



#LEARNANYWHERE

To discover more about how we can shape your flight test professionals, please contact us and book a consultation.

**ETPS**

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# Shaping the World's Flight Test Professionals

**Course Catalogue**

March 2021



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# Introduction

## A warm welcome to ETPS

With an unrivalled 75 year heritage and state-of-the-art training facilities, ETPS provides world-leading training for flight test professionals, equipping them with the specialist knowledge and flying skills they need to run safe and effective military and civil flight test programmes. Today's students are benefitting from our substantial investment in new facilities, flying assets and teaching systems as well as a new syllabus that offers a comprehensive range of dedicated fixed wing and rotary wing aircraft courses.

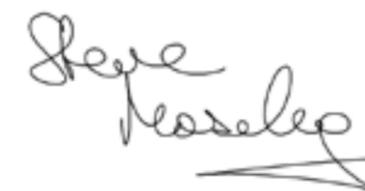
Our motto – Learn to Test, Test to Learn – perfectly encapsulates how we shape our students, using extensive theory that is always anchored in relevant, real-world experience. Our modular courses for Test Pilots, Flight Test Engineers, Systems Test and Evaluator Aircrew cover experimental, development and systems testing and are delivered by expert tutors who are recognised globally as experts in their respective fields. During their careers they have delivered some of the most high profile test and evaluation programmes in both military and civilian environments and bring this unique experience to bear in the classroom and in the cockpit.

Our new fleet of fixed wing and rotary wing aircraft have all been extensively modified with the latest flight test instrumentation to create 'flying classrooms' that meet both military and civil requirements. ETPS students gain invaluable experience in a wide variety of aircraft types and all courses are designed to inspire and equip flight test professionals with the skills, insight and know-how to meet future career challenges with both confidence and assurance.

This course catalogue sets out the syllabus for all of our graduate courses. Rest assured, a very warm welcome awaits every student attending the School - where the facilities, quality of training, learning options and aircraft fleet are truly second to none.



**Col Rae**  
Head of Training  
QinetiQ



**Cdr Steve Moseley**  
Commanding Officer ETPS  
Royal Navy

# We Are ETPS

**Shaping talented pilots, engineers, and aircrew into flight test professionals who deliver strategic advantage and real commercial value is at the heart of everything we do here at ETPS.**

Modern flight test programmes are complex and expensive endeavours. They require a high level of knowledge, skill and hard work in order to obtain the maximum capability from different air systems. To achieve this, while ensuring our aircraft also remain safe to operate, requires trained specialists with detailed knowledge and expertise in a broad range of theoretical, practical and analytical disciplines. Successfully imparting these skills to our students is why ETPS is recognised as the global leader in flight test training.

#### **First in flight test**

As the world's first test pilot school, ETPS has trained over 1500 students from no less than 32 different countries over the past 75 years. Building on our heritage as the premier school for military flight test professionals, we now also provide dedicated and fully accredited courses for civilian customers.

Former students have been responsible for bringing many new - sometimes iconic - aircraft and mission systems into service as well as delivering extensive modifications to well established aircraft, often with cutting-edge experimental technology and innovations. In doing so, they have increased the operational effectiveness of a wide range of aircraft for both the UK and our overseas partners. Some of our graduates have even been to the moon and back!

#### **A school for the future**

While we're proud of our aviation heritage, ETPS is absolutely focussed on the future of test aircrew training as demonstrated by our substantial investment in new capabilities and resources. Today, our contemporary and comprehensive range of courses are delivered in a truly 21st century learning environment with state-of-the-art and systems-rich aircraft to provide all students with the very best and most relevant, test and evaluation training to meet the complex demands of modern developmental flight test programmes. Importantly, we've also designed our courses and training delivery to maximise accessibility, continuity and resilience in all circumstances.

# Our Proud History

**ETPS was the world's first school dedicated to teaching test flying and equips the best pilots, engineers, and aircrew with the specialist techniques and skills needed to run effective military and civilian flight test programmes.**

Our founder, Group Captain Sammy Wroath, established the principles of flight test training in 1943 - developing flying and engineering skills, practising critical thinking and taking a broad perspective in order to distil and communicate useful findings from complex flight test programmes.

These principles remain at the core of our training programmes today. However, we constantly review what we teach to ensure precise alignment with the needs of customers and to enable our graduates to succeed in even the most demanding roles at the forefront of the flight test industry.

## Our methodology

Our motto, Learn to Test – Test to Learn, succinctly describes the teaching method at ETPS.

The ETPS Programme is founded on experiential learning – combining both classroom instruction with a wide variety of practical exercises on the ground and in the air. Designed to build experience quickly, our intensive courses provide the theory and hands-on familiarity that graduates need to run cost-effective, efficient and safe flight test programmes.

Collaborative working plays a significant part in how we prepare flight test professionals for their future careers and students work and learn together in syndicates of pilots and engineers. This helps them to develop the skills required to work within multi-disciplined teams to safely and effectively deliver the best outcomes. Students are also required to act as leaders of their syndicate. This helps to build vital leadership capabilities that are pivotal to the success of any flight test programme.

## Our success

Rigorous and intensive, our dedicated fixed and rotary wing courses compress many years' worth of experience in flight and systems testing into just a few months. The syllabus is tailored to develop the precision flying and analytical skills needed to run cost-effective, efficient and safe flight test programmes.

Our graduates leave ETPS as highly skilled professionals who are ready to deliver powerful strategic and commercial advantage through programmes that:

- Optimise aircraft and systems design and performance;
- Accelerate time to market;
- Support regulatory compliance;
- Build operational capability;
- Drive return on investment;
- Ensure the safety of personnel.

Graduates from our military courses are qualified to build operational capability from the outset - enabling organisations to maximise the performance and capabilities of air platforms, ensure the safety of personnel and support the commissioning of billion-dollar acquisitions. Similarly, our courses for civilian test professionals prepare students to drive commercial value from the word 'go' - immediately able to manage flight test programmes that optimise aircraft and systems design, accelerate time to market and ensure full regulatory compliance.

ETPS works in partnership with customer organisations to meet both current and future flight test training requirements, while also helping them to develop a talent pipeline and manage their cadre of test pilots and engineers.

# A Benchmark for Excellence

**New ways to learn, flexible ways to study, unrivalled facilities, highly experienced tutors and a modern and varied fleet provide a learning experience that prepares graduates thoroughly – both practically and mentally – for their demanding roles.**

## 1 Modular, cost and time effective courses

Delivered by expert tutors at our cutting edge training facilities, our enhanced modular courses cover experimental, development and systems flight test. We also design bespoke programmes to meet specific requirements, run refresher courses in key subjects, provide tailored training for specialist tasks or conduct conversions to upgrade existing qualifications (for example Cat 2 to Cat 1).

## 2 Unique learning management system

Our new digital learning management system (LMS) is the only one of its kind among leading flight test schools. This bespoke system provides advanced and specialist tools for interactive digital and face-to-face teaching and supports collaborative learning. Accessible from anywhere in the world on almost any conceivable system, the LMS provides unrivalled flexibility and resilience in the delivery of flight test training and, significantly, enables teaching at a time and place convenient to our students.

## 3 State-of-the-art fixed wing and rotary aircraft

Our aircraft have all been modified to create 'flying classrooms' that meet both military and civil requirements. Innovative glass cockpits have built-in flight test instrumentation suites to provide live flight data and enable realistic training scenarios. These enable training in specialist test techniques such as air-to-ground radar testing and the replication of entire sorties in the classroom for debrief and further study.

## 4 The complete training package

All ETPS courses draw upon the best doctrines and T&E approaches as well as the latest technological advances across both the military and civilian sectors. This provides a complete training package that enables our students to deliver the best value in their respective areas of work. Since 2018, ETPS has been recognised as an Approved Training Organisation (ATO) by the European Aviation Safety Agency (EASA). This enables the school to deliver a cost-effective EASA-only option for our test pilot and flight test engineer long courses. A number of the flight test qualifications awarded by ETPS are also recognised by the UK's Military Aviation Authority (MAA).

# QINETIQ

# How We Train

#LearnAnywhere

## How We Train

Our courses are designed to build experience quickly – providing the combination of theory and hands-on familiarity that rotary and fixed wing flight test professionals need. Classroom learning and group discussions are coupled with exercises structured to replicate real-world test programmes, enabling students to put what they learn into practice. Our commitment to continuous investment and course development also ensures all students benefit from the latest equipment to meet the ever-changing demands and constantly evolving priorities of flight test professionals.

Close collaborations with expert organisations and test centres around the world enable us to provide an exceptionally rich learning experience that gives students invaluable insight into numerous working methods and environments - both military and civilian.

Our unique and comprehensive approach to learning also caters for all eventualities to provide the resilience and adaptability that is required for students to complete their courses regardless of their personal circumstances and other unforeseen factors.

#LearnAnywhere

# Learn In The Cloud

## Bespoke online solutions

The ETPS Learning Management System (LMS) is the only system of its kind in the world and provides a level of flexibility and accessibility unprecedented in flight test training. This pioneering approach provides a truly modern and adaptive learning environment with a full suite of interactive tools covering both rotary and fixed wing flight operations.

Based on industry leading software that has been extensively customised by QinetiQ to meet the unique requirements of ETPS, the system enables students to work collaboratively with one another and their syndicate tutors. This provides a fully integrated and modular learning environment that empowers students to learn in a style that best suits the modern professional.

