

 Crafted in Switzerland

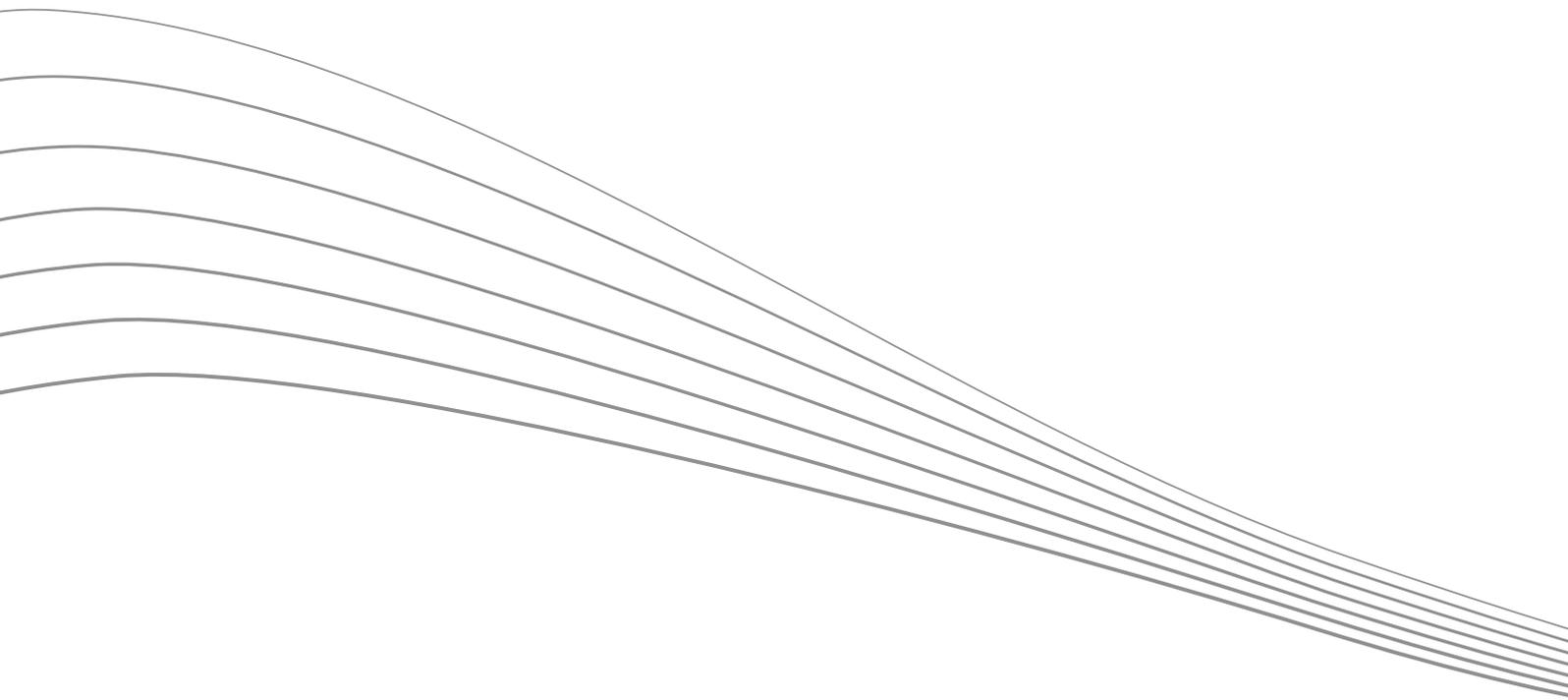
PC-21

THE 21ST CENTURY TRAINER

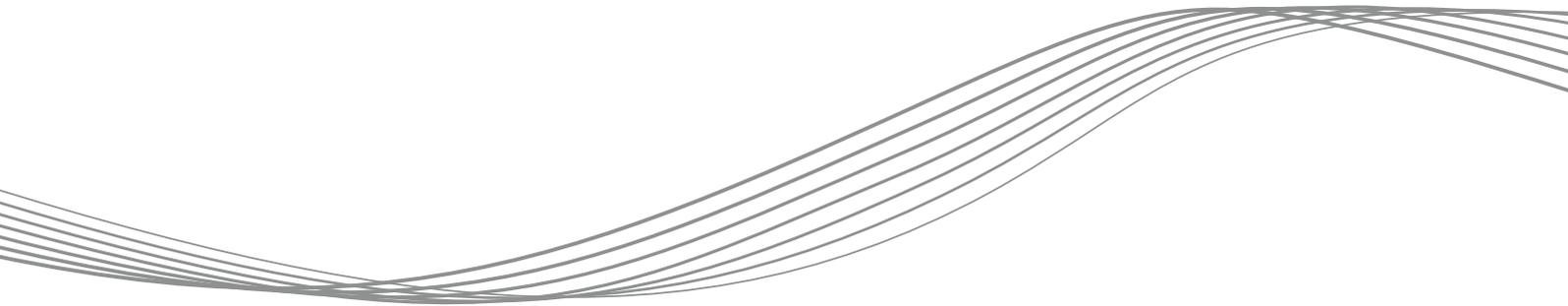


 **PILATUS** 

21ST CENTURY TRAINING
FOR 21ST CENTURY AIR FORCES



PC-21





Above the Desert near Doha, Qatar | 25°2'9"N | 51°16'34"E

THE ULTIMATE
TRAINING SYSTEM

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THE ULTIMATE TRAINING SYSTEM

THE NEXT GENERATION TRAINER

To train the next generation of military pilots, Pilatus developed the next generation trainer: the Pilatus PC-21, designed and built specifically with students in mind.

With air force budgets under continuous pressure, the PC-21 provides a cost-effective but highly efficient training solution. On the PC-21, pilots destined to fly fighter aircraft do not need to transition to jets until much later than those flying conventional trainers, reducing cost and training time. To achieve this, Pilatus expanded the design and performance envelope to take this single engine turboprop into an area that was

previously the domain of only jet aircraft. A fully-digital glass cockpit environment is capable of emulating front-line aircraft types. This flexibility helps to shorten the training process and increases the overall success rate.

The PC-21 has significantly better aerodynamic performance than any other turboprop trainer on the market. It is also supported by a more powerful, flexible and integrated training system than any other turboprop or jet trainer, whilst retaining life-cycle support costs equal to current turboprop benchmarks.





THE ULTIMATE TRAINING SYSTEM

AB-INITIO TO ADVANCED TRAINING

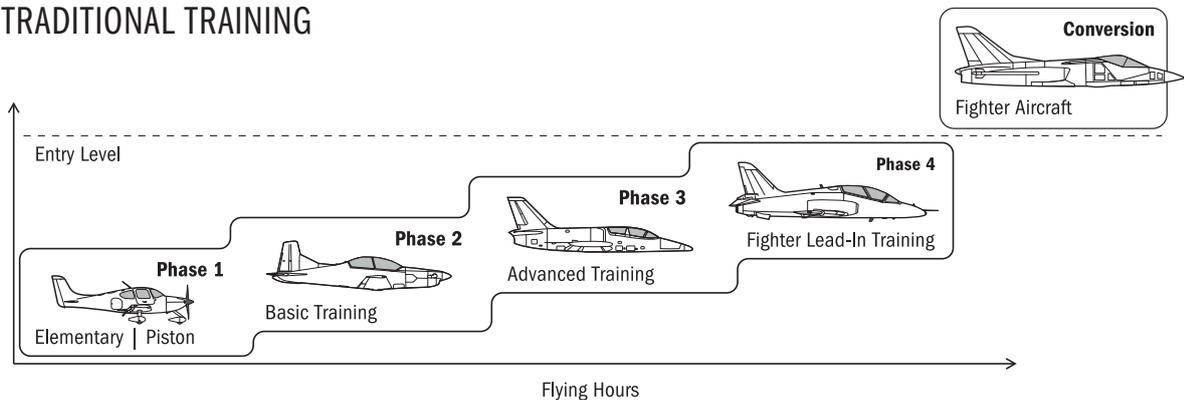
The PC-21 is as benign and easy to fly for the ab-initio student as it is challenging and rewarding for the pilot preparing for the front line.

The 1600 shp Pratt & Whitney PT6A-68B engine and five-blade graphite propeller push the speed and climb rate of the PC-21 into an area that was, until now, exclusively jet territory. The PC-21 is capable of sustained low-level speeds in excess of 320 knots (593 km/h). Hydraulically-assisted ailerons and roll spoilers can produce fighter-like roll rates in excess of 200° per second. It is therefore possible to download significant parts of front-line training to the PC-21.

