FLY MAG | SCANDINAVIAN AVIATION MAGAZINE

THE MAGAZINE

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SWEDISH AIR FORCE FLYING TRAINING SCHOOL

The backbone of the fixed wing training in Sweden, the Sk 60 is turning 50 this year. Søren Nielsen resports from Malmen, and the Swedish Air Force flying training school.

SUPER BASE ØRLAND

The Royal Norwegian Air Force is waiting for the new F-35, and is turning Ørland Air Base into a super base.

U.S. ARMY IN EUROPE

The U.S. Army has different flying assets throughout Europe. These includes the AH-64 Apache attack helicopter.

THE BLACK SEA KNIGHTS

Romania's Navy (Fortele Navale Române/ FNR) are small compared to other naval forces in the Black Sea region and within NATO.

FLYMAG

SCANDINAVIAN
AVIATION MAGAZINE

This issue features reports from Ankara in south, to Ørland in North. We give you an insight in why the Swedish Air Force flying training school is like no other, and takes a look at the U.S. Army aviation assets in Europe, hereby the AH-64 Apache attach helicopter.

We hope you enjoy the magazine - Happy reading.

THE MAGAZINE

For more info about FLYMAG, please visit: www.flymag.dk / www.facebook.com/flymag.dk
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U.S. ARMY IN EUROPE - APACHES

TEXT - JEROEN VAN VEENENDAAL
PHOTOS - JEROEN VAN VEENENDAAL & ROELOF-JAN GORT

The U.S. Army has different flying assets throughout Europe. These includes the AH-64 Apache attack helicopter. Jeroen van Veenendaal reports from Bavaria, in Germany.

An AH-64 Apache, with the Longbow radar, sits with the rotors spinning, preparing to take off.
Photo by Roelof-Jan Gort

U.S. Army in Europe - Apaches

A lot has changed in the international theater. Since the Russian military intervention in Ukraine, the Annexation of Crimea, and the Russian involvement in the Syrian Civil War, NATO is changing the way they train.

In the past year we've seen a few Theater Security Packages in Europe, to "strengthen interoperability, demonstrate the U.S. commitment to Europe and to deter further Russian aggression," according to a USAF release.

But the U.S Air Force isn't the only service sending security packages to Europe; the U.S. Army is also on a different path now.

Since the revolutions of 1989, USAREUR has greatly reduced its size and dispatched US forces to Operation Desert Shield and Desert Storm.

The U.S. Army's reorganization plans from 2005 called for the formation's major subordinate units – 1st Armored Division and 1st Infantry Division – to be relocated from Germany to the continental United States.

On 7 August 2006, the units of Aviation Brigade, 1st Infantry Division combined with units of both the 12th Aviation Brigade and the former 11th Aviation Group were combined into the 12th Combat Aviation Brigade. The 12th CAB replaced the units that were relocated. On 20 March 2007 the 12th became a separate brigade under V Corps.

Since its organization in 1965, the 12th Combat Aviation Brigade's motto, "Wings of Victory," defines the standard by which the brigade conducts its missions. The brigade is currently based around Ansbach, Bavaria, in Germany, and headquartered in Katterbach Kaserne, with subordinate units in Illesheim and Wiesbaden.

The plan was to reduce the presence in Europe even more. In 2015 the Defense Department announced to cut 24 AH-64 Apaches, 30 UH-60 Black Hawks, three CH-47 Chinooks and nine HH-60 Medevac Black Hawks in a process called the Army Aviation Restructuring Initiative.

Difference in training

The 12th Combat Aviation Brigade went from the largest CAB in the Army with seven Battalions down to two. The 12th CAB is now meeting the operation needs of Europe through a regionally allocated force, which is resourced through CAB's in the continental United States. The Brigade is currently augmented by the 3rd Battalion, 227th Aviation Regiment, "Task Force Spearhead" of the 1st Air Cavalry Brigade from Fort Hood, Texas.

The Brigade will receive additional forces in the spring of 2017 to bring the CAB close to the amount of aircraft present before the ARI cuts.

We spoke to Chief Warrant Officer 3 Chris Moore who is an Apache pilot with 12th CAB in the USAREUR. He joined the Army in 2002 as an infantryman and deployed in Iraq in 2003 as a spotter for a sniper team. It's there where he first came in contact with Apaches. "*The confidence and the safety that I had on the ground, knowing that the Apaches actually are above us, it was a game changer over there.*" He decided to become an Apache pilot: "*It was a natural progression to go with attack aviation.*"

In Iraq and Afghanistan, there was a threat of surface to air missiles. Moore explains: "*but realistically, at 1.500 to 2.000 feet we were not afraid of anything. we owned the skies and have since.*"

The training has changed following the tension along NATO borders. Our greatest threat is no longer confined to shoulder fired missiles, but a near peer adversary with attack aviation assets of his own. Training is now moving towards a near peer threat of actually flying in places that are not permissive and that have a surface to air threat. "*We train flying in places where we have to be low in the trees and we don't own the skies.*"

A typical mission day begins much earlier than it used to, because a long planning cycle comes first. All of the training missions now take between 24 to 48 hours of actually planning. The threat drives the tactics of how the aircraft are being deployed. Moore sees it as a challenge: "*It's been a steep learning curve for a lot of us because we've been flying in Afghanistan for 10 plus years doing the same thing over and over. We're very good at flying there. Getting into this lower and slower environment is a challenge.*"

Training in Europe

The steep learning curve is not just because of the change in tactics. The operations tempo is also very fast, and not without reason. After the US Army visited Ukraine to talk about lessons learned from their conflict, it became clear that the operations tempo that it took for the Ukrainian Army to constantly have helicopters out, to constantly change their tactics was very demanding. It's a peer-to-peer fight where they are always out flying missions.

"*We can take it, the aircraft can't*" CW3 Moore elaborated. "*The aircraft need time to reset, and fix things. Basically manage how much can we push, but at the same time how much can we sustain.*" There are a lot of processes going on during the training. For example, maintenance is fixing the rotor blades, people are refueling, there are food facilities supporting the personnel so they can eat, communications are set up, and each one of those aspects has their own maintenance and their own level of sustainability of how fast they can go.

But Moore notices that there's been great improvement: "*I feel that we've ramped up. If we do fight that near peer fight, we can now sustain a heavy operations tempo for a long period of time which we probably couldn't have done five years ago.*" He does not mind the high tempo, because "*we're going there to support allies, and they are waiting on us when we get there.*"

CW3 Moore is in Europe for a three-year tour. He thinks it's one of the most unique places to train and to use the Apache. Because the 1st Battalion is the only U.S. Apache Battalion in Europe they are tasked to meet every mission where attack aviation is requested. Training events in the U.S. are different. The ranges are typically very small, and in the local area.

In Europe it's much more of a global event. "One week we will be up in Denmark flying for them and will learn all their capabilities, we'll learn how we can communicate with them, how they move and integrate into their plan. And the next week we go to Poland and we do the same thing over again. Then Latvia, Lithuania, Estonia." Moore really notices the value of exercising with different countries: "*We see what their capabilities, their strengths and weaknesses are. Everywhere we go, the first week is always a problem-solving week. After that we're getting into a nice rhythm.*"

Helping the ground forces

A typical Army attack aviation battalion consists of 24 aircraft organized into three platoons of eight aircraft each. Europe is a diverse environment and calls for different requirements all over. That results in operating these companies a lot more. It allows the company leadership to learn to actually use just their company, instead of receiving orders from higher up all the time. It builds them up as problem solvers. The 5-pillar principle of the USAREUR is applied. They pillars are: Empowering Junior Leaders; Army Reserve and National Guard support; Allies and Partners; Regionally Allocated Forces; and Dynamic Presence.

At the moment, most of the missions the Apache pilots fly are live fire exercises. Moore is aware of the trust and confidence they have gained: "*We go out and not only execute an 8-ship mission, but also use live ammunition. The ground forces below us trust us to use live ammunition when were flying above them.*"

Usually it's a slow crawl, walk, run process in the U.S. In Europe it's a much faster process, because we built good relationships over all of our trips we've done. "The U.S. Army built a lot of contacts in the past time: "*When I get on the ground, I already know who they are, and I know how they operate. And so we can roll right into a live fire exercise now.*"

The aviation command structure in Europe is very different than the way it worked in the Middle East. In Afghanistan it's the mission commander who's in charge of the aircraft. He runs the air portion, and the ground force commander runs the ground portion. Since operating in Europe requires very low-level tactics, the aim is to operate as a maneuver force.

CW3 Moore explains: "*If you have an infantry platoon of three squads, we are your fourth squad now. We're directly integrated into the ground forces. The ground force commander, who is typically another NATO ally, is now in charge, and we follow whatever he wants us to do. Instead of us just flying in circles above the battle field, making our own decisions.*" Maneuvering with infantry troops is not all the support the Paches give to the ground troops. They are also working on being a maneuver force capable of taking on tanks and an armored force with the Longbow fire control radar system.

Working with different allies

A ground force working with Apaches has big advantages. "*We have a situational awareness. We are in the fight on the ground with them. The troops can say: We're taking fire two o'clock and I already know where their position is.*"

Another challenge the U.S. Army met when exercising in Europe is the variety of different allied countries. Moore tells an anecdote about a deployment: "We worked a rotation with forces in Eastern Europe and were trying to integrate a communications piece, and all they had were Motorola radios.

That was a challenge we never had to deal with before because we always worked with people with a near peer radio system. Rather than talking to them we had to implement triggers like: When you are at this line, I need you to be disciplined enough to say, "*I'm at this line*". That's my move to move to my next point. We're trying to find ways around these limitations like that."

There are more concerns with various allies working for the first time with the Apaches: "*They are nervous about how to use us and so they don't. Every time we do these rotations and integrate them into our planning and us into their planning, we break down that language barrier. We're getting better and better at them properly using us and us showing up on time and deploying our weapons so that they're confident that we can do our job too.*"

Longbow

There are also changes in the hardware. When training in Europe the Apaches make use of the Longbow fire control radar. "*The system weighs about an extra 600 pounds. In the Afghan and Iraq fight we didn't really need them, we were not looking for vehicles or armored targets over there. So they've been off the aircraft in the past ten years.*"

The radar system works on millimeter a wavelength radar where, rather than exposing the whole aircraft, just expose the radar has to be exposed in order to put a radar signature out. The aircraft will automatically identify what vehicles are there depending on the radar signature, and what type of material the vehicle is made of. It will then classify it if it's an air defense system, or a tanks and it will assign a title to each vehicle.