The system enables ETPS to offer flexible, distance preparatory learning for our students to fit around operational duties and to optimise learning time. Our students come from many different countries so this presents significant advantages, with students even completing the entire preparatory course while on deployment in the Pacific!

### IR SIGNATURES BACKGROUND

- Low observable technology or "stealth":
  - Make visible hard to detect;
  - Stealthy objects will eventually be detected;
  - Ste - detection system delayed in its response or cannot lock on properly;
  - Advantage lies with the attacker - "stealth" buys time.
- Stealth is multi-band activity:
  - None (optical) signatures;
  - Optical visibility (or signatures);
  - IR visibility (or signatures) - focus of this lecture;
  - Radar visibility (radar signatures) - focus of this lecture.
- First part of the "Coincidence Cycle":
  - Determines "visibility" of sensors so threats can be detected;
  - Determines the "amount" of IR and RF Cds required to defeat threat.

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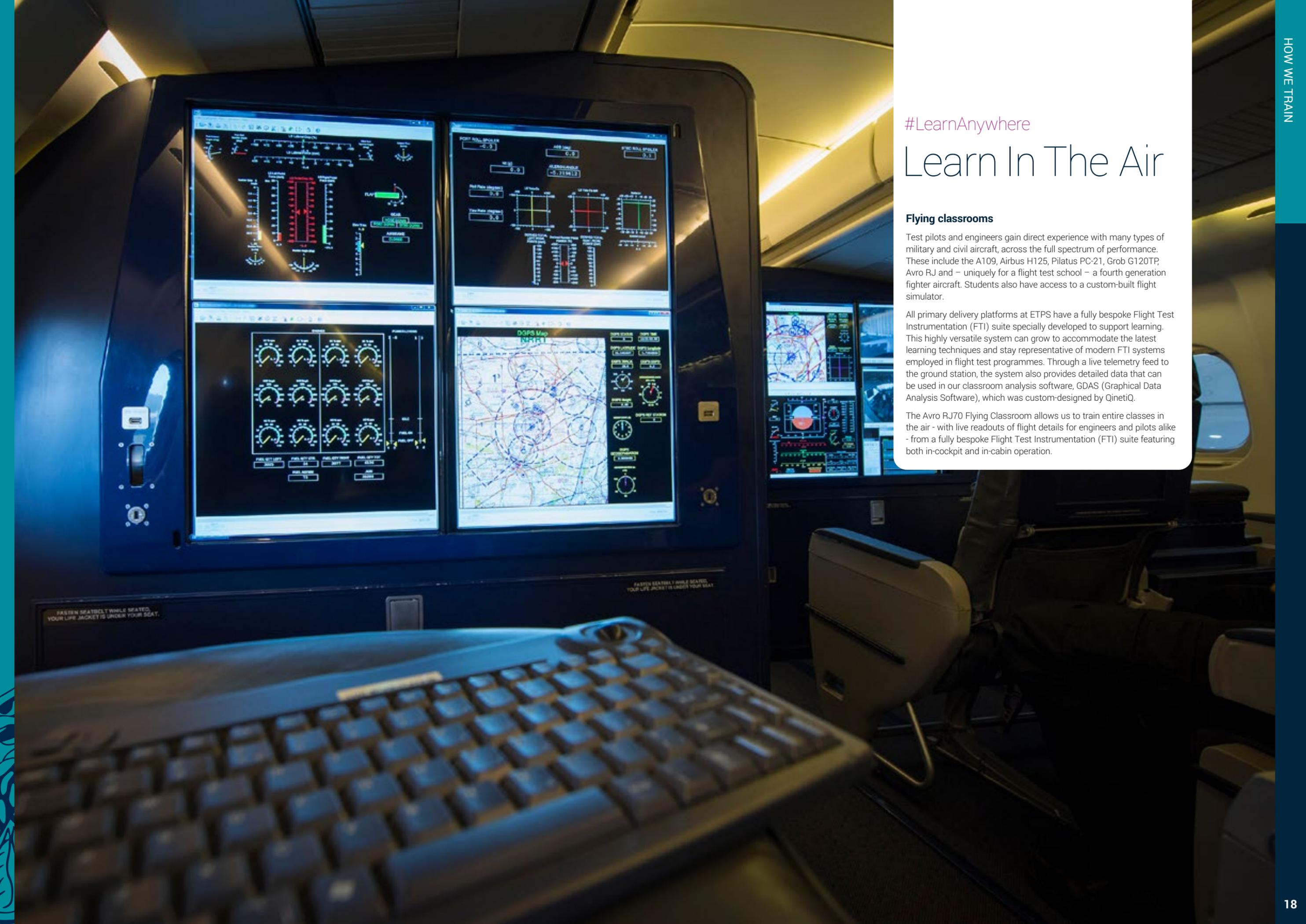
## Learn In The Air

**Flying classrooms**

Test pilots and engineers gain direct experience with many types of military and civil aircraft, across the full spectrum of performance. These include the A109, Airbus H125, Pilatus PC-21, Grob G120TP, Avro RJ and – uniquely for a flight test school – a fourth generation fighter aircraft. Students also have access to a custom-built flight simulator.

All primary delivery platforms at ETPS have a fully bespoke Flight Test Instrumentation (FTI) suite specially developed to support learning. This highly versatile system can grow to accommodate the latest learning techniques and stay representative of modern FTI systems employed in flight test programmes. Through a live telemetry feed to the ground station, the system also provides detailed data that can be used in our classroom analysis software, GDAS (Graphical Data Analysis Software), which was custom-designed by QinetiQ.

The Avro RJ70 Flying Classroom allows us to train entire classes in the air - with live readouts of flight details for engineers and pilots alike - from a fully bespoke Flight Test Instrumentation (FTI) suite featuring both in-cockpit and in-cabin operation.



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# Learn On The Ground

## Test & Evaluation Synthetics

Synthetics and simulation are essential elements for any modern test & evaluation programme and ETPS continues to develop and deliver cutting edge capabilities specifically designed for flight test training.

ETPS uses a broad range of synthetics and simulators across the globe to deliver our courses. These cover everything from desktop simulators (supporting familiarisation activities) and task-specific exercise synthetics all the way up to state-of-the-art flying simulators that allow a single aircraft to represent a vast array of platform types.

The synthetic capabilities employed by ETPS provide a tailored approach to simulation so we are able to maximise understanding of learning outcomes. Such an advanced training methodology capitalises on advanced mission planning and debriefing tools to optimise training efficiency and significantly reduce the time required to reach full comprehension of techniques.

Two military pilots in flight suits are walking on an airfield. The pilot on the left is older with grey hair, and the pilot on the right is younger with dark hair and glasses. They are both wearing green flight suits with red harnesses and carrying flight helmets. In the background, a large blue and white jet aircraft is visible on the tarmac under a clear sky.

#LearnAnywhere

# Learn From The Best

## Unparalleled experience

Instructors are the most important element to the success of any school and at ETPS we have a diverse and highly experienced team of test pilots, flight test engineers, and academics with a millennium of combined experience in the field to draw upon when developing and delivering courses.

Amongst our flight test instructors, you will find world-renowned experts in their respective fields from across both military organisations and civil industry who are frequently called upon to advise on and deliver the latest flight test programmes. With deep domain knowledge of both the theory and practical application of flight test our instructors have written the book on test & evaluation and can bring their unique knowledge to bear in the classroom.

Passing on the knowledge, best practice, and lessons learnt to the next generation is a point of pride for our instructors and, by attending ETPS, our students gain a unique insight into the world of flight test & evaluation.

## #LearnAnywhere

From the Great White North for a Variable Stability Helicopter to the Côte d'Azur and the Spectacular Alps, ETPS students will always get the best training no matter where we need to go.

And there is no experience quite like Mach 2! At ETPS, our students get the unique opportunity to train on fourth generation fighter aircrafts as well as with other facilities and aircraft all over the world.

# Long Courses Fixed Wing

# Fixed Wing Test Pilot

Military Class A | EASA CAT 1



**Duration**  
12 | 10 Months



**Aircraft Types Flown**  
Minimum 10



**Frequency**  
Annual



**Flight Test Hours**  
Minimum 100

## Summary

Delivering successful outcomes for complex and demanding flight test programmes requires a unique blend of specialist expertise, in-depth technical knowledge and true leadership. This course equips graduates with the skills, confidence and technical insight to lead diverse test teams and deliver the methodical evaluation required of contemporary and advanced air platforms – including experimental aircraft. As well as covering the full range of test techniques for the practical assessment of aircraft performance to specification, the course provides comprehensive training for the effective planning, delivery and reporting of multifaceted appraisal exercises such as first of type tests and envelope expansion programmes.

## Benefits

On completion of this course, test pilots will be fully prepared for very demanding and high performance roles in both the development and operational assessments of aerial capability. With expertise developed and extensively practised in some of the most advanced and representative training aircraft ever developed for flight test training, the course provides graduates with the ability and expertise to lead highly skilled teams and deliver gold standard test and evaluation to capability designers and operators.

## Students

This course has been developed to provide high performing pilots with a full flight test rating to deliver test and evaluation throughout the platform lifecycle, including for the experimental flight test phase. It is recommended that students have at least 750 hours experience as pilot in command before attending this course.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in USA, Switzerland, France, Netherlands and beyond.



To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Convex and Familiarisation

Pilatus PC-21; Grob G120TP; Avro RJ.

