



CONVERTING FROM COUGAR TO CAYMAN

After years of delays and setbacks, the Spanish Army became the latest European operator of the NH90 in late 2016. Jan de Ridder and Menso van Westrhenen reports from Spain.

EX COBRA WARRIOR

Exercise Cobra Warrior was held from September 1st until september 20th RAF Waddington.

THE 31ST FIGHTER WING

In beautiful Northern Italy against the foothills of the alps lies Aviano Airbase. Niels Roman reports.

MARINA MILITARE

Erik Bruijns and Mark de Greeuw reports from the 'Marina Militare', the Italian Navy defenders.

Welcome to the 33rd issue of FLYMAG, we're back post COVID, and we plan to be back stronger than ever! In this issue we're looking into a couple of exercises Cobra Warrior, Anatolian Eagle and Northern Edge, as well as going into depth with the Cypriot National Guard, and a lot more.

We hope you like the magazine - enjoy!

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COBRA WARRIOR 2019

TEXT & PHOTOS - DANNY REIJNEN

From September 1st until September 20th RAF Waddington was the temporary home of Italian, Israeli and German fighters participating in the Cobra Warrior exercise. Danny Reijnen reports from Waddington.



*An IDF F-15D taxiing at RAF Waddington during Cobra Warrior.
Photo by Danny Reijnen*

Low level flying

From September 1st until September 20th RAF Waddington was the temporary home of Italian, Israeli and German fighters participating in the Cobra Warrior exercise.

Normally RAF Waddington is the RAF's Intelligence Surveillance Target Acquisition and Reconnaissance (ISTAR) hub and is home to a fleet of aircraft composed of the Sentry AEW1, Sentinel R1, Shadow R1, RC-135W Rivet Joint and operating base for the RAF's MQ-9 Reaper

Formerly named Exercise CQWI (Combined Qualified Weapons Instructor), the annual Cobra Warrior is the RAF's largest collective-training exercise. The exercise developed the tactical leadership skills of aircrew and supporting elements within a complex air environment.

The Exercise Director, Group Captain Robert Barrett said: *"The RAF welcomes the participation of our Air Force colleagues from other nations and we welcome the opportunity to train alongside all of the participating nations' forces on this challenging exercise."*

The exercise has seen the participation of several foreign air forces in the past, including Saudi Arabia in 2015, Germany in 2016 and Italy in 2018.

Special participants during this exercise were the F-15's from the Israeli Airforce. The aircraft deployed from Tel Nof to RAF Waddington consist of 3 F-15 "C" Baz and 4 F-15 "D" Baz fighters as well as a KC-707 Re'em tanker and C-130J Hercules.





*A line of IDF F-15s ready to take on the British sky.
Photo by Danny Reijnen*



The nations

"We are happy and proud to participate in the 'Cobra Warrior' exercise. This is the first time IAF fighter aircraft are deployed to and flying in Britain. The deployment will help improve IAF readiness and capability. We view this exercise as the highest standard of training, an excellent opportunity for mutual learning and bolstering cooperation between partners." said Brigadier General Amnon Ein-Dar, The Israeli Air Force Head of Training and Doctrine Directorate.

"The cooperation with England over the years, and especially this past year, have gotten warmer and stronger," continued Ein-Dar, adding that the two air forces have taken part in several joint drills, including in June when Israeli F-35i fighter jets from Israel, the US and UK conducted training flights over the Mediterranean Sea in the Israeli aircraft's first-ever international exercise.

RAF pilots took part in Israel's Blue Flag international exercise in 2017, but as spectators, not with their own aircraft. The British air force may fully participate in the upcoming Blue Flag exercise in 2020, which would be the first time RAF pilots openly flew in Israeli airspace.

The Italian airforce and German Air Force participated with the well known Eurofighters and together with the Israeli's they joined aircraft from the United States Air Force flying with F-15s flying from RAF Lakenheat and B-52s from RAF Fairford and furthermore the Royal Air Force was flying from RAF Marham and Coningsby with F-35s and Typhoons.

"We are honoured to participate again in this very demanding and well organised international exercise. It will be a chance to fly with a selection of the best Weapon Instructors of the participating countries. Sharing our experiences will mutually increase our capabilities." said Colonel Urbano Floreani, the 4th Wing Commander, from the Italian Air Force.

Cobra Warrior 2019 has come to an end but with all lessons learned in combination with very good cooperation between all participating units resulted in some rumours that international participation for Cobra Warrior 2020 could well increase further. Time will tell.

CONVERTING FROM COUGAR TO CAYMAN

TEXT - DIRK JAN DE RIDDER & MENS VAN WESTRHENEN
PHOTOS - DIRK JAN DE RIDDER & MENS VAN WESTRHENEN

After years of delays and setbacks, the Spanish Army became the latest European operator of the NH90 in September 2016. Dirk Jan de Ridder and Menso van Westrhenen pay a visit to the NH90 battalion of the Spanish Army Airmobile Force (FAMET), to see how they are progressing.



*Maintain training is important for the Spanish NH-90 crew.
Photo by the authors*

Converting from Cougar to Cayman

After years of delays and setbacks, the Spanish Army became the latest European operator of the NH90 in September 2016. Dirk Jan de Ridder and Menso van Westrhenen pay a visit to the NH90 battalion of the Spanish Army Airmobile Force (FAMET), to see how they are progressing.

A contract for a total of 45 NH90s for all three armed forces was signed by the Spanish ministry of defence in December 2006. The Spanish Army's first NH90 performed its maiden flight in January of 2013. In September 2016, the first two NH90s were handed over to BHELMA III, by which point the order had been reduced to 22 helicopters, 16 of which for the Army. The majority of the NH90s were always going to be operated by BHELMA III, but the dramatic reduction led to the decision to base all of them with a single battalion.

"We just started to run the marathon. We have only run around 10 to 12 kilometres, so we still have another 30 kilometres ahead of us. Sometimes you want to finish the marathon and you look ahead and you must be patient, because if you run too fast you will not get to the end."

"That's the idea that I tell them [my personnel] every day. Let's take it step-by-step. We must keep in mind that the marathon is 42 kilometres. Every step that we take is important, because we are setting the basis for the future." Lieutenant colonel Magín Álvarez Arribas, commanding officer of BHELMA III (Batallón de Helicópteros de Maniobra III, or tactical helicopter battalion III) describes they are well on track, but converting to a completely new aircraft type requires a careful approach.

After years of negative publicity for the helicopter program in general, things are running smoothly now. *"We are pretty much already doing everything, except [operating from] ships. We do shooting, we do mountain flying, all tactical transportation that you can imagine. We are close to being able to do special operations. Once the program started and we received the first two helicopters, the deliveries were perfectly on time and there were no problems."*

Powerfull and easy to fly

By the time of the authors' visit, the battalion's NH90s had reached nearly 2,000 flying hours and their predecessors, AS532 Cougars, had been transferred to other battalions. The Huey, which was still flown by some BHELMA III pilots alongside the Cougar, had already been withdrawn from use by the Spanish Army shortly before.

"For one year and four months we were fully operational on the Cougar and Huey. We kept two worlds on parallel. We couldn't make all the effort to complete the transformation of the whole battalion at the same time, so we split the battalion in two halves. We maintained capabilities with some pilots flying on the Cougar and the others on the NH90. In October or November of last year we decided that we had enough aircraft, enough mechanics and flying personnel to change to one model."

Lieutenant colonel Álvarez Arribas flew tactical transport helicopters with BHELMA VI at the Canary Islands and attack helicopters with BHELA I at Almagro before converting to the NH90. Pointing at some old UH-1H Huey helicopters and a Bo-105 tucked away at the flight line, he jokingly calls the helicopters he flew before 'junk'.

When the author asked about what he likes most about the NH90 as a pilot: *"It is like a Huey with two engines, haha. The most powerful thing that you feel when you are flying the helicopter is that it is very easy flying. Definitely much easier than the Cougar. The way of interacting with the helicopter is also very different. You have to change your mindset. Most of the time you should let the helicopter fly by itself. It knows a lot of things that you don't know. It is quite simple, or it sounds quite simple, but for a pilot like me coming from older helicopters it is a big change."*







Trained by the French

BHELMA III's homebase Logroño, in northern Spain's Rioja province, is the country's primary location for mountain flying. Being located in the middle between two of Spain's largest mountain ranges, the Iberian System and the Pyrenees, BHELMA III has grown out to become the Spanish armed forces' most experienced helicopter unit when it comes to mountain flying.

Lieutenant colonel Álvarez Arribas thinks that on its own was one of the reasons to base the NH90 at Logroño: *"This battalion has been involved with all of FAMET's past international missions and at the same time it is set in a place where we don't have many restrictions for flights around the base. As a reference unit on mountain flying, I think it is quite a good decision that the helicopter came here. The NH90 is more powerful than the Cougar and due to the restricted weather conditions, that we have every now and then, it is a much more secure helicopter to fly than the Cougar."*

The first pilots were trained at the French Army aviation school (EALAT) in 2016. This detachment was originally created for Tiger pilots but is now also used for NH90 training. How long it takes a pilot to convert from the Cougar to the NH90 depends on their experience. *"First of all, comes a big block of theory for the pilots which takes around 2,5 months of studying every day because the aircraft is completely different. It has nothing to compare with any other aircraft that we ever had. For example, fly-by-wire is quite a complex thing. Then we have personalised [flying training] programs for each pilot. It is quite easy to understand that a pilot that has 2,000 hours in helicopters has a lot of knowledge about flying that a pilot with 200 hours doesn't have."*

The minimum in flying hours [aside from simulator hours] is about 20 to 25 hours. We now also have pilots for which the NH90 is their first helicopter model after flying school. They are doing great, but they don't have experience, so it's quite different. They need more hours of training, as they don't have the situational awareness of an experienced pilot."

