



115TH FIGHTER WING - WISCONSIN ANG

Deep in the American Midwest, one can hear the daily thunder caused by the engines of F-16s roaring over Madison, Wisconsin. Ivan Voukadinov reports from 115th Fighter Wing.

EL SALVADOR AIR FORCE

El Salvador has an Air Force that can potentially match its neighboring countries and its internal requirements.

DIFFERENT WORLDS

The Romanian Air Force is continuing modernization of its inventory, currently transitioning from the MiG-21 to the F-16.

FRISIAN FLAG 2019

From April 1st 2019 to April 12th 2019, the international exercise Frisian Flag was held at Leeuwarden Air Base.

Welcome to the third issue of FLYMAG of 2019. This issue brings you around the world, from Europe, the United States, to countries such as El Salvador, Bahrain and Taiwan. A true global issue this time.

Enjoy!

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AN INTERESTING TOUR OF TAIWAN

TEXT & PHOTOS - ANDY BINKS

Previously known as Formosa, Taiwan is an island of approximately 23.5 million people lying roughly 100km off the southeast coast of China. Andy Binks reports from Taiwan.



A single ROCAF F-16A landing with a majestic backdrop.

Photo by Andy Binks

Welcome to Taiwan

Previously known as Formosa, Taiwan is an island of approximately 23.5 million people lying roughly 100km off the southeast coast of China. It has long been claimed by China to be part of its territory but the Republic of China remains fiercely independent from the mainland and as such, has large and very well trained armed forces.

The air force has a mixture of both classic and modern foreign-supplied aircraft supported in the main by American and French industries as well as unusual indigenous designed planes thus making it a place of great interest for aircraft enthusiasts as the aircraft themselves are rarely, if ever, seen outside Taiwan itself.

However, the Republic of China has always been perceived as a difficult place to travel to, as it is not really geared-up for tourists, security is obviously tight and the language most unusual. Being seen as an exotic country, there are easier pickings to be had elsewhere in the aviation world but in our case, it was decided to take the plunge and see what would unfold from a voyage of discovery.

Firstly, there are no direct flights from Europe, so a changeover in Hong Kong was required. This was not too onerous and we were soon landing at Taoyuan International Airport to the west of Taipei. Our schedule had dictated that we would travel down the densely populated, industrialised west coast first which besides giving us shorter initial drives, also gave us a chance to understand our GPS system and the local driving style!

A good mix

The first port of call was the Mirage 2000-5 base at Hsinchu on a damp and dull day. Not the best of starts but once the first pair of aircraft had taxied out and taken off, to be followed by ten more mixed single and two-seaters, we began to feel better.

The overflight of an AH-64E Apache warmed us up even further and after a couple of hours of multiple landings, we had plenty of opportunities for some excellent photos which weren't going to be bettered considering the weather forecast, so we decided to move on to the area around Taichung International Airport or CCK as it is known locally, in readiness for the next day, whilst also taking in our first memorial along the way.

As can be easily found out from the internet, there are many aviation-related memorial sites dotted around Taiwan featuring retired airframes ranging from a C-82 and C-119 through to many F-104s and F-5s. Wreck and relic spotting is very easy to do in public places as long as the GPS system complies. As you can probably guess, we had 'issues', however, those aircraft that we took time to see were in some of the most obscure but interesting places to visit which made it all very worthwhile.

Again, the weather was not too good at the start of our second day, but at least it was a case of quality not quantity from our reasonable vantage point on the approach to CCK air base. We were lucky to photograph the F-CK-1 Ching Kuos from 7 and 28 TFG, some of which were carrying the latest Wan Chien stand-off missiles.



Change of bases

We didn't realise it at the time, but this was to become a trend throughout the trip, in that the Republic of China Air Force (ROCAF) practice flying with all types of weapons in their inventory, which obviously makes sense but is rarely seen in Europe.

As things quietened off, we moved further south again to visit Chiayi air base and its three squadrons of F-16s. By now the sun was coming out and we managed to see some of the based aircraft in action, both single and two seaters along with a very distant but colourful EC-225 helicopter from the SAR flight. Next came the first of our decisions based on the fact that Taiwan is quite a small island and relatively easy to drive around. Should we come back to Chiayi the next day or try our luck in the Taitan area? As the weather report wasn't favourable, we decided on the latter.

With the benefit of hindsight, it was a wise choice as we sought out Gangshan first because Taitan seemed to be very quiet. Upon arrival at the end of the runway, we were entertained by at least fifteen T-34 Mentors doing circuit and bumps training, thus allowing plenty of photo opportunities. As with the whole trip, most of the aircraft that we photographed were in excellent condition and this seems to show the pride with which they were looked after by their ground crews.

Once all of the T-34s had finally landed around lunchtime, we headed back to Tainan hoping for an afternoon wave of locally based F-CK-1s to perform. The local spotter community was also out in force and we were not disappointed as we witnessed flying that continued until well beyond dusk. All-in-all, a very impressive sight and sound.

Whilst the Ching Kuo may seem like a strange amalgamation, to put it politely, of an F-5, F-16 and F-18, it is actually quite purposeful in the air and seems perfectly capable of holding its own in an aerial contest in spite of its age. It certainly makes for an interesting photographic subject.



Going to the museum

By now, we were getting the hang of the road system and travelling around, so we started the next day with a brief visit to Pintung South air base, where we saw two C-130s leaving before we could even get out of the car. With little else happening, we moved just up the road to Pintung North and were entertained by an E-2T Hawkeye and P-3C Orion doing circuits whilst bathed in marvellous warm sunlight. We were fascinated by the weird rattling noise the multi-bladed propellers make on the E-2.

In the afternoon, we went back to Gangshan to visit the superb Republic of China Air Force Museum and it's many exhibits charting the history of the air force and some of the defections of MiG's, Shenyang's and Ilyushin's from mainland China, all of which were on show.

Luckily for us, the weather reports had improved as expected for the time of year and they promised sunshine all day long, so we made an early start at Tainan again. However, apart from a few colourful airliners, all was quiet on the military side, so we decided to go in search of the other indigenous rare aircraft, the AT-3 Tzu Chung two-seat jet trainer.

It seems that morning is jet training time at Gangshan and the AT-3s were out in force. In its patriotic white, red and blue paint scheme, the elegant but dated design was well highlighted against the blue skies. As was becoming our understanding of the ways of working at each base we visited, the flying was a relatively short, sharp burst of dramatic action followed by a long lull in proceedings. Some T-34s did eventually materialise but we felt a need for fast jet action instead, so it was back to Tainan yet again.

As before, the flying took place later in the day and the landings all happened just as the sun dipped below the horizon, so sadly the photos we took weren't perfect, but who is complaining? It was pleasant to then just to sit and watch the spectacle. After all, we had photographed our first ROCAF C-130 slightly earlier in great light!

Tiger hunting

With all the chopping and changing to our original plan, this left Saturday free for a relaxed cross-island journey through the scenic mountains of central Taiwan and then north along the coastal highway to Taitung, the home of 7 TFW and its squadrons of F-5s along with the tactical training squadron too. Little did we know what was to happen early on Sunday.

We had designated Sunday for a bit of rest and relaxation in the natural hot springs of the Taitung area but as we were eating breakfast, we heard jet noise overhead. Surely it was an airliner but no, it was two F-5s returning to base.

The plan changed instantly and after a hasty departure from the hotel, we made our way to our observation point at the end of the runway, along the way managing to stop just in time to photograph six more F-5s in the landing pattern. This was not the end of the action either, as by 10.30 we had managed to take pictures of more than sixteen different F-5s in a variety of colour schemes. The majestic mountain backdrop and perfect sunlight had given us the highlight of our trip so far and it was not to be beaten during the rest of our time on Taiwan.