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Intermediate Flight Test

Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal Flying Qualities; Lateral-Directional Flying Qualities; Take-Off & Landing Performance; Flight Performance; Stalling; Spinning; Stability & Control; Flight Control Mechanical Characteristics.

### Phase 6 – Advanced Flight Test

Asymmetric Flight; Envelope Expansion; High-Order Flight Control Systems; Engine Testing; Qualitative Evaluation; Graduation Exercise.

### Phase 7 – Military Test & Evaluation (Class A only)

Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Aerial Chase; Airborne Radar; Capstone Campaign.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of test pilots and features advanced modules covering military aerosystems and test techniques. This includes further training on fourth generation fighters covering the supersonic environment and military systems. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs.

## Fast Jet or Multi-Engine

At ETPS, our fixed wing test pilot courses are tailored to deliver the best possible skills development programme for each student. As well as providing dedicated content for flight testing of high performance Fast Jets, course content is readily tailored to meet the specific requirements of larger multi-engine platforms.

# Fixed Wing Test Pilot

Military Class B | EASA CAT 2



**Duration**  
7 | 6 months



**Aircraft Types Flown**  
Minimum 7



**Frequency**  
Annual



**Flight Test Hours**  
Minimum 50

## Summary

This course will develop the skills for the effective delivery of complex flight test programmes and to assist with experimental test flying programmes. Graduates will be equipped with a thorough technical understanding to perform the methodical evaluation required of today's advanced air platforms. Course content covers the full range of test techniques required for practically assessing the performance to specification of aircraft and will provide graduates with the ability to plan, operate and report on multifaceted appraisal exercises.

## Benefits

The modern air environment demands a highly skilled team that can deliver gold standard technical test and evaluation to capability designers and operators. By completing this course, test pilots will be well prepared for very demanding roles in the development and operational assessments of aerial capability and for providing effective leadership to the team. Taking full advantage of some of the most advanced and representative training aircraft ever developed for flight test training, the course provides students with the opportunity to develop, practise and refine their skills to deliver the very best performance outcomes.

## Students

This course has been developed to enable high performing pilots to attain a developmental flight test rating to deliver test and evaluation throughout the platform lifecycle. It is recommended that students have at least 500 hours experience as pilot in command before attending this course.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in Switzerland



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## Syllabus

- Phase 1 – Preparatory**  
Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.
- Phase 2 – Foundation**  
T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.
- Phase 3 – Convex and Familiarisation**  
Pilatus PC-21; Grob G120TP; Avro RJ
- Phase 4 – Aerosystems**  
Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.
- Phase 5 – Flight Test**  
Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal Flying Qualities; Lateral-Directional Flying Qualities; Take-Off & Landing Performance; Flight Performance; Stalling; Spinning; Stability & Control; Flight Control Mechanical Characteristics.
- Phase 6 – Military Test & Evaluation (Class B only)**  
Electronic Warfare; Weapons Systems.



## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class B qualification of test pilots and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons or stores release as well as electronic warfare. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 2 flight test rating which can be tailored to your specific needs.

## Fast Jet or Multi-Engine

At ETPS, our fixed wing test pilot courses are tailored to deliver the best possible skills development programme for each student. As well as providing dedicated content for flight test programmes on high performance Fast Jets, course content is readily tailored to meet the specific requirements of larger multi-engine platforms.

# Fixed Wing Flight Test Engineer

Military Class A | EASA CAT 1

 **Duration**  
12 | 10 months

 **Aircraft Types Flown**  
Minimum 6

 **Frequency**  
Annual

 **Flight Test Hours**  
Minimum 60

## Summary

Attention to detail and in-depth knowledge of system design and technologies are vital for flight test engineers who will be responsible for delivering and evaluating complex flight test programmes. This course provides graduates with the advanced technical understanding and analytical skills to provide methodical test and evaluation programmes that will optimise the performance and commissioning of modern air platforms, including experimental aircraft. Alongside the full range of test techniques and analytics to assess the performance to specification of aircraft, the course also develops and hones the skills required for the effective planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

Having graduated from ETPS, Flight Test Engineers will have the knowledge and insight to deliver the very best technical test and evaluation to capability designers and operators, having gained extensive experience both in the air and in the operation of telemetry ground stations. They will also have the skills to provide engineering leadership and foresight to optimise the development and operational assessments of aerial capability in even the most demanding test programmes. Significantly, having developed and extensively practised their flight test engineering skills in some of the most advanced and representative training aircraft ever developed for flight test training, they will know the most effective and efficient approach for delivering successful test outcomes.

## Students

This course has been developed to enable high performing engineers to attain a full flight test rating to deliver test and evaluation throughout the platform lifecycle, including for the experimental flight test phase. It is recommended that students have at least an Honours Degree (or equivalent) in a science or engineering discipline as well as 5 years of experience in an operational capacity prior to attending ETPS.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in USA, France, Netherlands



To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)



## Fast Jet or Multi-Engine

At ETPS, our fixed wing flight test engineer courses are tailored to deliver the best possible learning for our students, ensuring they are ready to meet the expected operational requirements. We are therefore pleased to offer two 'flavours' of this course: one focusing on high performance fast jets, and the other providing specialisation in larger multi-engine platforms.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of flight test engineers and features advanced modules covering military aerosystems and test techniques. This includes further training on fourth generation fighters covering the supersonic environment and military systems. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs.

## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Convex and Familiarisation

Flight Test Engineer

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Intermediate Flight Test

Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal Flying Qualities; Lateral-Directional Flying Qualities; Take-Off & Landing Performance; Flight Performance; Stalling; Spinning; Stability & Control; Flight Control Mechanical Characteristics.

### Phase 6 – Advanced Flight Test

Asymmetric Flight; Envelope Expansion; High-Order Flight Control Systems; Engine Testing; Qualitative Evaluation; Graduation Exercise.

### Phase 7 – Military Test & Evaluation (Class A only)

Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Aerial Chase; Airborne Radar; Capstone Campaign.

# Fixed Wing Flight Test Engineer

Military Class B | EASA CAT 2



**Duration**  
7 | 6 months



**Aircraft Types Flown**  
Minimum 5



**Frequency**  
Annual



**Flight Test Hours**  
Minimum 30

## Summary

This dedicated course for flight test engineers will develop their professional skills and capabilities to enable them to lead diverse and multi-disciplined test teams and ensure the effective delivery of complex flight test programmes. Graduates will be equipped with advanced technical understanding that will allow them to perform the methodical evaluation needed of modern, advanced air platforms. They will be taught the full range of test techniques and analytics required for practically assessing the performance to specification of aircraft and be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

On completing this course, your flight test engineers will be thoroughly prepared for very demanding roles in both the development and operational assessments of aerial capability and to provide engineering leadership to the team. The expertise developed on this course is extensively practised in the air and on the ground in some of the most advanced and representative training aircraft ever developed for flight test training as well as in the operation of telemetry ground stations. As a result, graduates will know the most effective and efficient approach to meet specific target objectives of both civilian and military flight test programmes.

## Students

This course has been developed to enable high performing engineers to attain a full flight test rating to deliver test and evaluation throughout the platform lifecycle. It is recommended that students have at least an Honours Degree (or equivalent) in a science or engineering discipline and 3 years of experience in an operational capacity prior to attending ETPS.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

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## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Convex and Familiarisation

Flight Test Engineer

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Flight Test

Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal Flying Qualities; Lateral-Directional Flying Qualities; Take-Off & Landing Performance; Flight Performance; Stalling; Spinning; Stability & Control; Flight Control Mechanical Characteristics.

### Phase 6 – Military Test & Evaluation (Class A only)

Electronic Warfare; Weapons Systems.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class B qualification of flight test engineers and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons or stores release as well as electronic warfare. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 2 flight test rating which can be tailored to your specific needs.

## Fast Jet or Multi-Engine

At ETPS, our fixed wing test pilot courses are tailored to deliver the best possible skills development programme for each student. As well as providing dedicated content for flight test programmes on high performance Fast Jets, course content is readily tailored to meet the specific requirements of larger multi-engine platforms.

# Fixed Wing – Bridging Course

Military Class B to A | EASA CAT 2 to 1

-  **Duration**  
Typically 6 | 4 Months
-  **Aircraft Types Flown**  
Variable – typically 4
-  **Frequency**  
Annual
-  **Flight Test Hours**  
Variable (minimum 30)

## Summary

This course will uprate test pilots and flight test engineers to enable them to deliver complex flight test programmes for experimental aircraft or activities. As well as being taught the full range of test techniques and analytics, graduates of the bespoke course will be equipped with advanced technical understanding to perform the further methodical evaluation needed on experimental platforms. Great care is also taken to ensure they develop the full skillset required for effective planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

On completion of this intensive course, your flight test professionals will be qualified and ready to deliver very demanding and high performance roles beyond the existing scope of their Class B or CAT 2 qualification. They will also have the expertise and experience to lead the development and operational assessments of new and experimental aerial capabilities and to ensure flight test programmes are completed as efficiently and effectively as possible.

## Students

This course has been developed to provide high performing Class B or CAT 2 flight test professionals with the opportunity to attain a Class A or CAT 1 flight test rating to enable them to take additional test and evaluation responsibilities on experimental aircraft.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in USA, Switzerland, France and the Netherlands.