A brand new platform

Currently almost every two or three weeks several pilots go to France, mainly to do emergency simulation. In the near future, the battalion will have its own simulators. A brand-new simulator building has already been constructed at their home base, awaiting the arrival of the actual simulators.

Lieutenant coronel Álvarez Arribas explains the importance of having a simulator: *"Simulating is something that is quite important, but it must complement real flights. We need to use the simulator very much, because the flight hour price of this helicopter is very expensive. We expect to have our simulators fully operational at the end of 2019. It will be a great tool for our pilot training. This will be the only NH90 simulator in the whole armed forces, so pilots from the air force and navy will come here to train themselves."*

Our simulators will be linked to the EC135, Cougar, Chinook and Tiger simulators [located elsewhere in the country]. We are building a network, so that we can fly missions using, for example, two [NH90] simulators here, two [Tiger simulators] in Almagro and another one in Colmenar [Chinook]. It will be great, not only for pilots, but also for a patrol commander or company commander."

The advantages that the NH90 has over the AS532 are evident. While the Cougar was developed in the late 1970s as an upgrade from the SA330 Puma, the NH90 is a brand-new airframe purely designed for military service. FAMET's Cougars are equipped with 2 Turbomeca Makila turboshaft engines delivering 1185 kW of power. In comparison, the NH90's two Rolls-Rolls Turbomeca engine each deliver 1662 kW.

Although both helicopters are able to transport around 20 fully equipped troops, the Cougar can only transport 6 injured passengers on stretchers (plus 10 seated passengers) as compared to the NH90's twelve, according to manufacturer specifications. A pilot clarified FAMET would normally operate the NH90 with around six stretchers though, to leave some room for treating the injured. With its maximum speed of 162 knots (versus 134 knots for the Cougar), the wounded will be transported to hospital considerably faster.

A better performer

Other characteristics in which the NH90 performs much better than the AS532 include range (800km vs nearly 600km) and service ceiling (20000 feet vs 11000 feet), but lieutenant colonel Álvarez Arribas explained the latter is not currently much of a difference for Spanish pilots: *"We do not train that. We do training under low pressure conditions at a hospital in Madrid, but we do not train these conditions [in reality]. The maximum that we can fly without oxygen is 13,000 feet for a short period of time. In Afghanistan we sometimes flew very close to that altitude. You should know the physical transformation that your body has with the altitude, but we are not operational on those altitudes."*

The final few NH90s are expected to enter service with the battalion around 2021 or 2022. Equipping BHELMA III with the NH90 signifies the start of a long-term modernisation project for FAMET's helicopter units. To simplify logistics, maintenance and training all battalions will ultimately specialise in one helicopter type. On the long run, the Spanish Army even plans to reduce their helicopter fleet back to four types. The whole armed forces may even end up following the plan.

The EC135 (now H135) will then remain as the only training and utility helicopter. The Tigre has already become the attack helicopter of choice. The NH90 will take on the tactical transport role, with new CH-47Fs due to replace the CH-47D in the heavy-lift role. It will take some 20 years to complete this whole transition and it seems reasonable that the Spanish Army will eventually get more NH90s, or else it may have to reduce its tactical transport helicopter battalions from three back to one.



EXERCISE ANATOLIAN EAGLE 2019

TEXT & PHOTOS - PAUL VAN DEN HURK

The Turkish-led multi-national exercise Anatolian Eagle 2019 took place from June 17-28, 2019, at the 3rd Main Jet Base, Konya, Turkey. Paul van den Hurk reports from Turkey.



*A busy flightline, with a F-16D from the Turkish Air Force taxiing.
Photo by Paul van den Hurk*

Exercise Anatolian Eagle 2019

The Turkish-led multi-national exercise Anatolian Eagle 2019 took place from June 17-28, 2019, at the 3rd Main Jet Base, Konya, Turkey.

The challenge between Turkey and Greece for the supremacy over the Aegean Sea passes even through the aim to hold the most important exercise in the southern border of NATO alliance.

The Anatolian Eagle exercise was born on 2001 to simulate the most realistic operational environment, to plan multi-unit integrated Large Force Employment (LFE) or Task Oriented Mission, day and night and to provide a forum to exchange ideas in order to increase the interoperability and revise standard tactics, techniques and procedures. Over the years it acquires more complexity and importance. Its Greek antagonist is named INIHOS, and both exercises saw a Blu force which has to destroy an enemy Red force, performing COMAO operations, including all the armed forces, in the air, in the ground and in the sea.

Anatolian Eagle (AE) Training Center, located in 3rd Main Jet Base-KONYA, is a high level tactical training center, providing realistic combat training opportunities to our wings and friendly countries in a high threat environment, more sophisticated than the unit level trainings on aspects such as the size of airspace, tactical ranges, threat emitters and number of participants. The Anatolian Eagle airspace, 120 NM-216 NM wide long, allows to more than 60 assets to employ their tactics away from the effects of any traffics around.

Since its establishment in year 2001, 41 Anatolian Eagle Trainings have been performed. More than 33.000 personnel and 2.000 air platforms participated and around 24.000 sorties were flown in these trainings. Up to this year, 15 countries participated in Anatolian Eagle Trainings.

The Anatolian Eagle Training is not only an important step taken in meeting the training requirements of Turkey, allies and friendly countries but also taking the initiative to contribute the international reliance and cooperation by sharing the resources it possesses, gifted by its unique geographic situation.





A pair of JF-17 Thunders from the Pakistanian Air Force taxiing in after a sortie during Anatolian Eagle 2019. Photos by Paul van den Hurk



A well establish exercise

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Objectives

The objectives of the exercises are the following:
 - To increase the operational training level of the pilots and air defense personnel in a most realistic operational environment,

- To exercise and develop joined and combined operational procedures,
- To decrease the attritions to a minimum level and to increase mission effectiveness to a maximum level in real operation environment.
- Give a chance to fighter pilots to execute their planned tactics to employ in large force compositions,
- Provide a forum to exchange ideas and lessons learned,
- Train the participants as they fight and teach them how to survive.

Every year the Anatolian Eagle attracted many aircraft from several Air Forces and it is gaining a reputation as one of the world's leading fighter aircraft training events. We went in Turkey to attend to an operational workday during the exercise.

Funded by the European Deterrence Initiative, Anatolian Eagle is designed to create a realistic operational environment for aircrews to integrate and prepare for combat and is comparable to the well-known Red Flag exercise conducted at Nellis AFB. After a two-year hiatus, this year's iteration involved participation from the U.S., Turkey, Pakistan, Jordan, Italy, Qatar, and NATO. Azerbaijan also joined the exercise as an observer country.



The participants

Anatolian Eagle 2019 saw participation of five JF-17 Thunders of 28sq of the Pakistan Air Force, three F-16AM/BM of 2sq of the Royal Jordanian Air Force, three AMX of the 51° Stormo (Wing), 132° Gruppo (Squadron) of the Italian Air Force, six F-15E Strike Eagles of the 494th Fighter Squadron belonging to the 48th Fighter Wing of the United States Air Force in Europe, a C-17A and a C-130J-30 of the 12th Transport Squadron of the Qatar Emiri Air Force and a NATO E-3A of the NATO Airborne Early Warning & Control Force. The host nation Turkey participated with six F-4E-2020 of 111 Filo, some twenty F-16C/D with markings of 113, 151 152, 161, 162, 182 and 193 Filo, an E-7T of 131 Filo, a C-130 of 222 Filo and very rarely seen ELINT/SIGINT C-160D of 221 Filo.

As the Turkish Air Force spokesman said, the Anatolian Eagle is a training center that provides air centric joint training to Turkish and allied/friendly Armed Forces personnel with the most realistic live simulations of the operational environment, a laboratory in which needs are determined and solutions are developed.

The exercise was based on continuously updated scenarios and missions with modern technology, with the aim to give the opportunity to compare and to improve capabilities and tactics, techniques and procedures between the participants.

According to the airmen from Lakenheath AFB, UK, the Anatolian Eagle offers excellent opportunities to improve operational readiness and interoperability with allies.

“This exercise is about readiness and relationships,” said Lt. Col. Jaina Donberg, USAF 494th Fighter Squadron commander. *“When we train together, we will be better prepared to respond to any crisis or contingency. By training together face-to-face and in the air, we’re building those lasting relationships, which will make us more effective in combat.”*

Improve air war tactics

Konya AB hosted several aircraft from each participating nations, which included the F-15E Strike Eagle, F-16, F-4 Phantom, E-3 Sentry, E-7 Wedgetail, C-130 Hercules, C-17 Globemaster, JF-17 Thunder and AMX ground attack aircraft. They conducted different types of missions such as tactical air lift/drop, slow mover protection, combat search and rescue, anti-surface force attack operations, time sensitive training, dynamic targeting and GRAD systems.

“This is a unique opportunity to train in a forward operating location in Turkey, as well as integrate from mission planning, briefing, execution and debrief with our partner and allied nations.” said Donberg.

During this training event, participants aim not only to improve air war tactics, but to exchange information and strengthen international partnerships.