Because of the fantastic Sunday happenings, the flexible plan changed yet again as we decided to take an early Monday breakfast and then a long drive up the wonderful eastern coastal highway before going through some very twisting and steep mountain roads, to arrive at Hualien air base, unfortunately just missing the landings of the morning wave of F-16s.

However, around 14.00, the base came to life again and the afternoon sorties took-off to return an hour or so later. This gave us a feel for where we needed to stand in order to hopefully catch the rarest beast of them all, the RF-5 from 12 TRS, in action.





Always on the move

With just five active RF-5s remaining in the ROCAF (and world) inventory, we were up early and waiting. Our perseverance was rewarded with the first flight of the day. Sadly this was to be our only sighting of the whole tour but at least we had seen one fly. The remainder of Tuesday also brought our first Beech 1900, Sikorsky S-70 and Fokker 50 too, so we retired happy at dusk, only to be shocked by yet more jet noise later in the evening.

It seemed that the ROCAF never rests as numerous F-16s performed night landings. It was not good for photos but certainly interesting to see the low approaches straight in over the town centre.

Wednesday started with a brief sojourn to Hualien again in the hope of another RF-5 but we were only treated to more F-16s. Therefore, we decided to head back to the capital city Taipei in order to complete a visit to our final base, Songshan.

The air force installation shares its space with the international airport and as such, contains the VIP fleet of aircraft more suited to the surroundings, namely a solitary Boeing 737-800, Fokker 50s and Beech 1900s all of which were photographed over the final two days of the tour albeit in poorer light than we had come to expect.

What conclusions can we take from this trip? At times it was hard to get around but we soon learned how to get along relatively easily. Away from Taipei, very little English is spoken although all the hotel staff were incredibly helpful in their own way. However, it was definitely worth going to the Republic of China both for aviation and general sight-seeing although it is not a tourist destination in the true sense of the phrase.

In answer to the question, would we go back again? The answer has to be "do F-5s fly on Sunday?!!"



FUERZA AÉREA DE EL SALVADOR

TEXT & PHOTOS - ARNOLD TEN PAS/4AVIATION

Despite being the smallest country in Central America, El Salvador has an Air Force that can potentially match its neighboring countries and its internal requirements. Arnold ten Pas reports from El Salvador.



An (O)A-37B Dragón rest on the tarmac before the next sortie.
Photo by Arnold ten Pas

History

Despite being the smallest country in Central America, El Salvador has an Air Force that can potentially match its neighboring countries and its internal requirements. However, with the status of their airframes and the operational strains on their capacities because of international operations, structural steps will need to be taken to ensure the future of the Air Force.

The history of modern-day El Salvador dates to 1841 when El Salvador gained independence after the Federal Republic of Central America fell apart in 1839. El Salvador borders the Pacific Ocean on the west, and the countries of Guatemala to the north and Honduras to the east. It was not until 1923 when the Salvadoran Army Air Force (Fuerza Aérea de El Salvador or FAS) was formed, then named Flotilla Aérea Salvadoreña.

Already years before that, in 1913, the first steps in aviation were taken when a home-built aircraft took to the sky (but unfortunately crashed after a 50 meters). After forming the FAS, a quite large and potent Air Force was built with help from the USA, consisting of FG-1D Corsairs and Harvards and later F-51 Mustangs and a B-26. In 1969, war with neighboring Honduras broke out and many of the types, including Dakotas, were used as bombers in the 100-hour war.

The jet-age in El Salvador started in the seventies with the delivery of eighteen MD450 Ouragan and five CM170 Tzukits from Israel (in a time when US embargoes were in place, preventing acquisitions from the USA). The Ouragans were intensively used in the civil war against FMLN guerilla groups between 1980 and 1982. The FLMN managed to destroy several Ouragans in counter attacks, urging the FAS to acquire new aircraft. As the US embargoes were dropped, the first 15 Cessna (O) A-37s Dragonfly were delivered, and still soldier on to this day.

The Centro de Educación e Instrucción Militar Aeronáutico (CIMA), or The Center for Education and Military Aeronautical Instruction (CIMA) was established on 16 July 1987 following the need for a specialized center of the education of aviators and technical personnel. The Centre reports directly to the Headquarters of the FAS and has three subordinate units.

Air Force Structure

The Escuela Técnica de Mecánica en Aviación “Cap. PA Guillermo Reynaldo Cortez” (ETAM) dates back to 1923 when the Salvadoran Air Flotilla was founded on March 20 of that same year. In that year, when the institute was just called Escuela Militar de Aviación or Military Aviation School, the first students graduated. The school was later dubbed “Captain General Gerardo Barrios”, before receiving its current name in 1983 (named after “War of 100 hours” hero Captain General Gerardo Barrios), delivering its first graduates in 1985. Besides the EAM, the CIMA also incorporates the Technical School (Escuela Técnica de Aviación/ETAM) and the School of Military Aeronautical Perfection (Escuela de Perfeccionamiento Aeronáutico Militar/EPAM) offering several courses for officers.

The EPA, based at Ilopango, uses a single ENAER T-35A Pillán and three ENAER T-35B-3 Pillán for their basic (fixed wing) training syllabus. Originally, seven were delivered from the late nineties (2x T-35A and 5x T-35B-3) but three were lost in accidents. The aircraft, locally dubbed Azul, were to gradually replace the MS893-235GTA Rallyes that are in use since 1979, but two of these aircraft are still going strong in the fleet as well is a single T-41.

Aspirant pilots start with 20 hours on the simulator before transiting to the Rallye. After 20-30 hours on this type, another 20 hours of simulator time is needed, this time for the T-35. Both the Rallye and T-35 simulator were developed in El Salvador, using airframes withdrawn from use, after the T-35 simulator provided by ENAER had major technical issues over a longer period. Final part of the training is done on the single Ce337G.

For rotary wing training, the EPA has four Schweizer TH-300C Halcón helicopters that have been in service since 1986. Helicopter pilots start their career with 20 hours on a TH-300 simulator, again locally built, before they can start flying on the actual helicopters. Simulator and actual TH-300 combined, the syllabus consists of 50 hours of training.

After finishing basic training, fixed wing pilots either go to the Grupo de Transporte flying IAI202 and BT-67, or the Grupo Caza y Bombardeo flying A-37s. Helicopter pilots make their way to the Grupo de Helicopteros flying a variety of types.





Primera Brigada Aérea

Sharing the facilities with EPA at Ilopango is the Primera Brigada Aérea, founded under its current name in 1994, consisting of two units; the Grupo de Helicopteres and the Grupo de Transporte. The latter uses, in theory, two types: the IA202 Pegasus and the BT-67. The FAS has a long history of several subtypes of C-47s in service since the sixties but currently on two, out of four delivered, converted Basler BT-67 remain in the inventory. However, one of them is in operational storage while the other recently had an incident and is awaiting final checks to re-enter service.

Main tasks of the BT-67s are transport, support for Special Forces and drug interdiction missions. For this task, the aircraft are fitted with FLIR and machine guns. Another classic type, but more current than the Basler BT-67, is the IA202, locally dubbed Pegasus. Three IDF/AF airframes were delivered from Israel in 2008. Two of them remain in service for transport duties, while another aircraft is in storage. For training and liaison duties the Grupo de Transporte uses two Ce210s and a single RC114.

Segunda Brigada Aérea

The Grupo de Helicopteres has a mixed bag of types. Five Bell 412EPs are used, of which one for VIP-duties, eight MD500Es and nine UH-1Hs. Besides that, a single Bell 206 and Bell 407 are used for Government VIP flights. Most of the UH-1Hs are awaiting upgrade to UH-1H-II standard if this ever will materialize.

