

EUROFIGHTER

PROGRAMME NEWS & FEATURES
JANUARY 2021

WORLD



- Chain Reaction
- Pilot Brief: Interoperability
- Eurofighter and FCAS



Weapon System of Choice

38 new Eurofighter Typhoon aircraft for the Luftwaffe

 Eurofighter
Typhoon



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PR & Communications
Am Söldnermoos 17, 85399 Hallbergmoos
communications@eurofighter.com

Editorial Team
Tony Garner
Mark Ritson
Luca Accinni

Contributors
Airbus Defence and Space
BAE Systems
Leonardo
Viva PR

Photography
Eurofighter Jagdflugzeug GmbH
Eurofighter Partner Companies
Martin Agüera
Giovanni Colla
Geoffrey Lee, Planefocus Ltd.
Jamie Hunter
Dr. Stefan Petersen/Bundeswehr

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Editorial

Looking back, 2020 was a year few of us will ever forget. Because of the impact of the Covid-19 pandemic we all faced huge professional and personal challenges. What stood out for me was the way everyone involved in the Eurofighter project worked closer together than ever before to deliver.

Germany's decision to replace its existing Tranche 1 aircraft under the Quadriga programme was a clear high point of the last few months. It was a real vote of confidence in the Eurofighter programme and a really powerful message from a core customer.

In this edition of Eurofighter World, we speak to Kurt Rossner from Airbus Germany and Andrea Thompson from BAE Systems and get their thoughts on what Quadriga means for the programme in the long term.

The Quadriga contract is good news for the whole consortium and, as such, was warmly welcomed by our partner companies — Leonardo, BAE Systems, Airbus Spain and Airbus Germany. But we should never underestimate the wider economic impact it will have.

Welcome

The Eurofighter programme supports over 400 businesses across Europe, sustaining more than 100,000 jobs. That's why in this edition we shine the spotlight on some of those supply chain businesses.

Elsewhere in the magazine we examine Eurofighter's place alongside a next generation fighter in the future battlespace. Two former Typhoon pilots take an expert look at the role Eurofighter will play in this future.

Of course, as I write this today, Eurofighter remains the backbone of combat air capability for a number of air forces and naturally, throughout this edition, we reflect on the work being carried out.

Reading this latest issue of Eurofighter World, it is clear to see that this is an aircraft that continues to go from strength to strength, supported by a group of people who are as firmly committed as ever.

Enjoy the read,

Herman Claesen
CEO
Eurofighter Jagdflugzeug GmbH

Weapon System of Choice

The Quadriga deal is a long term boost for Eurofighter



Eurofighter Typhoon is confirmed as Germany's weapons system of choice, says Airbus' Head of Combat Aircraft Systems Kurt Rossner, following the country's decision to replace its existing Tranche 1 aircraft under the Quadriga programme.

"It's a really powerful message from a core customer," says Kurt, who is also Chairman of the Eurofighter Supervisory Board. "It's a sign of their appreciation of our performance. It says they are very happy with the aircraft because they could have postponed the order or even selected a different one."

He believes the deal, which extends the usage life of the Typhoon, will reinvigorate Europe's industrial defence base, boost the Eurofighter's export campaigns in Switzerland, Finland. Furthermore, the deal serves as a catalyst for future capability.

Under the deal, announced in the Bundestag in November, Germany has committed to 38 new Eurofighter Typhoon aircraft for the Luftwaffe. The aircraft will be built to the latest standard and include the E-Scan radar Mk1.

This news is a further boost for the Eurofighter programme, following the E-Scan radar retro-embodiment contracts for the Spanish Ejército del Aire and German Luftwaffe Typhoon fleets and the continuation of the development of E-Scan version Mk2 announced in the summer.

Kurt says that because Quadriga is a show of faith from one of the original core partners, the decision will resonate far and wide. It represents both a continuation in the production and, at the same time, a positive signal that the capability roadmap will be extended, because Germany is now committed to Eurofighter until at least 2050 – 2060.

"The German Air Force is a very stable ecosystem, and, through Quadriga, it is clearly planning on the aircraft having an in-service life of at least 30 to 40 years," he says. "That means we have to enable Eurofighter's capability growth to meet their expectation. We look forward to further developing the aircraft to meet the future needs of the German Air Force, in terms of their mission require-



Kurt Rossner, Head of Combat Aircraft, Airbus Defence and Space GmbH

ments and the threat environment they will face. "Clearly Eurofighter will be an essential part of the future combat [FCAS] ecosystem and play a part in the system of systems. That means we have to grow the aircraft capability to meet the demands of the FCAS environment."

THE INDUSTRIAL IMPACT

Ahead of the Quadriga signing, the Eurofighter Partner Companies (EPCs), Airbus Germany, Airbus Spain, BAE Systems and Leonardo, worked together on a plan to bridge the production gap following the completion of the final Tranche 3 jet.

At the Airbus facility in Manching, Germany, Quadriga started life in 2020 with about 100 people working on the long-term initiative, the planning, preparation and procurement elements. When the first major components arrive for equipping the team will grow to almost 200 to 250.

By 2023 Airbus will start preparing the final assembly again and will grow the team

further. In total there will be around 150 to 200 people out of the Manching Eurofighter workforce up to 3000 working purely on Quadriga tasks.

However, Kurt says that this is not simply a job numbers story. "That's a quantitative issue, the qualitative issue is more important. People are extremely proud to work on this programme and to work on a new aircraft.

"Currently Manching is carrying out excellent work delivering centre fuselages for export to Qatar and Kuwait. But we really miss having brand new aircraft to deliver. It's a different mindset. It fills you with pride and because of that Quadriga is a real boost for the site."

Though work on the final assembly will start in 2023, the production process is already underway starting with procuring the titanium and other metals required. "We have a very detailed plan for each of the aircraft. All the industry partners started their long-term activities even before the deal was signed because we did not want to have a production

gap after the Kuwait and Qatar aircraft are completed. We have already embedded our plans into a production continuation plan."

EXPORT BOOST

Kurt says the fact that Germany has decided to back Eurofighter once again is a strong sales message. "If you have a fully convinced, happy customer procuring the same product, that demonstrates they are happy with the performance, with the support, with everything. It's just like if you buy the same car for the second time — it speaks volumes about how happy you are with that model. For Eurofighter this is a huge demonstration of support, even better than an export customer win in some respects, because it's a continuation and thus a very positive signal.

"This is a programme that is very much alive. The contract sends a strong message to potential export countries like Finland, Switzerland, Egypt and Bangladesh that they can be assured that this aircraft will be in service up to 2060. →

It says there is a fully committed partner there for long-term partnerships. In terms of export opportunities, I believe the contract is a huge enabler."

COVID PRESSURES

The Eurofighter chairman says that the consortium partners have been working closely together over the past 12 months, and he puts that down to a number of factors but in 2020 one stands out: Covid-19. "A crisis tests you and really shows if you can work together. I think the community passed that test, came much closer together and is now much stronger."

But, he says, there's a looming challenge. The response to the pandemic has hit Europe hard and forced governments into big unforeseen spending commitments in order to support their domestic economies and health services.

"The big risk we face is budgets. The pressure on defence budgets will inevitably be higher because of Covid and therefore the relationships between industry must be better. Programme performance and affordability will have to improve, and this can only happen if the four EPCs work even closer together, defining their values and their targets together.

We are all very willing to do this and work hand-in-hand as one team – industry and nations."

In March 2020 there was an agreement between the whole Eurofighter Enterprise around the 10-year plan for the programme. This, says Kurt, is a key enabler for the future joint working. "The plan is a baseline for planning and understanding. It is a common plan – not an industry plan, not a core nation plan but a common plan, with common goals and a shared roadmap for us to go on. It is important because it will help us in terms of affordability and speed."