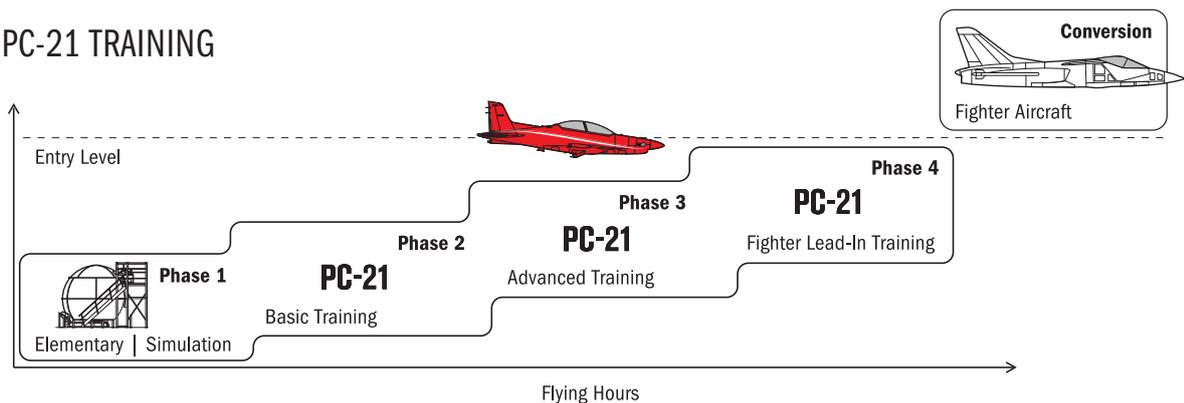
A digital power management system and automatic yaw compensation make the PC-21 easy to fly in the circuit, and also ensure the performance required for advanced training.

The capabilities of the PC-21 make it ideally suited to a very wide training envelope. It can be used from day one, eliminating the need for an elementary flying training fleet and also bridge the performance gap between traditional turboprop trainers and expensive lead-in fighters. In this respect, the PC-21 provides significant advantages over traditional turboprops and jet trainers.

TRADITIONAL TRAINING



PC-21 TRAINING





THE ULTIMATE TRAINING SYSTEM

REDUCING COSTS



Valais Alps, Canton of Valais, Switzerland | 46°5'1"N | 7°51'26"E

The PC-21 design ensures a predictable operating cost profile. An innovative concept, modern materials and validation with a full-scale fatigue test, result in an aircraft that is ideal for both conventional and performance-based operations.

Experience with existing PC-21 customers has shown that it is possible to reduce the cost of taking a student to wings graduation by more than 50 per cent.

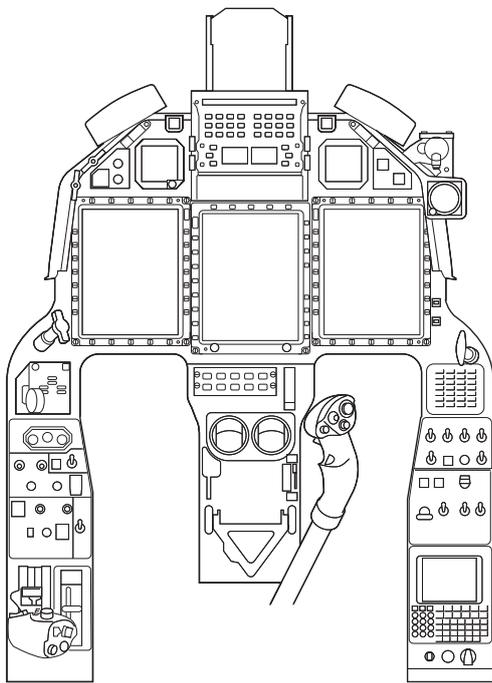
By using the PC-21 as a basic, advanced and lead-in fighter trainer, operators can:

- eliminate other aircraft types from the training pipeline
- replace expensive jet hours
- shorten the training process by minimising unnecessary transitions
- focus on front-line skills by emulating front-line functionality
- identify weak students more quickly by focusing on core skills earlier in the training syllabus

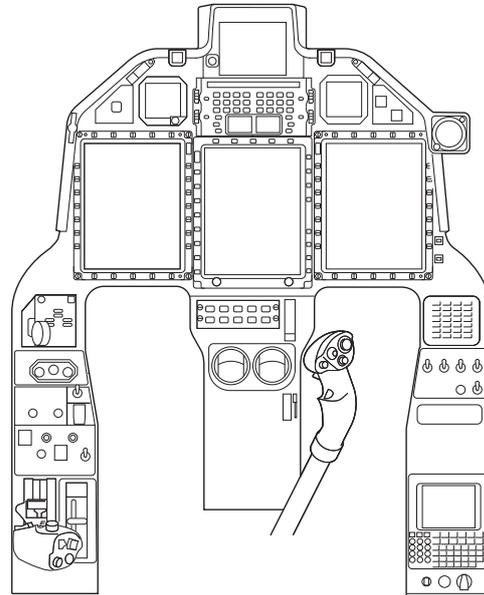




Central Switzerland | 47°7'37"N | 8°44'37"E



Front Cockpit



Rear Cockpit

AVIONICS AND MISSION CAPABILITY

A FULLY CUSTOMISABLE GLASS COCKPIT

Systems integration is at the heart of the PC-21 cockpit philosophy. As an advanced trainer aircraft, the cockpit display and control systems are configured to match the latest generation front-line aircraft as closely as possible. Trainees are exposed to an operational cockpit environment at the earliest stages of their training. This enables aircrew to acquire skills that are of direct relevance to front-line aircraft from day one.

The one-piece canopy has no metal arch in the front cockpit improving visibility for the pilot. This is achieved without compromising bird strike protection.

Environmental control and a pressurised cabin maximise crew comfort. The zero-zero ejection seats provide unparalleled safety whilst accommodating the widest anthropometric range in this class of aircraft.

