



18TH AGGRESSOR SQUADRON - THE BLUE FOXES

Eielson Air Force base in Alaska is home to one of only two USAF Aggressor Squadrons, the 18th Aggressor Squadron – also known as The Blue Foxes.

BALTOPS & SABER STRIKE

Between May 28 and June 24, the exercises Baltops and Saber Strike were taking place above the Baltic Region.

THE RED DEVILS TORNADO

The 6° Stormo "Diavoli Rossi", also known as the Red Devils, are the last wing to fly the Tornado in the Italian Air Force.

DAWN STRIKE 2017

"Dawn Strike 17" was the final exercise in a six month long Royal Australian Air Force "Air Warfare Instructor Course 2017".

This magazine features a look into the major exercises Baltops and Saber Strike, which has taking place in the Baltic Region, as well as a close look to one of the USAF aggressor units, the 18th Aggressor Squadron.

We hope you like the magazine - enjoy!

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THE RED DEVILS TORNADO

TEXT - ANDREA AVIAN
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The 6° Stormo "Diavoli Rossi", also known as the Red Devils, are the last wing to fly the Tornado in the Italian Air Force. Andrea Avian gives us a closer look at the Red Devils.



Two Italian Tornados high above the an Italian coastal city.

Photo by Italian Air Force

The Red Devils Tornado

During the 1970's the backbone of the Italian Air Force was represented by the Lockheed F-104G/S Starfighter, but it lacked in terms of manoeuvrability in low level flight, in spite of the J 79 engines which were, however, very reliable and powerful.

The F-104G equipped the 3 Stormo, at Villafranca air base, with reconnaissance as their main role, while the F-104G of the 6 Stormo, based at Ghedi, and those of 36 Stormo at Goia del Colle, carried out strike mission and nuclear strike mission. All the other squadrons were equipped with the "S" version for air defence.

In the late 70s the Aeronautica Militare (Italian Air Force) issued a request for a fighter-bomber to replace the Starfighter.

During the same period the RAF needed a new fighter to replace the fleet of Phantoms and Buccaneers, and even in Germany there was the same requirements concerning the replacement of the F-104G.

The cooperation between British Aerospace, German DASA and the Italian Aeritalia-Alenia lead to the birth of the Panavia PA-200 Tornado.

The first aircraft arrived in Italy in 1981 to the RSV (Reparto Sperimentale di Volo) in Pratica di Mare and on 27th August 1982 the second Tornado arrived in Ghedi air base, equipping the 154 Gruppo, 6 Stormo.

The Aeronautica Militare received 99 Tornado IDS and these equipped both 154 and 102 Gruppo, 6 Stormo at Ghedi, and the 156 Gruppo, 36 Stormo, at Gioia del Colle. The Tornados of the 156 Gruppo carried out the TASMO (Tactical Air Support of Maritime Operations) being equipped with the MBB/Aerospatiale AS 34 Kormoran anti-surface missile.

On 23rd July 1993, the 155 Gruppo, 50 Stormo, based at Piacenza, received 15 Tornado IDS from Ghedi, in the SEAD (Suppression of Enemy Air Defence) role, and its Tornado could use the AGM-88 HARM anti-radar missile. From 1994 these Tornados had been converted to Tornado It-ECR.





Reduction in the Tornado fleet

The reduction of the active fleet and the need to reduce military spending led the AM (Aeronautica Militare) to concentrate all of its Tornados to only one air base, in which they chose Ghedi.

Since 2017, 6 Stormo is the sole Italian Wing using the Tornado, including the 154 Gruppo, the 155 Gruppo and 102 Gruppo, and in its inventory there are 58 Tornado IDS and 16 Tornado It-ECR.

The 6 Stormo “Diavoli Rossi” (Red Devils) was established on 15th January 1936. During WWII it operated the CR 32, CR 42, Fiat G 50 and Re 2001.

After the war, it operated the P-51 Mustang, DH.100 Vampire and F-84G/F. In 1964 it received its first F-104G. Even in those days it was possible to see close to the runway, two shelters, now inoperative, but they hosted a couple of F-104G with nuclear weapons during the 70s, ready for sudden alarm.

The most important chapter in the 6 Stormo’s history began in 1982, when the Tornado era started. With the Panavia fighter, the 6 Stormo performed its first real operation after WWII, outside Italian borders.

In 1991 eight Italian Tornados were deployed to Al Dhafra air base, in UAE, for operation LOCUSTA against Iraq, which had occupied Kuwait. Here, the Wing lost one of its Tornados, shot down by Iraqi air defence. The Italian Tornados received a special sandy-yellow camouflage.

International missions

In 1995 and in 1999 it operated peacekeeping missions over Ex-Yugoslavia and Kosovo.

In this contest Italian Tornados carried out reconnaissance missions over the Balkans with the main purpose of detecting so-called death camps.

From November 2008 until November 2009 they participated to ISAF mission over Afghanistan, with six Tornados deployed to Mazar-e-Sharif, performing reconnaissance and CAS missions.

In 2011 they had been deployed to Sicily for “Odyssey Dawn” and “Unified Protector” missions over Libya, where the “Red Devils” performed reconnaissance missions and real-time transmission of high-resolution images using the RecceLite. Some of them were also available for “buddy” refuelling and ground attack missions.