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## Syllabus

- Phase 1 – Refresher Training**  
Bespoke training package tailored for each flight test professional to refresh any non-current skills and rediscover the key topics required to successfully deliver the bridging course.
- Phase 2 – Advanced Flight Test**  
Asymmetric Flight; Envelope Expansion; High-Order Flight Control Systems; Engine Testing; Qualitative Evaluation; Graduation Exercise.
- Phase 3 – Military Test & Evaluation (Class A only)**  
Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Aerial Chase; Airborne Radar; Capstone Campaign.

## Fast Jet or Multi-Engine

At ETPS, our fixed wing test pilot courses are tailored to deliver the best possible skills development programme for each student. As well as providing dedicated content for flight testing of high performance Fast Jets, course content is readily tailored to meet the specific requirements of larger multi-engine platforms.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of flight test professionals and features advanced modules covering military aerosystems and test techniques. This includes further training on fourth generation fighters covering the supersonic environment and military systems. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs.



# Long Courses Rotary Wing

# Rotary Wing Test Pilot

Military Class A | EASA CAT 1

 **Duration**  
12 | 10 Months

 **Aircraft Types Flown**  
Minimum 8

 **Frequency**  
Annual

 **Flight Test Hours**  
Minimum 100

## Summary

This intensive and rigorous course will provide rotary wing test pilots with the specialist skills and expertise to take leadership responsibilities in the successful delivery of complex flight test programmes including experimental aircraft. Graduates will be equipped with advanced technical understanding that will allow them to perform the methodical evaluation needed of modern and advanced rotary wing platforms. They will be taught the full range of specialist test techniques and analytical skills for delivering cost-effective, efficient and safe test programmes to assess the performance to specification of aircraft and will have the skills to plan, operate and report on multifaceted appraisal exercises.

## Benefits

The modern air environment demands highly skilled teams that can deliver gold standard technical test and evaluation to capability designers and operators. On completion of this course, test pilots will have developed and extensively practised their skills in some of the most advanced and representative training aircraft ever developed for flight test training. This provides the insight, expertise and practical experience that are all vital for very demanding roles in both the development and operational assessments of aerial capability. They will also have the leadership skills and competencies to safely, efficiently and effectively conduct all forms of rotary wing test flying.

## Students

This course has been developed to enable high performing pilots to attain a full flight test rating for delivering test and evaluation throughout the platform lifecycle, including for the experimental flight test phase. It is recommended that students have at least 750 hours experience as pilot in command before attending this course.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in Canada, Italy, Germany, Netherlands



To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

## Syllabus

- **Phase 1 – Preparatory**  
Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.
- **Phase 2 – Foundation**  
T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.
- **Phase 3 – Convex and Familiarisation**  
Flight Test Engineer
- **Phase 4 – Aerosystems**  
Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.
- **Phase 5 – Intermediate Flight Test**  
Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal and Lateral-Directional Stability & Control; Vertical & Hover Performance; Level Flight Performance; Low-Speed Stability & Control; ADS-33; Engine & Rotor Governing; Vibration & Rotor Adjustments; Flight Control Mechanical Characteristics.
- **Phase 6 – Advanced Flight Test**  
Single Engine Failures; Variable Stability Systems; Rotor Dynamics; Control Engineering; High-Order Flight Control Systems; Engine Testing; Fixed Wing Familiarisation; Envelope Expansion; Tethered Hovering; Qualitative Evaluation; Graduation Exercise.
- **Phase 7 – Military Test & Evaluation (Class A only)**  
Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Ship Helicopter Operating Limits; Capstone Campaign.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of test pilots and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons and electronic warfare as well as specialist training on Ship-Helicopter Operating Limits. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs.



# Rotary Wing Test Pilot

Military Class B | EASA CAT 2

 **Duration**  
7 | 6 Months

 **Aircraft Types Flown**  
Minimum 4

 **Frequency**  
Annual

 **Flight Test Hours**  
Minimum 50

## Summary

This course will shape test pilots to enable them to lead diverse test teams to deliver complex flight test programmes. Graduates will be equipped with advanced technical understanding that will allow them to perform the methodical evaluation needed of modern, advanced air platforms. They will be taught the full range of test techniques required for practically assessing the performance to specification of aircraft and be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

The modern air environment demands highly skilled teams that can deliver gold standard technical test and evaluation to capability designers and operators. By completing this course, test pilots will be prepared for very demanding, high performance roles in both the development and operational assessments of aerial capability and be prepared to provide leadership to the team. The professional competencies and expertise developed on this course are extensively practised in some of the most advanced and representative rotary wing aircraft ever featured in flight test training. This rigorous blend of theory and practical experience provides graduates with the insight and confidence to deliver safe and reliable test programmes as effectively and efficiently as possible at all times and in all circumstances.

## Students

This course has been developed to enable high performing pilots to attain a developmental flight test rating to deliver test and evaluation throughout the platform lifecycle. It is recommended that students have at least 500 hours experience as pilot in command before attending this course.

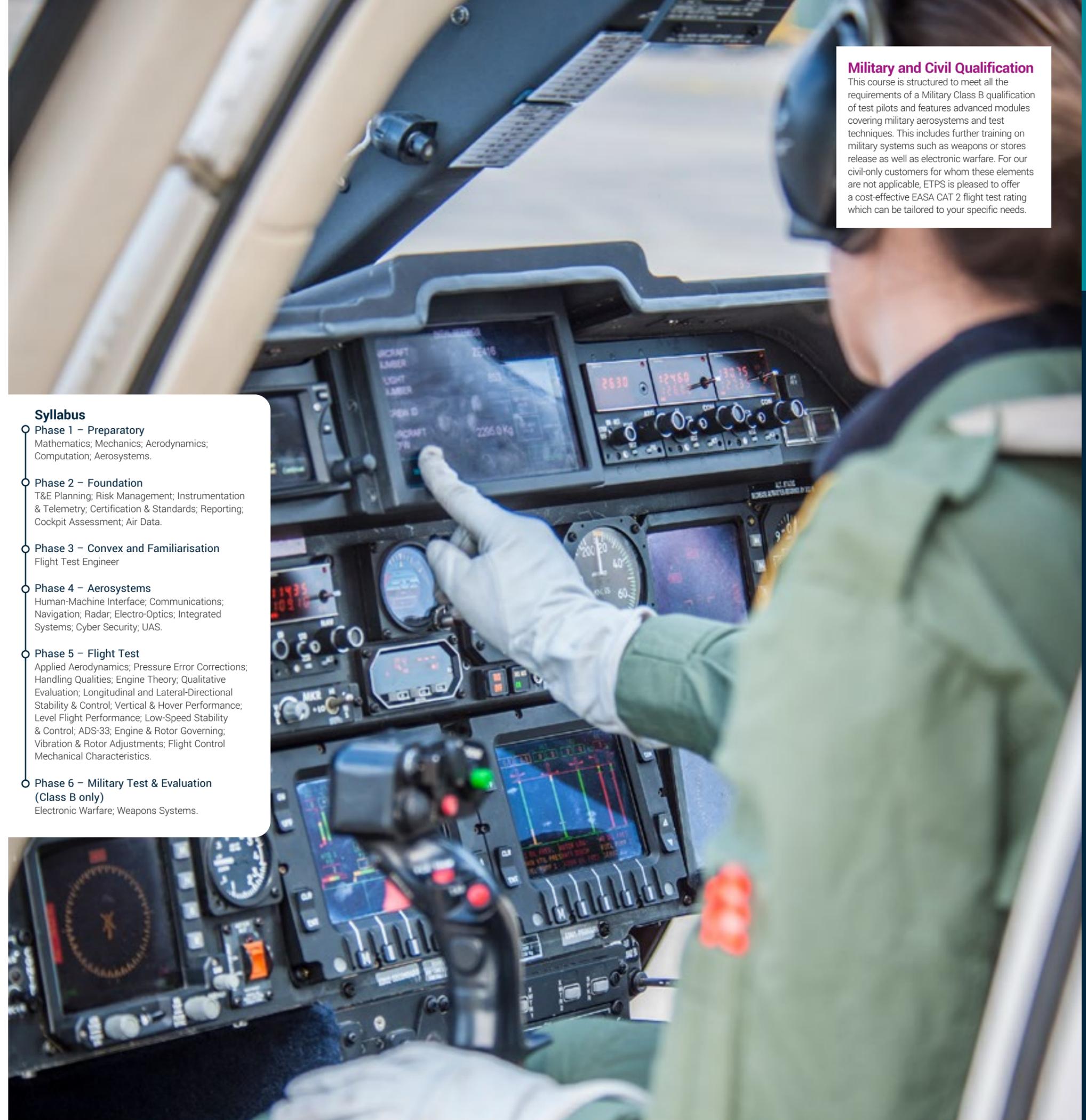
## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content is typically delivered in Italy.



To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)



## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class B qualification of test pilots and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons or stores release as well as electronic warfare. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 2 flight test rating which can be tailored to your specific needs.

## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Convex and Familiarisation

Flight Test Engineer

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Flight Test

Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal and Lateral-Directional Stability & Control; Vertical & Hover Performance; Level Flight Performance; Low-Speed Stability & Control; ADS-33; Engine & Rotor Governing; Vibration & Rotor Adjustments; Flight Control Mechanical Characteristics.

### Phase 6 – Military Test & Evaluation (Class B only)

Electronic Warfare; Weapons Systems.

