



## 100TH YEAR ANNIVERSARY OF THE POLISH AIR FORCE

This year, the Polish Air Force will celebrate its 100th anniversary as part of the national centenary of independence. Sławek hesja Krajniewski reports from Poland.

### ICELAND AIR POLICING

Søren Augustesen reports from Iceland, where on the 11th of April, four RDAF F-16s deployed to Keflavik Air Base in Iceland.

### KIOWA WARRIORS

Croatia has reached Initial Operational Capability on the OH-58D Kiowa Warrior, less than a year after receiving them.

### AZERBAIJANI AIR FORCE

This year marks the 100th Anniversary of both the Azerbaijani Air Force, and the Azerbaijan Democratic Republic.

This issue features among other, reports from the worlds largest maritime exercise with more than 200 aviation assets - RIMPAC, and reports from around the world, stunning photos and in-depth articles is what this issue of FLYMAG features.

Enjoy!

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# APROC 2018

TEXT - JEROEN VAN VEENENDAA  
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The Defense Helicopter Command at Gilze Rijen Air Base was host to the international Air Centric Personnel Recovery Operatives Course (APROC) from 23 May to 6 June. Jeroen van Veenendaal reports from the Netherlands.



*An Italian NH-90 seen at APROC  
Photo by Ralph Blok*

## APROC

The Defense Helicopter Command at Gilze Rijen Air Base was host to the international Air Centric Personnel Recovery Operatives Course (APROC) from 23 May to 6 June. The course is an initiative by the European Personnel Recovery Center (EPRC). This was the first time that the course took place in the Netherlands.

### What is Personnel Recovery?

To understand what the course is about we must first find out what Personnel Recovery, or PR actually is. Countries have a moral obligation to take care of their people. But besides the moral obligation, PR can also have a negative impact on operational security, morale of assigned forces and public opinion. The NATO definition of isolated personnel is if you do not have control over your situation.

Course Director LTC. Bart Holewijn explains with an example: *“If your car flipped over because you slipped on a slippery road, you are essentially isolated because you do not have control over your own situation. You drive up in the winter to northern Sweden, and you get into an event like this you can die simply because of the cold, you can freeze to death unless you have taken proper precautions. And this is without having an enemy threat.”*

To prepare personnel for an event where they get isolated, they train in Survive, Evade, Resist, Extract (SERE). This training consists of tactics, techniques, and procedures that will give isolated personnel the tools to survive in any environment and to evade capture where such a threat exists. And if they get captured, they are taught to resist exploitation by captors and, if the situation permits, escape captivity to finally be recovered and return with dignity.

### Historic PR events impact

Holewijn illustrates some PR events that have had a great impact in history. He mentions the U-2 crash over Soviet Union, and the captivity of Gary Powers. An event that happened over 50 years ago, but is still widely known. *“The problem in this case in terms of impact is that, at that moment the Americans and the Russians were just starting negotiations for the reduction of strategic nuclear weapons, and you can imagine that the American president was not very happy when the Russian President mentioned the capture of a CIA U-2 pilot. This immediately had a bad impact in the negotiations.”*

Holewijn also mentions Mike Durant, made famous by the book and movie Black Hawk Down: *“The fight around the crash site where the Blackhawk crashed in Mogadishu lasted for two days, and on the third day, President Clinton said: we stop operating immediately and all Americans have to be out of the country within six months. Five and a half months later there were no Americans in Somalia anymore. However the big impact was that the Americans were protecting a U.N. Support aid mission and the U.N. could not do anything without the American support so immediately the whole U.N. operation over there was stopped to help people in that country.”*

The Course Director also mentions Dutchbat in Srebrenica, where a whole battalion was isolated. If something really goes wrong, there has to be a system to get people back who are isolated. That system is not always military, it can also be diplomatic and civil efforts to effect the recovery and reintegration of isolated personnel.





*A Swedish Blackhawk on it's way to the LZ.*

*Photo by Ralph Blok*



## EPRC

Holewijn: *“To do that we have created the European Personnel Recovery Center (EPRC) in 2015 with seven participating nations. We would like to help NATO, E.U., the various EPRC nations, but also other nations if necessary to develop concepts and doctrines, and also help them educate and train procedures, so that we get standardization and thus interoperability. This means that at some point in time we are going to be much more effective, much more efficient in Personnel Recovery missions. Part of being effective is being safer and if we all use the same procedures then we can be quicker as well.”*

The center focuses on the four phases of Personnel Recovery; Preparation, Planning, Execution and Adaptation. To train this, the Air Centric Personnel Recovery Course (APROC) was invented.

## APROC

Director Holewijn explains: *“Air Centric is not because we think that you can only do this kind of mission with helicopters. Absolutely not, you can use infantry vehicles, armored personnel carriers, submarines or if necessary special forces. The difference is that if we want to do this kind of mission with air assets, we can only do it in a multinational fashion. Look at it as a jigsaw puzzle, all nations have a number of pieces of this puzzle and collectively we have the whole puzzle. The advantage of doing it together is it is a lot more efficient and a lot less expensive.”*

Therefore, the focus of the training is the multinational aspect of it. *“All the task forces are completely mixed with people from all the different nations. We focus on the process, in particular the planning process. The key is, if you can plan this kind of mission properly you can execute it. The execution in the course is very nice because then you can see how your plan worked out.”*

The course is a crawl-walk-run process. It starts slowly and simply, but will gradually become more challenging. The course is the only specific course that trains these kind of missions, and attracts great interest as various countries now notice the necessity of these capabilities.

## Aims of the course, training audiences

Holewijn outlines the two main training audiences: *“The primary training audience is inexperienced aircrew, who have never done any kind of mission planning in a complex environment like this. Complex, multinational, multi-ship, dissimilar type of aircraft.”*

*Secondly we have experienced pilots who will become Rescue Mission Commanders (RMC). We need experienced pilots to do this to keep things safe and to also increase their levels of success. And they will be leading these missions throughout the course.*

*Then the Extraction Force leadership, these guys will be participating in the planning, completely immersed in the process. This sometimes is a bit of an issue because fighter pilots and a senior NCO as boss of the extraction force need to communicate. The senior NCO is going to decide what is going to happen in the pickup zone because in this mission it's very simple: If the extraction force fails, the mission fails. The Extraction Force is key to the mission.*

*The secondary training audience are the Airborne Early Warning (AEW) crews, Rescue Escort (RESCORT) crews and the Extraction Forces personnel.*

*The Airborne Early Warning (AEW) crews have to become proficient as Airborne Mission Coordinator (AMC), In this course, French and NATO E-3F AWACS and a brand new Italian G550 CAEW (Conformal Airborne Early Warning) were providing this coordination. This is a type of mission that they normally never train, making this one of the very rare occasions where they could really train their PR mission coordinator skills.*

*The jets in particular do the on-scene commander duties. Every pilot should be able to be an on-scene commander, but there is a need for people who are really proficient in this role.*

*The Extraction Forces were training their skills, we also mixed the Extraction Forces among the other nations in order to standardize their procedures.”*



## Participants

Personnel involved in the training includes staff, opposing forces and specialists in the field of survival, escape, dodge, resist and evacuate from enemy territory. For every person in the training audience, there are two persons in this course making it possible.

For this year's course 577 personnel from 12 countries were deployed to Gilze-Rijen Air Base in the Netherlands. The aircraft deployed for this iteration were F-16 (NLD) and EF-2000 (ITA) in the Fixed Wing Rescue Escort role, AS-555 (FRA), AH-64 (NLD) and MI-24 (POL) in the Rotary Wing Rescue Escort role and CH-47 (NLD), AS-332(ESP), NH-90 (FRA), Merlin (GBR), EH-101 (ITA), HH-101 (ITA) and UH-60 (SWE) in the Extraction Vehicle role.

