25 YEARS

MILITARY FLIGHT TRAINING

IN PARTNERSHIP WITH

SWISS AIR FORCE

NFTE
NATO FLIGHT TRAINING EUROPE

MILITARY FLIGHT TRAINING MARKET REPORT 2026-2030: SELECTED MARKETS

Defence iQ

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The global flight training market (selected countries) is projected to rise from approx. US$5.5 billion in 2025 to approx. US$6.3 billion in 2030, reflecting a CAGR of approximately 3.1 per cent. Total spending between 2025 and 2030 is expected to reach approx. US$35.7 billion. Growth is driven by the acquisition of next-generation fixed-wing aircraft and rotorcraft, which require new training systems and upgrades to existing infrastructure.

Air forces are adjusting their training pipelines to match future fleet requirements. The Indian Air Force has launched the HLFT 42 programme to support upcoming platforms such as the AMCA and MRFA. The U.S. Navy has allocated more than US$970 million to sustain fleet readiness for the F/A-18C F and EA-18 18G. Funding will align training systems with aircraft hardware, software and mission systems, and address obsolescence through component and software renewal.

A notable trend is the shift from live flying to virtual and synthetic training. This transition reduces emissions and lowers operating costs. Defence organisations in multiple countries have adopted net zero strategies that mandate this change. The UK MoD's Jet Zero Strategy aims to achieve net zero in UK aviation by 2050, with the ASTRA Blueprint forecasts a 30:70 ratio in favour of virtual training by the decade's end.

Demand for rotary wing trainer aircraft remains lower than for fixed wing platforms. Helicopters face aerodynamic limits that make them less efficient for broad, high-tempo training. Their higher noise levels also restrict operations near populated areas, reducing flexibility compared to fixed-wing fleets that can use larger military airspaces. Fixed-wing trainers deliver core flight skills more efficiently, while rotary-wing training supports specialised roles in reconnaissance, transport, and medical missions. These needs are often met through legacy platforms that are due for replacement rather than through large-scale procurement of dedicated trainers.

A notable trend in the sector is the move from live flying to virtual and synthetic training. Cost pressures, restricted airspace, classified threat modelling, and expanding maintenance needs are driving militaries to use simulation to scale training while managing expenses. The shift also lowers emissions, supporting national net-zero objectives. The UK MoD's Jet Zero Strategy aims to achieve net zero in UK aviation by 2050, with the ASTRA2 Blueprint forecasts a 30:70 ratio in favour of virtual training by the decade's end. A good example of this shift is the US$14 million contract awarded to Raytheon UK in March 2023 to procure a full-flight simulator for a Shadow Mk2 aircraft. This procurement alone is expected to minimise the RAF's carbon footprint and reduce annual training costs by almost US$ 250,000.

Major defence organisations are also advancing clean energy goals. The U.S. Air Force aims to achieve carbon neutrality across its facilities by 2046 and to achieve 100 per cent net annual carbon pollution-free electricity by 2030. NATO has committed to a net zero footprint by 2050. The Swedish Armed Forces target 2045. Finland's Ministry of Defence has pledged to halve GHG emissions from civil and maritime transport from 2020 levels by 2030.

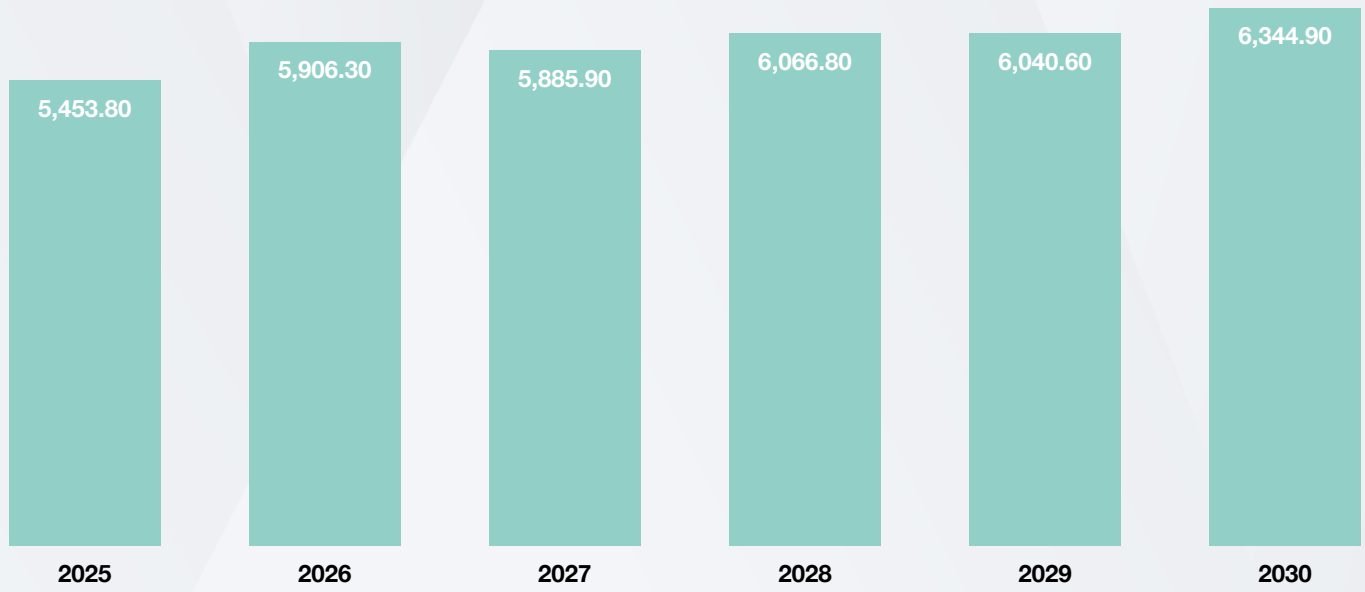
In terms of flight training categories, trainer aircraft-fixed wing is expected to account for the largest share of 63.8%, followed by training synthetic programmes– 32.1%, trainer aircraft-rotary wing – 3.7%, and trainer aircraft-transport at 0.4%.

GLOBAL: FLIGHT TRAINING MARKET, 2025-2030, US$ MILLIONS

Table 1: Global: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	3,474.20	3,768.10	3,849.90	3,850.30	3,761.80	4,019.70	22,723.90
Trainer Aircraft-Rotary Wing	310	268	235	205	212	98	1,328.00
Trainer Aircraft-Transport	25	25	25	25	25	30	155
Training Synthetic Programmes	1,644.50	1,845.20	1,776.00	1,986.50	2,041.90	2,197.20	11,491.40
Total	**5,453.80**	**5,906.30**	**5,885.90**	**6,066.80**	**6,040.60**	**6,344.90**	**35,698.30**

Figure 1: Military Helicopters Market (Selected Countries), 2025-2030, US$ Millions



Unsurprisingly, the North American region is estimated to be the biggest market for military flight training systems during 2025-2030, accounting for as much as 44.4%. Europe is the second largest market with a share of 28.9%, followed by Asia Pacific – 16.7%, South America – 4.1%, Middle East – 3.9%, and Africa – 2%. The decline in the European forecast is driven by the completion of major trainer procurement programs between 2026 and 2028, not by reduced spending. Poland and Turkey, which make up a large share, are scheduled to complete major trainer procurement programs between 2026 and 2028, reducing annual spending in the later years. Other countries continue investing through 2030, but the maturity of these large programs temporarily lowers the regional total. This signals timing effects, not reduced demand or long-term contraction.

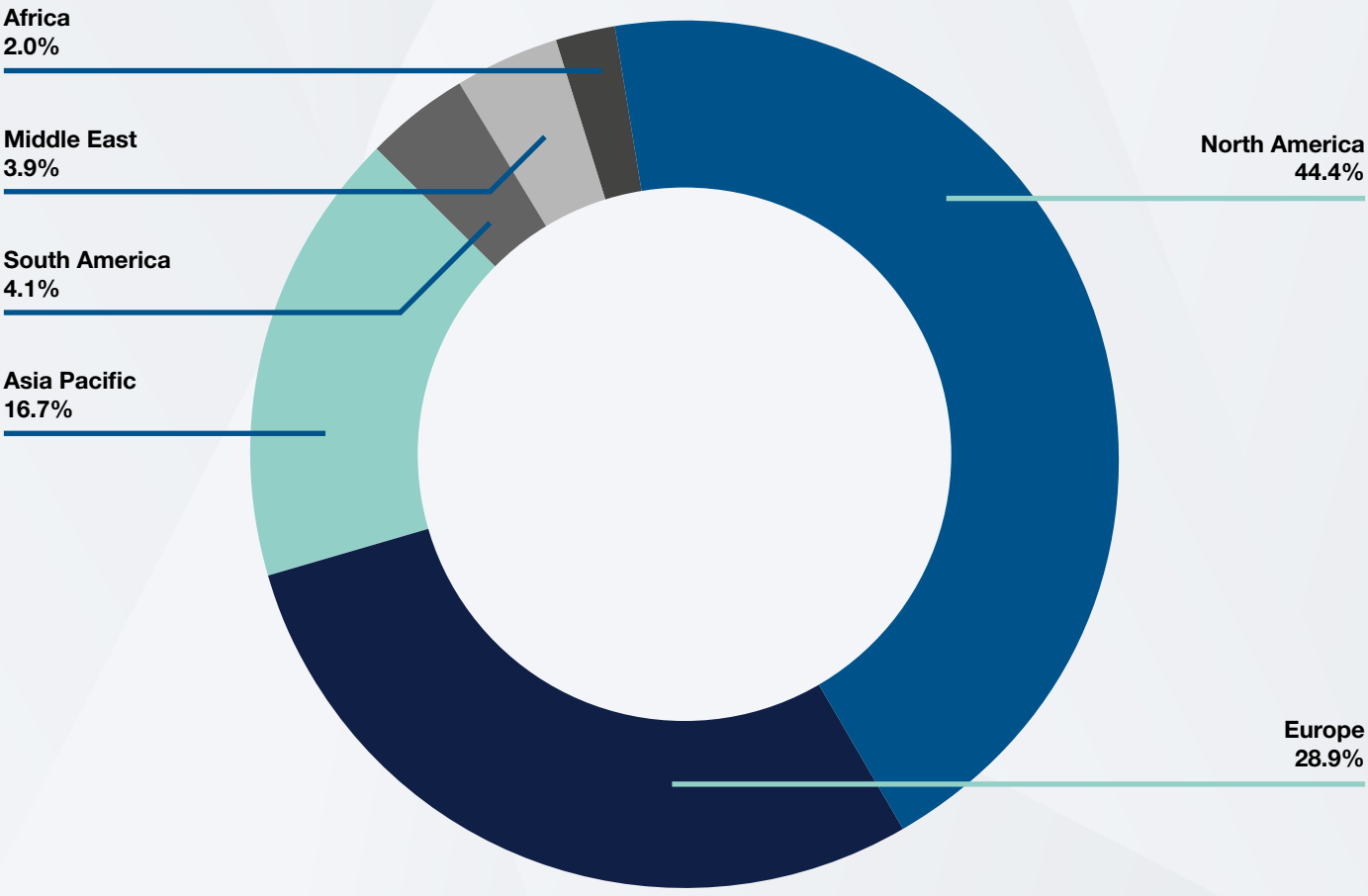
https://upload.wikimedia.org/wikipedia/commons/4/45/Finnish_Air_Force_McDonnell_Douglas_F-18C_%28HN-411%29_at_RIAT.jpg

GLOBAL: FLIGHT TRAINING MARKET, 2025-2030, US$ MILLIONS

Table 2: Global: Flight Training Market, by region, 2025-2030, US$ Millions

Region	2025	2026	2027	2028	2029	2030	Total
North America	1,846.4	2,206.3	2,405.9	2,752.8	3,251.6	3,429.9	15,892.9
Europe	1,970.0	2,086.0	1,966.0	1,764.0	1,188.0	1,274.0	10,248.0
Asia Pacific	789.4	835.0	1,010.0	1,121.0	1,087.0	1,136.0	5,978.4
South America	255.0	240.0	290.0	190.0	250.0	250.0	1,475.0
Middle East	243.0	189.0	214.0	239.0	264.0	255.0	1,404.0
Africa	350.0	350.0	-	-	-	-	700.0
Total	**5,453.8**	**5,906.3**	**5,885.9**	**6,066.8**	**6,040.6**	**6,344.9**	**35,698.3**

Figure 2: Global: Flight Training Market share by region, 2025-2030, %



MULTINATIONAL COOPERATION IN MILITARY FLIGHT TRAINING:

Multinational cooperation in military flight training is vital for improving operational effectiveness and ensuring seamless interoperability among allied forces. Through resource and expertise sharing, nations can tackle common issues like pilot shortages and increased training expenses. Initiatives such as NATO Flight Training Europe (NFTE) demonstrate this collaborative effort by enabling member countries to share training facilities, simulators, and aircraft, thereby enhancing training efficiency.

Such cooperative initiatives also promote the standardisation of training protocols, ensuring pilots from different nations can operate seamlessly during joint missions. Additionally, partnerships foster a diverse training environment, exposing aircrews to various operational scenarios and technologies. The European Defence Agency (EDA) further supports this effort by facilitating joint training programmes and encouraging investments in shared resources.

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NATO NFTE (NATO FLIGHT TRAINING EUROPE):

The NATO Flight Training Europe initiative began in June 2020 at the NATO Defence Ministers meeting to deliver cost-efficient and modern pilot training through a network of shared European facilities. Its model strengthens interoperability by using national training assets as part of a coordinated system. Belgium joined in February 2021. Germany and the United Kingdom joined in October 2023. The Netherlands joined in June 2024. This brought the group to 13 members, namely Belgium, Czechia, Germany, Greece, Hungary, Italy, Montenegro, the Netherlands, North Macedonia, Romania, Spain, Türkiye and the United Kingdom. Four additional members, Canada, Denmark, Norway and Poland, joined in June 2025.

As one of NATO's High Visibility Projects, NFTE is managed by the NATO Support and Procurement Agency (NSPA). It trains pilots on various aerial platforms, including jets, helicopters, and drones, reducing reliance on U.S. training facilities and enabling European allies to develop their flight crews.

https://upload.wikimedia.org/wikipedia/commons/a/a4/F16_RNAF_Baltic_Air_Police_in_air.jpg

EUROPEAN DEFENCE AGENCY (EDA):

The European Defence Agency (EDA) assists its 27 Member States enhance their defence capabilities through collaborative European initiatives. Serving as a facilitator for Ministries of Defence engaged in joint capability projects, the EDA has established itself as a central hub for European defence cooperation, leveraging its expertise and networks to address a wide range of needs.

- **EDA Flight Training Initiatives:** The EDA's growing portfolio of training and exercises aims to fulfil goals that no single Member State can achieve cost-effectively. This diverse portfolio includes training in helicopter operations, fixed-wing airlift, remotely piloted aircraft systems (RPAS), and more. While the EDA offers extensive training options, from countering improvised explosive devices to cyber defence, it does not intend to become a permanent training provider. Instead, the Agency identifies and assesses specific training gaps, facilitating collaborative efforts until a group of Member States can manage them.
- **EDA-Helicopter Training:** The EDA launched its helicopter aircrew training programmes in 2009 to address gaps in tactical training and interoperability, especially for operations in Afghanistan. Currently, three key activities are underway: the Helicopter Exercise Programme (HEP), the Helicopter Tactics Course (HTC), and the Helicopter Tactics Instructors' Course (HTIC). Fifteen European countries participate in these initiatives, including the annual multinational "Blade" exercise and various tactics-related events. In 2023, these training activities were relocated to the new Multinational Helicopter Training Centre (MHTC) in Sintra, Portugal, aiming to establish it as a permanent European centre of excellence for advanced helicopter training.
- **EDA-Airlift Training:** Under the European Air Transport Fleet Programme (EATF), the EDA has developed a tactical airlift training programme to enhance interoperability and provide advanced training opportunities, thereby improving the operational readiness of crews and aircraft. In June 2017, this programme transitioned to the European Tactical Airlift Centre (ETAC) in Zaragoza, Spain. Additionally, the five EDA Member States operating Spartan C-27 fixed-wing aircraft have created a cooperative platform to pool expertise and resources, fostering a community that focuses on harmonising operations and training, including common tactics and procedures.

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https://upload.wikimedia.org/wikipedia/commons/8/85/German_eurofighter.JPG

STRATEGIC CONTEXT, TRAINING PRIORITIES AND CAPABILITY TRENDS

STRATEGIC CONTEXT

Modern conflicts, multi-domain operations and the development of next-generation aircraft are reshaping military flight training. Air forces are adapting to information-heavy battlefields, rising electronic threats and the need to operate across dispersed locations. These pressures are forcing major changes in training infrastructure, pilot preparation and overall readiness.

ESCALATING OPERATIONAL CHALLENGES

Recent geopolitical tensions have shown how difficult it is for any air force to gain clear control of the skies. The war in Ukraine is a clear example. NATO notes that neither side has achieved air superiority, forcing both to fight a slow, grinding land war rather than a fast, air-driven campaign. This reality has pushed nations to place greater emphasis on integrated air and missile defence, mobility and survivability.

Rising tensions between Israel and Iran, and competition for airspace in the Eastern Mediterranean, are adding similar pressures. Pilots now must train to operate in electromagnetic environments where jamming, A2/AD systems and unmanned threats are routine. They must stay effective even when communications are limited and threats evolve quickly.

These conditions are straining older training methods and speeding up the shift toward Agile Combat Employment. ACE relies on aircraft and personnel dispersing across temporary or remote airfields to reduce vulnerability. It offers clear advantages, but it also demands a different level of preparation. Crews must be able to redeploy quickly, function with minimal support and operate under electronic warfare stress. This is shaping how air forces think about training for the next decade.

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PREPARING FOR MULTI-DOMAIN MISSIONS AND INFORMATION HEAVY ENVIRONMENTS

Air warfare is no longer limited to traditional dogfights. It has become a multi-domain contest where the side that manages information better usually gains the upper hand. Pilots now do far more than fly. They act as airborne battle managers, processing real-time data from satellites, sensors, ground controllers and unmanned systems while still flying the aircraft.

This shift is especially clear with fifth-generation fighters. Their sensor-fusion systems give pilots an awareness bubble that can stretch well beyond 100 miles, a dramatic change from older aircraft. To prepare crews for this level of complexity, air forces are leaning heavily on Live Virtual Constructive training. Live Virtual Constructive systems (LVC) environments blend live aircraft, simulators and computer-generated threats, allowing pilots to rehearse multi-domain missions in a controlled but realistic setting.

Crewed-uncrewed teaming is becoming a core part of this evolution. Training is beginning to include scenarios where pilots coordinate with autonomous drones or loyal-wingman platforms. This new training style reflects how real missions are evolving on the modern battlefield.

ADVANCED TRAINING - CENTRAL TO OPERATIONAL READINESS, DETERRENCE, AND ALLIED COOPERATION

Advanced training has become essential for modern air forces. It strengthens pilot proficiency, improves mission readiness and ensures aircrews can fully exploit the capabilities of advanced fighter aircraft. High fidelity simulators, LVC environments and large-scale networked exercises allow pilots to rehearse complex scenarios, manage high workloads and coordinate with other assets before they ever enter live combat. This raises sortie quality, improves operational confidence and supports higher mission generation rates.

Alliances like NATO depend on this approach. Shared training centres help standardise tactics and improve interoperability. The International Flight Training Centre in Greece illustrates this. Operated by the Hellenic Air Force with support from Elbit Systems, it trains pilots on platforms such as the Rafale, the F-16, and, eventually, the F-35 as part of NATO's Flight Training Europe program. Common training standards ensure that pilots from different nations can operate together with minimal friction.

Advanced training also complements deterrence by ensuring that modern fighters are crewed by pilots who can fully leverage their combat potential. It prepares aircrews for contested airspace, electronic warfare and communication disruptions, allowing them to execute missions effectively under pressure. Well-trained pilots paired with capable aircraft contribute to credible operational strength, which underpins deterrence in practice.

Advanced training has become essential for modern air forces. It is no longer just about improving flying skills. It is central to staying ready, deterring adversaries and working smoothly with allied nations. High-fidelity simulators, LVC environments and large-scale networked exercises give forces a shared picture of the battlefield and help crews react quickly and in sync.

TRAINING IMPERATIVES IN THE ERA OF FIFTH- AND SIXTH-GENERATION AIRCRAFT

Fifth and upcoming sixth-generation aircraft are redefining what it means to train a modern fighter pilot. Platforms such as the F-35, J-20 and Su-57, and the next wave of sixth-generation systems, rely on sensor fusion, stealth, multi-domain connectivity and advanced electronic warfare. Pilots are no longer just aviators. They act as mission commanders who must process large volumes of information in real time. This demands training environments far more complex than what live flying alone can provide.

Because of this, air forces are putting greater emphasis on Live Virtual Constructive training. LVC setups let crews rehearse against threats that would be too risky or expensive to recreate in real airspace, including modern SAM systems and drone swarms. The US Air Force already conducts a major share of F-35 training in synthetic environments for this reason. Programmes like FCAS and GCAP are planning even more interconnected training, where pilots, autonomous wingmen and ground operators operate together inside shared digital battlefields.

The maintenance and support ecosystem is undergoing a comparable transformation. Fifth-generation aircraft require skills in stealth coatings, secure data links, predictive maintenance tools and cyber-resilient systems. As sixth-generation concepts mature, technical and aircrew personnel will need continual upgrades in skills to stay effective.

https://upload.wikimedia.org/wikipedia/commons/e/e7/General_Dynamics_F-16C_'013'_%2831583949192%29_%282%29.jpg

TRAINING PRIORITIES AND CAPABILITY TRENDS

Modern warfare is evolving fast, and air forces must produce more mission-ready pilots who can operate in multi-domain, data-heavy environments. This means training pipelines must become quicker, more flexible and more cognitively demanding. Advanced air defences, electronic warfare and unmanned systems leave no room for outdated methods. Pilots must be prepared to excel in high-pressure, tech-intensive battlespaces while maintaining strong safety and resilience standards.

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EXPANDING PILOT NUMBERS WHILE ENSURING SAFETY AND QUALITY

One of the biggest global challenges is increasing pilot output without compromising quality. The United States faces a shortage of more than 3,000 pilots, driven by training delays and competition from the commercial aviation industry. In Europe, the UK has struggled with long waits for fast-jet training due to simulator issues and limited aircraft availability. Germany continues to rely on allied nations to train Eurofighter and Tornado pilots. France is expanding its Alpha Jet and PC-21 training capacity to support future Rafale and FCAS needs.

Similar issues appear across the Asia-Pacific. The Royal Australian Air Force has warned that pilot numbers have fallen below sustainable levels, prompting accelerated reforms and more synthetic training. India, meanwhile, is expanding its fighter programmes but still faces limits in training capacity and infrastructure.

Across all regions, the pattern is the same: demand for qualified pilots is rising faster than training systems can respond. To close this gap, many countries are turning to high-fidelity simulators, redesigned syllabi and multinational training partnerships. Nations that modernise their training systems early will be better placed to maintain readiness and keep pace with future operational demands.