It can do this up to a 1024 targets. Knowing that the pilot is now the weakest link, it will only show the top sixteen targets. Moore tells from experience: "*It knows I can't process hundreds of targets myself. It's too much for the pilot, especially when I'm ten feet above the trees at night time with zero illumination from the moon.*"

The Longbow Apaches are usually implemented into teams. If a team of two or a team of four Apaches is operated, only one of the Apaches has to have the Longbow radar. It can send target information constantly to the other pilots so they can see it too.

Missiles

The AGM-114 Hellfire Lima model is our radar missile working together with the Longbow radar. Moore knows the advantages: "*I never have to expose my aircraft to shoot it. Once I have that radar image I can back up and shoot the missile from behind cover.*

It's a fire and forget missile. I don't have to see where it goes; I don't have to continuously lase the target. It's more survivability for us."

The weapon has not changed, but the way it's used has. The Hellfires were used a lot, typically on a single person putting an IED in the ground back in Iraq.

With more targets there are a choices to be made. "*Do I use this Hellfire on this armored threat or do I use it on this BTR60 personnel carrier? Well I'm not going to use the Hellfire on the personnel carrier because I need to puncture the armor of a tank. And I can use the 30mm or rockets on the BTR60.*"

Not just these weapon systems, but most of all the international cooperation builds strength and hope. CWO3 Moore is convinced the training works well, and clearly enjoys doing it.
He says he has the best job there is:
"*I wouldn't change it for the world!*"

SUPER BASE ØRLAND

TEXT - SØREN AUGUSTESEN
PHOTOS - SØREN AUGUSTESEN & SØREN NIELSEN

Located on the west coast of Norway, Ørland Hovedflystasjon, Ørland Air Base, is one of two Norwegian F-16 bases, the other being Bodø further north on the coast.

A local F-16 from the Royal Norwegian Air Forces taxies back another sortie.

Photo by Søren Nielsen

Super base Ørland

Located on the west coast of Norway, Ørland Hovedflystasjon, Ørland Air Base, is one of two Norwegian F-16 bases, the other being Bodø further north on the coast.

Ørland Air Base

Ørland Air base was built in 1941 by the then occupying German troops in Norway. The reason for building the air base was to enable the German Luftwaffe to attack allied convoys sailing supplies to the Russian harbor in Murmansk.

The first German aircraft to arrive at the base were Focke-Wulf Fw 200 Condors, and in June of 1942 a squadron of Junkers Ju 87 Stuka dive-bombers were deployed to the base. The complement of aircraft at the base were further expanded when first a squadron of Messerschmitt Bf 109s and later a squadron of Focke-Wulf Fw 190 fighters arrived at the base.

When the German troops in Norway surrendered, they left behind a fully armed and defendable airfield, complete with docks and infrastructure. After the war, the first Norwegian aircraft to be located at Ørland, was a squadron for Spitfires, but already in 1946 the base was closed down and all the wooden buildings torn down.

The woods were then transported north, to help rebuild Finnmark, which had been almost completely destroyed by the Germans. In the following years the base were sporadically used for exercises until 1950. In 1950 the Norwegian government decided to reopen the base and make it a permanent deployable base. In 1952 a new runway was constructed, and in 1954 the base was expanded to handle NATO forces.

In 1954 the 338 Squadron was relocated from Sola airbase to Ørland, flying the F-84E Thunderjet. Today the squadron flies the F-16A/B Fighting Falcon, and it remains the only fighter squadron on the base. In August of 1970 a detachment from 330 Squadron arrived flying the Grumman HU-16 Albatross. In 1973 330 Squadron converted to the Westland Sea King, which they still fly today. The squadron is responsible for SAR operations in the area.

The squadrons

In 1983 the airbase was updated to accommodate NATO's E-3A Sentry AWACS fleet, which flies out of Geilenkirchen air base in Germany. Ørland is the only Forward Operations Location (FOL) for the NATO AWACS fleet in northern Europe, and E-3 Sentry aircrafts regularly deploy to the base.
Today the base is home to the following flying squadrons:

- **138 Air Wing**
  - **338 Squadron (F-16A/B MLU)**
- **330 Squadron (Westland Sea King – dethatched from Sola AB)**
- **NATO Airborne Early Warning Force, FOL (E-3A Sentry)**

338 Squadron

338 squadron was activated on 1954 at Sola air base, but moved to Ørland airbase that same year. The first aircraft the squadron flew was the Republic F-84E Thunderjet. In 1955 they swapped the E model with the F-84G, a jet they flew until 1960, when the unit converted to the North American F-86F Sabre. They continued flying the F-86F until 1967, when they began flying the Northrop F-5A Freedom Fighter. After almost 20 years of flying the F-5, the squadron converted to the F-16A Fighting Falcon in 1986.

When the squadron converted to the F-16 in 1986, they were the last of the then four Norwegian fighter squadrons to do so. Despite being the last squadron to convert to the F-16, they were the first squadron to begin flying the Mid-life Update (MLU) versions of the F-16.
In late 1998, early 1999 the squadron began converting to the MLU F-16 coming of the conversion line at the Kjeller depot.

With the introduction of the M2 software tape during 2002, the Royal Norwegian Air Force (RNoAF) decided to integrate the PANTERA targeting pod onto their F-16s, thereby introducing a state-of-the-art targeting system to their F-16 fleet, which would allow for pinpoint bombing accuracy. The RNoAF was the first F-16 user to introduce the PANTERA pods, the export version of the Lockheed Sniper pod, to the MLU F-16s, and it clearly showed the advantages of this modern pod compared to the older Low Altitude Navigation and Targeting Infrared for Night (LATIRN) system.

A Royal Norwegian Air Force F-16 on air patrol in Lithuania, during their deployment for NATO - Baltic Air Policing.

Photos by Søren Nielsen

Mounted Cueing System

With the MLU M3 and M4 software updates, the RNoAF decided to introduce a new and more modern air-to-air missile into its inventory. After a competition, where a number of missiles, including the AIM-9X Sidewinder and the German designed IRIS-T missile participated, the IRIS-T missile was selected.

The missile takes advantage of the Helmet Mounted Cueing System used by the Norwegian F-16 pilots. As with the PANTERA targeting pod, the RNoAF became the first F-16 user to integrate the IRIS-T missile on the F-16.

In 2006 the Norwegian military decided that it would be easier to pool all F-16s into one unit under the Forsvarets Logistikk Organisasjon (Air Force Logistic Organisation). This unit now controls all the F-16s in the RNoAF, and F-16s are dispersed amongst all the F-16 squadrons according to their actual needs.

330 Squadron

330 squadron is the RNoAF helicopter unit responsible for military and civilian search and rescue (SAR). The unit's home base is at Sola Air Base in southern Norway, but the unit has detachments at Rygge, Florø, Ørland, Bodø and Banak. Beside the unit's main mission of SAR, it also performs duties as air ambulance, disaster relief and special operations support.

The squadron was formed on April 25, 1941 as 330 (Norwegian) Squadron under the Royal Air Force (RAF) Coastal Command, and base at RAF Reykjavik, as German forces at that time had occupied Norway. Here they were equipped with 18 Northrop N-3PB aircraft, and were initially tasked with providing arctic convoy escort. The N-3PB proved highly unsuited for this role however, and the squadron started focussing more on anti submarine sweeps and providing an air ambulance service from various forward deployed locations around Iceland.

In June 1942, the unit received the first of a total of six Consolidated PBY-5A Catalina flying boats, and at the same time they retained six of their N-3PBs. On January 23, 1943, parts of 330 squadron were relocated to RAF Oban I Scotland, with the rest following on June 11, 1943. During their time on Iceland, the squadron flew 4379 hours (3524 in N-3PBs and 885 in the Catalinas).

Scotland

In Scotland the unit switched to the Short Sunderland flying boat. Being unable to buy these expensive aircraft themselves, the RAF lend twelve aircraft, six Mk II and six Mk III) to the squadron, while the Norwegians themselves paid the operating costs. While in Scotland, a 330 squadron detachment was set up at RAF Scatsta on Shetland.

They continued to fly the same role of submarine sweeps, search and rescue and convoy escorts. Until the end of WW II, 330 squadron flew over 12.000 hours from Scotland, carrying out 655 submarine sweeps, 50 convoy escorts and 22 SAR missions. After the end of the war 330 squadron, now flying Sunderlands Mk Vs, returned to Norway and set up base at the water aerodrome at Sola Air Station, flying daily routes to Bergen Airport, Sandviken and Trondheim – almost flying more like an airliner than a military unit.

Up until 1968 Norway did not have a dedicated SAR unit, but rather relied on various units equipped with suitable airframes to perform SAR as a secondary mission. This changed in 1968, when a private company was hired to operate two Sikorsky S-61 out of Sola and Bodø, while the government decided how best to set up a dedicated SAR unit.

In 1970 ten Westland Sea Kings were ordered, and 330 squadron were assigned the SAR role. Headquarter was at Bodø Main Air Station, with four flights; A-flight at Bodø, B-flight at Banak, C-flight at Ørland and D-flight at Sola, with two airframes in each flight. The squadron started operations on April 25, 1973.

NATO AWACS FOL

On November 8, 2013, it was announced that the AugustaWestland AW101 had been selected as a replacement for the Sea King and a contract for 16 helicopters, with an option for six more, were signed. The helicopters are scheduled to be delivered between 2017 and 2020.

In 1983 Ørland AB was established as a Forward Operating Location (FOL) for NATO's AWACS fleet of E-3 Sentry aircraft. Apart from providing the Sentry fleet with a base of operations in northern Europe, the base is also used for training flights, which helps in reducing the number of flights going in and out of the Sentry fleets home base at Geilenkirchen in Germany.

Since 2000, an average of over 170 AWACS sorties have been flown per year from Ørland, almost one flight every other day. A total of 33 personnel, 32 military and one civilian, work at the FOL and support the deployed AWACS crews during their stay at Ørland.


673


RESCUE
1. PUSH BUTTON TO OPEN DOOR
2. PULL DOOR OUT 6 FEET TO
JETTISON CANOPY


673

A couple of Vipers taxiing back from another mission.

Photos by Søren Nielsen

International Deployments

338 Squadron is part of NATO's Rapid Reaction Force, and since 1999 they have been deployed on numerous international missions.

From March 23 until June 10 1999, RNoAF F-16s were deployed to Grazzanise AB in Italy to take part in Operation Allied Force. This was the first time since World War II that Norway had deployed fighters into action. The Norwegian F-16s were tasked with flying Combat Air Patrol (CAP) missions, since they did not send any of their new MLU updates F-16s.

The next time RNoAF F-16s were deployed on international missions were on October 1, 2002 when RNoAF F-16s were deployed to Manas AB in Kyrgyzstan to support the US led Operation Enduring Freedom. The F-16s remained at Manas until March 31, 2003.