## Roles of helicopters

Swedish detachment commander Lt. Anna Brodin leads the Swedish Extraction Forces, and HKP 16A Blackhawk flight crew. She explains: *"We're flying all nations' extraction forces. The only extraction force we haven't flown yet in the Blackhawk are the Swedish extraction forces, because we have been flying with the French, the Italian, the Spanish and the British extraction forces."*

## Differences between nations

Brodin notices the differences, but also the similarities between nations. *"I think everyone is actually quite good at English, nothing has been a big issue. The different countries extractions forces work a bit different. Some of them have Joint Terminal Attack Controllers (JTAC), some of them don't. Some of them are quite small teams like for example the Swedish extraction teams. They are five to six people and the dog as well. Some other nations' extraction teams consist of twelve people."*

Swedish pilot, Captain Christian Bagge adds: *"Sweden is not part of NATO, and I think we are not as familiar with NATO documents like some NATO countries are. But otherwise I think we fly pretty similar to them. We know the procedures and they are often very similar or the same as ours. So I wouldn't say it is a big difference."*

## A day in the course

The missions are progressing in difficulty, and get more and more complicated each day. Lt. Brodin sketches a typical scenario: *"Quite early in the planning process we are informed there are one or more Isolated Personnel (ISOP). Something has happened, a plane has been shot down, or a team of journalists have been captured and managed to escape and are on the ground. The ISOP's are acting according to their plan of escape."*

*We've got a lot of intel about the hostiles and the area, so then the planning starts. We have a basic look at the area, how does the terrain look? How can we do the ingress and egress of the area?*

*A lot of planning takes place with the Extraction Forces, how they want to do it. Will they have like a quick snatch and grab? Are we having a positive ID of the ISOP quick? Can we just land there, grab the ISOP and the helicopter and go? Or do they have to make a search because of an injured ISOP?"*

The rotary wing discusses what the various capabilities, restrictions, speeds, and endurances are. Captain Bagge: *"First days felt very short, really compressed. But after a couple of days it feels natural. For us, this is a new way of planning, a new procedure. Then there will be the main briefing about the plan. We talk about deconfliction, if something goes wrong what will we do? Afterwards we go out and fly the mission according to the plan."*

When the Rescue Vehicle closes in on the ISOP, they try to identify the ISOP via radio. Letters from the NATO alphabet are sent by the rescue party in random order. The ISOP knows at which letter he has to pop smoke in order to identify his position. The ISOP is being treated as a suspect on the ground. He is a detainee until the mission is over.

Afterwards when they are back at base, the various parties de-brief together. Mission Monitors are following the planning process all the time and give feedback. Captain Bagge: *"The first week I was very exhausted by Friday, especially for the planning course because it was pretty intense. With more complex scenarios, more elements, it is more for us to take into consideration, I think especially for the mission commander."*





## Dutch airspace

The Dutch airspace poses some unique difficulties. The central European location of the host base restricted the freedom of movement of the course participants.

3 landing zones in Belgium are also part of the training areas. Holewijn elaborates: *“We have three pick up zones every day, one for each task force. On the base we will give them particular routes that they have to take to get out and to return. This way we ensure that the task forces will never meet each other in the air. In the very worst case they all come back at the very same time around the base. There is an air traffic controller so he will manage to keep everything safe at that stage.”*

*The routes are about 200 kilometers each, so you can fly the route plus some time on the pickup zone, and some time on the FARP within about two hours, which means that we don't make the day too long and you stay well within legal crew rest requirements.”*

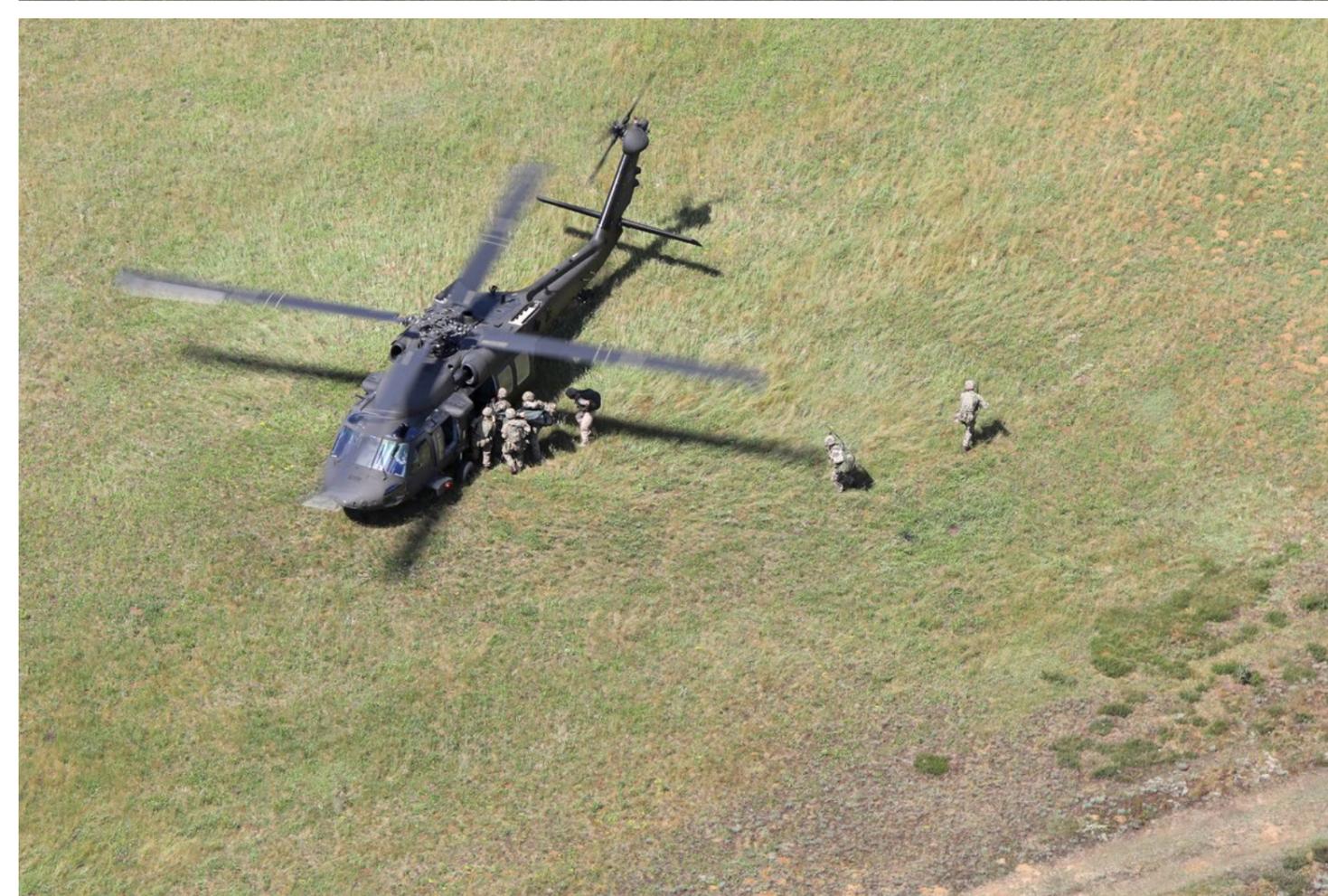
## Lessons learned

In the Netherlands, all the Air Traffic Controllers, all the airfield towers are very close. For pilots it's an additional challenge to have their mind on the tower and Air Traffic Control and still keep their mind on the mission. Low flying over populated areas was also new for Captain Bagge: *“Coming from Sweden, we have vast areas with no restrictions to fly low level so we were really surprised to go out in the military low flying area for the first time to fly over golf courses and farm land. These are prohibited areas in Sweden.”*

The course has changed a lot since the first edition in 2011. That was very ambitious, but now the EPRC has adapted, and that results in improved skills. And that is the reason APROC was initiated in the first place. Detachment Commander Brodin reflects on the course: *“We will try to implement things that we have learned that we can see that have a purpose back home in Sweden. We may adjust our planning methods or at least take the good parts and try to implement them.”*

*We have already started but can improve on cooperation with our fixed wing in Sweden. We do see all the good things about coordination and collaboration. So hopefully that will be one thing to work on in future exercises or just daily training. I think we can do it quite easily, so that's one thing we should take home with us and improve.”*

26 missions were planned in 9 flying days by 20 aircraft. 3 missions were cancelled due to bad weather. Over 140 sorties were flown, and over 300 flight hours were made.



# ICELAND AIR POLICING

TEXT - SØREN AUGUSTESEN  
PHOTOS - SØREN AUGUSTESEN, GEA & ROYAL DANISH AIR FORCE

On the 11th of April, four Royal Danish Air Force F-16s deployed from their home base at Fighter Wing Skrydstrup, to Keflavik Air Base in Iceland. Søren Augustesen reports from Iceland.



*This was the fourth time the RDAF deployed F-16s to Keflavik to support the Iceland Air Policing mission.  
Photo by Søren Augustesen*

## Iceland Defence Force

In 1951 the United States Armed Forces created a military command called the Iceland Defence Force (IDF), following a request from NATO. The purpose of the IDF was to provide defence for the country of Iceland which have only very limited defence forces. The IDF was disbanded on 30th of September 2006, and the US military forces withdrew from Iceland.