# Rotary Wing Flight Test Engineer

Military Class A | EASA CAT 1

 **Duration**  
12 | 10 Months

 **Aircraft Types Flown**  
Minimum 6

 **Frequency**  
Annual

 **Flight Test Hours**  
Minimum 60

## Summary

Covering everything from effective risk management and detailed preparatory work to comprehensive aerosystem familiarisation and advanced flight tests, this course will provide rotary wing flight test engineers with all of the skills and competencies to deliver complex flight test programmes including those for experimental aircraft. As well as featuring the full range of test techniques and analytics to assess the performance to specification of aircraft, the course is also structured to develop the skills required for the effective planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

Benefiting from extensive and practical experience in some of the most advanced and representative rotary wing aircraft ever developed for flight test training, flight test engineers on this course will also gain extensive insight into the operation of telemetry ground stations. On completion of this course, your flight test engineers will be prepared for very demanding, high performance roles in both the development and operational assessments of aerial capability and will be well prepared to provide authoritative leadership to the team. The expertise developed and extensively practised on this course will enable graduates to perform their test programme responsibilities both efficiently and effectively in all circumstances.

## Students

This course has been developed to enable high performing engineers to attain a full flight test rating for delivering test and evaluation throughout the platform lifecycle, including for the experimental flight test phase. It is recommended that students have at least an Honours Degree (or equivalent) in a science or engineering discipline and 5 years of experience in an operational capacity prior to attending ETPS.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in Canada, Italy, Germany, Netherlands



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## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Convex and Familiarisation

Flight Test Engineer

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Intermediate Flight Test

Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal and Lateral-Directional Stability & Control; Vertical & Hover Performance; Level Flight Performance; Low-Speed Stability & Control; ADS-33; Engine & Rotor Governing; Vibration & Rotor Adjustments; Flight Control Mechanical Characteristics.

### Phase 6 – Advanced Flight Test

Single Engine Failures; Variable Stability Systems; Rotor Dynamics; Control Engineering; High-Order Flight Control Systems; Engine Testing; Fixed Wing Familiarisation; Envelope Expansion; Tethered Hovering; Qualitative Evaluation; Graduation Exercise.

### Phase 7 – Military Test & Evaluation (Class A only)

Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Ship Helicopter Operating Limits; Capstone Campaign.



## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of flight test engineers and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons and electronic warfare as well as specialist training on Ship-Helicopter Operating Limits. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs

# Rotary Wing Flight Test Engineer

Military Class B | EASA CAT 2

 **Duration**  
7 | 6 Months

 **Aircraft Types Flown**  
Minimum 4

 **Frequency**  
Annual

 **Flight Test Hours**  
Minimum 30

## Summary

This dedicated course for rotary wing flight test engineers will develop their professional skills and capabilities to enable them to lead diverse and multi-disciplined test teams and ensure the effective delivery of complex flight test programmes. Graduates will be equipped with advanced technical understanding that will allow them to perform the methodical evaluation needed of modern rotary wing platforms. They will be taught the full range of test techniques and analytics required for practically assessing the performance to specification of aircraft and, on completion of the course, will be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

An effective, safe and efficient rotary wing test programme requires highly skilled teams with the competencies and insight to deliver gold standard technical test and evaluation to capability designers and operators. By completing this course, your flight test engineers will have all of the skills required for very demanding and high performance roles in both the development and operational assessments of aerial capability and they will be well prepared to provide engineering insight and leadership to the team. A blend of theory and practical experience in both the air and in the operation of telemetry ground stations, the course features extensive skills development in some of the most advanced and representative training aircraft ever developed for flight test training. This provides graduates with the knowledge and expertise to adopt the most effective and efficient approach and meet the target outcomes of even the most challenging test programmes.

## Students

This course has been developed to enable high performing rotary wing flight test engineers to attain a full flight test rating to deliver test and evaluation throughout the platform lifecycle. It is recommended that students have at least an Honours Degree (or equivalent) in a science or engineering discipline and 3 years of experience in an operational capacity prior to attending ETPS.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in Italy.



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## Syllabus

- **Phase 1 – Preparatory**  
Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.
- **Phase 2 – Foundation**  
T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.
- **Phase 3 – Convex and Familiarisation**  
Flight Test Engineer
- **Phase 4 – Aerosystems**  
Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.
- **Phase 5 – Flight Test**  
Applied Aerodynamics; Pressure Error Corrections; Handling Qualities; Engine Theory; Qualitative Evaluation; Longitudinal and Lateral-Directional Stability & Control; Vertical & Hover Performance; Level Flight Performance; Low-Speed Stability & Control; ADS-33; Engine & Rotor Governing; Vibration & Rotor Adjustments; Flight Control Mechanical Characteristics.
- **Phase 6 – Military Test & Evaluation (Class B only)**  
Electronic Warfare and Weapons Systems.

## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class B qualification of flight test engineers and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons or stores release as well as electronic warfare. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 2 flight test rating which can be tailored to your specific needs.

# Rotary Wing – Bridging Course

Military Class B to A | EASA CAT 2 to 1

 **Duration**  
Typically 6 | 4 Months

 **Aircraft Types Flown**  
Minimum 4

 **Frequency**  
Annual

 **Flight Test Hours**  
Variable - at least 30

## Summary

This course will uprate test pilots and flight test engineers to enable them to deliver complex flight test programmes for experimental aircraft or activities. Graduates of the bespoke course will be equipped with the advanced technical understanding to undertake the further methodical evaluation needed on experimental platforms. They will be taught the full advanced range of test techniques and analytics required for practically assessing the performance to specification of experimental aircraft and be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

Any test and evaluation programme on new or experimental aircraft requires considerable vigilance and insight as well as a comprehensive skillset, leadership qualities and experience. On completing this course, your flight test professionals will be qualified and ready to deliver very demanding and high performance roles beyond the existing scope of their Class B or CAT 2 qualification. With enhanced expertise and practical experience in some of the most advanced and representative training aircraft ever developed for flight test training, they will be well prepared for leading the development and operational assessments of new and experimental aerial capabilities using the most effective and efficient methodologies.

## Students

This course has been developed to enable high performing Class B or CAT 2 flight test professionals to attain a Class A or CAT 1 flight test rating to enable them to deliver test and evaluation on experimental aircraft.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in Germany, The Netherlands, Canada and, occasionally, Italy.



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## Military and Civil Qualification

This course is structured to meet all the requirements of a Military Class A qualification of flight test professionals and features advanced modules covering military aerosystems and test techniques. This includes further training on military systems such as weapons and electronic warfare as well as specialist training on Ship-Helicopter Operating Limits. For our civil-only customers for whom these elements are not applicable, ETPS is pleased to offer a cost-effective EASA CAT 1 flight test rating which can be tailored to your specific needs.

## Syllabus

### Phase 1 – Refresher Training

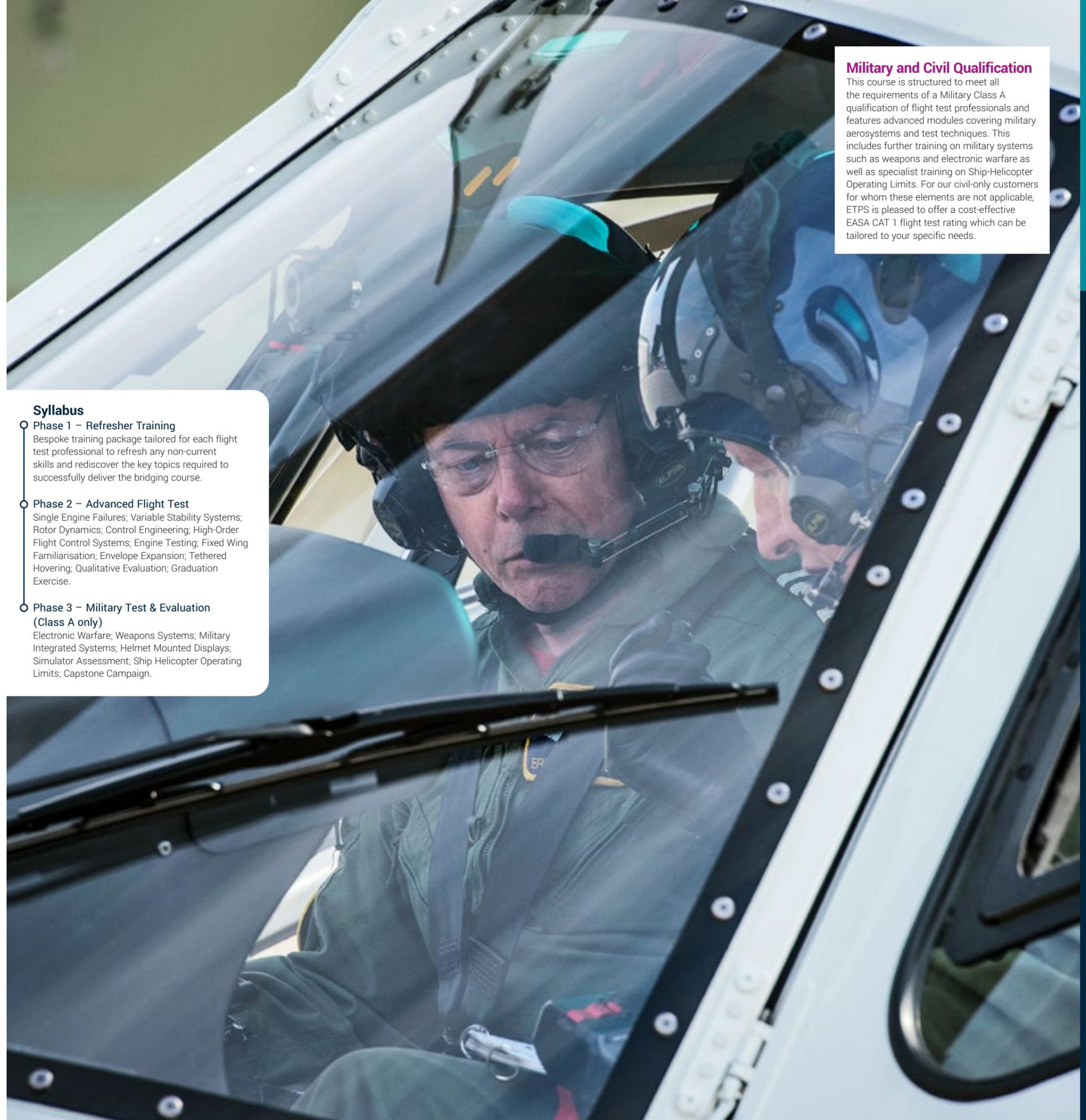
Bespoke training package tailored for each flight test professional to refresh any non-current skills and rediscover the key topics required to successfully deliver the bridging course.

