



THE LAST PROWLERS AT WTI

WTI 1-18 marked the final time that the EA-6B Prowler participated in the exercise. Ivan Voukadinov reports from WTI, Yuma.

UKRAINIAN HELICOPTERS

Alexander Golz reports from the Ukrainian Army Helicopter brigade, and takes us for a look on all their tasks, and previous missions.

ROUGH LANDINGS

Landing a large transport aircraft, on a rough unprepared airfield, requires a team of experts, both on the ground and in the air.

CROSS BORDER TRAINING

Sweden, Finland and Norway have discovered a way to optimize their daily training to include training sorties against the other nations.

How do you land a large transport aircraft on a beach, and how does Sweden, Norway and Finland train, on a daily basis, all together - without deploying? Those are some of the questions we'll give you the answer in this issue of FLYMAG.

We hope you like the magazine - enjoy!

THE MAGAZINE

ROUGH LANDINGS

Landing a large transport aircraft, like the Lockheed C-130J-30 Hercules on a rough unprepared airfield, requires a team of experts, both on the ground and in the air.

04

THE LAST PROWLERS AT WTI

The WTI 1-18 marked the final time that the EA-6B Prowler participated in the exercise. Ivan Voukadinov reports from Yuma.

12

CROSS BORDER TRAINING

The Nordic countries of Sweden, Finland and Norway have discovered a way to optimize their daily training to include training scenarios with and against other squadrons from other nations.

22

JOINT STARS 2017

Andrea Avian reports from Joint Stars 2017, the most important exercise in Italy. It has been held every two years, with different names in the past, such as Star Vega, Trident Juncture and Joint Star.

44

UKRAINIAN ARMY HELICOPTER BRIGADE

Alexander Golz reports from the Ukrainian Army Helicopter brigade, and takes us for a look on all their tasks, and previous missions.

52

AIR POWER OVER HAMPTON ROADS 2016

The Air Power Over Hampton Roads air show returned to the skies above Langley Air Force Base over the weekend of 22-24 April 2016 after a five-year absence. Andy Binks looks back on this event.

68



ROUGH LANDINGS

TEXT - SØREN AUGUSTESEN
PHOTOS - SØREN AUGUSTESEN & JESPER SPATZEK

Landing a large transport aircraft, like the Lockheed C-130J-30 Hercules on a rough unprepared airfield, requires a team of experts, both on the ground and in the air. Søren Augustesen reports from the Danish beach of Rømø, where Royal Danish Air Force trains for these rough landings.



A Royal Danish Air Force C-130 lifts off from the beach, with members of the Z-team watching in the background. Photo by Søren Augustesen

Rough landings

Landing a large transport aircraft, like the Lockheed C-130J-30 Hercules on a rough unprepared airfield, requires a team of experts, both on the ground and in the air. Training for such landings in the Royal Danish Air Force (RDAF) usually takes place at the Lakolk Beach, on the small island of Rømø.

Preparing the runway

The job of preparing any unprepared area for landings, be it a runway for large or small aeroplanes or a helicopter landing zone, in the RDAF, falls to the Z-team. The Z-team is part of the Air Transport Wing Aalborg (ATW), which is home of 721 Squadron - the RDAF transport squadron.

The day before a planned landing on an unprepared surface, the Z-team is deployed to set up a landing zone for the aircraft. The team normally consists of two people, but more can be added if necessary.

The first job for the Z-team when preparing a landing zone or runway, is to make sure the area is clear of obstacles, both large and small, which could damage the aircraft during take off or landing - and to make sure the surface is relatively even.

They also have to make sure that the runway can be made long enough to bring in the aircraft scheduled to land. When this is done, the team starts testing the load bearing capabilities of the surface. This is done using a Penetrologger. It is operated by pressing a thin metal rod into the ground, and the force needed to do this is measured.

This reading can then be converted to a California Bearing Ratio (CBR) value. The CBR values for the surface determines the maximum weight of the aircraft that can use the runway.

The Z-team takes numerous measurements over the entire runway, and special care is taken when measuring the so called "landing boxes" established at both ends of a runway.

The Z-team

The "landing boxes" are areas which are 500 feet (152 m) long and span the width of the runway at either end. The boxes are marked with large orange canvas markers. It is inside these boxes that the pilot must touch down, and the surface in these boxes have to be able to take the weight of the aircraft touching down.

The minimum length of the runway, for an RDAF Hercules, is 3200 feet (975 m), plus a 300 feet over/underrun at each end of the runway, which is there to give the pilots some extra room in case they are hit by a gust of wind, and land short of the landing box.

Once the runway has been set up, the Z-team makes a detailed report of the area surrounding the landing zone, including the position of any high ground areas, tall buildings or structures which might affect the aircraft during take off and landing.

This report is sent to the pilots scheduled to perform the landing and they "take a step back" and look at how an approach and departure can be flown safely given the area surrounding the landing zone.

The report is given final approval by the ATW Planning section. Once the report has been approved, the runway is ready to be declared operational. Once the report has been approved, it is handed over to the pilots flying the mission, who will use it in planning their approach and departure from the landing zone.

On the day of the actual landings, the Z-team makes a few test CBR readings to make sure that the load bearing capabilities have not changed over night due to wind or weather. The Z-team then takes up position next to the runway, ready to guide the aircraft in using their radios. When the aircraft arrives at the landing zone, the Z-team informs the pilots about the latest weather, such as wind speed and direction. It is then up to the pilots to bring the aircraft in for a safe landing.





Landing on an unprepared runway

Once the runway has been prepared and all the paperwork has been approved, it is time for the crew to start planning the landing. All the information the crew receives from the Z-team regarding the runway, like length and load bearing capability, is entered into the Flight Management System (FMS) on the Hercules.

This information, along with information about the aircraft weight, will determine if the runway is capable of supporting the Hercules at the planned weight. If the runway is unable to support the total weight, the weight of the aircraft has to be reduced, by offloading fuel and/or cargo.

When arriving at the runway, Visual Flying Rules have to prevail in order to land, as the approach and landing are performed visually. The crew of the Hercules has the added help of the Head Up Display (HUD). In the HUD they have a number of aids to help them land. They can set the Flight Path Angle indicator to the required glide slope, and use the Climb/Dive marker, which shows where the aircraft is heading, to help guide them down to the landing box.

These symbols also take into account any crosswinds that might be sweeping across the runway. When the required glide slope has been dialled in, the glide slope and Climb/Dive marker are kept on the runway threshold. This will bring the Hercules onto the runway.

Once the aircraft has touched down, full braking is applied, using both reverse thrust on the four Rolls-Royce AE 2100D3 turboprop engines and the large brakes on the main wheels, which have Anti-lock Braking System (ABS) which prevents the wheels from locking up and digging into the surface.

During the heavy braking, the braking discs on the main wheels heat up significantly, and during training missions when several landings and take offs are performed, care must be taken not to overheat the brakes as they will lose their efficiency.



Both day and night

After landing on the runway, the crew can choose to either turn the aircraft round and taxi back to the take off end, or, which is more often the case, they can open the cargo ramp and reverse back down the runway, with the help of one of the loadmasters.

The big advantage of reversing back down the runway is, that it eliminates the risk of the wheels digging into the surface while the aircraft is turning, and the Hercules getting stuck in soft ground.

The procedures for landing at night are much the same as during daylight hours. The orange canvas markers are replaced by infra red strobe lights, which the pilots can pick up using their Night Vision Goggles (NVG). Four strobes are used to mark the landing boxes and a single strobe is placed at each end to give the pilots a visual reference of the length of the runway.

Foreign landings

It is not only the RDAF that uses the beach at Lakolk to practice landings on unprepared runways. In 2016, during the Frisian Flag exercise, Royal Netherland Air Force C-130H Hercules performed their first ever beach landings.

