhaust gas turbochargers, to aircraft turbines, all the way up to large, stationary gas turbines, is beneficial, according to Hilberg. »We inspire one another. After all, fluid mechanics or the fundamentals of materials engineering do not depend on the size of a machine.«

Hilberg believes that the use of hydrogen as a source of combustion or fuel also offers great potential for synergies – not just for turbines, but also in engine research at FVV. »It is everyone's task to reduce CO₂ emissions. To do so, we absolutely need chemical energy stores, such as hydrogen and electricity-based fuels, for certain applications.« However, this requires cross-discipline collaboration, as a system which is based purely on fossil fuels must be converted. In this regard, individuals can quickly reach their limits, particularly in research.



About | Dr Dirk Hilberg (Rolls-Royce Deutschland)

Dr.-Ing. Dirk Hilberg, born in 1960, is responsible for cross-company research programmes as a Senior Manager Research & Technology at Rolls-Royce Germany. The engineer, who completed his doctorate at TU Berlin, has held several different positions at the engine manufacturer since joining the company in 1997.

At FVV, he is Deputy Chairman of the Scientific Advisory Committee and leads the PGT »Turbomachinery« planning group on a voluntary basis.

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