On January 1 2005, four RNoAF F-16s deployed for the first time to Siauliai AB in Lithuania to take part in NATO Baltic Air Policing mission. The four aircraft flew from Siauliai until March 31, 2005. Since this initial deployment to Siauliai, RNoAF F-16s have performed the Baltic Air Policing mission two more times, from December 16, 2007 until March 15 2007 and from May 1, 2015 until September 1 2015, both times flying from Siauliai AB.

As well as providing Air Policing over the Baltic, RNoAF F-16's have also flown three times over Iceland during the NATO Iceland Air Policing and Surveillance mission. The first time was in 2009; second deployment was in 2011 and the last one in 2014.

The largest operation the RNoAF's F-16's have participated in was Operation Odyssey Dawn/ Unified Protector. Six F-16's were deployed to Souda AB in Greece from March 23, 2011 until July of 2011. In total the RNoAF F-16's dropped over 500 precision bombs during the two campaigns.

The RNoAF F-16's did not remain at Souda AB until the end of the conflict, but was withdrawn in early summer 2011 when less capacity was needed to end the conflict.

Getting ready for the F-35

In November of 2008 the Norwegian government selected the Lockheed F-35 Lighting II as the replacement for the aging fleet of F-16s. Having been a partner of the F-35 program since the System Development and Demonstration phase, it came as little surprise that the F-35 was chosen.

Norway placed an initial order for 52 F-35's and as of late December 2016 they have funded the procurement of 22 of these. The first two F-35s were handed over to the Norwegian Air Force in late 2015 at Luke Air Force Base in Arizona, where they will be used for pilot training.

The first Norwegian pilot took to the skies in an F-35 in September of 2015. Under current plans, the first F-35 will arrive in Norway in 2017, where they will gradually replace the F-16 fleet.

All the Norwegian F-35s will be stationed at Ørland AB. This means that once F-16 operations starts winding down in the early 2020s, Bodø AB will be closing down. Due to the geographical shape of Norway, a small Quick Reaction Alert detachment will set up at Evenes AB in the northern part of Norway, as the distance from Ørland to the far north of Norway is simply to great to cover from Ørland.

The plans to have the majority of the 52 F-35s on order based at Ørland, means that there is currently a massive expansion of facilities taking place at the base. New hangars and maintenance facilities are being built to accommodate the new jets, as well as buildings and offices for all the new pilots and squadron support staff coming to the base in the next few years. So it is safe to say the Ørland will be at the heart for the Royal Norwegian Air Force for many years to come.

EXERCISE BLACK BLADE 2016

TEXT & PHOTOS - JEROEN VAN VEENENDAAL

Belgium was the host of the regular Blade helicopter exercise from the 14th to the 30st November. This edition, called 'Black Blade'.

A Belgium NH-90 just before touch down.

Photo by Jeroen van Veenendaal

Exercise Black Blade 2016

Belgium was host to the regular Blade helicopter exercise from the 14th to the 30st November. This edition, called ‘Black Blade’ because of the integration of special forces, had participating helicopter pilots and aircraft from fourteen countries.

This tenth Blade exercise is organized by the EDA (European Defense Agency) and falls under the umbrella of the Helicopter Exercise Program (HEP). The exercise adopts the lessons identified during previous HEP exercises, and the collection and implementation of these lessons is done by the EDA. The HEP project is designed to adapt its training objectives to reflect the actual security situation as well as actual deployments with various geographical specifics.

Participants

Austria, Belgium, Slovenia are the countries that participated in the exercise with a total of 13 air assets. They consisted of a Belgian Air Force NH90 TTH Caiman, five Belgian Air Force AW109s, two Austrian Army AB-212s, two Austrian Army UH-60 Blackhawks and one Slovenian Air Force AS532 Cougar and were operating from Florennes AB.

Roughly 400 military personnel participated as Helicopter Exercise Forces, Special Operations Ground Forces, Exercise Direction, Logistical and Medical Support. Additionally, observers from Ireland and Italy were present.

Locations

“*Flying activities take place six days per week on over thirty locations throughout Belgium.*” explains Major, and Agusta A109 test pilot Steven Boxberger. He is the planning officer during this exercise, and keeps the overview. “*The helicopters fly low, at an altitude of about 500 feet. But we do not practice near very densely populated areas to cause a minimum of inconvenience. That’s also the reason no flights were made after 10 PM.*”

Aircraft movements occurred primarily above the military training areas of Aarlen, Marche-en-Famenne and Elsenborn, the low flying zones for helicopters in the Ardennes, and in and around the air base of Florennes. Regional operations also took place in Arendonk and Gierle.

Focus and goals

One of the main focuses of exercise Black Blade 2016 is the seamless coordination and integration of the Belgian special operations forces into individual scenarios.

Major Boxberger explains: "*It's very important to align the procedures, tactics and equipment of the participating countries.*" As a helicopter pilot himself, he can clearly see the value of the training: "*For helicopter pilots, it is very important that they are used to working with their foreign colleagues. And that is exactly the challenge.*"

Mission profiles

Missions consisted of armed helicopters conducting reconnaissance, securing land convoys, protecting transport helicopters and eliminated targets. Medium-weight helicopters such as the NH-90 were used to transport ground staff and equipment. A109's were, among other tasks, ready to perform medical evacuations.

Various special operations were trained by the helicopter crews, including personnel recovery missions, night flying, MEDEVAC missions, Closed Combat Attack (CCA).

But the special forces were also very busy, performing special procedures like fast rope and abseiling techniques, Special Patrol Insertion/Extraction (SPIE), pick-up and drop off procedures, air-to-surface live helicopter shooting and helicopter parachuting.

Align procedures

A Composite Air Operations (COMAO) element was also added, and combined the participating helicopters with added air assets, like a DA20 Falcon for electronic warfare and F-16AM fighter jets.

Major Boxberger explains the focus of the exercise: "*Every European country has specific procedures for the use of helicopters. In the past, each country worked out its own technique. But during this international collaboration we align all procedures together. You fly along with people from other European countries and with other aircraft.*"

"*Every culture has its own habits, tactics and flight procedures.*" concludes Major Boxberger. "*The purpose of Black Blade is to get everyone on the same page so that the collaboration is easier.*"

Align procedures

Belgium is integrated in a contract with the EDA, but that contract will end in 2022. By then a common intervention capability of the different European forces should be achieved. The goal is to accomplish the capability to work together using the same procedures for all the forces allowing an efficient cooperation in a shared operational theater.

The next Blade exercise will take place in Hungary, and is named Fire Blade because of the focus on live firing.

LUFTSTRIDSSKOLAN

TEXT & PHOTOS - SØREN NIELSEN

The Swedish Air Force flying training school, located at Malmen Air Base, is pretty much incomparable with other armed forces flying training schools. Søren Nielsen has visited them, and is reporting why that is.

Break away, and return to base. Two Sk 60 is retuning to base, in the last rays of light.
Photo by Søren Nielsen

Luftstridsskolan

The Swedish Air Force flying training school, located at Malmen Air Base, is pretty much incomparable with other armed forces flying training schools. A very flat and practically non-existent hierarchy, in a place where everyone is equal, gives the students the best possible opportunities to make a success as pilots in the armed forces.

Cutting away the mandatory contract for new pilots, letting them select which type of aircraft they are going to fly before they start the education as well as the amazing atmosphere at the school are just some of the elements that makes Luftstridsskolan at Malmen something you don't see every day.

In the past, the Swedish Air Force did what many armed forces are doing today when it comes to selecting and training new pilots. This is an approach where less than 25% of the students make it through to become a pilot so the Swedish Air Force took a decision in the seventies to optimize the whole process.

The process has been scrutinised many times before but with no real improvements. They needed to think radically and had to look away from previous points of investigation, the students, and look at different alternatives.

This resulted in an impressive improvement, moving the success rate of less than 25% to a success rate of 95% and where the last 5% isn't usually due to bad flying skills, but rather personal problems, personality or a mental attitude that is not suitable for the armed forces.

Today the Flying Training School houses 48 pilot students (12 helicopter pilots, 4 transport pilots and 8 fighter pilots, every year for two years) and almost the same amount of instructor pilots, split into three squadrons:

- **Basic training Fixed-Wing Sk 60**
  - 1st squadron
- **Advanced training Fixed-Wing Sk 60**
  - 2nd squadron
- **Advanced training Rotary-Wing HKP 15**
  - 3rd squadron

Educators and not judges

As Capt. Magnus Bragvad, Commanding Officer of the 1st squadron, explains "*We changed our philosophy on how we educate future pilots. We start by letting the students know what they are going to fly before they begin their training.*"

When the students apply for the education, they can choose between three types - fighter, transport or helicopter and they then need to apply for at least two categories in a priority order. Once they are accepted, they already know which type they are going to fly.

Capt. Bragvad continues, "*This comes with the way we are picking our pilots - they should know from the start what they are going to fly. We don't want to pick out who is going to fly what, because then we becomes judges and not educators.*

We want them to know that before they start here there isn't any competition on who's going to fly what type - and that's what we want, no competition.

The students are not competing with the other students - only with themselves to get as good as they can get. That's our philosophy. We look at our students as colleagues from day one - not students. The student is our future wingman."

The educational environment

Cadet Christian Johansson, a future JAS 39 pilot - who already had civil flying experience before applying, tells "*The environment in the school is completely different from the civil world and even the other branches of the military where you get called by your last name.*

As soon as you got here, the first thing the teachers asked was: What's your nickname? That kind of sets the standard of how we speak to each other here and how the environment is."

Cadet Robin Norén, a future TP 102 Gulfstream pilot, who also has civil flying experience, adds "*The whole idea is to build up a relationship where you feel safe, where you don't have anything to lose by telling the truth, because that becomes dangerous as seen in the other branches where you get a penalty every time you do something wrong, even if it's not your intention, then later on you won't tell what happened because you are afraid of the potential penalty.*

Here we want everyone to be comfortable to tell everybody what happened, so we can all learn from our mistakes. We even discuss family relation subjects with our teachers. It's a really trustworthy environment."

Cadet Johansson continues, "*In the civil world you have grades and here you either pass or you don't. You never see on paper how good or bad you fly. The Swedish Air Force dropped the grades in the seventies because it starts a competition on who is the best pilot.*

We don't know who's best because it doesn't matter. I felt that in the civil pilot school that everybody was more on their own because you should get the best grades to get the best job for yourself. You didn't really care about each other, you were friends, but you didn't really care.

Here it's totally different, we really care for each other. If someone has a bad day, we all learn from it and we don't judge. We help each other to go from there to the next level."

The setting sun forms silhouettes of the two Sk 60.

Photo by Søren Nielsen

Helping each other

"*The students help each other out within the student community and they wouldn't do that if they were competing against each other to be the best in the class, just to be sure to fly the type that they want - because they want that seat.*" says Capt. Bragvad.