### Phase 2 – Advanced Flight Test

Single Engine Failures; Variable Stability Systems; Rotor Dynamics; Control Engineering; High-Order Flight Control Systems; Engine Testing; Fixed Wing Familiarisation; Envelope Expansion; Tethered Hovering; Qualitative Evaluation; Graduation Exercise.

### Phase 3 – Military Test & Evaluation (Class A only)

Electronic Warfare; Weapons Systems; Military Integrated Systems; Helmet Mounted Displays; Simulator Assessment; Ship Helicopter Operating Limits; Capstone Campaign.



# Systems Courses

# Systems Test Pilot



**Duration**  
5 Months



**Aircraft Types Flown**  
Minimum 4



**Capacity/Frequency**  
10



**Flight Test Hours**  
Minimum 20

## Summary

This course will develop the skills and expertise of test & evaluation pilots to enable them to lead focused test teams in the delivery of complex test programmes of modern aerosystems. Graduates of the Systems Test course will be equipped with advanced technical understanding to perform the further methodical evaluation needed on the rapidly developing systems being integrated into modern air fleets. They will be taught the complete range of systems test techniques required for practically assessing the performance to specification of experimental systems and be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

Modern aircraft are equipped with a wide array of highly complex and integrated airborne systems. To deliver gold standard technical test and evaluation of such systems to capability designers and operators demands a blend of specialist expertise within highly skilled test teams. By completing this course, your pilots will be qualified and able to draw upon their specialist systems testing practice to deliver in high performance roles within wider test teams. Following this course, they can be expected to lead the development and operational assessments of new and experimental airborne systems. The enhanced expertise developed within this course is extensively practised in some of the most systems-rich training aircraft ever developed for flight test training to enable graduates to perform effectively, safely and efficiently in all circumstances.

## Students

This course has been developed to enable high performing pilots to attain a systems test rating to enable them to deliver specialist systems test and evaluation throughout the platform lifecycle. It is recommended that students have at least 300 hours experience as pilot in command before attending this course.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content is typically delivered in the US and the Netherlands.



To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

## Syllabus

- **Phase 1 – Preparatory**  
Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.
- **Phase 2 – Foundation**  
T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.
- **Phase 3 – Familiarisation (depending on pilot discipline)**  
Avro RJ, Grob G120TP, Airbus H125
- **Phase 4 – Aerosystems**  
Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.
- **Phase 5 – Advanced Exercises**  
Electronic Warfare Systems; Weapons & Stores Systems; Integrated Military Systems; Helmet Mounted Display Systems; Airborne Systems Training & Research Support; Mission Systems Synthetics Exercise.



# Systems Test Aircrew



**Duration**  
5 Months



**Aircraft Types Flown**  
Minimum 4



**Capacity|Frequency**  
10



**Flight Test Hours**  
Minimum 10

## Summary

This course will develop the skills and competencies of flight systems engineers to enable them to lead focused test teams in the delivery of the complex test programmes required of modern aerosystems. Graduates of the Systems Test course will be equipped with advanced technical understanding that will allow them to perform the further methodical evaluation and analysis needed on the rapidly developing systems being integrated into modern air fleets. They will be taught the complete range of systems test techniques required for practically assessing the performance to specification of experimental systems and be capable of planning, operating and reporting on multifaceted appraisal exercises.

## Benefits

Modern aircraft are equipped with a wide array of highly complex and integrated airborne systems. To deliver gold standard technical test and evaluation of such systems to capability designers and operators demands a blend of specialist expertise within highly skilled test teams. By completing this course, your pilots will be qualified and able to draw upon their specialist systems testing practice to deliver in high performance roles within wider test teams. Following this course, they can be expected to lead the development and operational assessments of new and experimental airborne systems. The enhanced expertise developed within this course is extensively practised in some of the most systems-rich training aircraft ever developed for flight test training to enable graduates to perform effectively, safely and efficiently in all circumstances.

## Students

This course has been developed to enable high performing engineers to attain a systems test rating to deliver specialist systems test and evaluation throughout the platform lifecycle. It is recommended that students have at least a bachelor's degree (or equivalent) in a science or engineering discipline and 2 years of experience in an operational capacity prior to attending ETPS.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

Additional content typically delivered in USA, Netherlands.



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## Syllabus

### Phase 1 – Preparatory

Mathematics; Mechanics; Aerodynamics; Computation; Aerosystems.

### Phase 2 – Foundation

T&E Planning; Risk Management; Instrumentation & Telemetry; Certification & Standards; Reporting; Cockpit Assessment; Air Data.

### Phase 3 – Engineer Familiarisation

Systems Aircrew Familiarisation

### Phase 4 – Aerosystems

Human-Machine Interface; Communications; Navigation; Radar; Electro-Optics; Integrated Systems; Cyber Security; UAS.

### Phase 5 – Advanced Exercises

Electronic Warfare Systems; Weapons & Stores Systems; Integrated Military Systems; Helmet Mounted Display Systems; Airborne Systems Training & Research Support; Mission Systems Synthetics Exercise.



# Short Courses

# Evaluator Aircrew

**Duration** 3 weeks **Aircraft Types Flown** 1

**Capacity|Frequency** 10 | Quarterly  
with additional courses  
available on demand **Flight Test Hours** Typically 2

## Summary

The course is designed to introduce basic Test and Evaluation (T&E) principles and techniques to aircrew who are selected to join Test and Evaluation Squadrons, primarily to conduct Operational Evaluation flying. It is also a well-rounded and practical introduction to T&E for industry experts who provide support to Trials activities. Aircrew who complete the course will have a grounding in the importance of Test & Evaluation and how tests are planned and managed. They will also be advised on how risks are controlled, the fundamentals of flight test data gathering, how to report and conclude analyses and how to assess common aircraft systems such as navigation and radar.

## Benefits

This course delivers the Evaluator Aircrew (EA) requirements as documented in Regulatory Article 2370, and the training supports a recognised path to achieving this Test and Evaluation qualification. It provides practical grounding and knowledge for non-Test Pilot & Flight Test Engineers working within Test & Evaluation programmes to ensure the support they provide for such activities is safe and effective at all times. Each participant will take part in two practical activities to reinforce the theoretical content of the course and introduce them to the priorities and responsibilities for working effectively within a test team.

## Students

This course is recommended for both military aircrew working within a Test & Evaluation Squadron (TES) and for civilian contractors delivering in partnership with a TES. The course is applicable for aircrew on all types of platform – from fixed wing and rotary wing to unmanned aerial systems.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down, but can be delivered on location depending on aircraft availability.

To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

## Syllabus

- Week 1 – Test & Evaluation Ground School**  
Modules include Introduction to T&E; Flight Test Planning & Management; Risk Management; Flight Test Instrumentation; Reporting; and Systems Testing.
- Week 2 – Human Factors & Cockpit Assessment**  
Modules include Human Factors and Cockpit Design and the week concludes with a practical cockpit assessment exercise.
- Week 3 – Systems Test Sortie**  
Practical flight exercise for student teams to test the human machine interface in an airborne environment.



# Ship Air Integration Testing

-  **Duration**  
2 weeks
-   **Simulators Flown**  
1 – Typically Sea King
-  **Capacity/Frequency**  
8 (four TP/FTE pairs)  
Upon request
-  **Flight Test Hours**  
At least 4

## Summary

The aim of this course is to provide test pilots and flight test engineers with the necessary knowledge and expertise to carry out helicopter/ship interface trials, including the establishment of ship / helicopter operating limits (SHOLs). It is also suitable for non-test pilots and non-flight test engineers who will be closely involved in future trials to familiarise them with the techniques used to support SHOL development activity. The course is divided into a series of ground-based lectures that link the theory to the practical conduct of flight trials. It also features simulator flying and practical exercises to provide students with the opportunity to practise the application of the flight test and analysis techniques covered by the course.

## Benefits

The ETPS training provides the opportunity for test pilots and flight test engineers to practice the skills required for establishing SHOLs in a high-fidelity simulator before proceeding to real test programmes. It also provides 'non-qualified' pilots and FTEs who need an understanding of helicopter/ship integration testing techniques with the skills to organise these trials and to work effectively with contractors carrying them out on their behalf. Through carrying out a representative exercise, the entire HSIT 'class' will define a complete SHOL envelope, giving them valuable opportunities to put the theory into practice in a safe and controlled environment.

