



# THE POWER BEHIND TYPHOON



**WOLFGANG STERR**  
DEPUTY TECHNICAL  
DIRECTOR AND  
EXPORT MANAGER AT  
EUROJET

We speak to **Wolfgang Sterr**, Deputy Technical Director and Export Manager at Eurojet, about the significance of these achievements and what makes the EJ200 so special.

The Eurofighter Typhoon Programme has achieved a series of notable milestones recently with the aircraft racking up 250,000 flying hours, resulting in 500,000 engine flying hours for the Eurojet EJ200 engine, across six Air Force fleets. At the same time, the United Kingdom's Royal Air Force (UK RAF) has confirmed its Typhoon Fleet has now reached 100,000 Flying Hours.

The late Enzo Ferrari once famously remarked, "Aerodynamics are for people who can't build engines."

Although his design team might not have appreciated the comment, the point Ferrari was making was a profound one.

You can have the best looking car on the starting grid, but what ultimately differentiates it from its competitors is what lies under the bonnet.

The same is also true of jet-fighters.

One of the key factors in the success of the Eurofighter Typhoon is the engine that powers it.

Developed over a decade, the Eurojet EJ200 is revered throughout the world for its unprecedented performance record, its multi-role capability and its competitive life-cycle costs.

Now you can add reliability to that list too, after the Eurofighter Typhoon Programme clocked up 500,000 engine flying hours this summer, across six Air Force fleets.

"This is a very important milestone," says Wolfgang Sterr, Deputy Technical Director and Export Manager at Eurojet.

"Very often when we get involved in export campaigns our competitors can reference millions of flying hours.

"Our answer in the past was if you have the most modern product then you have to start somewhere because you can't start on five million flying hours.

"But now we have a latest technology engine that has achieved 500,000 flying hours, which is a good, solid base of evidence to demonstrate that we do have a product that is reliable and also mature so, in that respect, it's a very significant figure.

"There is no doubt this engine is proving to be extremely reliable. If you compare it to previous generations then we have fantastic on wing time - more than a thousand hours on average. Compare that to some of our main competitors and we come out favourably.

"If you look at the operations that took place in Libya, for example, we had fantastic engine reliability - close to 99% - so it's pretty evident this engine really works well and we have no issues with it."

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Then in 1986 the Eurojet consortium, comprising Rolls-Royce (UK), MTU Aero Engines (Germany), ITP (Spain) and Avio Aero (Italy), was formed to co-ordinate and manage the development of what became the EJ200 engine system.

Since delivery of the first production engine in 2003, more than a thousand EJ200 engines have been supplied to the fleets of six nations, and the overwhelming feedback from the customer is it's the best in the world in its thrust class.

"My own personal view on why it has proved so successful, and the same is probably true of the airframe as well, is we started building jets in Europe in the 1970s as part of the Tornado programme and a lot of know-

edge and know-how was acquired from that programme," explains Wolfgang.

"Many of the people who worked on Tornado and RB199 then carried on working on the next generation fighter, which was Eurofighter featuring the Eurojet EJ200 engine.

"The fact we were able to transfer all of that knowledge and experience into the new programme is one of the reasons why Eurofighter and the Eurojet EJ200 engine has been so compatible. It's a continuation, if you like, of what we started in the 70s.

"I also think this consortium we have with the four partner companies is another major strength.

"If we discuss technical issues then you get the views of four chief engineers so the

outcome you get is of a higher quality because you get those different perspectives.

"For me, those are the two main reasons why we now have such a good and mature product.

"Whenever I talk to pilots in the air forces they all say the engine is awesome. They never raise any issues about it, they tend to say they just sit in and start it, it's easy to handle, carefree and highly reliable. That's the consistent feedback we get from the pilots who fly the jet, which is a really great endorsement.

"That doesn't mean to say we can afford to be complacent. On the contrary, we are constantly looking at ways in which we can develop the engine and make it better."

One of the areas Wolfgang and his team are paying particular attention to is the cost of ownership.

"This engine was designed for low life-cycle costs and that is the case, but with the experience we have gained up to now we feel we could go beyond that and reduce the life-cycle costs even further. That's certainly one area we are keen to focus on.

"What you have to bear in mind is today's engine is the first batch of the production engines. We never did an upgrade in any respect, since there was no requirement for it. This leaves lots of room for future enhancements

"To achieve both is a big challenge but that is why you always have to insert new technologies and keep developing your product. If you look at some of our competitors' engines, it's a bit like a family and they go back to the Seventies so in some instances they have already upgraded two or three times and eventually they will reach a point where it doesn't make sense to go any further.

"However that is not the case with us. We have a very sound base line right now and we've got great growth potential from this point onwards."

### FACTS ABOUT THE EJ200 ENGINE

- The Eurofighter Typhoon powered by two EJ200 engines can cruise at supersonic speeds without afterburner help.
- One of our EJ200 engines will help power BLOODHOUND SSC aiming to be the first 1,000 mph car. That's faster than a bullet and covers the length of four and a half football pitches in a single second.
- A single crystal turbine blade is designed to operate 200°C above its melting point. That's like trying to stop an ice cube from melting in an oven.
- At its heart, in the combustion chamber, the heat is nearly half the temperature of the surface of the sun - and the pressure is the same as half a kilometer down in the ocean.
- The force on the small first stage turbine blade at take-off is about 10 tons. That's equivalent to hanging a double-decker London bus on each blade.

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A big thank you to all our fans, followers, supporters and contributors. During Farnborough Air Show this year the Official Eurofighter Typhoon Twitter account reached 10,000 followers and almost at the same time the Official Eurofighter Typhoon Facebook account achieved the 25,000-like milestone.

In the coming months we're looking forward to growing our global fan base even further because we want to make sure that you receive the best and most up-to-date information and images of Eurofighter Typhoon.

If you're new to these channels this is how our landing pages on Social Media look. So please join in, follow and share your images with our growing fan base.

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