When finishing the training at the CIMA, fixed wing pilots that are selected for the A-37 are transferred to the B.A. de Comalapa, where the Segunda Brigada Aérea (second flying brigade) is based. The Segunda Brigada Aérea was formed in 1968, shortly before the 100-hour war. Generally speaking, new pilots need about 40 hours of conversion on the A-37 before they are fully operational. Besides the A-37, the unit flies six O-2s for liaison duties and training.

El Salvador has been flying the (O)A-37 Dragón from 1982 onwards, when 15 aircraft were delivered from the United States. Another 10 aircraft were delivered from Chile a couple of years ago. Currently, the FAS has 14 A-37s on strength.



Operations Torogoz and Gavilan

Despite the fact the FAS only has limited funds and operational capacity, it has a strong participation in the Peace operations in Mali called United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Three MD500Es, 13 pilots and 90 other personnel are based at Timbuktu supporting the Quick Reaction Forces operating from there.

Pilots support the mission with day and night operations, using NVG for the latter. The Salvadorian forces operate independently of any direct support from any other country as part of a UN operation, a first for El Salvador. The operation is called "Torogoz", after El Salvador national bird (turquoise-browed motmot) and is now in its fourth rotation since 2015: Torogoz IV. More recently, the FAS deployed three more MD500s to Mali.

In December 2018 it shipped the helicopters to Gao, replacing the four German Tigres that left earlier in 2018. The deployment, named Gavilan I (Gavilan meaning Hawk), brings the total of FAS personnel involved in Mali to over 200.

Future

In September 2016 it was announced that the FAS was to upgrade its UH-1H helicopters to UH-1H-II standard but out of the current fleet only one was upgraded so far and lost in an accident in November 2016. There was an opportunity to acquire four Hueys from Taiwan but after El Salvador initiated diplomatic ties with China, these chances seem slim.

The A-37s are in need of replacement but still soldier on as the current government has not found a successor yet. With a new President recently elected, hopes are that more attention goes out to the needs of the FAS and the upgrade of the fleet of aircraft.

Looking at the operational capabilities of the FAS, the fleet and operability seem to suffer from budget cuts and Operations Torogoz and Gavilan. With so many people of the FAS involved in this mission, training and daily missions in El Salvador are scarce, with the A-37s only flying every other day.



DIFFERENT WORLDS IN ROMANIA

TEXT & PHOTOS - PAUL GROSS AND PATRICK ROEGIES

The Romanian Air Force is continuing modernization of its inventory. One of the results is that nowadays an F-16 squadron is working up to operational status to serve alongside two MiG-21 squadrons jointly providing air defence for Romania.



*A Romanian Air Force MiG-21 taxiing.
Photo by Paul Gross*

Different worlds in Romania

The Romanian Air Force (Forțele Aeriene Române, RoAF) is continuing a modernization program that was initiated in the early 2000s. One of the results is that nowadays an F-16 squadron is working up to operational status to serve alongside two MiG-21 squadrons jointly providing air defence for Romania.

We take a deeper look into the origins of this special combination and how it will accomplish the mission of air defence for Romania, with a little help from its NATO friends.

History

When Romania joined NATO in 2004 the fighter fleet of the RoAF consisted solely of 104 MiG-21's that had been modified to LanceR standard. These airframes were originally delivered between 1972 and 1975. The upgrade to LanceR took place between 1997 and 2003, when the last one was delivered.

In 2004 the fleet consisted of 68 (of 71 originally modified) LanceR A ground attack aircraft, 12 (of 14 originally modified) Lancer B trainers and 24 (of 26 originally upgraded) Lancer C air defence variant.

Only one year earlier the RoAF was still operating a relatively young fleet of originally 21 MiG-29's, delivered between 1989 and 1993. A promising cooperation between DASA Germany, Elbit Systems Israel and Aerostar Bacau Romania to upgrade the MiG-29s to NATO standard under the new name 'Sniper' had however been abandoned a few years prior. Budget cuts and restructuring of the armed forces resulted in the end for the MiG-29 in the RoAF service in 2001.

Further budget cuts have since then resulted in the withdrawal of the LanceR A's. This means that only 24 LanceR C aircraft are available for air defence, with a secondary ground attack role. These aircraft are divided over the air bases of Câmpia Turzii (Escadrila 711 / 711 Squadron) and Mihail Kogălniceanu (Escadrila 861 / 861 squadron). Both units maintain a Quick Reaction Alert (QRA) facility with each two MiG-21s on standby 24/7, 365 days a year.





Air defence for Romania

With little less than 240.000 square kilometres Romania is not only a vast country, but it also has a strategic geographical position adjacent to the Black Sea. The coastline at the Black Sea is some 225 kilometres long and is as the crow flies less than 400 kilometres from the new Russian territory of Crimea.

In 2014 it was decided that NATO would contribute to the air defence of Romania by installing an air policing detachment at Mihail Kogălniceanu Air Base (locally referred to as M-K Air Base or just M-K). This so called Enhanced Air Policing is part of NATO's Assurance Measures introduced in 2014. These measures were implemented with the goal of demonstrating the collective resolve of NATO and to deter Russia from aggression or the threat of aggression against NATO Allies.

Several countries have fulfilled these measures at M-K air base. In 2018 it was for instance the fourth time that Canada supported the mission in Romania. Preceding them from May 2018 to August 2018 a detachment of the Royal Air Force was based at Mihail Kogălniceanu Air Base with Typhoon fighters.

The number of intercepts of real intruders (so called Alpha Scrambles) was at levels of 60-70 per year in the years before the air policing. All of the intercepts were of Russian aircraft, varying from Il-20 and Il-38 patrol aircraft to Su-27 and Su-24 fighter jets. Since air policing started the activity from Russia near Romania decreased significantly. An example was the intercept made by the RAF contingent on August 23rd 2018 when two RAF Typhoons intercepted a Russian Be-12 coming from Crimea.

The MiG-21 in Romania

The day before the RAF reported it had intercepted two Russian fighter jets over the Black Sea, while on August 15 it had intercepted no less than six planes. Also the Canadians had a memorable intercept. On the night of Oct. 18th 2018 two CF-188 Hornets intercepted a Russian Su-27 operating near the western half of the Black Sea. The incident was the only intercept of a Russian fighter jet during the four-month mission.

Romania has been operating the MiG-21 in large numbers during the cold war. A total of 322 MiG-21s of several variants were delivered.

By 1993 Romania decided to upgrade a large number of MiG-21s to LanceR standard, with the R standing for Romania officially being written in capital. The program had been originally referred to as the "DD program" meant as a tribute to the Romanian poet and novelist Doru Davidovici who was also a MiG-21 pilot and killed in a crash with a MiG-21UM in April 1989.

The goals of this upgrade were to extend the service life of the MiG-21 by 10 years. This meant the MiG's were planned to be replaced between 2005 and 2010.

71 MiG-21's were modified to the LanceR A ground attack variant. Seven MiG-21-MF-75 airframes and 64 MiG-21MF were used for this. The Lancer C was the air defence variant. A total of 26 were upgraded from a fleet of two MiG-21MF en 24 MiG-21MF-75. For training 14 MiG-21UM were upgraded to LanceR B.

Most important of the many LanceR modifications was HOTAS (hands on throttle and stick), MFCD (Multifunctional Colour Display), Type 921 HUD (Head Up Display) by Elbit Electro Optical Systems, DASH (Display And Sight Helmet System) also by Elbit, an HNS (Hybrid Navigation System), chaff and flare system and a new IFF transponder. Important improvement was also the ELTA EL/M2001-B radar.