“I love meeting all of our international partners,” said Maj. Allison Mandas, USAF 494th FS weapons systems officer, who believes the lessons learned will build upon the strategic objectives of U.S. and allied forces. *“It’s fun working with them. I’ve learned that although we’re from different countries, we’re all pretty much the same as fighter pilots and aircrew. We share more things in common than differences.”*

“We never go to war alone,” Mandas added. *“Exercises such as this provide an opportunity to share lessons learned, tactics and techniques so that we all have a shared operating picture for when we do go to war.”*

During the exercise 389 sorties had flown by the participants including all the specialties of air combat missions, such as Close Air Support (CAS), Time Sensitive Targeting (TST), Combat Search and Rescue (CSAR), Ground Assisted Air Interdiction (GAAI), Point Defense, Hostage Rescue, Casualty Evacuation (CASEVAC), Infiltration/exfiltration, Offensive/Defensive Counter Air (OCA/DCA), Reconnaissance, Suppression of Enemy Air Defense (SEAD).



Execution

Not last, even to experience the possible ground assisted Joint Task Force (JTF) missions in a similar operation environment with a realistic scenario and make necessary feedbacks for the organization personnel, to identify faults and to develop solutions. With the Anatolian Eagle, Turkish Air Force maintains its deep relationship with other members of NATO and can compare its combat level to the NATO standards.

AE training will enhance the training level of the participants, by creating a realistic combat theatre within a specific scenario, blue forces conduct COMAO attacks against the targets on the red land defended by the SAM systems and fighter aircraft simulating aggressor tactics.

In the AE operations center, all airborne aircraft, threat systems, AWACS and GCI cross telling can be visualized on real-time basis and post-mission assessments can be made in a realistic way.

In the context of the training, electronic warfare test and training range in KONYA with a wide array of threat emitters, integrated with recognized air picture and Air Combat Maneuvering Instrumentation system (ACMI) are used to expose aircrews to a high threat environment.

In addition to the surface-to-air assets, fighters of the red force will give the blue participants hard time in a simulated war environment and compel them to stay away from target area in order to let them get the best training in a realistic scenario.

Special thanks to the Turkish Air Force PAO and to the entire staff of Konya AB for their excellent support and effort, which made the visit to Anatolian Eagle possible.



AP³ LUFTRETTUNG, HELP HAS NO BORDERS

TEXT & PHOTOS - JIMMY VAN DUREN

Between Germany, Austria and Switzerland there lies the small country of Liechtenstein, which is one of the smallest countries in the world. Jimmy van Drunen reports from Liechtenstein on the AP³ Luftrettung.



An EC.135 of the AP³ Luftrettung
Photo by Jimmy van Drunen

AP³ Luftrettung

Between Germany, Austria and Switzerland there lies the small country of Liechtenstein, which is one of the smallest countries in the world. In the mountainous area around Balzers in the south of the country, you'll find a small heliport with here based the EC.135 of the Lions Air Group, AP³ Luftrettung with the nickname 'Christoph Liechtenstein'.

To improve the cross-border activities, the German DRF Luftrettung, the Austrian ARA Luftrettung and the Swiss Alpine Air Rescue AG (AAA) have joined their efforts; the name AP³ Luftrettung is a result of this. Since December 2018 AP³ has been operational from Balzers Airport and is ready for missions in the participating countries.

All three partner countries have a lot in common in the area of air rescue, technical staff, maintenance, expertise and years long experience. They all fly in modern helicopters and have experienced aviation and medical staff.

Optimal medical care in the Alpine area

The goal of AP³ Luftrettung is to determine common standards and procedures, especially in the area of flight execution and medicine which means all participating countries use the same types of helicopters. They provide internal education for their staff and training for emergency services. AP³ will bring important contributions to the improvement of medical care in Germany, Austria and Switzerland.

Besides the base in Balzers AAA also have an EC.135 based in Birrfeld with the nickname 'Lions1', this helicopter has been operational since 2013.





The EC.135P1

The twin-engine EC.135P1 (HB-ZSJ) that has been in use since December 2018 is equipped with multiple rescue systems to assist in a variety of potential rescue situations. It is equipped with a hoist for rescues with a winch, for example in the mountains.

To make these types of rescue operations easier for the pilot the helicopter has recently been equipped with a bubble canopy which enables the pilot to look down during hoist rescues or while landing in rough terrain. The EC.135 also has a two-hook system for transporting cargo or a patient below the helicopter. This can be used in situations where the winch isn't long enough.

Apart from rescue equipment the helicopter also has medical devices onboard consisting of medicine, monitors and a stretcher. This equipment means the helicopter is perfectly equipped for the rough terrain around the base. The crew, consisting of a doctor, a HEMS paramedic and the pilot, are standing-by day and night to provide high quality medical care in an emergency situation.

To facilitate the night missions the crew carry Night Vision Goggles (NVG). Except for rescue and medical missions the helicopter is also suitable for transport between hospitals and transplantation flights due to its modern and advanced equipment.

The helicopter's location in Balzers is well suited for missions in the bordering countries and their citizens benefit from the responsive emergency assistance from the air. Ambulances in the region are often too slow or can't get to the patient because of the location and so the helicopter is used frequently.

When the helicopter gets to the patient in an early stage it can often prevent increasing trauma by bringing a specialized doctor to the scene. The helicopter can also be used for mountain rescues, search missions or any other type of rescue mission. Whether it be a traffic incident in Germany, a fallen mountain climber in Switzerland or a missing person in Austria, the crew of AP³ is always ready!



THE CYPRIOT NATIONAL GUARD

TEXT & PHOTOS - DIRK JAN DE RIDDER AND MENSO VAN WESTRHENEN

Dirk Jan de Ridder and Menso van Westrhenen visits what may well be the European Union's most exotic attack helicopter squadron, a unit that has never left national territory for operations or training exercises.



*A pair of Mi-24s from The Cypriot National Guard
Photo by the authors*

The Cypriot National Guard

The Cypriot National Guard's Mi-35 Hind and SA342 Gazelle attack helicopters are very rarely reported on. Dirk Jan de Ridder and Menso van Westrhenen visit what may well be the European Union's most exotic attack helicopter squadron, a unit that has never left national territory for operations or training exercises.

By legend the birthplace of the Ancient Greek goddess of love, Cyprus has been divided since 1974 when Turkey invaded the north in response to a military coup backed by the Greek government. Northern Cyprus is run by Turkish Cypriots and is internationally only recognized as a separate entity by Turkey. Divided by a 'Green Line' patrolled by United Nations troops, the internationally recognized Republic of Cyprus covers the southern two-thirds of the island. Reunification talks continue to take place, but they have made little progress.

Twelve Mi-35P 'Hind-F' helicopters entered service in the Republic of Cyprus from August 2001 after its pilots had been trained in Russia by the Russian Army. As early as 1999 rumors had started to appear about a possible purchase of South African Rooivalk attack helicopters. A year later the ministry of defense turned its mind to the Russian market, after having issues to close the deal with South Africa.

The National Guard was then initially interested in the Kamov Ka-50 (NATO codename 'Hokum'), but a study concluded that the Mi-24 'Hind' or Mi-28 'Havoc' would better suit its needs. American attack helicopters were never considered due to an arms embargo that has been in force since the 1974 invasion. That embargo was partially lifted in 2015, but only for defensive weapons.

A European country allegedly offered to sell attack helicopters, but this never materialized, and the Cypriot National Guard opted for the Mi-35P Hind, an export designation of the Mi-24P. The Mi-35's presence in the Cypriot National Guard was initially kept secret until the next year when they appeared in a flypast during a general's funeral. The squadron became fully operational during that same year.

The Hinds

One Mi-35 crashed shortly after takeoff in 2006, killing a Cypriot pilot and his Russian instructor pilot. The remaining eleven helicopters form part of the second Platoon of 450 Squadron based at Andreas Papandreou Airbase near Paphos, the only airbase still operated by the Cypriot National Guard.

At any time, around four are normally airworthy. All eleven Mi-35s were overhauled by the 419th Aircraft Repair Plant at Saint Petersburg during 2014. When they returned to Cyprus, they had been painted in a light desert camouflage scheme, in stark contrast with the monotonous dark grey color scheme in which they were originally delivered.

The SA342L1 Gazelles entered service with the Mi-35 squadron in 2010 when their former squadron based in Nicosia, the capital of Cyprus, was disbanded, bringing together all airborne attack capabilities of the National Guard. A total of six had been purchased in 1987 and delivered from 1988. Four Gazelles remain in service in their original three-tone desert camouflage color scheme.

The helicopter can carry up to three passengers but is mainly used as an anti-tank helicopter. When Gazelles and Hinds fly together, the Gazelles usually go in front. Their small size and low noise profile make them very hard to detect, especially at treetop level. Its only armament is the MBDA HOT-3 wire-guided anti-tank missile, up to four of which can be carried. It can penetrate 1300mm of steel at a maximum range of 4300 meters. The Mi-35's 9M120 Ataka anti-tank missile can be launched from a distance up to 5800 meters from the target and it is able to penetrate 800mm of steel.





A multi purpose helicopter

Whereas the Gazelle is a specialized anti-armor attack helicopter, the Mi-35 has various means of attacking other types of targets. This includes the fixed 30mm gun mounted on the right-hand side, which is loved by Mi-35 pilots for its precision and destructiveness, but it can be supported by 23mm machine guns under the wings. Both guns carry up to 250 rounds and have a range of up to 2000 meters.

Up to 4 rocket pods with twenty 80mm S-8KOM rockets each can also be carried under the wings, or four 240mm S-24B rockets with a fragmentation radius of 400 meters. Typically, the Cypriot National Guard equips its Hinds with S-8 rockets or nothing at all on the inner wing hardpoint and 9M120 missiles or any other type of armament on the outer hardpoints.