While budgets will inevitably come under pressure, Kurt says Eurofighter will be able to make a strong argument for investment in terms of skills and IP. He says a programme like Eurofighter ensures the technical knowledge base in the respective core nations is sustained.

"The knowledge we have gained over the decades in the different nations can be sustained with the continuation of production contracts and with the development of capability enhancements and the Long Term Evolution [LTE]."

EVOLUTION STORY

Kurt says a further challenge for Eurofighter industry partners will be to demonstrate to customer nations, both export and core nations, that they can deliver new capability more expediently. "We need to develop capability in faster and shorter cycles.

We currently have a two-year cycle but in the future, we need to deliver a full capability enhancement package over a 12 month cycle."

A key area will be computing power and the avionics as new software architecture will have to be adopted. "We need to improve the software architecture into a more easily handled software configuration. We also need to be ready to adopt different missions.

"The UK, through Project Centurion, did a good job of transferring their Tornado missions onto the aircraft. Now we need to be prepared for the same thing in Germany because the next big opportunity will be the Tornado replacement contract. We need to be able to transfer Tornado missions onto the Eurofighter, which means additional weapons and additional capability.

"In Germany we will also demonstrate that we can even further improve the excellent flight performance and stability of the aircraft to carry different weapons. This is called the Aerodynamic Modification Kit [AMK]. It's about generating even higher longitudinal stability of the aircraft's aerodynamics to new potential weapon integration."

Looking to the future battlespace, where the Quadriga standard aircraft will operate, Kurt says Eurofighter will also play a role in helping de-risk technologies for next generation fighters too. "If you were to define and design a new aircraft like the Tempest or

FCAS from scratch, there would be a high risk of failure in one area. But having a stable aircraft like Eurofighter means you can implement technology enhancement programmes without risk. Take communication, for example, you can develop communication capability to other assets in the system of systems and implement it on a stable platform like Eurofighter.

"You can gain from Eurofighter knowledge and transfer technology, which was proven

on a stable platform, into the future combat aircraft system, Tempest or FCAS. For the engineers it's an excellent test bed, while at the same time Eurofighter capability improves ensuring its transfer into a new generation system environment.

Kurt says that in the short-term Eurofighter will be concentrating its efforts on the next potential customer: Spain. Eurofighter has submitted proposals for the replacement of the Spanish Air Force's F-18s which are based

on the Canary Islands. Spain is looking to secure 20 new Eurofighter Typhoon aircraft to boost its existing fleet under what is called Project Halcon. Airbus is in the process of negotiations with the Spanish government to mature the proposal and a contract for the 20 aircraft is expected to be signed in 2021.

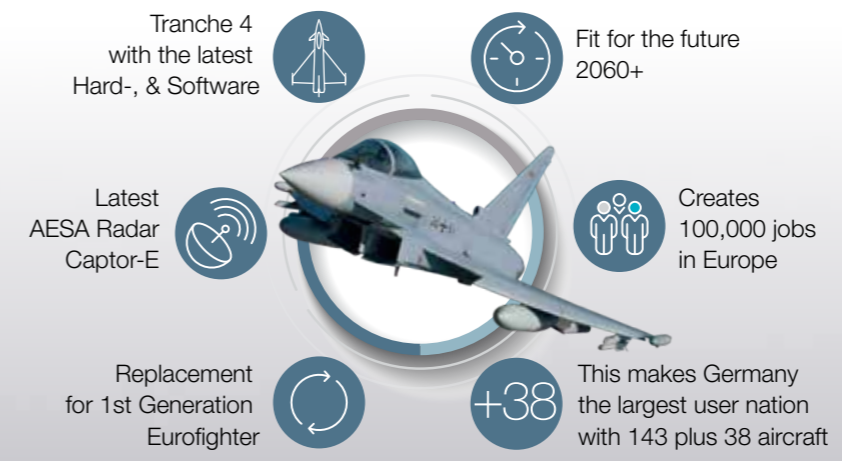
"Quadriga is proof to Spain of how it will work," he says. "We also want to provide industry with even longer sustainability on production by securing more export contracts with Switzerland and Finland.

For Germany the next big target will be to prepare the proposal for replacing the aligning fleet of Tornado by Eurofighter.

"And finally, to create a technology roadmap – the LTE plan. With the LTE agreement in place, we could deliver the Quadriga aircraft but enable them for additional retrofit programmes so that in 10, 15 years' time these aircraft are transformed into a much higher standard jet. We will be able to grow into the 2060s with this vision.

"The capability growth areas are more in terms of the missions, weapons and avionics, aero mod kit and these are all retrofittable. The good thing is we are starting from a point where the aircraft is already world class in terms of its baseline performance." ←

QUADRIGA



Boost for Partners

Across Europe

What does the Quadriga contract mean for BAE Systems and for the UK?

Quadriga is significant on many levels for the UK. From an economic perspective, it maintains continuity of supply for our Typhoon production to the mid-2020s, sustaining highly-skilled jobs. We directly employ more than 5,000 people in engineering, production and support roles on Typhoon in the UK, and sustain a further 10,000 jobs in the wider UK economy as a whole.

Quadriga is also a very clear signal that the Eurofighter partner nations, in this case Germany, fully back Typhoon. This order comes on the back of commitments for the electronically-scanning radar from Germany, Spain and the UK. It's another vote of confidence for the programme.

All of this sends a very clear message about the longevity of Typhoon and that is a strong signal for our current and potential customers.

Germany has said it now expects to see Typhoon operating until the 2060s and we know that many other operators see it in service for at least another 30 years, and the injections of capabilities that will inevitably come from that.

What does it mean in programme terms for BAE Systems?

Quadriga will have an immediate positive impact maintaining continuity of supply to the mid-2020s for our Typhoon production facility at Samlesbury, where we produce more than a third of the major unit components for each jet.

What does Quadriga mean for capability developments on Eurofighter Typhoon?

The German Quadriga order underscores the opportunity to introduce more capabilities on Typhoon because of the size of the order and the long-term commitment from a core nation partner.

It will equip the German Air Force with an

advanced electronically-scanning radar, future proof its hardware and software and develop and integrate technologies which will make it the perfect interoperable partner for any future combat aircraft.

This develops and sustains core capabilities and skills which will be vital to unlocking the full range of capabilities our customers need now and in the future.



What message do you think the Quadriga agreement sends to the export market?

All orders are important, but when a core nation continues to invest, that says something incredibly powerful to existing and potential customers alike.

It says we still absolutely believe in Typhoon, we trust it, we're going to develop it and I don't think you can get much more positive than that.

Quadriga is a vote of confidence in Eurofighter Typhoon that says German Typhoons will be the backbone of their air force right out to 2060s.

BAE Systems is leading the Eurofighter campaign in Finland and we know there are already close military ties which exist between Finland and Germany.

So when Finland sees Germany making a commitment like this, it shows them they have a partner next to them that's committed to the long term.

The same is true in Switzerland where our partners Airbus Germany are leading the Eurofighter response to the Air 2030 competition.

What's next?

As far as Quadriga is concerned, right across the consortium, we have been preparing for this commitment for some time and both our production teams and our supply chain are primed to start work from the start of 2021.

In terms of future investment in Typhoon, we recently saw the UK customer commit to developing its electronically-scanning radar, and separately we have seen the UK Government commit to increased investment in defence and security.

The Eurofighter Typhoon we see today is completely different to the one which was in service 20 years ago and we are now working alongside our core nation customers to define what the long-term evolution of the aircraft will look like.