The Danish Z-team acted as instructors for their Dutch counterparts, passing on their experiences when guiding the aircraft in for landings.

A particular strong side wind made for some very tricky landings. In 2017, two Luftwaffe C-160D Transall performed several approaches and landings on the beach at Lakolk.

Real world operations

Landing on rough and unprepared runways is something RDAF Hercules pilots are quite familiar with. When flying supply missions over Greenland, many of the runways consist of gravel or snow and ice.

In recent years, RDAF Hercules aircraft have been deployed to many places around the globe, either in support of Danish and coalition troops on the ground, or support UN operations following natural disasters. Many of the runways used during these operations have been rough unprepared runways, some of which have been set up by the Danish Z-team.

As of the 1st of June 2017 the RDAF has taken over the transport role for the UN mission MINUSMA (United Nations Multidimensional Integrated Stabilization Mission in Mali) from the Portuguese Air Force. The command of the transport mission is rotated between Denmark, Norway, Sweden, Portugal and Belgium, with each nation having command for six months at the time.

The RDAF MINUSMA detachment consists of one Hercules and around 60 personnel. The main tasks for the detachment are transportation of goods and personnel, medical evacuation of sick people and various tactical missions for the UN. During deployments like this, the ability to land on rough unprepared runways is essential.

With the prospect of the RDAF doing more international missions in the future, where flying from rough, unprepared runways will be required, the training gained from landing on beaches like Lakolk Beach will be essential for future RDAF Hercules crews, as well as the members of the Z-team.



THE LAST PROWLERS AT WTI

TEXT - IVAN VOUKADINOV
PHOTOS - IVAN VOUKADINOV & CPL. ERNEST D. GRANT (USMC)

The WTI 1-18 marked the final time that the EA-6B Prowler participated in the exercise. Ivan Voukadinov reports from Yuma.



*The last Prowlers participating in WTI has flown.
Photo by Ivan Voukadinov*

The last Prowlers at WTI

Twice a year, Marine Corps Air Station Yuma (MCAS Yuma) in southwest Arizona hosts the well-known Weapons and Tactics Instructors Course (WTI). WTI is a seven-week course consisting of advanced tactical aviation training designed to produce weapons and tactics instructors.

The students graduate the WTI course as experts on their particular aircraft, with the knowledge of how to plan and how to train others, and return to their units where they can pass down their training on to others. Each WTI includes about three weeks in the classroom followed by the flying portion of the course where the students plan and fly missions in their respective aircraft.

Weapons & Tactics Instructor Course

WTI is often compared to the USAF's Weapons School or the Navy's TOPGUN course. In essence, it teaches the students how to better employ their respective platforms. The course is designed and run by Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) which are based at MCAS Yuma.

The flying portion initially has the students fly small scale sorties involving only their particular platforms, but eventually evolves into bigger and more complex tasks which the students have to plan and execute with other components of USMC aviation. Each daily scenario, more commonly known as an "evolution", may include both day and night missions. For example, a USMC pilot flying the F/A-18 will initially fly "evolutions" only with other F/A-18s, but by the end will be working with all other fixed-wing and rotary-wing platforms, as well as various ground assets.

The final stages consist of mass force scenarios involving all USMC aviation assets. Key to this is the guidance of MAWTS-1 as well as the excellent opportunities provided by the airspace and ranges around MCAS Yuma, which allow for almost any type of scenario to be flown, as well as allowing the use of live ordnance. During WTI, students come from all USMC squadrons from different parts of the country and bring some of their own aircraft to Yuma which results in a very active flightline.

History

An integral part of USMC aviation for a long time has been electronic warfare (EW) and suppression of enemy air defenses (SEAD), a small and specialized, yet key role which is in high demand. The charismatic Grumman EA-6B Prowler is the aircraft tasked primarily with this mission. The units that fly the EA-6B are better known as Marine Tactical Electronic Warfare squadrons or "VMAQ squadrons" by USMC nomenclature.

For many years, there were a total of four squadrons which flew the type with 5-6 aircraft each. After 40 years of service and almost 50 years since its first flight, the inevitable end of the Prowler is approaching as the "sundown" nears and the planned retirement is set for 2019. No other tactical jet has such a long history with both the USMC and the US Navy. Traditionally, all VMAQ squadrons have been based at MCAS Cherry Point in North Carolina and are currently part of Marine Air Group (MAG) 14, 2nd Marine Aircraft Wing (MAW). In 2016, VMAQT-1 "Banshees", responsible for Prowler training, was the first Prowler squadron to disband followed in June 2017 by VMAQ-4 "Seahawks".

VMAQ-3 "Moon Dogs" is planned to be shut down in the summer of 2018, which leaves VMAQ-2 "Death Jesters" as the last operator of the type until they bid farewell in 2019. VMAQ-2 were the first USMC squadron to receive the EA-6B in 1977, replacing their older EA-6A "Electric Intruder", so it is only fitting that they will also be the last. In the early 1990s, VMAQ-2 was split up to form the other three squadrons.





Prowler participation in WTI

The EA-6B, just like all other aircraft in the USMC, has been a part of the WTI course for a long time, with students training on it twice a year. With the retirement approaching, it was also time to phase it out of WTI. During WTI 1-18 which took place in September/October of 2017, VMAQ-2 brought five of their aircraft for a total of two months to participate in the course for the final time. This marked yet another “final time” in the aircraft’s long and spectacular career with both the Marines and the US Navy. The US Navy retired the EA-6B in 2015 following the final carrier deployment to the 5th fleet area of operations in 2014. Earlier in 2017 also marked its final participation in the well-known “Red Flag” exercise.

Although the squadron took part in WTI, it did not do so in the traditional sense. Due to the impending sundown, only three VMAQ-2 aircrew participated in the actual course and only during the first few weeks which was the academic nonflying part. Following that, the squadron mostly flew in support of the various “evolutions” of the other aircraft types.

Lt Col Andrew Rundle is the commanding officer (CO) of VMAQ-2 and talks about their participation: “As a support squadron we’re flying the missions that would’ve traditionally been flown by the WTI Prowler students. The instructors here on staff are flying with us. We are participating as if there were (Prowler) students in the class. The Prowler being the primary EW asset in the USMC, we’ll support every scenario that they fly out here where there’s a component that we can potentially affect. It’s largely scenario driven.

We’ll fly in support of just about every type of evolution that’s done during WTI whether it’s rotary-wing flight, bread-and-butter events, or tacair fixed-wing type event. If there is something that’s part of the scenario that’s EW based we will participate in that and get integrated into that plan. In most cases we are in support of the aircraft when they carry out their primary missions. If it’s an assault aircraft or MH-53s and MV-22s doing some type of raid and there’s EW in the scenario then we’re included into the considerations for that as part of the MAWTS package.”

Not just WTI

VMAQ-2 also took advantage of the airspace and ranges as well as the nice southwest Arizona weather to conduct some of their own individual training. Lt Col Rundle goes into more detail about this as well: “We’ll take advantage of the weather for some traditional unit training. There are some exceptional ranges out here and airspace that is different from what we have back home. It’s called “white space” training, and as the opportunity presents itself we’ll do some basic squadron training for some of our younger aircrew to get some proficiency in certain aspects of the mission set. A lot of the airspace out here you can schedule just for yourself.

We have a lot of that in Yuma so you can go out and have a range or airspace that’s dedicated just to you where you can do things and not worry about other aircraft. It makes it easier to meet your objectives when you don’t have to worry about other aircraft coming into your airspace. The thing that’s nice is that during WTI there are so many other assets and aircraft communities that participate, that it’s a unique opportunity for us to train with them.”

