

TURKISH TRAINING REVOLUTION

TEXT & PHOTOS - DIRK JAN DE RIDDER

As one of NATO's largest air arms, the Turkish Air Force has a large demand for new pilots. Dirk Jan de Ridder finds out how they are trained at Izmir-Çigli with brand new KT-1T turboprop aircraft and recently modernized T-38M jets.



The new kid on the block, the Korean Aerospace Industries KT-1T turboprop trainer. Photo by Dirk Jan de Ridder

Turkish Training Revolution

A couple of years into the 21st century, the Turkish Air Force faced a challenge. Its pilots were trained using aircraft over 30 years old with analogue instruments while converting to modern fourth-generation platforms like the F-16 Block 40 and Block 50.

Something had to change, especially with the Turkish intention to buy the F-35 Lighting II in the near future in mind. The solution was to replace the T-37 Tweet with the Korean Aerospace Industries KT-1T turboprop trainer and to modernize the T-38 Talon. Turkish Aerospace Industries was heavily involved in both projects.

Turkish Air Force pilots are trained at the 2nd Main Jet Base, just north of the country's third biggest city Izmir. The 2nd Main Jet Base actually comprises two airbases, each with a single runway only separated by the small village of Kakliç. To the west of Kakliç is Izmir-Kakliç airbase, which is home to an SF260 Marchetti squadron offering ab-initio training along with a squadron providing training to future helicopter and transport pilots.

Izmir-Çiğli airbase, to the east of Kakliç, is a lot bigger operating the KT-1 and T-38 from a number of ramps and shelter camps, while also providing all the facilities needed by the students.

Currently 141 instructor pilots train around 300 students at the 2nd Main Jet Base, using 174 aircraft of five types and generating over 30.000 flying hours per year. A regular flying day at Çiğli is divided into four 2-hour blocks, each normally containing up to 30 sorties, during which either the KT-1s or T-38s are flying.

The only moment the two different aircraft types meet each other is when the first aircraft of the next block await clearance to taxi onto the runway as the final aircraft from the previous block are touching down. Aircraft continuously taxi out, take off, fly overhead and make touch and go's before landing. This is without any doubt the Turkish Air Force's busiest airbase.

Future pilots

Base commander major general Kubilay Selçuk, a pilot with many hundreds of hours of experience of flying the F-100 Super Sabre, F-104 Starfighter and F-16 Fighting Falcon: "Many things have changed in the past few years. We resurfaced the runways and taxiways, built new ramps with sunsheds and other facilities such as a simulator center. Our new KT-1Ts, modernized T-38Ms and new simulators enable us to train fifth generation fighter pilots well into the future.

Future fighter pilots will not be assets of a command center, they will be a vital part of that command center, collecting more and more information themselves and acting accordingly. We prepare them for that. One of our priorities right now is to reduce the stress level on the students in order to provide them the best learning environment."

The demand for new fighter pilots is large and this is reflected in the number of instructors being assigned. Instructor pilots are accepted as first assignment instructor pilots (FAIP) and they are taken from operational units. The author talked to a young instructor who received one year of training on the F-4, then flew the F-4 in an operational squadron for one more year and suddenly he was notified of his new job position as a KT-1T instructor.

Only a week later he arrived in Izmir, which he described as 'a shock'. Between 2000 and 2014, 485 instructor pilots were trained at the 2nd Main Jet Base. A peak was reached in 2011 when 52 new instructors arrived, but currently around 30 new instructor pilots arrive each year.

Top

The ground crew secures these two Korean Aerospace Industries KT-1T turboprop trainer, before the next training flight.

Bottom

The modernized T-38 Talon, T-38M with the city of Izmir making a nice backdrop.

Photos by Dirk Jan de Ridder





Ground training

Before starting their flying courses, future pilots complete four years of education at the Turkish Air Force Academy in Istanbul. Upon graduating, they are physically tested and psychologically trained. If they pass this phase, they will start pilot training. If they don't, they will get another job position in the Turkish Air Force or any of the other armed services.

Students who drop out of pilot training, may still be selected to become a weapon systems operator on the F-4E Phantom which will serve until 2020. Students who do get their wings, will spend a total of three months flying the SF260D, six months flying the KT-1T and another six months flying the AS532, CN235 or T-38M. Apart from the flying training, a lot of other types of training are provided to the students, including academic, simulator and technical courses, water survival training as well as squadron and centrifuge training, for a total of 600 classroom hours.

A unique method links each student with the instructor pilot. Students all have different types of intelligence and methods in which they best absorb information. This could be visual intelligence, listening intelligence or emotional intelligence, for example. A survey before entering flight training links their specific learning style to an instructor with a similar teaching style.

A new simulator training center was opened in February 2014. It has six KT-1T and four T-38M simulators. The KT-1T simulators comprise two Instrument Flight Trainers and four Full Mission Simulators, two each with 210° x 60° and a 270° x 110° visibility. For the T-38M there are four Full Mission Simulators in the same configuration as the ones for the KT-1T.