Through the Long Term Evolution study, we are looking at the respective national requirements, how we ensure they can be delivered in an agile way and how we ensure they are connected to the future combat systems.

What is the mood in the programme?

Despite the challenges we have all experienced, the energy we've seen in 2020 around the four nations really pulling together to support Quadriga has been very positive.

It has been a period of intense activity because we all recognise the importance of Quadriga not least because it is such a powerful signal.

We're really pleased with the work and the result. ←

ANDREA THOMPSON

Managing Director - Europe and International, BAE Systems

Supporting the production of up to 38 Eurofighter Typhoon aircraft for the German Air Force under the Quadriga contract is good news for all the Eurofighter Partner Companies. Here we speak to **Andrea Thompson**, Managing Director - Europe and International, BAE Systems – Air, about what it means for the UK.

The big picture:
Two Spanish Air Force Eurofighter Typhoons flying on a reconnaissance mission over the Mediterranean sea.





Chain Reaction



The importance of the Eurofighter Typhoon programme on the defence industry supply chain goes beyond the jobs and opportunities it has created.

The partner companies manage industry suppliers employing more than **100,000 people**

across the supply chain, enriching the technology capabilities of the whole European region.

The positive economic impact of Eurofighter on its major industrial partners is well-known and documented.

However, further down the supply chain working with Eurofighter has had a transformative effect on businesses of all sizes, including some small micro-businesses, unlocking new opportunities and allowing them to build valuable relationships and share knowledge and experience.

The result is a strong, integrated supply chain benefiting local economies and eager and well-placed to seize further opportunities.



Nicolas Bonleux, managing director and chief commercial officer at Liebherr-Aerospace & Transportation SAS.

Germany:

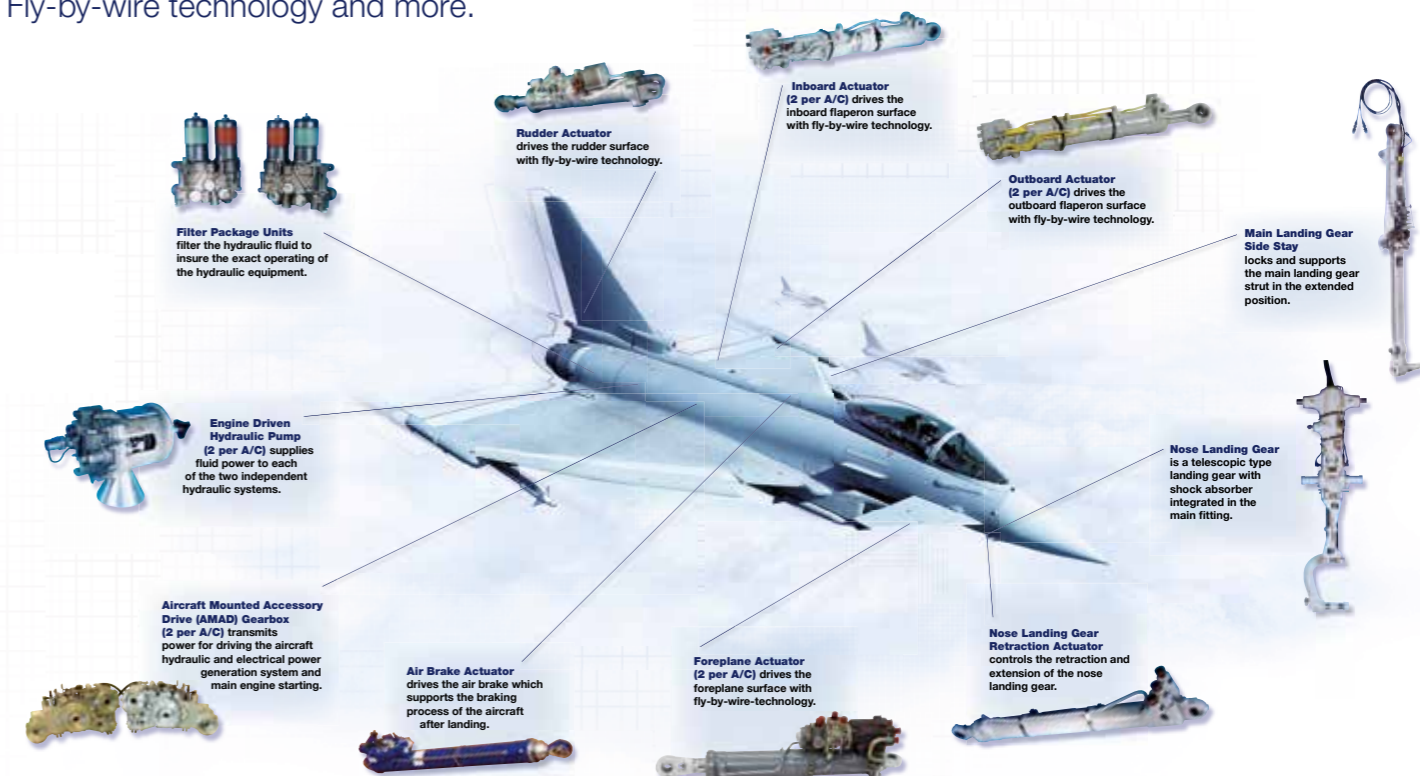
LIEBHERR-AEROSPACE

The value of being part of the Eurofighter programme goes far beyond the actual production work and the direct jobs it supports and sustains.

As Nicolas Bonleux, managing director and chief commercial officer at Liebherr-Aerospace & Transportation SAS, explains, it has had a major impact on growing his company's expertise and in opening doors to other opportunities.

Liebherr develops, manufactures and services aircraft flight control and actuation systems, landing gear, air management systems, on-board electronics as well as gears and gearboxes for the aerospace industry.

On Board Eurofighter: Fly-by-wire technology and more.



LIEBHERR

From its operation in Lindenberg in Bavaria, it provides a range of supplies and services to the Eurofighter, including nose landing gear and primary flight control actuators.

The business can trace its relationship with the programme all the way back to 1982, with development work for the primary flight control of the British Experimental Aircraft Programme (EAP), which formed the basis for the subsequent Eurofighter specifications.

Liebherr went on to work with other companies from the participating nations on the development of equipment. Bonleux says it has been a highly successful programme for the business, and continues to play a major role moving forward.

He says: "If you take into account the market analysis of Eurofighter GmbH in 2018 for 150 to 200 additional aircraft orders, our company, especially customer service, will secure sales and employment with the Eurofighter Typhoon in the coming decades as well."

The benefit of being part of the Eurofighter project cannot be underestimated. Bonleux says: "Being a part of a multi-national European aircraft programme provides an unmatched opportunity to gain expertise and knowledge."

That expertise is found not only in engineering, production and services but also in project management and what Bonleux describes as "the exchange between different cultures."

He adds: "Working closely together on a project and aiming for the same goal is very demanding but also very fruitful. Eurofighter provided the opportunity to develop unique

technologies and know-how in our fields of excellence – transmissions, hydraulics, flight controls and landing gear.

"Based on the expertise and experience gained during the last six decades in the military and civil aviation, and especially in the Eurofighter programme, Liebherr is in a position to offer technologies for the next generation of combat aircraft.

"Beyond the technologies and know-how, Eurofighter is one of the programmes that gave us the opportunity to develop a military collaboration with other European suppliers and nations."

United Kingdom:

PRP Optoelectronics

Being part of the Eurofighter programme team has allowed Tier Two supplier PRP Optoelectronics to develop and grow and today it remains an integral part of the business.