VMAQ-2 overview

Currently VMAQ-2 has a total of 6 aircraft and a combined 30 aircrew. Since the Prowler requires a crew of 4 (one pilot and three electronic countermeasures officers or “ECMOs” for short) there are roughly an equivalent amount of aircraft and crew, and around 30 is the comfortable number according to Rundle. As the Prowler slowly bows out of USMC service, some of the aircraft from the disbanded squadrons get transferred to the remaining ones, while others head straight to the “boneyard” at Davis-Monthan AFB.

As of October 2017, the USMC fleet is down to only 12 active airframes, six in each of the two squadrons that are left. Due to maintenance cycles and remaining service life, they also get transferred between squadrons as needed, leading to a mix of different squadron markings on most of the aircraft. The last Prowler to come out of deep maintenance was in December 2015. While some of these last EA-6Bs have flown their entire lives with the USMC, some also came from Navy squadrons after they transitioned to the EA-18G Growler.



*An EA-6B Prowler above the Arizona desert
Photo by Ivan Voukadinov*

Upgrades

All of the aircraft with the Marines have in the past been upgraded to the latest ICAP III standard and despite the pending retirement, have recently received the newest ICAP III block 7 software upgrade.

The ICAP III upgrade replaces the AN/ALQ-99 Receiver System with the AN/ALQ-218, replaces the AN/TDY-43 display system with a new Commercial Off The Shelf (COTS) based display system, upgrades the Recorder Reproducer Set with a new Digital Recorder, incorporates the Multi-Mission Advanced Tactical Terminal (MATT) to provide reception of data links, incorporates the AN/USQ-113 Communication Receiver/Jammer with the AN/ALQ-218, updates mission planning for ICAP III to Joint Mission Planning System (JMPS), and incorporates Link-16 to include basic electronic warfare battle management capabilities. The Prowlers in USMC service can also carry a LITENING targeting pod.

The future

As VMAQ-2 closes yet another page in the Prowler history book, they are still ready for any upcoming challenges. Although the squadron came back in March of 2017 from a seven month deployment to Incirlik airbase in Turkey in support of Operation Inherent Resolve (OIR), they were immediately replaced by VMAQ-3, which came back home in October of 2017. According to Rundle, a future deployment is still not out of the question, and if it happens, will surely be the last one in the 50 year history of the jet.

As the end approaches, the Marines serving in the squadron are already looking at the future, as Rundle explains: "We have about 200 Marines with squadron, and most of them are Prowler specific. The USMC has options for them to transition into other platforms and there is a transition conversion board for Marines that want to transfer to a different platform. We've had pretty good success with that in the recent year as we get closer to the sundown.

We've had UAS transitions, F/A-18 transitions, and etc. A couple of ECMOs had selections to be WSOs (weapons systems officers) in F/A-18s or go to flight school for their pilot wings."

The distribution of capabilities

Unlike the Navy, which transitioned to the Growler, the Marine Corps will take Prowler capability and distribute it amongst remaining and future assets in a concept known as Marine Air-Ground Task Force – Electronic Warfare (MAGTF-EW). The USMC describes MAGTF-EW as "an integrated system of distributed, platform-agnostic EW capabilities on manned and unmanned assets. These assets will be fully networked and collaborative to provide the MAGTF with the ability to control the EMS (Electromagnetic Spectrum).

MAGTF EW will unite air, ground, and space-based technologies to ensure collaborative, efficient, and effective control of the EMS." At present, this includes the Intrepid Tiger II EW pod which can be carried by a variety of platforms, as well as the Electronic Warfare Service Architecture (EWSA) which intends to connect all the airborne EW assets with each other as well as ground operators.



CROSS BORDER TRAINING

TEXT & PHOTOS - SØREN NIELSEN

The Nordic countries of Sweden, Finland and Norway have discovered a way to optimize their daily training to include training scenarios with and against other squadrons from other nations, without any of the parties having to deploy. Søren Nielsen reports from Luleå.



*A mix of fighters from each nation, symbolises the trilateral training, that the three Nordic countries of Sweden, Norway and Finland conducts all year round.
Photo by Søren Nielsen*

Cross Border Training

The Nordic countries of Sweden, Finland and Norway have discovered a way to optimize their daily training to include training scenarios with and against other squadrons from other nations, without any of the parties having to deploy.

Each of the nations has an airbase geographically located close to each other, with Bodø in Norway to the west, Kallax in Sweden in the middle, and Rovaniemi in Finland to the east - giving the three nations a low cost, and efficient way to do training sorties, and train interoperability with dissimilar airframes from other nations, on a daily basis.

It all started with a political decision in 2000, where it was decided that Finland and Sweden should start working closer together and utilize the potential of NORDEFECO (Nordic Defence Cooperation) across the borders of the two countries.

Lt Col. Peter 'Restless' Greberg, Squadron Commander 211 Fighter Squadron of the Swedish Air Force at Norrbottens flygflottilj F 21, explains, *"From an economic point of view, it's very efficient and very good. It's a cost-efficient training. It takes the cooperation between the countries even further, based on the NORDEFECO, where all the Nordic countries want to cooperate, and we just wanted to take this a bit further, and that's how Cross Border Training started."*

This was the start of what is known today as the Cross Border Training (CBT) program, starting out with a close cooperation between Finland and Sweden, in a bilateral training program between the two nations, utilizing the big airspaces to the north.





The change in mindset

At the same time, the NATO alliance changed their mindset, and not only looking at their full members, but conducting and participating in Partnership for Peace (PfP, a program aimed at creating trust between NATO nations and other nations) exercises, as Lt Col. Erik 'Folder' Brettingen, Squadron Commander 331 Squadron of the Royal Norwegian Air Force (RNoAF) at Bodø Main Air Station explains, "There would be participants from NATO members, members that had just joined the alliance, and non-NATO members in the Partnership for Peace exercises."

Back then, the missions were mostly just to 'get to know each other'. A lot of the missions, would be non-tactical, but more familiarization rides, where you would fly some formations, re-joins, navigation. Starting out very basic, and those progressed to gradually be more tactical exercises. Some of those would be large force exercises, where the objective would be to employ together, like a big package."

It's not only on a political level, but also on an air force and even squadron level, that this change in mindset spawned new opportunities. Every fighter aircraft has advantages and disadvantages. And every fighter pilot wants to exploit these and learn about them, giving the pilot the best opportunities to react on potential enemies and have the edge on them.

The PfP exercises gave new possibilities, and began the start of the coalition warfare mindset, as Lt Col 'Folder' continues, "I was here exactly ten years ago, during a Nordic Air Meet they had at Kallax, with participants from other NATO countries. We would do the big package. It's been a mutual wish from the squadrons to have the opportunity to explore the similar mix fighter force operations. Being that you're on the same side, you have to get used to how to cooperate with NATO and non-NATO nations, into a coalition warfare mindset."

Trilateral

It's been around for many years, the realization that countries like Sweden will fly in some of the coalition operations, next to NATO members. With the coalition warfare mindset, new challenges arose that needed to be faced and solved, as Lt Col. 'Folder' illustrates, "When the political go-ahead was given for closer cooperation between NATO air forces, and non-NATO air forces, to do these kind of exercises, it was quite exciting. It gave us more training opportunities. Along with that, there were parallel efforts, both between fighter squadrons and also the command and control centres, to achieve a higher degree of standardization."

At the start up the gap was quite huge, as you had a NATO culture, and a set of TTPs (Tactics, Techniques and Procedures), that were quite different from non-NATO countries. That could be everything, like just the way you talk on the radio, like 'Bingo fuel' and so on."

Lt Col. 'Folder' continues, "Then it's easier to say that you have identified a pretty hard requirement; that we need to get them on board with our procedures, and how we (NATO members ed.) conduct operations. It's the same way that NATO countries used to do exclusively, for exactly the same purpose, and now we see the benefits and gains, by doing it with the partnering nations."