The IDF was headquartered at Naval Air Station Keflavik, located close to the capital of Reykjavik on the south-western tip of the island. The IDF were made up of personnel from the US Navy, Air Force and Marine Corps, as well as local Icelanders. In all, about 2000 personnel from more than 25 different commands were attached to the IDF.

The USAF component of the IDF, were the 85th Group, which flew a number of different types during the 55 years the IDF existed, including the North American P-51 Mustang, McDonnell Douglas F-4 Phantom II and the McDonnell Douglas F-15 Eagle.

Following the withdrawal of US military forces from the island, aircraft from the Russian Air Forces 37th Air Army, entered Icelandic air on several occasions. This prompted the then Icelandic Prime Minister Geir Haarder, to request that Iceland's NATO allies took over responsibility for protecting the Icelandic air space during the Riga Summit in November 2006.

## Iceland Air Policing

At a NATO meeting in July of 2007, NATO agreed to this request, which is in line with agreements made with other NATO countries that does not have their own air defence, like the Baltic countries.

On the 5th of May 2008, the first deployment of NATO jets to Keflavik Air Base were made by the French Air Force, when they sent four Mirage 2000C aircraft to Iceland for just under two months. Since then, a number of NATO countries have deployed between four and eight fighters, as well as various support aircraft, to Iceland. These deployments vary greatly in duration, with some lasting only three weeks, and some lasting almost two months.

There is not a continuous presents of NATO aircraft at Keflavik, like there is at Siauliai and Amari in Lithuania and Estonia. Sometimes there is a gap of a few days between deployments, and sometimes several months. The randomness of the deployments can act as a deterrent in itself, as the "enemy" have no idea when the island will be protected.





## RDAF Deployments

On the 11th of April, four Royal Danish Air Force (RDAF) Lockheed F-16AM Fighting Falcons deployed from their home base at Fighter Wing (FW) Skrydstrup, to Keflavik Air Base in Iceland. This was the RDAF's fourth deployment to Iceland for the Iceland Air Policing mission. A total of 56 personnel deployed to Iceland, including ground crews, mission planners and other staff and support personnel. Among them were seven pilots. Personnel and material were flown to Iceland using C-130J-30's from the 721 Squadron base at Air Transport Wing Aalborg.

With a primary mission of Quick Reaction Alert (QRA) two aircraft and two pilots were kept on a 24/7 alert during the entire deployment. However, the RDAF used the deployment to train other types of missions as well, which they are not able to train on a daily basis in Denmark. They flew a number of air-to-ground missions in mountainous terrain, something which can't be done in Denmark.

They also used the opportunity to practice operating from unfamiliar airfields, often in challenging weather conditions. During the latter stages for the deployment, an RDAF CL-604 Challenger maritime patrol aircraft, deployed to Keflavik as part of what is known as "Luftgruppe Vest" (Air Group West). The Challenger flew a number of fishery patrols around Iceland, and the F-16 took the opportunity to fly intercept mission against the Challenger as it flew around the island.

At the same time the four F-16's was deployed to Iceland, four other F-16's from the RDAF were deployed to Siauliai Air Base in Lithuania for NATO's Baltic Air Policing mission. This meant that with the Iceland Air Policing, Baltic Air Policing and the QRA mission over Denmark, the RDAF provide air policing over 5 nations simultaneously.

On the 30th of May, the four F-16's left Iceland and returned to their home base at FW Skrydstrup in the southern part of Jutland.

The author would like to thank the personnel and pilots of the Royal Danish Air Force for their help in making this article possible.



# RIM OF THE PACIFIC 2018

TEXT & PHOTOS - SØREN NIELSEN

The 2018 edition of the Rim of the Pacific (RIMPAC) exercise, the world's largest international maritime warfare exercise, was held from June 27 to August 2, on and around the Hawaiian Islands and Southern California. Søren Nielsen reports from the Pacific.



*The last cruise for US Navy 'Legacy' Hornets ended at RIMPAC.  
Photo by Søren Nielsen*

## Rim of the Pacific

The 2018 edition of the Rim of the Pacific (RIMPAC) exercise, the world's largest international maritime warfare exercise, was held from June 27 to August 2, on and around the Hawaiian Islands and Southern California.

With RIMPAC the United States Pacific Command seeks to enhance interoperability among Pacific Rim armed forces, ostensibly as a means of promoting stability in the region to the benefit of all participating nations. Described by the US Navy as a unique training opportunity that helps participants foster and sustain the cooperative relationships that are critical to ensuring the safety of sea lanes and security on the world's oceans.

RIMPAC is held every second year during the summer months, with headquarters in Pearl Harbor, Hawaii. The 2018 edition was the 26th exercise in the series that originated in 1971. The first edition of RIMPAC was held back in 1971 with only five nation participating in the exercise. The size of the exercise, as well as number of participants has grown throughout the years.

This year's edition saw twenty-five nations, 46 ships, five submarines, and about 200 aircraft and 25,000 personnel participating in the exercise. The participating nations span the Pacific Rim and far beyond, with the United States and returning nations of Australia, Brunei, Canada, Chile, Colombia, France, Germany, India, Indonesia, Japan, Malaysia, Mexico, Netherlands, New Zealand, Peru, the Republic of Korea, the Republic of the Philippines, Singapore, Thailand, Tonga, and the United Kingdom, as well first-time participants Israel, Sri Lanka, and Vietnam making the list of participating countries.

The countries brought different assets to the exercise, where not all countries supplied with ships, or aircraft. Countries would bring a mix of ships, ground personnel, aircraft, vehicles or just one of the items to the exercise, making the united force of the exercise a truly diverse.

## Capable, Adaptive, Partners

"*Capable, Adaptive, Partners*" was the theme of RIMPAC 2018, where participating nations and forces exercised a wide range of capabilities and demonstrated the inherent flexibility of maritime forces. These capabilities ranged from disaster relief, and maritime security operations, to sea control and complex warfare. The relevant, realistic training program included amphibious operations, gunnery, missile, anti-submarine and air defense exercises, as well as counter-piracy operations, mine clearance operations, explosive ordnance disposal, and diving and salvage operations.

This year's exercise saw aircraft from many nations, including Australian and Indian P-8 maritime patrolling aircraft, and Australian, Canadian, and South Korean P-3 maritime patrolling aircraft, as well as helicopters from many of the nations onboard their vessels. Australia brought their amphibious assault ship L-01 HMAS Adelaide, and Japan brought DDH-182 JS-Ise, a helicopter destroyer, both capable of carrying more than a dozen helicopters each.

The United States joined as the centerpiece of the exercise, the carrier CVN-70 USS Carl Vinson, including the entire Carrier Air Wing Two (CVW-2), the amphibious assault ship LHD-6 USS Bonhomme Richard with a mix of rotary aircraft, as well as multiple land based aviation assets such as P-3, P-8, C-17, C-130, KC-130, KC-135, A-10, B-1, MV-22, CH-53, MH-60, F/A-18, UH-1, AH-1, UH-60, AH-64, and multiple UAVs from the Air Force, Marine Corps, Navy and Army, all pitching in.







## Maritime - not just ships

Although it's a maritime exercise, the aviation assets of the exercise played a huge role in this year's edition of RIMPAC, as Capt Greg Newkirk, the commander of CVW-2, explains: *"The maritime battlespace is not one where the arena is limited to the many very capable warships you see at RIMPAC. Rather it is an integration between platforms that operate in all the mediums – on, under and over the oceans."*

*The impact of aviation on RIMPAC in a larger sense is to refine that integration in a way, and on a scale that makes each nation participating in this exercise a more capable maritime force, which certainly includes learning and progressing in the aviation realm. CVW-2 has been a primary contributor to the growth and efficacy of the Combined Air Operations Center as we develop that critical battlespace infrastructure and corporate knowledge.*

*CVW-2 worked with ships of nearly every country in some capacity from logistics, targeting, sensor utilization, air intercept control, anti-submarine warfare integration, and command and control."*

The land-based aviation assets were split between three major air stations on the Hawaiian island of Oahu, Joint Base Pearl Harbor Hickam, Wheeler Army Airfield and MCAS Hawaii, as well as using other airfields and landing zones throughout the Hawaiian Islands. Other assets were based in Southern California, spreading the entire force over a larger geographical area, as you would see in real world operations.