AVIONICS AND MISSION CAPABILITY

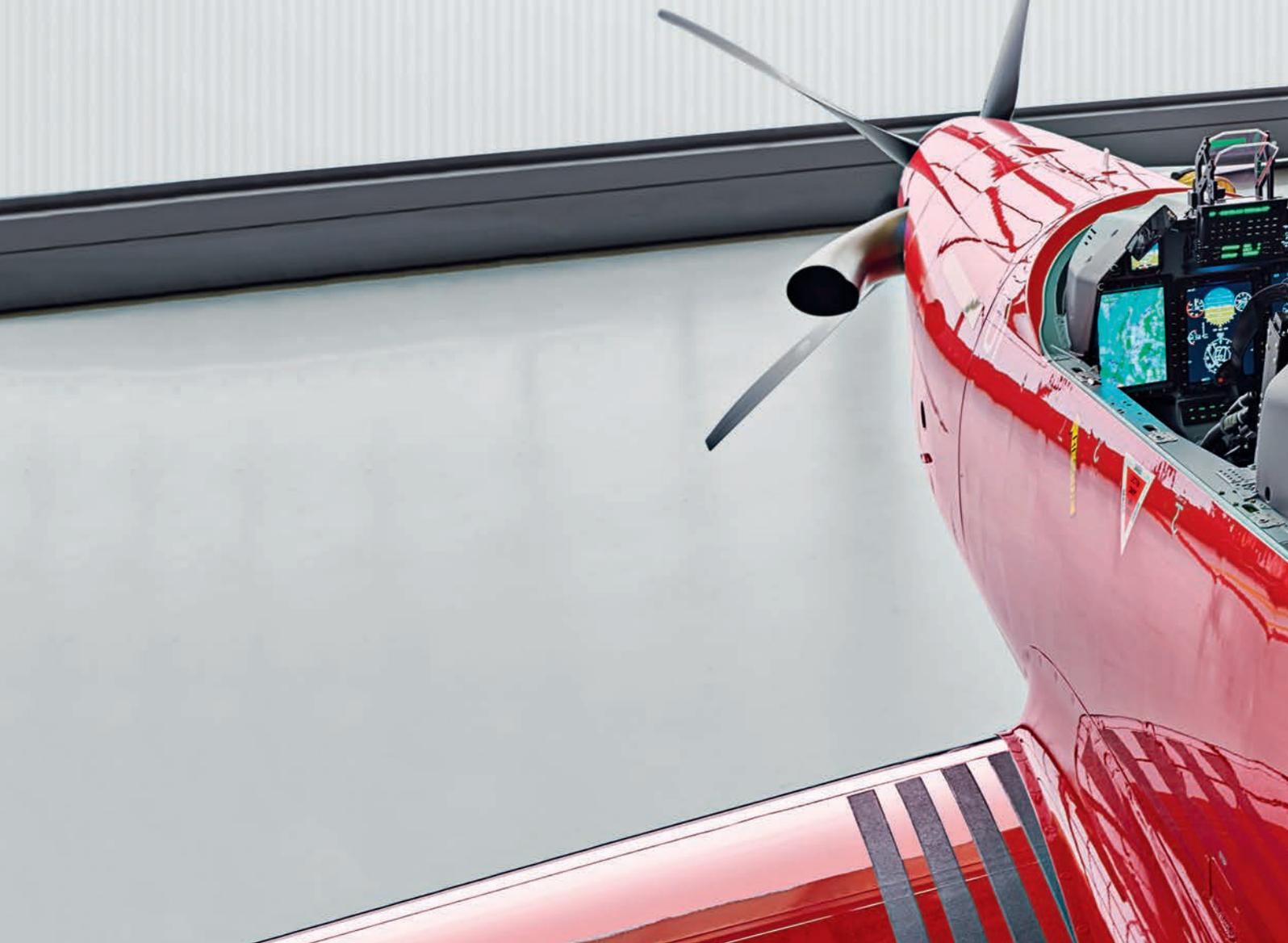
MULTI-MISSION CAPABILITY

The PC-21 is designed not only to satisfy the requirements for basic and advanced military pilot training but also to provide enhanced training for all aircrew in the following skills:

- mission planning and tactical navigation
- mission system management
- civil flight management
- electronic warfare
- air-to-air operations
- air-to-ground operations
- air-to-air and air-to-ground radar training
- simulated weapons employment
- night vision goggles operation

The PC-21 is enhanced by the ability to adapt the aircraft avionics to the requirements of each phase of training. The front and rear cockpits can be de-coupled for independent operation or to allow instructor access to training modes and data not available to the trainee. Aircraft displays, navigation sensor performance, system modes and synthetic weapons status can all be modified by the instructor to increase training effectiveness and meet the needs of individual students.

The ability to download elements of operational conversion unit training to a far less expensive platform makes the PC-21 an excellent tool for air forces wishing to rationalise and improve their training.

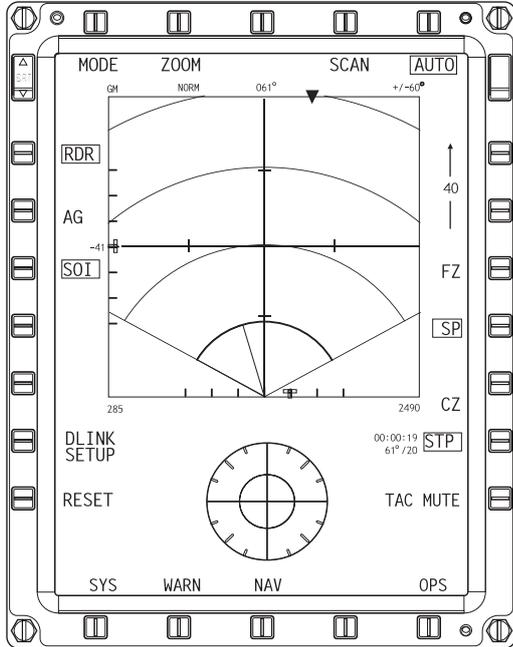




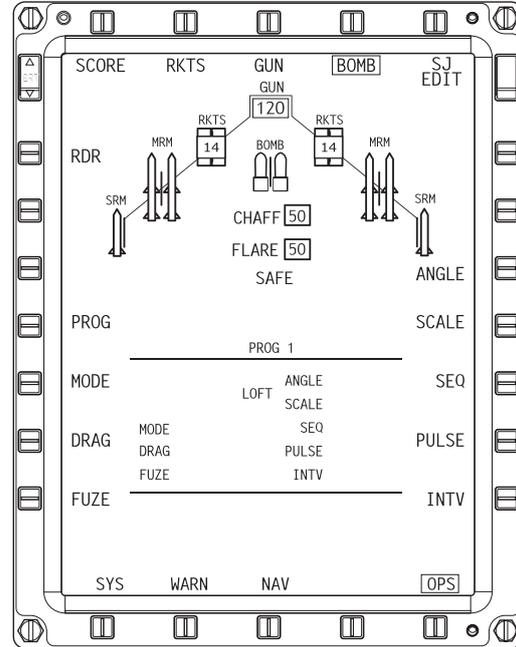
Radar Training







Synthetic Air-to-Ground Radar



Simulated Weapons Configuration

AVIONICS AND MISSION CAPABILITY

REALISTIC TACTICAL TRAINING

The PC-21 embedded radar simulation and integral datalink system allow teaching of radar techniques and simulated weapons deployment against computer generated targets and real aircraft. This type of training on the PC-21 can significantly reduce or replace expensive jet training.

The PC-21 can simulate almost any weapon found on the latest generation of fighter aircraft. Realistic tactical training can be carried out without the extra costs associated with practice weapons and air-to-ground

weapons ranges. Using the radar simulation, beyond-visual-range missile employment can be taught without the need for other aircraft as an airborne target. Radar-to-visual intercepts and multiple target engagements can also be conducted with any similarly equipped aircraft. For air-to-ground training, the PC-21 provides various weapon modes such as continuously-computed release point and continuously-computed impact point delivery modes, a synthetic air-to-ground radar and a 'no-drop' bomb scoring system.



GROUND-BASED TRAINING

MORE THAN JUST THE AIRCRAFT

The PC-21 Training System is fully integrated and provides a proven turnkey solution for today's pilot training needs.

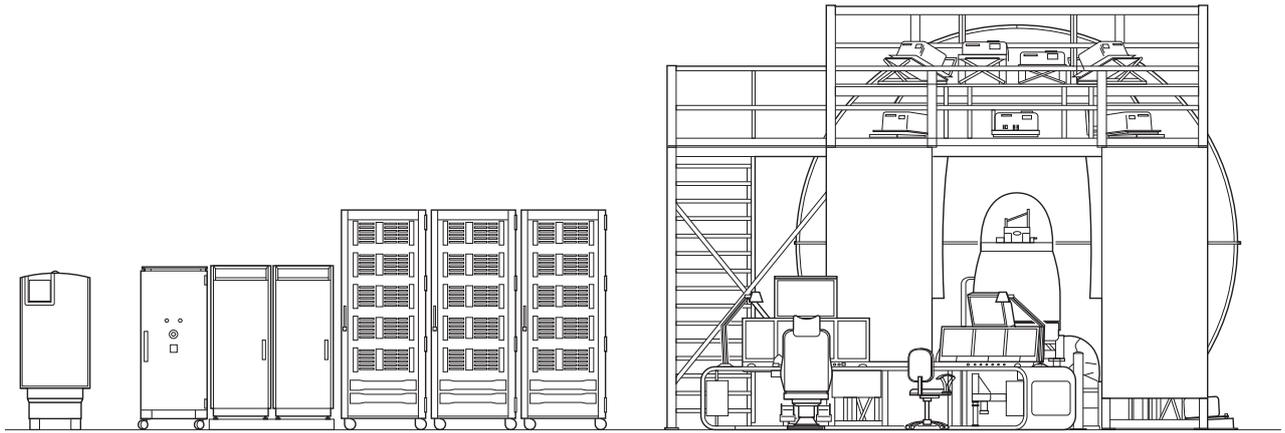
The latest generation fighters, transport and helicopter aircraft are all characterised by vastly increased mission system workloads. Student pilots should therefore be exposed to a realistic cockpit environment at the earliest stages of their training. The PC-21's Integrated Training System introduces students to mission profiles that were previously only possible on expensive airborne platforms.

This makes it easier for air forces to take the next generation of student pilots through to a successful operational conversion. The PC-21 Training Solution combines performance and flexibility with proven affordability to provide a new level of training effectiveness. This results in fewer total training hours, higher graduation rates and faster front-line capability at less cost.