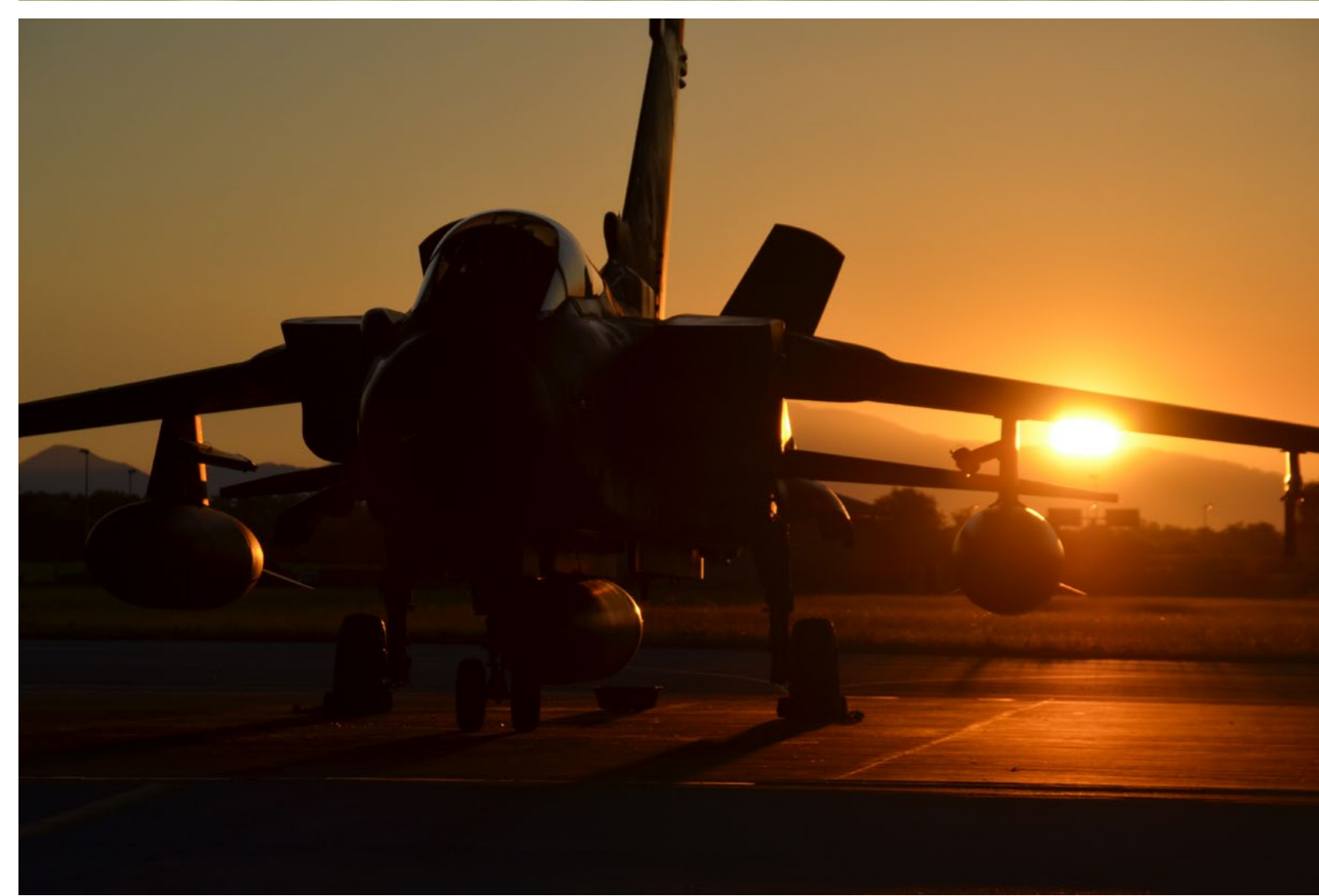
More recently, after the invasion by ISIL (Islamic State of Iraq and the Levant) in Iraq and Syria, four Tornados of 6 Stormo participated to operation INHERENT RESOLVE with ISR role against terrorists from November 2014 till June 2016.

Consequently, due to the ISIL expansion in Iraq and Syria, the US created a Coalition of Willing (COW) with the purpose to provide the Iraq Security Forces (ISF) the necessary operative support to neutralize the terrorist’s threat; to secure its borders; to re-establish the State supremacy, and to create armed forces and police capable of providing national security.

Particularly during INHERENT RESOLVE, Italy with “Prima Parthica” operation, provides personnel to the multinational Commands in Kuwait and Iraq, such as assets for training and assisting the Iraqi police and armed forces.

By now the four Tornados of the Red Devils had flown more than 1,000 hours performing ISR (Intelligence Surveillance Reconnaissance) missions.





Mid Life Upgrade

Over the years, the Tornados of Aeronautica Militare had been subject to several upgrades with the aim of extending the operational life till 2025.

At first, limited upgrades were developed by Finmeccanica to meet urgent requirements, to make the fleet compatible with new-generation weapons and improved interoperability. This was called the Italian mid-life upgrade IT-MLU “First Upgrade” and it included improved communication and navigation systems, new avionics, new operational software and new weapons data bus to support the GBU-16 and GBU-24 laser guided bombs, EGBU-24 GPS/laser guided bombs, GBU-31 JDAM (Joint Direct Attack Munition) and the Storm Shadow cruise missile.

Adding to this, the IT-MLU provided a Quick I/II digital secure communications, improved Marconi M-425 NGIFF and a cockpit compatible with night vision goggles (NVG). New external stores included the Rafael RecceLite reconnaissance pod.

The IT-MLU first upgrade, also known as RET 6 (Retro Enabling Task) involved 18 machines, the first of which having been delivered in 2003. By the beginning of 2007 all the 18 Tornados were upgraded to the standard RET 6.

During that time, Alenia developed another interim program, the IT-MLU “Full Basic”. This program, also known as RET 7, has been extended to 15 machines. The deliveries of the Tornados upgraded to the standard RET 7 began in 2010 and was completed by the end of 2012.

In addition to the improvements introduced in the “First Upgrade”, the IT-MLU “Full Basic” standard further added cockpit revision, with colour multi-function displays (MFDs), hands on throttle and stick flight controls and upgraded Turbo Union RB-199 Mk 103 engines with digital control.

In the cockpit, the central Head-Down Displays for the pilot and the navigator’s Combined Radar and Projected Map Display are replaced by multi-functional Active Matrix Colour Liquid Displays (AMCLDs) and the old TV-Tabs have the same form of replacement used on the RAF Tornado GR.4. New systems support the Link 16 Multi-functional Information Distribution System (MIDS).





Three Tornados in close formation.

Photo by Italian Air Force



Tornado community

The last phase of the upgrade, known as IT-MLU "Full" was originally planned for 35 machines but later reduced to 25.

This included a DASS integrated by Alenia and incorporating AR-3 radar warning equipment (RWE), an internal active electronic countermeasure system (AECM), chaff/flare dispenser pods, electronic warfare antennas and a defensive aid computer (DAC).

In 2010 BAE Systems signed the contract to providing the upgraded kits for 25 IT-MLU "Full" Tornado under the name RET 8. It includes, apart from the aforementioned upgrades, Link 16 MIDS, an integrated inertial /GPS navigation system supported by a multi-mode receiver system for approaches and instrument landing system (ILS).

It involved the upgrade of 15 Tornado ECR and 10 IDS. The kit for the ECR includes new functionality for threat identification and localization, plus the AGM-88E HARM missile. In December 2015 the last Tornado RET 8 had been delivered.

Nowadays, the flight line at Ghedi AB is composed by the three different standards, RET 6, RET 7 and RET 8, and it includes both Tornado IDS and ECR.

The flight squadrons are represented by the 102, 154 and 155 Groups.

The 102 Gruppo is responsible for the training of the new pilots assigned to the Tornado fighter. The Squadron became the OCU (Operational Conversion Unit) for Italian Tornado after the dissolution of the TTTE (Tri-national Tornado Training Establishment) in Cottesmore, in 1999. The TTTE was one of the first example of interoperability between different Air Forces; here crews from RAF, Luftwaffe and AM could flight and train together, with composite crew and machines.