ADVANCES IN SIMULATION AND SYNTHETIC TRAINING

Modern flight training is shifting toward synthetic, networked environments known as Live Virtual Constructive systems (LVC). These setups let aircrews train in complex and realistic scenarios without the cost, risk or limits of real-world flying. LVC combines live aircraft, full-motion simulators and computer-generated forces to create a single, scalable mission space. Boeing notes that this approach reduces the number of aircraft needed and makes it easier to train against advanced threats like electronic warfare. Lockheed Martin has already demonstrated this by pairing a live F-16 with a simulator-based wingman to counter simulated missile threats. Thales uses a similar model to recreate large-scale combat with minimal physical assets.

Northrop Grumman and Collins Aerospace have also developed LVC systems that link live platforms with virtual and constructive elements. These tools are especially valuable for fifth-generation aircraft, where threat environments are too complex or classified to replicate on real ranges. Beyond threat training, LVC helps pilots handle higher cognitive workloads and strengthens decision-making under pressure. It also supports human-machine teaming by giving pilots practice in managing data from sensors, networks and simulated autonomous partners.

As the pressures on pilots grow, the importance of psychological resilience and cognitive readiness is now on par with technical flying skills. The mental strain of juggling a heavy workload, facing unpredictable threats, and processing a constant stream of information is quite significant.

HIGH-THREAT ENVIRONMENT PREPAREDNESS: ELECTRONIC WARFARE & ADVANCED AIR DEFENCES

With the rise of modern Integrated Air Defence Systems (IADS), electronic warfare (EW), and anti-access/area-denial (A2/AD) capabilities, a key focus in training is preparing pilots to survive and engage in contested airspace. Advanced synthetic environments simulate enemy jamming, radar signals, and targeting systems, allowing aircrew to practice evasive manoeuvres, frequency hopping, and counter-jamming techniques in realistic threat scenarios. Training programmes also cover the maintenance and operation of electronic warfare systems, ensuring that both pilots and ground support teams understand the tactical and technical aspects of electronic warfare.

PSYCHOLOGICAL RESILIENCE & COGNITIVE READINESS

As the pressures on pilots grow, the importance of psychological resilience and cognitive readiness is now on par with technical flying skills. The mental strain of juggling a heavy workload, facing unpredictable threats, and processing a constant stream of information is quite significant. To address this, air forces are incorporating resilience training, stress-inoculation exercises, and cognitive-enhancement techniques into their training programmes. Some emerging research suggests that neurotechnology, like auricular vagus nerve stimulation, could enhance attention, memory retention, and stress recovery for operators of remote or unmanned systems. Additionally, keeping an eye on physiological markers, such as heart rate variability, during simulated flights allows instructors to customise interventions that help pilots perform at their best under pressure.

https://upload.wikimedia.org/wikipedia/commons/b/b2/Dassault_Alpha_Jet_E_%27E83_-_705-TZ%27_%2825958368913%29.jpg

PROCUREMENT, BUDGET AND DELIVERY CHALLENGES

PILOT SHORTAGES AND THEIR IMPACT ON READINESS

Air forces worldwide are struggling with a widening gap between the number of pilots they need and the number they are able to train. The U.S. Department of Defence reports a shortage of more than 3,000 pilots, and the Air Force continues to miss its annual training targets. Europe and the Asia Pacific face similar issues. In the UK and Australia, fast jet trainees can wait up to three years to complete their courses due to aircraft shortages, simulator delays and too few instructors. These shortages directly affect operational readiness. Some of the most common and pressing readiness issues include:

a. **Reduced mission-capable availability** - With fewer pilots available, even aircraft that are technically ready to fly often sit idle. According to a report by the Mitchell Institute, the USAF's fighter pilot shortfall has left squadrons under-manned by almost 15-20%, which hampers sortie generation and diminishes surge capacity.

b. **Loss of experienced instructor pilots** - The shortage of instructors only worsens the situation. According to RAND analysis, the USAF is facing multiple challenges in keeping a sufficient number of instructors on board, which slows down the training of new pilots and can extend course durations by 20-40% in some cases.

c. **Overworked pilots and burnout** - A high operational tempo is leading to fatigue and prompting early retirements. Many air forces report that seasoned pilots are leaving for commercial aviation due to heavy workloads and limited career incentives.

d. **Strain on air-policing and deterrence missions** - Pilot shortfalls strain essential missions such as NATO's Baltic Air Policing. Countries with fewer pilots may shorten deployments or pull back from commitments, placing more pressure on allies and weakening overall deterrence.

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TRAINING PIPELINE DELAYS AND THEIR IMPACT ON FORCE GENERATION

Training pipeline delays have become one of the biggest obstacles to building and sustaining pilot strength. Even when air forces meet their recruitment targets, many trainees get stuck in the system because of aircraft shortages, limited simulator access and too few instructors. This slows the flow of students into operational squadrons and weakens long term force generation.

A major part of the problem comes from ageing or insufficient training aircraft. India is a clear example. Its reliance on older PC 7 Mk II trainers and the limited number of Hawk jets has slowed both basic and advanced training stages. Instructors are often forced to stretch flying hours and extend courses just to meet minimum proficiency levels.

These delays ripple through the entire system. When trainees pile up in waiting pools, every subsequent batch is pushed back. RAND's research shows that once a backlog forms, it can take two to three years to clear, even after new aircraft or simulators are added. This creates a persistent drag on pilot production and makes it harder for air forces to keep pace with operational needs.

The overall impact of these delays can be understood through three interconnected dynamics:

- Efficiency takes a hit. Slower training progress means fewer pilots graduate each year, limiting the ability to replace losses or support fleet expansions, including new platforms like the F-35, Rafale F4, Su-30 upgrades and Tejas Mk1A.
- Operational squadrons receive less-experienced pilots because prolonged, uneven training disrupts continuity. This reduces unit readiness and adds pressure on frontline conversion units to close skill gaps.
- Long waiting times also drive attrition, as skilled recruits often leave for other careers when delays persist. This loss of talent deepens existing shortages and reduces the pool of future trained personnel.

Delays in the training pipeline are more than just administrative inefficiencies and have a direct impact on a nation's capacity to develop, deploy, and maintain its air power. When pilots take too long to get qualified, when training aircraft are out of commission, or when simulators can't keep up with demand, the whole force structure becomes fragile. Modern air forces need a consistent and reliable flow of training to stay strategically resilient.

In summary, delays in the training pipeline are more than just administrative inefficiencies and have a direct impact on a nation's capacity to develop, deploy, and maintain its air power. When pilots take too long to get qualified, when training aircraft are out of commission, or when simulators can't keep up with demand, the whole force structure becomes fragile. Modern air forces need a consistent and reliable flow of training to stay strategically resilient. Without it, even well-funded forces will find it tough to meet readiness goals, surge demands, and long-term operational commitments.

BUDGET CONSTRAINTS, PROCUREMENT DELAYS AND THEIR IMPACT ON READINESS

Budget pressures and procurement delays continue to slow the modernisation of military training systems. Even though defence spending has increased in many countries, much of the new funding is directed toward frontline aircraft programmes such as the F-35, Rafale F4, GCAP/FCAS, AMCA and new helicopter fleets. This leaves fewer resources for trainer aircraft, simulators and synthetic environments, creating a widening gap between the advanced capabilities of frontline jets and the outdated infrastructure meant to prepare pilots for them.

Rising aircraft costs add to the problem. Governments tend to prioritise major capital programmes, often at the expense of essential training investments. The U.S. Government Accountability Office has repeatedly highlighted F-35 cost overruns and sustainment issues that strain budgets and push training upgrades further down the list. In Europe, the scale of investment required for GCAP and FCAS has led several countries to delay spending on LVC networks and trainer replacements.

Procurement delays only deepen the challenge. The U.S. Air Force's T-7A Red Hawk, intended to replace the 60-year-old T-38, has faced setbacks due to software issues, escape-system redesigns and testing problems. These delays push the programme into the late 2020s, forcing pilots to train on aircraft that no longer match the demands of fifth- and sixth-generation operations.

Procurement delays and budget constraints aren't just administrative obstacles, they directly impact a nation's ability to maintain a ready, skilled, and survivable air force. In a time when air superiority is increasingly challenged and operational tempo is high, the failure to modernize training systems quickly risks creating readiness gaps that frontline aircraft alone can't fill.

These procurement and sustainment problems directly affect readiness in several ways:

a. **Limited training capacity:** When training aircraft are grounded or in short supply, flying hours drop, and simulators cannot be used to their full potential. Pilot progression slows, fewer trainees graduate each year and existing shortages deepen. This weakens long-term force generation.

b. **Training systems falling behind frontline aircraft:** Modern fighters rely on sensor fusion, advanced EW systems and high-bandwidth data sharing. Older trainers and outdated simulators cannot replicate these features well. Without upgrades, new pilots arrive with gaps in the skills needed for frontline missions, forcing squadrons to compensate during conversion training.

c. **Slow adoption of next-generation synthetic training:** Budget constraints often delay investment in LVC networks, high-fidelity threat simulations and multi-domain training modules. As a result, many air forces struggle to expose pilots early to environments that include integrated air defences, contested EM spectrums and manned-unmanned teaming. These skills are then learned later and under more operational pressure.

In summary, procurement delays and budget constraints aren't just administrative obstacles, they directly impact a nation's ability to maintain a ready, skilled, and survivable air force. In a time when air superiority is increasingly challenged and operational tempo is high, the failure to modernise training systems quickly risks creating readiness gaps that frontline aircraft alone can't fill. Tackling these issues demands ongoing investment, acquisition reform, and a strategic acknowledgment that training infrastructure is foundational, and not secondary to air power.

DIFFICULTIES LINKING LEGACY TRAINING AIRCRAFT TO MODERN REQUIREMENTS

Many air forces still depend on older trainer aircraft built for a different era of aviation. These platforms lack the avionics, sensors, data links and manoeuvrability needed to prepare pilots for modern fifth and sixth generation fighters. As a result, training becomes less efficient, sometimes less safe, and often out of sync with what frontline aircraft actually require.

A trainer without modern radar, secure communications or digital flight controls cannot replicate the cockpit environment of today's combat jets. This forces air forces to rely heavily on simulators or lengthy conversion training, both of which increase cost and complexity. Older trainers also struggle to replicate modern threat environments such as integrated air defences or electronic warfare, limiting the realism of training.

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https://upload.wikimedia.org/wikipedia/commons/b/b0/T6-C_texan_II.jpg

Upgrading legacy trainers is rarely straightforward. Modernising avionics and data systems in old airframes requires major structural work, strict certification and long timelines. The cost of keeping these aircraft flying can outweigh the benefits, making replacement the more practical option.

These shortcomings directly affect pilot output and readiness. Training takes longer because instructors must work around aircraft limitations. Pilots transitioning to advanced jets require extra preparation, slowing down the pipeline. Ultimately, outdated trainers create a mismatch that undermines both the quality and speed of military flight training.

THE NEED FOR SHARED INFRASTRUCTURE AND GREATER MULTINATIONAL COOPERATION

To address growing training demands and limited resources, many countries are turning to multinational and shared training infrastructures. These cooperative models allow nations to pool assets, reduce costs and build common training standards that better match modern operational needs.

A leading example is NATO's Flight Training Europe initiative. NFTE aims to create a network of multinational campuses offering basic through advanced training for fighter, transport, helicopter and remotely piloted aircraft crews. In 2025, the 120th Air Training Wing in Kalamata, Greece, became an accredited NFTE campus, capable of training international pilots on T-6 Texan II and M-346 aircraft. This setup helps smaller nations avoid the expense of running full training systems on their own and strengthens interoperability across allied air forces.

NATO is also developing a Distributed Synthetic Training environment to link national simulators for joint virtual training. This approach improves access to high quality synthetic scenarios, reduces duplication and supports complex mission rehearsals, including contested airspace and electronic warfare, without overburdening any single country.

Such hubs promote common doctrines and procedures. Programmes like NATO's Partnership Training and Education Centres and Spain's Tactical Leadership Programme further enhance cross-national training and help build a shared professional foundation among allied aircrew.

Some of the key advantages offered by such collaborative approaches include:

a. **Cost Efficiency and Resource Sharing** - By pooling resources like training aircraft, simulators, and instructors, countries can cut down on unnecessary duplication and redirect funds to other important capabilities.

b. **Interoperability** - Joint training helps ensure that aircrews from different nations operate under a unified doctrine, making coalition operations smoother and sharing the load more effectively.

c. **Sovereign and Strategic Flexibility** - Smaller nations can achieve high-quality training without having to shoulder the entire responsibility of building and maintaining modern facilities.

FLIGHT TRAINING – NORTH AMERICA

The North American military flight training market is projected to grow from US$1.8 billion in 2025 to US$3.4 billion in 2030, with a compound annual growth rate (CAGR) of 13.2%. Globally, air forces are rapidly increasing their investments in training systems that complement advanced aircraft. In the U.S., investments are directed towards platforms like the F-35 and autonomous systems, requiring upgraded simulators and AI-enabled training tools. For example, the U.S. Navy's (USN) recent RFI modification for the Undergraduate Jet Training System (UJTS) programme aims to replace the ageing T-45 Goshawk training fleet as part of a planned scheme valued at over US$3.5 billion in the coming years. The USN has also allocated over US$970 million to maintain fleet readiness on the F/A-18C-F and EA-18G aircraft platforms. Additionally, the U.S. Air Force (USAF) has initiated the Advanced Pilot Training (APT)/ T-7A Red Hawk Programme with a budget of US$7.6 billion. This Programme will replace the ageing T-38c fleet used by the Air Education Training Command (AETC) with new aircraft, Ground-Based Training Systems (including simulators, training devices, computer-based training systems, and academics), Maintenance Training Systems (which will be procured separately), and support infrastructure. These will be utilized in the fighter/ bomber advanced Specialist Undergraduate Pilot Training (SUPT) track and the Introduction to Fighter Fundamentals (IFF) Programme.

Similarly, the Royal Canadian Air Force (RCAF) is undertaking the Future Aircrew Training (FAcT) programme worth US$8.1 billion that aligns with its ongoing fleet-wide renewal efforts including the acquisition of F-35s, P-8s, and A330 tanker/transport aircraft. Canada's US$11.2 billion Future Aircrew Training (FAcT) programme, contracted in May 2024 to SkyAlyne (CAE and KF Aerospace), is also designed similarly, and aims to align pilot training with modern aircraft capabilities by adding new trainer aircraft, simulators, and digital systems, all of which are scheduled to be in active service by 2030. In parallel, the Future Fighter Lead-In Training (FFLIT) contract awarded to CAE in February 2025 primes RCAF pilots for the CF-35A with next-gen syllabus content that embeds simulation and mission-system proficiency. Other key programmes include the U.S' procurement of around 63 Multi-Engine Training Systems (METS), the Advanced Pilot Training programme, the F-22A Trainers Modernisation, the Flight School Training Support Services programme and upgrades to the existing trainer aircraft including the T-6 and T-38.

The U.S. is also the largest spender on related research and development (R&D), with over US$1.1 billion expected to be spent over the period 2025-2030. Most of this spending is being driven by the immediate need to modernise the country's fifth-generation fighter pilot training, especially in areas such as increased levels of autonomy, real-time problem-solving, and increased threshold levels for basic training. Technologies such as artificial intelligence (AI), machine learning (ML), and sensor fusion play a pivotal role in this process.

AI, VR, AR, AND SYNTHETIC TRAINING EXPANSION

One of the key trends in the industry is the steady shift from live flight training to virtual or synthetic training. Cost pressures, limited airspace availability, classified threat simulation requirements, and growing maintenance workloads are pushing militaries to adopt synthetic environments to increase training output while preserving aircraft life. Climate policy adds further momentum as defence organisations align with national net zero commitments. Several governments have already set transition targets for their armed forces over the short to medium term. In June 2024, the USAF publicly announced its strategic position regarding synthetic training and clarified its future stance on the strategic use of AI in pilot instruction to reduce reliance on flying hours. Synthetic training capacity is further driven by doctrine and sustainability goals; the USAF has targeted 100 % carbon-free electricity by 2030 and net-zero greenhouse emissions by 2046, a rationale that pushes ongoing investment in environmental-friendly virtual pilot training. In Canada, official documents emphasize expanding simulation content under FAcT and FFLIT, synchronized with both live training and theoretical instruction.

Training expenditures are not just limited to pilots with immersion-based, AI-powered maintenance training also being funded by the DoD. For instance, USAF's Air Force Work Project (AFWERX) recently awarded a contract worth US$5.8 million to Houston's HTX Labs to develop virtual KC-135 tanker engine repair classrooms. Additionally, as part of the "RPA Training Next" initiative, machine learning-driven simulators are being used to modernise the U.S' RPA pilot training in order to promote earlier mission qualifications and minimize pipeline bottlenecks. The U.S. is the largest market in the region with a cumulative spending of US$13.5 billion over the period 2024-2030, followed by Canada with US$2.3 billion.

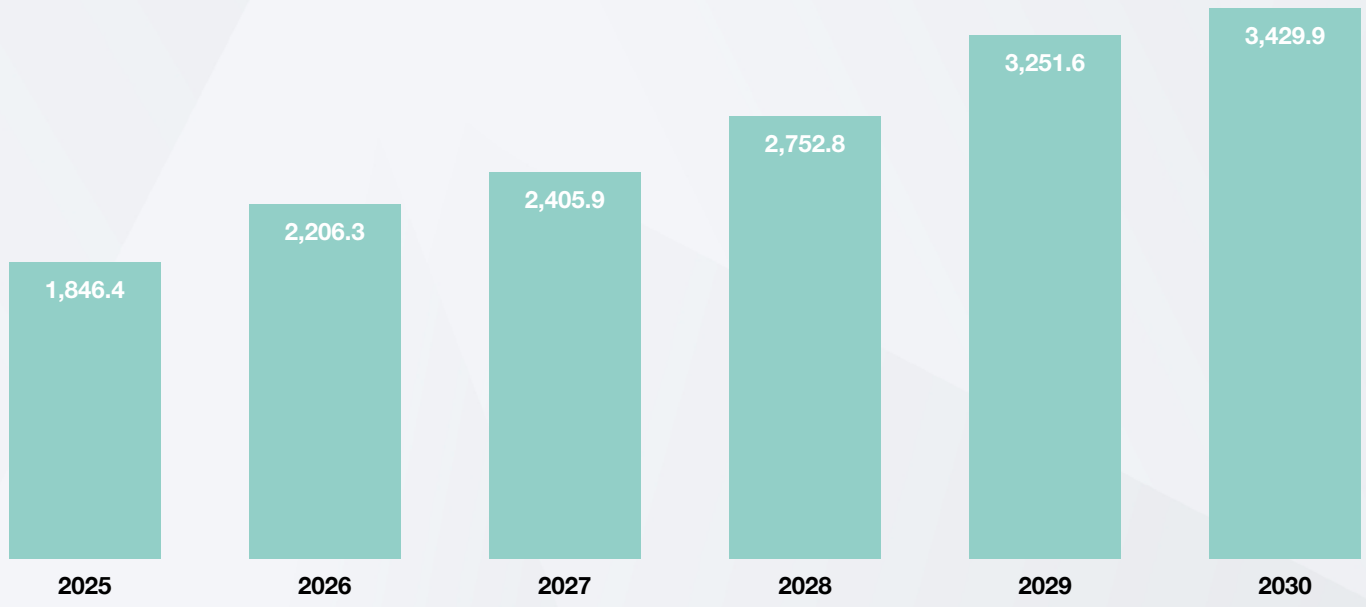
With the steady expansion of fifth-generation fighter fleets, both the U.S and Canada are shifting to training ecosystems that combine AI analytics, VR/AR, and synthetic environments. The U.S. AI courses and SBIR-funded maintenance tools, along with Canada's FAcT and FFLIT, indicate a calculated step toward building interoperable, future-ready training pipelines. These expenditures aim to increase capacity, decrease carbon footprints, and lessen reliance on flight hours. Given these developments and shifts in official flight training approaches, the future of military flight training is anticipated to be defined by the smooth integration of digital infrastructure, cognitive trainers, and unmanned teaming.

NORTH AMERICA: FLIGHT TRAINING MARKETS, 2025-2030, US$ MILLIONS

Table 3: North America: Military Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft – Fixed Wing	750.2	880.1	1,059.9	1,213.3	1,616.8	1,639.7	7,159.9
Trainer Aircraft – Rotary Wing	25.0	28.0	30.0	30.0	32.0	33.0	178.0
Training Synthetic Programmes	1,071.2	1,298.2	1,316.0	1,509.5	1,602.9	1,757.2	8,555.0
Total	**1,846.4**	**2,206.3**	**2,405.9**	**2,752.8**	**3,251.6**	**3,429.9**	**15,892.9**

Figure 3: North America: Flight Training Market, 2025-2030, US$ Millions



CANADA

FUTURE FIGHTER LEAD-IN TRAINING (FFLIT) PROGRAMME

In February 2025, the Minister of Public Services and Procurement Canada, on behalf of the Minister of National Defence, designated CAE Inc as the primary partner for the Royal Canadian Air Force's (RCAF) Future Fighter Lead-in Training (FFLIT) Programme. CAE's role under FFLIT encompasses the design and co-development of a new fighter pilot-lead training solution specifically for transition to the CF-35A Lightning II fleet. The designation award follows CAE's (CAE–KF Aerospace SkyAlyne joint-venture) C$11.2 billion, 25-year Future Aircrew Training (FAcT) award awarded in May 2024 and a subsequent C$1.7 billion pilot-training subcontract from October 2024.

Under this partnership agreement, CAE will be responsible for leading the development of a 21st century fighter lead-in training syllabus, including digital learning systems, simulation environments to mission levels, and interoperability with next-generation CF-35A avionics. The programme will enable domestic, continuous fighter-pilot training by replacing the US' prior reliance on NATO or allied lead-in training, thereby ensuring the sovereignty of fundamental fighter pilot training. Canadian officials have emphasised that the FFLIT initiative not only strengthens the RCAF's 5th-generation fighter readiness but also bolsters domestic industry. The contract mandates include provisions for compliance with the Canadian Industrial and Technological Benefits (ITB) Policy, thus ensuring engagement with small and medium enterprises across Alberta, Ontario, and Quebec. The overall programme value is estimated at US$1.7 billion with an estimated US$870 million anticipated to be sent over the period 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ FUTURE AIRCREW TRAINING (FACT) PROGRAMME

Canada is implementing the Future Aircrew Training (FAcT) programme to modernise its aircrew training services for the Royal Canadian Air Force (RCAF). This initiative aims to consolidate all necessary training aspects, including classroom instruction, simulator and flight training, aircrew training for air combat systems officers and airborne electronic sensor operators, as well as maintenance and infrastructure services, under a single 20+ year contract.

The new contract will replace two existing training services contracts and in-house training provided by the RCAF:

- The NATO Flying Training in Canada (NFTC) programme, which is currently provided by CAE Military Aviation Training in Moose Jaw, Saskatchewan through a contract until 2028.
- Contracted Flying Training and Support (CFTS) provided by Allied Wings in Southport, Manitoba through a contract until 2027.
- Aircrew training for air combat systems officers and airborne electronic sensor operators, which is currently being performed by the RCAF.

The programme began with preliminary consultations in 2013, followed by an official announcement by the Government in 2016 where it informed industry participants of its scope and breadth. Thereafter, the government invited a list of qualified suppliers including BAE Systems, Airbus Defence and Space, Lockheed Martin Canada, Babcock Canada, Leonardo Canada, and SkyAlyne Canada Limited Partnership, to participate in the initial rounds of discussions.