The quest for a new fighter

After joining NATO on April 1st 2004 Romania almost simultaneously commenced the search for a new fighter jet to replace their MiG-21 LanceR fleet. Initial debates had already started soon after the end of LanceR upgrade program, around the immediate premature retirement of the MiG-29 Fulcrum in 2001.

Early 2005 rumours started to emerge that Romania was interested in the acquisition of two dozen ex-Israeli Air Force F-16s representing a value of USD 150 million. Although the actual acquisition never took place, the proposal was approved by the US government and Lockheed Martin.

The next attempt followed in the summer of 2006 when the Romanian government negotiated with the Belgian government on the possible purchase of ex-Belgian Air Force F-16's. This also did not result in an actual transfer. One possible reason could be that the concerned F-16s in Long Term Storage at the Rocourt and Weelde facilities in Belgium were not up to MLU standard. This would mean additional costs for upgrading the F-16s.

A third attempt followed in the spring of 2008 when the Romanian government submitted a proposal for future acquisition for Major Defence Equipment (MDE) in the United States. Subsequently the Defence Security Cooperation Agency (DSCA) notified Congress of a possible future Foreign Military Sale to Romania of F-16C/D aircraft representing a value of USD 4.5 billion. This included the delivery of 24 refurbished F-16C/D Block 25 aircraft and 24 new F-16C/D Block 50/52 aircraft. For unknown reasons this deal did, however, not materialize.

After this attempt failed as well, the Romanian Supreme Defence Council approved the Defence Ministry's proposal for the purchase of 24 ex U.S. Air Force F-16C/D block 25 variants in 2010. The total value of this acquisition was estimated to be between USD 900 million and USD 1.2 Billion. According to sources who took part in the discussions held between the Romanian National Defence Ministry and the United States, the Romanian Government cancelled the plans due to lack of a long-term financing plan.

The Fighting Falcons

Finally Romania succeeded in its attempts to find a replacement fighter when the Romanian government announced the purchase of twelve ex-Portuguese Air Force F-16s on October 11th 2013. The Portuguese government had been searching for a potential buyer for its surplus MLU upgraded F-16AM and F-16BM aircraft since 2006.

The program was referred to as Peace Carpathian and included the delivery of twelve F-16AM and F-16BM Fighting Falcons. Of those, nine were originally delivered to the Portuguese Air Force and three were former U.S. Air Force aircraft supplied to Portugal under the US Excess Defence Article program. The Portuguese military procurement agency DGAIED bought the latter three F-16s and had the Portuguese Air Force upgrade them to the F-16 Mid Life Update (MLU) standard with assistance of the local OGMA aviation industry prior to transfer to Romania.

The MLU upgrade consisted, amongst other things, applying the Falcon UP reinforcement structure to their aircraft. The Falcon UP program was intended to restore the 8,000-hour capability for the USAF's Block 40/42 aircraft. As a result the acquired F-16s that have on average some 4,000 hours of flight now have at least another 4,000 hours left.

Also, the engines were upgraded to F100-PW-220E and a series of modern armament and equipment were implemented. The major armament upgrades were compatibility with AIM-120 AMRAAM, Joint Direct Attack Munition-JDAM, Joint Stand Off Weapon-JSOW and Rafael Litening II.

The value of this acquisition was EUR 628 million and the contract also included modifications and upgrades to the aircraft, additional engines, logistics support, and the training of 9 Romanian Air Force pilots, 4 mission planners and 75 maintainers and engineers.





Extra orders

On July 20th 2018 Romania announced that it plans to buy five more F-16 fighter jets from Portugal. The order contains four single seaters and one dual seater and they should be delivered by early 2019. The Romanian government planned to submit legislation on the procurement to parliament by the end of 2018 but no news has come forth so far.

In July 2018 it was also stated that Romania still intends to purchase 36 more F-16s in the future. Procurement could be from other NATO countries like the US and Greece but also Israel was an option. Preceding this, Romania has asked for support from US Defence Minister, James Mattis, for this acquisition. Because, whether these aircraft are bought from Portugal or another country, it is imperative that the US government agrees.

Peace Carpathian conversion training

On September 30th 2014, the first group of 23 pilots, mission planners, maintainers and engineers headed for Portugal. The pilots started their initial 30-day ground-training program.

During this period they were taught the composition of aircraft systems and their operation mode, essential elements how to fly and operate the F-16, specific navigation procedures of Portuguese airspace and of course, how to act in emergency situations. The theoretical part was complemented by long hours of flight simulator training. On September 30th 2015 the remaining group departed to Portugal to get qualified on the F-16.

After aircraft conversion training was completed the pilots moved forward to Initial Qualification Training (IQT). Here the pilots got familiarized with flight characteristics of the F-16 and executed the first solo flights. After finalizing the IQT the Romanian pilots went through the next phase: Initial Mission Qualification Training (IMQT) in which the pilots are trained to conduct air defence missions and ground attack sorties with all categories of systems and armament.

Combat ready

A fine description of the difference between MiG-21 and F-16 was made by the commander of the 861 Squadron at M-K air base: *“We are one of the few that still operates the MiG-21, this is an advantage because MiG-21 allows pilots to make a transition to the F-16 easy; if you can fly the MiG-21 you can fly anything”*. *“The main difference for the pilots being the Mig-21 has no fly-by-wire (FBW), so pilots can feel it with their butt as we say”*.

From November 9th 2014 Romanian pilots were finally in command of an F-16BM performing full flight from taking off to landing. This was an important milestone in their training program, which ended with the qualification *“Combat Ready”*. Wednesday, November 26th 2014 13:00 hours Căpitan-comandor’s (Lt.col.) Andrei Constantin and Cătălin Micloș became the first Romanian pilots to fly a single seater, the following day Lt. cdr. (Maj.) Mihăiță Marin became the third pilot to solo.

Finally on September 29th 18:29 local time the first Romanian F-16, serial 1610, landed at Fetesti Air Base. Deliveries continued and on September 27th 2017 the last three were handed over to the Romanian Air Force.

Since that day pilot training has continued at Fetesti Air Base. The Romanian Air Force is supported by Portuguese instructor pilots, temporarily based in Romania. It is expected that in early 2019 the squadron will be fully operational and ready to fulfil the air defence mission. With operational status coming close there are already plans to participate in multilateral exercises. The 53rd Squadron hopes to participate in Tactical Leadership Program (TLP) in 2019 and already has an invitation for Red Flag Alaska in 2021.

All together the RoAF and Portuguese AF performed an impressive training job. As Col Miclos Catalin, Squadron commander of 53 squadron states: *“The transition to F-16, including the course up to instructor pilot, was done in Portugal in 2 years. Normally this takes 6 to 8 years. I got ten years older in two years, but the challenge comes with great rewards”*.

The future

The on-going transition to the F-16 has an impact on just about every aspect of the RoAF. Or as the squadron commander Col Miclos Catalin states: *“Every country that did the transition to the F-16 has a story. Ours is even more important to tell because the transition from MiG-21 to F-16 is far from one jet to another. If you are able fly the MiG-21 you can probably fly the F-16. But the transition to the mind-set that is accompanying the F-16 is huge. Everything is different. Starting from how you show up at work, how you behave, how you brief, how you debrief, how much time you spend studying. It’s just...everything is different, period”.*

“It is not about changing a squadron from MiG-21 to F-16, it is about changing the entire air force from one way of doing things to a completely different way”

The future for the MiG-21 in the RoAF looks bright for two reasons. Firstly, as long as the 36 additional F-16’s that are needed to completely re-equip the RoAF with F-16 are not acquired, the LanceR will be needed for the air defence task. Secondly, the MiG-21 is very valuable for Dissimilar Air Combat Training (DACT) for the F-16’s.