Norway is, besides being a member of NATO, a member of the NORDEFECO collaboration, which has as its main aim and purpose to strengthen the participating nations' national defences, explore common synergies and facilitate efficient common solutions. The partnership in NORDEFECO and the change in mindset of NATO opened up for new possibilities, as Lt Col. 'Folder' explains, "It's well known that the interest for Nordic Defence Cooperation (NORDEFECO) has always been there, but it has been more in the open for the last 15-20 years, where it gradually had the opportunity to have more cooperation."

I think in that sense the initiative has been broad. This is an example of how you are able to use that initiative for good training, but also for the lower level, a little of the bottom up approach, at our level - at the squadrons, there was a positive and proactive mindset, really looking into, what we can achieve within this framework, and the new opportunities that raised a few years ago."



Four JAS 39 above the many small islands at the top of the Gulf of Bothnia
Photo by Søren Nielsen

Two became three

Based on the changes and political decisions, Norway noticed the advantages of the CBT program, not only training against dissimilar aircraft, but also integrating with other non-NATO nations on a daily basis, would benefit both themselves, and the other nations.

Furthermore, the big remote areas in the northern part of Sweden would give RNoAF access to facilities not seen in Norway, as Lt Col. 'Folder' explains, "Other advantages we identified, if you look at the map and look at the possibilities with airspace - in particular northern Sweden with big remote areas, where there are big airspaces for air-to-air training. That was clearly very attractive, because there will, a lot of the time, be difference in weather when looking at the coast of northern Norway compared to inland, like Sweden."

This led to Norway joining the Cross Border Training program in 2009, taking advantage of the entire CBT package, as Lt Col. 'Folder' illustrates, "If you look at it from our perspective in Norway, for both Bodø and Ørland, when we were only oriented towards other NATO air forces, we were limited if we wanted to do something from our home bases, as opposed to go to the Red Flag in the US of course, which was the type of the solution we had to go for."

So once the Cross Border-era kind of started to evolve, we could all of a sudden see that we had an excellent airspace, and the advantages of training from our home bases with, and against, mixed formations."

The training order

What started more than fifteen years ago as small basic air to air engagements training, has now grown into one of the most effective daily training programs you can find anywhere in the world, utilizing the massive airspace of the remote and deserted northern part of Finland, Norway, and Sweden.

Today, the Cross Border Training program is a large operation, where the squadrons at the three northern bases put in a wish-list of what kind of training they want. It can range from a large forces deployment, to simple basic training for the students of the squadrons.

The wish-list

This wish-list is then once a year conducted into the operational plan for the Cross Border Training program. The plan is to have 40 events a year. This is then revisited after six months to check if they are sticking to the plan, as Major Jouni Turula, Fighter Squadron 11 of the Finnish Air Force at Rovaniemi states, "We make a CBT training order for the entire year, and we schedule the sorties in that. We want to make a lot of them, as they are easy to cancel if something comes up so we cannot participate - it's harder to put new ones in it."

The CBT sorties are planned for almost every week, and it gives around a CBT sortie every second month for each pilot."

Only benefits

The big benefits of the CBT program are the low cost, the flexibility, the big airspaces, and the interoperability with other nations. The aircraft fly from their home bases, fight, and return to their home bases. It's the same as a regular training sortie with the local units.

One of the unique aspects of CBT is the way that the communication, planning, briefing and debriefing are done. The squadrons have a Video Tele Conference (VTC) system setup, so that they can do briefing and debriefing 'face-to-face', even though they are not located at the same airbase.

They do the mission planning in a special internet portal, where all the mission commanders put in their planning. All of the briefings and debriefings are also stored in this portal. In this way, everybody can evaluate the facts of the missions, and this gives the squadrons a unique opportunity to enhance their training.

Even though the three countries are neighbours, there are still small cultural differences, and this is also present within the air forces and fighter squadrons that might do things in a slightly different manner. This is not a disadvantage - quite the opposite! It could result in the other nations gaining strategic or technical ideas that could be implemented to their training, as Lt Col. 'Folder' summarizes, "Maybe we can practice this more, or this is a better way of doing things, that could be interesting for us."





Take turns of being red and blue

Some days there's two nations fighting each other, other days it's all three nations joining the fight, where a typical trilateral force could be eight Swedish JAS 39 Gripens, and two Norwegian F-16s working together against six F-18s from Finland. The nations share the burden as Red air, where they try to have every second sortie as the 'enemy' doing as they please.

The sortie is built up upon what the 'good guys' want. Red air will then play the role desired by the other units. In this way, you get as much variation as possible, but also optimizing your training to be specific to what you want to train for, whether it's offensive counter air, defensive counter air, large scale deployment scenarios or whatever the squadron wants.

The geographical location of the three bases gives big advantages for the three air forces, making it possible for them to train together and make use of each other's airspace, as Maj. Turula explains, *"The other fighter squadron that has F-18s here in Finland is quite a lot further south of Rovaniemi, so basically the closest fighter squadron we have is at Kallax. It's really cost efficient to train with the Swedes here in Lapland."*

The airspaces in the northern part of Finland and Sweden are very good, with very limited commercial traffic, which basically means we have unlimited vertical airspace most of the time, so it's really easy to train here."

Although the three bases are close to each other, it's not only those bases that gain benefits of CBT, as the other squadrons of the nations from time to time are a part of the CBT sorties. Maj. Turula explains, *"If we fly a bilateral sortie between Finland and Sweden, then we can use the airspace south of Rovaniemi that is closer to Kuopio, which enables them (Fighter Squadron 31 at Kuopio ed.) to participate. Or they can land at Oulu, which is one of our alternatives, and refuel there, participate and fly home."*

Arctic Challenge Exercise

As an air force, and even as a squadron, you cannot just deploy on an internal mission, without being prepared, which takes training and practice, especially if you're joining a coalition operation.

The practice and training can be achieved in many ways, but the most common method is to deploy to an international exercise, and gain valuable experience through the exercise. When you have the biggest airspace in Europe, with some of the best weapon ranges in the middle of it, then why not bring the exercise to you?

The three countries took all the benefits and experience from CBT -and the requirement to be prepared - and enlarged the CBT package with the Arctic Challenge Exercise (ACE).

An exercise first held in 2013, taking all the advantages of CBT, utilizing all three bases for the exercise. It was something that was unproven as Lt Col. 'Restless' explains, *"If we look back at ACE, then it's a direct spin-off of CBT. Everything ACE is based on, was first tested and developed from CBT. ACE is CBT on a larger scale. In 2013, for the first ACE, we were a little bit worried as we had participants deployed to three different bases. When we had previously been participating in exercises, all had been deployed to one airbase. Now the participants were at three different air bases, in three different countries."*

We used the VTC facilities to do all the planning, briefs, and debriefs. We thought 'How is this going to work on such a large scale?'. We knew it was tricky just in the CBT environment, and that is not that many aircraft."

It was an unnecessary concern, as Lt Col. 'Restless' adds, *"The funny thing is that one of the main pros from the other countries, during ACE 13, was 'It's perfect that we are on different bases, because that is the real world. We would never meet in one single planning room, where everybody plans together - everybody will be spread out'."*



Bringing it to a higher level

They took the experience gained at the first ACE, with the unknown elements that worked better than expected, and brought, and is continuously bringing, ACE to a higher level.

As Lt Col. 'Restless' continues, "That was kind of an awakening, that this new concept, worked so very good. We continuously try to improve that, making all the facilities, planning rooms, VTCs better, to facilitate the planning, briefs etc. even better.