Al Udeid Air Base, Qatar | 25°7'4"N | 51°19'0"E



PC-21 Full Flight Simulator

GROUND-BASED TRAINING

MAXIMISE TRAINING EFFICIENCY ON GROUND

The objective of a modern pilot training system is to produce a pilot capable of meeting the demands of flying today's sophisticated aircraft. With increasing cost of equipment, resources and time, this goal needs to be achieved as economically as possible. Preparation on the ground saves perspiration and failure in the air. By the time students fly, they should be totally familiar with aircraft systems and avionics functionality. The PC-21 Ground-Based Training System translates student learning into an airborne context.

While designing the Pilatus PC-21 Integrated Training System it was recognised that flexibility is essential. Customer requirements, resources and budgets will obviously vary. Therefore, we attach great importance to offering customised solutions. A comprehensive set of training products is available to cover all aspects of ground-based training. From the simplest type of training aid, such as an aircraft silhouette, through to a full flight simulator, all Pilatus training equipment is designed to support integrated, progressive learning.



GROUND-BASED TRAINING

PREPARE YOUR MISSION

Whether planning an advanced tactical sortie or learning the basics, the PC-21 Ground-Based Training System provides both student pilots and instructors with the tools to ensure success.

In this age of computer-based self-study, it is important to retain flexibility and so Pilatus offers a range of training material from the simple aircrew manual to fully immersive simulation. Initial computer-based training is complemented by computer-aided instruction and advanced mission planning and debriefing systems.

In addition to basic planning, the mission planning system contains an integrated digital flight manual for performance calculation and advanced capabilities such as the ability to plan formation sorties, synthetic weapon delivery and both 2D and 3D mission rehearsal.

An essential element of the PC-21 Ground-Based Training System, the mission planning system is the last step in the preparation for flight.



GROUND-BASED TRAINING

FLY YOUR MISSION

The flight simulator is one of the cornerstones of the PC-21 Integrated Training System. Modern technology and targeted expertise enable Pilatus to deliver a range of flight simulation systems designed to provide effective, efficient support for training today's air force pilots.

The PC-21 Full Flight Simulator represents the pinnacle of Pilatus simulation capabilities. Simulation that ensures an immersive training experience using cutting-edge visual systems, detailed visual and radar data-bases, accurate aircraft dynamics and on-board systems models as well as networking capabilities for every conceivable training exercise.

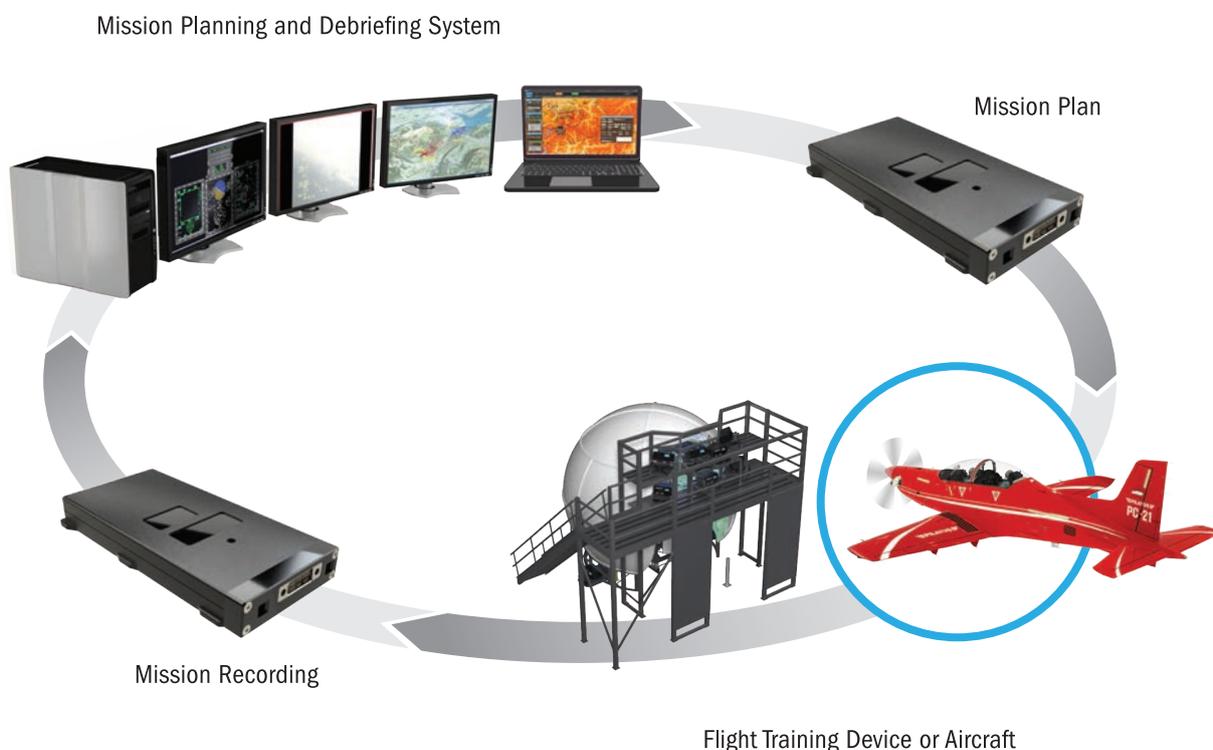
The simulator provides pilots with in-depth knowledge of the PC-21 and its modern avionic systems allowing them to practice sorties from basic to advanced and tactical flying.

A powerful instructor station permits monitoring, recording and debriefing of all exercises. Computer-generated forces acting as friend or foe can be guided and controlled in simulated tactical scenarios.

Emergency procedures are accurately simulated allowing pilots to train for even the most complicated live situation.







GROUND-BASED TRAINING

DEBRIEF YOUR MISSION

The mission debriefing system is a powerful training tool that provides vital post-flight analysis capability and accelerates the student learning process.

Whether replaying a sortie from the aircraft or the simulator, the mission debriefing system provides synchronised post-flight replay of audio, video and avionics data recorded during the mission.

Using the mission debriefing system, instructors can reinforce key learning points and students can review

sorties or conduct critical self-analysis. The system can also be used to assess student performance on solo sorties, for post-incident analysis or just comparative measurement of progress over time.

The Pilatus Mission Debriefing System provides a tool for detailed analysis of performance and gives the opportunity to learn from not only mistakes but also successes.

INTEGRATED LOGISTICS SUPPORT

FROM LOGISTICS ON-DEMAND TO PERFORMANCE-BASED

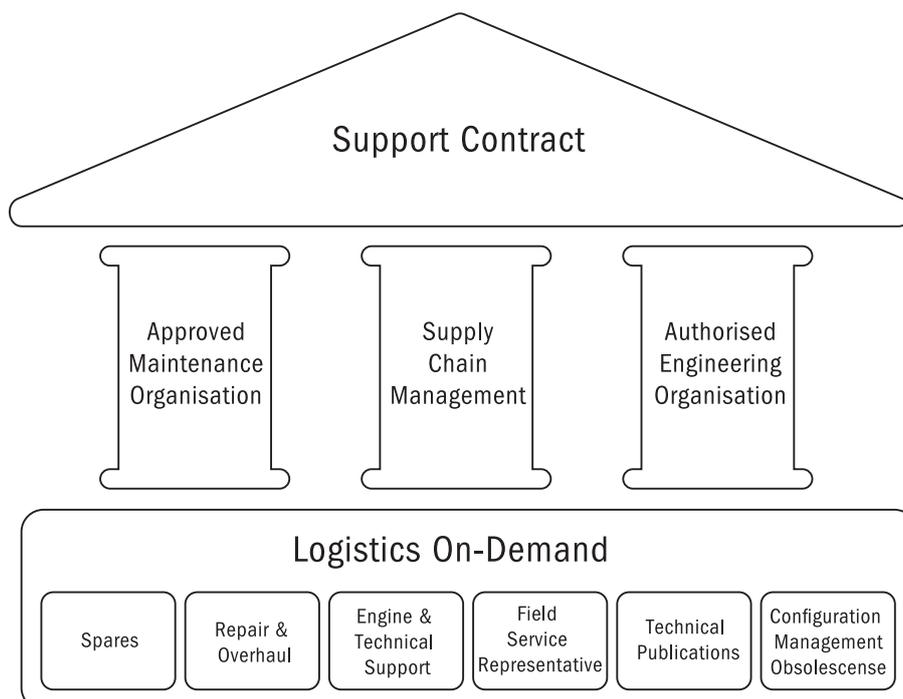
Much analytical and design effort has gone into providing the benefits of the PC-21 Integrated Logistics Support Programme. We set ourselves demanding availability targets and used advanced tools to optimise supportability, cost and technical requirements.