Established in 1989, the UK company is a world leader in the custom design and manufacture of optoelectronic displays. It offers complete in-house design, development and manufacturing capabilities for a range of LED light engine and display applications.

PRP has been making the LED warnings panel display and switches for cockpits on

the Eurofighter Typhoon aircraft for almost 20 years.

It developed a dedicated warnings panel display system for the programme. The panel features a 28-caption display with 24 fully programmable bi-colour captions with over- and underlines, and three fixed legend captions, all fitted into an extremely tight space.

The display system designed by PRP incorporates many novel features and the LED



display modules use both analogue and digital application-specific integrated circuit (ASIC) technology.

In 2018 the business celebrated a significant milestone; the manufacture of the 1,000th custom LED display for the Eurofighter programme.

PRP relocated from Towcester in Northants in 2014 to new headquarters in Swindon, Wiltshire. This year it has expanded the business



Kevin Peart, Managing Director PRP Optoelectronics

across two sites and its workforce has grown in numbers to 35.

Managing director Kevin Peart says that between 10-15 of those staff have been sustained by its Eurofighter work.

The company's involvement in a pan-European project has had other important benefits. As Peart explains, Eurofighter is "integral to the business".

He adds: "We have built strong relationships with other businesses: General Dynamics, GE, Korry-Esterline and Ultra Electronics.

"We continually discuss, evolve and improve our services allowing us to take our technology through to other platforms around the world."

Today PRP supplies a variety of LED displays to the aerospace industry – and it continues to seek out new markets and products in a range of sectors.

The business says its ever growing, varied product line focuses on quality, leading-edge technology and high levels of customer satisfaction.

R&D work continues on the company's custom RGB monolithic semiconductors and UVC water purification systems.

Peart, who became managing director after an MBO in 2015, adds: "As a business we are very proud to be part of the Eurofighter family, working closely alongside partner

businesses and being recognised by our sophisticated client base for our commitment to stringent quality standards and exceptional service."

Spain:

CESA (HÉROUX-DEVTEK)

The history of CESA – now operating as Héroux-Devtek Spain – goes hand in hand with the unfolding Eurofighter Typhoon story.

The business was founded in April 1989 as a spin-off of CASA's hydraulic equipment division and its creation was directly linked to the Eurofighter programme launch.

From day one its activities have been focused on developing and producing FluidMechanical - hydraulics, pneumatics and fuel - and landing gear components.

The operation is based in Getafe and since 2007 has had a facility in Seville. In 2018 the business was bought by Canadian group Héroux-Devtek, the world's third largest landing gear manufacturer.

Today it is manufacturing and supporting a large panel of components and systems. The list is impressive and wide-ranging. It is participating in 36 LRUs and collaborating with BAE Systems, Alenia Aermachi, Airbus DS GmbH and SAU as well as with Liebherr Aerospace, Safran, ACMA, Microtecnica and ITP and Avio for the Eurojet.

That involvement includes working on primary and secondary flight control systems, the aircraft's landing gear system and engine.

José Leal, general manager of CESA, says collaboration and building strong relationships across Europe has been central to delivering the programme.

He says: "The relationship with our European counterparts in the programme was built on a highly respectful recognition of the capabilities and capacities of each partner on the technical side and following the industrial guidance of the four nations for the industrial side.

"This has been the seed to develop further the collaboration in other programmes with all our partners in the Eurofighter programme.

"This further collaboration is essential to grow and develop a robust supply chain and relationships to ensure strong capabilities for the sake of our common customers, which are all the pilots and ground support teams in the different countries where the Eurofighter is operated."

At its peak around 50 per cent of CESA's workforce was engaged on Eurofighter work. Today's programme still represents 10 to 15 per cent of its sales. The programme has been a catalyst for new opportunities both in Europe and overseas.

Leal says the skills developed on Eurofighter, and continued on other programmes, are "the strong basis" of its presence on

other military and commercial aircraft programmes.

They have also allowed it to play important roles on the development of future European defence aircraft projects and the new technologies needed.

Leal adds: "We are proud to be part of the Eurofighter team and wish to continue to be a major player in the future of the European aerospace and defence community."

Italy:

AEREA

Enrico Poliero describes Eurofighter as "a perfect example of how fruitful and effective European cooperation at its best can be" – not just for the core nations but across the supply chain.

The chief executive of AEREA says: "The programme has been developing technical standards par excellence and high levels of co-operation over the years.

"This has enabled not only the core nations to share their know-how, but also their respective industries to expand their capabilities and expertise."

Poliero says that knowledge-sharing and growth journey has been massively beneficial to SMEs like AEREA, helping drive its development and giving it a cutting edge commercially.

Today the company, taken over by Eng. S. Mantovani in the 1970s, is an industry leader in the field of carriage and release systems.

It is, as Poliero says: "A global player capable of designing, developing, producing and delivering high performance systems for Eurofighter, while at the same time growing its capacity and expanding internationally."

The company's mantra of continuous investment in technology and engineering, coupled with the experience gathered on the programme, has allowed it to successfully develop leading edge technology projects such as pneumatic ejection.

Already in use in defence programmes and available to upgrade Eurofighter's ejection system, Poliero describes it as "a clear example" of AEREA's contribution to the aircraft's continuous improvement.

AEREA can trace its history back to 1927. Since 2016 it has operated from a state-of-the art facility in Turate, north of Milan.

Poliero says: "Eurofighter remains a significant contract for us. In the early phase of the programme we were awarded an OEM role for specific key components of the aircraft's armament system.

"As well as these main areas of responsibility we are also involved in work-sharing projects on a range of other equipment, including missile launchers and external fuel tanks.

"Our involvement in the programme also extends to providing support equipment, training customers' ordnance personnel and Maintenance Repair, Overhaul and Upgrade (MRO&U) work."

Poliero says the Eurofighter came at a "perfect time" for the business. He adds: "Our participation has perfectly matched AEREA's strategies and has significantly supported the company's growth in terms of both turnover and expertise.

"In the last few years, we have started to see the retirement of colleagues who originally enrolled in support of the ramp-up of the programme.

"They are all proud of their role in a significant phase of the history of the European aerospace industry and their contribution in creating opportunities for the new generation of engineers coming onboard today, with future programmes in sight."



Enrico Poliero, Chief Executive of AEREA

He adds: "We strongly believe in the benchmark for collaborative programmes which was so effectively set by Eurofighter, and we support it.

"One of our main objectives is to secure new partnerships with a forward-looking strategy in order to pursue development prospects, especially in regard to the next generation European platforms and their bay launch and ejection requirements." ←



José Leal, General Manager of CESA

The big picture:
An Italian Eurofighter Typhoon securing the skies over Northern Europe as part of the NATO Baltic Air policing missions.



Mission Future: Eurofighter and FCAS

Raffael Klaschka is a former Typhoon pilot who served in the German Air Force for 18 years. Today Klaschka is Head of Strategic Marketing at Eurofighter. His colleague, Daniel Krueger, is an experienced Eurofighter Typhoon pilot and Weapons Instructor. In this series of exclusive articles for Eurofighter World they examine Eurofighter's place alongside a next generation fighter in the future operating environment.



In PART ONE they look at the role Eurofighter will play in the future.

“Eurofighter Typhoon will play an important and operationally relevant role in the future operating environment – I have absolutely no doubt about that,” says Raffael Klaschka.

“I’m not saying this simply because of

my role at Eurofighter GmbH or indeed my perspective as a former Eurofighter Typhoon pilot—I’m convinced of Eurofighter’s central role for a number of reasons.