The Mi-35P can also transport up to eight armed soldiers, making it the Cypriot National Guard's largest (and more or less only) tactical transport helicopter. This enables them to also support special operations or carry out combat search and rescue missions.

For improved survivability in combat crews rely on exhaust-heat shields, a radar warning receiver, flare dispensers and armor-protected cockpits. On the other hand, they lack a forward-looking infra-red camera and a fire control radar, meaning they cannot share their tactical picture with other helicopters or ground troops in real-time.

New pilots join the squadron after completing pilot training in Greece, the country's main ally. Their training syllabus is identical to that of any Hellenic Air Force fighter pilot, including over a hundred hours on the T-2 Buckeye training jet. The tactical aspects taught in fast jet training are considered indispensable, even when they continue as a helicopter pilot.

They then enter 450 squadron for flying training on the Gazelle and to gain experience in the anti-tank role. Some pilots initially fly the Bell 206 before continuing on to the Gazelle. Pilots will remain operational on the Gazelle for at least several years, before ultimately converting to the Hind.

Grounding the fleet

The squadron's pilots describe their role as mostly defensive, as an attack against Turkish-backed Northern Cyprus would be more or less pointless. The squadron's official mission though is to conduct defensive, offensive and special operations near or behind enemy lines.

Pilots continuously train in destroying or neutralizing armored and non-armored targets. During the authors' two-day visit two Mi-35P's with rocket pods attached were flying both in the morning and afternoon or night. Hot crew changes (crew changes with the engine running) took place after an hour into every flight. This enabled eight pilots to fly for an hour everyday part. The Gazelles were grounded for a short period due to shortage of spare parts.

In October of 2018 it came to light that the whole fleet of Mi-35s had also been grounded for several months when they did not appear at the annual military parade in the capital Nicosia. This was also due to a lack of spare parts, probably caused by Cyprus freezing bank accounts of Rosoboronexport, Russia's defense export agency, following American and EU sanctions.

The Mi-35s were back in the air by early November, proven by two examples taking part in exercise Dynamic Fist 2018 between 5 and 10 November. This exercise is held annually and is meant to examine how aerial, land and maritime forces of the National Guard deal with conventional and asymmetric threats.

Cyprus also regularly hosts international exercises with Greece and Israel. Hellenic Army AH-64 Apaches and CH-47 Chinooks deployed to Andreas Papandreu airbase as recently as October 2018. An annual counterterrorism exercise with Israeli Air Force airplanes, helicopters and special forces units has also taken place in Cyprus since 2016.

The Mi-35 has a lifespan of 25 years, meaning that it can remain operational until 2026 with just one more overhaul. A somewhat more experienced Gazelle pilot told the authors he did not currently see the urge of converting to the Hind as plans are starting to emerge to replace both the Gazelles and the Hinds with a new attack helicopter.

The neighbors

This would possibly happen when the Mi-35s are due for their next overhaul by around 2021, which they consider to be very expensive. It leaves no doubt that purchasing whichever new helicopter will also be expensive and the question is whether Cyprus has the budget for it. The country's defense budget has more or less remained steady in recent years but increasing parts of that budget are required to cover increasing payroll costs.

The total 2019 defense budget will be over 350 million euro, but the expenditure on equipment will be only 52 million euro, down from 77 million euro in 2018. Cyprus Mail, the country's largest English-language newspaper, probably described it fittingly: "People, although they may occasionally get carried away by media-generated military hype, are pragmatic enough to know that the National Guard, regardless of how much it invested in arms, could never be a match for the second largest standing military force in NATO." Until such a situation would become reality, it is up to 450 squadron to pose such a threat that their northern neighbors will never consider that.



THE 31ST FIGHTER WING

TEXT - NIELS ROMAN
PHOTOS - NIELS ROMAN & ROBIN COENDERS

In beautiful Northern Italy against the foothills of the alps lies Aviano Airbase, one of the two bases in Europe which houses the USAFE F-16 fleet. The 31st Fighter Wing calls Aviano their home with the 510 Fighter Squadron and the 555 Fighter Squadron operating under its command.



*A F-16 resting in front of its HAS at Aviano AFB.
Photo by Niels Roman*

The 31st Fighter Wing

In beautiful Northern Italy against the foothills of the alps lies Aviano Airbase, one of the two bases in Europe which houses the USAF F-16 fleet. The 31st Fighter Wing calls Aviano their home with the 510 Fighter Squadron and the 555 Fighter Squadron operating under its command.

Aviano airbase is situated in the northern part of Italy in the vicinity of Venice. Aviano airbase has a rich aviation history. The first use as an airbase dates back to 1911 when it was a training base for the Italian Armed forces. During World War 1, Aviano airbase was used to launch missions against Austro-Hungarian and the German Armies. One of these raids was a daring air raid on the Austrian Naval yards at Pula by Maurizio Pagliano and Luigi Gori. Despite that the raid was not approved by High Command they executed their unauthorized but heroic mission with success. This resulted in both men earning the status of national hero. Aviano airbase was named in their honor after the First World War. It became the Aeroporto Pagliano e Gori.

In the Second World War the airbase was used by both the Italian and German forces for air raids against the Allies. In 1945 the Aviano was captured by British Forces that would use the base until they left in 1947. When the British Force left the base it came under Italian command. In 1954 the Italian and American government signed a mutual use agreement in which the US Air Force could use the base but the base would remain under Italian command.

This makes Aviano the only US base in mainland Europe that is not owned by the US Government. In 1955 Aviano became the HQ of the United States Air Force when this was moved from Udine to Aviano. Although the Aviano had a constant US presence the base would not host a permanent fighter squadron, instead Aviano was used by different units on a rotational basis because of the close vicinity of the live fire range.

When the Italian Air Force closed the range, the different squadrons stopped using Aviano after which it became a storage base for war time reserves. During the Gulf War of 1992 it played a big part as a transit base for a large portion of the men and materials that were needed in this war.

The legacy

The 31st Fighter Wing has a long and proud heritage. Its history started when the 31st Pursuit Group was activated at Selfridge Field, Michigan on 1 Feb 1940. When the United States got involved in the European part of the Second World War, the 31st Pursuit Group was transferred to the European theatre to become the first operational American group. The 31st was also the first group to see combat over Europe.

Because the 31st Pursuit Group was sent to Europe without aircraft of their own they were equipped with the British Supermarine Spitfire MK Vb's. As the war progressed and moved to the African continent the 31st Pursuit Group was sent to Gibraltar from where the first American mission of the African campaign was flown. During the Allied invasion of Africa, Operation Torch, the 31st flew missions to cover and protect the invasion force from air attacks by French forces in Algeria. After the successful invasion their first base of operations on the African continent became Tafaraoui Airfield in Algeria. As the front moved forward the 31st moved from base to base to keep up with the ground forces as the brunt of the missions flown by the 31st were ground attack missions.

After the Germans surrendered in Africa the 31st supported the Allied invasion of Italy. From their Italian bases they flew sweep missions for the ground troops and also escorted the bombers on their way to destroy German positions. Up until March 1944 the Spitfire was used by the 31st after which they were replaced by North American P-51 Mustangs. The use of the Mustang provided the 31st with a much larger range so now they could escort the heavy bombers on long range missions deep inside German occupied territory.

After the Second World War was over the 31st became part of the US occupying forces in Germany where they flew the P-80 Shooting Star, USAF its first fighter jet, between 1946 and 1947. After this short period the 31st was moved back to the United States without any personnel or equipment. In late 1947 the US Air Force reorganized the wing structures and the 31st Fighter Group became the 31st Fighter Wing and received their aircraft. Under this restructure Turner Field, Georgia became the 31st FW new home base. After first operating the piston engine driven F-51 Mustangs the 31st soon transitioned to the F-84G Thunderjets.







Out in the far east

This upgraded model of the earlier F-84 models gave the 31st Fighter Wing a nuclear capability. Due to their nuclear capability the wing was transferred to the Strategic Air Command and was redesignated as the 31st Strategic Fighter Wing. In the early 1960's the unit changed its F-84G for the North American F-100 Super Sabre giving the unit its fighter jet that was capable of supersonic flight when flying level.

In 1965 the 31st Tactical Fighter Wing, as it was now known, deployed its squadrons on a rotational bases to Bien Hoa Air Base, Vietnam until the end of 1966 when the complete wing transferred to Tuy Hao Air Base. The main mission of the 31st was air interdiction and close air support in support of troops in the central part of Vietnam. When the fighting in Vietnam escalated further with the start of the TET offensive, the 31st Fighter Wing was heavily involved in giving support to the besieged troops. The 31st also provided support when Khe Sanh was attacked and was almost overrun by North Vietnamese troops. When the US decided to reduce its forces in Southeast Asia the 31st Tactical Fighter Wing was again transferred back to the United States without personnel and equipment.

Back in the US the 31st Tactical Fighter Wing was resurrected and equipped with the more powerful and state of the art McDonnell Douglas F-4E Phantom II. Although the 31st TFW was an Air Defense Unit it also took on a second role as a replacement training unit operating out of Homestead, Florida. This meant that they were training new pilots to be ready for their tour of duty in the skies over South East Asia. At the end of the Vietnam War two of the wings squadrons were stationed at Udorn Air Force Base in Thailand to bolster the units already there.