Today this cooperation is still alive at Ghedi, where crews from the Luftwaffe fly with their Italian colleagues on the Tornado for 6-12 months, and Italian crews fly with their German colleagues in Jagel.

Getting ready for the future

The 154 Gruppo carries out CAS (Close Air Support); OCA (Offensive Counter Air); ISR (Intelligence Surveillance Reconnaissance); air refuelling with the "buddy-buddy" pod; and cooperates with civil forces in the case of emergencies such as earthquakes and floods, using the Reccellte pod which provides high resolution images which can be shared in real-time with other units.

Recently, the Italian Tornado participated in reconnaissance missions in cooperation with civil protection units during the earthquake in central Italy.

Sometimes the ordinary training reconnaissance mission of the Tornado can be particularly useful for Italian Police, as happened a few months ago when two Tornados discovered a Marijuana camp in Northern Italy. Thanks to the sharing of the coordinates, the Police could stop the illegal production.

The 155 Gruppo performs SEAD missions carrying the AGM-88E missile.

The basic maintenance of the Tornado fleet is performed by GEA (Gruppo Efficienza Aeromobili) at Ghedi, with a level I after 150 and 300 flight hours and a level II after 600 and 1200 hours. The main overhaul, after 2,000-2,400 flight hours, is provided by 1 RMV (Reparto Manutenzione Velivoli) at Cameri.

Operating outside Italian borders in different climatic and environmental conditions, such as in Afghanistan or in Kuwait, required a huge effort from the support technicians, who, thanks to the high level of training and professionalism, had been able to provide efficient machines, daily, for the entire duration of missions and without having any technical default for the entire operation.

In an era where the government is continually searching to reduce military expenditure, the importance of 6 Stormo is demonstrated by the choice to enhance and improve the structure of the air base - to be ready to accept by 2025 the F-35A Joint Strike Fighter and to likely become the main air base user of the Lightning II.

The author would like to thank Gen. L. Del Bene, Col. L. Maineri, Lt.Col. M. Andreis, Lt. G. Perna for making this article possible.

EXERCISE DAWN STRIKE 2017

TEXT & PHOTOS - JEROEN OUDE WOLBERS

Exercise "Dawn Strike 2017" was the final exercise in a six month long Royal Australian Air Force "Air Warfare Instructor Course 2017". Jeroen Oude Wolbers reports from Australia.



2017 marks the 75th anniversary of 2 Operational Conversion Unit. To commemorate the 75th anniversary 2 Operational Conversion Unit decided to paint the tail of the A21-16 in the unit's Tiger colours. Photo by Jeroen Oude Wolbers



Exercise “Dawn Strike 2017”

Exercise “Dawn Strike 2017” is the final exercise in the six month long Royal Australian Air Force “Air Warfare Instructor Course 2017”. Royal Australian Air Force’s Air Combat Group has come a long way from the original “Fighter Combat Instructor Course”, developed in 1954 in order to rectify deficiencies in air combat skills between World War II and the Korean War, to its involvement in today’s “Air Warfare Instructor Course”.

Air Combat Group commands all the Royal Australian Air Force’s fast-jet combat aircraft to deliver Australia’s capability to control the air and conduct precision strike. Headquarters Air Combat Group commands three operational wings:

- **78 Wing**
Conducts operational training on the F/A-18B Hornet and Hawk 127 at 76 Squadron and 79 Squadron
- **81 Wing**
Controls the air with 3 Squadron, 75 Squadron and 77 Squadron and 2 Operational Conversion Unit (all F/A-18A/B Hornet)
- **82 Wing**
Strikes designated targets, conducts reconnaissance and provides electronic warfare support with 1 Squadron (F/A-18F Super Hornet) and 6 Squadron (E/A-18G Growler) and Forward Air Combat Development Unit (PC-9/A)

Units that make up Air Combat Group are based at:

- **RAAF Base Amberley, Queensland**
- **RAAF Base Williamtown, New South Wales**
- **RAAF Base Pearce, Western Australia**
- **RAAF Base Tinda, Northern Territory**

A series of exercises

Air Combat Group was formed in January 2002 by merging the Tactical Fighter Group and Strike Reconnaissance Group. The merger enhanced the ability to deploy combat air power in a prompt, effective and highly integrated manner.

The “Air Warfare Instructor Course” involves Pilots, Intelligence Officers and Air Combat Officers across a range of Air Force platforms including F/A-18A Hornets, F/A-18F Super Hornets, E-7A Wedgetail and C-130J Hercules aircraft. Conducted by the Air Warfare Centre, the aim of the “Air Warfare Instructor Course” is to graduate expert leaders and instructors capable of tactics development, validation and instruction.

The series of exercises is designed to integrate people and systems; an objective which is now achievable with the introduction of fifth generation capabilities into the Royal Australian Air Force. As Australian Defence Force platforms interact, electronically, so too must the human elements interact more closely to get the greatest benefit from this technology.

The “Air Warfare Instructor Course” developed by the Air Warfare Centre, has done that and each component of the course has prepared the instructors to be effective in the integrated Air Warfare space.

Graduates will provide leadership in the development of future tactics and help determine how those tactics can be used to enhance the Australian Defence Forces joint war fighting capability using fifth generation platforms.

The course exercises complex war-like scenarios and the students put their newly developed skills into practice and make decisions which will shape the way Air Force fights in the future; in an integrated war-space using fifth generation platforms.



Air Warfare Instructor Course

Exercise “Dawn Strike 2017” is the culmination of the “Air Warfare Instructor Course 2017” and represents the final mission prior to graduation, according to Air Commodore Joe Iervasi, commander of the Air Warfare Centre, “*These RAAF Air Warfare Instructors will put their newly developed skills into practice on this final mission.*”

The new Air Warfare Instructors returned to RAAF Base Williamtown on Friday 30 June 2017 after taking part in Exercise “Diamond Storm” which took place at RAAF Base Darwin and RAAF Base Tindal. “*The graduates will form a nucleus for tactics development which will shape the way the Air Force conducts air power in the future. Graduates will provide leadership in the development of future tactics and help determine how those tactics can be used to enhance the ADF’s joint war fighting capability using the fifth generation platforms.*”

In this final phase of the course a total 45 Royal Australian Air Force aircraft took part in a simulated battle in the RAAF Base Williamtown area with various elements tasked as either offensive or defensive forces. At the conclusion of the battle all the participating aircraft recovered to RAAF Base Williamtown after a series of low level, high speed passes at dawn.

Twenty F/A-18A/B Hornets and two Hawk 127’s departed from RAAF Base Williamtown from 6.00am on while the other aircraft departed from RAAF Base Amberley. Around 08.15am Exercise “Dawn Strike 2017” came to an end.