This ‘Red Forces’ mission helps to train RoAF F-16 pilots. With the still limited number of F-16’s available there is no room for the F-16’s to perform this Red Forces role themselves. There are simply not sufficient flying hours, airframes and pilots available. Moreover, on average a flying hour with the MiG-21 costs between USD 4,000 and USD 6,000. For the F-16’s this figure is almost double as high.

Keeping the Romanian sky safe

Different worlds will continue to exist side by side within the RoAF for some time to come. The combination of many years of LanceR-experience with the steep learning curve that is being experienced with the new F-16’s is proving to be successful.

Starting this year these different airframes of different generations will perform the important task of air defence alongside each other, keeping Romania’s skies safe while in the meantime preparing pilots for the hoped of many more F-16’s in the near future.

The authors would like to thank the many men and women of the Fortele Aeriene Romane for their help, in particular the following individuals: Second lieutenant Bahнару, Col. Cosma, Col. Dodu, Col. Hulea, Warrant officer Muresan, Lieutenant Colonel Neamu, Col. Zamfirescu, Col. Miclos.



115TH FIGHTER WING

TEXT & PHOTOS - IVAN VOUKADINOV

Deep in the American Midwest, just a couple of hours north of Chicago, one can hear the daily thunder caused by the engines of F-16s roaring over Madison, Wisconsin. Ivan Voukadinov reports from 115th Fighter Wing.



*A pair of Vipers getting some extra gas
Photo by Ivan Voukadinov*

115th Fighter Wing

Deep in the American Midwest, just a couple of hours north of Chicago, one can hear the daily thunder caused by the engines of F-16s roaring over Madison, Wisconsin. It is here, at Dane County Regional Airport / Truax Field, that the 115th Fighter Wing and its 176th Fighter Squadron, known as the “Badger Air Militia”, calls home.

The 115th Fighter Wing (FW) traces its lineage from the 128th Fighter Wing (FW) and then even further back to the 176th Fighter Squadron (FS), whose roots were in the 306th Fighter Squadron (FS). The history of the 115th FW therefore truly begins on July 16, 1942, when the 306th FS was constituted and then later activated on July 22, 1942. Soon after, the 306th FS was inactivated on May 1, 1944. However, more than two years later, on May 24, 1946, the 306th FS was reconstituted and redesignated the 176th FS.

On October 6, 1948, the 176th FS received federal recognition which is considered the anniversary date for the squadron. Over the years, the unit has flown a wide variety of missions and aircraft types which included F-51s, F-89s, F-86As, F-102s, O-2As, OA-37s, and the A-10 Thunderbolt II. In 1992, the unit received their F-16s which they have been flying ever since. Today, the 115th FW is one of 12 Air National Guard units that still fly the F-16C/D Fighting Falcon. In that time, the unit has deployed around the globe all the while maintaining their mission which is “to deliver dominant combat air power and provide agile support for domestic operations.”

In the past 15 years, the 115th FW has been on 5 combat deployments in support of Operation Iraqi Freedom and Operation Enduring Freedom and in 2019, the unit deployed again to Afghanistan. Other recent non-combat deployments have included one to Kunsan, Korea in 2017 and Kadena, Japan in 2015. Although not deploying as often as active duty units, the 115th tends to do a long term deployment once every 2 years.

Wisconsin Air National Guard

As part of the Wisconsin Air National Guard, the unit is subordinated to the governor of Wisconsin who is also in Madison. The structure of the wing can be split up into 4 main parts. First is the 115th OG (Operations Group) which owns the flying mission and is responsible for everything related to it such as scheduling flights and training, intelligence, aircrew flight equipment, and etc.

The 115th MXG (maintenance group) is responsible for all tasks related to maintenance of the aircraft. The third component is the 115th MSG (Mission Support Group) performs all other functions from civil engineering to base security. Finally, the last component is the Medical Group. The wing’s F-16 jets are assigned to its 176th Fighter Squadron and they operate a minimum of 18, although currently the number is slightly higher, reaching up to 24.

The 115th FW flies block 30 “big inlet” F-16C/D aircraft with an APG-68 radar. The big inlet refers to the fact that their jets are equipped with the more powerful GE F110 engine. The median age of these aircraft is now over 30 years, however they continue to receive software upgrades. Over the years, capabilities such as a helmet mounted cueing system and SADL datalink have been added. Alongside the F-16s, the 115th FW also operates a single Fairchild RC-26B Metroliner.

Most F-16 units in the Air Force and National Guard tend to focus on one area or another, even though the aircraft itself is capable of a diverse set of missions. For the 115th FW, Close Air Support (CAS) is the name of the game most often, especially given the demand for such missions in the past 15 years during combat operations overseas.







Many exercises

As such, the pilots in the 115th FW go through a repeating 8-month syllabus which allows them to train for all the necessary missions required.

While the focus is on CAS, they also train for air interdiction, opposed interdiction, basic fighter maneuvers (BFM) and beyond visual range (BVR) air combat with both small 1v1 and large force 4vX engagements. This allows them to have a well-rounded skill set and not be a “one trick pony”, all the while taking advantage of the different capabilities of the F-16. One particular mission profile which is not flown however, is suppression of air defense (SEAD), also known as “Wild Weasel” missions.

The unit regularly takes part in exercises such as Red Flag and Red Flag Alaska where they have a chance to prove themselves and integrate with other air assets, as well as other smaller exercises and deployments such as NAS Key West for training with the Navy’s F-5C aggressor squadron and Tyndall AFB for live air-to-air missile shooting. One of the best training opportunities provided at home is the Northern Lightning exercise which takes place twice a year at the Volk Combat Readiness Training Center (CRTC) just down the road from Truax Field.

Due to the close proximity, the 115th FW have become the de facto “hosts” of the exercise, which has recently grown into a large scale event with up to 80 aircraft participating and a focus on integration with 5th generation aircraft. The location of Truax Field offers great training opportunities because of its very close proximity to the large training airspaces located in central Wisconsin.

Weather challenges

The available airspace is more than 30,000 cubic miles, up to 50,000 feet high. It takes literally a few minutes for the aircraft to fly to these airspaces, which maximizes training efficiency. Not far away is also the Hardwood Range, which provides realistic and challenging training scenarios and offers a full spectrum of target sets that support live, laser, GPS-guided munitions, moving strafe, and Synthetic Aperture Radar (SAR) targets.

Although in wintertime the weather causes some difficulties, the lack of many other military airbases in the area means the training airspace is less crowded and therefore allows easy and seamless mission planning, again increasing efficiency. The close proximity of the 126th ARW and the 128th ARW also means readily available tanker support for training flights.

Outside of training, the 115th FW has a permanent homeland defense mission under Operation Noble Eagle, which is the ongoing NORAD mission started in response to the September 11, 2001 terrorist attacks to protect the continental United States from further airborne aggression from inside and outside of U.S. borders.

F-16s are on alert at Truax Field 24 hours a day, 365 days a year. The 115th FW doesn’t scramble very often, typically only a couple of times a year with the usual reason being an airplane that is unresponsive to ATC. One of the more unique missions is the one flown by the RC-26B, which is equipped with various sensors including a FLIR (forward looking infrared) and is used for intelligence and surveillance flights. Most often this includes counter-drug operations and border patrol, with the aircraft deploying to various “hotspots” with such activity.

The long loiter time of the aircraft makes it ideal for such flights. Through its use of surveillance and photographic equipment, the RC-26B can provide law enforcement agencies full motion video, ground-to-air communication capabilities, and the ability to execute day and night reconnaissance. The aircraft also supplies “eyes in the sky” during natural disasters, aiding relief efforts by providing real-time assessments of flooded areas, including dams, bridges, and highways.