## Realistic scenarios

Unfortunately, the USS Bonhomme Richard suffered a severe mechanical breakdown in its propulsion system, that forced the Bonhomme Richard to return to the port of Pearl Harbor in the middle of the second phase of the exercise. Some of the operations and tasks that the Bonhomme Richard should have conducted during the exercise was moved to the Australian amphibious assault ship L-01 HMAS Adelaide, which is a similar type of ship.

It was not only the Australian ship who covered for the Bonhomme Richard, where multiple other ships took in aircraft, amphibious vehicles or personal, originally planned to be hosted on the Bonhomme Richard. This was a scenario that could as easily have happened during real world operations, showing that RIMPAC is a true multinational and readiness exercise, where operations might not go as planned, but the entire force then adapts to the new situation.

This, as well as already planned co-nation operations, gave the different nations a unique opportunity, as the Operations Officer with Marine Heavy Helicopter Squadron 463 (HMH-463), Major Gerrid Gall, illustrates: *"Partner nations participating in RIMPAC provide the USMC with unique opportunities to integrate flight operations. The Australian HMAS Adelaide provided day and night deck-landing qualification opportunities for multiple Type/Model/Series USMC aircraft, as well as follow-on troop loading operations, during this exercise. This ability to share respective tactics, techniques, and procedures with allied and partner nations enables us to develop common and best practices that will, ultimately, make us a better force individually and collectively. Moreover, the confidence and experience gained by our crews, operating on a foreign vessel provides our unit with an instructor base for future endeavors."*

Marine Aircraft Group 24 Future Operations Officer Major Robert Monroe, who served in the Marine Air-Ground Task Force Hawaii (MAGTF-HI) Air Planning Cell for RIMPAC, adds: *"Interoperability between the forces of participating nations is a huge part of RIMPAC. MAGTF-HI aircraft landed on the HMAS Adelaide and carried personnel from several different nations. This training will allow us to better work together in future exercises and a whole range of operational missions. It's always beneficial to everyone involved when we can train together and learn different techniques and procedures."*

## Realism in simulation

Although RIMPAC is a naval exercise, the aviation part of the exercise is a very important piece to everything that's going on throughout the exercise. The realism of the simulations throughout the exercise are close to real-world scenarios as Maj Gerrid Gall explains: *"Aviation has been a critical part of naval operations for over 100 years and continues to be an integral part of military actions afloat and ashore to this day. This is especially true with events and efforts throughout RIMPAC. Whether conducting logistics support missions to ships out at sea, or inserting forces in a simulated raid to an objective 150 nautical miles away, Marine aviation provides the commander with a capability for varied and far-reaching actions across the range of military operations."*

*The various RIMPAC events simulated missions and environments in which Marine Corps units may very well find themselves in throughout the world- conducting recovery operations inside a nation that may not be friendly or stable with aviation providing over watch and conducting the recovery, or higher-intensity assault operations, where mechanized ground forces are complemented by aviation delivered fire support."*

Maj Robert Monroe continues: *"The F/A-18s of VMFA-533 participated in the 'War at Sea' in conjunction with the Navy, and HMH-463 provided support for distinguished visitors, but for the most part, MAGTF-HI aviation flew in support of the U.S. Marines and their partners on the ground. We dropped thousands of rounds of live ammunition in support of Joint Terminal Aircraft Controller training for Marines, Airmen and foreign partners, and transported hundreds of passengers and thousands of pounds of gear between ships and islands."*

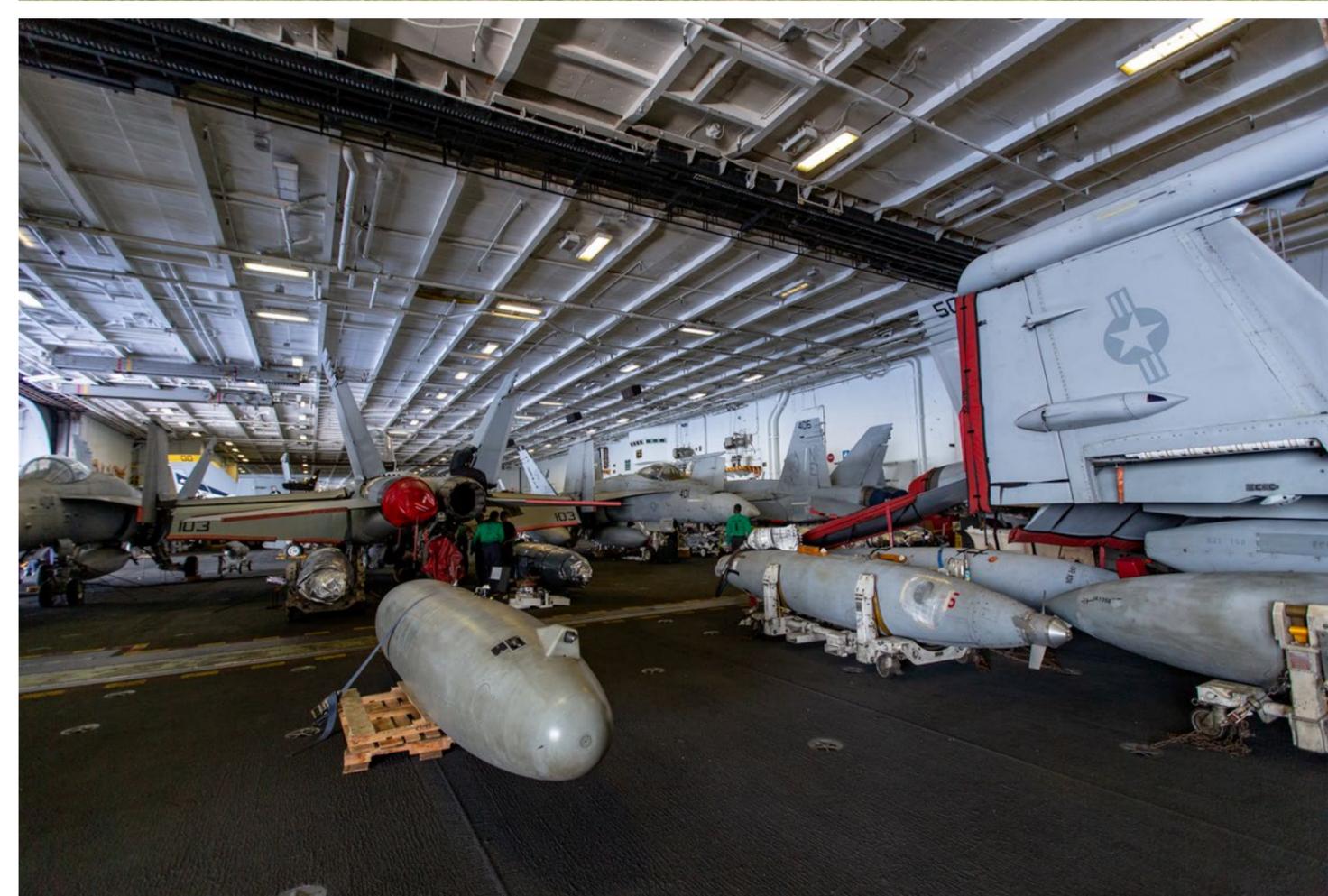
## The important mission

RIMPAC is not only about completing the missions within the exercise, but as much as building relationships, both as a unit, but also personal relationships, and getting to know the one in the other end, as well as expanding capabilities by working close together with other nations, as Maj Robert Monroe explains: *"Although MAGTF-HI worked with numerous nations, I personally interacted with the Australian Navy. Those officers and sailors exemplified professionalism, and their openness and friendly demeanors created an enjoyable atmosphere in which to work. Their support for our air operations enhanced the training of our aircrews and built a strong relationship which will be valuable in future exercises and operations."*

Maj Gerrid Gall continues: *"Exercises like RIMPAC offer great opportunities for USMC forces to work with nations we may not necessarily encounter when deployed otherwise. Literally being side-by-side during planning and execution phases of an operation enables us to level-set all participants. We can compare different viewpoints or theories behind our respective methods, which provides us an ability to develop a common ground as we move towards more complex and integrated events and operations."*

*Just like forming a new sports team, meeting and working together through the basics to develop and refine base standards is essential to larger-scale success. RIMPAC provides us the training grounds, construct, and opportunities to hone those common skills to enable opportunities for continued and more integrated learning."*







## The phases of the exercise

The exercise is split into three phases, known as the crawl-, walk- and run-phases. A couple of weeks prior to the exercise, sees the arrival of all the ships to Pearl Harbor, together with the sailors, ground forces, and aviators. This is where the crawl-phase of RIMPAC starts, also known as the 'Get to know your neighbor'/'Harbor'-phase, as this phase is not an active part of the exercise, but more of a social gathering to get to know the different participating countries, as well as their ships, sailors, aviators etc.