BALTOPS & SABER STRIKE 2017

TEXT & PHOTOS - ROELOF-JAN GORT & RALPH BLOK

Between the 28th of May and the 24th of June, the exercises Baltops and Saber Strike were taking place above the Baltic Region. Roelof-Jan Gort and Ralph Blok reports from RAF Fairford, UK.



A 'Bone' sits in the morning mist, waiting for it's mission at RAF Fairford, UK.

Photo by Roelof-Jan Gort

Baltops & Saber Strike 2017

Between the 28th of May and the 24th of June, the exercises BALTOPS and SABER STRIKE were taking place above the Baltic Region.

The exercise BALTOPS is an annual maritime-focused exercise in the Baltic Region and was held between the 1st of June and ends on the 15th of June and was taking place for the 45th time.

During these two weeks about 4.000 personnel, more than 50 ships and submarines and about 55 aircraft from 14 countries (including NATO's Enhanced Opportunities Partners like Finland and Sweden) took part in an intensive and complex training. The goal of this exercise was to enhance flexibility and interoperability among the participants.

The exercise Saber Strike is a long-standing, U.S. European Command-scheduled cooperative training exercise that took place in various regions in the Baltics and Poland from the 28th of May and the 24th of June. During these weeks about 11.000 U.S. and NATO service members from 20 countries took part in this exercise.

The goal of this exercise was to exercise with NATO's enhanced forward presence battlegroups as part of a multinational division, while conducting an integrated, deterrence-oriented field training exercise designed to improve the interoperability and readiness of participating nations' armed forces.

Bomber participation

During these two exercises there were all three type of bombers (B-1B Lancer, B-2 Spirit and the B-52H Stratofortress) deployed to RAF Fairford in the United Kingdom. It was the first time that all three bombers were deployed simultaneously at RAF Fairford. In total there were three B-1B Lancers from Ellsworth Air Force Base, South-Dakota and three Boeing B-52H Stratofortresses from Barksdale Air Force Base, Louisiana based at RAF Fairford for these exercises. The two B-2 Spirits from Whiteman Air Force Base, Missouri were at RAF Fairford for the media day on the 12th of June.

About 800 Air Force Global Strike Command personnel were deployed to RAF Fairford for the third year running, to support the exercises with the United States joint-partners and NATO Allies. The deployment of strategic bombers to the U.S. Air Forces in Europe-Air Forces Africa's forward operating location for the USAF's strategic bombers provides important integration and interaction with the United States' NATO allies and partner nations.



The different scenarios

We have spoken with Captain “Jackal” from the 34th Bomb Squadron, Ellsworth AFB, South Dakota about his experiences on the B-1 and the deployment at RAF Fairford, UK.

As former crew member on the B-1B Lancer he is now flying for five years on the B-1B and has about 1600 flight hours on the type. He got his wings in 2012 after successfully completing the Undergraduate Combat System Officer Training at Pensacola.

Capt. “Jackal” spoke about the difference in scenarios between the both exercises. *“Both the exercises BALTOPS and SABER STRIKE are different from the war we were fighting in the past 15 years.”* The scenarios during BALTOPS were especially assaults and landings with troops. The scenarios during SABER STRIKE had large troop movements, infantry and vehicles like tanks in a contested environment with a potential for surface to air missiles.

The captain continues: *“The main task during the exercise SABER STRIKE is Close Air Support (CAS), like the B-1B pilots also executed before in Afghanistan, Iraq and Syria. The main task during the exercise BALTOPS is just surveillance, using the radar to find the boats and portray a kind of advisory trying to penetrate and destroy the carriers too.”* During the exercises the B-1s were also playing ‘Red Air’ to give the ships a general overview what they can expect. Sometimes they were also playing ‘Blue Air’ to show that they can fulfill both roles.

The captain emphasizes the significance of the deployment of the amount of bombers: *“It was very important to have so many different bombers at RAF Fairford for these two exercises because it was to show the allied partners nations and show NATO that, no matter what will happen, we will support them with the bombers of the United States military.”*

It’s also to show to any kind of aggressive state that we can move on a very short notice to a forward deploying location and execute a global strike wherever we want, at any time.”

International missions

During the exercises the crew of the B-1B were working in cooperation with the JTACs (Joint Terminal Attack Controllers) on the ground. There were JTACs from the U.S.A, Poland, Latvia, Estonia and Lithuania. Capt. “Jackal” explains about the communication between them and the JTACs on the ground: *“For us it was really awesome to work with these ground troops. Despite the language barrier between the controllers and us. Because we are very experienced to work together with JTACs of the coalition in the Middle East, it is no problem to work with these guys.”*

The crew of the B-1B are very used to working with foreign ground operatives, but sometimes there was a small language, or capability knowledge gap because the JTACs didn’t know what the B-1B Lancer is capable of. For many of the controllers it was the first time that they were working together with the B-1B Lancers. For both sides this was the main reason to work together.

Interception by Russian SU-27s

During these exercises the bombers were intercepted by Russian SU-27s. Capt. “Jackal” recalls interceptions by the Russian Su-27s during the exercise. *“The Russian SU-27s were flying around us, but for the most part it were complete safe intercepts.”* During these flights the crew didn’t have any issues with the Russian fighters. *“As crew of the B-1B Lancers it was important to keep flying our own mission, but the SU-27s didn’t really bother us”.* The captain also mentioned that the B-1B Lancers and the SU-27s flew side by side, without any problems.



Reservists flying the B-1B Lancer

There is something very unique about the participation of the B-1B bombers. They are flown and maintained by reservists. Reserves integrate with active duty personnel, and share aircraft to better utilize expensive assets.

Capt. "Jackal" told us about the reservists that are flying in the B-1B Lancers. He gave us an example "One of our guys who is retired is a police officer and he is a Reserve Weapon System Officer". The U.S. Air Force does this with almost all the older airframes within the Reserve Component and the Guard Component as well.

Some people in the squadron work full time and they keep up the currencies on the type and will be able to fly with everybody that comes in one or twice a month to fly. But then there is a good person in the squadron who, to show up maybe once or twice a month and fly a week.