All the things we were worried about in the early days, have now been beneficial for the exercise. Everybody thinks it's good."

Another benefit of having the aircraft spread out, is that having that many aircraft on a single base - with a single runway - limits the amount of launches you can have. Thereby also limiting the possible scenarios for the exercise. Spreading them out on three bases, gives three times the capability and makes the perfect scene to train real world scenarios, as Lt Col. 'Restless' concludes, "You have the possibility to build real world scenarios, flying from different bases, meeting in the air, and do the sortie together."

Lt Col. 'Folder' adds, "During ACE 17, there were more than 100 aircraft. You do the planning via the VTC tool - that's different from sitting around the table - but that's also realistic training, because that's how recent combat operations have been done as well, where you are spread out on multiple bases."

ACE led to special events

The major benefits and possibilities of CBT have been noticed around the NATO community, as Lt Col. 'Restless' concisely adds; "The reputation grew."

The interest in CBT from other countries has been growing, and it's not only the Nordic countries now taking advantage of it, what with the huge airspaces available, and the possibility to fly against dissimilar airframes.

Two years ago the so called 'Special events' in the CBT program started, which included a couple of F-15 Eagle formations from RAF Lakenheath, being dragged by a RAF Mildenhall KC-135 tanker, to take part in a CBT sortie in the north, and return to RAF Lakenheath. Lt Col. 'Restless' explains, "The US Air Force participated in the first ACE, and saw the advantages of the big airspace and the possibility to train with many fighters on a day to day basis. That's how it all started, and they said, 'Hey we want to chip in on this'. Which is why we created the 'Special Event'."





Adapting to the situations

What was a priority yesterday, may not be a priority today, as the world is changing with new situations and potential crises lurking, the focus also shifts in the armed forces around the world. Something that can also be seen in the ever-evolving CBT, as Lt Col. 'Restless' explains, "We have been very focused on international types of missions here, which means peace support and peace enforcement operations, as ACE has these kinds of scenarios. I think that most of the air forces around the world are now looking back to basics, which means national defense is once more on the agenda, and we're not that large scale anymore, we might be on our own."

What we have been trying to do, is to implement a little bit more of a national scenario, with a high threat environment. A couple of years ago we mostly trained against a medium level threat, but now we're more focused on a high threat environment, so we need to go in low - we can't go mid level anymore."

Changing the focus from international operations to more national oriented operations, but still keeping the international readiness, is a fine balance. The combination of CBT and ACE seems to be the key for the Nordic countries, as Lt Col. 'Restless' continues, "Adjusting to the different crisis scenarios. We need to continuously improve CBT. When we launched CBT on a really large scale, we had 65 occasions a year. There's actually a reduction now, and this year we only have 40. That's because when something is new everyone is eager. But it also takes a lot of resources to plan and adapt to the different situations, both for the squadrons and from a political side - to come to fruition."

We're looking at the bilateral meet up differently than we did five or six years ago. Now we can do a lot of good stuff with them, instead of doing basic BVR (beyond visual range ed.) setups, we can actually bring in scenarios, where four adversaries are ample to fulfil our goals. Earlier we just looked at large scale scenarios all the time - it's still interesting, and we still need to train it, but not on the same scale as before. The smaller scenarios are equally useful for us, to reach our goal."

Ready to handle the real world

Even though it's not the large-scale scenarios that are the main focus of CBT, it's still a part of CBT, and in combination with ACE, this keeps the squadrons on a high level of readiness and interoperability with other units, as Major Turula explains, "We are training to be interoperable with NATO, as we're not a part of NATO, but under the NATO 'Partnership for Peace'. With Norway being a NATO country, flying CBT sorties with their F-16s helps us to know how the NATO work."

Lt Col. 'Restless' adds, "CBT is easy, and extremely useful, to keep a sufficient amount of interoperability in the squadron. To reach these goals, before we had CBT, we needed to travel to the Netherlands, or the US, otherwise it wasn't possible. Before CBT came about we needed to go to the bigger exercises, deploying to other countries. It's very expensive with only a few pilots at a time. Now we can actually train more pilots during the year. It's been very beneficial."

It's important for the countries involved in CBT to be ready to handle an international crisis if need be. This is where ACE helps the squadron be ready, and train these coalition scenarios in their regular training, as Lt Col. 'Restless' illustrates, "Interoperability is the key to success. No matter how the crisis may look like, if it's in Europe or anywhere else in the world, interoperability is the key."

We were very focused on the global situation fifteen years, where we were going to do peace enforcement, or peace support operations, and we needed to train for that. We did not prioritize how to fight in Sweden, to defend our self. Presently we're back, focusing on national defense, and now it includes interoperability, and that is ACE for me."

All the scenarios can be trained in the CBT package, to be ready to handle the real world, as Lt Col. 'Restless' concludes, "If you look at how we have been flying the last ten years, one large exercise every second year (ACE ed.), in combination with CBT, that will be totally sufficient for us, to maintain our interoperability level - so that is ACE for me."





A four-ship formation, flying low above the islands close to their homebase

Photo by Søren Nielsen

Arctic Fighter Meet

Once a year the participating squadrons arrange an actual meeting with the units meeting face to face at one of the three air bases. The location changes every year, and this year it was held at Kallax. This is called Arctic Fighter Meet (AFM), which is a great opportunity for the pilots to meet, and shake the hands of the other pilots they fight with and against, and do video conferences with. It creates a strong connection, and relationship between the squadrons across the borders.

The meeting is invaluable and it gives the squadrons a chance to learn the pros and cons from the other squadrons. During AFM some of the more experienced pilots from one nation, fly with the younger, and less experienced pilots from another nation – a method that benefits all the players.

There's different ways to flying the airframes, and with most of the modern missiles and weapon systems these days the most predictable outcome of any engagement against an enemy would result in a BVR fight, but as Lt Col. 'Folder' states, the good old fashion dog fighting is still an important aspect of their training, and CBT - and especially AFM - facilitates this kind of training: *"This fighter meet in particular is all about getting back to basics, such as one-on-one. Maybe the awareness wasn't there twenty years ago. We started to get new systems, new missiles, and the training would start to shift away from the visual engagement. I think it's nice to see that we are now embracing this component of our training."*

Even though we're hoping that at the time we hit the merge with the adversary, that the outcome has already been decided (the enemy has been shot down ed.). But if that's not the case, you of course have to have a plan for what to do next, if you actually find yourself there."

If you was to give AFM a motto, it would most likely be something as simple as 'Developed by pilots, for pilots', as Lt Col 'Restless' illustrates, *"I love AFM, it's brings us back to the very basics of flying. To keep it easy, we just keep it to BFM (basic fighter manoeuvres) all the time. There shouldn't be any big planning, or evaluation. The most important thing about AFM is to be at the same place, to meet - to get to know each other. That's equally important, as it is to fly."*

For the young pilots

AFM is all about going back to basics, and getting to know the other pilots from the other countries, building a social bond, as Major Turula concludes: *"It's a good thing with AFM to do briefings and debriefings face-to-face for the young pilots, because in the near future they will fly the CBT sorties and brief and debrief across the VTC. AFM gives them an opportunity to build a relationship with the other nations' pilots. It's a lot easier to brief and debrief when you have met the other pilots previously - put a face to the name."*

The future

No one can predict the future, but the CBT package is helping the squadrons of the Nordic countries to adapt to the ever-changing global situation, as Lt Col. 'Restless' explains, *"The future for CBT is good, and we're always trying to improve it. We should not be satisfied with how it is, and we should always try to improve it. If we want it to be as productive as it has been for the past ten years."*

The typical BVR scenario might not work in all situations, the conflict or situation is not aggressive, but more defensive, protecting your borders, by being present in the air, to show air superiority, as Lt Col. 'Restless' illustrates, *"It has always been a focus to have the younger pilots, to have an environment, to learn how to fly against dissimilar aircraft."*

Doing BFM manoeuvres - does it bring us further in some war-type tactical scenario? No, but it's a way to know how to use your aircraft in different situations, because it's not only peace and war. You can find yourself up there, in various states of crisis, and then being able to manoeuvre your aircraft, and learn your aircraft against dissimilar ones, that is the main achievement."