System design and choice was based not only on technical analysis but also on our experience of producing and supporting Pilatus turboprop aircraft worldwide. Our partnerships with customers and suppliers allow us to provide tailored support and an optimised flow of data, technical services and material.

With increasing global pressure on defence budgets, many air forces are seeking more innovative ways to support their aircraft fleets. Defence ministries are also investigating new ways to manage complex systems and maximise value for money. To support this change, Pilatus has developed performance-based contracting, an advanced contracting framework specific to the

PC-21 Training System. The aim is to ensure that the operating air force receives an affordable product that meets its explicit performance criteria. This is achieved by contracting for an integrated support package that focuses on overall output requirements, delivering a target availability, rather than separating discrete input measures such as parts, maintenance and technical services.

The performance-based contract transfers the burden of aircraft control, output risk and associated costs throughout the product life-cycle to the prime contractor, enabling the customer to concentrate on operations. Contracts are conducted in close cooperation with the contracting authority, allowing transparency of information and clear lines of accountability without compromising on airworthiness or safety. Active management of key availability drivers includes e.g. mission success, flying hours, supply support and technical airworthiness.







Switzerland



Singapore



United Arab Emirates



Saudi Arabia



Qatar



Australia



Jordan



France

A PROVEN TRAINING SYSTEM

FROM A PROVEN MANUFACTURER

Since 1939, Pilatus has built a reputation for manufacturing aircraft that excel in demanding conditions without compromising safety, speed or comfort.

Our first sustained success came with the Pilatus P-2 and P-3, put in service by the Swiss Air Force, and the latter even by Swissair. Highly successful regionally, these trainers provided Pilatus with the experience it needed to grow to a global level.

Our current military training aircraft, the PC-7 MkII, the PC-9 M and the PC-21 make up a product family used by thousands of air force pilots around the world. On the civil side, the PC-12 is the benchmark for outstanding versatility, performance, reliability and

operational flexibility. As such, it is one of the most popular turbine-powered business aircraft on the market today. 1,500 aircraft have been sold so far.

From our proud heritage comes knowledge: the PC-21 embodies all this experience and represents the pinnacle of more than 75 years of quality training aircraft manufacturing.

Pilatus has a long history in assisting air forces to train their front-line pilots. Customers rely on the PC-21 to provide them with a world class training system. The PC-21 is served by a dedicated support unit with responsibility for over 30 military customers worldwide.





Burj al Arab Jumeirah, Dubai, United Arab Emirates | 25°8'28"N | 55°11'8"E

WHY THE PC-21?

TEN REASONS

1. MULTI USE

The PC-21 can be used as a basic, advanced and fighter lead-in trainer. This reduces the number of different aircraft in the training pipeline and delivers optimum efficiency for maximum student quality in minimum time.

2. OUTSTANDING COCKPIT

The cockpit avionics with the display and control system can emulate latest generation front-line aircraft.

3. TOP PERFORMANCE

The PC-21 has better aerodynamic performance than any other turboprop trainer on the market, pushing the speed and climb rate into a domain previously reserved for jets only.

4. INTEGRATED TRAINING

The PC-21 Ground-Based Training System translates student learning into an airborne context. All elements of training are highly integrated and can be customised in line with customer wishes.

5. ONE-STOP-SHOP

Pilatus can provide all the elements required for efficient pilot training; aircraft, ground-based training systems, documentation and conversion training.

6. CUT COSTS

The PC-21 dramatically cuts the total cost of training student pilots to front-line standards.

7. TAILORED SERVICE

Pilatus offers integrated service from supply chain management and engineering support to complete maintenance solutions.

8. PROVEN TRACK RECORD

Eight visionary air forces operating 207 aircraft rely on the PC-21 in climates ranging from the heat of the desert to the cold of the high Alps.

9. CUSTOMER FIRST

Pilatus customers are only a call away from genuine Pilatus service. We will support your aircraft for as long as it is part of your training solution.

10. SWISS QUALITY

We are proud of our over-engineered precision and innovative drive. Pilatus Aircraft Ltd has been developing, producing and selling aircraft worldwide since 1939, earning a reputation for excellence that spurs us on to even greater achievements.



Landwasser Viaduct, Canton Graubünden, Switzerland | 46°40'51"N | 9°40'33"E



FACTS AND FIGURES

PERFORMANCE



Spannörter, Canton Obwalden, Switzerland | 46°47'59"N | 8°30'35"E

TAKE-OFF AND LANDING

Take-off ground roll, sea level	490 m	1,608 ft
Take-off distance to clear 15 m (50 ft) obstacle, sea level	725 m	2,380 ft
Landing ground roll, sea level	600 m	1,969 ft
Landing distance to clear 15 m (50 ft) obstacle, sea level	900 m	2,953 ft

CLIMB

Maximum rate of climb at maximum power available:

Sea level	4,250 ft/min
10,000 ft	3,325 ft/min
20,000 ft	2,125 ft/min
Time to climb:	
10,000 ft	2 min 35 s
20,000 ft	6 min 20 s

CRUISE

Maximum horizontal speed, based on maximum power available:

Sea level	321 KTAS
10,000 ft	335 KTAS
20,000 ft	331 KTAS

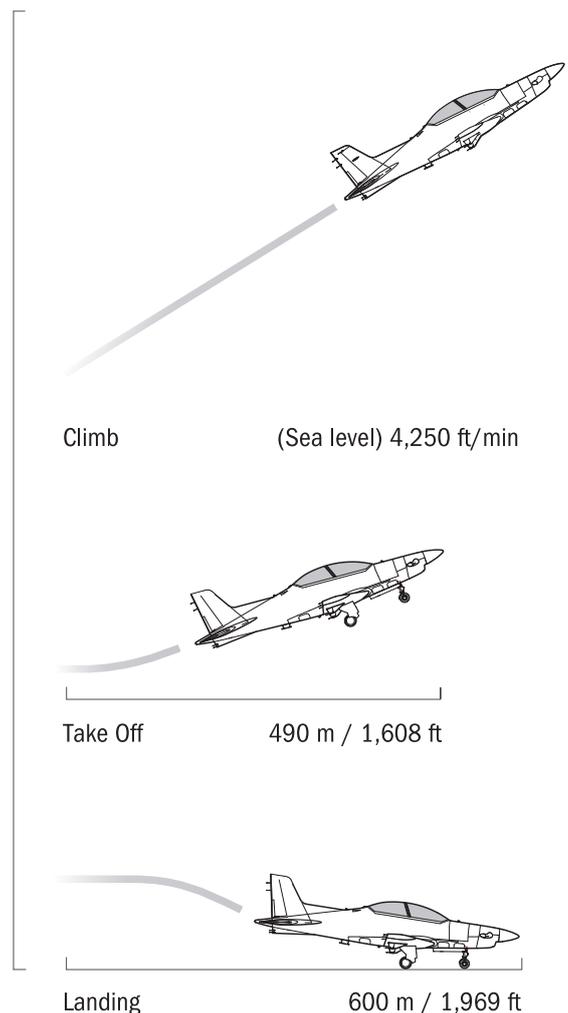
SUSTAINED LOAD FACTOR

The maximum sustained load factor is as follows:

Sea level	3.4 g
10,000 ft	2.7 g
20,000 ft	1.9 g

ROLL RATE

The maximum steady roll rate in acrobatic configuration is 200°/sec at 10,000 ft, at all speeds above 250 KIAS