When the Vietnam War ended the 31st Fighter wing absorbed those two squadrons again. In 1980 the unit swapped their F-4E's for the older F-4D model. With this change the role of the wing changed more to a full time training wing and was redesignated to the 31st Tactical Fighter Training Wing.

The arrival of the Fighting Falcon

When the F-4D's were at the end of their operational life the unit received their first F-16's. With the transition from the F-4 to the F-16 the wing returned to their original air defence task. When the Tactical Air Command became Air Combat Command the wing got its final redesignation to the 31st Fighter Wing which it remains until today.

When the Homestead Air Force Base was hit by hurricane Andrew in 1992 the wing was evacuated to Wright Patterson Air Force Base. After a short stay at McDill Air Force Base the 31st Fighter wing returned to Homestead Air Force Base. At that time the base was on the initial closing list of the Base realignment and Closure Commission meaning that the base would seize its fighter operations and the end of the 31st Fighter Wings history.

Around the same time Aviano became home to the 401st Fighter Wing that was relocated to Aviano Air Base after the US presence ended at Torrejon Air Base in Spain. The 401st Fighter Wing replaced the 40th Support Wing at Aviano. In 1992 two of the Ramstein Air Base F-16 equipped squadrons were transferred to the 401st Fighter wing. The 510th and the 555th Fighter squadron would now be part of the 401st Fighter Wing. In order to keep the legacy of the 31st Fighter Wing alive it was decided to rename the 401st Fighter Wing as the 31st Fighter Wing.

The strategic location makes the 31st Fighter Wing very important for operations in NATO's southern region. The 31st FW is equipped with two F-16 fighter squadrons, the 510th "Buzzards" Fighter Squadron and the 555th "Triple Nickel" Fighter Squadron. Both squadrons operate the Block 40 model and are recognizable by the AV tail code which is short for Aviano. The two fighter squadrons both carry a distinctive coloured band on their tail fin. The 510th squadron carry the purple tailband and the 555th squadron carry the green tail band. Both carry their name inside the tailband. During the Vietnam war the 555th Fighter Squadron was part of the 8th Tactical Fighter Wing which was led by the then Col Robin Olds, famous for its part in Operation Bolo.

Relocation of the Rescue Squadrons

In 2018 the Secretary of Defence authorized the relocation of the 56th and 57th Rescue Squadrons from RAF Lakenheath, UK, to Aviano Air Base, Italy. The unit operates five HH-60 Pave Hawk Helicopters and is tasked with Combat Search and Rescue of downed airmen behind enemy lines.

When the 56th and 57th Rescue Squadrons were stationed at RAF Lakenheath during the cold war they were in flying range of the possible battlefield. But as the world changed it became clear that the posting of the Combat Search and Rescue assets in the United Kingdom was too far away from any possible operating area.

In an effort to establish an enduring Personnel Recovery location closer to the potential operating areas Aviano was selected as the ideal airbase for the future and the Air Force is better situated to provide rescue capabilities across Africa, Europe, and Southwest Asia.

The acknowledgment

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NORTHERN EDGE 2019

TEXT & PHOTOS - HANS ANTONISSEN AND PATRICK ROEGIES

From Monday 13 May until Friday 24 May 2019 the bi-annual exercise Northern Edge 2019 took place in the northern state of Alaska comprising the participation of approximately 200 combat aircraft and 10,000 military personnel of the military services Air Force, Navy, Marines and Coast Guard.



*A KC-135 takes off for a Northern Edge 2019 sortie
Photo by Hans Antonissen*

Northern Edge

From Monday 13 May until Friday 24 May 2019 the bi-annual exercise Northern Edge 2019 took place in the northern state of Alaska comprising the participation of approximately 200 combat aircraft and 10,000 military personnel of the military services Air Force, Navy, Marines and Coast Guard.

“Alaska is not only the most strategic place in the world, Alaska provides the exercise with 110,000 square miles of space between the joint pacific, air ground range and Gulf of Alaska which enables the exercise to train according to a set of objectives and a level of intensity that cannot be replicated anywhere else” according to United States Air force Brigadier General Daniel “Rock” Hieres, exercise director for Northern Edge 2019.

The Alaskan premier joint exercise Northern Edge exercise found its roots almost half a century ago and originated in 1975 as the Jack Frost exercise. With the exception of 1978 three Jack Frost exercises took place until 1979 in which the exercise evolved into a joint forces exercise.

The final Jack Frost event took place from January 10 to February 15, 1979 and the exercise included the training of command and control techniques including procedures for joint task force operations.

Later that year, US Readiness Command was notified that the name used for the exercise was prohibited and was renamed to “Brim Frost”

The 2019 edition

The first edition of Brim Frost was organized in 1991 and five US readiness command editions took place until 1989 under this exercise name. The exercise, again, evolved in participation level from 18,000 servicemen to 26,000 servicemen in 1989, introducing numerous communications initiatives such as AWACS, satellites, and electronic intelligence to the exercise.

In 1991 Brim Frost was renamed again to Arctic Warrior as a result of the re-establishment of Alaska Command in 1990. As a direct effect the exercise sponsorship was transferred from Forces Command to Pacific Command. The exercise again evolved in this period featuring live firing missions.

The next edition organized was renamed to Northern Edge which took place in 1993. During the 1995 event three stages of the exercise were introduced which meant the exercise period was to be extended to over one month. This event tested and validated ALCOMs ability to field a deployable joint task force. The exercise kept evolving and will keep evolving in the future. The primary exercise goal is to integrate operation techniques and procedures, enhancing the participating forces abilities to work together anywhere in the world.

General Hieres, *“The purpose of Northern edge comprises three main objectives we are aiming to develop during the exercise. The primary goal is the development of the tactical skills, air introjection, air-ground, air to introjection of sea targets and the second objective is the development of the communication and the third objective is the development of command and control”*.







Air Force, Marine Corps and Navy

In its current shape Northern Edge is a bi-annual designed to replicate a series of potential crises that could occur in the Indo-Pacific region. Specifically, it is to develop the combat skills of Naval, Marine and Air Force aviators, and ground personnel to be able to respond to crisis, hone tactical skills, command and control and especially interoperability with other sister services.

The 2019 event included the participation of an aircraft carrier battle group after an absence of almost 10 years bringing a full complement of naval air power. The 7th Marine regiment also participated and they have come up in elements to form a special purpose air-ground task force that is fully integrated air and land.

“Northern Edge is a joint training exercise that allows aviators and other operators to train against a very robust adversary threat scenario which gives them an opportunity to hone their skills and improve upon the areas which need it,” said U.S. Air Force Maj. Larin Wong, a Pacific Air Forces planner for NE19. *“This bi-annual exercise really allows our force to practice new tactics and techniques for future combat operations and weapons employment.”*

Additionally, this allowed joint force units from the Air Force, Marine Corps and Navy to train together and enhance interoperability between the branches.

“It’s a joint fight,” said Wong. *“That is why being in Alaska is so advantageous to us, I don’t think we have another space that has as big of a training area combining air, land and sea. Being here allows us opportunities to work communication lines and practice command and control of both air and ground working a coordinated fight with air and sea to make sure we can utilize the right tactics and perfect our capabilities as a force.”*

Wong said the lessons from the exercise benefit more than just the participating units because individuals who experience this training are able to take their new tactics, procedures and inter-service experiences with them as they move on to in their careers to units throughout the world.

Forward arming and refuelling points

Second time F-35 participants were VMFA-121 Green Knights bringing the “B VTOL” (Vertical Take Off and Landing) model from Marine Corps Air Station Iwakuni, Japan. According to Lieutenant Colonel Michael Rountree, commanding officer of the Green Knights, one of the main drivers for them to come to Northern Edge was, besides doing the regular NE missions, to operate forward arming and refuelling points for several days.

This means they would start out of Joint Base Elmendorf-Richardson (JBER) with a regular NE mission and after completion they would fly to their forward operating location get the aircraft turned around, plan and do the next NE sortie from that location before returning to JBER. This was kind of an exercise within the exercise. Sorting everything out and especially getting all the logistics at the right place in the right time.

With the block 3f capability the F-35B’s from VMFA-121 have already passed the first few chapters as an operational unit and are “right there now” as Rountree puts it. “NE is one the most robust venues we can participate in, it is fighting the way we would actually fight as part of a joint force, Navy, Air Force, Marines, 4th and 5th gen aircraft all working together to an end so this was probably the best training, large force exercise, we can get”.

The bad guys

During the exercise, adversarial support, or “red air”, was provided by both the U.S. Air Force 18th Aggressor Squadron F-16C Fighting Falcons and Airborne Tactical Advantage Company (ATAC) Hawker Hunters MK-58 to afford realistic training opportunities to friendly, or “blue air” units.

Eielson’s 18 AGRS, together with 64 AGRS at Nellis AFB, Nevada, are the only units within the United States Air Force inventory that are dedicated adversaries, replicating the flying styles and abilities of foreign air forces in order to train USAF pilots against realistic opposition. Their aircraft are painted in different paint schemes, representing the threats they are supposed to duplicate.

The Blue Foxes

“We are the primary threat replicators during this exercise,” said Lt. Col. Jason “Majik” Monaco, Commanding officer of the 18th Aggressor Squadron. “It’s Indo Pacific Command’s largest joint exercise which occurs every two years. The reason it’s such a big deal is because it allows all these units to come from around the world and then use the over-water airspace, over-land airspace, threat simulator actors and ranges. Northern Edge provides unmatched training for all the pilots and support members involved”.