Cadet Johansson, adds "*If a student fails, the entire class fails. We are all colleagues and we will work well together in the future, and the best thing is to help your colleague out, so you know you'll have the best wingman you can get.*"

"*The instructors are very happy when the students makes it and concerned when they don't. That's how I want all my instructor pilots to be; He wants the students to succeed, he wants them to make it, and if the students doesn't make it, he's concerned. The instructor pilots care about their students and that's where we want to be.*" says Capt. Bragvad.

Psychological training

Capt. Bragvad continues, "*We have studied the psychology of how the brain works. You don't learn when you are forced and stressed. We don't want to stress and put pressure on the students; the students do this all by themselves!*"

Cadet Norén continues, "*It's not a strict environment. The teachers expect us to be prepared and to have read-up the lessons. We talk a lot about the flying window. Half an hour to an hour before we go to the aircraft, we should leave our cell phones alone and sit by ourselves to think through what's going to happen on the upcoming flight during the lesson.*

I never had this in the civil world. Yes, we needed to be prepared but it wasn't that strict. You could sit with your phone, watch YouTube or what you wanted to do beforehand, then you went out flying and evaluating.

It's very different here, as a lot of time is spent on preparation and evaluation, but it's not strict in a way where you need to spend a certain amount of time on it. You need to figure out what works for you - your way.

Take the debriefs as an example, it's a very open environment where we all talk it through and the teacher maybe gives us a few recommendations or sometimes they just say that you have learned a lot today and just continue forwards."

Cadet Johansson, adds "*Debriefs are really an exercise in this 'No blame'-culture, you admit to all your faults and all the mistakes you made. This is very helpful as this is done within the class and not just in a student to teacher talk.*

You can listen to what others have just done which is maybe what you are going to do tomorrow and the student for example says that I did this, but I should rather have done it like this. Next time you'll think about this and use the experience that the other student shared with you. Then the next day when you are in the exact same situation, you remember what he said and you learn from their experience.

The teachers are not judges, but coaches, helping us getting through in the best way possible."

A complete training

Cadet Norén continues, "*We have a lot of sessions that are not about flying, but about what's best for a pilot such as health, training and physiology, what not to eat and what's best to eat. It's been very helpful. You really feel here at the flying school, that they want you to have the best opportunity to become as good as you can be.*

We are not in a rush, we are enjoying it here. I think this year at the flying school has been the best year of my life. If they tell me that I should stay here for two more years, I would sing a song, grab a beer and celebrate.

It's absolutely amazing here. I have been inspired by being here and I hope that I one day can come here as a teacher. Nothing is really a problem here, we do everything together.

We have become best friends within the class and are really tight connected."

The Nordic culture

Capt. Bragvad explains "*It has something to do with the Nordic culture. I'm not sure it would work for all cultures around the world, like if you have a very segregated society. A rank here doesn't mean so much and that's intentional.*

The philosophy is that the student has one instructor the first year. This instructor is then responsible for that student and an instructor usually only has a maximum of two students. This is to build a strong relationship between the instructor pilot and the student because that helps in learning.

If you feel safe and you feel that this instructor really wants you to make it, then you won't focus on what the instructor thinks, the only thing you need to focus on is getting as good as possible.

If the student and instructor relationship doesn't really work, we don't try to change the student, but we'll change the instructor to another instructor. The two personalities needs to match.

We do not have grades, so you can't compare yourself with your classmates to see if you are doing better. We write words, describing how the session went instead of giving you a grade. It makes it a bit harder for the instructor pilot as they need to be more specific when writing in this diary; what went good, what went bad, where the student has to develop etc.

The grade doesn't, in our opinion, make a better a student." concludes Capt. Bragvad.

The pilot course

The student already knows which type they're going to fly once they're accepted which helps in different ways as described earlier. Another advantage is that the structure and flow of the education can be adjusted to be more specific about the type they're going to fly.

The first two years of the education is similar for all students. The students starts with a standard armed forces Junior Cadet education which lasts for six months. This is a basic armed forces education, which isn't only for future air force pilots, but for all branches of the armed forces.

They'll then start on the National Defense College Aviation (NDCA) program once they're Junior Cadets. The first one and a half years of the three year programme is spent at the Military Academy Karlberg in Stockholm, where they learn the theory in tactics, military techniques, leadership, as well as physical training.

Once the first year at the academy is completed, the students get split for the next year. The fixed wing students will head to Luftstridsskolan at Malmen Air Base, close to Linköping. Here they'll go to 1st squadron, the basic fixed wing training squadron, flying the Sk 60. Rotary wing students will go to Bückeburg in Germany for their basic rotary training, flying the Eurocopter EC135.

After this year of flying, the students head back to the academy in Stockholm to complete the NDCA programme with a six month officer's exam. This will make the students officers in the Swedish Armed Forces, earning them a bachelor degree in war science, a degree that's of equal value to any other degree from civilian university.

Malmen and Bückeburg

The fixed wing students then return to Luftstridsskolan at Malmen to join 2nd squadron to begin their advanced flying training. The transport pilots will stay in 2nd squadron for five months before heading off to civil aviation training in Ljungbyhed, then heading to their future squadron for type rating and combat readiness training (CRT).

The fighter pilots will stay in 2nd squadron for eleven months to complete their advanced fixed wing training, all done in the Sk 60. They'll then go to F 7 at Såtenäs for six months for the conversion training (CT) to the JAS 39 Gripen. Here they learn all about the fast jet, as well as all the avionics, sensors etc of the Gripen.

Once they have cleared the CT, they'll head to their future squadron for CRT. The student don't pick their own squadron, as this varies from year to year between the three Swedish fighter wings: F 7, F 17, and F 21.

The rotary students will return to Bückeburg for further six months of flying training which then concludes their basic flight training. They'll then join up with 3rd squadron, the advanced training Rotary-Wing, at Luftstridsskolan. Here they'll fly the HKP 15 (AgustaWestland AW109) for the next two years.

Returning to base with the last rays of lights.

Photo by Søren Nielsen

Fixed Wing

The basic flying training starts off with theoretical training combined with some simulator work. Within the first 3-4 weeks the students will find themselves in the Sk 60 for their first flight. The Swedish Armed Forces might be the only air force in the world to train its fixed wing pilots in a jet from day one, which is an advantage, as you can do everything with the jet trainer from day one.

The theoretical training, combined with simulator training continues, as they are flying. The students have around two hours of theoretical training for every flight they do. One flight can include multiple theoretical sessions, making the ratio of theoretical to flying larger.

The basic flying training consists of simple handling, aerobatics, instrument (Instrument Flight Rules - IFR), navigation, formation etc. The students go solo quite late, usually after around thirty hours of flying, compared to around fifteen hours before reaching solo when you're flying a prop plane. When you have a fast, dynamic jet, things can go wrong and with the speeds they're flying, they can go wrong fast. Having the pilot get to thirty hours before going solo, makes a difference and keeps everyone safe.

The side-by-side configuration of the Sk 60 has its advantages in the early stage of training, making the interaction between the student and instructor a lot easier, where the instructor gets a lot of information about the student by just looking at him. The instructor is able to monitor the students, making notes on where their hands and feet are, where the student is looking, and how he or she behaves.

When all the fixed wing students are back after completing the NDCA program, they'll start of the advanced flying training together but they will be split up after a short while. The transport students will get a short taste of the air-to-air role, but will never do it solo.

They will stay at Malmen doing advanced flying training for five months, before moving to the Trafikflyghögskolan in Ljungbyhed, to train for multi crew, multi-engine types and to get the required commercial pilot license (CPL).

Tour Europe

Once done in Ljungbyhed, the students will move on to their assigned squadrons to get their CT. In the squadrons, the pilots will get the type rating in the type they are going to fly as well as getting their combat readiness training.

The fighter pilots stay for eleven months with 2nd squadron, doing simulated fighter and recce missions, air-to-air, and air-to-ground missions, NATO-procedures, as well as a "Tour Europe".

The "Tour Europe" is a flight to a European country, where the student needs to do all the planning, coordination, approvals, permits etc. to facilitate such a flight with a Swedish military aircraft. This teaches the students about all of the processes such a flight requires.

Once the transport pilots have left Malmen, the fighter pilots begin their extended air-to-air training. The air-to-air training is very advanced and creates a high demand on the students as they go solo without limits.

The students will also go to Finland to take part in the final air-to-air exercise at the Finnish flying training school - a Red Flag event for students. This is a relatively new concept, which illustrates the strong bond and cooperation between the Nordic countries.

The fighter students will also go to Flygvapnets Luftstridssimuleringscentrum (air combat simulation center), FLSC, in Stockholm, to do familiarization flights in the JAS 39 Gripen simulator.

The FLSC consists of eight simulators, all linked up, giving them the opportunity to do a 4 vs 4 in the simulators. This gives the students a hint of what's coming, before they head out to the F 7 wing at Såtenäs to conduct their JAS 39 training to become the new generation of Swedish fighter pilots.

Rotary Wing

The course for the rotary students is a lot different when compared to the fixed wing students. The rotary students start their basic flying training in Bückeburg in Germany, flying the Eurocopter EC135 and covering navigation, IFR (CPL), mountain flying, basic night vision goggles (NVG) training. There is one Swedish Qualified Flying Instructor (QFI) based at Bückeburg.

The basic flying training for the rotary students is longer than the basic flying training for the fixed wing students, as they will return to Bückeburg to continue the basic flying training when the fixed wing students return to Malmen for their advanced flying training. This means that the students will get 115 flight hours in Germany before heading permanently to Malmen.

When the transport students leave Malmen to go to Ljungbyhed, the rotary students begins their advanced flying training in the 3rd squadron, and the 14 QFI, at Malmen, where they will fly the HKP 15 - AgustaWestland AW109. The advanced flying training consists of low level flying, mountain flying, formation training, advanced NVG and finally solo-flights.

The rotary students will stay eleven months at Malmen for their advanced flying training, gaining them an additional 110 flying hours. Once done with their training, the students will move from the 3rd squadron to get their CRT. The HKP 14 pilots will get CRT in France, HKP 15 pilots will stay at Malmen and HKP 16 pilots in the USA. Once they have their CRT, they'll join their future squadron.

The sun is setting with two Sk 60 above the many lakes in the middle of Sweden.

Photo by Søren Nielsen

Instructor courses

Besides having the student pilot courses, Luftstridsskolan also runs other courses, one of them being the Qualified Flying Instructor course (QFI). This course trains pilots from different Swedish front line squadrons to become qualified flying instructors, which gets them back where their flying career started.

The Swedish QFI course takes a different approach to many other countries QFI courses. The most noticeable difference is in the first two segments of the course. Here they have a lot of theoretical training about psychology and pedagogy as well as a “live practice” segment, which really tests the future instructors to their limit. This is to get the instructors to have the right knowledge, mind-set and skills to train pilots and to give them a chance to practice this. The course turns the future instructors into coaches rather than judges.