However, BAE Systems, Airbus Defence and Space, and Lockheed Martin Canada withdrew from the competition on April 2, 2019, September 13, 2019, and December 14, 2020, respectively. In August 2021, Babcock Canada and Leonardo Canada informed the Government of Canada that they had formed a joint venture in support of the FAcT programme.

The Canadian Department of National Defence (DND) released the RFP on February 11, 2022, with a submission deadline of January 5, 2023. To facilitate robust Indigenous participation in the programme's delivery, qualified suppliers were required to include an Indigenous participation plan committing a minimum of 5% of the total contract value (excluding aircraft and simulators) towards domestic investments. The bid evaluation process concluded on June 30, 2023, resulting in the selection of SkyAlyne Canada Limited Partnership as the preferred bidder.

After almost a year, in May 2024, the Canadian DND awarded a contract worth US$8.1 billion to SkyAlyne. This contract entails providing flight training aircraft and infrastructure to the RCAF for 25 years, starting in 2029. The primary objective of this contract is to equip RCAF instructors with 71 new aircraft, which will be utilized for training new pilots across various frontline platforms.

Specifically, SkyAlyne will procure different types of aircraft for various training purposes. This includes 23 Grob G 120TP turboprop singles for basic flight training, seven Beechcraft King Air 260s for multi-engine training, and 19 Airbus H135s for rotary wing training. Additionally, SkyAlyne will acquire three De Havilland Dash-8 Q400s equipped with mission training systems.

In October 2024, CAE was awarded a major contract worth CA$1.7 billion (approx. US$1.25 billion) over a 25-year period, as part of the FAcT programme. This contract represents a significant milestone in Canada's efforts to modernise its military pilot training ecosystem. Under this agreement, CAE will deliver comprehensive ground-school, simulation, and live-flying instruction for the RCAF. Training services will be delivered at the company's existing facilities in Moose Jaw, Saskatchewan, and Southport, Manitoba, with the aim of producing a new generation of mission-ready aircrew for Canada's armed forces.

This development complements a separate announcement made in February 2025, where CAE was officially identified as the Strategic Partner by the Government of Canada for the Future Fighter Lead-In Training (FFLIT) programme. The FFLIT initiative is designed to prepare RCAF fighter pilot candidates for transition to fifth-generation platforms such as the CF-35A. This comprehensive training programme aligns with the RCAF's ongoing fleet-wide renewal efforts, which involve the acquisition of new equipment including 85 F-35s, 16 P-8s, and nine A330 tankers/transports. The DND is estimated to spend around US$887.5 million between 2025 and 2030 on this programme.

NATO FLYING TRAINING IN CANADA (NFTC) PROGRAMME

Launched in 2000, the NATO Flying Training in Canada (NFTC) programme was initiated as a joint Canadian and NATO member nation programme to provide quality pilot training for student aviators from NATO and allied nations. In 2015, the Canadian Government awarded CAE a contract to manage and operate the NFTC programme, allowing CAE to continue to deliver classroom instruction, simulator-based training, and live flight training support to the Royal Canadian Air Force (RCAF). In 2017, the contract was amended to extend this service to 2023, for an amended contract value of over US$200 million.

In March 2022, the Government of Canada further extended the NFTC programme contract with CAE through 2027, with an option to extend it until 2028 if necessary. This contract extension, valued at more than US$435 million, ensures the continuity of the NFTC programme and aligns it with the Contracted Flying Training and Support (CFTS) programme managed by Allied Wings. Canada is estimated to spend around US$300 million between 2025 and 2028 on this programme.

CONTRACTED FLYING TRAINING AND SUPPORT (CFTS) PROGRAMME

Launched in 2005, the Contracted Flying Training and Support (CFTS) Programme, is responsible for managing and supervising the flying training and support services for the Royal Canadian Air Force's (RCAF's) pilot training operations conducted at the Southport Aerospace Centre in Manitoba. The programme provided a 22-year contract valued at US$1.5 billion to the Allied Wings consortium, led by KF Aerospace. The Allied Wings team also included important sub-contractors such as, Bluedrop Training & Simulation, Canadian Base Operators, and Canadian Helicopters, to provide flying training and support.

Under this contract, Allied Wings provides aircraft, instructors, facilities, and other support for the Primary, Basic, Multi-Engine, and Helicopter pilot training programmes. This includes supplying Grob G120A, Raytheon King Air C90B, and modified Bell 206 and 412 helicopter aircraft, as well as full-motion flight simulators. The consortium also oversees infrastructure, accommodation, meals, academic training, air traffic control, and other services to create a fully equipped training environment.

Initial training began in 2006, and the contract is set to run until 2027. A total of US$225 million is estimated to be spent on this programme during the forecast period 2025-2027.

TRAINING SYNTHETIC PROGRAMME/ A330 MRTT SIMULATORS

The Canadian Government awarded a new contract to Airbus for the procurement of four new Airbus A330 Multi Role Tanker Transport (MRTT) aircraft along with the conversion of five previously operated A330-200s in July 2023. The contract not only includes the acquisition and conversion of the aircraft but also has a whole range of advanced training services with the most prominent being a Full Flight Simulator which will contribute to enhancing the operational readiness and training capacity of the Canadian Armed Forces' aircrew and support staff.

As part of the modernisation efforts, Canada is estimated to allocate approximately US$25 million between 2025 and 2030 for the acquisition of the simulator and associated training services. This investment reflects the country's commitment to maintaining a highly skilled and prepared aircrew by utilizing cutting-edge training devices and ensuring their readiness for operational missions.

THE U.S.

TRAINER AIRCRAFT-FIXED WING/ TRAINER AIRCRAFT SERIES UPGRADE

The U.S. Navy is in the process of analysing and upgrading several trainer aircraft systems, such as the T-44, TH-57, TH-73A rotary-wing trainers, and other aircraft operated by the US Navy Test Pilot School (USNTPS). The upgrades planned for several of the T-44, TH-57, and USNTPS platforms are oriented toward modernisation of avionics and related subsystems to enable compliance with Federal Aviation Administration (FAA) standards and compliance with future cybersecurity needs. At the same time demonstrations and upgrades are being made to the TH-73A to address faults identified during the aircraft's production phase. The total programme value for these modifications and upgrades is estimated at US$370.5 million, with approximately US$79 million expected to be spent during the forecast period between 2025 and 2030.

https://upload.wikimedia.org/wikipedia/commons/d/d6/Wings_of_Blue_UV-18B_Landing.jpg

TRAINER AIRCRAFT-FIXED WING/TRAINER AIRCRAFT-GLIDER MODIFICATIONS

The U.S. Air Force Academy's training programme for the next generation of military pilots relies heavily on aircraft and gliders. The USAF is currently undertaking a series of modifications to several of these training platforms, including the TG-15, TG-16, TG-17 gliders, T-41, T-51, T-53, and UV-18 aircraft, to ensure they remain safe, reliable, and capable of meeting the evolving needs of pilot training.

The primary focus of the modifications in fiscal year 2024 is on low-cost modifications, which include upgrades to the avionics systems of the T-41 and T-51 aircraft, performance enhancements for the T-53 aircraft, the procurement of spare engines for the UV-18B and addressing various Federal Aviation Administration (FAA) service bulletins and airworthiness directives. The T-53 performance enhancement, also called the turbo-normalizer project, is essentially a safety upgrade. The programme was initiated after an incident where a T-53 aircraft lost power and went off the runway during a training exercise. Currently, the T-53A does not climb quickly enough, only achieving less than 500 feet per minute, especially at high altitudes. This upgrade aims to help the aircraft climb better, increase safety during engine failure, and make it safer to use the aircraft's parachute system. The total programme value for these modifications is estimated at US$15.2 million, with around US$3.5 million expected to be spent during the forecast period between 2025 and 2030.

TRAINER AIRCRAFT-FIXED WING/ ADVANCED PILOT TRAINING T-7A/ NEXT-GENERATION JET TRAINER

The Advanced Pilot Training (APT)/T-7A Red Hawk programme is being undertaken by the U.S. Air Force (USAF) to replace its ageing fleet of T-38C aircraft currently in service with the Air Education Training Commands (AETC). This procurement includes new aircraft, ground-based training systems, and support infrastructure. The T-7A Red Hawk is an advanced single-engine jet trainer with twin seats, a glass cockpit, and digital avionics, designed to prepare pilots to fly the latest generation of fighter aircraft. It is also capable of carrying various weapons, including bombs and rockets.

The acquisition strategy for the T-7A Red Hawk programme was approved in December 2016, and a Fixed Price Incentive Firm Indefinite Delivery/Indefinite Quantity (IDIQ) contract was awarded to the Boeing-Saab partnership in September 2018. Under the IDIQ contract, the USAF has the option to purchase up to 475 aircraft and 120 simulators, but it has currently received approvals only for 346 T-X aircraft, 46 simulators, and associated ground equipment.

The critical design review was completed in August 2020, and the developmental test and evaluation phase is scheduled to be finished by February 2025. The first deliveries under the Low-Rate Initial Production were expected to begin in January 2026. However, in January,2025, the U.S. Air Force announced a modification to its approach to the entire acquisition programme. Funds that were supposed to go towards purchasing the aircraft in 2025, are now being redirected to ongoing research and development. This shift in strategy is anticipated to push back the programme's next major milestone approval, known as Milestone C, until at least 2026. As a result, the T-7A Red Hawk may well not reach its initial operational capability until 2027.

This decision follows initial flight tests that uncovered unexpected problems, especially with the aircraft's emergency escape system. A key part of the new approach is to encourage Boeing to make performance improvements beyond what the current contract requires. For instance, recent tests showed that the T-7A can achieve greater range, but this capability is not yet part of the production agreement. The Air Force believes that the changed approach adds flexibility and promotes better results while still meeting the programme's goals and intends to offer financial incentives to Boeing for reaching specified improvements. The estimated cost of the programme is approximately US$9 billion, with around US$3.14 billion allocated for the period 2025-2030.

TRAINER AIRCRAFT-FIXED WING/ TRAINER AIRCRAFT-T-6 SUSTAINMENT

The U.S. Air Force (USAF) has more than 440 T-6 aircraft which have been used for pilot training since 2010. The USAF intends to continue operating these aircraft until 2049 and has allocated funds for their maintenance and sustainment. These funds will be utilized to address issues related to Diminishing Manufacturing Sources (DMS), procure crash survivable recorders, modernise T-6 aircrew training devices, upgrade crew systems, implement service bulletins, and make low-cost modifications.

In April 2021, Textron Aviation Defence was awarded a US$95 million contract to provide sustainment engineering and programme management support for the T-6 training aircraft. Textron received another contract modification from the U.S. Air Force Life Cycle Management Center in June 2024 regarding the T-6 aircraft. The contract, valued at US$29.3 million, includes options for the purchase of support and supply services for three additional T-6C aircraft with projected completion date set at September 2026. It is anticipated that additional associated contracts will be signed in the coming years. The USAF has budgeted approximately US$1.5 billion for this programme between 2025 and 2030.

TRAINER AIRCRAFT-FIXED WING/ MULTI-ENGINE TRAINING SYSTEM (METS)

The U.S. Navy (USN) is undertaking the Multi-Engine Training System (METS) programme to replace the Chief of Naval Air Training (CNATRA) fleet of T-44C Pegasus aircraft and modernise its multi-engine aircraft training programme. This programme includes the acquisition of the commercial T-54A multi-engine training system (METS) aircraft, a ground-based training system, support equipment, and other associated services such as systems engineering, curriculum updates, and contractor logistics support.

In January 2023, Textron Aviation was awarded a firm-fixed-price contract by the USN to develop the T-54A aircraft, which allows for the procurement of up to 64 King Air 260 (designated as the T-54A) aircraft. The initial Lot I award will involve the purchase of 10 units along with associated support. If the options for Lot II and Lot III are exercised, 54 additional aircraft could be provided. In March 2024, another contract was awarded by the Naval Air Warfare Center-Training Systems Division (NAWCTSD) to TRU Simulation, for the METS Ground Based Training System (GBTS). The contract base award includes three Unit Training Device (UTD) simulators in a King Air 260 standard configuration, one Operational Flight Trainer (OFT) simulator in the METS T-54A configuration, one Simulator Support Station (SSS) in the METS T-54A configuration and 21 Desktop Trainers for avionics training. The contract also includes options to upgrade the three UTDs METS T-54A configuration and provide an additional four OFTs. TRU Simulation will also provide Contractor Logistics Services (CLS) to support the fielded devices.

The METS programme aims to modernise multi-engine aircraft training at CNATRA, providing an intermediate and advanced training platform for aviators from the U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard who fly aircraft such as the P-8, EP-3, KC-130, E-6, E-2, CMV-22, CV-22, and MV-22. The T-54A aircraft will feature a pressurized cockpit with side-by-side seating, a jump seat, multifunction displays that include a digital moving map, redundant ultra-high frequency and very high-frequency radios, an integrated global positioning system/inertial navigation system, automatic dependent surveillance-broadcast capability, a flight management system, weather radar, a radar altimeter, and a cockpit data recorder. The METS aircraft will also have tricycle landing gear and a reconfigurable cargo bay in the cabin. The USN has allocated a budget of US$698 million for the programme between 2023 and 2025 of which approximately US$301.3 million is estimated to be spent in 2025.

TRAINER AIRCRAFT-FIXED WING/ TRAINER AIRCRAFT-T-38 SUSTAINMENT

The U.S. Air Force (USAF) is currently engaged in a structural modification programme known as Pacer Classic III, aimed at modifying its existing fleet of T-38 trainer aircraft. The programme ensures the viability of the T-38 until the introduction of the Air Force's future trainer and is designed to be the most extensive structural rework undertaken on the aircraft across all major overhauls.

The T-38 is a supersonic jet trainer, developed by Northrop Grumman, and is equipped with twin engines and a two-seat tandem configuration. The Air Education and Training Command (AETC), Air Force Materiel Command (AFMC), Air Combat Command (ACC), and Air Force Global Strike Command (AFGSC) and other various commands within the USAF use the platform for diverse training purposes. Presently, the Air Force inventory comprises approximately 497 active T-38s, consisting of 53 T-38A, 6 AT-38B, and 438 T-38C aircraft, with an average age of over 50 years.

The modification programme, initiated in 2015, is intended to extend the service life of the T-38 aircraft until 2030 or until a replacement aircraft is introduced. The USAF has allocated a budget of approximately US$1.2 billion for this programme, with US$764 million allocated for the period spanning 2025 to 2030.

TRAINING SYNTHETIC PROGRAMME/ H060WH-COMBAT RESCUE HELICOPTER - TRAINING SYSTEMS

The U.S. Air Force (USAF) is procuring the new H060WH-Combat Rescue Helicopter to replace its ageing fleet of HH-60Gs. A critical part of this programme is the advanced training system being developed to prepare pilots, crews, and support personnel for the H060WH's demanding combat search and rescue (CSAR) missions. Around US$405 million is earmarked for training and related systems out of the total programme spending of US$4.6 billion.

Under this programme, the USAF is acquiring a comprehensive training system that includes motion and non-motion simulators, virtual reality/mixed reality trainers, and other aircrew and maintenance part task training devices. It also includes Type-I training, aircrew and maintenance courseware, spares, Interim Contractor Support (ICS), and support equipment. Spending in 2025 will be directed towards addressing Diminishing Manufacturing Sources/material Shortages (DMSMS) and/or obsolescence issues, depot stand up, sight activation and Interim Contractor Support (ICS) for Training Devices while the majority of procurement expenditure over 2026 is expected to focus mainly on Interim Supply Support (ISS), ISS Repairs, Field Service Representatives and Technical Service Representatives. Cumulatively, about US$72.6 million is estimated to be spent on this programme during the forecast period in 2025 and 2026.

TRAINING SYNTHETIC PROGRAMME/ FIXED WING FLIGHT TRAINING SERVICES

In January 2023, CAE won a US$250 million follow-on contract from the U.S. Army to continue providing flight training services till 2032. This programme's first phase commenced in 2016 and includes various virtual, simulation and aircraft training services for the Army's fixed-wing and rotary-wing training centres. This includes CAE's Trax Academy, which combines ground-based training with self-paced virtual and augmented reality in C-12 Beechcraft King Airs and Grob G 120TPs. At its Dothan training base, CAE provides training on G120 TP flight training devices and a suite of desktop trainers. In addition to training services, the contract also requires CAE to modernise and upgrade related training devices and simulators, to ensure that the Army's pilots always have access to advanced and realistic training.

Out of a total programme value of US$250 million, around US$166.5 million is estimated to be spent during the forecast period between 2025 and 2030.

TRAINING SYNTHETIC PROGRAMME/ KC-46A MDAP – TRAINING SYSTEMS

The U.S. Air Force (USAF) has been procuring the new KC-46 Pegasus aerial refuelling tankers since 2016. As part of this programme, the USAF is also developing the Aircrew Training System (ATS) and Maintenance Training System (MTS), to prepare aircrews and maintenance personnel to operate and maintain the KC-46 more effectively.

The ATS contract was awarded to Flight Safety Services Corporation, now known as Flight Safety International – Defence (FSI-Defence), back in 2013. Under this contract, FSI-Defence is responsible for providing a range of Aircrew Training Devices (ATDs), including Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), and Part-Task Trainers (PTTs). These ATDs are designed to closely replicate the KC-46 cockpit and systems, ensuring high-fidelity training. The ATS contract also encompasses courseware development, logistics support, technical data management, and the maintenance of concurrency between the training devices and the evolving KC-46 aircraft. Since 2015, several production options have been exercised, with the latest one occurring in March 2024. Around US$52.9 million of the total ATS budget of US$291.1 million is expected to be spent between 2025-2026.

Concurrently, the USAF awarded the MTS contract to Boeing in 2016. This contract focuses on the design, development, and production of an optimized training solution for KC-46 maintainers. The MTS is expected to integrate a variety of training technologies, including hardware trainers, virtual/augmented reality simulations, interactive multimedia instruction, and other emerging technologies. Key MTS training devices include Virtual Maintenance Training Systems (VMTS), Flight Deck Avionics Trainers (FDAT), Advanced Wiring and Electrical Repair Trainers (AWERT), and Engine/APU Maintenance Trainers (EAPU), which enable maintenance personnel to practice complex tasks and troubleshooting in a safe and controlled environment.

On April 22, 2025, the Air Force Life Cycle Management Center's PEO Training Directorate issued a Request for Information (RFI) to gather input from the industry about the ATS and MTS programmes. This RFI aims to assess the market's ability to provide the needed training capabilities and will help guide future contract decisions, though no contract is currently guaranteed.

The RFI seeks information on several key areas, including programme management, support for training systems, instructional services, and the development of new training concepts. It outlines specific needs for both ATS and MTS. Additionally, the document includes details on the expected duration of training programmes for pilots and boom operators. It highlights that course materials must stay current as the KC-46 aircraft evolves and that training content must be adaptable for international military students.

Approximately US$20 million of the total MTS budget is expected to be spent between 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ SPECIALISED UNDERGRADUATE FLIGHT TRAINING

The USAF Specialised Undergraduate Flight Training (SUFT) programme plays a crucial role in producing the highly skilled pilots needed to fly the Air Force's diverse fleet of aircraft. This comprehensive training regimen supports the Air Education and Training Command's (AETC) implementation of SUFT, as well as the DoD's initiative for joint pilot training. The programme consists of three key components, namely the Undergraduate Remotely Piloted Aircraft (RPA) Training (URT), T-6 and T-38 operational system development.

A key component of SUFT is the Undergraduate Remotely Piloted Aircraft (RPA) Training (URT) programme, which continues to evolve and expand. URT produces RPA pilots and sensor operators to man the USAF's growing fleet of drones. The programme's effectiveness depends on the Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System, used to train and prepare undergraduate students for entry into Remotely Piloted Aircraft (RPA) Formal Training Units (FTUs). Currently, the PRIME is configured to mimic the MQ-9 Reaper and needs to keep evolving with updates to the actual MQ-9 platform in order to stay effective and keep the system relevant for training. The system has finished seven phases of development and has now reached its basic operational capability. Around US$5.7 million is earmarked to be spent on this initiative during 2025-2030.

The T-6 Texan II is the primary trainer aircraft used in SUFT. Ongoing development activities for the T-6 include studies, instructional courseware improvements, and logistics support to address issues like diminishing manufacturing sources and material shortages. Upgrades to the T-6, such as the Next Generation On-Board Oxygen Generation System (OBOGS), Crash Survivable Recorder (CSR), and the Avionics Replacement Programme (ARP), will help ensure the aircraft remains a capable and reliable training platform. A sum of US$6.8 million is estimated to be spent during the forecast period 2025 and 2030.

The venerable T-38 Talon also plays a vital role in SUFT, serving as an advanced trainer in Specialized Undergraduate Pilot Training and Introduction to Fighter Fundamentals, as well as a test bed for fighter-type aircraft capabilities. T-38A/B aircraft are also used by Air Combat Command as a companion trainer for U-2 operational units and in Adversary Air exercises supporting F-22 readiness, and by Air Force Global Strike Command as a companion trainer for B-2 operational units. Approximately, US$1 million is budgeted to be spent on upgrading T-38 training systems during 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ F-22A TRAINERS MODERNISATION

The F-22 Raptor is expected to remain in service until the late 2040s. As such, the U.S Air Force has started a thorough modernisation effort aimed at creating, testing, and implementing improved hardware and software for the aircraft's airframe, engine, Operational Flight Programme (OFP), as well as related training systems in order to maintain the tactical superiority of the entire platform.

This endeavor is expected to result in an investment of around US$191 million by 2030 and will include the modification and upgrade of the F-22A's flight simulators and related flight training equipment. The Air Force expects this to result in a more accurate simulation of the F-22's existing and future operational capabilities. Additionally, the modifications will enable the 4-ship Mission Training Centers (MTC), Weapons and Tactics Trainers (WTT), and Maintenance Training Devices (MTD) to provide realistic and up-to-date training. The programme is estimated to witness a spending of US$45.1 million over the period 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ ROTARY WING TRAINING SERVICES

The U.S. Army awarded infrastructure consulting firm AECOM a US$442 million cost-plus-fixed-fee contract in January 2018 to provide rotary wing flight training instructor support services at Fort Rucker in Alabama.

AECOM is expected to provide personnel, supervision, and related services to support ongoing classroom instruction, hands-on flight training, and other support functions. Using a fleet of helicopters and simulation devices, the business will instruct every U.S. Army and Air Force aviator throughout their initial rotary-wing pilot training period.

The contract has a base period of 12 months and multiple option years till 2026. The U.S. Army is estimated to spend around US$140 million on this programme during the forecast period over 2025 and 2026.

