

Light Touch

Text **CHRISTIAN BUCK** / Photo **MARCO PROSCH**



Tanja Becker is a highflier. As Senior First Officer, she can often be found in the cockpits of long-haul jets like the Airbus A330 and A340. She normally sits to the right of the captain but fills in at the controls when the latter takes breaks. Becker (37) is not only a trained Lufthansa pilot but also an engineer. She wrote her dissertation on jet lag for the Interdisciplinary Sleep Medical Center at the Charité university hospital in Berlin. "I'm interested in a lot of things," she says simply.

A pilot and an expert on sleep? "I regularly travel all over the world, which means my body often has to adjust to different time zones," she explains. "This is where aviation and sleep medicine come together: everyone who takes long-haul flights has to contend with jet lag."

And Becker has taken an active stand against low levels of energy due to travel. In 2017 she cofounded the Hamburg start-up jetlite with Achim Leder, Felix Brüggemann, and model Toni Garrn. Leder wrote his dissertation on lighting in aircraft and offers the perfect complement to Becker's expertise in sleep medicine. What jetlite seeks to do is ease the human organism from one time zone to the next on long flights with the help of intelligent technology. "We provide the first scientifically demonstrated means of reducing jet lag in commercial aviation," says Becker, who is jetlite's chief technical officer. "Our solution prepares people's physiological systems for the time zone they're about to enter while still on the plane."

A German startup seeks to banish jet lag and help people achieve higher levels of performance—by regulating light in targeted ways on planes and in cars.

Light plays the key role here because it is the main influence on the body's biological clock. Cells in our eyes prompt our brains to release the hormone melatonin, which regulates our circadian rhythms. Light with a high proportion of blue waves lowers melatonin production and makes people more awake. Red light waves have hardly any influence on its production and therefore provide the best conditions for falling asleep if complete darkness is not possible.

The jetlite algorithm uses the departure time, flight duration, and number of time zones flown over to calculate the best lighting plan for the cabin. "When a plane leaves New York for Europe, for example, we begin preparing the passengers for sleep with the red part of the light spectrum during dinner already," says Becker. "In the morning before landing, we actively wake them with light that has a greater

blue component." Lufthansa already uses the jetlite solution for its long-haul A350 and Boeing 747-8 aircraft—to the desired effect. Tests have shown that passengers are less affected by jet lag and recover from it more quickly.

Optimized lighting is not only a good way to make flights more pleasant. It is also expected to benefit car drivers in the future. This is the focus of a pilot project that jetlite has launched with Porsche. "The right light can be used in car interiors to enhance driver alertness, for example on early winter mornings," says Becker. "It will also play an important role in self-driving cars, to improve passenger well-being during the trip." Light can even be used to raise the performance levels of stressed-out managers.

But light alone is no guarantee for high performance. Family support is another crucial factor—especially for a highflier like Tanja Becker who, in addition to her work in the cockpit and at jetlite, also has a husband and two children. "It all wouldn't be possible without my husband," she remarks. "He knows that I'm simply incapable of sitting still."