It is our role as “MIG-1” which means we are the mission commander for all Red Forces but also the safety observer for the entire air battle and have to ensure safety comes first, no matter the scale or type of aircraft.

Although red air is vastly outnumbered by blue air we are allowed to regenerate multiple times after being shot down thus increasing our numbers significantly.

In normal exercises “blue air” pilots often are pulled to act as “red air” in order to provide enough opposition force to train against, Monaco says, this is minimized by bringing in dedicated threat replicators to provide more pilots from each “blue air” unit the realistic combat training required to maintain readiness and ensure lethality.

TTF (Tanker Task Force)

Northern Edge has seen a lot of tanker support originating from all over the country, with KC-10’s and KC-130’s operating out of JBER and KC-135’s at Eielson. “What is kind of unique for Northern Edge is that we have multiple airspaces which require a different approach for aerial refueling, we have to look at all the fuel requests in different airspaces and have to get the tankers up there on the requested time and place” said captain Darren Ward who is a KC-135 instructor pilot and is here during Northern Edge as a mission planner.

You don’t see a mass launch as you often see during Red Flag exercises but a more staggered deployment of tankers.

Can’t work without fuel

All the fuel requests first go to the central hub at JBER, they will look at them and see what tankers are available, how much fuel is needed and prioritize the fuel requests. “We come in pretty early during the planning phase” Ward says, “experienced mission planners know the best plan in the world does not work if you don’t have the fuel”. Major William Nana, who is the detachment commander of the KC-135 TTF flew all the way from Kadena Air Force Base, Okinawa, Japan with 3 KC-135’s from his own unit.

A total of 7 KC-135’s were deployed to Eielson not including the ones from the local 168 Air Refueling Squadron, Alaska Air National Guard that are also a part of the TTF. He is very satisfied with the way things are going. “the 60 year old lady is still doing very well, even my father flew them and probably my son will do so too, she is built to last and proves it every day”. Although deliveries of the new KC-46 have started, the KC-135 still remains the backbone of the Air Force’s tanker community and will be for the foreseeable future.

Navy comeback

After an absence of ten years a United States Navy aircraft carrier CVN-71 USS Theodore Roosevelt participated in this year’s edition of Northern Edge. Naval Air Station Lemoore based Carrier Air Wing 9 was embarked on the USS Roosevelt during the exercise. The carrier arrived in the Gulf of Alaska just before the exercise commenced.

The participation of a carrier is in accordance with the strategy of the Pentagon with the focus on defense. With their participation the Navy further develops their commitment to Arctic security and operations in Alaska.

The Arctic ice cap area has decreased significantly, and this increases trading routes and sea-lanes that will be accessible over longer periods of the year. Therefore it becomes incredibly important that the Navy continues operating in the Arctic region to protect this vital area and integrate this area into the national defense strategy.





Air Force, Marine Corps and Navy

During Northern Edge the Carrier Air Wing strike group had the opportunity to train their primary mission which is providing prompt and sustained combat operations at sea while being re-acquainted with operations in the Arctic.

Any time a carrier air wing can get to sea conducting sets of different missions enhances the air wing's abilities while operating with a joint force is invaluable.

Northern Edge is one of the premier exercises for the INDO-PACIFIC commanders with the exercise being designed to sharpen all of the crews skills, tactical combat operating skills, improve our ability to command and control forces, establish those command relationships; develop our communication networks; with an overall goal of increasing interoperability within the joint force, particularly in the INDO-PACOM region.

The exercise covers command and control over both land and maritime domains, and the carrier air wing, but also the participating destroyers, are all integral combined to the specific mission set of that day and are sharing information and work together under a single joint force commander.

The crew was excited to participate in the joint event, which would pair the carrier air wing's assets with ground-based Navy P-8A Poseidon maritime surveillance aircraft, but also Marine Corps F-35B Joint Strike Fighters and KC-130 refueling aircraft, and Air Force jets such as the F-22 Raptors and F-15 Eagles.

Conclusion

Any event that incorporates multiple types of aircraft to work in a range of mission areas as a part of a joint force is incredibly valuable, which will increase the carrier air wings readiness and our lethality across the board.

Northern Edge is the largest joint US military training exercise in the region. Aircrews completed more than 1,400 sorties, spent 3,900 hours flying and delivered approximately 15.1 thousand gallons of fuel throughout the 12-day exercise.

"Northern Edge, first and foremost, is used to replicate our most challenging Indo-Pacific theatre scenarios," said Lt. Col. Ty Bridge, Pacific Air Forces exercises division deputy division chief, assigned to Joint Base Pearl Harbor-Hickam, Hawaii. *"To be able to perform joint interoperability, tactics and procedures, and to be able to utilize the entire capabilities available to the Joint Pacific Alaska Range Complex and Gulf of Alaska."*

Bridge said the goals for the exercise were to assess advanced equipment and future operations and to put those plans through significant rigor to ensure that what is being proposed is effective and allows service members to hone their skills.

General Heires sums it all up *"My confidence in our future ability to dominate the air, land and sea fight, have never been higher"*.

The authors would like to express a very big thank you to Public Affairs Northern Edge, especially to 1st LT Keyshel Trudell and SrA Eric Fisher at Eielson AFB and LCDR Christine Gargan and 2nd LT Daniel Rubio at JBER.



MARINA MILITARE

TEXT & PHOTOS - ERIK BRUIJNS & MARK DE GREEUW

Erik Bruijns and Mark de Greeuw reports from the 'Marina Militare', the Italian Navy defenders, and takes on a journey with they helicopters.



Both UH-101A and SH-90A perfectly integrate with each other adding a multitude of capabilities to the Italian Navy
Photo by the authors

Marina Militare - Italian Navy defenders

Maristaeli (Marina Stazione Elicotteri) Luni (Sarzana-Luni helicopter terminal) is one of the three air bases of the Marina Militare Italiana (MMI) or Italian Navy and, since 1999, has been named after Admiral Giovanni Fiorini, one of the major architects of the helicopter component of the Italian Navy and main creator of Maristaeli Luni. The air base has a relatively short history in aviation terms, as construction of the air base began in the 1960s in an area adjacent to the existing airfield.

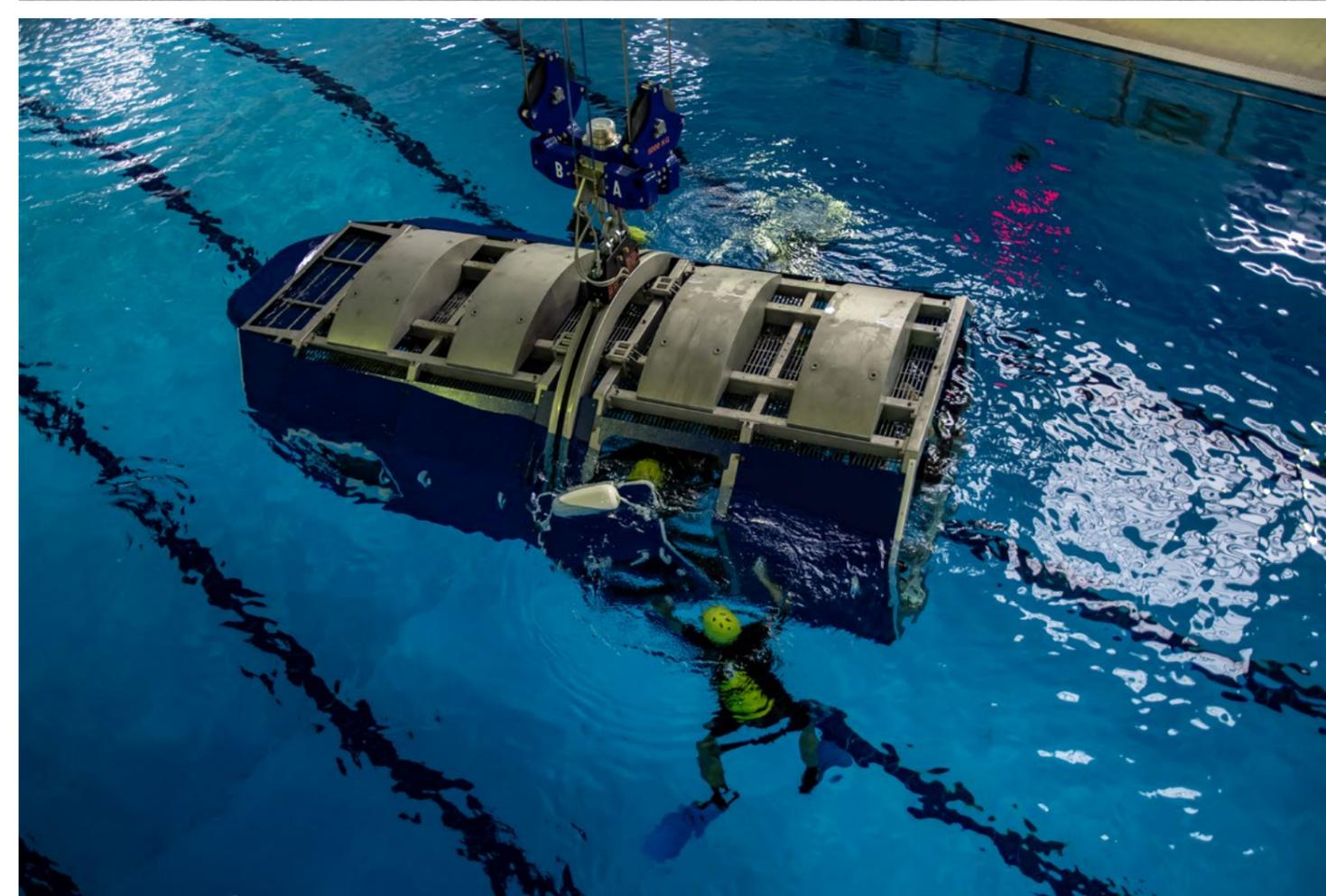
The base became operational on 1 November 1969 with the establishment of 5° Gruppo Elicotteri equipped with the Agusta-Bell AB-47J. During May 1971, 1° Gruppo Elicotteri moved in from Catania-Fontanarossa, Sicily, with their Sikorsky SH-34s. Both units have remained at the base since then and form the heart of the operational and supporting activities.