Lt Col. 'Restless' concludes, *"CBT is the perfect platform to prepare for real world scenarios."*

The author would like to thank Major Jouni Turula, Lt Col. Erik 'Folder' Brettingen, and especially Capt. Daniel 'Northug' Strand, Louise Levin, Chief of Public Affairs Norrbottens flygflottilj F 21 and Lt Col. Peter 'Restless' Greberg for making this article possible.



JOINT STARS 2017

TEXT - ANDREA AVIAN
PHOTOS - ANDREA AVIAN & MIRCO BONATO

The Joint Stars 2017 is the most important exercise in Italy. It has been held every two years, with different names in the past, such as Star Vega (in 2013), Trident Juncture (in 2015) and Joint Star (in 2017). Andrea Avian reports from Italy.



An Italian Navy, Marina Militare, NH-90, during Joint Stars 2017.

Photo by Andrea Avian

Joint Stars 2017

The Joint Stars 2017 is the most important exercise in Italy. It has been held every two years, with different names in the past, such as Star Vega (in 2013), Trident Juncture (in 2015) and Joint Star (in 2017). But each and every time it involves all the Wings of Aeronautica Militare (Italian Air Force) in cooperation with Italian Navy and Italian Army.

The Joint Stars 2017 included “Vega 2017” - the exercise carried out by the Air Force; and “Mare Aperto 2017” - this one carried out by the Navy, which took place 16th to 27th October 2017.

The main purpose for the AM (Aeronautica Militare) is to train its personnel and for the Command Structure to plan and manage the COMAO (COMposite Air Operation).

The exercise had been carried out based on a simulated scenario which expected the participation of the Italian Air Force and Hellenic Air Force in an international operation ordered by ONU to resolve an international crisis situation.

During Joint Stars 2017 all the Squadrons of Aeronautica Militare had been involved. The F-4E AUP Phantom II of 339 Mira, 117 Combat Wing of Polemiki Aeroporia, Andravida air base, in Peloponnese, but deployed in Decimomannu air base, Sardinia, was also involved for the entire exercise.

The Italian Air Force component were represented by Tornado IDS and It-ECR from 6 Stormo, Ghedi air base; the Eurofighter EF2000 from 4 Stormo, Grosseto air base, 36 Stormo, Gioia del Colle air base, 37 Stormo, Trapani air base; the AMX from 51 Stormo, Istrana air base; C-130J and C-27J from 46 Brigata Aerea, Pisa air base; KC 767 from 14 Stormo, Pratica di mare air base, and the Predator from 32 Stormo, Amendola air base.







Restricted air spaces

All the fighter jets were deployed in Trapani air base, while the transport aircraft were in Pisa AB. The tankers in Paratica di Mare and the Predators in Amendola AB.

The air component of the Italian Navy was represented by the AV-8B+ Harrier II, SH-90, EH101 and AB212.

During the exercise, all the air specialities had been trained. The crew performed ISR (Intelligence, Surveillance and Reconnaissance) missions, CAS (Close Air Support), OCA/DCA (Offensive/Defensive Counter Air), electronic warfare, SEAD (Suppression of Enemy Air Defence) and ASW (Anti Surface Warfare).

The Joint Stars had been thought out and planned to include a reduction in costs and environmental impact, two terms which are very important for the media in Italy at this moment. Except for the fighters, all the other aircraft operated from their own bases with less need to move personnel and equipment, and without using live ordnance, but resorting to simulation technologies. One of these is AACMI (Autonomous Air Combat Maneuvering Instrumentation), a training system belonging to Reparto Sperimentale Standardizzazione del Tiro Aereo of Decimomannu, of to which it had been possible to train the crews in several types of air operations.

The aircraft operated in restricted air spaces reserved solely for military flights, without any interference from commercial air traffic.

The Joint Stars represented a final test of all the experiences learnt in several recent real operations, from the ISAF mission in Afghanistan to "Unified Protector" in Libya 2011, and such as "Inherent Resolve" in Kuwait in 2014-2016.

In particular, one of the fundamental activities in the modern scenarios, is to trace, to analyze, to protect and to share in real time all the information and data useful to have an adequate and prompt awareness of the situation - and to permit the command center to make the best decisions in the fastest way as possible.

A successful exercise

In operative scenarios characterised by asymmetric threats, often posed by improvised devices (IED) in the presence of civilians, it is fundamental to have available the use of leading edge technologies and capabilities.

To have these in the sector of Intelligence, Surveillance and Reconnaissance (ISR), such as the capability inside a NATO complex mission, to analyze and share all the data coming from the ground and air sensors, such as high resolution photos, full motion videos, electromagnetic emissions. To this end the Tornado, the AMX and the Predator carried out these roles in excellent fashion

The Joint Star 2017 viewed for the first time the presence of a detachment of Polemiki Aeroporia (Hellenic Air Force). The Hellenic F-4E Phantom, thanks to the AUP (Avionics Upgrade Program), is still a valid competitor with capabilities typical for a third-generation fighter jet. The 339 Mira "Aias" is specialized in air defense, and they carried out OCA/DCA and CAP missions for the entire exercise. The four F-4s arrived in Sardinia on 12th October in order to familiarize with the operational area. During the exercise they flew four sorties every day, both in pairs and in four-ship formations.

In Spite of the excellent performance during the exercise, the VEGA 2017 had been the last international effort for the 339 Mira, which has suspended all operations on 31st October in order to reduce costs for the Hellenic Air Force. From 1st November the 338 Mira "Aris" will be the last Phantom squadron in the HAF.

The Joint Stars 2017 has been a successful exercise both for AMI (Aeronautica Militare Italiana) and the PA (Polemiki Aeroporia) and the co-operation between the air forces had been profitable, verifying the effective readiness to respond quickly to any crisis situation internationally.

UKRAINIAN ARMY HELICOPTER BRIGADE

TEXT - ALEXANDER GOLZ
PHOTOS - ALEXANDER GOLZ & RALPH BLOK

Alexander Golz reports from the Ukrainian Army Helicopter brigade, and looks on all their tasks, and previous missions.



*A Mi-24 Hind high above Ukraine
Photo by Ralph Blok*

The Ukrainian army helicopter brigade

During several visits at the 16th Independent Helicopter Brigade of Army Aviation in Brody (OBr AA) close to the city of Lviv, the 18th OBr AA at Poltava, the 12th OBr AA at Novy Kalyniv and the 11th OBr AA at Kherson the author got an impression about the current challenge of Ukrainian army aviators amongst two demanding tasks. Since years they cope with challenging duties of UN deployments in Africa. Furthermore, since beginning of ATO (Anti-Terrorist Operation) in 2014, they are required permanently in the east of the Ukraine and at the border line to the Crimea.

In Western Europe hardly recognized, the Ukrainian helicopters achieve tremendous successes in Africa. Painted in noticeable white colours and marked with the UN identifier they fulfil their duties for more than a decade.

This applies also to the 16th Independent Helicopter Brigade, the "Fighting Bees" of Brody on the Ukrainian western border. They were already established in 1981 during Soviet times as the 119th Independent Helicopter Regiment. After the foundation of the Ukraine and the accompanying reorganisation of the armed forces, the unit carried the names 3rd Brigade respectively 3rd Regiment until 25th December 2012.