TRAINING SYNTHETIC PROGRAMME/ MH-139A – TRAINING SYSTEMS

The U.S. Air Force (USAF) is focusing heavily on improving training capabilities for the MH-139A Grey Wolf helicopter, which is expected to replace the outdated UH-1N Huey fleet. The MH-139A, designed by Italian defence firm Leonardo and militarised by Boeing Aerospace, made its first flight in December 2023. By 2029, the United States Air Force plans to procure 36 helicopters for the 908th Airlift Wing (AW) at Maxwell Air Force Base in Alabama. To ease the transition to this new platform, the Air Force has set aside around US$84.7 million for training programmes, infrastructure, and equipment purchase. The key efforts include:

- **Aircrew Training:**
- The initial training programme for the new MH-139A Grey Wolf helicopter commenced at Kirtland Air Force Base in New Mexico in 2019. As part of this training regimen, pilots have undergone extensive flight instruction, both in the air and using simulators, to develop critical skills such as instrument approaches, confined operations, and emergency procedures.
- In 2020, Maxwell Air Force Base in Alabama was selected to set up the first Formal Training Unit for the MH-139A. Over the fiscal years 2022 and 2023, the base spent US$8.4 million and US$30 million respectively on new facilities and renovations to support the aircraft's arrival.
- In February 2024, Maxwell Air Force Base launched its first active-duty flight training unit to help the 908th AW train its pilots. This new training unit was created in collaboration with the New Mexico-based 58th Operations Group, which was among the early recipients of the Grey Wolf helicopters. According to the 908th AW spokesman Brad Clark, the training unit at Maxwell is now fully operational.
- A total of 180 new full-time employees are set to be hired before the first MH-139A helicopter arrives at Maxwell by the end of 2024 or early 2025. The training facility at Maxwell will eventually receive a total of 10 helicopters and six simulators by 2028.
- **Maintainer Training:**
- Before 2023, there was no formal DoD training programme to maintain the MH-139A. Hence, the 908th AW sent Airmen to Picayune, Mississippi, where the civilian mechanics showed the Airmen how they maintain the AW139s, which are the civilian version of the Grey Wolf.
- In March 2024, Boeing started providing MH-139-specific "Type-1" maintenance training at the Leonardo facility in Philadelphia. This 9-week programme, along with additional proficiency training, is meant to equip maintenance personnel with the knowledge to support the aircraft's advanced avionics, power systems, and other critical components.

According to the latest budget projections, the USAF is estimated to spend around US$24.5 million on various training efforts for the MH-139A platform in 2025.

TRAINING SYNTHETIC PROGRAMME/ B-2 TRAINER SYSTEM UPGRADE

The USAF has long operated a fleet of advanced stealth B-2 bombers mainly to strike high-value targets. To ensure this aircraft maintains its operational edge, the USAF is undertaking a comprehensive modernisation programme, that is expected to witness an investment of approximately US$94.4 million by 2030, mainly to modify and upgrade its training systems. This programme will enable the B-2 to continue fulfilling its critical anti-access/area denial and global strike missions and remain abreast of a continuously changing global threat environment.

The B-2 Training System provides a wide range of training for aircrew, maintenance personnel, and weapons loaders, including initial qualification, proficiency, continuation, re-qualification, mission rehearsal, and upgrade training. The training elements located at Whiteman Air Force Base which are expected to get an upgrade include Weapon System Trainers (WSTs), Cockpit Procedure Trainers (CPTs), Weapons Loading Trainers (WLTs), Crew Escape System Maintenance Trainers (CESMTs), and Flight Control System Trainers (FCSTs).

The maintenance training systems that are expected to get an upgrade are Computerized Maintenance Training Systems (CMTS), Computer-Based Training (CBT), and Weapon System Training Aids (WSTAs). These enhancements will help maintain alignment between the B-2 training devices and the actual aircraft configuration, ensuring that maintenance personnel receive up-to-date training. The programme also plans to build a Mission Director Room which will allow instructors to communicate with trainees through voice and text. Supervisors and instructors can set up pre-planned scenarios and make real-time changes to the training environment, such as adjusting the weather or participants. These missions can be viewed live or can be reviewed later as recordings. The programme also includes upgrades to the computer systems used in simulations to improve the training quality and make mission setups quicker. Additionally, old software and hardware that are no longer supported will be replaced. The entire system will be updated to a more modern, modular, and secure design that will be easier to maintain in the future. Around US$20.1 million is estimated to be spent during the forecast period over 2025-2030.

TRAINING SYNTHETIC PROGRAMME/F-35 C2D2 - TRAINING SYSTEMS & SIMULATION

The U.S. Air Force (USAF) has been actively engaged in enhancing the capabilities of the F-35 Joint Strike Fighter (JSF) since the programme's inception. One of its core efforts is the JSF Continuous Capability Development & Delivery (C2D2) programme which provides incremental improvements to ensure joint air dominance in the face of evolving threats, including those in the area of training and simulation.

The F-35 Training Systems & Simulation Programme Management Office (TSS PMO) oversees a development portfolio that aligns with the C2D2 programme and is organized into three key areas: Training System Capability Development (TSCD), Training Systems Investments (TSI) Roadmap, and Joint Simulation Environment (JSE) Development.

- **Training System Capability Development (TSCD):** in this, the USAF is focused on the development of Block 4 capabilities which enable the release of one capability upgrade per year, the ongoing development of the Production Runtime Server (PRTS) and the advancement of Live-Virtual-Constructive (LVC) capabilities, including Distributed Mission Training (DMT).

- **Training Systems Investments (TSI) Roadmap:** this is aimed at delivering higher fidelity training to the war fighter by modernising software and hardware architectures and enhancing defence against synthetic threat capabilities.

- **Joint Simulation Environment (JSE) Development:** this looks to develop capabilities such as F-35 In-A-Box (FIAB) software integration, and complex threat sensor model integration to create a robust and relative simulation environment that is needed to obtain credible operational test trials. These capabilities will also facilitate the completion of Verification, Validation and Accreditation (VV&A) activities for all F-35 Block 4 aircraft.

The USAF has allocated a budget of over US$1 billion annually since 2023 for the modernisation of the F-35 platform, with approximately US$85 million dedicated to updating the training systems. In FY2025, modernisation activities will continue through step-by-step releases of Block 4 upgrades. These upgrades include advanced weapons integration and give international partners the chance to evaluate, add, and use new features based on their own country's defence needs. It is anticipated that the 2025 funding request will also be decreased by US$204 million due to the availability of unspent funds from previous years. This programme element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. It is estimated that a total of US$418.2 million will be spent on this programme between 2025 and 2030.

TRAINING SYNTHETIC PROGRAMME/ MC-TRAINER MODIFICATIONS

The U.S. Air Force's (USAF's) HC/MC-130 Recapitalization programme, aims to upgrade the existing C-130J aircraft to an HC/MC model, providing a standardized baseline configuration. As part of this effort, the USAF is also required to enhance the existing AC/MC-130J training and simulation systems to align them with the modifications made to the aircraft, ensuring consistency between the trainers and the actual aircraft.

The modifications to the training systems encompass a range of enhancements, including Live Virtual Constructs (LVC) and MC Concurrency Modifications. LVC enables trainers to interact not only with other trainers but also with real aircraft engaged in missions. The MC Concurrency Modifications will update the MC training and simulation systems, incorporating features such as the Continuous Improvement Programme (CIP), Option X, Large Aircraft Infra-Red Countermeasures (LAIRCM), and Automatic Dependent Surveillance-Broadcast Out (ADS-B Out) capabilities. Additionally, the modifications will involve the integration of Virtual Reality (VR) and Augmented Reality (AR) technologies. Furthermore, the AC-130W Weapon System Trainer (WST) will be upgraded or repurposed to an MC-130J configuration. The USAF plans to modify various training systems, including flight simulators and fuselage trainers, to facilitate comprehensive aircrew training simultaneously.

Training systems to be modified include flight simulators and fuselage trainers to enable simultaneous full aircrew training This modification programme also includes the upgrade/ re-purpose of the AC-130W Weapon System Trainer (WST) to an MC-130J configuration. The expenditures listed under the programme, includes the purchase of Government furnished equipment, trainers, data, Interim Contractor Support, and other programme costs needed to field the capability.

For modifications to the tanker aircraft, the USAF has allocated a budget of US$2 billion, with approximately US$216.8 million earmarked for updating the training systems. An estimated amount of US$123.5 million is projected to be spent over the forecast period 2025-2030.

TRAINING SYNTHETIC PROGRAMME/F/A-18C/D/E/F AND EA-18G TRAINING SYSTEM

The U.S. Navy (USN) has allocated over US$970 million to ensure fleet readiness on the F/A-18C-F and EA-18G aircraft platforms. These funds will support aligning training systems with current aircraft hardware, software, and system capabilities, help with acquiring new components and software to avoid obsolescence of related training aircraft and also for updating courseware, computer-based training, and maintenance trainers while simultaneously working to improve simulation fidelity as a response to aircraft-driven changes.

The programme also includes technology upgrades to related tactical operational flight trainers (TOFTs) and Live Virtual Constructive Training (LVC) devices. The USN currently has 27 maintenance trainers with 18 devices for F/A-18E/F and EA-18G and 9 devices for F/A-18C/D; and 72 aircrew training devices and 110 aircrew cockpits with 48 devices and 81 cockpits for F/A-18E/F and EA-18G and 24 devices and 29 cockpits for F/A-18C/D. It is estimated that a total of US$449.7 million will be spent over 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ FLIGHT SCHOOL TRAINING SUPPORT SERVICES

In March 2023, General Dynamics Information Technology (GDIT) secured a US$1.7 billion contract from the U.S. Army to deliver flight school training support services under the Flight School XXI programme at the U.S. Army Aviation Center of Excellence. This contract is managed by the U.S. Army Programme Executive Office for Simulation Training and Instrumentation and will have a base five-year period followed by an additional option period of seven years.

Under the contract, GDIT will utilize advanced simulation technology to train students at the Fort Rucker facility in matters relating to cargo handling, attack, utility, and other aspects of helicopter training. GDIT's responsibilities include owning, operating, maintaining, and upgrading a suite of virtual flight simulators, as well as providing related training and programme management services.

In May 2023, GDIT partnered with CAE Defence & Security to develop and deliver new full-flight simulators for the CH-47F and UH-60M rotorcraft platforms. Part of this US$455 million agreement also includes related software configurations for reconfigurable collective training devices. Further, in July 2023, GDIT also contracted Adacel Technologies Limited (Adacel) to replace the U.S. Army Enhanced Tower Simulator (ETOS) and Army Aviation Radar Training Simulator (AARTS).

The U.S. Army has allocated approximately US$1.7 billion for this programme until 2034, with around US$1.1 billion earmarked as expenditure over the period 2025-2030.

TRAINING SYNTHETIC PROGRAMME/ ROTARY WING, INTRODUCTORY FLIGHT TRAINING (IFT-R)

In June 2023, CAE Defence & Security was awarded the U.S. Air Force (USAF) Rotary Wing Introductory Flight Training (IFT-R) contract to support the Air Education and Training Command (AETC). This initiative is an integral part of the USAF's Helicopter Training Next programme, which seeks to provide necessary flight training to student pilots. The original contract valued at US$44.5 million covers all basic rotary-wing air, ground, and simulation training for the USAF and also mentions additional option years through 2033 that could raise the total value of the contract to US$110.6 million. The training will take place at the CAE Dothan Training Center in Dothan, Alabama, which is also home to the U.S. Army Fixed-Wing Training Services programme.

CAE will conduct the IFT-R training using a fleet of Bell 505 Jet Ranger X aircraft that have been specifically configured for AETC's initial USAF helicopter training. It will also utilize the IFT-R Ground Based Training System, which incorporates advanced simulation and interactive media to provide next-generation rotary wing training to future aviators.

https://upload.wikimedia.org/wikipedia/commons/4/44/Georgia_Army_Guard_aviation's_new_CH-47F_Chinook_heavy-lift_helicopter_%287402578458%29.jpg

A notable aspect of this contract is the collaboration between CAE and various industry leaders such as Bell Textron, Alpha 1, and Navigator Development Group, to prepare USAF rotary-wing student pilots for their subsequent training. The team is expected to work together to support flying operations, training simulation, academics, and other aspects of the programme.

Overall, the USAF is expected to allocate approximately US$110.6 million to this programme by 2033, with an estimated expenditure of around US$66 million between 2025 and 2030.

TRAINING SYNTHETIC PROGRAMME/ TRAINING SYSTEM AIRCRAFT

The United States Navy (USN) has initiated a comprehensive programme aimed at enhancing the Naval Undergraduate Flight Training Systems for multiple aircraft, including the T-45, T-6, T-44, TH-57, TH-73A, T-44 Follow-On: Multi-Engine Training System (METS), and the T-45 Follow-On (Undergraduate Jet Training System (UJTS)/Tactical Surrogate).

This programme encompasses various activities such as design, development, integration, and testing of pre- and post-production platform improvements. These efforts involve the development and sustainment of engineering change proposals (ECPs) to address avionics reliability and modernisation, corrosion prevention, obsolescence, and other solutions necessary to meet evolving fleet training requirements. Additionally, the programme includes analysis for mitigating physiological episodes (PE) in the T-45 and T-6 aircraft, as well as the development of the T-44 Follow-On: METS and T-45 Follow-On (UJTS/Tactical Surrogate) systems.

In a recent development from April 2025, the U.S. Navy has chosen to remove the full carrier landing requirement from its upcoming UJTS platform, which will eventually replace the aging T-45 jet trainers. Instead of requiring the new aircraft to perform full Field Carrier Landing Practice (FCLP), which simulates aircraft carrier landings, the Navy now only requires the aircraft to conduct “wave-offs.” These are approaches that simulate carrier landings but do not involve an actual touchdown. This change is meant to simplify aircraft design, cut costs, and speed up procurement. The Navy believes this will help them introduce the new jet more quickly to meet changing training and operational needs. However, full carrier landings will still be part of more advanced stages of naval aviation training using fleet aircraft.

As of 2023, the USN has already invested approximately US$116.4 million in this programme. Looking ahead, a budget of US$186.7 million is anticipated to be allocated for the period between 2025 and 2030. Several companies, including NAWCAD, FRCSE, Rolls Royce, Vertex Aerospace, NAVAIR, and others, are actively involved in various modules of this programme, and their participation is expected to continue beyond 2030.

ADVANCED HELICOPTER FLIGHT TRAINING SUPPORT (AHFTS) PROGRAMME – RE-COMPETE

In March 2024, CAE Defence & Security was awarded a competitive re-compete contract by the U.S. Army Aviation Center of Excellence (AVCOE) and the 110th Aviation Brigade to continue its role in the Advanced Helicopter Flight Training Support (AHFTS) programme. The contract, which extends through 2030, is valued at approximately US$180 million and includes an initial base period with four additional one-year options. It reinforces CAE’s position as a key industry partner in supporting the U.S. Army’s advanced helicopter training pipeline.

Under the terms of the agreement, CAE will provide Instructor Pilots, Maintenance Evaluators, and Non-Rated Crewmembers to support the training of approximately 900 U.S. Army and allied foreign military aviators annually. These students are transitioning to the Army’s primary rotary wing platforms which include the CH-47F Chinook, UH-60M Black Hawk, and AH-64E Apache. The scope of the contract promises a significant increase in instructional capacity, with the number of UH-60 instructor pilots set to double. Provisions are also in place to expand this capacity further in response to growing training demands.

Since 2021, CAE has played a pivotal role in this programme by delivering classroom instruction, simulator sessions, and live aircraft flight training, helping move Initial Entry Rotary-Wing aviators to mission-ready status. In addition to its role in the AHFTS programme at Fort Novosel, CAE also supports broader Army aviation training efforts through its Dothan Training Center in Alabama. This facility trains more than 600 U.S. Army and U.S. Air Force pilots annually under the Army’s Fixed-Wing Flight Training Service programme. Moreover, CAE contributes to the Flight School Training Support Services (FSTSS) initiative by delivering full-flight simulators for the CH-47F and UH-60M aircraft, along with reconfigurable software tools that support collective training exercises. Over the forecast period of 2025-2030, the programme is anticipated to witness an expenditure of US$178 million.

UNDERGRADUATE JET TRAINING SYSTEM (UJTS) PROGRAMME - REQUEST FOR INFORMATION (RFI)

On March 31, 2025, the United States Navy issued a new Request for Information (RFI) for the Undergraduate Jet Training System (UJTS) programme. The RFI was issued in pursuit of a replacement for the aging T-45 Goshawk training fleet. This latest iteration updates the programme's timeline, indicating that a formal Request for Proposal (RFP) is expected by December 2025 with contract award anticipated in January 2027. This represents a shift toward an accelerated procurement schedule, especially in light of a recent T-45 grounding event in March 2025, due to an engine malfunction.

The most significant change in this RFI is the U.S. Navy's decision to eliminate the requirement for the new UJTS aircraft to complete Field Carrier Landing Practice (FCLP) with touchdown. Instead, the aircraft will now be required only to conduct FCLP to the wave-off stage, eliminating the need for carrier-landing strength structural design. This change was driven by recent advancements in operational platform landing modes and ground-based simulation fidelity, reducing the necessity for live carrier-landing practice. Consequently, future naval aviators will perform full FCLP profiles in simulators while only executing the approach phase in real aircraft.

To maintain high training standards while expediting the programme's rollout, the Navy has set a limit on the contractor's development timeline at three years from contract award to delivery of the first test aircraft. This measure is intended to ensure a timely replacement of the T-45 fleet, which continues to experience age-related issues. In parallel, the RFI seeks extensive industry input on the structure of the Ground Based Training System (GBTS). The Navy is contemplating a four-tier training device configuration comprising Operational Flight Trainers, Unit Training Devices, Cockpit Procedural Trainers, and Desktop Avionics Trainers. The GBTS will also incorporate Live/Virtual/Constructive (LVC) capabilities for enhanced simulation-based training environments.

The RFI includes detailed system requirements for the future UJTS aircraft. It outlines a performance envelope that includes a minimum speed of Mach 0.9, sustained Angle of Attack (AoA) over 20 degrees, 6G load factor, and an operational ceiling of at least 41,000 feet. The Navy also requires the platform to support Precision Landing Mode (PLM), a system now standard in F/A-18 and F-35 carrier-based operations, to aid approach accuracy and reduce structural fatigue.

Additionally, the aircraft must include advanced cockpit systems with HUDs, single primary touchscreen displays, and Helmet Mounted Displays (HMDs) supporting Augmented Reality, as well as Large Area Displays (LADs), aligning with the interface of next-generation combat platforms. The simulator and training infrastructure will feature embedded synthetic training environments and augmented reality modules. Simulated systems must also replicate radar, EO/IR sensors, RWR, EW capabilities, and air-to-air and air-to-ground weapon employment, among others. The Auto Ground Collision Avoidance System (Auto G-CAS) is also a core safety requirement.

In conclusion, the latest RFI signals a decisive pivot by the Navy toward simulation-centric training, seeking to balance rapid acquisition timelines, enhanced training effectiveness, and cost-efficiency through reduced structural requirements and greater reliance on digital training tools. Total programme value is estimated to be in excess of US$3.5 billion and the period over 2027-2030 is estimated to witness an expenditure of about US$575.8 million.

https://en.wikipedia.org/wiki/McDonnell_Douglas_T-45_Goshawk#/media/File:T-45A_Goshawk_03.jpg

AI-ENABLED IMMERSIVE MAINTENANCE TRAINING-KC-135 REFUELLING TANKERS

On April 14, 2025, the U.S. Air Force's innovation directorate AFWERX awarded Houston-based HTX Labs up to US$5.8 million in military funding to develop an AI-enabled immersive training programme for maintenance personnel working on Boeing's KC-135 Stratotanker. The contract forms part of the EMPACT platform, HTX Labs' flagship extended reality (XR) training suite, and represents a significant investment in virtual reality-based workforce readiness initiatives for sustainment operations.

This initiative builds upon HTX Labs' successful completion of the second phase of a virtual maintenance training programme for the KC-135 in collaboration with RAF Mildenhall in England. That phase was funded through the U.S. Air Force's Small Business Innovation Research (SBIR) programme. The latest effort will focus on creating a virtual, AI-powered classroom for the KC-135's F108 engine maintenance. HTX Labs will work closely with the Maine Air National Guard's 101st Air Refuelling Wing Maintenance Squadron to fine-tune the EMPACT's immersive training modules to align with complex, infrequently performed engine repairs.

According to Major Ryan Wing of the 101st Maintenance Squadron, the value of this capability is critical in nature as KC-135 maintainers face limited real-world opportunities to practice advanced engine maintenance and immersive technologies hence play a vital role in building mission readiness for this platform. The programme will see an expenditure of US$5.8 million over the period 2025-2027.

https://upload.wikimedia.org/wikipedia/commons/2/23/Boeing_KC-135R_Stratotanker_'71483'_%2829263748436%29.jpg

FLIGHT TRAINING – EUROPE

The European military flight training market, the second largest regional market, is projected to reach a cumulative value of about US$10.2 billion between 2025 and 2030. The UK leads the region with about US$3.2 billion in cumulative spending, supported by its long term Military Flying Training System (UKMFTS) programme valued at about US$4 billion.

Poland is another major market, reaching about US$2.1 billion during the same period. This growth is shaped by its proximity to Russia and the continuing conflict in Ukraine. Spain ranks third with cumulative spending of about US$1.4 billion.

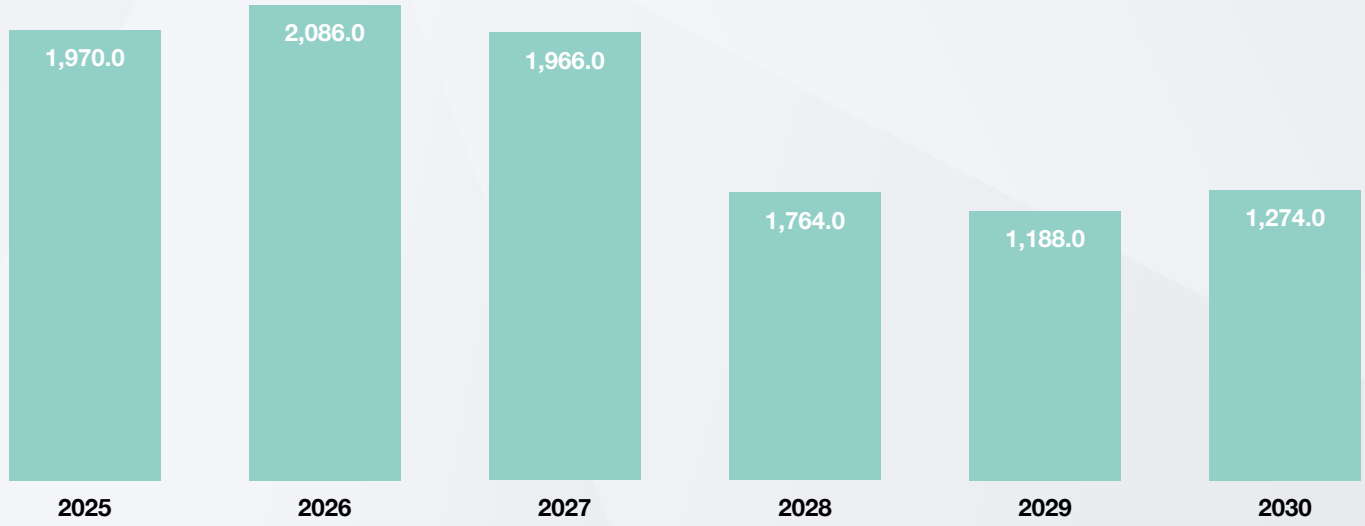
Key programmes include Poland's procurement of 48 FA 50 trainers and light fighters for about US$3 billion, the United Kingdom's Military Flying Training System for about US$2.7 billion, Greece's purchase of 10 M 346 aircraft for about US$1.3 billion, Turkey's acquisition of 55 Hurkus B trainers for about US$1.1 billion, Turkey's MFI 395 Super Mushshak basic trainer programme for about US$832 million, and Spain's proposed purchase of 20 M 346 aircraft for about US$1 billion.