It’s important that the instructors don’t judge a student for having a different personality to their own. This helps them to become as objective as they possibly can be. If a sortie is “failed”, it is as much a failure for the student as for the instructor. In most other countries instructors just control that the student is doing the right things. Instead the focus is on the learning process and trying to create an environment that is optimal for learning.

The student and the instructor are in it together and their goal is to get through it together. This method has three pillars: the relationship between student and instructor, communication, and self-confidence. It’s a very open relationship between the students and the instructors, and it has to be like this, as they don’t want to end up in a “higher officer and cadet” situation, where the cadet is afraid to speak to the higher officer. Students and teachers can say anything, every right and wrong thing they do, every thought they have, absolutely anything.

This is where they build the foundation of the future pilots, via the future instructors. The instructor needs to build the students self-confidence as much as they can. It is scientifically proven that confidence makes better learning possible and that if you learn during stress you don’t get the deep learning process.

Live practice

You’ll always need some amount of pressure, but the Swedish Air Force makes sure never to pressure the students too much, by understanding the cone of stress, where there is a fine balance between the levels of stress you have and how well you perform.

Once they learn the elements under the right amount of pressure, then it’s going to be how they do it by instinct. When the students later come under stress in a live war situation, then they know how to handle the situation as they have already had the experience and instinct for it.

The instructor pilots have to evaluate and adapt to student’s personality and learning style. This is an important skill for the instructor to master. If the student and instructor are too alike, they might not be a match as some might be too much of a perfectionist, where the opposite would be chaotic.

It should be a fine balance, where the students and instructors line up mentally. The instructors are instructed in the three learning styles; Visual, Auditory and Tactile so they can adapt to the way that the student learns the best. These important skills are the first that the instructors must learn and develop.

After this basic training, they’ll head into the “Live practice” segment, where they take volunteers, more or less “from the street” with no previous flying or military experience. The instructors are then supposed to teach them how to fly within three weeks. They will fly once every day from day two.

The instructors have to put theory into practice and really adapt and show what they have learned. The volunteers selected are based on the instructor’s knowledge, to get the person least similar to the instructor as possible. This is done to challenge the instructor as much as possible and to get them in the worst-case scenario from the beginning to see what they are capable of.

As real as possible

The pair will then fly special sorties that are known to be confusing in terms of communication between the instructor and the student to test the instructor's abilities to teach, observe and communicate with students.

It's a very intensive three weeks, as they make mistakes and learn each day, giving the instructors the equivalent of almost a year of experience in just three weeks. Compared to talking about it, doing theoretical practice, and then getting a real student, this is an effective way of training instructors.

This will, in the end, give the instructors the mental tools they need to teach future pilots to be autonomous and have the self-confidence to make those split second decisions when they sit alone in the cockpit of a fighter jet in a war situation.

Sk 60

The Swedish Air Force bought a total of 150 aircraft back in 1965 to replace the aging De Havilland Vampire fleet. The aircraft were divided into three principal variants:

- **The Sk 60A for training and liaison duties using a four-seat configuration.**
- **The Sk 60B for light attack missions in a twin side-by-side seating configuration.**
- **The Sk 60C dual-role attack and reconnaissance aircraft equipped with various cameras in the aircraft's nose.**

The future

Today the Swedish Air Force flies the Sk 60A and Sk 60B models, using them for training and liaison duties. The first student pilots started flying the Sk 60 in July 1967, making 2017 the 50th anniversary of the Sk 60, making the workhorse of the Swedish Air Force fixed-wing pilot school an old lady.

SAAB received a contract in December 2008 to extend the support of operations of the Sk 60s in the Swedish Air Force trainer fleet up to mid-2017. This has then been extended to mid-2020.

The majority of the Swedish Sk 60s are based at Luftstridsskolan in Malmen with a number of planes throughout the three air bases too, F 7 Såtenäs, F 17 Kallinge and F 21 Luleå. All of the Sk 60s that are not at Malmen will be moved from their base during the summer of 2017, to Malmen as time is running out for the airframes and the Air Force need to concentrate on getting all the hours possible from these aircraft to train the future pilots of the Swedish Air Force.

What the future will bring is currently uncertain, as a request for information (RFI) was issued in April 2015, by the Defense Materiel Administration for a new Military Flying Training System to provide long term basic and advanced training fleet functions. The advanced trainer requirements specify the presence of an embedded training capability including simulated radar and weapons use, as well as tactical displays in the cockpit resembling fourth and fifth-generation jet fighter aircraft.

Replacement aircraft, such as the Alenia Aermacchi M-346, BAE Systems Hawk, Embraer Super Tucano and Pilatus PC-21 have been suggested. SAAB and Pilatus Aircraft signed a memorandum of understanding to offer the PC-21 to the Swedish Air Force.

Only time will tell what the Swedish Air Force and Luftstridsskolan will end up with, if it is one aircraft replacing the Sk 60 for either basic and advanced flying training or a two type aircraft configuration.

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TURKISH ARMY AVIATION COMMAND

TEXT & PHOTOS - MARCO DIJKSHOORN & DIRK JAN DE RIDDER

Marco Dijkshoorn and Dirk Jan de Ridder reports from Ankara, and Turkish Army Aviation Command, on how they have modernized and standardized the it.

A two ship of S-70 Black Hawk helicopers making their way towards the desert. Photo by the authors.

Turkish Army Aviation Command

The Turkish Land Forces Command or Turkish Army made during the attempted military coup that started late night on Friday July 15. Besides Turkish Air Force F-16's flying out of Ankara-Akinci and Diyarbakir, KC-135's flying out of Incirlik, coup-plotters used Army Aviation Command AH-1 Cobra helicopters based at Ankara-Güvercinlik as well as Black Hawk, Huey and Cougar helicopters from Bodrum to attack several military and political targets, including the Parliamentary Palace, the headquarters of the Turkish National Intelligence Organization (MIT), Satellite operator Türksat in Gölbaşı as well as a number of Police facilities like the Special Operations Command at Ankara-Gölbaşı. Bodrum-based Cougar and Black Hawk helicopters deployed Special Forces to a hotel where President Recep Tayyip Erdoğan was staying at the time of the coup-attempt.

The plotters deployed large numbers of troops and heavy armour in both Istanbul and Ankara while Turkish Air Force F-16s executed show-of-force flights over Ankara where they would strafe the city centre at low-level with full afterburners deployed. Some even dropped bombs on key-government buildings in broad daylight.

After only a few hours it was clear that the plotters did not get the anticipated support for the coup and forces loyal to President Erdoğan took back control of the situation before dawn, heavily supported by masses of Erdoğan-supporting civilians that went to the street when the President asked them to.

Within hours after the failed coup, almost 3.000 military personnel had been detained and 2,745 judges removed from duty. Many more would follow in the time after the failed coup. It is to be expected that the Army and the Air Force will be ongoing targets for a purge and in the direct aftermath of the failed coup, footage of detained high-ranking officers and foot-soldiers was shown on television. It is hard to say what the longer-term implications are of the purge so this article will focus on the situation from just before the coup-attempt.

History of Turkish Army Aviation

In 1948 the Kara Ordusu Topçu Havaciliği or Army Artillery Aviation section was formed. A number of officers from artillery regiments were sent to the Türk Hava Kurumu or Turkish Aeronautical Association for flying training.

The THK is a civilian organisation set up in 1925 by Mustafa Kemal Atatürk to promote interest in aviation and is still very much alive today. Initially the Topçu Okulu Hava Grubu or Artillery School Air Group operated out of Polatli but in 1958 the Army Aviation Headquarters and Flying School were moved to Ankara's former civil airfield of Ankara-Güvercinlik. One year later the Flying School was renamed to Kara Havacilik Okulu or Army Flying School.

Eventually, the aviation component became more and more important and from 2003, the Turkish Army Aviation Command went through a drastic reorganisation. In that process it gained the status of an independent command reporting directly to the Army headquarters. Four Air Regiments (Hava Alay) were created at Ankara Güvercinlik, Malatya-Tulga, Izmir-Gaziemir and Istanbul-Samandira.

Besides these four regiments, the Army Aviation Command utilizes a number of subordinate units that operate out of satellite locations to perform their duties.

An AH-1 Cobra from the Turkey Army. The Cobra was first native attack helicopters to be delivered to Turkey.

Photo by the authors

Recruiting new pilots

To sustain an Army Aviation Command, new recruits are needed constantly. With the high op-tempo in Turkey, there is a constant need for qualified and certified pilots and not only from the Army but also from the other air-arms that train with the Army.

Each year 300 to 400 recruits apply for a pilot position in the Army but after going through the Pilot Selection System, only 140 pilots on average start with the Basic Flying Training. This number is limited not only by the qualifications and the outcome of the Pilot Selection System but also because currently the Army Aviation School is at its full flight capacity, Güvercinlik cannot practically host any more flights.

Before the recruits are allowed to enrol in any of the classes of the Army Aviation School, they first have to graduate from the Army College where they will undergo tests in flight simulators to determine the piloting skills. The Pilot Selection System selects the candidates that can enrol into the School but it does not give an advice for what career the aspirant pilots should pursue.

All the pilots have to follow the same basic training course which involves flying the fixed-wing Cessna T182T as well as the AB206R helicopters initially and at a later stage in the training also the UH-1H/AB205 Huey and T-42A and Cessna 421B.

Ankara moves in

With over 100 flights per day on average, the relatively small area of Güvercinlik air base is buzzing with activity. Due to the very close proximity of the airbase to the ever-expanding city of Ankara, the flights are putting a high pressure on the environment surrounding the airport. Specific training areas for tactical flying had to be sought further afield and forward operating bases are used to take the pressure off Güvercinlik.

To release the pressure on the city of Ankara in the longer term, the Turkish Army Aviation Commanders sought a solutions and they found an ideal location to move the Turkish Army Aviation School to, Isparta Süleyman Demirel, 320 km to the south-west of Ankara.

Aviation school moves out

Isparta is ideally located with the Mediterranean Sea only 115 km to the south and because it is surrounded by mountains, all sorts of training scenarios can be played out without putting pressure on the human population. Furthermore, the Mountain Commando School of the Turkish Army is located here which makes for realistic training scenarios. The plans to move the Army Aviation School away from Ankara became more concrete around 2010 and plans were made to make the move reality.

"*Ankara and the surrounding areas are not ideal for nap-of-the-earth (NOE) low-level flying whereby geographical features are used as cover*", says Brigadier-General Unsal Coşkun, the highest-ranking officer at Güvercinlik army air base. "*Koçoğlu Group was hired as the prime contractor for the redevelopment and the location to build it was chosen: Isparta Süleyman Demirel Airport. Our move to Isparta will bring a lot of possibilities for tactical flying training like NOE and night-vision goggle (NVG) training in a far less light-polluted area*", he continues.