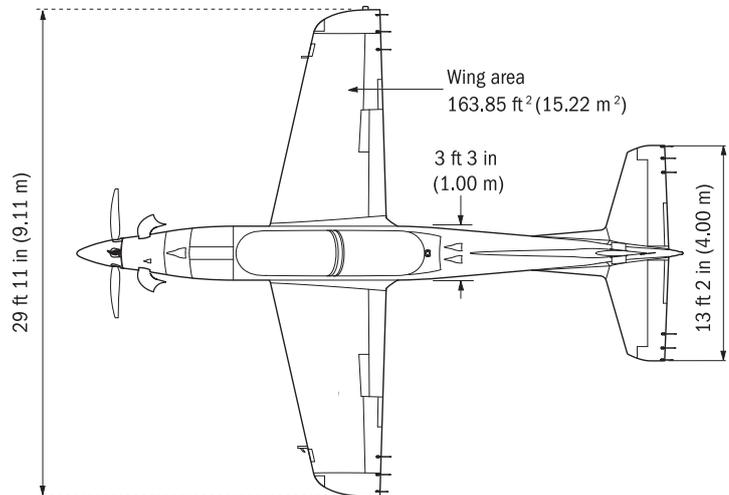
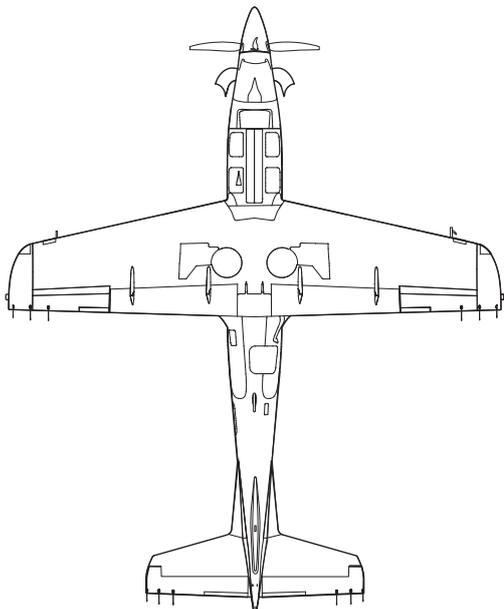
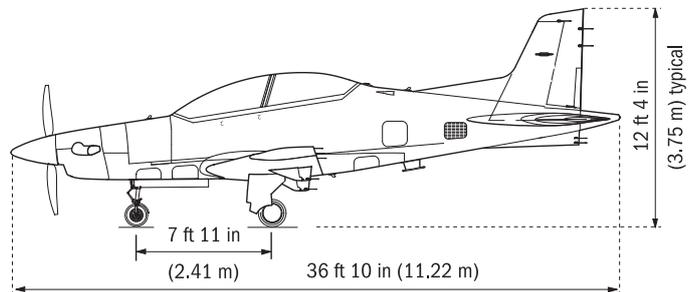
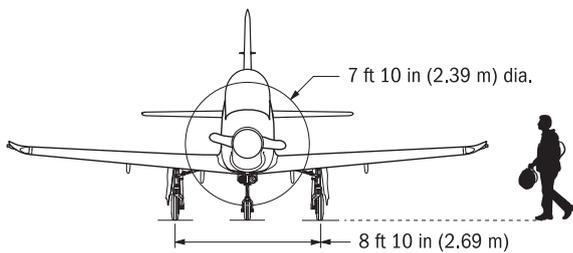


FACTS AND FIGURES

DIMENSIONS AND WEIGHTS

DIMENSIONS

Wing span	29 ft 11 in	9.11 m
Horizontal tail span	13 ft 2 in	4.00 m
Fuselage length	36 ft 10 in	11.22 m
Fuselage width	3 ft 3 in	1.00 m
Propeller diameter	7 ft 10 in	2.39 m
Wing projected area	163.85 ft ²	15.22 m ²



WEIGHTS

	ACROBATIC		WITH STORES	
Maximum ramp weight	6,878 lb	3,120 kg	9,414 lb	4,270 kg
Maximum take-off weight	6,834 lb	3,100 kg	9,370 lb	4,250 kg
Maximum landing weight	6,834 lb	3,100 kg	8,902 lb	4,038 kg
Maximum zero fuel weight	6,062 lb	2,750 kg		
Maximum weight of stores			2,535 lb	1,150 kg

ALTITUDE

Maximum operating altitude	25,000 ft
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SPEEDS

Equivalent air speeds (EAS) at maximum operating weights in acrobatic configuration:

Maximum operating speed (V_{MO})	370 KEAS
Maximum operating mach number (M_{MO})	0.72 Mach
Stalling speed (idle power) at MTOW (3,100 kg) with flaps land and gear down (V_{SO})	81 KCAS

OPERATING TEMPERATURE

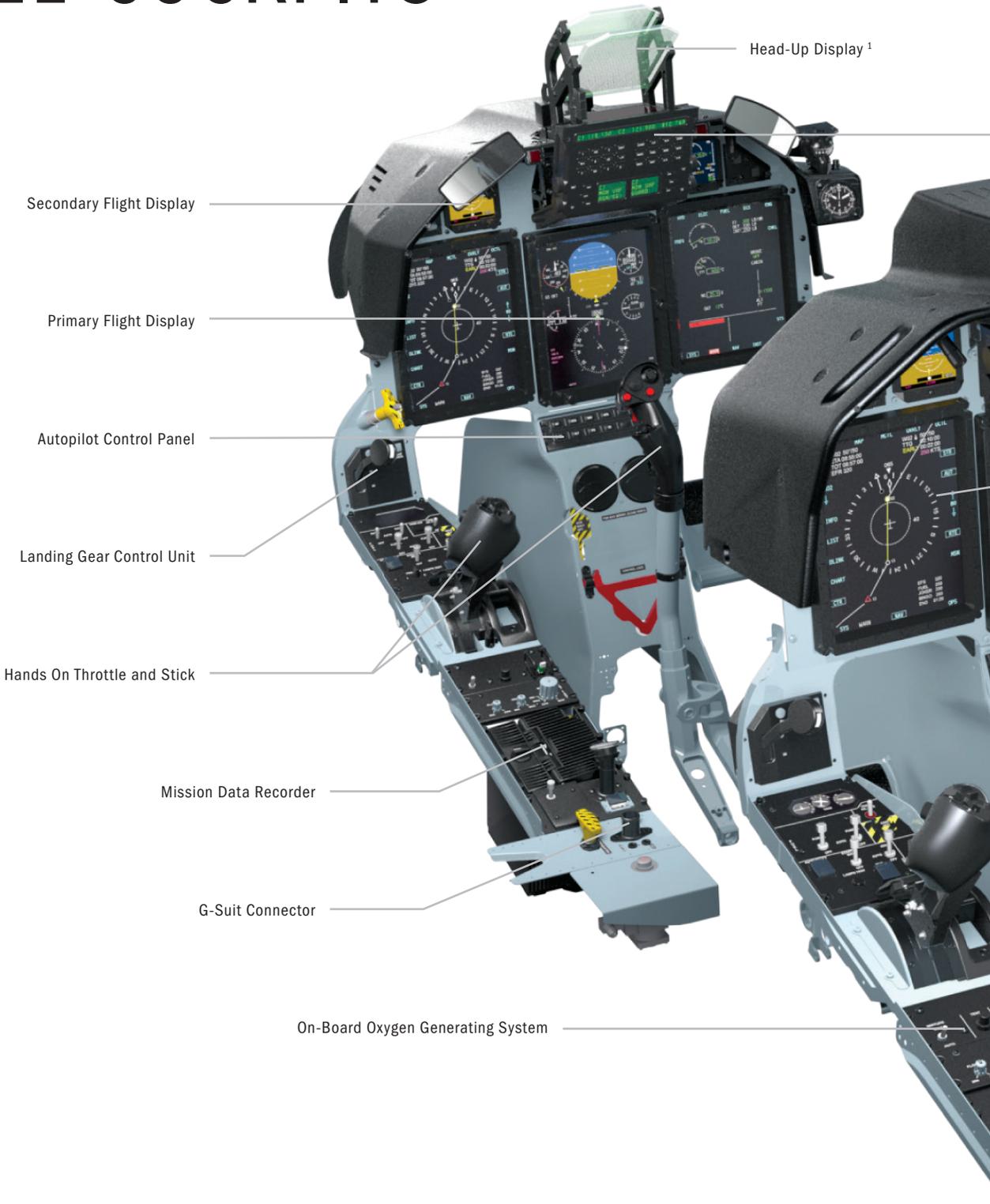
Minimum	-55° C (-40° C oil temperature for engine starting)
Maximum	+55° C