## Students

This course is recommended for all flight test professionals and supporting crew who will be delivering ship integration trials on Rotary Wing platforms.

## Location

The ground school for this course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down, and practical exercises are conducted at our partner facility at Royal Naval Air Station Culdrose in Cornwall.

To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)



## Syllabus

- Week 1 – SHOL Ground School**  
A refresher of all the key academics and test techniques required to perform SHOL activities.
- Week 2 – SHOL Simulator Activities**  
A practical team exercise lasting one week at one of our partner's specialist simulators. Each TP/FTE pair will perform a series of sorties covering approximately 20 deck landings each, where their test technique is refined and perfected.

# Flight Test Professional Refresher



**Duration**  
Typically 2 weeks



**Aircraft Types Flown**  
Variable



**Capacity|Frequency**  
6 | Upon request



**Flight Test Hours**  
Variable

## Summary

Complex skills can fade with time and this course aims to refresh the skills of qualified flight test professionals in both test techniques and analytical methods - plus the associated theory - to restore currency in essential fields ahead of a major trials programme. This course can also be delivered to test teams to enable your professionals to re-establish collaborative working skills for the flight test environment.

## Benefits

This course is extremely flexible and specially tailored to match the requirements and recent experience of the audience. On completion of this course, your professionals will have a renewed appreciation of the test techniques and analytical methods that are essential for successful upcoming deliverables and will be provided with the latest updates to the test techniques. The skills revitalised on this course using systems-rich aircraft and the unique experience of our instructor cadre, will lead to an improvement in performance that could help to reduce costly errors - especially those that affect safety.

## Students

This course has been developed to enable qualified flight test professionals from any Test Pilot School to refresh their pilot, engineering and management skills relevant to upcoming trials work and to ensure they are well equipped to deliver new activities that haven't been practised recently. It is also an appropriate avenue for continuing professional development of flight test professionals.

## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down, but can be delivered on location depending on aircraft availability.

To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)



## Syllabus

This course is fully bespoke to customer needs and we can provide refresher training on almost any topic covered during our long courses.

# EASA Flight Test Instructor Rating (Initial)



**Duration**  
2 weeks



**Aircraft Types Flown**  
Minimum 2



**Capacity/Frequency**  
Variable |  
Upon Request



**Flight Instruction Hours**  
Minimum 5

## Summary

Meeting the requirements of FCL.930.FTI, the Flight Test Instructor (FTI) initial course ensures that a flight test professional satisfies the requirements of the European Aviation Safety Agency (EASA) and is appropriately equipped and accredited to deliver training via an Approved Training Organisation (ATO). Through a combination of ground-based teaching and practical airborne instruction (minimum of 25 hours teaching and 10 hours of technical training) by our own Flight Test Instructors, graduates of the FTI course at ETPS are fully prepared to deliver ATO training for Flight Test.

## Benefits

By undertaking an FTI course at ETPS, flight test instructors are qualified to deliver flight test instruction at an approved ATO by conducting complete practice exercises on representative, modern aircraft and learn best practice from the unique experience of our highly experienced tutor cadre. Each exercise will equip instructors with the relevant knowledge and skills required for flight test instruction, including preparation of lesson plans and development of classroom, synthetic and telemetry instructional techniques. Airborne instructional techniques, including intervention, will be covered both in the air and on the ground.

## Students

This course has been developed to enable qualified flight test professionals from any Test Pilot School to expand their skill set and be rated in the delivery of flight test instruction under EASA approved ATOs. Where applicable, if applicants have or have held an instructor certificate, this will be fully credited towards the teaching and learning requirements.

## Location

This course is delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

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## Syllabus

- **Element 1**  
Technical Knowledge Revision
- **Element 2**  
Test Methods Briefing – Study and Delivery
- **Element 3**  
Sorties – Planning, Management, Safety
- **Element 4**  
Practical Sortie Instruction – Briefing, Conduct, De-Briefing
- **Element 5**  
Student Assessment and Records



# EASA Flight Test Instructor Rating (Renewal)



**Duration**  
2 weeks



**Aircraft Types Flown**  
Minimum 1



**Capacity|Frequency**  
Variable |  
Upon Request



**Flight Test Hours**  
Minimum 1 flight

## Summary

Aligned to the requirements of FCL.930.FTI, the Flight Test Instructor (FTI) renewal course enables a flight test professional with a lapsed FTI Rating to re-satisfy the requirements of the European Aviation Safety Agency (EASA) and become re-equipped and accredited to deliver training via an Approved Training Organisation (ATO). Through a combination of ground-based teaching and practical airborne instruction by our own Flight Test Instructors, graduates of the FTI course at ETPS are fully prepared to deliver ATO training for Flight Test.

## Benefits

By undertaking an FTI renewal course at ETPS, flight test instructors with lapsed ratings are requalified to deliver flight test instruction at an approved ATO by conducting complete practice exercises on representative, modern aircraft and learning best practice from the unique experience of our highly experienced tutor cadre. Each exercise will equip instructors with the relevant knowledge and skills required for flight test instruction including preparation of lesson plans and development of classroom, synthetic and telemetry instructional techniques. Airborne instructional techniques, including intervention, will be covered both in the air and on the ground.

## Students

This course has been developed to enable previously qualified flight test professionals from any Test Pilot School to regain their rating for the delivery of flight test instruction with EASA approved ATOs. Applicants must have previously held an EASA FTI Rating.

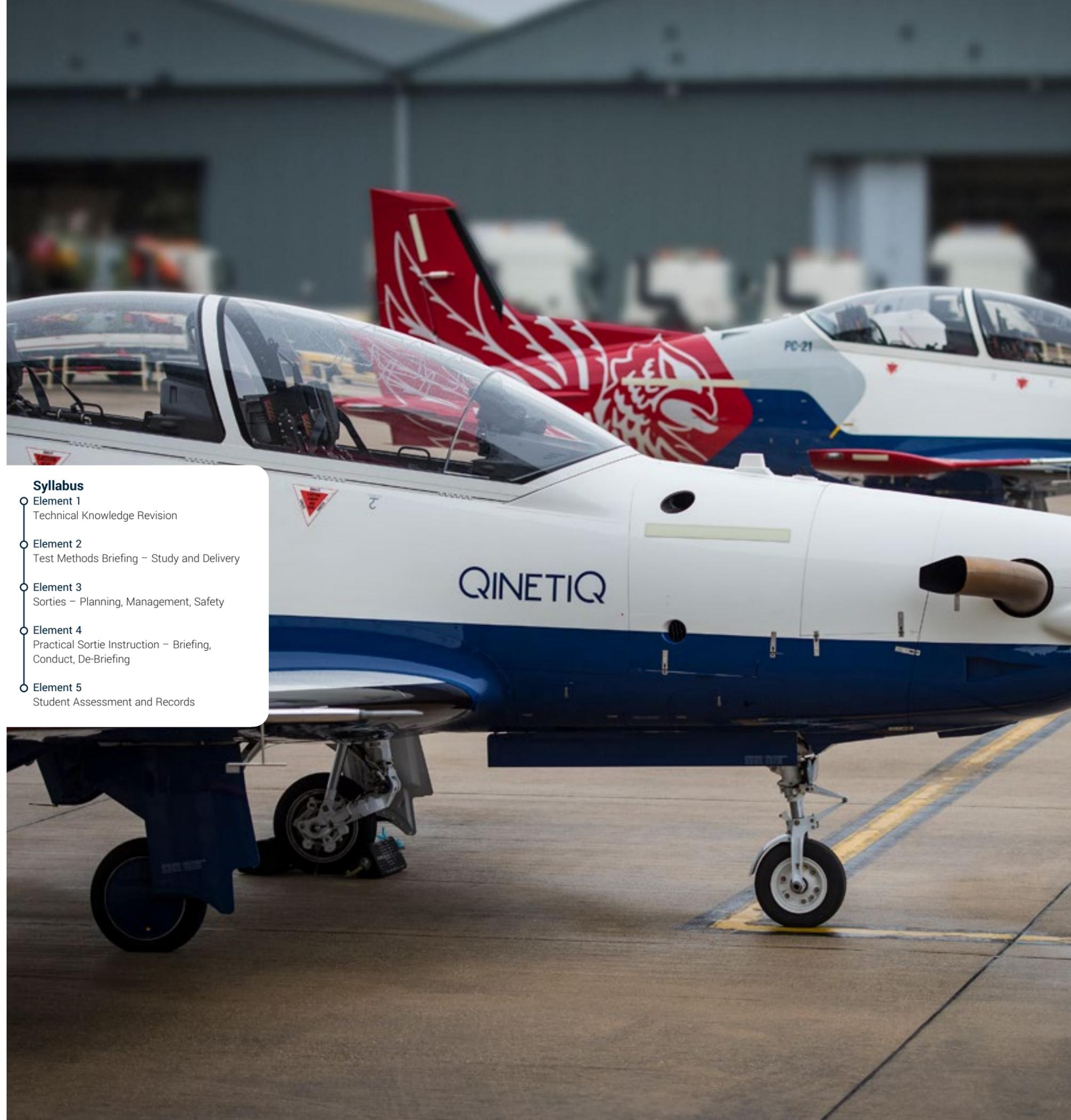
## Location

This course is delivered at the UK Home of Test & Evaluation, MOD Boscombe Down.