Currently the small aerodrome of Temeli, 40km south-west of Ankara is used for NOE and NVG training but once the School has moved to Isparta, specific forward operating bases that serve specific purposes will be used and if needed built from scratch.

Since the start of the building process in 2012, a new runway, parallel to the 23/05 runway used by the civilian airport has been constructed. As part of the $150 million project, Koçoglu takes care of the construction of the Army Aviation Command headquarters building, three hangars (for helicopters and fixed-wing aircraft), four helipads, two runways, a maintenance centre, as well as other educational buildings and dormitories.

The project is still in full swing and is expected to be completed in 2016. The move of the Army Aviation School was planned for year's end of 2016 but the current complications might well push this date back.

A two ship of AH-1 Cobras launching.
Photos by the authors.

New and more diverse training

During the building process a number of lessons learned were incorporated which resulted in changes to the layout of the airfield compared to Güvercinlik. Isparta will have more helicopter landing pads than Güvercinlik, which allows for more concurrent training flights. It also has two autorotation panels, instead of only one that is available in Güvercinlik.

Due to the move to Isparta, the Army Aviation School is able to host and train more students. Although the number of students will increase, the number of aircraft at the disposal of the School will stay the same.

Due to the new and more diverse training environment that Isparta provides, the flight training syllabus has been changed to also include flights over sea and tactical flying as part of the Basic Rotor Wing Pilot Course.

To not interfere with the civil aviation traffic using the adjacent Süleyman Demirel airport, the Army Aviation School will get its own Controlled Traffic Region (CTR) with a dedicated control tower overlooking the helipads and the runway.

Although more are needed, two forward operating bases are already present in the vicinity of Isparta, namely Çardak, which is a Turkish Air Force reserve base located 60km to the east of Isparta. Another one is farther afield.

The big transfer

250km south-west is Bodrum Askeri, an airport that was taken over by the Army from the Turkish Civil Aviation Authorities in 1998 with a huge training area adjacent to the air base. These will be used for specific training purposes like fixed wing basic training, special operations, mountain training, NVG training and tactical flying.

The actual move of the assets to Isparta is a monumental task. All the Flight Instructors, mechanics and support personnel as well as over 50 planes and 100 helicopters need to be transferred.

Isparta can initially accommodate approximately 450 students and personnel but these figures can increase to as much as 1.200. Isparta will, just as Güvercinlik, be commanded by a Brigadier General which indicates that it will become an Army Aviation Regiment in its own right.

The 5th Maintenance Centre Command (5 ABMK) which is located at Güvercinlik performs depot-level maintenance to all helicopter and fixed-wing types of the Army Aviation Command.

This unit will stay at Güvercinlik as regular maintenance will be performed at Isparta by local maintenance personnel. When depot-level maintenance is needed, aircraft will transfer back to Güvercinlik.

A S-70 Black Hawk decents towards the rocky hills.
Photo by the authors.

US Marine Corps inspired training

Inspired by the US Marine Corps (USMC), the Army Aviation School has adopted their doctrine to train all pilots in both fixed wing as well as rotary aircraft. All students start with the fixed wing course on the Cessna T182T Turbo Skylane and when graduated they will move on to the rotary section where they will fly the AB206R and Huey respectively.

Only when they pass the solo flight in the AB206R successfully, they will learn to fly heavier helicopter types, typically the AB205 and UH-1H. Once graduated on the Huey, the selection is made if a pilot will be a fixed-wing or rotary-wing pilot. Rotary-wing pilots move on to the advanced helicopter training on the S-70A-28D Black Hawk and AS532AL Cougar while fixed-wing pilots will go to the Cessna T-42A and Ce421C and on to the Beech 200. Some helicopter pilots with specific talents get the chance to operate the (Super) Cobra and T129 ATAK attack helicopters.

Modernization

In the last few years the Turkish Army has been modernized and standardized. Under the Helimod I and Helimod II programs, the Huey, Cougar and Black Hawk fleets were upgraded and a number of older types were replaced by new types. The Cessna U-17B and Cessna T-41D fleet was replaced by the CeT182T Skylane of which 46 were delivered between March 2009 and August 2010.

The Bell OH-58Bs were withdrawn from use, leaving only the Bell 206R in the basic helicopter training role. Due to the delay of the introduction of the T129 in the Attack helicopter role, three additional AH-1W Super Cobra helicopters were delivered from USMC stocks in September 2012. In June, the first CH-47F Chinook heavy-lift helicopter was delivered to Turkey, introducing a new capability for the Army.

On an organizational level things changed as well. The Özel Hava Grup Komutanlığı or Army Special Forces Command moved from Güvercinlik to Etimesgut where they are now located right next door to the Turkish National Intelligence Agency (Milli İstihbarat Teşkilatı or MIT) with whom they even share the platform; a very convenient location to have your professional soldiers in times of need.

The Special Air Group Command

Under the Turkish Utility Helicopter Program (TUHP) that was formalised in early June, the Turkish Army will receive twenty Utility (UH)/SAR-configured S-70i helicopters, designated T70, plus eleven for the Special Forces which will be in the SAR/CSAR configuration.

In a surprise move, the first the first prototype of the T-70/S-70i for the Turkish Army was revealed by Sikorsky's Polish subsidiary, PZL Mielec on June 22, 2016. Over the next two years, PZL will manufacture the first five cabin structures that TAI will assemble onto the first five T-70 aircraft. The remaining aircraft will be produced under license by TAI and Turkish Defense company ASELSAN (Askeri Elektronik Sanayi or Military Electronic Industries).

The TUHP contract covers the production and delivery of 300 T70 helicopters (109 firm order and 191 options) to six Turkish military and government agencies: 30 for the Gendarmerie (Jandarma Genel Komutanlığı) in the SAR/CSAR/ Armed Reconnaissance Helicopter (ARH)/UH configurations. 20 UH/SAR T-70s will go to the Turkish Army Aviation Command (Türk Kara Havacilik Komutanlığı), the General Directorate of Security (Emniyet Genel Müdürlüğü), to be flown by the National Police, will receive 20 UH versions and the Ministry of Forest and Water Management (Orman ve Su İşleri Bakanlığı) will get 20 too which will be equipped for fire-fighting duties.

The Special Air Group Command (Özel Hava Grup Komutanlığı) will get eleven, the Turkish Air Force (Türk Hava Kuvvetleri) will get six SAR/ CSAR versions. Finally, a pair of T-70 ELINT/ SIGINT versions will go the Gölbaşi Command unit of the National Intelligence Agency/ Signal Intelligence Directorate (Milli İstihbarat Teşkilatı/ Sinyal Istihbarat Baskanligi).

Unmanned capabilities

The Turkish Army adopted Unmanned Aerial Vehicles (UAV) technology when it was still in early development. As far back as the early nineties, six General Atomics GNAT 750 UAVs were delivered and they were mainly operating in Eastern Turkey in the fight against Kurdish separatists. The GNAT 750 was supplemented by the more advanced and capable I-GNAT of which sixteen were delivered from 2000 onwards.

These UAV's were retired in early 2000's and handed over to TAI. Despite the success of the I-GNAT, the Turkish Army are relying on American MQ-1 Predator UAVs operated by U.S. forces out of Incirlik Air Base due to the more recent conflict with ISIS on the Iraqi and Syrian borders.

Due to the deteriorating security situation along these borders where rocket attacks by Daesh (or ISIS) are an almost daily reality, the Turkish military fast-tracked two programs aimed at indigenously developing armed drones: the Bayraktar TB2 and Kayarel UAV's.

The Bayraktar TB2 is a tactical unmanned aerial vehicle (UAV) system manufactured by Baykar Makina. The Bayraktar tactical UAV developer is Kale Baykar, a joint venture of Baykar Makina and the Kale Group.

Phase one development of the prototype Bayraktar Block A began in 2007 and first flight was made in June 2009. The contract for phase two development and serial production was signed between the Savunma Sanayii Müsteşarlığı (SSM) or Undersecretariat for Defence Industries and Kale-Baykar in December 2011.

The second phase involving the development and serial production of Bayraktar Block B (TB2) commenced in January 2012. The Bayraktar TB2 completed its first flight in April 2014 with the acceptance tests following in November 2014.

More UAVs

The Turkish Land Forces accepted the first system consisting of two ground control stations (GCS), three ground data terminals (GDTs), two remote video terminals (RVTs), ground support equipment and six Bayraktar TB2s UAVs, before the end of the same year, with a second system, also containing six UAVs following in June 2015. Another six are currently on order.

The Bayraktar TB2 is used in eastern Turkey to conduct reconnaissance and intelligence missions against the opposing Kurdish groups and Daesh and since October 2015, the Turkish Police has one system with six aircraft on order as well, showing the success of this platform.

The Bayraktar TB2 can carry a maximum payload of around 100kg, has a range of more than 150km and can fly at a maximum altitude of 22.500ft. It has a maximum speed of 70kt and endurance of more than 20 hours.

Another indigenous UAV is the Vestel Karayel UAV of which the Turkish Army has six on order. The Karayel (or Southwind) UAV System is designed and manufactured by Vestel Defense Industries, The system was developed in 2007 and began test flights in 2009. The Kayarel can reach a speed of up to 110kt, has an endurance of 20 hours and a payload of 70kg.

Deliveries of the first system containing six aircraft was expected in 2013 but deliveries have not yet taken place due to contractual issues. In order to meet urgent operational requirements, the Turkish Army signed a lease contract with Vestel and began using Karayel UAVs out of Elazig.

International Aspirations

The Army Aviation School Command is in fact also a Multinational Military Flight Crew Training Centre that provides a 48-week long Basic Rotary Wing Pilot Course for other air-arms. Clientele is found both inside Turkey like the Gendarmerie, Police, Navy and Forestry Department as well as outside as the training centre has trained students for over 10 foreign countries.

All non-Turkish Army recruits are subjected to the same Pilot Selection System as their Turkish Army equivalents and all will follow the same syllabus.

The Turkish Army conducts regular exercises with multinational parties. A good example is the bi-annual Efes Combined Joint Live Fire Exercise which takes place in Turkey's Western Anatolia region, the central part of the Aegean Sea, the Gulf of İzmir and the Doğanbey Live Fire Training Area, 70km north-west of Turkish Army training camp and airport Bodrum Askeri.

During the 2016 exercise the armies of Azerbaijan, Germany, Pakistan, Poland, Qatar, Saudi Arabia, the United Kingdom and the United States participated. Since a few years, the Turkish Army has regular exchange programs with neighbouring Azerbaijan with which Ankara has closer ties than ever before.