Already with those names they participated in their first UN missions. The long list of deployments reaches from UN Protection Force (UNPROFOR) 1995-1996 via UN Confidence Restoration Operation (UNCRO) in Croatia 1995-1998 and KFOR in Kosovo 1999-2001 to the UN mission in Sierra-Leone (UNAMSIL) 2001-2005.

Currently after the end of UNOCI they have to cope with two peacekeeping missions at the same time. At the moment all missions are taking place in Africa with the UN missions MONUSCO and UNMIL. Within these two missions the deployment in Liberia (UNMIL) is practically a permanent task that takes place since more than a decade.

United Nations

Reasons for the UN mission were the occurring civil war as well as the resignation of Liberia's former president Charles Taylor in 2003. Initially, a peacekeeping force of the West African Economic Community ECOWAS together with a small contingent of United States Marines Corp took over the responsibility to establish and secure peace.

On 19th September 2003 the UN Security Council provided with resolution 1509 the legal basis to conduct a multinational mission. Main task until today is to allow refugees a secure return and disarm the different groups of rebels. With resolution 2116 from 18th September 2013 the UN Security Council prolonged the mandate.

For the Ukraine the deployment in Liberia started on 11th January 2014 with a vanguard of 18 men. Those formed together with the following troops the 56th Independent Helicopter Detachment. The transfer of overhauled Mi-8 and Mi-24 helicopters as well as necessary spare engines took mainly place with An-124 cargo aircraft via the international airport close to the capital Monrovia.

Additional cargo and troops found their way to Africa in Tu-154 or respectively on seaway. The relocation happened rapidly. End of January 2004 the planned contingent of 300 Ukrainian troops including functioning equipment was reached already. From the beginning the mission proved to be challenging for soldiers and material. Temperatures of +40 to +45 °C with a humidity of 90% to 98% have to be coped with.

On top of that comes heavy rain for half of the year and the long distances. The strategically important Greenville is 230 km away and has to be approached regularly with Mi-8 for logistical tasks. The Mi-24 serves for reconnaissance and patrol flights. Even if the situation eases after the elections and foreign troops can be withdrawn, the Ukrainian helicopters probably will stay in until the end in smaller numbers. After five Ukraine helicopters in 2016, now there are three remaining.





Going to Africa

Close related to the mission in Liberia was the UNOCI operation in Cote de Ivory. The 56th Independent Helicopter Detachment from Liberia did sent the three Mi-24 helicopters to this African hotspot. The mission was ongoing until March 2015. The second UN-mission with participation of Ukrainian helicopter technology takes place in the Democratic Republic of Congo. MONUSCO, how the mission is called, is one of the largest peace creating missions of the United Nations.

It started on 30th November 1999 with Resolution 1279 under the name of MONUC. Reason was the so called second Congo War, where troops of the government in Kabila faced several movements of rebels. In spite of the UN mission, which even was extended to a robust mandate with active usage of weapons, and several years of relative peace, rebels took the provincial capital of Goma with one million citizens in 2012. From this point on, the Ukrainian helicopters can be found in Congo.

They form the 18th Independent Helicopter Detachment. Main tasks of the of Ukrainian troops are air recce, transport of cargo, UN troops and VIP as well as show of force. Especially in Congo the high amount of flight hours are big challenges for soldiers and equipment. All maintenance checks in 6, 12 and 24 month cycles have to be done in Congo. Extra hours occur frequently to manage all existing tasks.

Taking the numbers of all deployments in Africa combined, it adds to more than 50.000 flight hours and more than 200.000 passengers for the Ukrainian Army Aviators since 2004. At the moment the following helicopters are based in Congo; four Ukraine Mi-8 and four Mi-24.





Low level flying

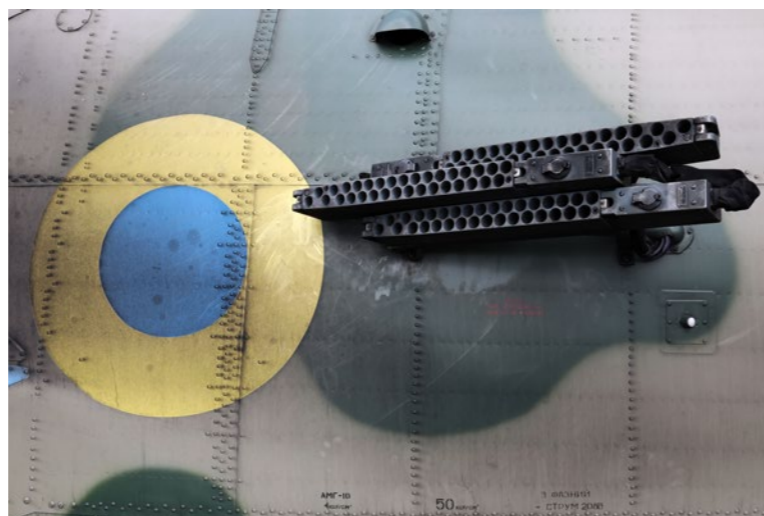
The deployments in Africa were the main task for Ukrainian Army Aviators over years. However, the situation quickly changed in 2014 with the beginning of the Anti Terror Operation (ATO) in the east of the Ukraine in 2014. According to Colonel Igor Jaremenko, the Brigade in Brody misses the soldiers and helicopters that are sent to Africa immensely.

Colonel Igor Jaremenko, who also gathered flight experience in Germany during his five-year assignment in Parchim, was in the beginning of the ATO in charge of the Fighting Bees at Brody and from 3.July 2017 he is now the new Commander of Army Aviation in Ukraine. Yet, a withdrawal of the troops deployed in Africa is not possible. The long-term contracts with the United Nations allow a withdrawal only in cases of catastrophe or war in Ukraine/home country.

In generally used linguistic terms the deployment in East Ukraine still is a mission against terrorists, which is according to the contracts no reason to return troops. Volunteers helped to ease the situation. Nowadays, mainly patriots from Dnepropetrovsk (now renamed to Dnipro city) helped out at the Regiment. Since March 2015 the Ukrainian Army Aviators did not lose any helicopter during hot missions. Luckily, the initiated peace process of Minsk continues. The casualties of the 16th Brigade in the scope of ATO are six helicopters (3x Mi-8 and 3x Mi-24) as well as eight crewmembers according to Colonel Jaremenko.

Although the helicopter pilots own vast experience through their deployments in Africa, they still lost more than ten helicopters. The air defence system in Donbas is well constructed and strong. For helicopters as well as for Sukhoi fighters jets. This means: low flying provides security. Mayor General Valentin Pistryuga, former head of the Ukrainian Army Aviators, underlined during the beginning of the ATO this mantra and did even go one step further.

During an interview he postulated that the tasks of Army Aviation have changed immensely with the introduction of manpads in Russia between 2012 and 2013. They also were used in the ATO zone rapidly. For Ukrainian pilots remained only one solution: *low-flying*, five meters above ground is standard in the meantime. Through the deployments in Africa the pilots thankfully have on average more than 1000 flight hours.





A pair of Mi-24 Hinds patrolling the sky above Ukraine.

Photo by Ralph Blok



Around the clock

During the beginning of ATO the helicopters flew their support missions based on standard musters. Quickly, this approach changed. Timing became the most important factor of tactic. A helicopter circling over a convoy would easily reveal its presence.

Waiting in secure distance and attacking in due time only proved to be a better approach. According to Major General Valentin Pistryuga the deployment of Army Aviation started during the first days of ATO already. Besides of transport of ammunition, troops and weapons the helicopters helped to evacuate wounded out of the warzone.

Over 8.000 missions were flown until the Minsk-2 treaty. Especially at the beginning of ATO the crews had to work almost around the clock. From four o'clock in the morning until midnight the helicopters were in charge. Six missions a day per crew was not unusual. The typically psychological stress also needs to be taken into consideration.