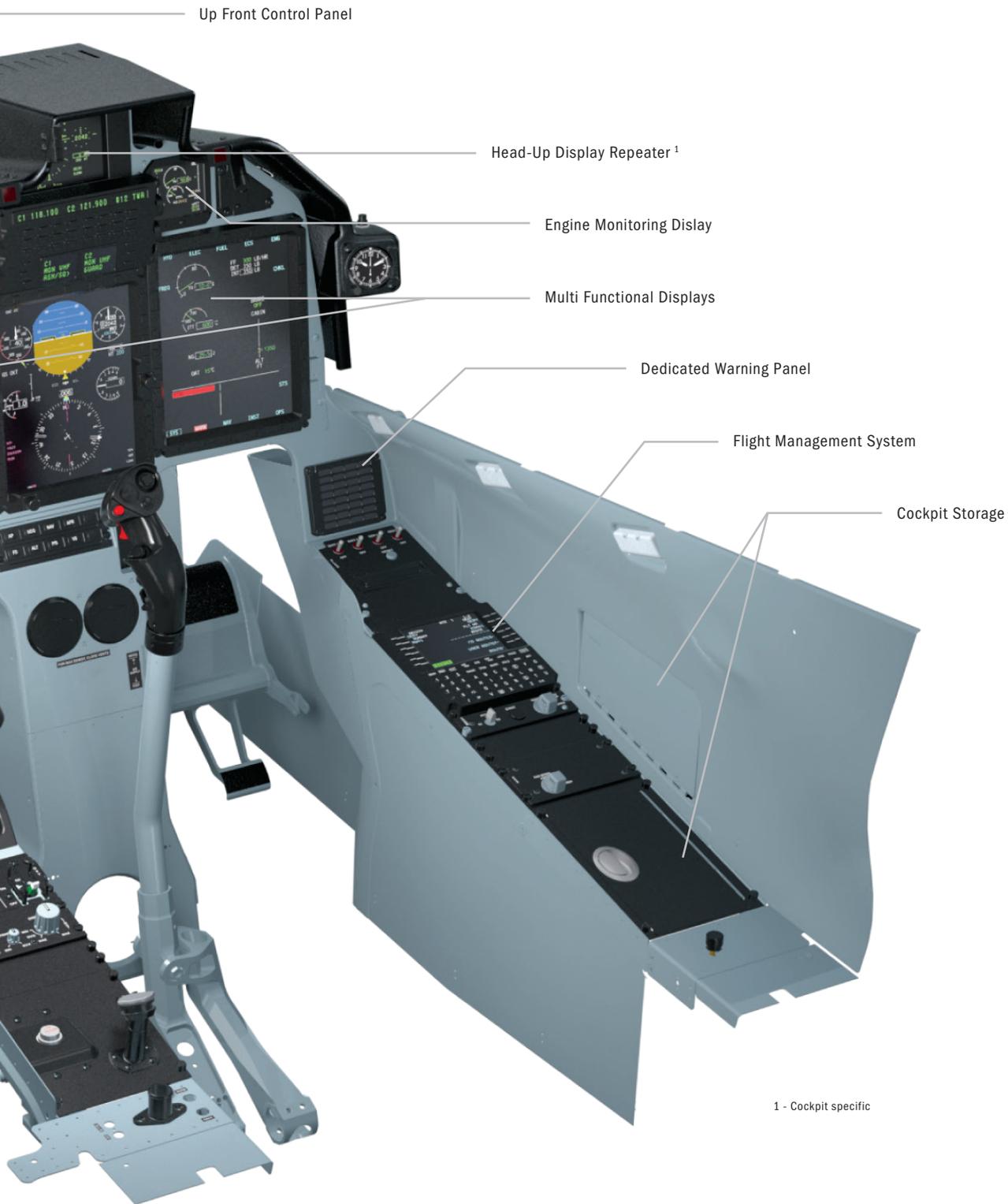
LOAD FACTOR

	ACROBATIC	WITH STORES
With landing gear up and locked or down and locked:		
Maximum positive	+ 8.0 g	+ 5.0 g
Maximum negative	- 4.0 g	- 2.5 g
With flaps extended in take-off or land position:		
Maximum positive	+ 4.0 g	+ 4.0 g
Maximum negative	0 g	0 g