“Let’s be clear. The idea that Eurofighter will be replaced or won’t have a fundamental role to play when an FCAS



Raffael Klaschka

system arrives doesn’t stand up to scrutiny. I’d go even further – the European nations involved in planning the next FCAS systems won’t be able to get the best out of them, both in terms of development and operational capability, without Eurofighter.”

“With its scalable weapon effects, great precision and flexibility, Eurofighter will be an essential part of the FCAS. It will be able to significantly increase the mission effectiveness as a manned platform within the FCAS.”

So how will a combat aircraft like Eurofighter play a part in the future operating environment?

“In the future battlespace a combat aircraft would still have a fundamental role to play besides other manned and unmanned assets,” says Raffael. “And if you take a manned, combat proven fighter aircraft out of the FCAS equation, you would leave a capability gap that is hard or impossible to fill with assets that were designed for very specific niche operations rather than for a variety of roles.

“From stabilisation operations and close air support through to high intensity dynamic warfighting, we see a variety of scenarios that demand a wide bandwidth of capabilities. High payload and electronic combat are often mentioned in this context but even the Typhoon’s gun can be a very effective asset in certain scenarios. It is about adaptability and flexibility in terms of scalable weapon effects and aircraft performance. In short, there will be a need for a number of capabilities that a manned combat aircraft like Eurofighter will be perfectly placed to fill.”

Eurofighter colleague Daniel Krueger agrees: “It’s clear that in planning for the future Eurofighter has some capabilities that are very well suited to, and perfectly

Eurofighter's Elementary Role

Eurofighter will have an elementary role to play in the decades to come alongside any new Future Combat Air System in the Future Operating Environment, says Raffael Klaschka. It's the only logical conclusion you can draw when you consider the picture, for these main reasons:

- **Intersection:** When you consider the different platforms currently used by nations who are developing European FCAS solutions, Eurofighter Typhoon is a common denominator. This means that, regardless of whether we end up with several or one large European FCAS programme, the Eurofighter will be an elementary and important component.
- **Quantity:** Eurofighter is the largest fleet on a single platform with almost 500 aircraft across Europe. Of course, while some may be taken out of service over time, replacement orders, like Quadriga, will see this number increase. In short, Eurofighter dominates the European market in terms of numbers and will do for years to come.
- **Gradual developments to the FCAS:** The development of the FCAS systems will be an incremental process, with some of its new technologies matured on existing platforms, like Eurofighter. We don't have the luxury of ignoring existing and proven platforms when it comes to maturing new technologies.
- **Operating life:** When you look at the current Eurofighter user nations and their plans for the operating life of Typhoon, we can be very confident that we will see Eurofighter flying until at least the 2060s.

complement, the bigger picture. Nobody really knows exactly when an FCAS will reach 100% Full Operating Capability. But we do know that Eurofighter will pave the way for it and will continue to make a major contribution to the force mix as and when the FCAS does arrive."

But, with nations across Europe facing major funding pressures following the Covid-19 crisis, how will they be able to justify a Eurofighter upgrade as well as an FCAS development?

"It's not a question of either an evolved Eurofighter or an FCAS," says Raffael. "I'd argue that you can't have a truly effective FCAS without investing in the evolution of Typhoon as well. For one thing, investment in Typhoon technology, will allow it to be a maturation platform for the future combat system. As a technical enabler Eurofighter would help de-risk FCAS development."

And, says Daniel that's not all. "Continued investment in the further evolution of the Eurofighter delivers a huge benefit as a force multiplier of certain military capabilities. For example, installing a high-speed data network into the Eurofighter fleet can be done relatively easily and with limited cost. That in combination with new communication assets enables connectivity to a variety of assets."

Both men argue that the price you would pay if we were to stop investing in Typhoon would be far higher than the cost needed to make it a vital asset in the future operating environment. Because then the cost would be measured in lost opportunities, skills, technology maturation and future capability of the whole system. ←



The big picture:
A fully armed Italian Eurofighter Typhoon from Trapani Air Base preparing for night training mission.



Factory of the future

Manufacturing on Eurofighter Typhoon is advancing all the time says Professor Andy Schofield, Technology Delivery Director at BAE Systems - Air, where a wide range of advanced manufacturing techniques are helping to deliver parts in a more cost effective way.

The team in the UK is investing in advanced technologies such as digital manufacturing, 3D printing, and the use of virtual and augmented reality which are evolving how Typhoon is produced. This is supporting the development of technologies which are considered key to defining how a future combat aircraft will be manufactured.

This investment is not only allowing us to manufacture quicker and cheaper, it is enhancing the quality of the components we produce and giving us better data to ensure we can support the aircraft through its life.

Here Andy picks out some examples where improvements in processes, technology and materials are being embedded in BAE Systems' Eurofighter Typhoon production today — with one eye on the future.

Additive manufacturing: Using advanced additive manufacturing to certify the first titanium parts for the Eurofighter Typhoon which will form part of the structure which surrounds the engines of the jet. Traditionally, parts would be fabricated and welded together, whereas now they are additive manufactured using titanium as one part, delivering cost and time savings and enhancing quality.

Environmental Cooling System (ECS) duct: This cooling duct is an example of additive manufacturing in use on Eurofighter Typhoon today, where it is used to provide cooling for the aircraft's new electronically-scanning radar. The part was previously made of 16 pieces assembled together. The new revised part is now made in two pieces of using an advanced nylon material which takes 24 hours to build. Two aircraft sets can be printed in one build.

Optical Projection on Typhoon fin: Optical projection technology is being used to support operators to insert fasteners on to Typhoon fins. It delivers information at the point of use including measurement and fastener type information, ensuring the process is faster and more efficient.

Automated looms: Through the digitisation and automation of producing electrical wiring looms for the 12 kilometres of wire which goes in to the front fuselage of Typhoon, the team is saving five kilometres of wire which would have been wasted. ←



THE INTELLIGENT WORKSTATION

In the BAE Systems Typhoon production facility in Sarnesbury, UK, an Intelligent Workstation is already in use to produce sub-assemblies for our export aircraft deliveries to our customers in Kuwait and Qatar.

These workstations are equipped with a range of technologies which assist operators to assemble components, in a more efficient way.

In development in the BAE Systems Factory of the Future, are a range of technologies which include 'pick by light' technology prompting the user towards the correct components or consumables, and a sensor-enabled robotic arm to work safely and seamlessly alongside our people.

We can expect some of these further technologies to be brought in to use for the production of components for future Typhoon aircraft, including the up to 38 aircraft due to be delivered to the German Air Force.

Pilot Brief on Interoperability

In this edition of Eurofighter World we speak to Eurofighter pilot **Daniel Krueger** about Interoperability and find out what it is, why it's important and why it will remain crucial in the future.

What is interoperability?

From a front-line pilot's perspective, interoperability is the ability to work together with different platforms and assets in a secure and efficient manner. In really simple terms, it means I can fly my Typhoon together with a UK F-35 and we can share information mid-flight. Essentially it is about being able to distribute and share information — mainly data — between forces, whether that's with other aircraft of different types, ships or ground forces. The information is shared via data links.

Another area where interoperability is key is in the partnerships between air forces operating the same weapon system. Here there are clear synergies, as, for example, demonstrated by the UK RAF and the Luftwaffe during the NATO Baltic Air Policing missions in 2020.

Why is it important?

Sharing data this way significantly reduces the time it takes for a pilot to act. This data sharing is not a manual operation, it's done automatically through the jet's on-board computers. However, the pilot is always in full control of exactly what data he is sharing. The other factor is that interoperability reduces the risk of human error. In mission terms it's about taking decisions where speed and accuracy are a matter of life or death. And here I do not just mean military, it's about protecting civilian lives too.