The future of 155th Fighter Wing

Around 35 pilots are currently flying with the 115th FW and come from a variety of backgrounds and experience. About half are former active duty Air Force, some have been with the ANG throughout their flying careers, while others are former Navy and Marine Corps. There are also usually 3-4 current active duty pilots as well, under a program with the Air Force known as Total Force Integration (TFI).

Typically, they serve a 3-year assignment with the 115th FW during which they completely integrate with the rest of the pilots, although they tend to fly a bit more due to their active duty status. A common misconception is that a "traditional" Guard pilot only flies one weekend a month. However, the minimum requirement for proficiency is 6 flights a month, which means these pilots have to report on base 1-2 times a week. Once a year, a hiring board replaces any pilots that may have left the unit, usually no more than 1-2. Overall the pilots fly around 150 hours per year.

The future of the 115th FW is the F-35, which was chosen to replace the F-16 in December 2017, following a systemized selection process. Pending an environmental impact review, the plan is for the first F-35s to arrive at Truax Field in 2023. Besides bringing new 5th generation capabilities to the skies over Wisconsin, it also highlights the fact that the Pentagon is investing into providing a long and bright future for the wing. The future stealth fighters will likely be the first F-35s to be put on alert status in support of Operation Noble Eagle, which will be another milestone in the F-35 program.



FRISIAN FLAG 2019

TEXT & PHOTOS - DANNY REIJNEN

From April 1st 2019 to April 12th 2019, the international exercise Frisian Flag was held at Leeuwarden Air Base. During this annual exercise, the Dutch Air Force trained with various armed forces and coalition partners for 2 weeks. Danny Reijnen reports



A Eurofighter taking off with the skyline of Leeuwarden as a backdrop.

Photo by Danny Reijnen

Frisian Flag 2019

From April 1st 2019 to April 12th 2019, the international exercise Frisian Flag was held at Leeuwarden Air Base. During this annual exercise, the Dutch Air Force trained with various armed forces and coalition partners for 2 weeks.

Frisian Flag was organised by 322 TACTES Squadron, based at Leeuwarden Air Base.

Fighter pilots from different countries trained complex and international missions these two weeks during Frisian Flag. Witnessed by hundreds of aviation enthusiasts, about 50 aircraft take off twice a day from Leeuwarden Air Base.

The focus of contemporary missions is increasingly on international cooperation. No mission is carried out by just one country, but countries seek each other out and work together.

The following units participated in the exercise:

- **France**
Mirage 2000D EC003
- **Germany**
EF-2000 Eurofighter TLG31
- **Netherlands**
F-16 Fighting Falcon 312/313/322 sqn
- **Poland**
F-16 Fighting Falcon 31BLT
- **Switzerland**
F/A-18 Hornet Flst 11
- **United Kingdom**
DA-20 Cobham
- **United States**
F-16 Fighting Falcon 179th FS





Leadership

The focus of contemporary missions is not only on international cooperation, but also on military leadership and precision in execution.

Frisian Flag strives to develop leadership skills among the participants. In the normal daily training missions outside the exercise, this is also trained, but with a limited number of pilots and planes.

During Frisian Flag missions, experienced pilots were given the opportunity to devise, develop and ultimately execute and evaluate a mission in a much larger context. The Frisian Flag missions were planned and debriefed by a different country every day.

Hereby leadership skills were seriously challenged and the maximum is achieved from the training. The pilots develop leadership skills that they can use during their regular missions.

Use of airspace

The exercise took place not only in Dutch airspace, but also German and Danish airspace. This required close cooperation between the airspace control authorities of the 3 countries.

The combat management is in the hands of the Dutch and German Control and Reporting Center (CRC). An Airborne Early Warning and Control (AWACS) reconnaissance aircraft from Geilenkirchen also contributed to this.

European Air Refuelling Training

Simultaneously with Frisian Flag, an international tanker exercise took place: European Air Refuelling Training (EART). This exercise was based at Eindhoven Air Base.

The aircraft participating in this exercise provided air-to-air refuelling of the aircraft taking part in Frisian Flag. Tanker aircraft from Germany, France, Netherlands, United Kingdom and the United States took part.

Air Defense Systems

During Frisian Flag 2019 a number of air defense systems were deployed to make the scenarios as realistic as possible. These systems are set up at Leeuwarden air base, NATO training range "the Vliehors" and a location to be determined in Friesland. The latest radar system from the Royal Netherlands Army, the Multi Mission Radar (MMR) was also present at Leeuwarden Air Base during Frisian Flag.

During the exercise, all capabilities offered by the different fighter aircraft were used to prepare each mission.

Experience gained during previous missions is extensively processed and used during the subsequent missions. During Frisian Flag, larger and more complex scenarios are also practiced, with high amounts of air and ground threats for the participants. It will never be able to replace reality, but it is the best way to optimally prepare the pilots for deployment during actual operations.





*A pair of F-16s taxiing out for a new sortie.
Photo by Danny Reijnen*

Participation 179th Fighter Squadron

During the media day that was held on April 1 an interview was held with Lieutenant Colonel Blade Thornton.

During the last couple of Frisian Flags, F-15s from several Air National Guard Units have participated. The reason why F-16s were sent to participate this year was clear; The decision to send the 179th was because of no availability of other units and because the 179th had a special mission in Europe.

Due to their partnership for peace program with Croatia, participation in Frisian Flag was an ideal opportunity for the 179th to practice in a large-scale context with coalition partners and can show their presence in Croatia. Therefore the 179th sent two of their F-16s towards Zagreb to fly with the Mig-21s of the Croatian air force.

Thornton explained that the European theatre wasn't unknown territory for him, because he was based at Aviano Air Base for 4 years, both in 2001 and from 2004 till 2007.

For this exercise the 179th brought around 180 ANG personnel, including 32 pilots.

Within the ANG there is a constellation that part-time pilots are in service with the ANG. About 62% of the pilots are part-time and the rest fly full-time.

The 179th Fighter Squadron is part of the 148th Fighter Wing, Minnesota Air National Guard and based at Duluth Air Base. The F-16s of the squadron are specially equipped for their task, which is Search and Destroy, or SEAD. The F-16s are also equipped with a special coating, "Have Glass 5", which would make them less visible to radar. The 179th Fighter Squadron flies with block 50 F-16s. The only other squadron within the Air National Guard that flies SEAD missions is the South Carolina ANG flying the block 52 F-16s.

"The special thing is that the systems in the F-16 have been upgraded in such a way that it is possible to eliminate targets by us. So in addition to the HARM rockets, we can also use bombs to eliminate targets. It is called Opportunistic destructive SEAD", Thornton explained.

Not as complex as the Red Flag

Because the 179th has a lot of experienced pilots within this unit there is a kind of exchange program running with the United States Air Force, part of the total force integration. Lt Chaz Smidt was one of the pilots, normally based at Shaw Air Force Base with the 20th Fighter Wing, but now temporarily flying with the 179th to gain experience.

The 179th Fighter Squadron is able to fulfill this need because many fighter pilots have many experienced fighter pilots and instructors.