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## Syllabus

- **Element 1**  
Technical Knowledge Revision
- **Element 2**  
Test Methods Briefing – Study and Delivery
- **Element 3**  
Sorties – Planning, Management, Safety
- **Element 4**  
Practical Sortie Instruction – Briefing, Conduct, De-Briefing
- **Element 5**  
Student Assessment and Records



# Qualitative Evaluation



**Duration**  
1 week



**Aircraft Types Flown**  
Minimum 1



**Capacity|Frequency**  
8 | Upon request



**Flight Test Hours**  
2

## Summary

Qualitative Evaluation (QualEval) flying enables a flight test professional without a valid Certificate of Qualification on Type (or Type Rating) to handle an aircraft in order to complete an assessment. Undertaking regular QualEval activity is a vital requirement for the continuing professional development of any pilot or engineer to maintain currency in the skills of flight test. The QualEval course at ETPS is designed to enable trained flight test professionals to rejuvenate their skillset on a wide range of aircraft in a safe but unfamiliar environment.

## Benefits

By undertaking a QualEval course at ETPS, qualified flight test professionals can rejuvenate their skillset on representative modern aircraft and brush up on QualEval skills by drawing upon the unique knowledge of our highly experienced tutors. Beyond our own fleet at Boscombe Down, ETPS also has access to a wide range of partner aircraft to ensure that the platform provided to students is most representative of the type they will be working with in their operational roles.

## Students

This course has been developed to enable qualified flight test professionals from any Test Pilot School to refresh their QualEval experience on different types of aircraft and optimise test and evaluation activities.

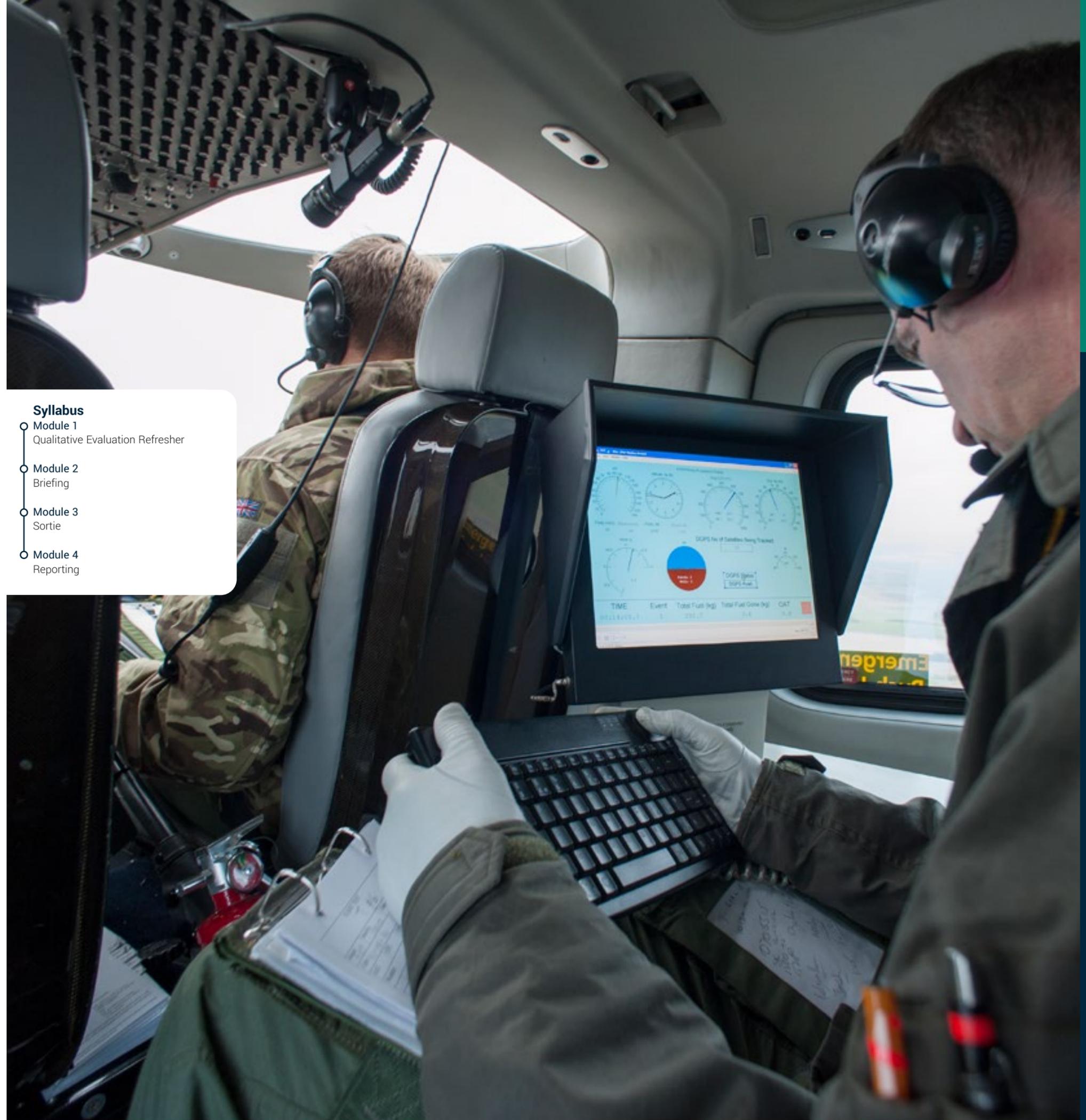
## Location

This course is primarily delivered at the UK Home of Test & Evaluation, MOD Boscombe Down, but can be delivered on location depending on aircraft availability.

To discover more about how we can shape your test pilots, contact [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

## Syllabus

- Module 1  
Qualitative Evaluation Refresher
- Module 2  
Briefing
- Module 3  
Sortie
- Module 4  
Reporting



# Constantly Evolving

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ETPS is continuously investing in new resources and developing its offering to meet flight test and specialist training needs. This prospectus covers all of our core courses, but we have made a conscious effort to retain the agility and scope to provide bespoke half-day courses to meet specific customer requirements and to deliver training in new environments. We are always looking to provide flight test professionals with the most effective and relevant training experience at whatever stage they are in their career and wherever they may be based. Here are some examples of courses we are also able to provide as and when a need arises. [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com) for further details on any specialist course.

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## **Cyber Security Awareness for Airborne Systems**

This short course provides students with an awareness of the cyber threats that can impact modern airborne systems through a mixture of theory and practical experience. Exposing students to the vulnerabilities in aerial systems - both during flight test and in operation – we enable them to identify potential threats and draw upon the correct expertise to protect deployed assets.

## **Introduction to Unmanned Test & Evaluation**

Based on our Evaluator Aircrew course, this 3 week course introduces the concepts of Test & Evaluation to students who will be involved in the testing and evaluation of unmanned aerial systems. The course has been developed to ensure students are prepared and appropriately equipped to deliver smaller T&E activities or to support larger test programmes.

## **Unmanned Aerial Systems Top-Up for Qualified Test Professionals**

Designed for students who have any existing qualification as a flight test professional, this 6 week top-up training will equip students with the essential skills and practical experience required to enable the delivery of T&E for unmanned aerial systems. The course focuses on the differences between manned and unmanned testing using a number of activities at active ranges and test facilities.

## **Unmanned Aerial Systems Test Professional**

This course has been developed for students from an unmanned aerial systems background who have yet to secure test and evaluation qualifications or experience. It shares common elements with our core courses and provides a similar level of qualification to our existing Test Pilot and Flight Test Engineer qualifications. Additional content provides a specific focus on the application of T&E for unmanned aerial systems.

## **Upset Prevention & Recovery Training Course**

Upset Prevention & Recovery Training (UPRT), is an advanced course that provides a blend of theoretical and practical instruction in the causes of upsets, prevention of upset occurrence and techniques for recovery. Drawing upon the vast experience of ETPS instructors, the course prepares pilots to mitigate occurrences and handle upset conditions when they occur.

## **Post Maintenance Flight Check**

Based upon the theory covered in our flight test professional courses, this short awareness course focusses on the principles of best practice in flight test and provides flight crew with the skill set required to plan, manage, conduct, and report on post-maintenance flights to maximise operational performance.

## **Post-Production Training Support**

Effective testing of a post-production air platform presents a unique set of challenges. This requires bespoke training support to reflect the capabilities and performance of the new aircraft under test. ETPS offers a training package for those responsible for conducting post-production flight test to ensure that their activities are planned, managed, conducted, and reported upon in a safe and efficient manner by following our proven methodologies.

## **9G Centrifuge Training**

Operating in a high-G environment during flight test or within complex missions demands specialist training that prepares pilots for safe conduct and improves their G-tolerances. Working with our partners in G-training delivery at the national Flight Physiological Centre (FPC) in Linköping, Sweden, ETPS is pleased to offer training using the Dynamic Flight Simulator (DFS) – a combined human centrifuge and flight simulator – that provides a unique and complete method for high-G training.

## **Bespoke Courses**

If you have a unique challenge in either flight test or complex missions, we will be pleased to support your activities by developing bespoke training packages that help to ensure your aircrews and supporting teams are suitably prepared to deliver the required outcomes in a safe, efficient, and effective manner.

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If you would like to discover more, keep up to date with course developments or register your interest in attending any of the courses outlined in this prospectus, please contact us – [ETPSSales@qinetiq.com](mailto:ETPSSales@qinetiq.com)

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