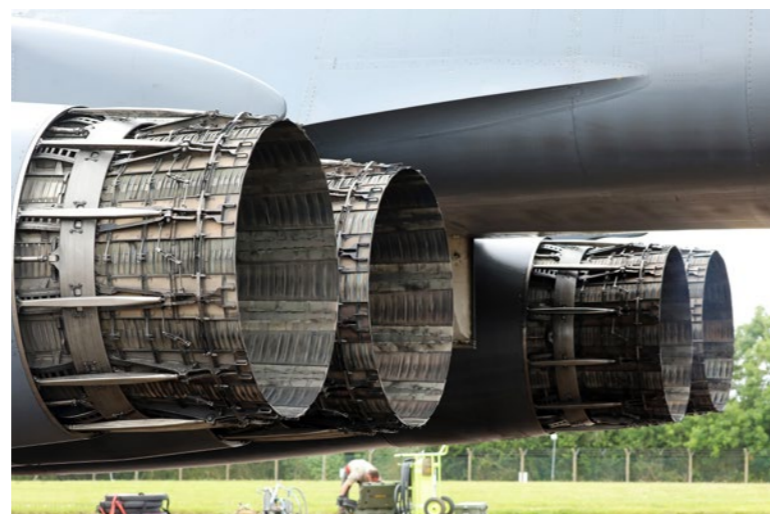
Maintenance of the B-1B Lancer

We have spoken with Lt. McKerman who is Head maintenance for about eight months after he was at the Reserve Officers' Training Corps (ROTC) and is responsible for the maintenance of the B-1B Lancers during this deployment. For the maintainers it was a huge learning experience what parts they had to bring with them to RAF Fairford.

He explains: "The parts for the new Block 16 are different than for the older models". It was a learning experience to decide which parts are not necessary needed. It's also important to learn which parts they didn't bring with them, but which are necessary for a deployment like this.

When there are parts needed to get the B-1B Lancers in the air again, and they haven't taken these with them, it takes a while to get these parts at the deployed location. Normally it takes between a few days and one week to get parts at RAF Fairford for example.

Of course this depends on the parts. Because the B-1B is a unique and older aircraft, and a lot of the parts are not manufactured anymore, they use the refurbished parts from the 309th Aerospace Maintenance and Regeneration Group (AMARG) at Davis-Monthan Air Force Base Tucson, Arizona. It is a unique jet, but there are limited parts available for it.





The B-1B Lancer

Not many people are needed to get a B-1B Lancer in the air, only a few crew chiefs and some specialists. In general they need about 10 persons to get the B-1Bs operational. *“But when you have to stay for a longer period you have to bring more with you for the bigger issues and the manufacturing parts”.*

For their home base they need more people because the B-1Bs are based there permanently, and maintenance goes beyond what’s needed on deployment.

If there are technical problems with the B-1B Lancers and they have to land at an airbase in Poland instead of RAF Fairford for example, they can call the maintainers at RAF Fairford.

“When we haven’t got the manpower or the capability to fly to that location, we will call our people at our home base Ellsworth AFB to repair the aircraft”. These guys are on the right location within a couple of days.

Nicknamed “The Bone”, the B-1B Lancer is a long-range, multimission conventional bomber, which has served the United States Air Force since 1985. Originally designed for nuclear capabilities, the B-1 switched to an exclusively conventional combat role in the mid 1990’s. The B-1 bomber has advanced over the years as it is modified for current needs.

It carries the largest payload in the Air Forces long-range bomber fleet. In 1999, during Operation Allied Force, six B-1s flew 2 percent of the strike missions, yet dropped 20 percent of the ordnance. During Operation Iraqi Freedom in 2003, it even dropped 40 percent of all weapons while flying only 5 percent of the sorties. The B-1 has been nearly continuously deployed in combat operations over Afghanistan and Iraq since 2001.

Today’s B-1 can carry a mixed load of weapons in each of its three bays. Its long range allows it to be deployed far from the conflict and fly unrefueled for long periods. Its swept wings allow it to fly fast, slow, low or high as the situation demands.

Today and the future

With only four crew members required, missions can rapidly be adjusted in flight to keep up with adversaries. The radar and targeting pod can be used for positive target identification and the aircraft can employ a variety of other weapons, including laser-guided Joint Direct Attack Munitions (JDAMs), Joint Air-to-Surface Standoff Missiles with an extended range, and high explosive BLU-129 bombs.

In April 2012, Boeing has received a US \$55.3 million production contract from the U.S. Air Force to upgrade the B-1 Lancer navigation system. The upgrade has replaced the original navigation hardware with a new ring laser gyro system. The new inertial navigation system uses a ring laser gyro with no moving parts to wear out and repair. This upgrade has dramatically increased the system reliability.

Later in 2012 Boeing has received a US \$65.8 million Lot 2 follow-on contract from the U.S. Air Force for nine B-1 lancer bomber Integrated battle Station (IBS) modification kits, spares, training, support equipment and engineering support. IBS integrates three major aircraft modifications: an updated front and cockpit, a new diagnostic system system and a new Link 16 datalink, which all enhance situational awareness and communication for the crew.

The latest update that came in 20156 exists a trio of updates also known as the integrated battle station, are ensuring the B-1 meets today’s mission requirements and further establishes a solid foundation for additional modernization in the decades to come

We have asked Capt. “Jackal” if he expect big changes in the next years with the B-1s.

He explains: *“I don’t see big changes. I think that the B-1 is getting some newer engine replacements. Not the whole engine but pieces and parts of it. For example for the fuel efficiency”.*



Conclusion

For the crew of the B-1s the biggest differences between exercises in Europe and continental USA were that they had the chance to cooperate with the Coalition partners.

The Captain explains: "We can't do this at home. It costs tons of money. During Red-Flag and Green Flag our aircraft and squadrons have worked together with Emirati Mirages before. But we were able to integrate and train together with the coalition and with the navies of the different countries. Because we are situated in the middle of the United States, we don't fly to the coast very often to train and integrate with the navy."

The squadron has learned a lot, and they enjoy doing it: "It is good to see this part of the world and it is good to see how we can pick all our necessities and move it to a location, fly out from there, work with coalition partners and other US units like the F-16s from Aviano and execute missions successfully with JTACS from Lithuania and Latvia."



VISIT FROM THE NEIGHBOUR

TEXT & PHOTOS - JENS SHYMURA

Seven Eurofighters of the Austrian surveillance squadron at Zeltweg, visited from April 27 to May 16, the German Air Force Tactical Air Force Wing 71. Jens Shymura reports from Wittmund.



An Austrian Eurofighter is taxiing out of its temporary shelter at Wittmund, while deployed to the base in northern Germany.

Photo by Jens Shymura

Austrian Eurofighters at Wittmund

From 27.04.2017 - 16.05.2017, seven Eurofighters from the Austrian surveillance squadron from Zeltweg visited the German Air Force Tactical Air Force Wing 71 "Richthofen" in Wittmund in the Lower Saxony for live shooting over the North Sea.

The history of the Eurofighter in the Air Force of the Republic of Austria is closely connected with the German Air Force from the very beginning. On the basis of a joint contract from the year 2004, the Austrian pilots were trained on the Eurofighter at the German Tactical Air Force Wing 73 "Steinhoff" at Laage.