The ships then set sail for the Pacific Ocean, marking the start of the walk-phase, known as the 'Force Integration Training'. This part of the exercise is the first active part. The phase is split into multiple smaller exercises, such as amphibious assaults where a combined force would assault a beach, seeing marines and amphibious vehicles from USMC embark the Australian amphibious assault ship HMAS Adelaide, as well as US Navy helicopters, together with Australian helicopters, landing vessels and soldiers was a part of a joint force in the amphibious assault on the beach. Making this operation a success in joint operations, utilizing each nations capability and joining these capabilities into one united force.

The walk-phase included a Humanitarian Assist / Disaster Relief (HADR) exercise, again seeing a joint force undertaking this exercise, with Japanese MH-60's and US Navy MH-60 extracting wounded civilians to different ships, including the Australian HMAS Adelaide.

SINTEX, an exercise with the objective of sinking a decommissioned ship, is a repeating event during RIMPAC. This year's edition saw two such exercises, where the first one included the Royal Australian Air Force's (RAAF) P-8A firing the ATM-84J Harpoon missile for the first time. The participation of the P-8A was a major step for the RAAF as Flight Lieutenant Angus Wheeler, P-8A pilot of the RAAF explains: "Being here on exercise RIMPAC, and firing the ATM-84 Harpoon takes us one step closer to full operational capability of the P-8 Poseidon", Group Captain Darren Goldie continues: "With twenty-five nations participating, the opportunity to fire the Harpoon in conjunction with the United States Navy and other coalition partners, really provides us with a real wargame style scenario."

## Crawl, walk, run

The Force Integration Phase involved a structured and detailed training program, that developed the skills of the units that participated. It was aimed at enabling participants to operate at the task force level, that exercised each nation's ability to operate in a robust command and control setting with other nations. Besides the structured and detailed training program this phase also included a variety of live training at sea, underwater, on the ground, and in the air.

The third and final phase of RIMPAC was the run-phase, also known as the 'Free play'-phase, where the different commanders of the assets needed to work together to fight unknown enemies, on a large force scale.

Maj Gerrid Gall illustrates how the different phases worked for HMH-463: "The Harbor, Force Integration Training (FIT), and Scenario Free play phases enable the operational units to methodically complete a crawl, walk, run approach to training. The earlier Harbor Phase provided the Aviation Combat Element (ACE) of the MAGTF with critical meetings to foster relationships and set groundwork for follow-on flight operations through various planning events, as well as familiarization flights.

The FIT Phase allows us to take the next step and conduct aviation delivered fires in a Joint and Partnered environment. This Phase also provided us our first opportunity to conduct day and night landing qualifications on the HMAS Adelaide. Working with naval partners throughout the Pacific, like the Australians, is absolutely critical. It's a completely realistic scenario in which we may find ourselves having to rely on the Aussies for sea-based operations.

The final operational event was an Amphibious Assault onto MCBH- Kaneohe Bay, using partner ships, mechanized units, ground troops in concert with USMC fixed- and rotary-wing aircraft within a three-hour period. This complex assault can only be safely accomplished with the groundwork that was set in the planning and earlier execution stages."



## The large scale scenarios

The Free Play Phase tested the military unit skills during large scale scenarios. Component commanders and subordinate units responded to scenarios that become more and more intense. These included realistic situations that nations could face in the Pacific Rim, as a result, military units and members that took part experienced challenging, full-spectrum operations. These operations covered surface, submarine, air, and land threats.

Capt Greg Newkirk ends: *“An air wing can operate independently only up to a certain point. The utility and lethality of an air wing hinges on the support of other services, other disciplines and certainly other nations. Coordinating with, planning side by side with, and executing with partner nations creates interoperability synapses and muscle memory that cannot be replicated in any other exercise on such a grand scale. We most often operate in combat or in other contingency operations in a coalition. The more we learn from our partners, the more effective we will be and the more effective the Pacific theater will be.”*

For CVW-2, RIMPAC is an opportunity to contribute directly to the maturation of the Pacific theater -- not just for the US Navy and the US Joint Force, but for the participant nations as well. We've done so while training to our own readiness needs and refining our own sharp edges to maintain proficiency in this area of responsibility.”

Maj Gerrid Gall concludes: *“Critical sea-based training opportunities can only be attained during exercises such as RIMPAC. Landing on ships capable of facilitating USMC aircraft, conducting mission planning and execution along with partner nations is a huge win for MAGTF-HI and the Marine Corps in the Pacific.”*

The author would like to thank Capt Eric Abrams, LTJG Kristina Wiedemann, LCDR Tim Hawkins and the entire RIMPAC media team for making this article possible.



# 100 YEARS OF THE POLISH AIR FORCE

TEXT & PHOTOS - SŁAWEK HESJA KRAJNIEWSKI

This year, the Polish Air Force will celebrate its 100th anniversary as part of the national centenary of independence. Yet on that distant day, 11 November 1918, some Polish aviation units had already been formed and become active.



*A pair of CASE C-295M with the rays from the sun shining down on the country side.  
Photo by Sławek hesja Krajniewski*

## 100th of the Polish Air Force

This year, the Polish Air Force will celebrate its 100th anniversary as part of the national centenary of independence. Yet on that distant day, 11 November 1918, some Polish aviation units had already been formed and become active. The first combat sortie was flown on 5 November 1918, as Lieutenant Stefan Bastyr and Flight Observer Janusz de Beaurain took off from the Lewandówka airfield in the southeastern city of Lwów.

Within less than a month, the white-and-red chequerboard, borrowed from the personal coat of arms of another pilot, Lieutenant Stefan Stec, would become the identification sign of Polish military aircraft and would endure in that role to this day. Polish pilots flew this symbol in nearly all theatres of World War II and then in peacetime, their achievements invariably bringing pride, respect and inspiration to generations of Poles.

Today, nearly 30 years after the fall of the communism, the Polish Air Force is flying a mix of tried and tested indigenous designs, some fearsome aircraft dating back to the Soviet Union and an ever expanding fleet of state-of-the-art western-built aircraft.

After a long history of top-notch pilots having to fly less-than adequate technology, this is the first time that the Polish Air Force has met the highest worldwide quality standards, which it often confirms in international exercises and combat missions.







### Centenary

On the 100th anniversary of the PLAF, an idea from a handful of aviation enthusiasts inspired the General Command of Armed Services to launch an unprecedented photographic project. The aim was to photograph all aircraft types in Polish service air-to-air against typical Polish landscapes. I had the honour to be invited to be part of a group of select photographers tasked with the job. The photos that resulted from the project offer the best possible illustration of Polish Military Aviation on its centenary.

### TS-11 ISKRA

The TS-11 Iskra (Spark) is a Polish designed and built two-seat tandem jet trainer. Polish pilots have been training on it since 1961. The Iskras fly from their 41st Air Training Base in Dęblin. The TS-11s are also flown by the PLAF "Iskierki" Aerobatic Team.

### C-130E HERCULES

The C-130E Hercules is the largest airlifter serving with the PLAF. Since 2009, these aircraft have been supporting Polish soldiers in military, humanitarian and exercise missions worldwide. They are based at 33rd Air Transport Base in Powidz.

### PZL-130 TC-II ORLIK

The PZL-130 TC-II Orlik is a Polish designed turboprop covering basic to advanced training phases. It has been in service since 1994 and is based at the 42nd Air Training Base in Radom. The PZL-130 TC-II Orlik is flown by the "Orlik" Aerobatic Team.

### SW-4 PUSZCZYK

The SW-4 Puszczyc is a Polish designed light helicopter used for basic to advanced training, utility transport, liaison and reconnaissance missions. The SW-4 has been in service since 2006 and is stationed at the 41st Dęblin Air Training Base.

### W-3 SOKÓŁ

The W-3 Sokół is a multi-role helicopter of Polish design. Its numerous guises have been used by the Polish Military Forces since the early 1990s. The Sokół is primarily used for utility transport and rescue missions. They have also proven themselves in combat conditions.

### CASA C-295M

The CASA C-295M is a new-generation multi-role, robust and reliable airlifter. More than just cutting a beautiful silhouette in the sky it has proven its worth many times during missions, including risky international environments. In service since 2004, the C-295M is stationed at the 8th Air Transport Base in Krakow.