The aftermath of the coup

Until today it remains unclear what exactly happened during the coup attempt of 15 July. Rumours are that a huge number of helicopters that were present at Güvercinlik were damaged or destroyed by the attack helicopters that returned from the assaults over Ankara. A Black Hawk helicopter with eight military personnel on board defected to Greece.

The occupants requested asylum. Some helicopters are reportedly lost after being used by coup-plotters that fled into the Turkish countryside and left the helicopters behind.

Despite the many rumours, some facts can be substantiated with pictures and video accounts and it is clear that Army Aviation assets were used by the coup-plotters. Apart from the material loss that might have been inflicted, the Army Aviation Command suffered a huge blow because many officers and cadets were either arrested or discharged.

With so much personnel leaving the Army ranks, it is to be expected that many years will pass before a full recovery can be expected.

A massive reorganisation to avoid coup-attempts in the future seems highly likely. The events that unfolded on that single night will undoubtedly result in the biggest changes to the Turkish Army Aviation Command in recent history.

A Turkish Army AH-1 Cobra landing on a training mission.

Photo by the authors.

Beech 55 Baron / T-42A Cochise

Five T-42A Cochise were delivered under Foreign Military Sales (FMS) in 1971 and still serve at Güvercinlik instrument trainers. They sport an attractive white colour scheme similar to the Beech B200s and some have a shark mouth painted on the nose.

Their primary role is to get pilots that are selected to operate the multi-engine Cessna 421B or Beech 200s, acquainted with multi-engine aircraft. They are owned and operated by the Army Aviation School and despite their age, they are expected to remain in service until at least 2018.

AH-1P Cobra, AH-1W Super Cobra

The first native attack helicopters to be delivered to Turkey were ten brand-new AH-1W Super Cobras that arrived in Turkey between 1990 and 1994. They were delivered under a Foreign Military Sales program.

Due to delayed operational capabilities of the T129A, Ankara decided to request three ex-US Marine Corps AH-1W to augment the then serviceable fleet of six Super Cobras. These arrived in 2012.

In the meantime, Turkey sought more attack helicopters and training platforms. Thirty surplus US Army AH-1S, AH-1P and TAH-1P Cobra trainers were gradually acquired and arrived in the following four batches supplied under FMS: seven AH-1P on 3 June 1893, seven AH-1P on 16 August 1993, twelve AH-1S on 5 March 1995 and four TAH-1P training platforms on 29 March 1995.

The Cobra fleet was later subjected to an upgrade program supported by Israeli Aircraft Industries under which they received improved weaponry, navigation systems and self-defence systems.

More recently, ASELSAN fitted the Cobra and Super Cobra fleets with a self-defence suite consisting of EADS Missile Launch Detection System (MILDS) produced under license by ASELSAN as well as chaff/flare dispensers.

In the near future, the AH-1Ps will be replaced by the T129.

Bell 206R Jet Ranger

In 1996 an order for twenty AB206B-3 training helicopters was completed and when these were subsequently upgraded, they received the local AB206R designation.

In 1998 thirteen refurbished Jandarma AB206R were taken on charge by the Army Aviation School to supplement the existing fleet.

The Jet Rangers are the primary helicopter training platform and all students now start their basic helicopter training course on this type.

Beech B200 King Air / Super King Air

Five Beech B200 King Air dual-prop planes were delivered between 1991 and 1992. They are used for VIP transportation and liaison duties. Two ex-Army operated Harita Genel Komutanlığı or General Mapping Command examples have been transferred to the Millî Savunma Bakanlığı = Ministry of Defence around 2011, after the Mapping Command activities were privatised. The exact role of these two King Airs remains elusive.

Five Beech 350 Super King Air are leased under a $70 million contract, covering 2.000 flying hours, signed in May 2012. They still sport the US Civilian registration and are in a quasi-civilian livery but their purpose is very clear since they are registered in the FAA with the "US Special Operations Command" as the owner. It is likely that these are operated by the Army by the unit called Insanli Kesif Ucagi (Manned Reconnaissance Aircraft) from Malatya but they might as well be flying for the National Intelligence Organisation or MIT.

Since 2012, all the Signal Intelligence (SIGINT), Electronic Intelligence (ELINT) and Communications Intelligence (COMINT) activities were consolidated under the MIT department "Sinyal İstihbarat Başkanlığı" or Signal Intelligence Directorate, which is an organisation run by civilians.

Previously this role was performed by Genelkurmay Elektronik Sistemler (GES) or Joint Staff Electronics Command, a military organisation. The consolidation of intelligence gathering services under one tightly controlled entity such as the MIT as well as the civilization of these critical services must have contributed to a better control by the government.

Bell UH-1H & Agusta-Bell 205 Iroquois

Seventy Italian-build Agusta-Bell 205 Hueys helicopters were delivered to the Turkish Army between 1968 and 1985. From 1982 onwards, the United States started delivering ex-US Army Bell UH-1H Huey helicopters and by 1986 a total of 100 Hueys was delivered of which 60 were newly-built kits, locally assembled by the 901st Hava Araçlari Ana Depo ve Fabrika Komutanlığı at Ankara Güvercinlik.

The Hueys were subjected to the HeliMod I and HeliMod II programs, under which they received Avionic and Communication Systems upgrades and more powerful engines. Under the HeliMod II upgrade, the Hueys received the EADS/ASELSAN MILDS self-defence system and the ASELSAN ÖZIŞIK Countermeasure Dispensing System/Chaff and Flare Decoy (CMDS/CFD).

Eurocopter AS532UL

Starting in 1996, twenty Eurocopter-produced AS532UL Cougar medium-lift helicopters were delivered to the Turkish Army. They were delivered under the Phoenix I program for which the $225 million contract was signed in 1993. In 1997 Turkish Aerospace Industries signed the Phoenix II contract with Eurocopter for the co-production of thirty AS532 Cougars, of which the Turkish Army received ten examples.

The consortium between TUSAŞ Aerospace Industries Inc. and Eurocopter was baptized EUROTAI which completed the deliveries of the ten helicopters, some of which were in the SAR and Ambulance configuration, by 2003. Under the HeliMod I and HeliMod II programs, the Cougars received a number of Avionics, self-defence and communication systems upgrades.

Boeing CH-47F Chinook

In December 2009, the SSM requested the foreign military sale of fourteen CH-47F Chinook helicopters, four of which will be equipped for combat search and rescue (CSAR) and Special Operations. The contract for the delivery of the first six aircraft was eventually signed in 2013. This $3.4 billion multi-year contract was followed by a $131 million contract signed in September 2015, taking the total acquisition to 11 aircraft.

The first group of twenty pilots have been trained at Fort Rucker, AL, USA and graduated in mid-2016. The first five are expected to be absorbed by the Army Aviation Command. Five will be in a special operations configuration, and they will be operated by Özel Hava Grup (Special Air Group Command) while one will be operated for the Genelkurmay (General Staff) in the VIP transport role.

On 14 July, the first three CH-47F Chinook helicopters arrived in the harbour of Izmir, Turkey after being test flown at Summit Airport in Middletown DE, USA for some time. It is painted in the recently adopted and very attractive green/sand/black colour scheme.

Cessna 421B Golden Eagle

Three Cessna 421Bs were delivered in 1975. Initially they were used for VIP and liaison duties but after the delivery of the King Air, their role was changed and they started operating as advanced multi-engine training platform. The Army Aviation School now operates them as advanced multi-engine trainers and students that graduate on the T-42A move on to the Golden Eagle before moving on to the Beech B200.

Cessna T182T Turbo Skylane

All the Army regiments have a number of Turbo Skylanes in their inventory. They serve a multi-purpose role: as trainers and in the liaison role. In total, the Army operates 45 (one crashed) CeT182T that were delivered between December 2009 and August 2010 after which the remaining U-17B and T-41D were withdrawn from use.

All feature a glass cockpit and have the Garmin 1000 glass flight deck system installed. They are also fitted with Mode-S transponders that makes ILS approaches possible. The Garmin 1000 system prepares the student for glass cockpit configurations that they will also encounter with many other types operated by the Turkish Army. They are also fitted with Mode-S transponders that makes ILS approaches possible.

"*When a student encounters any situation that makes him uncomfortable, like losing visual due to clouds, the Autopilot feature can help him or her gain control again"* says Yunus Erol, Instructor Pilot of the fixed wing unit of the Army Aviation School.

"The moving map system as well as the multi-functional displays help the pilots to navigate through congested areas. Operating the Turbo Skylanes takes more effort from the pilots, it is much heavier than the older types which typically makes the landing more difficult", he says. During the initial flight course, the pilots make approximately 25 flying hours.

After a final check ride, the pilot will make its first solo hours with up to 3 hours flying solo before moving on to the multi-engine T-42A.

Sikorsky S-70A-28D Black Hawk

In December 1998, a direct-sale contract was signed with Sikorsky by SSM for the delivery of 52 Black Hawk helicopters, 22 of which would be in the analogue S-70A-28A configuration and 30, that would follow from 2000, in the S-70A-28D digital configuration.

In 1999 the Army received the first examples, some of which were delivered to the Special Forces. Under project Yarasa (Bat), signed in mid-2002, all analogue helicopters were upgraded to -28D standard by TAI and ASELSAN.

Five D-models were converted to combat search and rescue (CSAR) standard and are designated S-70A-28DSAR. Each Aviation Regiment has a Search and Rescue Flight that has one S-70-28DSAR on quick reaction alert around the clock.

Under the HeliMod program, a number of Army and Jandarma Black Hawks were upgraded and fitted with the ASELSAN HEWS system, which is a fully integrated Electronic Warfare Self Protection Suit indigenously developed to protect helicopters.

The system comprises of Radar Warning Receiver System (RWR), Missile Warning System (MWS), and Laser Warning Receiver System (LWR) as well as countermeasures subsystems like Radio Frequency (RF) Jammer System, chaff-flare dispensers and Infra-red (IR) Counter Measure Systems.

A S-70 Black Hawk is training in the rocky hills.

Photo by the authors.

TAI/AgustaWestland T129A/B ATAK

In September 2007, the SSM announced an order for 50 T129 ATAK armed reconnaissance helicopters, to be built by a consortium of Turkish Aerospace Industries and AgustaWestland (now rebranded to Leonardo - Helicopter Division). An option for 41 additional helicopters was taken up in the contract but the Army had an almost instant requirement for these helicopters and it was decided to order nine slightly less capable Erken Duhul Helikopteri (EDH) or Early Delivery Helicopters in November 2010.

These were designated T129A and are part of the optional package, leaving the order for the advanced T129B version still at 50 examples. The ADH variant is armed with the 20mm canon and can fire unguided rockets but it cannot fire any precision guided munition. Eventually these EDHs will be upgraded to the T129B variant.