The delivery of 15 machines from mid-2007 to mid-2009 included 9 factory-new Tranche 1 Block 5 aircraft directly from the industry and 6 overhauled 2nd-hand Eurofighters of the German Luftwaffe with an average of around 200 flight hours. The reduction in the number from 18 to 15 aircraft and the fact of purchase used aircraft should offer a considerable saving potential against the purchase of new Tranche 2 Eurofighters.

It is precisely this fact that is currently being intensely discussed in Austria on political and social levels. The recently completed report of the Task Force Eurofighter deals with the risk of increasing operational costs of the 15 Eurofighters and with the financial and technical difficulties associated with the necessary upgrading of the aircraft to a tranche 2 level.

In order to be able to reliably operate the complex weapon system Eurofighter with its fully digital cockpit and the comprehensively networked systems and sensors, it is necessary to continue constantly the training of the personnel involved in Austria. The 14 pilots spend 1200 hours per year in the cockpit and each pilot trains another 25 - 40 hours in the simulator.

New possibilities

As a result of the fact that "sharp" air-to-air gunnery is not possible in Austria due to the geographical situation, a closer cooperation with the German Air Force should cover this part of the training. As a first step, an Austrian-German joint deployment to Decimomannu Air Base in Sardinia was carried out in 2014 in order to jointly practice air2air shooting and exchange experiences.

After about a year of planning, another joint exercise with the participation of the German Eurofighters and those of the Austrian Armed Forces should take place in the spring of 2017. Due to the excellent training areas above the North Sea and the availability of target tugs, Wittmund the home of the Tactical Air Force Wing 71 "Richthofen" in East Friesland was chosen.

The exercise period was determined from April 24, 2017 to May 19, 2017 and included the entire logistic component with the transport phase to North Germany, as well as the relocation. All the necessary material, from the spare tire to the ground equipment and spare engine was shipped with 15 trucks by road transport to Wittmund in two days.

The Seven Eurofighters from Zeltweg in Styria landed on Thursday, April 27th in Wittmund. Previously the staff had transferred to the north on board of several shuttle flights of Austrian C-130 "Hercules". A total of 130 soldiers from the command and staff department, Eurofighter maintenance and support from supplies, pioneers and specialists including 12 of the 14 Austrian pilots, were transferred to East Frisia.

The commander of the Austrian contingent, Colonel Doro Kovatsch, said: *"We have designed personnel and logistics in such a way that they can be fully self-sufficient and that we are able to have two Eurofighters in maintenance at the same time"*.





From Draken to Eurofighter

Colonel Kovach, an experienced military pilot, was the commander of the surveillance wing at Zeltweg from 1997 to February 2014. During his time as commander, he played a decisive role in the withdrawal of the “Draken” at the end of 2005 and the takeover of the Eurofighter as a successor in 2007. Since 2008 he has been responsible for system implementation and regular service with the Eurofighter weapon system.

“Our focus is the air-to-air shooting and the associated qualification of the pilots during the 14-days liveexercise. The training goal was reached by all 12 pilots within the planned 65 practice flights over the North Sea by 10th of May” informed Colonel Kovach during a press day in Wittmund on 11th of May. On average, 2 missions with 4 aircraft each and duration of up to 90 minutes per day were taken.

Outstanding cooperation

They were either flown together with the Eurofighters of the host, or were practiced with the A-4N “Skyhawk” target tugs of the Wittmund-based Discovery Air Defense Service Inc. In the shooting ranges ED-D44 and ED-D46 northwest of Helgoland the A-4s towed a target on a 300-meter-long rope, which was about 1 x 15 meters long, which the Eurofighters had to shot at with the cannon and sharp ammunition. An elaborate measuring technique analyzes how precisely they have met their goal.

“Our Eurofighters will leave Wittmund again on 16th of May. For us, the ideal conditions and also the cooperation with the members of the Tactical Air Force Wing were outstanding” lauded Col. Kowatsch the cooperation with the German hosts.



CHERRY POINT AIR SHOW 2016

TEXT & PHOTOS - ANDY BINKS

Andy Binks looks back at the 2016 MCAS Cherry Point Air show, and the last standing EA-6B Prowlers, as well as the new toy of the USMC - the F-35B Lightning II.



*An EA-6B Prowler from USMC taxiing back after it has flown its display at the air show.
Photo by Andy Binks*

Cherry Point Air show 2016

The United States Marine Corps hosted the 2016 MCAS Cherry Point Air Show on April 29, 30 and May 1 this year to celebrate seventy-five years at the air station. This also coincided with the 75th anniversary of 2nd Marine Aircraft Wing and the decommissioning ceremony of VMAQT-1, one of the last EA-6B Prowler squadrons in service with the USMC.

A short ceremony for the latter was held at the evening air show on 29 April. This included a three-ship fly past in fading light to mark the occasion, a fitting end as the sun went down.

The main air show event at the weekend was very well attended considering the distance the public had to travel to this off-the-beaten-track air base. There were plenty of grandstands and bleacher seats available for an extra fee and these seemed to be very popular, proving that European air shows are not the only ones to benefit from this marketing idea. Unlike some European events though, there was also enough space on the crowd line to enable even the most hardened enthusiast to gain access to the flight line for excellent photographic opportunities.

For the early-riser, the static line-up was extremely varied, very interesting and barrier free, thus enabling unencumbered photos of the vast majority of Marine Corps aviation equipment. The base aircraft that were not part of the show line-up were also easy to photograph by walking along the fence by the side of the public car park, a bonus for the hard-pressed UK enthusiast. Where else can we see the remains of our ex-Harrier fleet?!

Enough of the politics and on with the show description.....As stated, the static park contained the USMCs finest in the form of CH-53s, AH-1s, UH-1s, CV-22s and even a brightly coloured F/A-18C CAG bird from VMFA-312. The Cobras and Hueys were the latest variants of this long line of helicopters, sporting all kinds of modern lumps, bumps and engine exhaust shapes.





Upgrades

The aforementioned Harriers were also on show along with a few EA-6B Prowlers, a splendidly maintained C-9 and C-12 and even an F-35 Lightning II with colour on its tail. The US Navy chipped in with two SH-60 Seahawks and the Blue Angels Flight Demonstration Squadron, the sure-fire winners as far as the crowd was concerned.

The US Air Force was represented on the ground by a B-52 from Minot AFB and a C-17 from Dover AFB amongst others as well as the amazing F-22 Raptor Demo Team display.

The older generations of aviation were symbolised by displays from B-25 'Panchito', a rare OV-1 Mohawk and a Curtiss C-46 Commando.