The simulators with the wider view are single seater simulators which enable the students to look upwards, thus making it ideal for aerobatic training. The other simulators are double seaters used to train for emergencies and instrument flying.

Each flight is generally instructed in the classroom, then practiced in the simulator and finally flown for real. The simulators are an enormous improvement over the ones previously used.

Multinational Flight Crew Training

The T-37 simulator did not even have a screen, just instruments. The current simulator system can even be used to train formation flying with pilots flying in two different simulators. The adjustments to teaching methods and the commissioning of the new simulator center has led the students to acquire more information in a shorter time frame. For example, T-38 students now fly 69 real sorties instead of the 81 sorties their predecessors used to fly.

While Turkish Navy and Coast Guard pilots are already trained by the Turkish Air Force, Çigli airbase inaugurated its Multinational Military Flight Crew Training flight school in June 2015. This opened up the opportunity for foreign armed forces to train their pilots in Turkey.

Due to paperwork issues no country has yet sent a large amount of students to Çigli yet though. A small handful of students from countries like Azerbaijan, Pakistan and South Korea currently fly the KT-1T and/or T-38M in Turkey. A few pilots from South Africa, South Korea and the United States form part of the instructor pilots. English is already the language spoken by all students in-cockpit.

On the ground the main language is Turkish, but every once in a while briefings and debriefings are done in English. Quality of pilot training is on a very similar level to that provided by the United States Air Force. Students and instructors are occasionally trained in the United States. The main difference with training in the United States is the fact that students in Turkey stay for a shorter period and they need fewer flying hours to become proficient, thus making it a cheaper alternative to training at Sheppard AFB.

In principal, elementary flight training on the SF260 will not be available to foreign students, but exceptions may be made for smaller countries. All other training aircraft, including the AS532 Cougar and the CN235 will be available for foreign students. Foreign instructor pilots are also more than welcome. Should any country come up with a need to base their training aircraft abroad, this will even be considered.



Top / right middle

Korean Aerospace Industries KT-1T turboprop trainer, is the new trainer in Turkey.

Bottom / Left middle

The modernized T-38 Talon is the backbone of the fastjet trainers of the Turkish Air Force.

Photos by Dirk Jan de Ridder



Two jettrainers, T-38M, and a turboprop trainer, the Korean Aerospace Industries KT-1T.

Photo by Dirk Jan de Ridder

Basic flying training

Students fly 22 sorties on the SF260 during Phase I of their pilot training, one of which is a solo flight, before they start flying the KT-1T. The KT-1T was selected by the Turkish Air Force in 2007 as the new basic training aircraft and a \$350 million contract was signed for 40 aircraft with an option on another 15.

The aircraft is jointly manufactured by Korea Aerospace Industries (KAI) and Turkish Aerospace Industries (TAI). The KT-1T was designed to have a jet-like feeling and the squadron flying it, 122 'Akrep' (Scorpions) Filo, is therefore still designated as a Basic Jet Squadron. Its speed and limitations are not too much different from the T-37 Tweet jet it replaced in 2012. The cockpit is up to standard with modern turbo-prop trainers like the PC-21 and T-6 Texan II.

It is completely digital, with a compass being the only analogue instrument. Whenever necessary problems can be solved in-flight with instructions appearing on the screen, guiding the pilots step-by-step. If a problem cannot be solved, the system will advise the pilots to land and send the aircraft to maintenance. All flight characteristics are logged on a data recorder enabling students to review any issues they had and providing crucial information for maintenance.

The squadron consists of two flights, both of which offer exactly the same kind of training, both Phase IIA for all students and Phase IIB for future fighter pilots. All students first fly 37 sorties in the KT-1T (Phase IIA), two of which solo, before it is decided whether they will become a fighter, helicopter or transport pilot. Both helicopter and transport pilots then go back to Kalkiç to log between 50 and 60 hours on the AS532 (Phase IIIR) or CN-235 (Phase IIIT). Most students will become a fighter pilot and they continue to fly 32 sorties in the KT-1T, mostly consisting of low level navigation and formation flights with up to 4 aircraft, during Phase IIB.

The option to purchase a further 15 aircraft is still under consideration. One of the factors having an influence on this is the new Hurkus trainer that is being designed and built in Turkey. The Turkish Air Force's idea is to purchase it and train students on either KT-1T or Hurkus.

Advanced jet training

If the Multinational Military Flight Crew Training project becomes a success, a practical solution would be to provide English classes on one aircraft type and Turkish classes on the other.

Originally donated by the United States Air Force in the 1970s, a total of 68 T-38 Talon supersonic jet trainers remain in service today. TAI delivered the first modernized T-38M to the Turkish Air Force in June 2012.

This project was initiated in 2007 with a contract for the upgrade of 55 aircraft. An option on a further 13 aircraft was later taken. Apart from an overhaul, extending the aircraft's service life to beyond 2020, TAI included a new control computer, multi-function cockpit displays, a head-up display in the front and hands on throttle and stick controls.