From 2011 onwards the first 27 pilots were trained at the Italian Army training centre Centro Addestrativo Aviazione dell'Esercito at Viterbo. The Italian Army, which operates 60 A129C/CBT Mangusta helicopters, detailed out the training syllabus for the Turkish T129 pilots. After these pilots graduated, the training was taken over by the main contractor for the T129: TUSAŞ.

T129 training is now conducted at Malatya and all the ATAK helicopters are concentrated there. TAI, the main T129 contractor, is providing the training. "*The T129 is very different from the A129 Mangusta*" says Major Ahmet Okur, an experienced T129 instructor pilot. "*The T129 is a third generation attack helicopter and especially the electro-optical systems in the helicopter and diverse armament package provides unique capabilities which require many different skills from the pilots*" he says.

RETURN OF THE BLACK SEA KNIGHTS

TEXT & PHOTOS - CARLO KUIT & PAUL KIEVIT

Romania's Navy (Fortele Navale Române/ FNR) are small compared to other naval forces in the Black Sea region and within NATO. Carlo Kuit & Paul Kievit reports from Romania.

A Romanian Navy Puma, hovers in front of the special forces.

Photo by the authors.

Return of the Black Sea Knights

Romania's Navy (Fortele Navale Române/ FNR) is small comparing to other naval forces in the Black Sea region and within NATO. Though having a number of frigates, corvettes and minesweepers the size of the naval aviation component is limited to three IAR.330 'Puma Naval' locally designed and built helicopters serving in a variety of tasks.

Romanian Naval Aviation celebrates its tenth anniversary in 2017. The ' Black Sea Knights' helicopter squadron is housed at Tuzla Airport, located southwest of Constanta, and is operating three IAR.330s locally built and designated 'Puma Naval' (Navy) helicopters.

The history of Romanian Naval Aviation dates back to June 1920 when the first aircraft arrived. By the end of World War 2 twenty-four Heinkel He-114s were in service. These seaplanes were withdrawn from service over the years with no replacement. Naval Aviation operations were disbanded in May 1960 when the last eight He-114s were scrapped.

In the late 1980's, when the first Tetal II class frigate and destroyer 'Mărăşeşti' entered service with the FNR, a number of IAR.316B Alouette helicopters were outfitted with inflatable flotation gear and a winch on the port side, as well as foldable main rotor blades. The two Tetal II class ships have a deck capable of handling one IAR.316B while 'Marasesti' has a deck and hangar capable of accommodating two IAR.316Bs.

The helicopters were sourced from Air Force (Fortele Armee Română/ FAR) inventory, based at Tuzla at the time. With the disbandment of the 59th Helicopter Group from Tuzla in 2001 and the retirement of most of the IAR.316s, the Romanian Navy found itself with no helicopter support from the FAR. The few operational IAR.330s from the disbanded squadron at Tuzla transferred to the 863rd Helicopter Squadron at Mihail Kogalniceanu.

Modernization program

"*With the acquisition of two Type 22 frigates; F-221 Regele Ferdinand (ex HMS Coventry) and F-222 Regina Maria (ex HMS London) in 2004 it became clear there was a need for a dedicated naval helicopter force and procedures had to be adopted resulting in a steep learning curve for our crews. Without helicopters we are not able to perform all our tasks*" according to Captain Ioan. "*They are a vital part in our ASW/ASuW tasks*".

"*In March 2016 a modernization program has been started to upgrade the Type 22 frigates to be able to be able to carry out ASW and Anti-Surface Ship Warfare (ASuW) missions and to improve the Command & Control systems onboard. The upgrade will have a timespan of three years planned to be finalized in 2019*" adds Captain Ioan.

A request for three new helicopters was issued. Elbit Systems & IAR Brasov being contracted in July 2005 with cooperation of FHL Claverham, Aerazur, Rockwell Collins, Breeze Eastern and Rafael Company from Israel. The first IAR.330 Puma Naval (#140) made its first flight at Ghimbav, Brasov on 30 January 2007. The IAR.330 Puma Naval underwent testing from February until June 2007, including sea trials and ship compatibility tests.

On 13 July 2007 the 'Black Sea Knights' squadron was formally re-established after forty-seven years of absence with the introduction into service of the first IAR.330 Puma Naval (#140) assigned to the Type 22 Frigate "Regele Ferdinand". By the end of 2007, each of the eight Naval Aviation pilots logged a total of 25 flight hours.

The second IAR.330 Puma Naval (# 141) was delivered during January 2008. After delivery of the third IAR.330 Puma Naval ('142') the squadron relocated end 2009 to Tuzla.

The crew doing the final checks, before starting up the Puma.

Photo by authors.

The Naval Puma

"*Initial tasks were mainly day operations to get to learn operating the Puma Naval and get used to seaborne operations*" according to Lt. Cmdr. Bogdan Curca. "*The next phase we started to train and explore the capabilities of the tactical consoles onboard, lastly in the period 2009-2010 night operations were high on our agenda in the training syllabus to be able to operate 24/7 when required*". Currently not all pilots have been qualified for night operations.

The main modifications to the Puma Naval compared to the standard IAR.330L variant are: cockpit layout, Rafael Toplite eletro-optical ball senor in the nose (EOP), laser and radar warning receivers, blade antennas under the tail boom and on top of the main rotor fairing, chaff and flare dispensers under the main gear. These modifications can also be found in the IAR.330 SOCAT fleet of the Romanian Air Force (FAR).

For naval operations a number of changes were made to the basic IAR.330L airframe: foldable main rotor blades, inflatable flotation gear, door-mounted winch on the starboard side, anti-crash seats, harpoon for deck landing in rough weather conditions, crash position indicator on the port side of the tail boom, two searchlights under the fuselage and a bubble-type observation window on the sliding doors. "*We basically added what devices we require for naval operations to the standard IAR.330L airframe*" adds squadron commander Marius Mitric.

At the time of the Authors visit exercises were conducted with the DDG-78 USS Porter to share experiences and procedures operating in a multi-national environment. This also included deck landings of an IAR.330 at the USS Porter. Till date the FNR have been involved in Unified Protector (2011) and Operation Atalanta (2012) as part of European Union Naval Force (EU NAVFOR). The latter deployment included an IAR.330, 4 pilots and 12 technicians/engineers.

A Pumas missions

"*Before we deployed we had a Maritime Interdiction training to prepare ourselves for the anti-piracy mission*" according to Commander Ciobotaru. He continues, "*We mainly conducted ISR missions of the Somali coast working with multi-national MPAs with usage of digital cameras. On average two missions a day were flown during the deployment of three months*" he concludes.

Operations with the Naval Puma typically consists of a pilot, copilot and a mechanic, who is also operating the winch in case of SAR missions. "*For ASuW missions two operators are added to the crew who are responsible for operating the sonar buoys and datalink 11 which is used to exchange large amounts of data between helicopter and the ASuW operators onboard our Frigates. The tactical consoles can be added rapidly and can deliver a valuable Recognized Maritime Picture (RMP) to our fleet*" explains Black Sea Knight Commander Mitric.

In December 2005 ten selected naval officers started their initial flight training at the Air Force Academy at Boboc on the IAR.316B helicopter type qualifying as Navy pilots in July 2006 finalizing a 100-hour training syllabus. "*At the start the trainers at Boboc were a bit hesitant to have naval aviators with no experience trained, luckily this changed as we showed our capabilities and dealing successfully with the fast pace of training*" according to one of the FAR Naval pilots.

The new naval aviators continued with an accelerated training on the IAR.330 SOCAT at Bucharest-Otopeni airport for an additional 75 hours focusing on day operations, basic maneuvering and emergency procedures" explains Commander Ciobotaru, one of the current elite naval pilots. Simultaneously with the pilot training, eighteen ground crew technicians were trained at Boboc Air Force Academy. Two of the eight pilots are also instructors on the IAR.330 Puma Naval.

Anti-Submarine Warfare

"*As we did not have any relevant experience anymore in naval operations we had to start building our expertise again. In a way we are a self-learning squadron*" according to Lt. Cmdr. Bogdan Curca "*To build up our expertise in Anti-Submarine Warfare (ASW) operations we have been working closely together with ASW operators on our Frigates as of 2014*".

"*After an extensive training we gained operational ASW capabilities in 2015.*

Currently we are conducting real life exercises with the Turkish Navy (Türk Deniz Kuvvetleri) submarines in order to test our procedures deploying the new TMS2000 sonobuoys with support of two technicians from Thalys".

To enhance IAR-330 Puma Naval helicopter's ASW IAR Brasov awarded a contract in June 2013 to Thales to develop and deliver TMS 2000 sonobuoy processors. The sonobuoys send acoustic data to the processor through a VHF link, which is received from the VHF receiver and processed by the aircraft in, real-time.

More Naval Pumas

The TMS 2000 provides capabilities for detection, tracking, localization and classification of surface and subsurface targets in all environments by processing active and/or passive acoustic data gathered from sonobuoys. The TMS 2000 provides mono and multi-static processing modes for all active sonabuoys.

The last stage of the modernization was finalized by late 2015 and had run for two years. The helicopters have been fitted with torpedo launchers, extending their operability to anti-submarine warfare. The Puma Naval had previously been outfitted in 2012 with two machine guns (7.62 mm and 12.7 mm), for anti-piracy operations (operation Atalanta).

"*We have not selected and procured the actual torpedoes yet" adds squadron commander Mitric. "The Puma Naval is able to carry various torpedoes. We just select what equipment we want to have and put it on the helicopter. That is our way of working and thinking*" finalizes Marius Mitric. It is expected a final decision will be made before end of 2016 which torpedo will be selected. It is most likely the BAE systems Stingray torpedo will be selected.

To further sustain the future of Romanian Naval Aviation there are plans to acquire a fourth IAR.330 Puma Naval specifically to support the Batalionul 307 Infanterie Marina (307th Marine Battalion), the elite squadron of the Romanian Marines.

The Marines are trained in a similar way with the Green Berets and Rangers and are primarily used for on/off -shore and beach-head establishing missions, as well as fighting in Delta regions such as the Danube Delta. Less known is the cooperation with GNFOS Grupul Naval - Forte pentru Operații Speciale Grupul Scafandri Incursori (Special Operations Naval Group) who also saw action during Operation Atalanta (2012).

To support the future expansion of tasks and sustain the 'Black Knight' squadron a new group of young pilots are planned to be trained at Boboc training school in the near future.

THE NEXT ISSUE OF FLYMAG MAGAZINE

The next issue of FLYMAG will be published in March of 2017.
The issue will among other feature an article about the German Air Force - Taktisches Luftwaffengeschwaders 73 at Laage,where all the Eurofighter pilots are being trained, and we take a look at the U.S. Coast Guard in San Diego.

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