The main point is that thanks to Typhoon's interoperability I am able to fly anytime, anywhere, with any asset in the battle space, to fulfil the mission in the shortest time necessary.

In the military environment, a key consideration is security. Being able to send and receive data securely across the different data links is a crucial part. Challenging but critical.

What does it look like in operational terms?

For example, I may be flying in a joint NATO mission, as part of a German Air Force four-ship formation, when one of the UK assets, a warship say, needs to send me information to attack a specific adversary aircraft. It would not send a voice command, instead they would designate the action on their system and send it to me via a data link. My system on Typhoon would then automatically process the data, the coordinates and so on. I simply complete the mission.

What are the challenges around interoperability?

Getting numerous different assets harmonised and talking to one another is a major technical challenge. There are countless data link standards used by all the different assets across air, land and sea. Ground forces use different data links compared to specific aircraft or compared to ships. Then there are questions over how technically evolved an asset might be or the national standards.

How important will it be in the future?

Interoperability will be even more important for a number of reasons. First, threats are mutating. Today enemy forces are capable of jamming voice communications. They have also started jamming data frequencies.

Therefore, having the ability to use another platform's data and information to complement your own data becomes important in terms of resilience, and redundancy. So, sharing and distributing data is vital. Another point to consider is the technological advances that are coming. These will mean the amount of data used in the battlespace will increase massively. Therefore, ensuring your forces share and use that data through secure, fast and highly capable data links will be essential. When looking to the future, it's worth considering the impact the Future European Combat Air System projects will have. Connecting a variety of assets to interact with one another will drive the interoperability challenge to new levels. ←



The big picture:
Two German Eurofighter Typhoons from the Tactical Air Wing 74 in Neuburg on duty securing the skies.

Eurofighter squadron assigned to Italian Air Force

51st Wing



The Italian Air Force has officially included the 51° Stormo at Istrana Air Force Base, northern Italy, among the units responsible for national air defence after a Eurofighter fleet was deployed to the base. This deployment brings the total number of operative Eurofighter bases in Italy up to four.

The 51° Stormo is currently operating with one flying squadron (132° Gruppo) which is equipped with two different fighter aircraft types, specifically the Eurofighter Typhoon and AMX.

The 51° Stormo aims to transfer entirely to the Eurofighter Typhoon in the near future, gradually phasing out the AMX.

Colonel Massimiliano Pasqua, Commander of the 51° Stormo, said: "The phase out of the AMX is necessary for the future



Colonel Massimiliano Pasqua,
Commander of the
51° Stormo

of 51° Stormo as a fighter unit, as managing two very different aero-tactical fleets was proving to be a challenge."

The Typhoon has both air-to-air and air-to-ground capabilities, which will enable the Stormo to carry out the same missions as they previously performed with two different fleets, with only one single type of aircraft.

51° Stormo formally changed its mission in September 2019, adding the 'provision of an air defence service' to its assigned

tasks. The changes at Istrana Air Force Base — with the arrival of Eurofighter fighters to the 132° Gruppo — represent the latest part of the transformation.

Part of the process has included activation of the maintenance bays for the Eurofighter line — specific work areas equipped for technical inspections — enabling the 51° Stormo to reach full maintenance capacity, which allows the staff of the Gruppo Efficienza Aeromobili (GEA) at Istrana to take over the other Eurofighter Units in the aircraft maintenance cycle.

There are two maintenance bays, allowing GEA staff to simultaneously accommodate two aircraft undergoing inspections, which involve second level technical maintenance and inspections of the engines,

ejector seats and the on-board armament systems, including their preventative removal.

Colonel Massimiliano Pasqua added: "The number of pilots assigned to the 132° Gruppo is constantly increasing, to the point that we perceive that the other two Squadriglia, the 252a and 253a, will be 'populated' by pilots flying the new Eurofighter Typhoon aircraft."

Until recently, Italian Air Force deployments to Istrana were carried out in rotation by aircraft and crews from the 4° Stormo in Grosseto (Tuscany), the 36° Stormo in Gioia del Colle (Puglia) and 37° Stormo in Trapani (Sicily).

Originally, Eurofighter Typhoons were assigned to these three airbases. However,

this left northern Italy with no cover.

Colonel Pasqua said: "The assignment of the first Eurofighter Typhoon to Istrana was a gradual process. It was initiated in January 2017, when a pair of Eurofighter aircraft were detached to Istrana airfield, replacing a similar aircraft which until that moment had been present at the Cameri airbase."

Leonardo delivered the latest brand new Italian Eurofighter to the 132° Gruppo during a small, COVID-19 proof-ceremony at Istrana Air Base on the 23rd of October 2020.

The future of the 51° Stormo with the 'Swing Role' Eurofighter Typhoons looks bright! ←

Jamie Hunter

Jamie Hunter is a photographer, videographer, and specialist aviation content creator with over 20 years' experience.

With his company Aviacom Ltd Jamie has flown with air forces and industry clients all over the world, and is proud to have over 30 Eurofighter Typhoon missions in his logbook.

What Jamie says about this image:

I was flying a mission from RAF Lossiemouth, which was a training mission for three aircraft to perform low level intercepts, with another jet conducting close air support (CAS) training. I was flying on the back seat of a two-seat Typhoon T3, and we were able to allocate a few minutes to getting some dynamic imagery. For this set-up, I carefully choreograph the three jets to be in a formation on our starboard side. It takes a lot of careful briefing and planning before anyone steps to the jets to ensure safety and success. With the jets in position, everyone knows what to do when the call of '3, 2, 1, break comes.' Perfect!