### M-28 BRYZA

The Polish Navy has four variants of the M-28 Bryza. The turboprop is used for reconnaissance, target cueing and SAR missions. The Bryza joined the force in 1994 and has been based at the 43rd Navy Air Base in Gdynia and at the 44th Navy Air Base in Siemrowice.

### Mi-24

The Hockey, a nickname by which the Mi-24 is known to pilots and enthusiasts, has been with the Polish Army for more than 30 years. Its core task is close air support missions, which they normally fly from the 56th Air Base in Inowrocław and the 49th Air Base in Pruszcz Gdański.

### F-16 Block 52+ Fighting Falcon

This multi-role F-16 fighter is the pride of the Polish Air Force. This ruthlessly efficient and immensely popular design used worldwide entered Polish service in 2006 in the then-latest version Block 52+ Advanced. The "Vipers" are based at 31st Tactical AFB at Krzesiny and at 32nd Tactical AFB at Łask.

### MiG-29 Fulcrum

The MiG-29 continues to be a formidable opponent, as well as an unquestionable beauty. It is very popular and appreciated by pilots. MiG-29s have been guarding Polish skies since 1989 flying from two Tactical AFBs: No. 22 in Malbork and No. 23 in Mińsk Mazowiecki.

### Su-22M4 / Su-22UM3K

The Su-22 remains in intensive use as a workhorse of Polish AF bases. It is famous for its classic, monster-like posture and an exceptional afterburning roar. The Su-22s have been in service since 1984 and are stationed at the Tactical AFB Świdwin.



# CROATIA'S NEW KIOWA WARRIORS

TEXT & PHOTOS - DIRK JAN DE RIDDER AND MENS0 VAN WESTRHENEN

Dirk Jan de Ridder and Menso van Westrhenen visited the Croatian Air Force's Kiowa Warrior squadron to find out how they reached Initial Operational Capability on the OH-58D Kiowa Warrior, less than a year after receiving them.



An armed Kiowa Warrior going low in Croatia.  
Photo by the authors

## Croatia's new Kiowa Warriors

Croatia has reached Initial Operational Capability on the OH-58D Kiowa Warrior, less than a year after receiving them as part of the Excess Defense Articles program. Dirk Jan de Ridder and Menso van Westrhenen visited the Croatian Air Force's Kiowa Warrior squadron to find out how they did it in such a short time.

In February 2016, Croatia became the second country after Tunisia to acquire excess Kiowa Warriors from the US Army, shortly followed by Greece. All helicopters, comprising 16 OH-58Ds plus an instructional airframe, were delivered to Zadar-Zemunik air base during that same year.

It took a few months for American instructors to arrive, so in April they started performing trial flights with the helicopters, each time accompanied by a Croatian pilot. The five American instructor pilots then trained eight Croatian pilots according to the 'train the trainers' principle.

The Kiowa Warriors are flown by pilots of the Eskadrila Helicoptera (EH, Helicopter Squadron) at Zadar-Zemunik. Although the Kiowa production line ceased in 1989, the helicopters are in a perfect state due to their recent overhaul and upgrade. Some of the airframes were even manufactured with brand new cabins.

Lieutenant Colonel Krešimir Ražov, squadron commander with nearly 3,000 hours on the Bell 206 and among the first eight pilots to fly the OH-58D, explains: "In 2010 they went through the so-called Wartime Replacement Aircraft program. This covered 49 helicopters, 23 of which were cabin conversion A2D models [OH-58A to OH-58D] and 26 were 'new metal' aircraft. Between 2012 and 2014, they started to fly as rebuilt helicopters with new serial numbers and zero flying hours."

The KWs [Kiowa Warriors] we received at the end of 2016 had between 120 to 550 hours, so we consider them new helicopters. They were in a very good shape."

## The armed Kiowa

The squadron has operated the Bell 206B in the training role for many years, so conversion to the OH-58D, which is based on the Bell 206 airframe, may not seem extremely complicated. That proved different. Lieutenant Colonel Ražov: "We were expecting the conversion training to be relatively easy. Eight of our most experienced instructor pilots started the training and we were surprised. It takes a few hours to get accustomed with the Kiowa Warrior. For example, we didn't expect it to be more maneuverable than the Bell 206. Another thing that was new for us was the glass cockpit. All this new and sophisticated equipment was demanding for us, so we needed some 75 hours of type rating on this helicopter. It takes time to start processing the information and then be concentrated on the flying. After these 75 hours of type rating, the training was oriented around mission tactics as a scout weapon team [SWT] during day and night."

The Kiowa Warrior is the armed version of the OH-58 Kiowa. It was designed for close combat aerial reconnaissance, intelligence gathering, surveillance and target acquisition. In Croatia, the KW will be used in a variety of roles, including anti-armour combat, close air support, very close air support, convoy escort and protection, as well as acting as an airborne C2 (Command and Control) platform. The helicopters can also determine the distance and direction to an intended target and hand it over to field artillery for engagement. Depending on the mission, the KW can be armed with any combination of .50 caliber machine guns, AGM-114 Hellfire air-to-surface missiles or Hydra 70mm rockets, with one type of armament on a weapons pylon on each side of the airframe. Ground crew can re-arm or change the type of armament in a matter of minutes.







## Firing training

The Mast-Mounted Sight (MMS) is part of the standard equipment of the helicopter. It has a gyro-stabilized platform containing a television system, a thermal imaging system, and a laser range finder/designator offering the ability to search, detect, identify, track, locate, and designate ground targets in both day and night environments.

Lieutenant Colonel Ražov details the tactical use of the MMS: *“It can function on the move and while in a hover and it allows us to remain hidden behind trees or terrain, as we recently demonstrated for the first time during joint exercises with Croatian Army ground forces. We can designate a target, so that another KW, aircraft or UAV can attack it. We train for it a lot with Hellfires, in which case we call it Remote Hellfire Shots.”*

In August 2017 the pilots carried out their first firing training under the watchful eye of an American team of evaluators. It was the first time any of the pilots had fired anything from a helicopter and it marked the completion of their conversion training.

It was a true highlight in their careers, as Lieutenant Colonel Ražov explains: *“We qualified as independent Croatian crews using the .50 caliber machine gun, Hydra 70mm rockets and [simulated] Hellfire missiles with all the required manoeuvres and techniques. For us, the first live firing with the gun and rockets was amazing. First with the [American] instructors, then with the Croatian crews by day and night. After that, the final part was the instructor pilot course, in order for us to be able to train others, and the maintenance test pilot course for four of our pilots.”*



## The multi-role helicopter

Only the Hellfire air-to-surface missile has not been launched for real yet, for obvious reasons. Lieutenant Colonel Ražov: *“You have to consider that it is a very expensive missile, costing over 100,000 US dollars. We flew a lot of Hellfire missions, but we have not shot any live Hellfires yet. The Hellfires we have right now are only for training purposes, but the procedure of really firing one and simulating it is exactly the same.”*

*Everything is recorded in the software, so you can see whether you are doing it right. With all the preparation, the lock-on before launch and lock-on after launch, launching a Hellfire missile is very challenging. Crew coordination is vital. When we start the live firing [with the Hellfire], the only difference will be the smoke that we see. We will receive them very soon and we will launch them.”*

He continues: *“The Kiowa Warrior is a multi-role helicopter that requires two pilots to conduct missions. Without two pilots you can not do it, especially not in the night environment. It takes a lot of coordination to do the job right. The crew consists of a pilot and a weapon systems operator, but the weapon systems operator is also a pilot. That is crucial.”*

*Both the right seat and the left seat are capable to do the same things. As a team we normally fly with two helicopters, so there are four pilots and one of them is the air mission commander, who puts the others in position. It was very demanding to get qualified with all the procedures and requirements of the qualifying sheets.”*