EUROPE: FLIGHT TRAINING MARKET, 2025-2030, US$ MILLIONS

Table 4: Europe: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	1,335.0	1,438.0	1,428.0	1,254.0	661.0	807.0	6,923.0
Trainer Aircraft-Rotary Wing	210.0	200.0	165.0	135.0	150.0	65.0	925.0
Trainer Aircraft-Transport	25.0	25.0	25.0	25.0	25.0	30.0	155.0
Training Synthetic Programmes	400.0	423.0	348.0	350.0	352.0	372.0	2,245.0
Total	**1,970.0**	**2,086.0**	**1,966.0**	**1,764.0**	**1,188.0**	**1,274.0**	**10,248.0**

Figure 4: Europe: Flight Training Market, 2025-2030, US$ Millions



BELGIUM

TRAINER AIRCRAFT-FIXED WING/ PILATUS PC-7 MKX:

In November 2025, Belgium's federal cabinet approved the acquisition of 18 Pilatus PC-7 MKX turboprop trainers under a long-term support contract. The Swiss manufacturer Pilatus Aircraft will supply the aircraft, along with simulators and infrastructure upgrades at Beauvechain Air Base and provide operational support for 20 years.

The objective is to replace Belgium's ageing SIAI Marchetti SF-260 trainer fleet (which has served for 55 years) and transition pilot training to a modern aviation-standard platform. The contract is structured at about US$46 million (€40 million) per year and covers aircraft, simulators, infrastructure and the fixed and variable operating costs.

Training on the new fleet is scheduled to begin in 2028, after the last SF-260 is phased out in 2027.

This procurement ensures that Belgium retains a high-quality basic pilot training capability aligned with NATO standards, enhancing readiness and preserving the training pipeline for future fast-jet and multi-engine pilots.

TRAINER AIRCRAFT-ROTARY WING/H145M:

In June 2024, Belgium signed a contract with Airbus for the procurement of 17 H145M helicopters, comprising 15 for the Belgian army and 2 for the federal police. This acquisition, which aligns with the Belgian Ministry of Defence's STAR (Security, Service, Technology, Ambition, and Resilience) programme, aims to enhance the country's tactical airlift capabilities, particularly for special operations and medical evacuations.

The H145M helicopters are versatile, light utility aircraft that can be reconfigured for various roles, including training, light attack missions and humanitarian operations. Notably, they feature advanced self-protection systems and capabilities for rapid deployment, such as fast rappelling equipment.

The first helicopter is anticipated to be delivered in 2026, accompanied by an initial five-year support contract from the NATO Support and Procurement Agency (NSPA). Although the exact contract amount remains undisclosed, it is estimated that approximately US$340 million will be allocated for this procurement by 2029.

CZECHIA

TRAINER AIRCRAFT-FIXED WING/L-39NG ADVANCED MILITARY TRAINER AIRCRAFT:

In November 2022, national aviation firm LOM PRAHA awarded a contract to domestic manufacturer AERO Vodochy, to manufacture and deliver four new L-39NG advanced military trainer aircraft to the Czech Republic's Air Force. The programme includes the option for an additional four jets and special and high-altitude equipment, survival equipment, flight planning and analysis systems, and a ground training system. According to Jiří Protiva, the Director of LOM PRAHA, the L-39NGs are being acquired to replace the country's fleet of ageing L-39C Albatros aircraft that have been in operation for the last 18 years. This procurement will therefore ensure the continuous availability of subsonic aircraft for tactical air force pilots to train on. The procurement started in 2024 and the eighth unit expected to enter service sometime in 2029. The total programme value has been estimated at US$80 million.

TRAINING SYNTHETIC PROGRAMME/ AH-1Z TRAINING SUPPORT:

In October 2021, the Czech government signed a contract with state enterprise LOM Praha for simulated flight training support on the AH-1Z Viper attack helicopters, 12 of which have been procured as part of a 2019 programme. The contract includes the operation of the simulation centre, including technical assistance, technical support for simulated flight training on the AH-1Z simulator, including its facilities, and the provision of support services for the simulation centre, including staffing, provision of classrooms, offices and other facilities for pilots and instructors. It is expected to last during the period 2023-2032 and will cost around US$13 million.

DENMARK

TRAINER AIRCRAFT-FIXED WING/ SAAB T-17 SUPPORTER UPGRADE:

Denmark is currently modernising its fleet of Saab T-17 Supporter aircraft through a significant upgrade initiative aimed at enhancing pilot training capabilities. In March 2024, Scandinavian Avionics was awarded a contract to replace the aircraft's outdated analog cockpit with advanced digital instruments. This upgrade includes the installation of Garmin's G500 TXi touchscreen displays, GTN 750Xi navigators, and LED indicators, which will improve operational efficiency and reduce maintenance needs.

The objectives of this overhaul are to future-proof the T-17 fleet, reduce aircraft weight, and increase fuel savings. The programme will encompass all 26 T-17 aircraft used by the Royal Danish Air Force, with initial upgrades slated for completion on the first ten aircraft, while the remaining units will undergo a complete overhaul in Aalborg.

The project, initiated in response to evolving training requirements, is expected to continue into the coming years until 2030, solidifying the T-17's relevance in military training. Although the specific contract amount has not been disclosed, it is estimated that US$26 million will be allocated for this procurement by 2030.

FRANCE

TRAINER AIRCRAFT-FIXED WING/ PC-7 MKX PILATUS:

In January 2025, France's defence procurement agency DGA signed a 17-year Mentor 2 contract with Babcock International's French division to deliver the PC 7 MkX training fleet and run the flight training programme. The contract launches a new fixed-wing training pipeline for the Air and Space Force and Navy.

Pilatus confirmed the purchase of 22 PC 7 MkX aircraft in March 2025. The package includes aircraft, ground-based simulators, and digital training systems to prepare new military pilots for advanced flight training. Pilatus will supply the aircraft and training systems, while Babcock will provide training delivery and maintenance support.

The programme aims to train approximately 120 student pilots every year. Training will happen at Salon de Provence Air Base. Babcock will deliver about 11,000 flight hours and 6,500 simulator hours each year. Deliveries of the PC 7 MkX fleet will start in 2027.

Total spending through 2041 is budgeted at about US$925 million, with roughly US$300 million allocated for 2025-2030. The project gives France a single supplier training pipeline, using the PC 7 MkX for basic training and the PC 21 for advanced stages.

https://upload.wikimedia.org/wikipedia/commons/6/6d/Saab_T-17_Supporter_T-404_Royal_Danish_Air_Force.jpg

TRAINING SYNTHETIC PROGRAMME/ VIRTUAL HELICOPTER SAR TRAINING:

In February 2023, the French Ministry of Armed Forces Command awarded a multi-year contract to American company Priority 1 Air Rescue (P1AR), to provide virtual Synthetic Aperture Radar (SAR), tactical, aerial use of force/ gunnery and night vision imaging system (NVIS) simulation and training support services for helicopter pilots. The flight training services will only be provided to the crew of the H225M, AS532, SA330, NH90, AS565, H125M and AS342 platforms, and are taking place at the P1AR Search and Rescue Tactical Training Academy (SART/TAC) in Bordeaux, France. The various operations for which the training is being provided include mission training for inland and maritime hoist SAR, shipboard operations, external sling load, aerial sniper-M240/M134/GAU21 gunnery, and forward-looking infrared imaging (FLIR)/Night Vision Goggle (NVG) operations. The programme's total value has been estimated at US$30 million, out of which around US$12 million is expected to be spent through 2025-2030.

GERMANY

TRAINING SYNTHETIC PROGRAMME/ AB INITIO TRAINING SERVICES:

In February 2022, the German subsidiary of U.S.-based defence manufacturer CAE secured a contract from the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) to provide ab initio training services for the German Air Force. This seven-year contract, with an option for an additional five years, encompasses academic instruction, simulator training, and live-flying exercises for over 40 student aviators in the first year alone. Instructors will utilize a fleet of Diamond DA-40 and CAE-owned DA-42 aircraft to conduct both single and multi-engine live-flying training at the newly established CAE Bremen Training Centre, as well as at a training site in Montpellier, France, operated by Airways Aviation. The total estimated value of the programme is approximately US$60 million, with expenditures projected through 2030.

TRAINING SYNTHETIC PROGRAMME/ H145M - SIMULATORS:

Germany has launched a significant procurement initiative for the Airbus H145M light attack helicopters, awarding a contract for up to 82 units. This includes 62 firm orders and options for an additional 20 helicopters. This procurement effort is part of a broader strategy to modernise the Bundeswehr's capabilities, particularly aimed at replacing the ageing Tiger attack helicopters.

The programme, expected to run until 2028, is financed through Germany's US$110 billion military modernisation fund, with total contract value estimates of around US$2.3 billion.

A crucial element of this order includes eight simulators that will enhance pilot training and operational readiness. These simulators are designed to replicate the capabilities of the H145M, enabling pilots to train in a controlled environment that mimics real-world scenarios, thereby minimising the risks associated with live flight operations. Additionally, the integration of the HForce weapons management system within the simulators will facilitate training with both ballistic and guided weapons.

TRAINING SYNTHETIC PROGRAMME/ NH90 SEA LION AND SEA TIGER HELICOPTERS - TRAINING:

Germany has initiated a training programme for its naval pilots, concentrating on the NH90 Sea Lion and Sea Tiger helicopters. In November 2024, Heli Operations secured a US$181 million contract from the German Ministry of Defence to provide comprehensive training for German Navy pilots over seven years. This initiative is set to commence immediately at Heli Operations' base in Portland, Dorset, where the necessary training infrastructure is currently being developed.

The primary objective of this programme is to prepare crews for the operational demands of the Sea Lion, designed for search and rescue missions, and the Sea Tiger, which specialises in anti-submarine warfare.

Training will encompass theoretical instruction, advanced simulator sessions, and practical live flight training during both day and night operations. The integration of simulators is crucial, as they will allow pilots to practice critical scenarios in a safe environment, enhancing their readiness for real-world missions. The programme is expected to continue until 2031, helping to ensure that the German Navy maintains its operational effectiveness amid evolving maritime challenges.

GREECE

TRAINER AIRCRAFT-FIXED WING/M-346 NEW PROCUREMENT AND MAINTENANCE OF EXISTING ONES:

In April 2021, the Hellenic Ministry of Defence awarded a 20-year, US$1.3 billion contract to Elbit Systems, to establish and operate the International Flight Training Centre for the Greek Air Force. This also includes the supply of 10 new M-346 training aircraft and the maintenance of the entire training fleet, including the T-6 aircraft, for around 20 years. Additionally, Elbit will also integrate its Embedded Virtual Avionics (EVA) onboard the two platforms, deliver networked flight simulators and various Ground-Based Training Stations (GBTS), along with command-and-control systems. The first two M-346s were delivered in May 2023, at the International Pilot Training Centre at 120 ATW Kalamata in Greece. This contract, which is part of a wider defence cooperation between Israel and Greece, is expected to witness spending of around US$325 million over the period 2025-2030.

ITALY

TRAINER AIRCRAFT-FIXED WING/ M-345 HIGH-EFFICIENCY TRAINER (HET):

In June 2019, Italian defence manufacturer Leonardo won a US$360 million contract to provide 13 M-345 high-efficiency trainer (HET) aircraft, along with ground-based training systems and a five-year logistics support package, to the Italian Air Force. The HETs will replace the country's ageing fleet of 137 MB-339s that have been in service since 1982.

Awarded by the Italian Ministry of Defence's armaments and airworthiness department, this contract is an extension of a previous one signed in 2017, for the procurement of five M-345s, thereby bringing the total number to 18. The aircraft will also complement the existing fleet of T-346As that are stationed at the Italian Air Force Base Galatina near Lecce in the southern part of the country.

The first two M-345s were delivered in December 2020, with final deliveries expected to take place by 2028. A total of US$215 million is expected to be spent on this procurement over the period 2025-2030.

https://upload.wikimedia.org/wikipedia/commons/0/07/Greek_Air_Force_F-16%2C_Trapani_AB%2C_Trident_Juncture_15_%2822689740761%29.jpg

NETHERLANDS

TRAINER AIRCRAFT-FIXED WING/ PC-7 TRAINERS AND SIMULATORS:

The Royal Netherlands Air Force is moving ahead with a full refresh of its basic pilot training system, with the acquisition of eight new Pilatus PC-7 Mk X aircraft and dedicated simulators. The plan was first announced by the Dutch Ministry of Defence in October 2024 to replace the current fleet of thirteen PC-7s that have been flying since 1988. The new training setup will continue to support the EMVO programme, which prepares student pilots for advanced platforms, including the F-35.

In February 2025, the government confirmed Pilatus as the supplier. The contract covers eight PC-7 Mk X aircraft and a full suite of ground training tools. This includes four simulators, computer-based training modules and briefing or debriefing systems. Deliveries are set to begin in the first half of 2027.

The PC-7 Mk X brings updated avionics, improved cockpit displays and new safety features. The aircraft and simulator package is designed for early-stage military training, giving students a reliable platform to build their skills before moving into jet or multi-engine tracks. With this upgrade, the Netherlands secures a modern, stable training pipeline for the next generation of military pilots.

https://upload.wikimedia.org/wikipedia/commons/b/ba/RIAT_2019_-_Dutch_Apache_DSC_1601_%2849110997406%29.jpg

TRAINING SYNTHETIC PROGRAMME/ C-390 MILLENNIUM TRAINING SUITE:

The Netherlands is advancing its military capabilities through the procurement of a comprehensive training suite for the C-390 Millennium military transport aircraft. In November 2024, Embraer and Rheinmetall secured a contract to deliver this training package, which supports the Royal Netherlands Air Force's (RNLAF) initiative to replace its ageing fleet of C-130H Hercules aircraft. The programme is expected to be fully operational by 2026, coinciding with the arrival of the five new C-390 transport planes.

The primary objective of this training suite is to provide realistic and effective training for RNLAF pilots, loadmasters, and operational personnel. The suite includes an advanced Full Flight Simulator, a Cargo Handling Station Trainer, and a Computer-Based Trainer developed by Empordef Tecnologias de Informação. Notably, the Full Flight Simulator can replicate both normal and emergency flight conditions and features over 350 malfunction scenarios to enhance emergency preparedness.

TRAINING SYNTHETIC PROGRAMME/ AH-64 APACHE AND CH-47 CHINOOK PILOT TRAINING:

In March 2021, the U.S. Defence Security Cooperation Agency (DSCA) approved the purchase of pilot training and logistics support services for the AH-64 Apache and CH-47 Chinook helicopters, by the Netherlands. The overall value of the contracts is US$315 million, with US$190 million allocated to the AH-64s and US$125 million to the Chinooks. Both programmes include fuel, base operating support, facilities, personnel training and training equipment, publications and technical documentation, weapon system and software support, programme support, U.S. government and contractor technical and engineering services, and logistics personnel services. The crew of both platforms are undergoing training at Fort Hood, Texas. A total of US$140 million is expected to be spent on both programmes over the period 2025-2030.

POLAND

TRAINING SYNTHETIC PROGRAMME/ F-16C/D BLOCK 52+ FLIGHT SIMULATORS:

In December 2022, the Polish Ministry of National Defence awarded a contract to Israeli defence manufacturer Elbit Systems, to develop and deliver four F-16C/D Block 52+ flight simulators. The tender for this programme was first issued in 2020, which resulted in seven proposals, which were subsequently opened in September 2022. These simulators are expected to replace the simulation system which came with the F-16s that were delivered to Poland towards the beginning of the century. They are expected to simulate all weather conditions, mid-air refuelling, and emergency training and train a minimum of four pilots simultaneously while connected with other simulators. The programme has a total value of US$51 million, with final deliveries scheduled for 2025.

TRAINER AIRCRAFT-FIXED WING/ M-346 BEILIK - LONG TERM SUPPORT:

In February 2023, Leonardo and Wojskowe Zakłady Lotnicze Nr 1 (WZL1) signed a contract to provide long-term support for the Polish Air Force's fleet of M-346 Bielik advanced jet trainers. Under the agreement, Leonardo, as the original equipment manufacturer (OEM), will handle engineering support, while WZL1 will coordinate and assist in areas where Leonardo cannot be directly involved. The two companies will also collaborate on training, maintenance, and repair services at WZL1's headquarters. Poland operates 16 M-346 aircraft, which were delivered in 2022. The total value of the programme is estimated at US$36 million, to be allocated through 2030.

TRAINER AIRCRAFT-FIXED WING/ FA-50 TRAINER AND LIGHT FIGHTERS:

In September 2022, the Polish Armament Agency (AA) signed two procurement contracts with Korea Aerospace Industries (KAI) for a total of 48 FA-50 advanced trainers and light fighters. The first deal, valued at US$705 million, includes twelve FA-50 Block 10 jets, identical to those used by the Republic of Korea Air Force (RoKAF). Deliveries for this initial batch were completed in 2023. Notably, these aircraft were initially intended for the RoKAF but were redirected to Poland in response to its urgent needs following Russia's annexation of Ukraine.

The second contract, worth US$2.3 billion, involves the acquisition of 36 FA-50PL Block 20 aircraft, with deliveries expected between 2025 and 2028. This batch will feature enhancements, including various weapon integrations, an Advanced Beamforming Multi-Mode Radar (AFAR), advanced avionics, mid-air refuelling capabilities, and NATO's identification system for friend or foe. The contract also encompasses training and logistics support, including full-motion simulators and operational flight trainers.

The total value of the programme is estimated at US$3 billion, with approximately US$2 billion allocated for expenditures from 2025 to 2030.

PORTUGAL

TRAINER AIRCRAFT-FIXED WING/ A-29 SUPER TUCANO:

In December 2024, the Portuguese Ministry of National Defence signed a contract with Brazilian manufacturer Embraer to acquire twelve A-29N Super Tucano aircraft. Portugal becomes the launch customer for this NATO-standard variant.

The deal, valued at around US$210 million, includes the twelve aircraft, a full flight simulator and logistics support services. The supplier, Embraer, will deliver aircraft configured for advanced training, light attack and surveillance missions. The A-29N features modern avionics, NATO-specific communications systems and adaptable capabilities for missions like close air support and ISR.

Portugal's objective is to replace its ageing Alpha Jet and other legacy platforms and to establish a versatile fleet capable of training fast-jet and multi-engine pilots, as well as performing light attack duties. Deliveries of the first units began in 2025, with full fleet integration expected in the near term.

TRAINING SYNTHETIC PROGRAMME/ KC-390 SIMULATOR:

Portugal is undertaking a programme to procure the KC-390 Millennium aircraft alongside a state-of-the-art simulator designed to enhance pilot training and operational readiness. The Portuguese government has announced a contract valued at approximately US$935 million (€827 million) for the acquisition of five KC-390 aircraft from Embraer, which will include a comprehensive training package featuring simulators.

The programme is part of Portugal's broader military modernisation strategy, which is expected to continue under the Military Programming Law through 2034. The primary objective of integrating the KC-390 simulator into the training programme is to provide advanced, realistic training environments for pilots and crew members, significantly improving their preparedness for various operational scenarios, including air-to-air refuelling and transport missions.

SPAIN

TRAINER AIRCRAFT-FIXED WING/ HÜRJET ADVANCED TRAINER AIRCRAFT:

In December 2024, Turkey's aerospace authority and Spain's Ministry of Defence signed an MoU to introduce the Hürjet advanced jet trainer into the Spanish Air and Space Force fleet. The Hürjet is a twin seat, single engine supersonic aircraft built for advanced pilot training and secondary light attack missions.

In May 2025, Spain confirmed the order for 28 to 30 aircraft, valued at about US$1.2 billion. Turkish Aerospace Industries will deliver the platform. Co production work will take place in Spain with Airbus and a group of Spanish aerospace suppliers, which strengthens local industry participation and ensures long term support.

The programme replaces the ageing F 5M trainer aircraft and establishes a unified training pipeline covering advanced fighter pilot preparation. The package includes aircraft, mission planning systems, ground-based simulators, and digital training tools. Spain is also investing in modern simulator systems to cut training costs and reduce the need for live flying hours while maintaining high safety and readiness standards.

Initial deliveries are planned for 2028, with the first six aircraft expected in service that year. Eighteen aircraft are planned to be operational by 2029. Full domestic co-production and fleet delivery is targeted by 2031.

TRAINING SYNTHETIC PROGRAMME/ C295 MSA TRAINING SYSTEMS:

In December 2023, the Spanish Ministry of Defence placed an order with Airbus Defence & Space for 16 C295 aircraft configured for maritime patrol and surveillance. The contract value is about US$1.9 billion, including ground-based training systems and simulation infrastructure.

The programme objective is to replace Spain's retiring CN-235 VIGMA and P-3 Orion fleets and to strengthen anti-submarine warfare, maritime surveillance, reconnaissance and search & rescue capabilities for both the Spanish Air & Space Force and the Spanish Navy.

https://upload.wikimedia.org/wikipedia/commons/5/55/T.21-12_Casa_C.295_Spanish_Airforce_%287365791938%29.jpg

Manufacture and final assembly are to take place at Airbus's Seville facility to reinforce Spain's defence-industrial base. Deliveries are planned to commence in 2026, with full operational capability targeted by the early 2030s. The training-system element covers instructor-led sessions, mission-simulation hours and logistics support to ensure transition from legacy platforms to the C295 MPA/MSA fleet.

TRAINER AIRCRAFT-FIXED WING/ PC-21 NEXT GENERATION TRAINERS:

In January 2020, the Spanish Air Force awarded an over US$210 million contract to Swiss manufacturer Pilatus to develop and deliver 24 PC-21 advanced trainer aircraft, along with spare parts and simulators. Deliveries of all units were completed in June 2022. After this, in March 2023, the Dirección General de Armamento y Material (DGAM), awarded another contract to Pilatus for an additional 16 PC-21s, thereby making Spain the largest operator of these trainer aircraft in Europe. 14 of these are expected to be delivered to the Academia General del Aire (AGA) in San Javier, with the remaining two being delivered to the Centro Logístico de Armamento y Experimentación (CLAEX). The contract also includes a PC-21 simulator, two cockpit procedure trainers, mission planning and debriefing systems, and pilot training software. The PC-21 has a cruise speed of around 624 km/hr and a maximum rate of climb of 4,091 feet (1,246 meters) per minute. It also has a pressurized cockpit, an anti-G system, and onboard oxygen generation capabilities. The programme value has been estimated at US$144 million, with deliveries expected to be completed by 2025.

TRAINER AIRCRAFT-ROTARY WING/H-135:

In December 2021, the Ejército del Aire Español (EdAE) or the Spanish Air Force, placed an order with Airbus for 36 H135 helicopters, with 18 to be used by the Air Force and the Navy and the rest by the police/civil guard. The Spanish Army already has a fleet of H135 helicopters. The first unit was accepted into service by the Air Force in May 2023, with the police/civil guard getting two units back in 2022. The air force's H-135 is replacing Sikorsky's S-76C deployed under the service's 78th Wing at the Military School of Helicopters in Armilla, Granda. It will be used for advanced aircrew training, law enforcement, surveillance, and rescue missions. The value of the 18 helicopters ordered for the Air Force and Navy is US$194 million, with deliveries expected to culminate in 2027. The H-135, which is equipped with Airbus' Helionix avionics suite, is operated by 65 countries around the world, thereby making it one of the most popular training platforms globally.