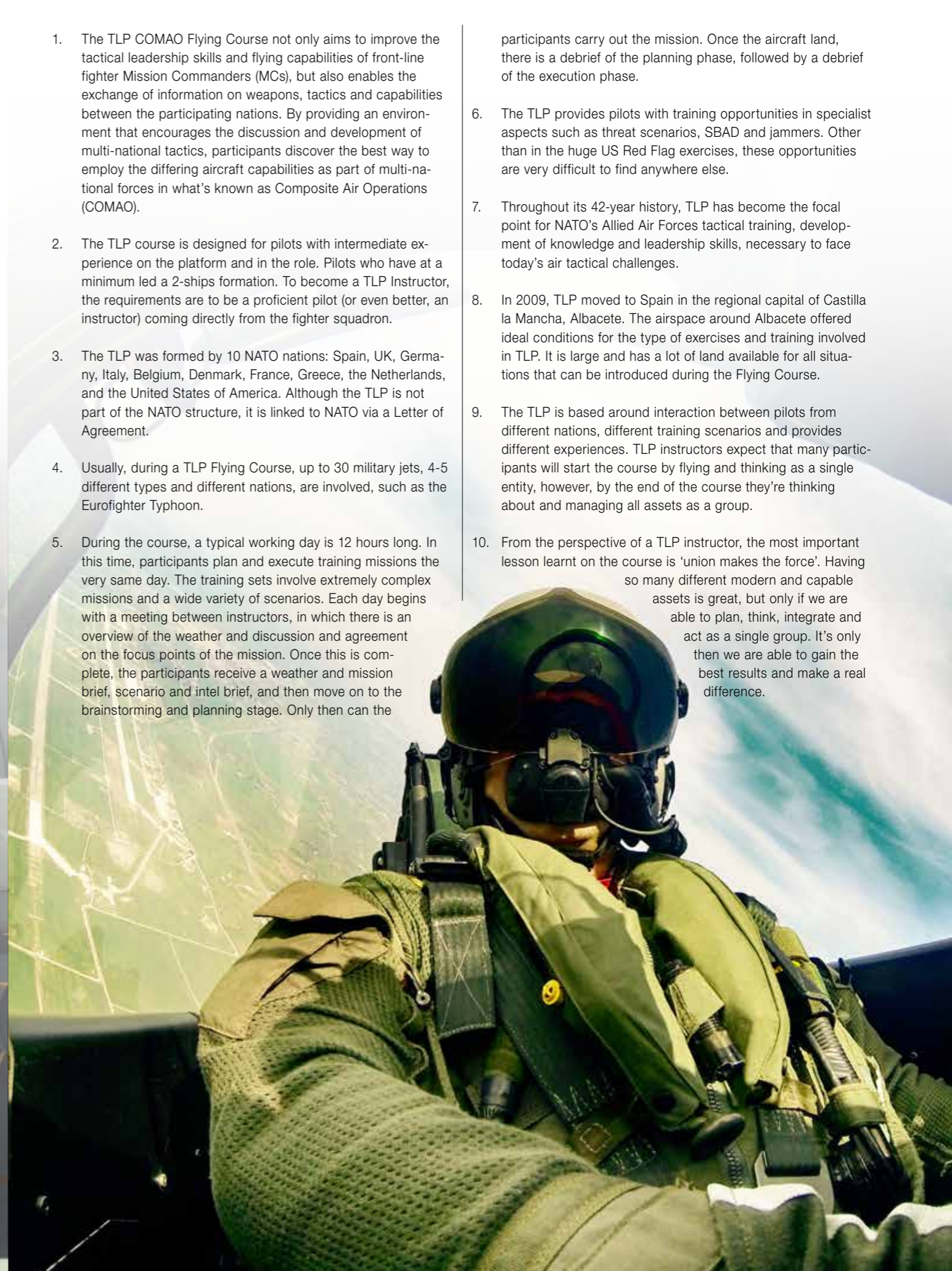


10 Things

about the Tactical Leadership Programme

With the help of Maj Pil Daniele 'Marmo' Marmioli, Air to Air Instructor, here's your guide to the Tactical Leadership Programme (TLP) at Albacete Air Base.

1. The TLP COMAO Flying Course not only aims to improve the tactical leadership skills and flying capabilities of front-line fighter Mission Commanders (MCs), but also enables the exchange of information on weapons, tactics and capabilities between the participating nations. By providing an environment that encourages the discussion and development of multi-national tactics, participants discover the best way to employ the differing aircraft capabilities as part of multi-national forces in what's known as Composite Air Operations (COMAO).
2. The TLP course is designed for pilots with intermediate experience on the platform and in the role. Pilots who have at a minimum led a 2-ships formation. To become a TLP Instructor, the requirements are to be a proficient pilot (or even better, an instructor) coming directly from the fighter squadron.
3. The TLP was formed by 10 NATO nations: Spain, UK, Germany, Italy, Belgium, Denmark, France, Greece, the Netherlands, and the United States of America. Although the TLP is not part of the NATO structure, it is linked to NATO via a Letter of Agreement.
4. Usually, during a TLP Flying Course, up to 30 military jets, 4-5 different types and different nations, are involved, such as the Eurofighter Typhoon.
5. During the course, a typical working day is 12 hours long. In this time, participants plan and execute training missions the very same day. The training sets involve extremely complex missions and a wide variety of scenarios. Each day begins with a meeting between instructors, in which there is an overview of the weather and discussion and agreement on the focus points of the mission. Once this is complete, the participants receive a weather and mission brief, scenario and intel brief, and then move on to the brainstorming and planning stage. Only then can the participants carry out the mission. Once the aircraft land, there is a debrief of the planning phase, followed by a debrief of the execution phase.
6. The TLP provides pilots with training opportunities in specialist aspects such as threat scenarios, SBAD and jammers. Other than in the huge US Red Flag exercises, these opportunities are very difficult to find anywhere else.
7. Throughout its 42-year history, TLP has become the focal point for NATO's Allied Air Forces tactical training, development of knowledge and leadership skills, necessary to face today's air tactical challenges.
8. In 2009, TLP moved to Spain in the regional capital of Castilla la Mancha, Albacete. The airspace around Albacete offered ideal conditions for the type of exercises and training involved in TLP. It is large and has a lot of land available for all situations that can be introduced during the Flying Course.
9. The TLP is based around interaction between pilots from different nations, different training scenarios and provides different experiences. TLP instructors expect that many participants will start the course by flying and thinking as a single entity, however, by the end of the course they're thinking about and managing all assets as a group.
10. From the perspective of a TLP instructor, the most important lesson learnt on the course is 'union makes the force'. Having so many different modern and capable assets is great, but only if we are able to plan, think, integrate and act as a single group. It's only then we are able to gain the best results and make a real difference.





The big picture:
RAF 6 Squadron Eurofighter Typhoons on Exercise Bersama Lima 11 in Malaysia.

Typhoons take part in largest UK exercise in over a decade

Eurofighter Typhoons have taken part in what was the RAF's largest exercise in the UK for over a decade.

Exercise Crimson Warrior also involved the Royal Navy, British Army, United States Marine Corps and United States Air Force.

The exercise involved rapid jets, multi-engine aircraft, helicopters and Unmanned Air Systems operated from bases across the country. Over 70 aircraft — including the Typhoons — completed a

range of missions during the three-week training session.

The exercise also marked the end of the intense Qualified Weapons Instructor courses, where selected pilots are trained to be expert practitioners in their individual warfare speciality or aircraft.

As a swing role aircraft, the Typhoon lent itself perfectly to the course. Students were tested in both air-to-air and air-to-ground roles in the same mission, with pilots en-

gaging hostile aircraft as they approached their target area. They were then asked to defend against enemy surface-to-air missiles as they located and attacked the land targets.

"Exercise Crimson Warrior is the UK's premier live airborne tactical training event of the year and the directing staff from the Air & Space Warfare Centre's 92 Squadron took great pride in delivering an extremely demanding and complex exercise," said Exercise Director Group Captain Rob Barrett.

"All the participants gained valuable experience in the integration of Air and Space power roles. The QWIC students, who met the exacting standards required during Exercise Crimson Warrior, proved themselves in the most challenging of environments and are now qualified to join the ranks of the UK Services' most able tactical leaders and instructors."



A three-ship of USMC F-35B's sitting off the wing of an RAF Voyager before taking on fuel, flying as part of Ex Joint Warrior. © UK MOD Crown Copyright 2020

Image shows Airbus Voyager, ZZ336, landing, after finishing a sortie in support of Exercise Joint Warrior 20. The sortie started in the morning flying as a MADRAS callsign, flying up to the North Sea and refuelling F-35B's of the United States Marine Corps and the Royal Air Force F-35's of Number 617 'Dambusters' Squadron. After a few hours it landed at Prestwick for a fuel stop, before returning to the air to fuel F-35's again. After finishing its support it then returned home to RAF Brize Norton.

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New NETMA GM looking forward to 2021 challenges



NETMA

From your point of view, what were the NETMA highlights of 2020?

We started this year with a very positive meeting in Garmisch between industry and the four core nations. The Programme Planning and Decision meeting (PPDM) set the tone for the rest of the year, because it revitalised team spirit and helped deliver valuable updated plans.

When the COVID-19 pandemic arrived, we created a new working model to preserve the health of our staff and the level of performance expected of the Agency.

Summer saw the appointment of four directors at NETMA: General Manager, Deputy GM, Director of Operations and Engineering and Commercial Director. While these changes brought new skills and vast experience, they also required effort to maintain knowledge and continuity within the Agency.