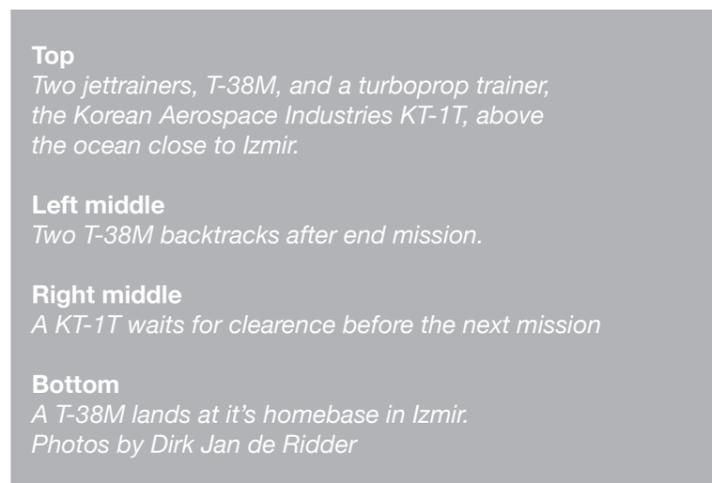
The first five aircraft, including two prototypes and three production examples, were delivered by TAI after which the Turkish Air Force maintenance center at Eskisehir continued with the remaining airframes. The final T-38M was delivered back to the Turkish Air Force about half a year ago.

Advanced jet training consists of 57 dual and twelve solo flights, including instrument flying, formations of up to four aircraft, low level navigation and night flying. The T-38's landing speed is about double that of the KT-1T, so landings are among the first things practiced.

Every flight is planned on the computer and mission data are then downloaded into the aircraft. After the flight mission data are uploaded back to the computer enabling very detailed debriefs.

On their thirteenth sortie students go solo. Unlike their American counterparts flying the T-38C, Turkish students don't fly supersonic in the Talon. This is reserved for experienced instructors performing check rides. In terms of organization, 121 Filo is divided into two flights carrying out advanced jet training and a third flight for Introduction to Fighter Fundamentals (IFF).

Only future F-16 pilots go through this IFF phase, future Phantom pilots directly convert to the F-4. IFF is a relatively new role to the 2nd Air Base and to the T-38.



Top
Two jettrainers, T-38M, and a turboprop trainer, the Korean Aerospace Industries KT-1T, above the ocean close to Izmir.

Left middle
Two T-38M backtracks after end mission.

Right middle
A KT-1T waits for clearance before the next mission

Bottom
A T-38M lands at its homebase in Izmir.
Photos by Dirk Jan de Ridder



A student and a teacher poses in front of the T-38M jet trainer.
Photo by Dirk Jan de Ridder

The conversion

It was taken over from 133 flying the F-5 at Konya, when the type was withdrawn from active service in 2013. The change was a very small one since both types are virtually identical. The main difference is the fact that the T-38 cannot carry any armament or drop tanks, nor does it have wingtip tanks, so all weapon deliveries are therefore simulated.

The IFF phase consists of a single air intercept sortie, six basic fighter manoeuvre sorties and eight air-to-ground sorties over a nearby reserve airbase, none of which are flown solo, along with 10 simulator rides. The aim of this phase is for students to learn how to employ their aircraft as a weapons systems, rather than 'simply' flying it. Completing this phase smoothens their conversion to the F-16.

Only one squadron at Çiğli is not directly involved in training. Pilots from 124 Filo perform check flights, provide instructor pilot training and carry out research and develop, using T-38 Talons on loan from 121 Filo. Following their overhaul and upgrade, the T-38s still have many years of service left.

The squadron expects to be able to fly the T-38 until around two years after the United States Air Force stops operating the type, meaning the aircraft could stay in service until at least 2030. Preparations for the selection of a new training aircraft that must replace the T-38 have recently started. It should probably enter service in the second part of the next decade.

The Turkish Air Force has strong ties within NATO, the Middle East and Asia due to the country's geostrategic location and foreign policy. In short time they have managed to turn their own version of Red Flag, Anatolian Eagle, into an exercise providing the highest level of training value possible. It is frequently attended by air forces from Pakistan to the United States and from Saudi Arabia to the United Kingdom.

It leaves no doubt that the Turks know what they are doing when it comes to air warfare and providing the right amount of training value. Those air forces attending Anatolian Eagle will know their future fighter jocks will be in great hands as a student pilot in Turkey and it will take short time before the rest of the world knows it as well.



Top

It's not only daylight missions that is flown. The student of this KT-1T, is checking that everything is at it should, before this dark mission.

Bottom left

The ground crew gives the pilots of this T-38M, the all clear, and they can now go on the next mission.

Bottom right

The turboprop trainer, KT-1T is a working horse. Photos by Dirk Jan de Ridder