All of the aerial displays were as ever entertaining and well choreographed with the main plaudits going to the Canadian Forces F/A-18 team and their colourfully marked plane, the previously mentioned Blue angels and finally to the Marine Air Power show demonstrating the might of MAW-1 in an airfield attack sequence, ending in a 'wall of fire'!

Sadly the weather was not ideal being cloudy and dull, but at least the rain held off making this an enjoyable show for one and all.



18TH AGGRESSOR SQUADRON

TEXT - SØREN AUGUSTESEN
PHOTOS - SØREN AUGUSTESEN & SØREN NIELSEN

Eielson Air Force base in Alaska is home to one of only two United States Air Force (USAF) Aggressor Squadrons, the 18th Aggressor Squadron – also known as The Blue Foxes. Søren Augustesen reports from Alaska.



The Alaskan Range mountains in the back, is the perfect backdrop for this blue 18th aggressor F-16.

Photo by Søren Nielsen

18th Aggressor Squadron

Eielson Air Force base in Alaska is home to one of only two United States Air Force (USAF) Aggressor Squadrons, the 18th Aggressor Squadron – also known as The Blue Foxes.

History of The Blue Foxes

The 18th Aggressor Squadron can trace their history back to 1940, when they were activated as the Southwest Air District 18th Pursuit Squadron at Moffett Field in California. The squadron first moved to Alaska in February of 1942, when they were stationed at Elmendorf Air Force Base (AFB), flying the Curtiss P-36 Hawk and P-40 Warhawk. In Alaska the squadron were engaged in combat during the Aleutian Campaign in 1942-43. The squadron remained in Alaska as part of the air defence forces until it was deactivated in August 1946.

Over the following years the squadron went through a number of reactivations and deactivations, which saw the squadron flying from various bases around the United States, flying a range of aircrafts, including the Northrop F-89D Scorpion, McDonnell F-101B Voodoo, Fairchild Republic A-10 Thunderbolt II before getting the F-16C Fighting Falcon in 1991. The squadron were assigned to Eielson AFB in Alaska on 1 January 1982, and have remained there since. On 1 October 2007, the then 18th Fighter Squadron were re-designated the 18th Aggressor Squadron, taking on the role of teaching fighter pilots how to best defeat the enemy in the air.

Today the squadron has 18 Primary Assigned Aircraft, but the squadron has a total of 21 aircrafts. All of them are standard USAF Block 30 F-16C/D Fighting Falcons, painted in different colour schemes to represent enemy aircraft. No special modifications have been made to the airframes, but they fly with the AN/ALQ-188 Electronic Attack Training Pod on the centre line pylon, which is used to replicate enemy radar jammers.

These pods can be re-programmed to reflect upgrades in enemy equipment. A few of the 18th Falcons have also begun using the Advanced Capabilities Pod (ACaP), which is a dedicated aggressor training asset used only by the 64th Aggressor Squadron at Nellis AFB and the 18th at Eielson AFB. It is used to provide extra Electronic Warfare training.





A blue aggressor of the 18th Aggressor Squadron breaks away from the tanker, after getting some needed gas!

Photo by Søren Nielsen



Know, Teach, Replicate

As an aggressor squadron the Blue Foxes main mission is to replicate enemy aircraft during exercises. As the commander of the 18th Aggressor Squadron Lt Col Gregory “Pinball” Keller explained “We work to know the enemy, to both an academic and a flying standpoint, to teach and replicate. So our mission is to ‘Know, teach, replicate’. As the 18th aggressors we primarily focus on the PACAF [PACific Air Force] area or responsibility, so obviously China, Russia those types of countries.”

The squadron works closely with the intelligence community to build up a large knowledge base about potential enemy aircrafts as Lt. Col. “Pinball” explained “Our goal is to work with the intelligence community to understand the enemy, and then we take that knowledge and teach that to all the units throughout PACAF, and then replicate those threats in the air.”

Once knowledge of the enemy have been obtained an analysed, the squadron have to teach “Blue Force” pilots what they can expect from the enemy when it comes to air-to-air combat. Although teaching air-to-air combat is the squadrons primary mission, they can replicate air-to-ground threats as well. Lt. Col. “Pinball” continued, “We are primarily an air-to-air squadron, for replication purposes. So every once in a while we will replicate air-to-ground capabilities, when required or requested too, but our primary mission is to replicate air-to-air.”

Teaching for the 18th means replicating the capabilities for the enemy. The squadron flies the F-16C/D Fighting Falcon and they use it to replicate enemy aircrafts. Lt. Col. “Pinball” elaborates, “We basically have to take our avionics and try to work out how that would correlate to enemy type of capabilities. We don’t have any ability to change the F-16, obviously, into a Su-35, but we try to modify the way we behave in the air and way we employ to mimic, as close as we can what the enemy would do.”





A trio of 18th F-16C awaits their turn at the boom of a KC-135 tanker. In addition to starting using the Sniper Pod, the 18th also started carrying the AIM-120 mock up on the wing tips rather than the AIM-9 Sidewinder or the ACMI pod.

Photo by Søren Nielsen

Becoming an Aggressor

Back in 1972 when the first aggressor squadrons were formed, they were made up of a very selected group of instructor pilots. If you had more the 1500 hours flight time, you could try out to become an aggressor. Today the requirements are different as Lt. Col. "Pinball" explained, "Minimum requirement currently is for a 4-ship flight lead to become an aggressor, and that is handled through our normal assignment cycles for the most parts. Once you show up here as an aggressor it kind of depends what you show up as. If you show up as a 4-ship flight lead or do you show up as an IP [Instructor Pilot], or what ever the case may be, then we go from there."

He continues "With a typical pilot that shows up, it takes about three rides to become an aggressor wingman, that also involves several simulator and academic sessions, and then from there to progress from aggressor wingman to aggressor flight lead to eventually and aggressor instructor and finally a MiG-1, is going to be anywhere from 2 to potentially 10 or 15 more rides."

"MiG-1" is what the "Red Air" calls the Mission Commander during large exercises. Becoming a "MiG-1" does not happen over night as Lt. Col. "Pinball" explains "Typically what is going to happen is someone showing up as a Blue mission commander, he or she goes through our upgrade process which can be anywhere from 3-6-9 month depending on his or her experience level when he or she shows up. When he or she has finished the normal upgrade, we are going to asses if the pilot is ready to lead a Red Flag. Once again, depending on his or her experience level, that could be three month after they shows up, because they're a highly experienced instructor pilot, or it could be that the pilot never achieves that level here at Eielson."







Big exercises

Where the 18th Aggressor squadron really comes into its own are during the large-scale exercises where they participate as Red Air. A couple of times a year the Red Flag Alaska exercise is held at their home base at Eielson AFB, and bi-annually the large combined exercise Northern Edge takes place with aircrafts flying from both Eielson AFB and Joint Base Elmendorf-Richardson (JBER), which is located outside Anchorage.