*A Kiowa Warrior high, and a Kiowa Warrior low.  
Photo by the authors*

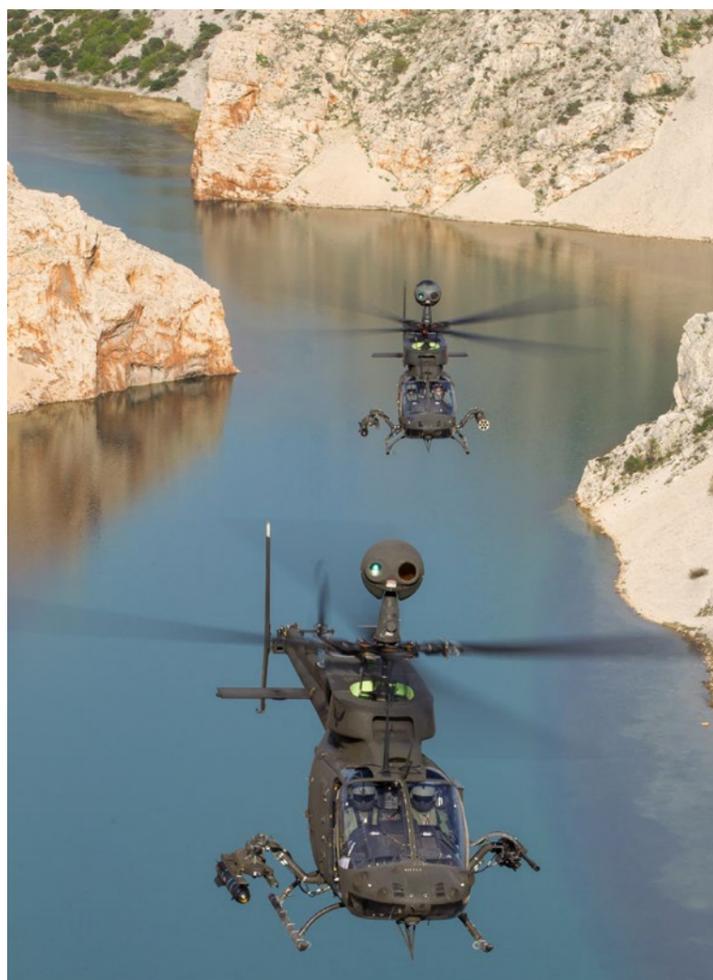
## Soon Full Operational Capability

The first group of Croatian pilots and mechanics completed their entire training in December 2017, totalling more than 1,000 flying hours over seven months and the squadron achieved Initial Operational Capability (IOC).

The American instructors had accomplished their job and returned home. Lieutenant Colonel Ražov: *“Training with the Americans has brought our capabilities to a very high level. They were very open in what they were expecting from us, they put us in all kinds of situations and they gave us everything they had. We are grateful for that. As pilots, we wanted the American instructors to stay, but the contract was for them to just ‘train the trainers’. They have a lot of combat experience and you cannot learn from that experience by reading. Being in the air and hearing from them why they do something and why they make certain decisions was invaluable.”*

In February 2018, a second group of pilots began flying training under the supervision of the Croatian instructors and a third group will be trained at the end of the year, according to Lieutenant Colonel Ražov: *“The next step is to achieve Full Operational Capability [FOC]. Our instructors are fully capable, but we need to train more pilots to achieve Full Operational Capability. We are very satisfied with how we are developing our mission-specific capabilities, so we expect the squadron to reach FOC by the end of this year.”* Current students and instructors on the Kiowa Warrior remain instructor pilots on the Bell 206. The plan is for all pilots to continue to fly both helicopter types. During the current transformation that is challenging, but next year when the squadron is fully operational things will settle down.

What the squadron has achieved in such a short time is a massive accomplishment, especially considering the fact that the Croatian Air Force hasn't operated any attack helicopters in over twelve years. Its last Mi-24 Hinds were withdrawn from use in 2005. Lieutenant Colonel Ražov concludes: *“I never expected to be in this position within a year. We are conducting our training and we are now approaching the next gunnery training [for the next group of pilots]. We are providing them with full combat training and we are extremely happy to build up our capabilities to this high level.”*



# DUTCHIES IN THE COPPER STATE

TEXT & PHOTOS - NIELS ROMAN, ROBIN COENDERS & RON KELLENAERS

The Arizona Air National Guard's 148th Fighter Squadron is a Dutch detachment which belongs to the 162nd Fighter Wing, stationed in Tucson, Arizona to provide F-16 Operational Conversion Training for the Royal Netherlands Air Force (RNLAf) new and current pilots.



A Dutch F-16 on it's way in Arizona.  
Photo by Ron Kellenaers

## Dutchies in the Copper State

The Arizona Air National Guard's 148th Fighter Squadron is a Dutch detachment which belongs to the 162nd Fighter Wing, stationed in Tucson, Arizona to provide F-16 Operational Conversion Training for the Royal Netherlands Air Force (RNLAf) new and current pilots.

Dutch pilots were the first in a long line of international students to ever train with the 162nd Fighter Wing (FW). Starting in 1989, they were a common sight among the Arizona Air National Guard (AZ ANG) unit for 18 years until the detachment moved to Springfield, Ohio, for a five-year agreement to train with the Ohio Air National Guard's 178th FW. A new contract with the RNLAf was signed in 2010 after which the Royal Netherlands Air Force moved their F-16 pilot training from Springfield, Ohio back to the 148th Fighter Squadron (FS) at Tucson.

The 162nd FW is stationed opposite to the commercial terminal at Tucson International Airport. On a daily basis US, Iraqi and Dutch F-16s are being launched into the sunny skies above Arizona. This particular area is great for flying fighter jets. It's situated in the Sonoran desert, surrounded by five small mountain ranges.

Due to the desert climate the weather conditions are extremely good which provides the best possible training opportunities for the pilots compared to the Netherlands which is a country that boasts a typical maritime climate with mild summers and cold winters. Wind and rain are common throughout most of the year.





A row of Dutch 'Vipers' in the sun shelters, hiding from the sun in Arizona. Photo by Niels Roman



### Kicking Ass

The 148th FS “Kicking Ass” is equipped with 10 General Dynamics F-16 Fighting Falcons; five single-seat versions, the F-16AM and five twin-seat versions, the F-16BM. All these F-16s are owned and operated by the RNLAf.

If you compare these jets with the ones from the operational squadrons in Volkel and Leeuwarden you will see no difference. The hardware and software is of the same standard, due to this the aircraft can be swapped easily from an operational squadron to the 148th FS. Maintenance on the jets is performed by US personnel from the Arizona Air National Guard. They work according to Dutch regulations and requirements and are tested every year by the Militaire Luchtvaart Autoriteit (Dutch Military Aviation Authority).

Normally each course consists of 4 Dutch students which are based in Tucson for 9 months of training on the F-16. The trainees are transferred from Sheppard where they were flying the T-6 Texan and T-38 Talon with the Euro-NATO Joint Jet Pilot Training Program.

### Coming from Sheppard

The Detachment Commander of the 148th FS, Lieutenant Colonel ‘Niki’ Luijsterburg adds: “All the students are qualified to fly jets, but now they will make their first steps on to the F-16, which is a weapon platform. In Sheppard they just had to fly the plane, but from now on they have to deal with a lot of complex systems and huge amounts of information as well.”

The 148th FS makes use of eight Instructor Pilots, five of them are from the Royal Netherlands Air Force and the other three are American instructors. The course syllabus is split up in three phases. Before the students can start their actual training they first spend four to five weeks in classrooms and simulators.

It starts with a lot of academics to gain knowledge of the F-16. Most academics are focussed on gaining knowledge of the various aircraft systems, like the hydraulic and electric systems. Besides the academics they also spend time in the simulator to learn the basics on how to fly and operate the F-16.



## New sorties

These fundamentals are followed by tactical topics that cover operating the aircraft's avionics and employing the F-16 as a weapon system. After ground training, students fly the F-16 for the first time in transition training (phase 1).

One of the main differences between their basic flying training in Sheppard and the training in Tucson is that during their basic flying training students are able to repeat certain expects which they weren't able to succeed at first. With the 148th FS the students have to progress every sortie.

Every sortie they have to learn and successfully complete something new. This makes the training very demanding. Students fly their first four sorties from the front seat of a two-seat F-16 with an instructor pilot in the back seat after which their first solo is planned for the fifth sortie. From then on a lot of their sorties during the remainder of their training are flown solo.

Transition Training covers takeoffs, landings, and instrument flying. Transition Training is followed by phase 2; this is the Air-to-Air (A2A) phase, which involves Basic Fighter Manoeuvres. Students fly against a single aerial adversary from offensive, defensive, and high-aspect, or head-on, positions (dogfighting).

Followed by Air Combat Manoeuvring in which students fly as wingmen in a two-ship formation against a single adversary (2V1). Tactical Intercept is the last item on the list before students are ready to start with Air-to-Ground training (phase 3).

This last phase of the training involves Air-to-Ground (A2G) missions in which students start with surface attack missions of increasing difficulty. They begin by dropping unguided bombs (like the MK 82/84) and advance to using targeting pods to direct guided munitions. Close Air Support training flights are also in this program. All flights in these series (A2A and A2G) are also conducted at night. Day and night Air to Air refuelling is part of the syllabus and students practice this skill throughout the 9 months.