TURKEY

TRAINER AIRCRAFT-FIXED WING/ HURKUS-B:

In December 2013, the Turkish Air Force placed an order for 15 indigenously manufactured Hurkus B trainer aircraft, and in April 2024, it expanded this order by an additional 40 units. Production and assembly of these aircraft are currently underway, with the first expected to join the Air Forces Command inventory in May 2025, followed by the 15th aircraft in September 2025, and the 55th by June 2027.

https://upload.wikimedia.org/wikipedia/commons/d/d9/Hürkuş-P9187710.jpg

Developed by Turkish Aerospace Industries (TAI), the Hurkus-B is equipped with a single Pratt & Whitney Canada PT-6 turboprop engine. It serves multiple training functions, including basic pilot training, instrument flying, navigation, and weapons and formation missions. The aircraft features a pressurized cockpit and an onboard oxygen generating system (OBOGS), along with an advanced cockpit that combines both analogue and digital displays in a tandem seat configuration. Notably, the cockpit avionics resemble those found in the Lockheed Martin F-16 and F-35 fighter jets.

The Hurkus is available in three variants: the Hurkus A for civilian use, the Hurkus B for military training, and the Hurkus C for close air support missions. The total programme value is estimated at US$1.1 billion.

TRAINER AIRCRAFT-FIXED WING/MFI-395:

The MFI-395 Super Mushshak Basic Trainer Aircraft (BTA) manufactured by Pakistan Aeronautical Complex (PAC) was first ordered by the Turkish Air Force (TAF) back in 2016, to replace the Cessna T-41D Mescaleros and SIAI Marchetti SF.260Ds. At the time the first few units were scheduled for delivery in 2020. However, it wasn't until November 2022 that Turkey received the first three units, out of a total order of 52, mainly due to delays caused by COVID-19. The two countries have also agreed to an option for another 48 trainers, deliveries for which are expected to begin after the first order of 52 aircraft is completed. The MFI-395 can carry a maximum of three people, has a maximum flight speed 268 km/h, a flight range of 814 km, a practical ceiling of 6700 m, and a maximum flight time of 4 h 15 min. The total programme value has been estimated at US$832 million, with US$200 million of that expected to be spent over the period 2025-2030.

TRAINER AIRCRAFT-ROTARY WING/ AW119T:

The Turkish Land Forces Command has contracted Italian manufacturer Leonardo to deliver 15 AW119T training helicopters, which are the Turkish versions of the AW119M. Each helicopter is equipped with a digital avionics suite that displays flight-related information on two large multifunction displays, a synthetic vision system, a dynamic moving map, and a rotorcraft terrain-avoidance warning system. The helicopter weighs around 2.9 tons, has a maximum range of 922 km, a maximum cruise speed of 243 km/hr, and can carry nine passengers including two crew. The first three units were delivered to the Turkish Army Aviation Command in May 2023, with all 15 expected to be delivered by 2026.

UK

TRAINER AIRCRAFT-FIXED WING/ PROJECT TELUM:

In August 2025, the UK Ministry of Defence (MoD) launched Project TELUM to replace the Grob 115E Tutor T Mk1 fleet used for basic military flight training. The programme introduces a new light training aircraft and modern training system for the Royal Air Force.

The contract will run for ten years from April 2030 to March 2040. It will include delivery of aerobatic capable aircraft, qualified flying instructors, maintenance and support services, and ground based training. The scope covers air experience flying, flying grading, and student streaming into advanced phases.

The supplier has not yet been selected. Industry expectations point to global competition. Options include a Boeing and Saab team, with possible involvement from BAE Systems. The selected platform may be a light turboprop or jet trainer depending on requirements, training efficiency, and operating cost.

The purpose of Project TELUM is to renew the UK's elementary military flight training system and improve training continuity across the pipeline. The budget for the programme is planned at about USD 530 million, equivalent to GBP 403 million. Aircraft deliveries are planned to start in 2030 after contract signature. Full training capability is targeted by 2040 under the planned contract period.

TRAINING SYNTHETIC PROGRAMME/ FLIGHT TRAINING CAPABILITY UPGRADE:

In May 2025, the UK MoD awarded a US$401 million contract to Ascent Flight Training to upgrade military flight training for the Royal Air Force and Royal Navy. The package includes two new training complexes at Royal Naval Air Station Culdrose and RAF Cranwell, state-of-the-art mission simulation environments delivered by Lockheed Martin, and an upgraded fleet of four twin-engine Beechcraft King Air Avenger T1 aircraft.

The objective is to increase mission-aircrew training capacity to 140 trainees per year (a four-fold increase), modernise training infrastructure, reduce flying hours, lower the carbon footprint, and prepare crews for modern ISTAR and unmanned systems operations. Deliveries of the new training system will begin in 2027.

TRAINING SYNTHETIC PROGRAMME/ MISSION AIRCREW TRAINING:

In June 2023, the UK MoD's Defence Equipment & Support (DE&S) awarded a contract to Ascent Flight Training, a joint venture between Lockheed Martin UK and Babcock International, to provide training services to members of Mission Aircrew. This will allow Royal Navy Observers and RAF Weapon System Officers to operate on board Wildcat, Merlin, Poseidon, and Rivet Joint aircraft. The training will be provided by Ascent civilian instructors and military staff operating from 750 Naval Air Squadron. The contract is expected to last until 2026, after which it will be replaced by the Future Intelligence, Surveillance, Target Acquisition, and Reconnaissance (ISTAR) and Rear Crew Training System (FIRCTS). This programme will result in five new job roles at RNAS Culdrose and will sustain 43 more across the southwest of the country. The programme is estimated to cost US$156 million.

TRAINER AIRCRAFT-ROTARY WING/H145M:

The UK Ministry of Defence (MoD) is expanding its fleet of Airbus H145 helicopters through a US$152 million (£122 million) contract for six additional units. This procurement is part of a strategic initiative to support UK military operations in Brunei and Cyprus, where the helicopters will replace the ageing Airbus Puma HC2s currently in use. The new H145s, designated as Jupiter HC2, are expected to enhance capabilities in jungle training and emergency response, particularly for medical evacuations in Brunei and search-and-rescue missions in Cyprus.

The contract was announced in April 2024, and the helicopters are set to be delivered by 2026. The H145s are already familiar to the MoD, as they are utilized in the UK Military Flying Training System for training purposes, which fosters operational commonality and efficiency in pilot training and support.

TRAINER AIRCRAFT-ROTARY WING/ UK MILITARY FLYING TRAINING SYSTEM (UKMFTS)-ROTARY WINGS:

The UK's Military Flight Training System (UKMFTS) is a comprehensive programme designed to provide flight training to the armed forces. Currently, the programme operates under a 25-year Private Finance Initiative (PFI) contract, valued at approximately £6 billion, which began in 2006 and is set to continue until 2033. The primary objective of UKMFTS is to modernise and streamline the training of military pilots, ensuring that they are equipped to operate advanced aircraft, including those of the latest generation.

Within the rotary-wing segment, the programme has recently expanded its capabilities with the acquisition of additional Airbus H145 helicopters, known as Jupiter. This is aimed at enhancing the training infrastructure at RAF Shawbury, addressing the increasing demand for rotary-wing pilots and rear crew members.

As of now, the rotary-wing component of UKMFTS includes 29 Airbus H135s for basic training and several H145s for advanced training, focusing on operational scenarios and winching tasks. This initiative reflects the UK MoD's commitment to addressing pilot shortages identified in past defence reviews, thereby reinforcing the capability and readiness of the British military's aircrew.

https://upload.wikimedia.org/wikipedia/commons/1/14/Airbus_Helicopters_H145_Jupiter_%2840961377550%29.jpg

FLIGHT TRAINING – ASIA PACIFIC

The Asia Pacific market for military flight training is projected to grow from about US$789 million in 2025 to roughly US$1.1 billion by 2030, reflecting steady annual growth of 7.6%. Total spending over 2025 to 2030 is expected to reach US$6 billion, placing the region third globally. Long running border tensions continue to shape training demand, including India and Pakistan, India and China, Japan and China, the Koreas and the Taiwan Strait.

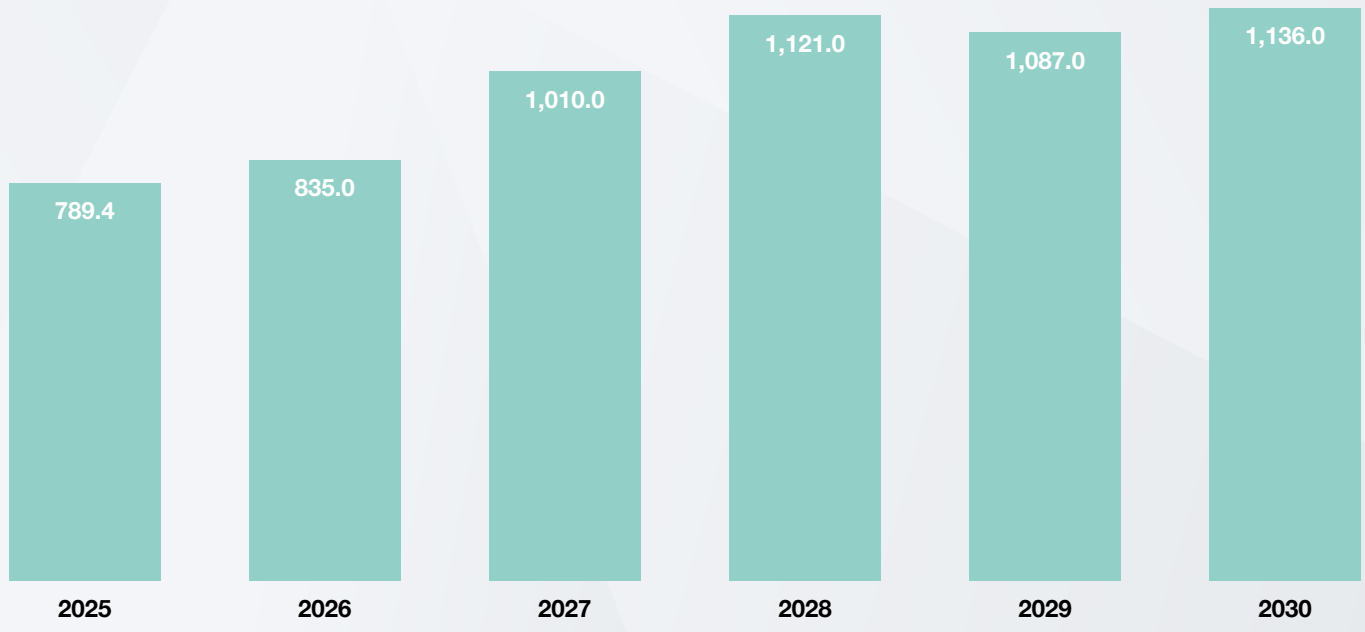
Australia, India, Japan, Malaysia and South Korea account for the largest shares of regional spending. Their estimated totals for 2025 to 2030 are about US$1.7 billion, US$1.6 billion, US$1.2 billion, US$720 million, and US$290 million. Several major programmes underpin this growth. Australia's Project Air 6002 Phase 1, which will replace the Hawk 127 fleet, is valued at around US$3.5 billion. India is advancing both the LCA Tejas trainer and the HLFT 42 lead-in fighter trainer, with budgets of roughly US$1.6 billion and US$1.5 billion, respectively. Malaysia is moving ahead with its FA 50 Golden Eagle programme, valued at about US$920 million.

ASIA PACIFIC: FLIGHT TRAINING MARKETS, 2025-2030, US$ MILLIONS

Table 5: Asia Pacific: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	624.0	700.0	887.0	983.0	984.0	1,068.0	5,246.0
Trainer Aircraft-Rotary Wing	60.0	25.0	25.0	25.0	30.0	-	165.0
Training Synthetic Programmes	105.4	110.0	98.0	113.0	73.0	68.0	567.4
Total	**789.4**	**835.0**	**1,010.0**	**1,121.0**	**1,087.0**	**1,136.0**	**5,978.4**

Figure 5: Asia Pacific: Flight Training Market, 2025-2030, US$ Millions



AUSTRALIA

TRAINER AIRCRAFT-FIXED WING/ IN-SERVICE SUPPORT - HAWK 127 LEAD-IN FIGHTER TRAINING AIRCRAFT:

In February 2022, BAE Systems was awarded a contract worth US$1.1 billion by the Royal Australian Air Force (RAAF) to modernise and extend the in-service support for the Hawk 127 lead-in fighter training system. With the RAAF currently operating 33 Hawk 127s, this support programme will ensure continued training for frontline fighter pilots until 2031. BAE Systems will be responsible for providing maintenance, software and hardware upgrades, engineering services, and supply chain support to the RAAF under the terms of the contract.

The Hawk 127 lead-in fighter training system plays a crucial role in equipping aircrew with the necessary skills and experience to bridge the gap between initial training and operating advanced Air Combat fast jet aircraft. The upgrade programme also aims to better prepare pilots for advanced RAAF platforms such as the Boeing F/A-18F Super Hornet, EA-18G Growler, and Lockheed Martin F-35A.

BAE Systems has noted that previous upgrade work in 2019 has brought the RAAF Hawks to a state of similarity with the UK Royal Air Force's Hawk T2 aircraft. The current contract covers the continuation of existing in-service support and upgrades, including the installation of the new Rolls-Royce 951 Adour engine by 2025, thereby aligning the platform further with the UK Royal Air Force's T2 Hawk. The commonality between the Australian and the UK Hawk fleets is expected to foster collaboration opportunities and reduce costs in the future.

According to Australian Defence Minister Peter Dutton, this 10-year contract with BAE Systems Australia will sustain 350 direct jobs and create opportunities for up to 900 direct and indirect jobs within the industry. It will also progressively enhance the performance of the fast-jet combat training aircraft until 2031.

The RAAF's estimated expenditure on this programme is approximately US$1.1 billion, with around US$675 million expected to be spent between 2025 and 2030.

TRAINER AIRCRAFT-FIXED WING/ HAWK 127 LEAD-IN FIGHTER TRAINING AIRCRAFT REPLACEMENT:

As part of Project AIR 6002 Phase 1, Australia is seeking to acquire a lead-in fighter training system to replace its existing lead-in fighter trainer (LIFT) solution. This new platform will be responsible for training both pilots and weapons system operators, serving as a transitional link between the PC-21 and the F-35A, EA-18G, and F/A-18F combat aircraft.

In June 2020, the Australian Department of Defence (DoD) released a Request for Information (RFI) through the Capability Acquisition and Sustainment Group (CASG) for the replacement of the Royal Australian Air Force's (RAAF) fleet of 33 BAE Hawk 127 lead-in fighter trainers (LIFT). The Hawk 127s are scheduled for retirement by 2032, and the RAAF intends for the replacement platform to enter service in 2030. This requires the signing of a contract for new lead-in fighter trainers (LIFT) no later than 2027.

Several potential contenders are being considered for this replacement programme, including the Saab-Boeing T-7A Red Hawk, Lockheed Martin and Korean Aerospace Industries' T-50 Golden Eagle, Leonardo M-346 Master, Textron Scorpion, and a new variant of the BAE Hawk.

Although the contract is yet to be signed, Australia is estimated to allocate approximately US$3.5 billion towards the procurement of new trainer jets between 2027 and 2032, with around US$900 million expected to be spent between 2025 and 2030.

TRAINER SYNTHETIC PROGRAMMES/ AEROSPACE SIMULATOR INTEGRATED SUPPORT AND TRAINING (ASIST):

In March 2023, Australia signed a 19-year contract under the Aerospace Simulator Integrated Support and Training (ASIST) programme. The agreement was awarded to CAE Australia Pty Ltd, tasked with providing simulator-based training, sustainment, maintenance and upgrade services for the Australian Defence Force’s aircrew.

Under ASIST, CAE Australia supports platforms including the KC-30A tanker, C-27J transport, Hawk 127 lead-in fighter and C-130J airlifter across bases at Amberley, Williamtown, Pearce and Richmond.

The objective of this programme is to ensure full-life training support for Australia's military aviation systems, improve readiness, embed simulator integration and deliver cost-effective aircrew mentoring across multiple platforms. The flexible contract structure allows periodic upgrade of training systems and adapts to evolving requirements.

While a specific total cost was not publicly disclosed, the long-term horizon and scope signify a major investment in simulator-centric training infrastructure. The 19-year period runs from 2023 through to 2042.

Deliverables include high-fidelity mission simulation, engineering support, logistics sustainment, and curriculum updates, strengthening Australia's sovereign training capability over the programme life.

BRUNEI

TRAINER AIRCRAFT-ROTARY WING/H145M:

In April 2024, Brunei placed an order for six Airbus H145M helicopters to replace the retired Bolkow BO-105 helicopters, which had been in service for 41 years until their decommissioning in 2022. The H145M helicopters will support a range of missions, including training, close air support, aerial observation, and potential roles in medical evacuation and special operations. While the exact contract amount has not been disclosed, it is estimated that Brunei will spend over US$150 million for the programme. The introduction of these helicopters is expected to occur gradually from 2026 to 2029.

The H145M variant is known for its versatility and high performance, equipped with twin turboshaft engines, a cruising speed of 152 miles per hour, and a range of up to 420 miles. It can be armed with various weapons, including machine guns and anti-armour missiles, enhancing its operational capabilities.

This acquisition is part of Brunei's broader military modernisation strategy, which also includes the recent addition of two Airbus C295MW transport aircraft, further bolstering the air force's capabilities for future missions.

INDIA

TRAINER AIRCRAFT-FIXED WING/ HTT-40 BASIC TRAINER AIRCRAFT:

In March 2023, the Indian Ministry of Defence (MoD) and Hindustan Aeronautics Limited (HAL), a domestic manufacturer, reached an agreement for the acquisition of 70 HTT-40 basic trainer aircraft for the Indian Air Force (IAF) at a cost of US$388.5 million (INR 68 billion). The contract includes the purchase of associated equipment and training aids, including simulators, over a period of six years. The HTT-40 aircraft will be used by the IAF for various training purposes such as basic flight training, aerobatics, instrument flying, and close formation flights. It will also serve secondary roles like navigation, night flying, and tasks such as evacuation, search and rescue, and humanitarian assistance and disaster relief (HADR) operations.

https://en.wikipedia.org/wiki/HAL_HTT-40#/media/File:HAL_HTT-40.jpg

The Indian Air Force currently utilizes Swiss-made PC-12 Mark II basic trainers, and the HTT-40 is intended to supplement their existing fleet. Presently, the IAF operates 260 trainer aircraft, comprising basic and advanced trainers, falling short of the required total of 388.

The HTT-40 trainer jet features an air-conditioned cockpit, modern avionics, and hot refuelling capabilities. It is equipped with zero-zero ejection seats, enabling safe ejections at zero altitude and zero airspeed. HAL invested US$85 million in the design and development of the HTT-40, which involved the creation of two prototypes and conducting over 550 test flights.

Currently, the HTT-40 incorporates 56% of Indian-made systems and components, with the MoD aiming to increase this figure to 60%. The HTT-40 programme is supported by a supply chain consisting of over 100 domestic, private, and small-scale enterprises, which will generate 1,500 direct employment opportunities and 3,000 indirect employment opportunities through local suppliers.

The delivery of the trainer jets is set to begin in 2026 and is expected to be completed by 2030. However, the aircraft is still pending full airworthiness certification from the Centre for Military Airworthiness and Certification (CEMILAC), which raises concerns about possible delays in the planned delivery schedule.

TRAINER AIRCRAFT-FIXED WING/ LCA TEJAS TRAINER VERSION:

In March 2006, the Indian Ministry of Defence (MoD) placed an initial order on behalf of the Indian Air Force (IAF) for 20 light combat aircraft (LCA), specifically the Tejas MK-1, from Hindustan Aeronautics Limited (HAL). This order included four twin-seat trainers and 16 single-seat LCAs, meeting Initial Operational Clearance (IOC) standards. Later, in December 2010, HAL received an additional contract for four trainers and 16 single-seat LCAs (MK-1s) that met Final Operational Clearance (FOC) standards. The Tejas is a multi-role LCA designed by the Aeronautical Development Agency (ADA) and developed by HAL for the IAF and the Indian Navy.

On October 4, 2023, HAL delivered the first twin-seater trainer variant of the LCA to the IAF, and an additional seven units in 2024.

Over the years, HAL has implemented several upgrades to the LCAs, and the current LCA MK-1A is the most advanced version. It features an Active Electronically Scanned Array (AESA) radar, an electronic-warfare (EW) suite with radar warning capabilities and self-protection jamming, a Digital Map Generator (DMG), Smart Multi-function Displays (SMFD), a Combined Interrogator and Transponder (CIT), an Advanced Radio Altimeter, and other advanced features. In November 2016, the Indian MoD announced plans to procure an additional 83 units of the LCA MK-1A, which includes 10 trainer variants. However, the programme faced delays, and a formal contract was awarded only in February 2021. The IAF is scheduled to receive the trainer jets by 2027.

In September 2023, Indian Air Chief Marshal VR Chaudhari stated that the IAF aims to acquire an additional 97 units of the Mark 1A fighter jets in the coming years. A request for proposal (RfP) was issued in April 2024. Based on previous trends, it is estimated that this proposed deal will include approximately 15 trainer jets.

The Indian MoD is expected to spend around US$1.6 billion to procure approximately 33 Tejas LCA trainer jets by 2035, with roughly US$900 million allocated for the period between 2025 and 2030.

TRAINER AIRCRAFT-FIXED WING/ HINDUSTAN LEAD-IN FIGHTER TRAINER (HLFT)-42:

The Indian Air Force (IAF) is currently modernising its ageing fleet of fighter aircraft. As part of this plan, several crucial projects are in progress, including the development of single-seater aircraft such as the LCA Mk II, Advanced Medium Combat Aircraft (AMCA), and Multi-Role Fighter Aircraft (MRFA).

These programmes have created a need for the next generation of fighter jet trainers that can align with these advanced platforms. Keeping this in mind, Hindustan Aeronautics Limited (HAL), is now looking to design and develop the Hindustan Lead-in Fighter Trainer (HLFT)-42, a next-generation supersonic trainer.

The HLFT-42 is expected to play a significant role in the country's modern combat aircraft training and will be equipped with state-of-the-art avionics, including the Active Electronically Scanned Array (AESA) radar, an advanced electronic warfare suite, Infrared Search and Track (IRST) systems, and a Fly-by-Wire control (FBW) system.

The project was initiated by HAL in 2017 and has since made significant progress in terms of its design. Currently, the company is focused on developing a next-generation aero-engine with a higher thrust, which will be followed by other critical elements such as wind tunnel testing and the fabrication of the actual aircraft. The scheduled timeline for the completion of these capabilities is 2025-2026.

The HLFT-42 is also designed to be highly customizable for the export market. It will offer scalability and interoperability, allowing it to be configured according to the specific requirements of customers.