During these large exercises the Blue Foxes are flying at least twice daily acting as Red Air adversaries, trying to teach the Blue Forces how to complete their mission objectives when facing enemy opposition in the air. Doing this requires a lot of planning before the mission is flown as Lt. Col. "Pinball" explains: *"For Northern Edge, or other large exercises, it is a little more planning intensive than our day to day operations, but a typical sortie is going to start the day prior just like for the Blue side, so we need to mission plan that sortie."*

"We will start by meeting with White force intel, the people who are putting on the exercise, and find out 'What is Blue's objective?'. We are a support squadron to them, we are here to train Blue, so we need to know what their objectives are, so we can plan something accordingly, to try and teach them or test their objective."

He continues: *"Once we know what Blue's objectives are, we are going back to work with Intel, to develop a game plan that is realistic and that will be challenging to them, so whether we are doing Defensive Counter Air or Strike on the day it depends on Blue's objective."*

The aggressor pilot responsible for planning the mission is the designated MiG-1, and he will typically spend 4-8 hours on the day before the mission, figuring out tactics, de-conflicting the airspace and other administrative tasks.

On the day of the mission, the aggressor MiG-1 starts the day by briefing all the participants in the exercise, Blue and Red, with a Red Air Coordination brief. During this briefing, the training rules for the exercise is briefed, as well as all the admin, which involves both Red and Blue air. This briefing usually last about one hour.

Not alone as the aggressor

Following this is another hour of "Red" briefing, where the aggressor pilots brief their mission and the tactics that they will be employing during the mission. Then follows the actual mission lasting anywhere from one and half to two and half hours. Once the mission is over, the aggressor pilots will run the entire air-to-air portion of the exercise de-brief, which last about an hour and a half.

Once all the de-briefing is over, comes one of the most important aspects of the whole mission. Lt. Col. "Pinball" elaborates *"Once that is all done, we will gather our lessons learned and provide those to Blue air and go 'Hey, these are the area that we saw, that may have been weaknesses for you, or areas that we think you need to dig deeper into to get your lessons learned'. So we will provide that information to them, and then it is up to them to build upon that, and figure out what they did right and wrong."*

With the amount of work that goes into every single mission the 18th's fly, it is vital that they replicate the threats as accurately as possible, and that they make sure the Blue force, learn as many lessons as possible from each mission.

During large-scale exercises the 18th F-16's will often be supplemented with fighters from other non-aggressor units to bolster their numbers. These will typically be F-15's or F-16's from units already participating in the exercise. This is done because the 18th simply doesn't have enough jets to meet the demand during exercise like Red Flag or Northern Edge.

Speaking about flying with these units Lt. Col. "Pinball" elaborated *"Even in the Blue world, when you are just flying at your home station, you will pretend to be Red at times, just because we have to do upgrade rides, so everybody has a basic understanding of how to be Red and I think from the flying aspect those guys can show up and we just provide them a bit more information and they do just fine."* He continues *"We are very scripted with those guys, how we want them to act, and where we want them to be those types of things. The aggressors themselves typically will afford a little bit more freedom than they do, because they understand the tactics more and so those guys are great to support us base on the numbers that we can't put up."*



The new "splinter" F-16C of the 18th Aggressor Squadron with the Alaskan mountains in the back.
Photos by Søren Nielsen

Day-to-day tasks

When there isn't a Red Flag Alaska or Northern Edge exercise taking place, the 18th's are being kept busy. Units participating in the big exercises usually arrive well early and leave a couple of weeks after the exercise finishes, not only to take advantage of the huge air space available over the Alaska ranges, but also the unique capabilities of the Blue Foxes.

Lt. Col. "Pinball" explains "We call that 'Distant Frontier', as the name of that 'exercise', so we are basically a free-agent at that point for whatever unit is here training and what ever they would like to achieve. Obviously there are only so many of us to go around, so we kinda have to share that between the units that are in town. So in the summer that is going to be our primary customers, the units that are here at Eielson. Throughout the rest of the year and even during the summer when we can fit it in, we train on a day-to-day basis with the 3rd Wing down at JBER, so we are the primary training aid for the Raptors."

When not supporting units before and after Red Flag or Northern Edge exercises, the squadron is busy gathering new intel and honing their skills as aggressor pilots. From time to time they also bring in new equipment to test their usefulness as a tool in their advisory training. Recently the squadron started flying with the Lockheed AN/AAQ-33 Sniper pods. The squadron is still trying to work out how best to use this new tool in the adversary role as Lt. Col. "Pinball" explains "We started using the Sniper pod back in the fall [of 2016] and we are just trying to employ that right now as an additional sensor and see how that goes. For us it is something new to try out and see how it works with us and our replication, but we are in the infancy stages right now."







Working with the 64th

The only other dedicated aggressor squadron in the USAF is the 64th Aggressor Squadron based at Nellis Air Force Base in Nevada. Being such a small community, the two squadrons have to make sure that they are on the same page when it comes to how they teach the pilots they fly against. Speaking about the relationship the 18th have with the 64th Lt. Col. “Pinball” said *“The 64th and the 18th get together annually and review how we do tactics, how we replicate the enemy. We publish an aggressor threat replication guide together, and make sure that we are both on the same page.”*

What we don’t want to see is one unit training against the 64th and then training against us, and go ‘Hey you guys replicate that threat completely different’. That would be contrary to what we are trying to achieve here.”

He elaborates *“The one time we will get together is usually once a year, when we will travel down to Nellis AFB, and supplement them for Weapon School support, and during those three weeks we will get together and have conferences, and talk about ‘Hey are we doing the same thing you are doing? Is our replication the same?’ And in that same vein, we will fly their pilots in our aircraft while we are at Nellis and we will occasionally fly in their aircraft. Just to make sure that we are doing the same thing, so we can observe each other’s ways of doing business.”*

Once and always an aggressor

Becoming an aggressor is part of the normal USAF assignment cycle, which means that after three years an aggressor pilot will be rotated out to other squadrons.

They take with them a huge amount of knowledge, which they continue to use in their new units. Lt. Col. “Pinball” explains *“That guy [the pilot leaving the 18th] is not going to remain one of our aggressor subject experts, because we don’t have control over that guy anymore, but we definitely encourage our pilots that leave here, to go to their new unit and continue to teach the information that they have learned here and to try and propagate that out to the rest of the CAF [Combat Air Force].”*



THE NEXT ISSUE OF FLYMAG MAGAZINE

The next issue of FLYMAG will be published in December of 2017.

We're going to look into the unique cooperation, between the three Nordic countries of Norway, Sweden and Finland, in the Cross Border Training program, as well as 'Rough landings', where heavy transporters land on the beach.



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