Navy training

Part of the base infrastructure are two very important units that take care of training of both pilots and supporting crew. Aircrew have the ability to train in the AgustaWestland EH-101 simulator. Delivered in 2011, the Full Mission Flight Simulator (FMFS) and Rear Crew Trainer (RCT) provide a complete training environment for EH-101 crews of all versions, enabling both student pilots and experienced crews to familiarise and maintain efficiency with the aircraft. In addition, it allows crews to practice emergency cockpit procedures, night-vision goggle training, ship deck landings and tactical mission training.

The RCT part of the simulator mirrors the rear cabin of the Anti-Surface Warfare (ASW/ASuW) version of the EH-101 and is used to teach and maintain tactical crews in operating all the sensors, avionics and software systems in the aircraft. The FMFS and RCT can both be used independently or can be networked to offer a realistic mission training environment for the EH-101 pilots and sensor operators. Unlike EH-101 crews, the NH Industries SH-90 crews at Luni don't benefit from having a simulator on base and therefore have to use one of NH Industries' simulators.





Operational responsibility

Maristaeli Luni also operates what is known as a “helo-dunker”. The building that houses the Survival Training Centre contains a large swimming pool with the helo-dunker being used for underwater escape training. A mock-up of a helicopter cockpit and cabin is suspended from a large steel girder and can be plunged into the pool and then flipped over in a variety of positions. It is used to train crews to escape from a helicopter in an upside-down position after impacting with the water in a simulated accident.

Responsible for the Survival Training Centre, Commander Rambelli explains; *“Once a year pilots and crew need to go through the training course to stay current on their survival capabilities. The two-day course consists of a theoretical part and a “wet” part, where pilots and crew get hands on training with increasing difficulty. We train 450 to 500 pilots and crew members every year and we have over 20 years of experience”.*

The initial training of new pilots and crew takes four days for the Navy and three days for the Air Force. *“This is due to the Air Force not using oxygen bottles within their training syllabus”* as Commander Rambelli continued. *“We do not only train Italian Navy aircrew. We have a wide range of operators, like the Air Force, Polizia, Carabinieri, Coast Guard and also Leonardo crew. Over the years we have also trained aircrew from foreign countries. The Hellenic Navy has been training in our facility for many years and as of 4 February 2019 we started training the Qatar Navy as they are in the process of acquiring the NH-90. This is a multi-year training program we have started up with them”.* The Italian Navy uses the Modular Egress Training Simulator (METS) Model 40 from

Survival Systems Limited, based in Canada. This system is state of the art and provides a wide range of possibilities for training as Commander Rambelli continues: “We introduced the new system in September 2018 which gives us the ability to train many scenarios. We now also have the possibility to train on the rescue hoist, something we could not do in the past in a controlled environment. The beauty of the new system is that it gives us the possibility to change up to eight interchangeable emergency escape exits. This gives us the ability to change the layout of the helo-dunker, so we can replicate the EH-101, NH-90 and AW-139 all incorporated in one system”.

The roles

The main roles of Maristaeli Luni are to provide logistical support, training and standardisation of crews for the two Gruppo Elicotteri. In addition, it supports ship-embarked aircraft and those deployed in operational theatres. The main tasks of the two Gruppo Elicotteri are to maintain the operational readiness of air and maintenance crews and their aircraft, whose roles involve them operating primarily in the anti-surface & anti-submarine roles. The units also support the 1st San Marco Regiment, an amphibious unit of the Italian Navy (Italian Marines).

The MMI operates a total of 18 EH-101's in three versions. Six are in the Anti-Surface/Submarine Warfare (ASuW/ASW) configuration, locally designated SH-101A. Four are in the Airborne Early Warning (AEW) configuration and are locally known as EH-101A.

A total of eight airframes are in the Amphibious Support Helicopter (ASH) configuration which are locally called the UH-101A. Unlike the AEW and ASW/ASuW versions the ASH benefits from a folding rear cargo ramp, allowing 1° Gruppo Elicotteri to perform a large array of missions for the MMI, including Search & Rescue (SAR), civil protection, anti-immigration duties, counter terrorism, anti-piracy duties on oil platforms and cruise ships and general transport/support duties. Another operation performed by 1° Gruppo Elicotteri is to provide support to the ‘Operations Group Commandos’ for Combat Search & Rescue (CSAR) missions and as previously mentioned support the 1st San Marco Regiment.

In 2000 the MMI placed an order for a total of 46 NFH90 and 10 NH90TTH helicopters to replace the Agusta-Bell AB-212 that has been in service with the Italian Navy since April 1976. Locally designated the SH-90A and MH-90A, these state-of-the-art helicopters give a welcome boost to the capabilities of the Italian Navy. The composite airframe and fly-by-wire technology provides a huge step-up in capability over the AB-212.

Full Operational Capability

The Italian Navy chose to introduce five SH-90's in the Meaningful Operation Capability (MOC) standard into service early. Early introduction, before the full capability 'Step B' version was available, allowed both aircrew and maintenance personnel to integrate the aircraft into service without causing further delay, resulting in the helicopter entering Full Operational Capability (FOC) earlier than it would have otherwise.

The first fully operational airframes in the Step B configuration entered service on 8 November 2013. These support the systems integration for both air-to-surface missiles such as the MBDA Marte Mk./2S and torpedoes, plus an advanced satellite and encrypted communications, radar and avionics capability. To date around 30 airframes have been delivered and are in a pool of helicopters that are shared between 4° Gruppo Elicotteri, based at Grottaglie and 5° Gruppo Elicotteri. In addition to this allocation of airframes, both units provide their helicopters for ship-based missions. So, at any given time several SH-90's are stationed onboard one or multiple Italian Navy ships.

In 2010, 1° Gruppo Elicotteri was deployed to Afghanistan as part of the International Security Assistance Force (ISAF) mission, with the Task Group Shark, comprising a total of 67 military aircrew, helicopter maintenance technicians, administrative, logistical and medical personnel as well as riflemen from the 1st San Marco Regiment for protection and security tasks.

The Group has operated from October 2010 up to 7 December 2011 with about 300 men and women (with a rotation every 3-4 months). Three UH-101A helicopters using their Forward-Looking InfraRed (FLIR) and Night Vision Goggle (NVG) systems and helped by their self-protection systems, were able to operate both day and night. They were tasked with surveillance missions, patrolling, escort convoys and medical evacuation (MEDEVAC), totaling approximately 900 hours of flight in 224 missions for a total of 1112 sorties.

Naval surveillance & security operation

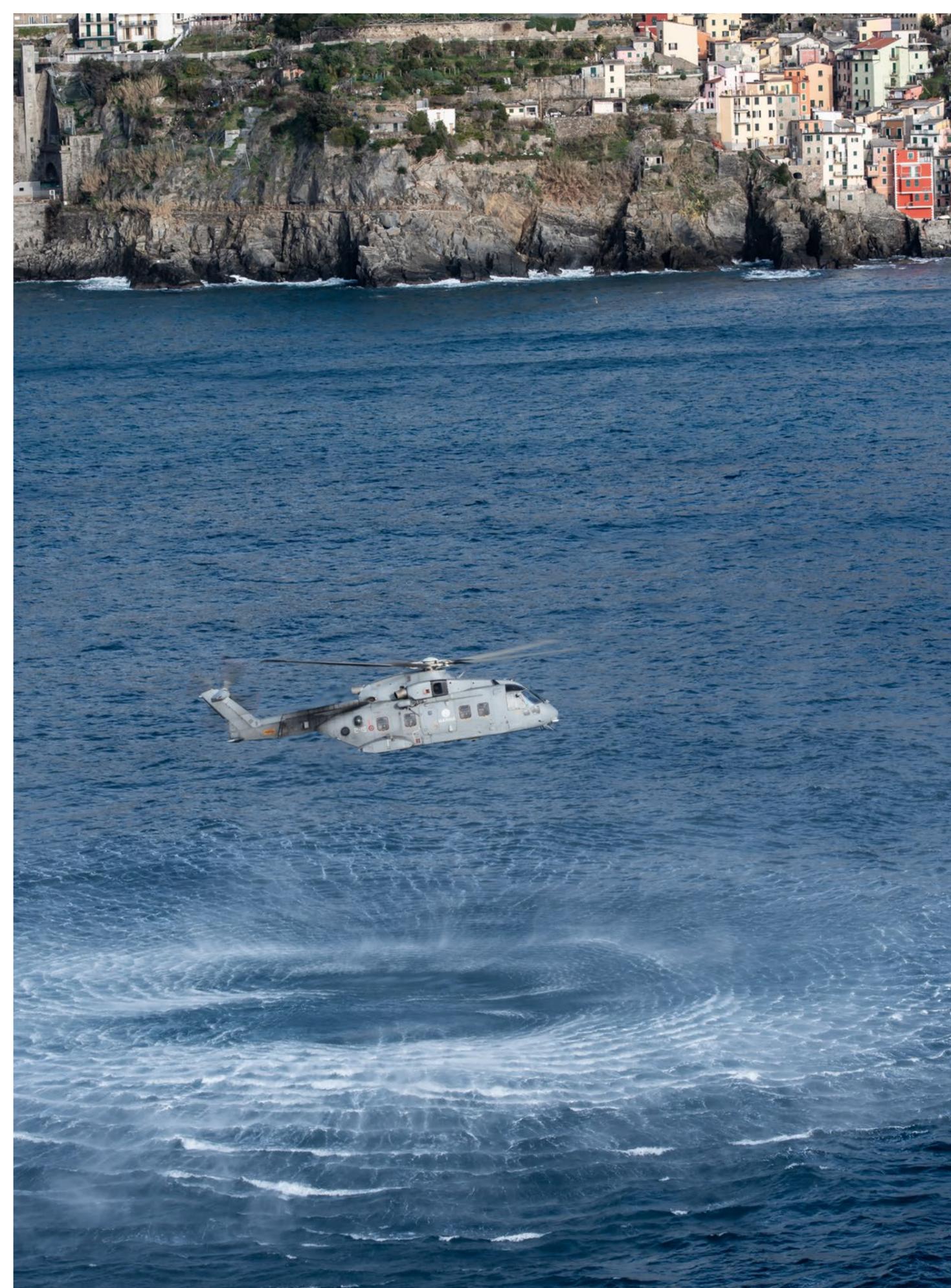
This resulted in transporting about 3700 passengers and 95.000 Kg of materials, operating under the Western Regional Command NATO (Regional Command RC-WEST) in the area of Western Afghanistan in the Herat area, where the Italian command is also located. With the operational area expanding also towards the South of Afghanistan, the helicopters were also able to support the Italian personnel of the Sassari Mechanized Brigade and the 1st San Marco Regiment. The three helicopters returned back to Italy in January 2012.