While the price of the HLFT-42 has not been disclosed by HAL, the target price point to remain competitive in the global market is estimated to be around US$20 million for the bare flyaway unit cost of the aircraft. The Indian Ministry of Defence (MoD) is projected to allocate approximately US$1.5 billion between 2025 and 2040 for the development and procurement of these advanced trainers, with around US$165 million assigned for 2025 and 2030.

TRAINING SYNTHETIC PROGRAMME/MI-17V5, MIG-29 TRAINING VIA SIMULATORS:

In June 2020, the Indian Ministry of Defence (MoD) awarded a contract worth US$183.5 million to the domestic company Alpha Design Technologies Limited (ADTL) to train Indian Air Force (IAF) pilots using simulators. This contract involves the establishment of two training centres and provides for 1,200 hours of training each year over the next 20 years.

ADTL will adopt a "build, operate, and maintain" model, meaning they will not only construct the physical infrastructure and provide the simulators but also conduct the training sessions. These simulation centres will focus on training pilots for the Russian Mi-17 helicopter and will feature full-motion simulators.

Additionally, in October 2020, ADTL secured another contract worth US$102.3 million to establish and operate a MiG-29 simulator centre at the Adampur airfield near Jalandhar, Punjab, for a duration of 20 years, until 2040.

This programme aims to develop an integrated network of simulation tools to create realistic training environments for IAF pilots and crew members, allowing for effective joint training. The Indian MoD is expected to invest approximately US$285.8 million in these programmes, with an estimated expenditure of US$60 million planned for the period between 2025 and 2030.

TRAINING SYNTHETIC PROGRAMME/ RAFALE SIMULATORS:

India is strengthening its military aviation capabilities by planning to acquire two Rafale Simulation Centres for the Indian Navy. This initiative aims to improve pilot training, especially considering ongoing negotiations for 26 Rafale M fighter jets, which will include both single-seater and two-seater variants. The procurement of these simulators is essential, particularly because the two-seater Rafale M models cannot operate from aircraft carriers, posing a unique training challenge.

The new simulation centres are designed to provide a highly realistic training environment. They will enable pilots to engage in complex tactical scenarios, optimizing their flight time and enhancing their decision-making skills. The simulators will cover various operational domains, including electronic warfare, intelligence gathering, and combat tactics, ensuring that pilots are well-prepared for real-world challenges.

The programme is expected to progress alongside the acquisition of Rafale jets, which is projected to continue until full operational capability is reached. While the exact contract amount for the simulation centres has not been disclosed, it is estimated that approximately US$20 million will be spent on this initiative between 2025 and 2030.

JAPAN

TRAINER AIRCRAFT-FIXED WING/T-6 TEXAN II INTEGRATED TRAINING SYSTEM:

In November 2024, the Japan Ministry of Defence (MoD) selected the Beechcraft T-6 Texan II Integrated Training System (ITS) to modernise pilot training for the Japan Air Self Defence Force (JASDF). The contract announcement was made on 28 January 2025 by Textron Aviation Defence LLC, the supplier, working in coordination with Japan's Kanematsu Corporation.

The objective is to replace the ageing Fuji T 7 basic trainer and deliver a fully integrated training solution. The package includes T-6 trainers, ground-based training systems, instructor-pilot and maintainer training, logistics and sustainment support.

While the exact cost has not been publicly disclosed, the selection follows a major procurement described as a "major project" in Japan's FY2025 budget. Deliveries are scheduled to begin in the 2028 fiscal year, with operational capability ramping up as instructor and student training progresses. Overall, this new training system provides the JASDF with a modern, efficient primary-trainer fleet and supports its transition to advanced fighter wings in response to future operational demands.

TRAINER AIRCRAFT-FIXED WING/ T-4 TRAINER JET REPLACEMENT:

In July 2021, the Japan Acquisition, Technology & Logistics Agency (ATLA) issued a Request for Information (RFI) to explore potential successors for the Japan Air Self-Defence Force (JASDF) T-4 trainer jets, of which there are nearly 200 in service. The Kawasaki T-4 is a subsonic intermediate jet trainer that has been operational since 1988. The replacement for the T-4 could be either domestically developed or sourced from overseas. Given the JASDF's history of using domestic trainer aircraft, there is a possibility of developing a new domestic trainer in collaboration with Japanese aviation industries, potentially involving Kawasaki Heavy Industries (KHI).

Leonardo has responded to the RFI with its M-346 jet trainers, which offer a fully integrated advanced training system, including simulators, ground training devices, and an in-house developed Live, Virtual, and Constructive (LVC) environment.

As reported in March 2024, Japan and the U.S. are in discussions to co-develop a new trainer aircraft for the JASDF to succeed the T-4. This replacement programme is expected to begin with the release of a procurement tender in 2024. It is estimated that the JASDF will allocate approximately US$4 billion to US$5 billion between 2025

https://en.wikipedia.org/wiki/Fuji_T-5#/media/File:T-5_Ozuki_(22103680772).jpg

and 2035 to replace the existing jets, with around US$1.1 billion projected to be spent on this programme from 2025 to 2030.

TRAINER AIRCRAFT-FIXED WING/ FUJI T-5 TRAINING AIRCRAFT:

Japan has launched a procurement programme for a new batch of Fuji T-5 training aircraft to bolster the Japan Maritime Self-Defence Force (JMSDF). In September 2024, a contract worth approximately US$53 million was awarded to Subaru Corporation for the acquisition of 30 new T-5 aircraft. This initiative is designed to sustain and enhance the JMSDF's training capabilities, especially as the existing fleet of T-5s, in service since the late 1980s, nears the end of its operational lifespan by 2027.

The T-5, also referred to as the KM-2Kai, is equipped with a single 350 hp Rolls-Royce 250-B17D turboprop engine, allowing it to achieve a maximum speed of 193 knots and a range of 510 nautical miles. Its low-wing design, retractable landing gear, and dual controls make it well-suited for training new pilots while also advancing the tactical skills of seasoned aircrews.

This procurement programme will extend till 2034, during which the JMSDF will systematically incorporate these aircraft into its training operations.

MALAYSIA

TRAINER AIRCRAFT-FIXED WING/ FA-50 GOLDEN EAGLE FLIT-LCA:

In February 2023, the Malaysian Ministry of Defence (MoD) awarded a contract worth US$920 million to Korea Aerospace Industries (KAI) for the supply of 18 Fighter Lead In Trainer-Light Combat Aircraft (FLIT-LCA). These FLIT-LCAs will replace the Royal Malaysian Air Force's (RMAF) existing fleet of 18 BAE Hawk 108 and 208 light combat aircraft, as well as seven Aermacchi MB-339CM trainers.

In December 2018, Malaysia issued a request for information (RFI) from various manufacturers for its FLIT-LCA programme, receiving eight responses. The proposed platforms included the Boeing T-7 Red Hawk, South Korea's KAI FA-50, the Italian Leonardo M-346 Master, India's HAL Tejas, China-Pakistan's PAC JF-17 Thunder, China's Hongdu L-15, Russia's Yakolev Yak-130, and the Czech Aero Vodochody L-39NG. However, due to funding constraints, the programme was put on hold for approximately 18 months. The official tender was released in June 2021, shortly after Malaysia accused China of sending 16 military aircraft near its airspace over the South China Sea.

The FA-50, a combat-capable variant of the T-50 Golden Eagle trainer, emerged as the chosen aircraft for Malaysia. With this victory, the number of Southeast Asian countries operating the T-50 and its derivatives, including Indonesia, the Philippines, and Thailand, will rise to four.

Malaysia will allocate US$920 million towards the procurement of these FLIT-LCAs, with KAI commencing deliveries in 2026 and concluding in 2030.

SINGAPORE

TRAINING SYNTHETIC PROGRAMME/ PROJECT SOAR:

The Republic of Singapore Air Force (RSAF) has initiated a trial programme called Project SOAR, aimed at utilising artificial intelligence and data analytics to train and evaluate pilots. Typically, newly graduated pilot trainees from Basic Military Training undergo an assessment at the Air Grading Centre (AGC) in Australia after passing screening and aptitude tests. At the AGC, they are evaluated by flying the CT-4B training aircraft. Under Project SOAR, trainees will undergo a 10-day programme, at the Air Force Training Command in Singapore before proceeding to the AGC.

During training, the trainees will be equipped with flight simulators and sports wearables that monitor their eye movement, heart rate, and facial expressions. The collected data is then fed into a machine-learning system that builds a predictive model to estimate the trainee's potential for success in subsequent training.

The RSAF is projected to allocate approximately US$46 million to this programme during the forecast period.

SOUTH KOREA

TRAINER SYNTHETIC PROGRAMMES/ KF-16 SIMULATOR UPGRADE:

In September 2025, Lockheed Martin was awarded a six-year contract to modernise nine flight simulators for the Republic of Korea Air Force's KF-16 fleet, updating them to the F-16 V "Viper" standard. Under the contract, simulators at Seosan and Chungju air bases will receive new systems-integration work and upgraded software to replicate the latest aircraft avionics and mission systems. Local manufacture and support will be provided through Korea Aerospace Industries (KAI) as Lockheed Martin's partner.

The objective is to strengthen pilot training accuracy, mission readiness and safety by providing ground-based training environments that closely simulate real-flight conditions, while maintaining currency with actual platform evolution. No definitive contract cost was publicly disclosed at award announcement. The work will span six years and will be completed by 2031.

TRAINER SYNTHETIC PROGRAMMES/ P-8A TRAINING SYSTEMS:

In April 2025, Boeing was awarded a US$133.5 million contract to deliver advanced training systems for the P 8A Poseidon maritime aircraft fleet of the Republic of Korea Air Force. The contract covers software development, integration and installation of Phase 2 training platforms.

The equipment package includes one Operational Flight Trainer, one Weapons Tactics Trainer, one Maintenance Electronic Classroom, and a Training System Support Centre. Instructor-led electronic classroom training is also part of the scope.

The objective is to upgrade South Korea's P-8A training infrastructure so aircrew and maintenance personnel can train efficiently, simulate real-mission environments and support the Poseidon maritime surveillance role. The work is to boost readiness, reduce live-flight training burden and improve mission systems proficiency.

The contract work will be performed mainly in St. Louis, Missouri, USA, with some work in Pohang, South Korea. Completion of the programme is expected by October 2028.

https://en.wikipedia.org/wiki/KAI_T-50_Golden_Eagle#/media/File:Lead_In_Fighter_Trainer_TA-50_in_KAI.jpg

TRAINER AIRCRAFT-ROTARY WING/ BELL 505/JET RANGER X:

In May 2022, the South Korean Defence Acquisition Programme Administration (DAPA) finalized a contract worth US$132.8 million with Bell Textron Asia, a U.S. aerospace firm, for the procurement of trainer helicopters. This agreement entails the acquisition of 40 Bell 505 helicopters and eight simulators by 2025. These helicopters and simulators will be utilized by both the Republic of Korea Army (ROKA) and the Republic of Korea Navy (ROKN) to train their next generation of helicopter pilots.

The Bell 505 Jet Ranger X, powered by a Safran Arrius 2R FADEC-controlled turboshaft engine, is capable of carrying a load of 680kg. It boasts a maximum cruise speed of 232 km/h and a range of 617km. With seating capacity for one pilot and up to four passengers, the Bell 505 is equipped with state-of-the-art Garmin avionics and features a dual-channel FADEC-controlled engine. This makes it one of the most advanced short-light single-engine aircraft available in the market.

The Bell 505 is widely used as a training aircraft by various military forces worldwide, including the Indonesian Navy, Jamaican Air Force, Japanese Coast Guard, UAE military, and Montenegro Defence Force. South Korea is expected to receive the helicopters and simulators by the end of 2025.

TRAINER AIRCRAFT-FIXED WING/ TA-50 BLOCK 2:

In June 2020, Korea Aerospace Industries (KAI) was awarded a contract worth US$572.8 million (KRW 688.3 billion) by South Korea's Defence Acquisition Programme Administration (DAPA), to develop and deliver 20 TA-50 Block 2 lead-in fighter trainer/light attack aircraft.

The TA-50 Block 2 is an upgraded version of the TA-50 Block 1, of which 22 units are currently in service with the Republic of Korea Air Force (RoKAF). The TA-50 is very similar to KAI's T-50 Golden Eagle advanced jet trainer but is equipped with an Elta EL/M-2032 fire-control radar. It is also capable of carrying AIM-9 Sidewinder air-to-air missiles and AGM-65 Maverick air-to-surface missiles.

The addition of these 20 TA-50 Block 2 aircraft will help fill the gap left by some KF-16 fighter jets, which were previously used for training purposes but have now been assigned to combat duties as replacements for ageing F-5 aircraft. South Korea is expected to receive the trainer jets by 2025.

THAILAND

TRAINER AIRCRAFT-FIXED WING/ BEECHCRAFT T-6TH AND AT-6TH AIRCRAFT-SUSTAINMENT SUPPORT:

In June 2025, during the Paris Air Show, Textron Aviation Defence and Thai Aviation Industries (TAI) signed a Memorandum of Agreement to establish a sustainment support programme for the Royal Thai Air Force's fleets of Beechcraft T 6TH trainer and Beechcraft AT 6TH light-attack aircraft.

Textron, based in Wichita, Kansas, is the OEM for these aircraft. TAI, with deep experience in Thai aircraft maintenance and repair operations, will act as prime contractor and local partner. The objective of the programme is to ensure long-term readiness of the RTAF's T-6TH and AT-6TH fleets by delivering maintenance, logistics support, spare-parts supply, in-country technical services and sustainment of trainer and light-attack operations.

While the contract cost was not publicly disclosed, the agreement covers long-term sustainment over multiple years, signalling a major investment in Thailand's aviation training and support infrastructure. Deliverables begin shortly after the MoA signature in 2025. Full operational support is scheduled to roll out over the coming years as both aircraft types continue in service with the RTAF.

https://www.reddit.com/r/WarplanePorn/comments/1gu5u0l/first_vietnam_people_air_force_t6_texan_ii_1080720/

TRAINER AIRCRAFT-FIXED WING/ CT-4E TRAINERS - REPLACEMENT:

Thailand's Royal Thai Air Force (RTAF) is preparing to procure new trainer aircraft to replace its aging fleet of New Zealand-built CT-4E trainers, which are scheduled for retirement by 2031. This initiative is part of a broader modernisation strategy outlined in the RTAF's recent whitepaper, emphasizing the significance of long-term planning and the enhancement of training capabilities. The RTAF aims to introduce a new fleet of basic trainers starting in fiscal year 2032, coinciding with the retirement of the existing CT-4E aircraft. While the exact contract amount for this procurement has yet to be finalized, estimates indicate that Thailand may invest approximately US$100 million to acquire these aircraft, with procurement anticipated to begin in 2026.

VIETNAM

TRAINER AIRCRAFT-FIXED WING/ T-6 TEXAN II:

In December 2022, Vietnam entered into a contract with Textron Aviation to procure 12 Beechcraft T-6 Texan II trainer aircraft. This initiative is focused on modernising the country's pilot training program, ensuring that Vietnamese aviators receive high-quality instruction with the latest technology.

The T-6 Texan II is a versatile, single-engine turboprop aircraft tailored for primary flight training. Its advanced avionics and durable design make it well-suited for preparing new pilots before they advance to more complex aircraft. In addition to supplying the aircraft, Textron will also provide training for maintenance technicians and offer English language instruction for Vietnamese pilots.

The delivery of these aircraft is scheduled to take place between 2024 and 2027, with three T-6 trainers expected by the end of 2024 and the remaining aircraft delivered by 2027. While the total contract amount has not been publicly disclosed, estimates suggest that Vietnam will invest over US$160 million in this procurement between 2023 and 2027.

FLIGHT TRAINING – SOUTH AMERICA

South America is expected to spend about US$1.5 billion on military flight training between 2025 and 2030, making it the fourth-largest regional market. The overall demand is shaped by slow economic growth, limited local aerospace production and generally stable relations between neighbouring countries.

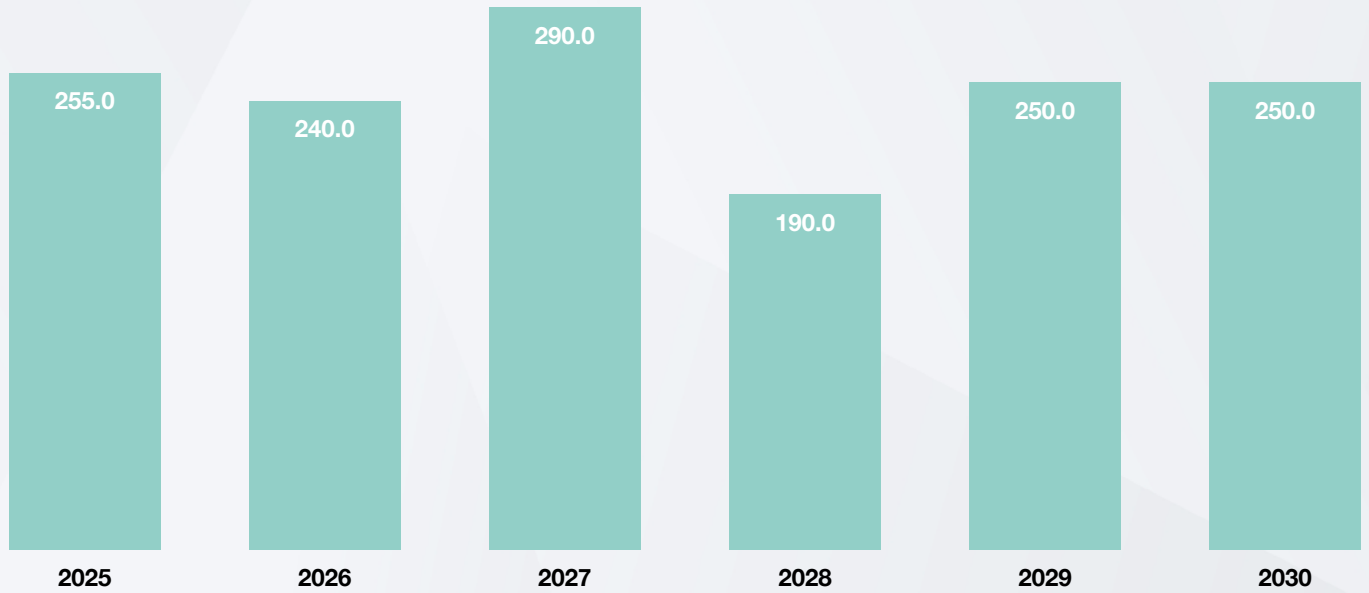
Brazil is the biggest contributor, with projected spending of around US$960 million. Colombia follows with roughly US$515 million. Several major programmes are driving these numbers. Brazil is considering a fleet of thirty M-346 trainer aircraft in a deal estimated at US$1.5 billion. Colombia plans to strengthen its training pipeline with twenty TA-50 and FA-50 advanced jet trainers valued at around US$600 million.

SOUTH AMERICA: FLIGHT TRAINING MARKETS, 2025-2030, US$ MILLIONS

Table 6: South America: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	240.0	225.0	275.0	175.0	250.0	250.0	1,415.0
Trainer Aircraft-Rotary Wing	15.0	15.0	15.0	15.0	-	-	60.0
Total	**255.0**	**240.0**	**290.0**	**190.0**	**250.0**	**250.0**	**1,475.0**

Figure 6: South America: Flight Training Market, 2025-2030, US$ Millions



BRAZIL

TRAINER AIRCRAFT-ROTARY WING/ H125 HELICOPTERS:

In September 2022, the Brazilian armed forces awarded Airbus Helicopters a contract to acquire a total of 27 single-engine H125 helicopters. This procurement aims to enhance the training capabilities of the Brazilian Navy and Air Force. The contract was placed through the Combat Aircraft Programme Coordinating Committee (COPAC) and will replace the ageing Eurocopter AS 350 Esquilo and Bell 206 JetRanger helicopters currently in service with the Brazilian Air Force and Navy, respectively. The H125 helicopters will be manufactured at the Helibras factory in Itajubá, Brazil, where the H225Ms for the Brazilian armed forces are also assembled.

The new H125 helicopters will feature a G500H TXi double glass cockpit and VEMD (Vehicle & Engine Multifunction Display). They will be compatible with night vision goggles (NVG) and equipped with various mission equipment, including a winch and a hook, to ensure that the training of future pilots closely simulates real mission scenarios.

Brazil is expected to allocate approximately US$81 million to the programme between 2022 and 2028, with deliveries scheduled to be completed by 2028.

TRAINER AIRCRAFT-FIXED WING/ GRIPEN-F:

In October 2014, Brazil entered into a contract with Saab AB to modernise the ageing fleet of fighter jets in the Brazilian Air Force (FAB) with advanced technology. This agreement entails the procurement of a total of 36 Gripen aircraft, comprising 28 single-seat Gripen E variants and 8 dual-seat Gripen F training variants. The programme is expected to run until 2027, aligning with the scheduled delivery of the aircraft.

The total value of this extensive contract is approximately US$4.25 billion, which includes not only the aircraft but also logistical support, training, and an industrial cooperation agreement that promotes local manufacturing capabilities.

The Gripen E and F aircraft are designed for multi-role operations, boasting advanced avionics, increased range, and exceptional combat capabilities. They are powered by the General Electric F414-GE-39E engine, which can achieve speeds of up to Mach 2. The Gripen programme also prioritises technology transfer, enabling Brazil to develop and maintain these aircraft domestically, thus enhancing its defence autonomy and operational readiness against future threats. An estimated US$300 million is projected to be spent in this programme during the period from 2025 to 2030.

https://upload.wikimedia.org/wikipedia/commons/7/71/200923ASO_Anderson_Soares_50.jpg

TRAINER AIRCRAFT-FIXED WING/M-346:

Brazil is progressing towards the procurement of 30 Leonardo M-346 aircraft, as preliminary negotiations have taken place between Brazil and Italy. The objective of this acquisition is to replace the ageing AMX jets currently in service with the Brazilian Air Force (FAB) and provide a modern training platform for the Brazilian Navy. The deal proposes the delivery of 24 M-346 units to the FAB and at least six to the Navy.

The M-346 is a subsonic jet designed for advanced training, featuring a dual-seat configuration that aligns with the operational requirements of both air force and naval training missions. It is equipped for light attack missions, making it a versatile addition to Brazil's fleet.

The programme is expected to proceed in conjunction with discussions at the upcoming G20 summit in Rio de Janeiro in December 2024. While the specific contract amount has not been disclosed, it is estimated that Brazil will be spending more than US$1 billion in acquiring these aircraft.

COLOMBIA

TRAINING REQUIREMENT FOR GRIPEN-F FIGHTER AIRCRAFT

In November 2025, Saab AB signed a contract with the Colombian Government to supply 17 of its Gripen E/F fighter aircraft, including 15 single-seat “E” variants and 2 dual-seat “F” trainer versions.

The contract value is reported at US$3.6 billion. Saab will supply the aircraft along with associated equipment, training services and long-term support. The training component is embedded in the contract and covers pilot conversion for the dual-seat F-version and full operational integration.

The objective is to modernise the Colombian Aerospace Force by replacing its aging fleet of IAI Kfir fighters, align with regional defence standards and establish a long-term industrial partnership.

Deliveries are planned between 2026 and 2032.