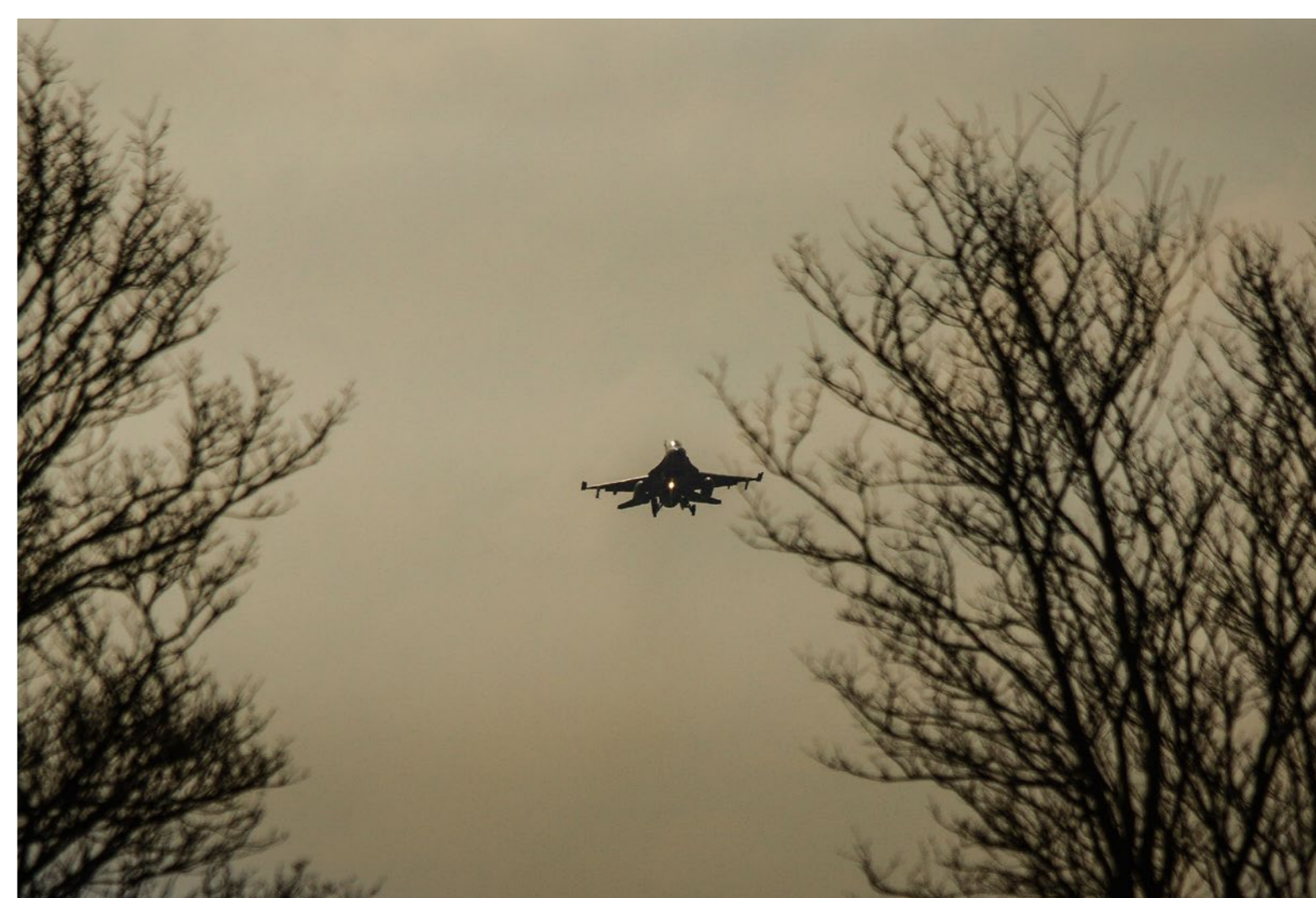
Thornton also explained that the Frisian Flag exercise is not as complex as the Red Flag exercise, but the timeline to prepare the mission, fly the mission and debrief the mission was very hard and strict.

The 179th returned to the United States on April 17th. Leeuwarden was visited by 2 C-17's the same day to pick up all the material used during this short deployment.

Future

In October 2019 the first Royal Netherlands Airforce F35s will join the 322 squadron at Leeuwarden. Base commander Colonel Stallman is expecting that the F-35s will participate in future Frisian Flag, but first things first.

With Frisian Flag 2019 ending on the 12th of April soon the 322 squadron will start again with the preparations of Frisian Flag 2020.



DEFENDING THE BALEARIC ISLANDS

TEXT & PHOTOS - CARLO KUIT & PAUL KIEVIT

During the summer period at the height of the firefighting campaign at the Balearic Islands (Mallorca, Menorca, Ibiza and Formentera) one CL-215T of 43 Grupo is based at Pollensa Air Base on the island of Mallorca.



A CL-215T makes a drop of its water loadout.

Photo by the authors

Defending the Balearic Islands

During the summer period at the height of the firefighting campaign at the Balearic Islands (Mallorca, Menorca, Ibiza and Formentera) one CL-215T of 43 Grupo is based at Pollensa Air Base on the island of Mallorca. The firefighting campaign typically runs from 1 June till 30 September. This deployment is supported by 43 Grupo stationed at Torrejon Air Base.

The unit is responsible and the sole user of the two types of firefighting aircraft currently in service with the Spanish Air Force, (Canadair Ltd, now Viking Air) CL-215T and CL-415. The main challenge is to deploy aircraft all over the country to meet up with the demand of firefighting tasks during the summer period.

43 Grupo (Air Force Group) is organically dependent on the MAGEN (General Air Command), operationally of the UME (Military Emergency Unit) and functionally of the Ministry is MAPA, Ministerio de Agricultura, Pesca y Alimentación, (literally, Ministry of Agriculture, Fishing and Food).

“The first request for us to fight a fire comes from MAPA, but since we are a military unit, the final order has to come from a military command, in our case, the final order for us to go to a fire comes from UME” Captain Maroto explains.

“Less fires have occurred during 2018 mainly due to the weather circumstances. “We call this a good firefighting year” is the conclusion of Captain Maroto, one of the pilots deployed to Pollensa Airbase. Captain Maroto has been serving for over 12 years with 43 Grupo.

“We only had one small fire on the Islands here, that has been different in previous years” Captain Maroto continues. *“Deployments of the CL-215s to Mallorca already started many years ago; People in Pollensa are familiar with the yellow and red aircraft. Only tourists from the beaches or boat owners look a little bit strangely when they see our aircraft land on the water”* Captain Maroto points out. - *“Pollensa does not have a landingstrip, so landing on the water is the only option”*.





The inventory

During the deployments to Mallorca two crews are present for a period of at least 15 days. After these 15 days not only the crews are changed, but also the aircraft. "It can also be that the period will be extended to a month, as it is in my case" Captain Maroto adds.

The first two CL-215s were procured in 1971 and stationed at Getafe with 803 squadron. The first mission of the CL-215 was a search and rescue mission, west of Cape Finisterre on March 11, 1971, and the first firefighting mission was conducted on July 9, 1971, in the province of La Coruña, with a mixed crew (Canadian and Spanish). The first firefighting mission with an all Spanish crew was made on March 23, 1972, in the province of Cantabria.

In 1980 43 Grupo was established at Torrejon. After refitting two turboprop engines (CL-215T) the unit marked its 100,000th flying hour in 1999. Due to the demand of fire fighting capabilities in 2006 the first CL-415s entered service. A year later The Emergency Military Unit (U.M.E) took Operational Command of the 43 Grupo. In 2013 the Ministry of Environment and Rural and Marine Affairs (MAGRAMA) acquired a CL-415. This year marks 175,000 flying hours with the fleet of CL-215s and CL-415s.

Currently the inventory of 43 Grupo consists of eighteen aircraft, fourteen CL-215Ts (UD-13) and four CL-415s (UD-14). UD-13 and UD-14 are the Spanish Air Force designations for them, where U stands for utility aircraft and D for SAR aircraft. Only three CL-415s are the property of the Spanish Ministry of Defense. The other fifteen aircraft (14 CL-215Ts and one CL-415) are the property of the Ministry of Agriculture, Fishing and Food, MAPA, formerly also the environment Ministry (MAPAMA).