Last, but not least, in November the Quadriga project was approved; 38 new aircraft for Germany to replace the existing Tranche 1 jet. This represents one of the most significant events of the last few years for the programme. The investment comes at a strategic moment for the entire Eurofighter Typhoon community and will enable the enterprise to prosper in a number of ways.

These include providing continuity for industry in terms of its production capacity; reinforcing export opportunities; contributing to the resolution of obsolescence issues; building a bridge to the future evolution of the aircraft and finally, supporting the service of NATO allies through the delivery of Germany's operational needs.

Looking towards 2021 and beyond – what do you see as the key opportunities and challenges?

2021 is another year of strategic importance for the Eurofighter programme and there will be a number of crucial challenges.

In the summer of 2020, the NATO Eurofighter and Tornado Management Agency (NETMA) appointed a new General Manager. As soon as Miguel Ángel Martín Pérez took control, one of his first major tasks was the signing of the Quadriga contracts that will support the continued modernisation of the German Air Force's Eurofighter Typhoon fleet. In this edition of Eurofighter World we ask him about the highlights of 2020 and what the next 12 months will hold.

**Miguel Ángel Martín Pérez, General Manager
NATO Eurofighter and
Tornado
Management Agency
(NETMA)**



One of the main ones for the Eurofighter Enterprise will be helping secure the Halcon contract for 20 new aircraft for Spain. This is a continuation of the German Quadriga agreement and achieving it will require the full commitment of all our national and industry partners.

More broadly, I believe all our efforts will be needed to continue to support Eurofighter export campaigns and opportunities. These are essential to boost the Eurofighter community and to demonstrate the competitiveness of the weapon system.

And, of course, we have to continue surviving, physically and mentally, in the face of COVID-19, which has brought so much difficulty to our private and professional lives.

Finally, I'd like to underline the point that in order for the Eurofighter programme to continue to be successful we have to work as a real team – nations, industry, NETMA, Eurofighter and Eurojet – more than ever before. For me a 'real team' does not only mean good performance but, fairness and transparency. ←

Partners unite behind the Swiss offer

In November, Airbus and the German government submitted their official offer to the Swiss Federal Office of Armaments for the sale of Eurofighter aircraft to Switzerland. The offer is designed to meet the requirements of the new combat aircraft (Neues Kampfflugzeug - NKF) procurement process implemented by Switzerland to replace its F-5 and F/A-18 fleet with a more modern fleet.

We talk to Franz Posch, CEO, Airbus DS Schweiz, who is leading the campaign for Eurofighter, about meeting the challenge caused by the COVID-19 pandemic, the impact of Quadriga and what 2021 will bring.



Franz Posch, CEO, Airbus DS Schweiz

CREATIVE RESPONSE TO COVID RESTRICTIONS

Not surprisingly, the COVID-19 pandemic had a big impact. For one thing the competition was delayed slightly. The original plan had been for offers to be submitted to the Swiss Federal Office of Armaments in August, however, that date was put back by three months to

November 18th, 2020.

The campaign team had to adapt their way of working. It rapidly launched two major digital events. "In the first, we invited 200 people from industry to join live presentations from Airbus," says Franz.

The event was critical because Switzerland wants 60 per cent of the contract value to be offset by work coming into their industry. "Normally we would have been out meeting companies face to face to develop relationships."

"We presented our offset potential for Switzerland and it was a good way for them to get to know us. We also worked with the Industrial Associations of Switzerland and Germany to bring companies together from both nations to discuss the offset possibilities."

This wasn't the kind of run-of-the-mill webcast that we became familiar with in 2020. Instead, Franz and the team set-up a TV studio and used their production facilities to produce a live show for their guests. The format included a host and three



Franz Posch and the Eurofighter Core Nations Ambassadors to Switzerland
From left to right: Spanish Envoy to Switzerland Javier Benosa Lalaguna
UK Ambassador to Switzerland Jane Owen
Airbus Switzerland CEO Franz Posch
German Ambassador to Switzerland Michael Flügger
Italian Ambassador to Switzerland Silvio Mignano

experts to provide live answers to industry questions.

Says Franz: "We also held a real, in-person press conference in the German embassy in Bern. This time we had the four ambassadors from the Eurofighter core nations."

"With both events, we tried to come up with formats that offered something unique

to the Swiss audience and both were extremely well received. I am really proud of the way the whole team responded to the challenge and the way we were able to deliver under difficult constraints."

A EUROPEAN SOLUTION

In order to be open and transparent, the Eurofighter team held the Bern press

conference a day after submitting their proposal. It was hosted by the German ambassador, alongside the ambassadors from the other core Eurofighter nations, Spain, Italy and the UK.

"Their message was clear — it's not only about buying a product; if Switzerland chooses to do so, it can join a partnership," says Franz. "This is a unique Eurofighter thing. Our special partnership means whenever you need support, there are four nations who can support you in things such as training, using common airspace for training or educating pilots. This is something that can only be offered through the support of the four air forces from the core nations. They were able to show how Switzerland has the chance to share all the experience which is available from day one."

same tranche that was being offered to the Swiss."

The press conference also announced that Eurofighter would support a final assembly in Switzerland, passing on valuable first-hand knowledge of how the fighters are built and maintained.

"This would allow Switzerland to build up their indigenous capabilities."

THE MESSAGE FROM QUADRIGA

The news about Quadriga from Germany broke the week before Franz and the team delivered their proposal. "It was absolutely the perfect timing. The Quadriga standard aircraft is the baseline for the proposal in Switzerland."

"Switzerland has asked all the nations competing in NKF that their solution should

This lifecycle question is a crucial one for Switzerland. It will be the last nation flying F-18 and as such they're having to invest heavily in order to keep the fleet operating."

Throughout the campaign, Franz and the team have been keen to stress two key messages about how their proposal is able to meet the brief for Switzerland.

"One is 'faster, higher and more reliable', which refers to the point that Switzerland is asking for a fighter with air superiority capability. This is something that Eurofighter was developed for and we believe it has the best technical capabilities in the international environment."

The second message is 'data superiority', which is also very important for Switzerland. "What we mean is that all the data that is generated from the Swiss Eurofighter would remain in Switzerland. It could use the Eurofighter autonomously and without any restrictions. In short, data remains in Swiss hands."

SWISS VOTERS TAKING KEEN INTEREST

Switzerland is very special because the decision always lies with its citizens. During the planning phase of the campaign, there was a public vote on the proposal from the Minister of Defence to spend six billion Swiss francs on 40 new fighters.

Franz says: "There was a very narrow majority. In fact, in the referendum 3.2 million voted and it was decided by 50.1% in favour — a difference of just around 8,500 votes. It was really close and there was intense discussion inside the country."

"It's a very special democratic process. After the type selection, the Swiss parliament will give the final approval for the contract."

WHAT HAPPENS NOW?

We have handed in our offer, now armasuisse, the Swiss Procurement Department, takes over. It will analyse the offers and hand over their recommendations to the Minister of Defence.

The Minister will then, together with her fellow members of government, discuss the reports and they will ultimately come to an agreement and make the final decision. This is called the Type Selection and it is likely to be announced around the second quarter of 2021. After that, the detailed contract negotiations are due to start. This is prelude to final contract.

"I'm quite confident that we definitely delivered something that's a very comprehensive and solid package with unique opportunities for Switzerland," says Franz.

be in operation with their home nation.

Quadriga means we can now show that Germany has decided to go for the latest generation of the Eurofighter. And this Tranche 4 Eurofighter will be able to fulfil all the requirements requested by the Swiss.

"Importantly, this is a guarantee for Switzerland that there will be a lead nation flying the same configuration beyond 2060.

EUROPE



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