Since 2015, 5° Gruppo Elicotteri has been involved in operation "Mare Sicuro". Following the worsening of the Libyan crisis and the increasing risks caused by the presence of extremist entities that significantly raise the level of terrorist threat, the Navy, with operation Mare Sicuro, conducts activities of protection and safety of the maritime environment, protection of national interests such as freedom of navigation at sea, protection of naval vessels engaged in rescue operations, merchant ships and Italian fishing vessels in the area, as well as the protection of oil platforms.

The operation, which started on 12 March 2015 as "Naval surveillance and security operation", sees the use of naval vessels as well as helicopters stationed onboard of these ships. Due to the strong geo-political instability on the African continent, in particular in Libya and in the sub-Saharan regions, illegal immigration has significantly intensified.

For this reason, the operation is often involved in search and rescue missions to safeguard human life at sea. The operational area for Mare Sicuro is approximately 160,000 km² of sea, located in the central Mediterranean and overlooking the Libyan coast. Up to five vessels operate continuously at sea, thus ensuring a high level of operation and constant surveillance in the area of operations.





Piracy impacts

Launched on 8 December 2008, the European Union Naval Force Atalanta (EU NAVFOR - Atalanta) was created within the framework of the European Common Security and Defence Policy (CSDP) and in accordance with relevant UN Security Council Resolutions (UNSCR) and International Law.

The European Union for some time was concerned with the effect of Somali-based piracy and armed robbery at sea off the Horn of Africa and in the Western Indian Ocean. Somali-based piracy is characterised by criminals taking control of vessels transiting the High-Risk Area in the Region and extorting ransom money for the crew, the vessel and cargo: this bears all the features of organised crime. Crews held hostage by pirates often face a prolonged period of captivity, the average being 5 months, although some hostages have been held for almost three years.

Moreover, piracy impacts on international trade and maritime security and on the economic activities and security of countries in the region. On 30 July 2018 Operation Atalanta was extended by the European Council until December 2020. The operation has the following objectives. Protection of vessels of the World Food Programme (WFP) and other vulnerable shipping, Deter, prevent and repress piracy and armed robbery at sea, Monitor fishing activities off the coast of Somalia and Support other EU missions and international organisations working to strengthen maritime security and capacity in the region.

The participation of the Italian Navy, as well as many other UN countries has been very successful and highly effective in preventing attacks before they happen. At the height of Somali piracy in January 2011, 736 hostages and 32 ships were being held by pirates. By October 2016 that number had dropped to no hostages and ships were being held. With a continuous rotation of deployed units, the Italian Navy and 5° Gruppo Elicoterri have provided support and will keep on providing support when called upon.

EU NAVFOR MED Operation Sophia was launched on 22 June 2015, as part of the EU's comprehensive approach to help better manage irregular migration and disrupt traffickers and smugglers' networks.

FRONTEX and EUROPOL

The operation entered its active phase in October 2015 enabling the identification, capture and disposal of vessels used or suspected of being used by migrant smugglers or traffickers. Since then, the operation has contributed to the arrest and transfer to the Italian authorities of 110 suspected smugglers and traffickers and has neutralised 470 vessels. In addition, the operation has helped rescue close to 40.000 lives.

With Operation Sophia falling under the command of the Italian Navy and has its headquarters in Rome, the Italian Navy involvement is of course very clear. 5° Gruppo Elicoterri provides continuous support with aircrew and helicopters. The Council added additional supporting tasks to the operation's mandate on 20 June 2016. These were to set up a monitoring mechanism of trainees to ensure the long-term efficiency of the training of the Libyan Coastguard, conduct new surveillance activities and gather information on illegal trafficking of oil exports from Libya in accordance with UNSCR 2146 (2014) and 2362 (2017) and finally to enhance the possibilities for sharing information on human trafficking with member states' law enforcement agencies, FRONTEX and EUROPOL.

Since then, the operation has trained 136 Libyan Coastguard and Navy personnel. It has also hailed over 650 ships, carried out 51 friendly approaches, seven flag enquiries and three inspections within the framework of its contribution to the implementation of the UN arms embargo on the high seas off the coast of Libya. These operations are not without controversy as one crucial issue relates to the ports to disembark migrants at.

All migrants rescued by the ships of the mission were taken to Italian ports. Italy has long urged that this issue be solved. At the end of 2018 an extension was granted for the operation until 31 March 2019. During March 2019 a decision was taken to stop searching on the water with boats. It was agreed to keep on searching from the air for any illegal activities. Time will tell what effect this will have on the region and the amount of illegal activity.

Navy Testing

Also part of Maristaelli Luni is a unit that is relatively new and is not often spoken about. The Centro Sperimentale Aeromarittimo (CSA) or Naval test evolution center was established on 1 January 2006 and represents the evolution of the pre-existing EH-101 Working Group born in 1996 to take care of the introduction into service of the EH-101.

Commander Pingitore explains: *“The Center is responsible for conducting the activities of study and operational evaluation of helicopters and systems related to the specific maritime use of the aircraft of the Italian Navy. Our aircrew are experts on the EH-101, NH-90 and AB-212 and we have test pilots and crew who are able to fly on and operate with all types of aircraft within the Italian Navy. We perform flight testing with the Italian Navy aircraft but also aircraft from other Italian government agencies. As we do not have any aircraft assigned to the CSA, depending on our needs we take the aircraft directly from the squadrons or in some cases from Leonardo”.*

All test pilots and flight engineers who are selected to work for the CSA go to Patuxent River Naval Air Station in the United States for a one-year course at the United States Naval Test Pilot School (USNTPS), before they graduate as Naval test pilot or flight engineer.

Commander Pingitore continues: *“During the course we fly on all types of aircraft in the US, both fixed wing and rotary aircraft, to get an as diverse as possible training. This will help us when we get to the CSA and start working on the different test programs. We then return on a yearly basis for specific testing. As an example we will soon be testing a new fly-by wire system on the Blackhawk helicopter. In addition to this we have an exchange program each May with the test pilot school for a period of two weeks to exchange experiences and learn from each other”.*

The CSA is responsible for five different sections. These are ship interface testing, general aircraft handling testing, aircraft sensor testing, technical solution testing and electronic warfare testing.

A standard Romeo

Commander Pingitore explains: *“Our ability to test in different areas is vital for the Italian Navy. We are involved in testing of prototypes of new aircraft, but also weapons that we use on our aircraft. CSA performed the first launches of torpedoes and missiles as well as firing new guns that we have on board of the helicopters. We perform dynamic system testing between aircraft and Navy ships and try to find the limits of the aircraft. Collaboration between other governmental agencies is vital in this. Together with the army the CSA worked on landing the first Agusta A-129 Mangusta on a Navy ship. We make use of sophisticated instruments during these tests. This includes telemetry data for real time data interpretation”.*

Its unique skills and the results achieved by it, make the CSA an instrument of significant value for the Italian Navy, in the context of the management of the aircraft and the development of new programs. *“Our work however isn't limited to only aircraft, their systems and weapons”, as Commander Pingitore continues. “We are heavily involved in the design of flight decks for the new Italian Navy ships. This even includes the support we give to Qatar, who are building new ships for their Navy. The CSA helps in the design of the flight deck, hangars and all rooms linked to flight activities onboard. The first ship for Qatar is expected to be finalised in 2021”.*

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THE NEXT ISSUE OF FLYMAG MAGAZINE

We'll be amongst others things take a look at the Paul van den Hurk brings us a unique look at the 70° Stormo of the Italian Air Force, and Reinier Bergsma takes a deep dive into Northoltz in the next issue of FLYMAG.



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