The unit is rather small in its organic structure. A total of 58 pilots are available for operational duties supported by twenty eight flight engineers and about sixty three supporting staff members.

Search and Rescue

The main tasks or role during the deployments is forest fire fighting, the secondary role is that of Search and Rescue (SAR) support. "The SAR Support role entails being the eyes in the sky, but we can also drop a line of rafts as the CN235 does, we also practice this during SURMAR exercises" explains Captain Maroto.

For this secondary role exercises are being executed during the deployment of 43 Grupo in Mallorca. These SAR missions are being practiced together with the aircraft of 801 Squadron which is stationed at Sant Joan Air Base, Palma de Mallorca International Airport. During a SAR Support mission two extra persons will be onboard the CL-215T/ CL-415, except for the three crew members, two 'spotters' will be present.

Except for the deployment of 43 Grupo, Pollensa Air Base is also being used for "SURMAR" exercises. These exercises are mandatory for Spanish Air Force pilots. The purpose of this training is to learn how to handle survival in the water. Pilots are dropped in the sea, simulating a plane crash, and learn how to survive and how to request for help.

After this request for help a CN235 or a CL-215T drops a line of life rafts near the communicated position. After following the protocol of how to enter the life rafts they get picked up by a Puma helicopter of 801 squadron out of Son Sant Joan Air Base, Mallorca. In the early days, the CL-215Ts assisted in dropping the pilots into the sea, simulating a plane crash. Nowadays a boat is used for this purpose.

Fighting the fire

"A typical fire fighting mission can have a duration up to 4,5 hours, with a maximum to 9 hours in two parts. The two main reasons to call in the CL-215Ts are first of all the ability to reach the fire by air rapidly, also that the aircraft can reach places that are not possible by the ground" Captain Maroto explains.

After reaching the fire the aircraft has to look for the nearest possibility to scoop water. The fire director who is first on the scene, and is already present on the ground or in the air with a helicopter or small fixed wing aircraft is telling us where to drop the water. After finding a good scooping location the CL-215T has to fly around to see if the water is clear of any objects that can damage the aircraft while scooping water.

Things that have to be thought about are rocks in the water, boats, swimmers, buoys and other floating objects. The CL-215T needs a clear pass way of 1,3km and at least 410 meters of water to scoop water, within 12 seconds the compartments are full (2x6000 lbs. (pounds) of water, approximately 6,000 liters or kilograms of water).

The pilot, together with the crew, chooses the way to fight and engage the fire and it all depends on the local circumstances. These circumstances give direction how to approach the fire, for the head, tail, and right or left flanks, all is being done in cooperation with the aforementioned Fire Director. "There where firefighting missions in which we exceeded eighty scoops and drops in 4,5 hours" Captain Maroto proudly adds.







High demand

Captain Maroto explains “The CL-215T is really good for firefighting, for navigation and logistics it is less suitable. The trip from Torrejon Air Base takes long and is not very pleasant for personnel other than the crew members. The CL-215T is not made for liaison tasks, it is cold on board and the engines are very noisy (however we have undertaken flights as far as the Canary islands, Greece, Bulgaria and Israel)”.

Captain Maroto continues “The CL-215T has two water probes for letting the water in during the scoop; the CL-415 has four water doors which can take in a maximum of 13,500 lbs. of water (both the 215T and 415 have 2 probes that “scoop” or let the water in, the 215T has two doors and the 415 has 4 doors that open and drop the water. The CL-415 holds 13,500 lbs. (pounds) of water, which equates to 6,100 liters or kilograms, which we usually round down to 6000 liters for both aircraft, our bad) . Also, this newer type displays a full digital cockpit which the CL-215T lacks”.

As flying firefighting assets have been in high demand this year due to a number of large fires in Europe, 43 Grupo has also been deployed abroad this year to Greece, in July, and to support local firefighting activities. “We have also fought fires in Portugal this past summer” the Captain concluded.

To safeguard firefighting skills new pilots out of the Academy join 43 Grupo in the co-pilot role for 4-5 years. After this period, they can switch to become pilots. Some will make the step to Flight Instructor or Test pilot. To support the training, education and remain current in firefighting skills a (CL-415) simulator is available at Torrejon.

Each year 43 Grupo has a budget of 4,300 flying hours. During 2017 this budget was extended up to 4,600 flight hours in total, of which 2,500 hours were used during real firefighting flights. It clearly shows the demand which is placed on the firefighting community of 43 Grupo. Though a serious and dangerous job, no serious accidents have occurred since 2003.



BAHRAIN INTERNATIONAL AIR SHOW '18

TEXT & PHOTOS - ANDY BINKS

Taking place bi-annually on this small island kingdom in the Persian Gulf is one of the region's leading commercial events, the Bahrain International Air Show. Andy Binks reports from Bahrain.



*The C-130J taxiing out for its first official RBAF flight.
Photo by Andy Binks*

The Bahrain International Air Show

Taking place bi-annually on this small island kingdom in the Persian Gulf is one of the region's leading commercial events, the Bahrain International Air Show.

The trade show is held over three days and is based along similar lines to that of Farnborough, indeed it is run by the same team of experienced people and follows a tradition of showing off the local forces as well as offering sales opportunities for the major worldwide aviation companies.

The show is held at Sakhir Air Base in the centre of the island, a fifty minute drive from the capital city Manama. From an aviation enthusiast's point of view, the background and lighting are excellent but only until midday. After that it is better to seek out suitable photographic points on the opposite side of the base to the showground, which of course leads to being much closer to the flying action.

This year the static display consisted of a number of Royal Bahraini Air Force (RBAF) aircraft including such classics as an F-5, an Avro RJ85, a Bo-105 and a pair of AH-1 Cobras as well as their more modern counterparts in the form of an F-16, a Hawk 100, Bell 212 and 214s and various UH-60s.

The latest plane in the RBAF inventory, a C-130J direct from its delivery flight from Cambridge in the UK was also shown but did not fly until departures day, this being its first official flight for the RBAF.





*The F-5 fly-past opened the show each day.
Photo by Andy Binks*



Special operations

As well as the expected large numbers of civil aircraft, also present were a contingent of USAF, USMC and US Navy aircraft consisting of an AV-8B Harrier, a pair of CV-22 Ospreys, two F-16 Fighting Falcons, two F-15E Strike Eagles and a mighty MH-53E Sea Stallion. The navy were represented by an MH-60S Seahawk.

The flight line was very ably covered by the Russian Knights and their magnificently manoeuvrable Su-30s (sadly no flares have been worked in to the routine as yet), as well as the RAF Typhoon display team, the Italian air force aerobatic display team, the Frecce Tricolori and last but by no means least, two each of the Mirage 2000-5 and F-16 from the UAE air force as well as their much-improved display team, Al Fursan.

Opening the show each day was a fly-past by three RBAF F-16s and three F-5s. After that, several of the previously mentioned aircraft took to the sky for their displays. Also participating from afar (so we were told!) were a B-1B and a VMFA-211 F-35B from the assault ship USS Essex.

The sun sets fast in this part of the world and the show was soon over but at least that afforded some opportunities to practice night photography of the static display. However, the selfie-ing crowd proved to be too over-powering for this photographer and an end was called on an excellent well-run event.

We hope to return in 2020 and possibly see the latest hardware on show yet again, maybe even in local markings if the sales teams have been proved to be successful!



THE NEXT ISSUE OF FLYMAG MAGAZINE

The next issue of FLYMAG will be published in December of 2019.

We are going to look at a couple of big exercises of 2019, Cobra Warrior in the UK, where German, Italian and Israeli air forces brought jets to participate with the Royal Air Force, as well as looking into one of the biggest domestic exercises in the US, Northern Edge.



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