FACTS AND FIGURES

PC-21 COCKPITS





1 - Cockpit specific

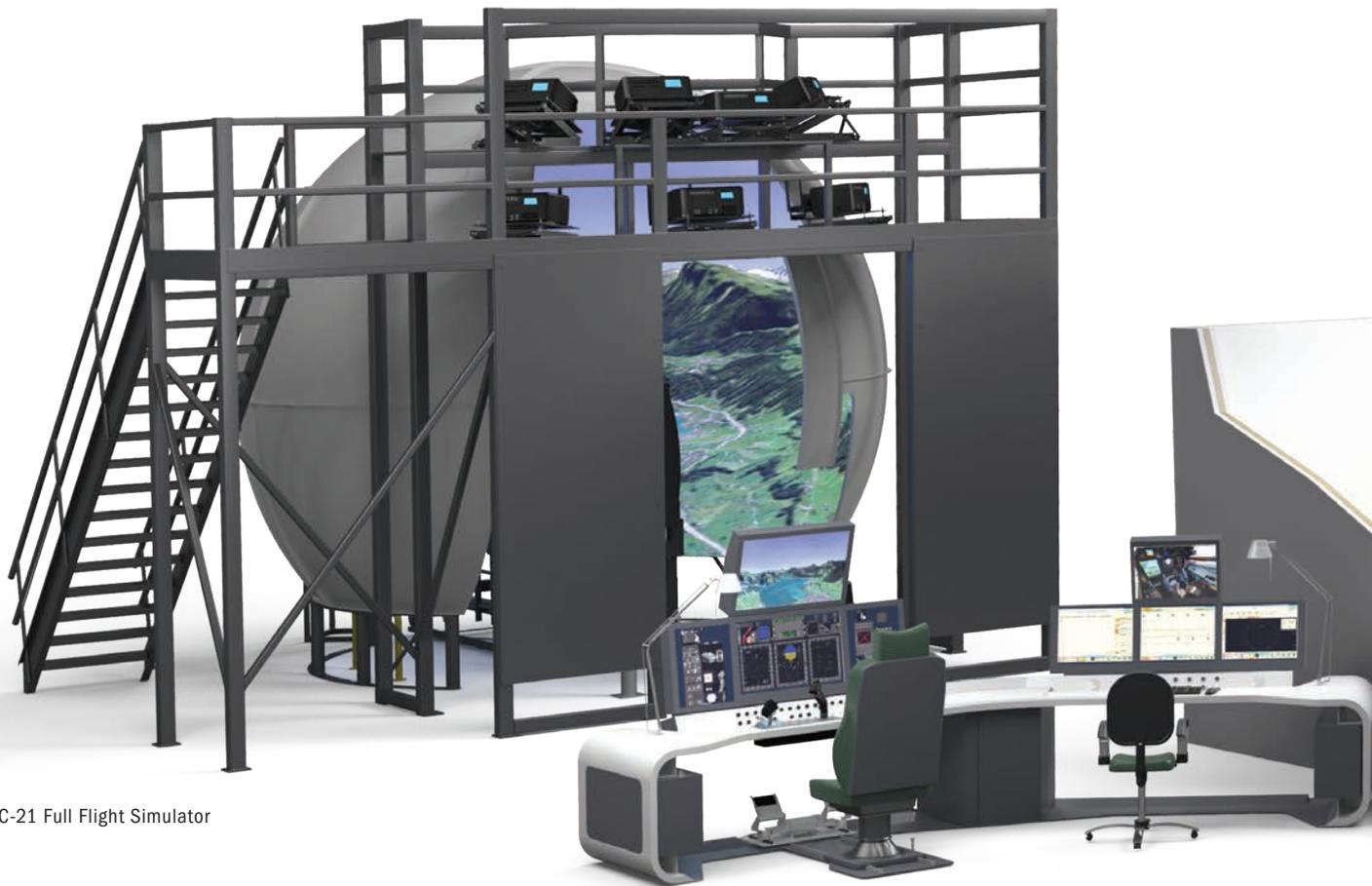


Over the Alps, Switzerland | 46°29'55"N | 7°47'45"E



FACTS AND FIGURES

GROUND-BASED TRAINING PRODUCTS



PC-21 Full Flight Simulator



Wallboards



Computer-Based Training



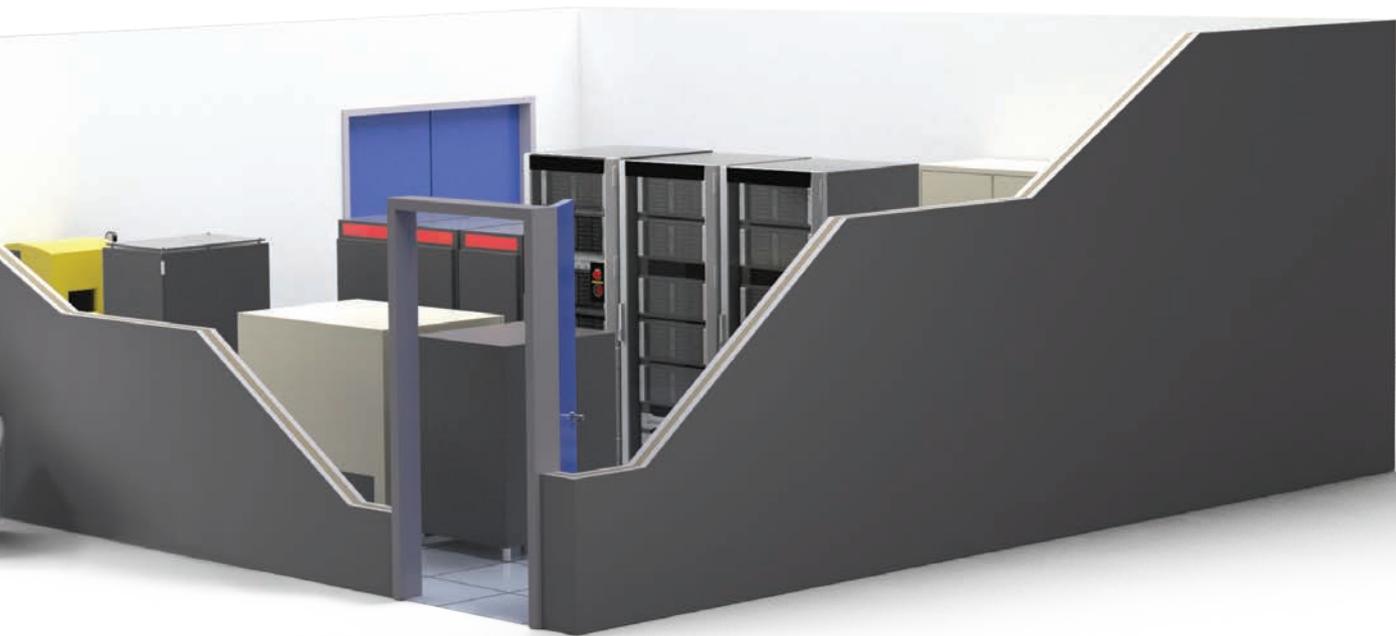
Classroom Teaching Aids and Documentation



Flight and Navigation Procedures Trainer



Mission Planning and Debriefing System



Egress Training Device



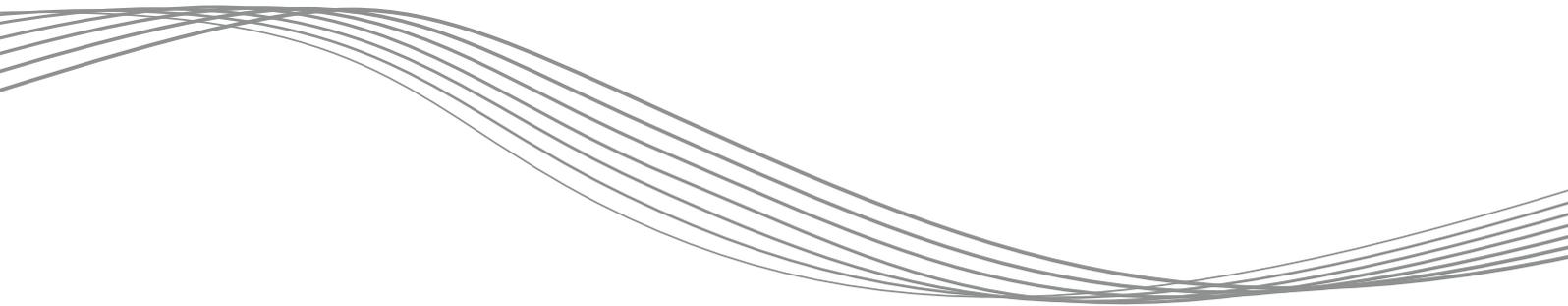
Ejection Seat Training Device

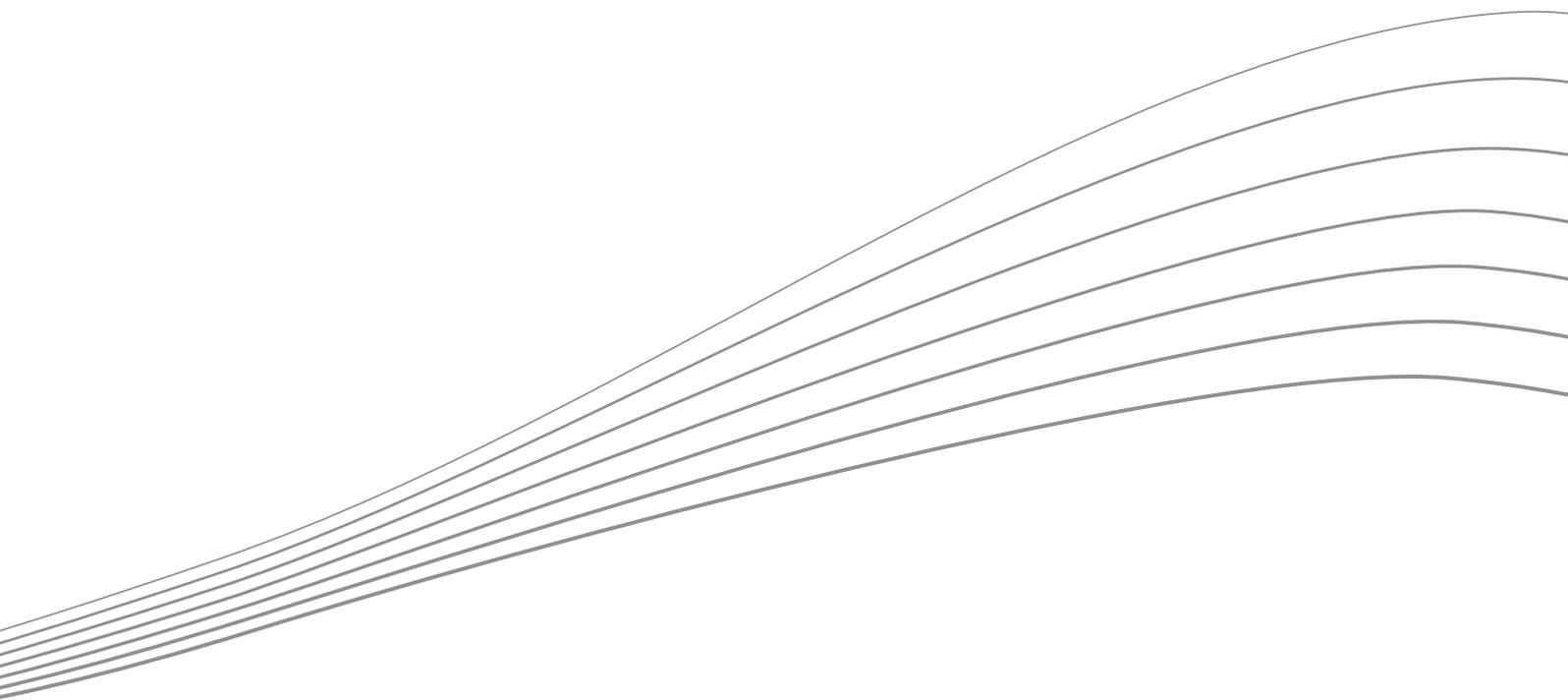
CONTACT US

FLY THE 21ST CENTURY TRAINER

PLEASE CONTACT US FOR
MORE INFORMATION.

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www.pilatus-aircraft.com





Founded in 1939, Pilatus Aircraft Ltd is the only Swiss company to develop, produce and sell aircraft to customers around the world: from the legendary Pilatus Porter PC-6 to the best-selling PC-12, a single-engine turboprop, and the PC-21, the training system of the future. Pilatus' newest aircraft is the PC-24 – the world's first ever business jet that can be operated from short unprepared runways. Domiciled in Stans, the company is certified to ISO 14001 in recognition of its efforts for the environment. The Pilatus Group includes two independent subsidiaries in Broomfield (Colorado, USA) and Adelaide (Australia) as well as a joint venture company in Chongqing (China). With over 1800 employees at its headquarters, Pilatus is one of the largest employers in Central Switzerland. Pilatus provides training for over 110 apprentices in eleven different professions – job training for young people has always been a very high priority at Pilatus.

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