TRAINER AIRCRAFT-FIXED WING/ T-6C TEXAN II TRAINING TURBOPROPS:

In January 2023, the Colombian Air Force (FAC) signed a contract worth US$41 million with Textron Aviation for the acquisition of four T-6C Texan II training turboprops. The T-6C Texan II is used for advanced training and will replace the C172 and T-27 Tucano aircraft, which were previously used for primary and basic instruction, respectively. The FAC and the Colombian Ministry of Defence plan to have a total fleet of 24 T-6C Texan II aircraft. Additionally, the FAC was given authorization to purchase more Cessna 172 Skyhawk aircraft for basic training purposes. The T-6C Texan II will replace the older T-37 Tweet jets, while the C172 will replace the T-41 Mescalero (military version of the Skyhawk).

Prior to this contract, Colombia had already ordered three T-6C Texan II aircraft in 2020 for a total of US$28.7 million. The country had an option to purchase up to eight more aircraft. The following year, Colombia placed separate orders for an additional four T-6C Texan II aircraft, with a combined value of US$37 million. As of December 2022, the FAC had received six out of the seven aircraft that were previously ordered. The remaining aircraft, including the newly ordered ones, are expected to be delivered by 2025.

Overall, Colombia is estimated to spend approximately US$106.7 million on this programme.

TRAINER AIRCRAFT-FIXED WING/TA-50, FA-50 - ADVANCED JET TRAINERS:

The Colombian Air Force is set to modernise its fleet by procuring advanced jet trainers capable of both air-to-air and air-to-ground combat. In May 2022, it was reported that the Air Force had chosen a combination of the TA-50 and FA-50 Golden Eagles, developed by Korea Aerospace Industries (KAI), as its next-generation trainers. Although Colombian military officials have denied these reports, sources indicate that Colombia plans to acquire around 20 of these jets for approximately US$600 million, with deliveries expected by 2030.

The Golden Eagle, developed by KAI in partnership with Lockheed Martin in the late 1990s, entered service in 2005. It features a General Electric F404 turbofan engine, allowing it to reach speeds of up to Mach 1.5 and a flight range of 1,850 kilometres (1,150 miles). The aircraft can be equipped with short-range, infrared-guided air-to-air missiles as well as air-to-ground munitions.

These new trainers will replace the retired Cessna A-37B Dragonfly light-attack jets, which were previously used for counterinsurgency operations and tactical training. Additionally, they will help bridge the capability gap left by the ageing fleet of Israeli-made Kfir jets, which currently serve as Colombia's main combat aircraft.

FLIGHT TRAINING – MIDDLE EAST

The Middle East is set to spend about US$1.4 billion on military flight training between 2025 and 2030, making it the fifth-largest market worldwide. Ongoing conflicts continue to shape demand. Fighting between Israel and Palestine, the civil war in Syria, the instability linked to armed groups in Iraq, Syria and Turkey, and the humanitarian emergency in Yemen all add pressure on air forces to maintain strong training pipelines.

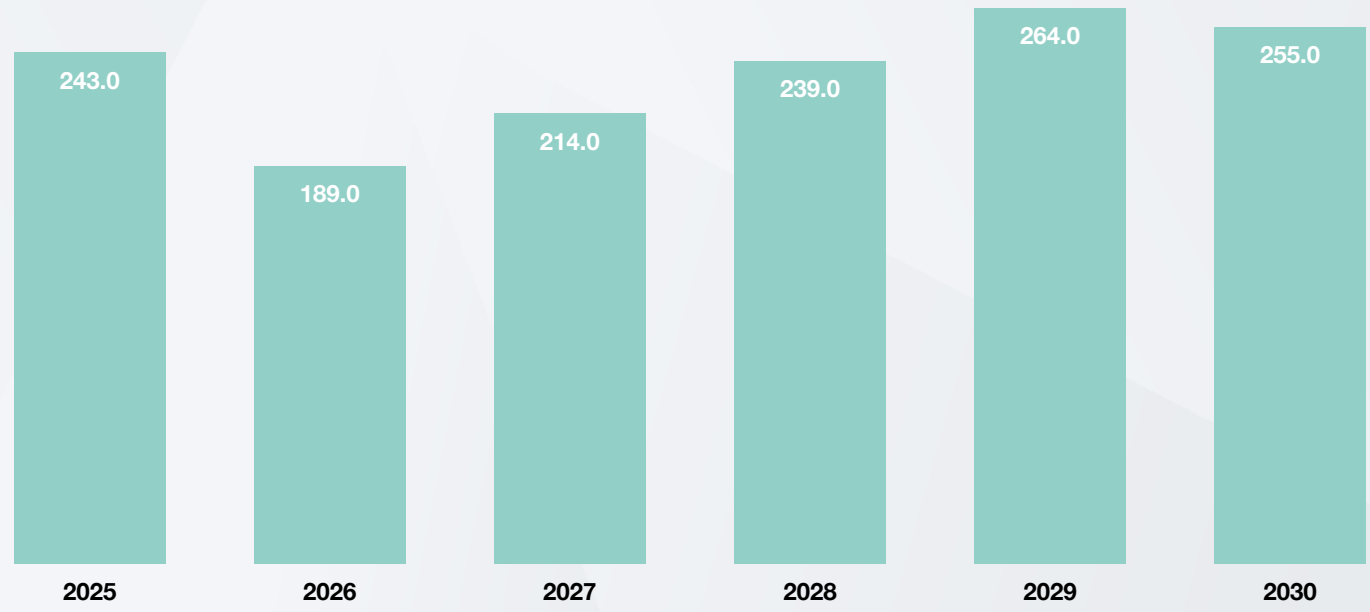
The UAE dominates regional spending, accounting for roughly US$1.3 billion of the total. Its major programmes include the B-250 light trainer fleet and the planned purchase of forty eight Hongdu L-15 advanced jet trainers. Israel follows with about US$64 million in planned spending, driven mainly by its network of ten F-16 Mission Training Centres. The landscape shows that training investment is closely tied to security conditions, with countries facing persistent threats prioritising advanced training systems to keep their aircrews ready.

MIDDLE EAST: FLIGHT TRAINING MARKETS, 2025-2030, US$ MILLIONS

Table 7: Middle East: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	175.0	175.0	200.0	225.0	250.0	255.0	1,280.0
Training synthetic programme	68.0	14.0	14.0	14.0	14.0		124.0
Total	**243.0**	**189.0**	**214.0**	**239.0**	**264.0**	**255.0**	**1,404.0**

Figure 7: Middle East: Flight Training Market, 2025-2030, US$ Millions



ISRAEL

TRAINING SYNTHETIC PROGRAMME/ F-16 - MISSION TRAINING CENTRE (MTC):

Elbit Systems was awarded a contract by the Israeli Ministry of Defence (IMoD) in January 2023 for the provision, operation, and maintenance of the new Mission Training Centre (MTC) dedicated to the Israeli Air Force's (IAF) F-16 fleet. The contract will span three years, followed by an additional 15-year period that includes ongoing operation and maintenance services.

Under the contract, the existing MTC will also undergo upgrades alongside the establishment of the new Mission Training Centre. These enhancements will significantly enhance the quality of aircrew training, effectively doubling the number of training sorties available for the IAF's F-16 and F-15 aircrews. The new MTC will feature ten simulators equipped with advanced high-resolution displays, accurate weapon simulation capabilities, and Elbit's arena generator. These advanced features will enable realistic simulation of both present and future battlefield environments.

The Israeli Ministry of Defence is anticipated to allocate approximately US$180 million to the programme, with around US$60 million allocated between 2025 and 2030. This investment underscores the commitment to providing state-of-the-art training capabilities for the IAF's F-16 fleet.

https://www.mdhelicopters.com/?utm_source=fragout&utm_medium=fragout&utm_campaign=fragout

SAUDI ARABIA

TRAINING SYNTHETIC PROGRAMME/ HELICOPTER TRAINING SUPPORT:

In August 2024, MD Helicopters (MDH) secured a 5-year contract worth US$19 million with the Saudi Arabian National Guard (SANG) to support its fleet of twelve MD530F training helicopters. Under this agreement, MDH will supply in-country technical and logistical support, station a field service representative and a logistics technician in Saudi Arabia, and provide spare parts, repair and overhaul services for the MD530F fleet.

The objective is to enhance the readiness and sustainment of SANG's helicopter training wing by improving maintenance turnaround, ensuring better material availability, and lowering downtime for the fleet. The support contract complements the existing training operations and bolsters local rotational and mission-relevant training capacity.

The five-year period begins with a base year and includes four optional years, running through to mid-2029 if all options are exercised.

TRAINING SYNTHETIC PROGRAMME/ FLIGHT TRAINING:

In December 2023, the U.S. approved a foreign military sale to Saudi Arabia, aimed at enhancing the capabilities of the Royal Saudi Air Force (RSAF). This deal, valued at approximately US$1 billion, will provide comprehensive military flight training, technical instruction, and professional military education to Saudi forces. The agreement includes the deployment of mobile training teams, specialized trainers, and English language instructors, focusing on improving the skills of military aviators.

A total of 339 training personnel will be involved in this initiative, which is designed to bolster the operational proficiency of the RSAF in the face of current and future threats. The training programme will cover a wide range of topics, including command and control, civilian casualty avoidance, and the laws of armed conflict, ensuring that Saudi forces are well-prepared for complex military operations.

This collaboration is designed not only to bolster the capabilities of the RSAF but also to improve interoperability with U.S. forces.

UAE

TRAINER AIRCRAFT-FIXED WING/HONGDU L-15 ADVANCED JET TRAINERS:

During the International Defence Exhibition and Conference (IDEX) held in Abu Dhabi in February 2023, the United Arab Emirates (UAE) entered into an agreement with China National Aero-Technology Import & Export Corporation (CATIC) to acquire twelve Hongdu L-15 advanced jet trainers, with the option for an additional 36 aircraft to be procured later.

The UAE had previously considered purchasing a similar number of Leonardo M346 trainers, but that plan was put on hold in 2011. In December 2021, discussions for a US$13.4 billion order of Lockheed Martin F-35s and General Atomics MQ-9 unmanned aircraft systems were also halted after concerns were raised by the United States regarding the UAE's relationship with the People's Republic of China.

The Hongdu L-15, developed by AVIC's Hongdu Aviation Industry Group in Nanchang, Jiangxi province, features a streamlined aerodynamic design, integrated avionics, and two engines. It can be equipped with advanced fire-control radar and can carry various types of munitions, including mid-range air-to-air missiles, precision strike bombs, and anti-ship cruise missiles.

The procurement of 48 L-15 trainer jets by the UAE is estimated to cost around US$720 million, with approximately US$380 million expected to be spent between 2025 and 2030.

TRAINER AIRCRAFT-FIXED WING/B-250T:

The UAE Air Force has recently initiated the procurement of 40 B-250T trainer aircraft from the Emirati firm Calidus,, marking the first order for this specific variant. This agreement is intended to enhance the training capabilities of the UAE's air force cadets while promoting local manufacturing initiatives. A letter of intent for the contract was signed during the Dubai Airshow in November 2023, with deliveries anticipated to begin by mid-2026.

Although the precise contract value has not been revealed, estimates suggest that the UAE will invest around US$1 billion in acquiring these aircraft. The programme will encompass not just the aircraft but also ground-based training simulators and Part Task Trainers, providing a comprehensive training solution. The B-250T is a turboprop aircraft designed for both training and light attack roles, featuring advanced technologies and locally developed components.

Notably, in September 2025, Calidus signed a long-term partnership agreement with HAVELSAN of Turkey to develop training systems for the B-250 light attack and trainer aircraft programme. Under the agreement, HAVELSAN will supply a full training ecosystem including a Flight Training Device, Part Task Trainers, Cockpit Entry/Exit Simulator, briefing/debriefing stations and computer-based training modules. Calidus will host the systems in the UAE and integrate them into its training infrastructure.

This programme underscores the UAE's commitment to modernising its military capabilities and developing homegrown defence technologies, reinforcing its strategic position in the region.

https://en.wikipedia.org/wiki/Calidus_B-250#/media/File:Calidus_B-250_at_Dubai_Air_Show_2019_1.jpg

FLIGHT TRAINING – AFRICA

The African market for military flight training is projected to see about US$700 million in spending between 2025 and 2030. Nigeria stands out as the main driver of this activity with its order for 24 M-346FA aircraft from Leonardo, making it the largest programme on the continent. South Africa, once a key player in military aviation, has no comparable training plans for this period.

South Africa's challenges are significant. The Armaments Corporation of South Africa (Armscor) reports that two core helicopter fleets, the Oryx transport helicopter and the Rooivalk attack helicopter, are grounded, with only a small number still flying. The situation is similar across the fixed wing fleet. Gripen fighters, Hawk trainers, Oryx helicopters and Falcon transport aircraft all face maintenance delays, mostly because several support and maintenance contracts have expired.

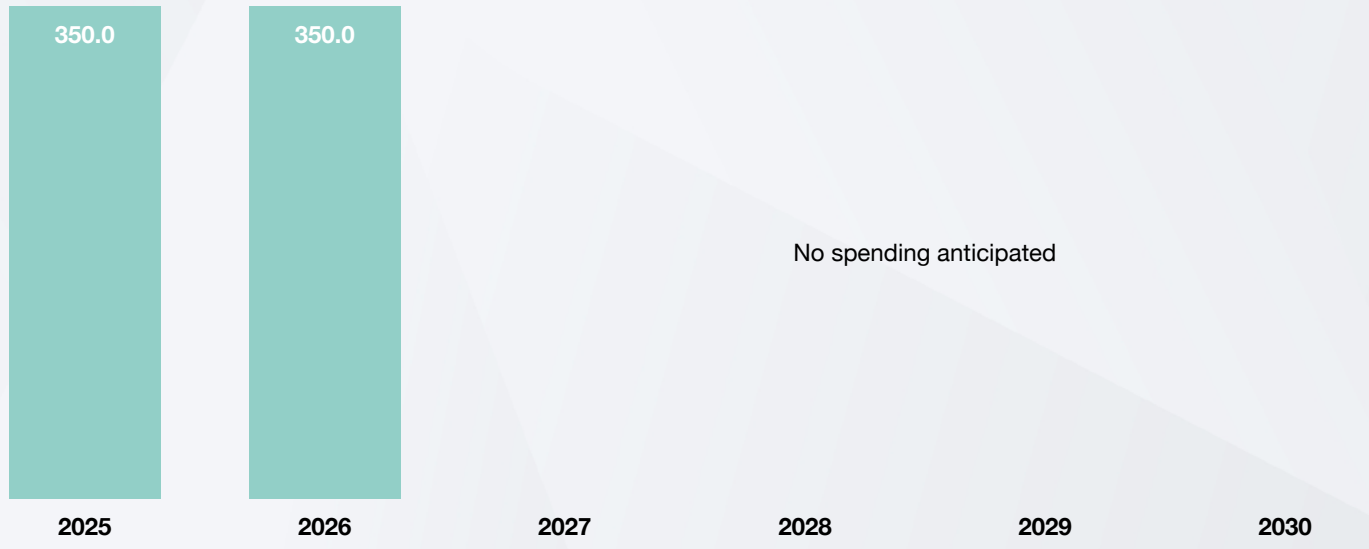
This mix of new investment in some countries and declining capability in others highlights the uneven state of military flight training across Africa.

AFRICA: FLIGHT TRAINING MARKETS, 2025-2030, US$ MILLIONS

Table 8: Africa: Flight Training Market, 2025-2030, US$ Millions

Types	2025	2026	2027	2028	2029	2030	Total
Trainer Aircraft-Fixed Wing	350	350	-	-	-	-	700
Total	**350**	**350**	**-**	**-**	**-**	**-**	**700**

Figure 8: Africa: Flight Training Market, 2025-2030, US$ Millions



NIGERIA

TRAINER AIRCRAFT-FIXED WING/M-346FA:

In May 2023, Nigeria announced the procurement of 24 Leonardo M-346FA multi-role aircraft. This acquisition marks the replacement of the older Alpha Jet ground attack aircraft and L-39ZA Albatros jet trainers within the Nigerian Air Force (NAF) fleet. The newly acquired Italian-made M-346FA aircraft will be utilized as both light combat aircraft and lead-in trainers for Nigeria's upcoming Chengdu PAC JF-17 fighter aircraft.

The Leonardo M-346 is a family of military jet trainers designed for transonic advanced training. It serves as a lead-in fighter trainer, providing pilot training for the latest generation of lightweight combat aircraft. It is currently operated by the air forces of Italy, Israel, Singapore, Greece, Turkmenistan, and Poland.

The M-346FA (Fighter Attack) is a multirole variant capable of both air-to-air and air-to-surface combat. It features a 3-ton payload spread across seven hardpoints, an advanced Grifo-M346 radar, countermeasures, and stealth features such as engine intake grids and radar-absorbing coatings on the canopy and wing leading edge. While retaining the characteristics of a trainer aircraft, the M-346FA incorporates new-generation equipment and sensors, making it an effective operational solution for light combat roles.

In October 2024, the NAF confirmed that the first three M-346 aircraft are set to be delivered by early 2025, with additional deliveries expected to continue until mid-2026. Nigeria is projected to invest approximately US$1.2 billion in the programme through 2026, with around US$700 million allocated for expenditure between 2025 and 2030.

https://en.wikipedia.org/wiki/Alenia_Aermacchi_M-346_Master#/media/File:Aermacchi_M-346_(code_MT55219)_arrives_RIAT_Fairford_13July2017.jpg

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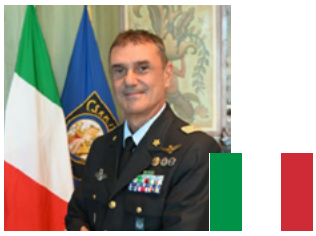

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Commander Italian Air Force Education and Training Command
Italian Air Force

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AGENDA

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ABBREVIATIONS & EXPANSIONS

- **A2/AD** – Anti Access Area Denial
- **ACC** – Air Combat Command
- **ACSO** – Air Combat Systems Officer
- **AETC** – Air Education and Training Command
- **AFGSC** – Air Force Global Strike Command
- **AFWERX** – Air Force Work Project (USAF innovation arm)
- **AGA** – Advanced Ground-based Training System
- **AI** – Artificial Intelligence
- **AMCA** – Advanced Medium Combat Aircraft
- **AOR** – Area of Responsibility
- **APT** – Advanced Pilot Training
- **AR** – Augmented Reality
- **ARP** – Avionics Replacement Programme
- **ASTRA** – Air Strategy to 2040 Blueprint (UK)
- **ATD** – Aircrew Training Device
- **ATF** – Air Transport Fleet
- **ATLC** – Advanced Tactical Leadership Centre
- **AWERT** – Advanced Wiring and Electrical Repair Trainer
- **BAE** – British Aerospace Engineering
- **BOT** – Boom Operator Trainer
- **CAE** – Canadian Aviation Electronics
- **CAP** – Combat Air Patrol
- **CFTS** – Contracted Flying Training and Support
- **CFT** – Composite Flight Training
- **CF-35A** – Canadian variant of F-35A
- **CIC** – Combat Information Centre
- **COTS** – Commercial Off The Shelf
- **CSAR** – Combat Search and Rescue
- **CSR** – Crash Survivable Recorder
- **DMS** – Diminishing Manufacturing Sources
- **DMSMS** – Diminishing Manufacturing Sources and Material Shortages
- **DND** – Department of National Defence (Canada)
- **EATF** – European Air Transport Fleet
- **EDA** – European Defence Agency
- **ETAC** – European Tactical Airlift Centre
- **EW** – Electronic Warfare
- **FAcT** – Future Aircrew Training (Canada)
- **FAA** – Federal Aviation Administration
- **FALIT** – Fighter Lead in Training
- **FFLIT** – Future Fighter Lead In Training (Canada)
- **FRP** – Full Rate Production
- **FTU** – Formal Training Unit
- **GAO** – Government Accountability Office (US)
- **GCAP** – Global Combat Air Programme
- **GHG** – Greenhouse Gas
- **HEP** – Helicopter Exercise Programme
- **HET** – High End Training
- **HLFT 42** – Hindustan Lead In Fighter Trainer 42
- **HTC** – Helicopter Tactics Course
- **HTIC** – Helicopter Tactics Instructors Course
- **HMT** – Helicopter Mission Trainer
- **HMI** – Human Machine Interface
- **HOC** – Helicopter Operations Centre
- **ICS** – Interim Contractor Support
- **IFF** – Introduction to Fighter Fundamentals
- **IMI** – Interactive Multimedia Instruction
- **IOC** – Initial Operational Capability
- **IR** – Infrared
- **ITB** – Industrial and Technological Benefits
- **JADC2** – Joint All Domain Command and Control
- **JET** – Jet Engine Trainer
- **KF Aerospace** – Kelowna Flightcraft Aerospace
- **KPI** – Key Performance Indicator
- **LCA** – Life Cycle Analysis
- **LVC** – Live Virtual Constructive
- **METS** – Multi Engine Training System
- **MFD** – Multifunction Display
- **MHTC** – Multinational Helicopter Training Centre
- **ML** – Machine Learning
- **MOC** – Mission Operations Centre
- **MRTT** – Multi Role Tanker Transport
- **MRFA** – Multi Role Fighter Aircraft
- **MTC** – Mission Training Centre
- **MTD** – Maintenance Training Device
- **NAWCTSD** – Naval Air Warfare Center Training Systems Division
- **NATO** – North Atlantic Treaty Organization
- **NFTC** – NATO Flying Training in Canada
- **NFTE** – NATO Flight Training Europe
- **NSPA** – NATO Support and Procurement Agency
- **OBOGS** – On Board Oxygen Generation System
- **OFP** – Operational Flight Programme
- **OFT** – Operational Flight Trainer
- **PC 21** – Pilatus PC 21 Trainer Aircraft
- **PDR** – Preliminary Design Review
- **PEO** – Programme Executive Office
- **PNT** – Positioning, Navigation and Timing
- **PRIME** – Predator Reaper Integrated Mission Environment
- **PTT** – Part Task Trainer
- **QRA** – Quick Reaction Alert
- **QWI** – Qualified Weapons Instructor
- **R&D** – Research and Development
- **RAF** – Royal Air Force
- **RAAF** – Royal Australian Air Force
- **RCAF** – Royal Canadian Air Force
- **RFP** – Request for Proposal
- **RPAS** – Remotely Piloted Aircraft System
- **RPA** – Remotely Piloted Aircraft
- **SAM** – Surface to Air Missile
- **SBIR** – Small Business Innovation Research
- **SLEP** – Service Life Extension Programme
- **SME** – Small and Medium Enterprise
- **SUPT** – Specialized Undergraduate Pilot Training
- **T&E** – Test and Evaluation
- **TCTS** – Tactical Combat Training System
- **TP** – Tactical Procedures
- **TRU** – Textron's Simulator Division
- **UAV** – Unmanned Aerial Vehicle
- **UDF** – Unitised Data Framework
- **UJTS** – Undergraduate Jet Training System
- **UQF** – Undergraduate Qualification Framework
- **URT** – Undergraduate Remotely Piloted Aircraft Training
- **USAF** – United States Air Force
- **USN** – United States Navy
- **USNTPS** – U.S. Naval Test Pilot School
- **VR** – Virtual Reality
- **WTT** – Weapons and Tactics Trainer

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