Small groups of enemies, equipped with Manpads, were able to move their locations quickly and even operate behind the frontline. High attention was necessary always. Sometimes even above the areas controlled by own forces they had to fly with the same precaution like in warzone.

Of course there were casualties. However, the Major General Pistryuga is proud that all of them happened through missile attacks. In spite the high amount of low flying, there was not a single accident caused by the pilots. Along with the change of tactic the headquarters in Kyiv tries to improve the used technique.

The upgrades

Modernization of existing equipment and machines is the choice of doing so. With the Mi-24PU1 and the Mi-8MSB-V (Mi-8MCБ-B) there are already two modernized machines in progress. The Mi-24PU1 is based on the Mi-24P version, the main attack helicopter of the Ukrainian Army Aviation. It has one GSh-30-2 30mm two-barrel cannon fixed to the starboard side and was delivered within the years 1981 to 1989. Besides them there are still a few Mi-24VP and some Mi-24RXP in Ukraine.

The new PU1 model distinguishes through the usage of the modified engines TV3-117VMA-SMB1V-02 (TB3-117BMA-CБM1B-02) and the installation of the ADROS KT-01AV self-protection system against approaching infrared missiles as well as the FPM-01KV laser searcher. Additionally, there is a Garmin navigation system GPS MAP-695 and the improved radio KY196V in the cockpit. Through usage of the new helmets THL-5NV with integrated night vision devices PNL-3, the Mi-24 is furthermore able to fly at night. The first Mi-24PU1 was delivered to the armed forces of the Ukraine in 2012.

In June 2014 already three helicopters of this model, developed in Konotop at the Aviakon factory, were available. The Army aviators got also already several Mi-8MSB-V from the factory Motor Sich (Мотор Сич) in Zaporizhzhia. It's also equipped with improved modified engines. They are called TV3-11VMA-SBM-1V-4E (TB3-117BMA CБM 1B 4E) and contribute enormously to the fact that the modernized Mi-8 performs excellent in altitudes above 2.000 meters or during extremely high or low outside temperatures. Motor-Sich even accomplished to create a new world record of a flight altitude of 9.150 meters with a Mi-8MSB-V in August 2014.



New equipment

The test pilots only needed 29 minutes and 30 seconds for this record. The modernized Mi-8 from Zaporizhzhia contains like most of the now used Army helicopters the “Adros” KUB 26-50 double-caliber flare dispenser system. This new Ukraine system is a more effective flare dispenser with larger bullets from calibre 50 mm in addition to the 26 mm flares.

It can be used on different aircrafts and helicopters. The main part of the Army helicopters already have in use the new Adros KT-01 AVE Infra-red counter-measure system. It protects the helicopters against defeat by guided missiles with infrared (IR) homing heads.

The passive system is jamming in 360° instantaneous and simultaneous with amplitude-phase, frequency-phase and time-pulse modulation. The introduction of the Mi-8MSB-V into the forces was however quicker than of the Mi-24PU1.

As early as the end of 2014 the armed forces as well as the National Guard got machines. Helicopters for the modernization are more than enough in Ukraine. Originally, they had about seven combat helicopter regiments stationed within the Ukrainian territory. From 1991 at least one more was relocated to Ukraine due to the withdrawal from Western Europe.

Well prepared

Correspondingly, it was not that hard to establish a new Task Force in February 2015. The new build 18th Independent Helicopter Brigade in Poltava got its first Mi-8MSB-V helicopter on 1. October 2015 and now helps to be well prepared in case the conflict in Eastern Ukraine intensifies again. It is the only unit using also Mi-2 for pilot training and liaison/transport missions.

Not far away from a zone with high conflict potential is the 11th Independent Helicopter Brigade in Kherson. Also this unit has its history in the soviet time. It was formed beginning of the 1960s as 370. independent helicopter squadron. The Mi-6 using unit got 1972 as 320 helicopter regiment the status of a regiment.

With the reformation of the structures and after the independence of the Ukraine it got in March 1992 the name 2. Army Aviation Brigade.

The now called 11th Independent Helicopter Brigade received its final name 2012 and operates today Mi-8, Mi-24P and Mi-24PU1. The city Kherson is located not far away from the Crimea and in practise is the last Ukraine city on the way to the Crimea. Because of this the 11th Independent Helicopter Brigade is not only active at the ATO but operates also in the border region to the Crimea.



AIR POWER OVER HAMPTON ROADS 2016

TEXT & PHOTOS - ANDY BINKS

The Air Power Over Hampton Roads air show returned to the skies above Langley Air Force Base over the weekend of 22-24 April 2016 after a five-year absence. Andy Binks looks back on this event.



*The dark sky shows off the gold-tinted F-22 Raptor cockpit glass.
Photo by Andy Binks*

Air Power Over Hampton Roads 2016

The Air Power Over Hampton Roads air show returned to the skies above Langley Air Force Base over the weekend of 22-24 April 2016 after a five-year absence.

Sadly, the whole evening show was cancelled on Friday due to torrential rain but the weather on both weekend days was bright and sunny. Unfortunately, a late afternoon thunderstorm on Saturday meant that the final few acts including the F-22 Raptor and USAF Thunderbirds displays were delayed and then stopped entirely as the show was yet again cancelled.

The irony of missing a Thunderbird show was missed by the crowd as they ran for cover from the mild precipitation which is so common in Europe and most certainly would not have prevented a continuation after a pause for the storm to pass.

As is typical of American air shows, the static display was quite small but contained such rarities these days as a KC-10 Extender and B-1B Lancer as well as the very latest of hardware in the form of several F-22 Raptors and F-35 Lightning IIs. The variety continued with an ATAC F-21 Kfir and L-39 Albatross parked alongside the AT-6B Texan II, still doing the rounds of air shows.

The modern military contingent also included two F-16s from Shaw AFB, one of which sported some colourful tail art, two T-38s from the home-based squadron and an Air National Guard C-17 from the 167th Airlift Wing at Shepherd Field, Martinsburg, West Virginia.

Interestingly, the jet war bird scene has grown somewhat in America since the last time this correspondent attended an air show, so it was a pleasant surprise to see a MiG-17 and T-33 perform in the flying portion of the show. These were accompanied by other acts including the US Army Golden Knights parachute display team, the Geico Skywriters and their North American T-6 Harvards, a B-25, P-51s of course along with several very accomplished aerobatic acts and an F/A-18C of VFA-106 'Gladiators' from nearby Oceana NAS.





*Air National Guard C-17 from the 167th Airlift Wing.
Photos by Andy Binks*



A great event

The latter was particularly effective in terms of photography during its high speed passes with the damp air creating a doughnut cloud effect around its fuselage. However, the real stars of the show for the large local crowd were the USAF Air Demonstration Squadron, the Thunderbirds.

Whilst not up to the standards of most European teams in terms of performing manoeuvres with large groups of aircraft, they are adept at crowd entertainment, even if the music and commentator is too loud and irritating for aging ears!

However, for the true aviation enthusiast, the real star of the show when it came to flying was the superlative F-22 Raptor Demo Team display. The quite incredible twisting and turning in the sky, sometimes in what appeared to be within the length of the aircraft, had to be seen to be believed. Whether these manoeuvres would be of any use in modern day combat is questionable but it certainly made for a thrilling end to a fine all round show. Well done Langley for such a well organised event.



THE NEXT ISSUE OF FLYMAG MAGAZINE

The next issue of FLYMAG will be published in March of 2018.

How do most NATO air forces train their fighter jet pilots? The answer is a massive joint operation at Sheppard AFB in Texas. We report from Texas and the Euro-NATO Joint Jet Pilot Training Program.



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