## Going back to the Netherlands

After completing the Air-to-Air and Air-to-Ground phase the students are limited combat ready and are sent back to the Netherlands where they will be assigned to an operational Squadron; either 312 Squadron or 313 Squadron which are based in Volkel or 322 Squadron which is based in Leeuwarden.

Back in the Netherlands the new pilots will start their Mission Qualification Training (MQT) in which they learn to the F-16 in a different environment. Not only the weather, but also the airspace is different. It's much smaller and busier than they are used to back in Arizona. The MQT lasts for a few months. In this phase a couple of scenarios from Tucson will be repeated and the pilots will be trained in 4 ship tactics. By completing this training the pilots are ready for their duty and can be sent anywhere around the world to fly missions against all enemies.

The 148th FS is a busy squadron. They not only train new students but they also support the Operational Test and Evaluation unit requirements for new ordnance and sensors by providing airframes to complete the test and evaluation. The 148th FS also provides Transition/Requalification Training courses for exchange pilots and pilots who lost their currency (theory and practice).

Next to these tasks every two weeks, four operational pilots from the Netherlands are sent to Tucson for training. Lt Col 'Niki' Luijsterburg further adds: *"They get the same training as in the Netherlands, but here they can fly in a different airspace and environment. Also there are more low flying possibilities over here and they can make use of unique ranges that are situated in this area."*

The detachment at Tucson will remain there for at least five more years, as Lt Col 'Niki' Luijsterburg explains: *"Tucson will be operational for the Royal Netherlands Air Force till the summer of 2022, which is three years before the F-16 will be retired (2025). Till this period new and current Dutch F-16 fighter pilots will be trained by us."*

The author would like to thank 'Niki', the students and all the personnel of the 148th FS for their support in creating this article.



# CENTENNIAL AZERBAIJANI AIR FORCE

TEXT & PHOTOS - CARLO KUIT & PAUL KIEVIT

This year marks the 100th Anniversary of both the Azerbaijani Air Force (Azərbaycan Hərbi Hava Qüvvələri) and the Azerbaijan Democratic Republic. Carlo Kuit & Paul Kievit reports from Azerbaijan.



*A MiG-29 taxis back, with a beautiful backdrop.*

*Photo by the authors*

## Centennial Azerbaijani Air Force

This year marks the 100th Anniversary of both the Azerbaijani Air Force (Azərbaycan Hərbi Hava Qüvvələri) and the Azerbaijan Democratic Republic. The Azerbaijan Armed Forces that include Air Force was established on the 26th of June 1918. In April 1920 Azerbaijan came under control of the Union of Soviet Socialist Republic (USSR) this included its armed forces till 1991.

Azerbaijan is known as 'The Land of Flames' and regained its independence after the breakup of the Soviet Union in 1991. The Azerbaijan Armed Forces were re-established on the 9th of October 1992. Today the Azerbaijan Air and Air Defense Forces are the largest in the Caucasus region with the Air Force having about 8.000 personnel of a total of almost 70.000 personnel in the total Armed Forces.

The main Fighter base of the Azerbaijan Air Force is located at Tagiyev (also known as Nasosnaya) Air Base. It is a former Russian Air Base which is undergoing a lot of modernization at this time. Tagiyev houses the sole squadron of MiG-29C's and MiG-29UB's which have been in service since 2007.

The airbase is located North-West of the Capital Baku, near the town of Sumqayit. Before operations started here with the MiG-29's, the unit was operating a mixture of MiG-25PD/PU/RB's which were withdrawn from use in 2006. The resident Su-24 fleet was withdrawn during 2010 with three derelict airframes remaining on base.

The specialized Repair Factory for MiG-25's, part of Tagiyev Airbase, has seen aircraft from Iraq, Libya, and Algeria for maintenance well into the last decade. Nowadays only the Air Force MiG-29's are undergoing repairs at the plant not being a commercial factory for foreign countries anymore.

Recently Tagiyev Air Base has undergone an extensive upgrade to both the HQ facilities and the runway. With support of the United States, new runway lightings have been installed. Also the ILS/DME and VOR capable to support operations is installed with this support.





### Training the Fulcrum-drivers

“The sole MiG-29 unit has no specific designation or name within our Air Force, we are just known as the Fulcrum unit” according to Base Commander Col. Rustamov Zaur. “We have the MiG-29’s in service since 2007 when they were procured from Ukraine and were overhauled in the Ukraine before delivery”.

In total about 17 MiG-29’s are believed to be in service, fifteen MiG-29C’s and two MiG-29UB’s of which three are currently undergoing a 3000 hour check at the Lviv Repair Plant in Ukraine. Approximately twenty-six pilots are on strength with the unit. “We fly approximately 60 hours a year, our way of counting flight hours is a bit different as we only note down actual time in the air without mission preparation, taxiing and landing” according to the Lt. Col. Ibrahim Haziyeu the MiG-29 Squadron Commander.

“Student pilots who are in their third year at the Air Force Academy in Baku start with flight training, approximately 10 to 20 hours at Baku Kala Air Base with the Mi-17-1V. After graduation, selected MiG-29 pilots will join the Air Force Training School which is located at Kurdamir Air Base for fixed wing training. The Training School is sharing facilities with the small Su-25 ‘Frogfoot’ fleet.

Student pilots have to be trained and fly around 150 hours on the L-39” according to Lt Col Ibrahim Haziyeu.

When the training is finalized at Kurdamir, new pilots (rank of captain) will either join the local Su-25 unit or join the MiG-29 unit at Tagiyev. “New graduated pilots will complete a forty-five day Academic Training as preparation on their first Fulcrum flight” explains Lt. Col. Haziyeu.

“After these forty-five day, there will be some additional training and a test to check capabilities. When we are satisfied the new pilots will have around 10 to 15 hours on the MiG-29 simulator which we acquired some years ago. Present two simulators are available, one for MiG-29 pilots and one for Su-25 pilots training. All MiG and Sukhoi pilots are required to have a number of simulator hours a year. It is a bit depending on availability how many hours can be logged by any one pilot on the simulator” according to the head of the Simulator Centre, Major Rustam Cafarov.



## Air Defense and Ground Support

*“In parallel with the simulator training about ten to twenty sorties, depending on student needs, are flown on the MiG-29UB before the new MiG pilot will have his first solo flight on the Fulcrum” concludes the Lt. Colonel.*

The solo flight is just basic flying. An additional three to four months, up to a year, is required to become a fully operational pilot with the squadron. Training for night flying and ground missions will take an additional two years of training. Currently conversion and operational training is conducted within the MiG-29 unit. *“It puts a lot of pressure on the squadron to have training in parallel of operational missions”* according to one of the instructor pilots.

This situation will change in the near future with opening a new dedicated Air Force Training School.

*“Air Defense and Ground Support are the most important tasks for our unit”* continues the Base Commander. *“We mostly train for Air Interception and have each day up to three MiG-29s on scramble alert. As an example in 2016 we had sixteen actual scrambles, mostly in the conflict region. We have the MiG-29 airborne within six minutes when required. We can also work together with the Su-25’s, we are then tasked as Combat Air Patrol. As most of the training exercises are held within Air Force, international cooperation has become more important over the last few years”* concludes Commander Col. Rustamov.

Turkey and Azerbaijan have a strong cooperation dating back to 1992 when an agreement was signed on military education. Ever since both countries have been closely cooperating in both Defense and Security. The Azerbaijan and Turkish Armed Forces have regular exercises. Most known is annual exercise “TurAz Şahini” (TurAZ) in which Azerbaijan MiG-29s, Su-25s and Mi-17-1s are practicing with Turkish Air Force units operating out of Konya Air Base in Central Turkey. The latest edition took place during September 2017 at Tagiyev in Azerbaijan.

## The relationship with Turkey

The TurAz exercise helps to improve interoperability and exchange of experience between the Azerbaijan and the Turkish Air Forces. Through years of joint exercises with Turkey, Azerbaijan has been updating its combat readiness tactics as well as adapting its airbases to standards, such landing-departure methods and instrument landing systems (ILS).

Azerbaijan pilots are mainly trained at the Azerbaijan High Military Aviation School. Some also attend courses at the Air Force Academy in Turkey and have had initial flight training at Cigli Air Base. *“The ultimate goal is to prepare and join the international exercise ‘Anatolian Eagle’ which is held yearly in Turkey (latest edition 2016)”* Col Rustamov explains. Currently two MiG-29 pilots are training with the Pakistani Air Force to gain experience with the JF-17 fighter.

*“First results are that the JF-17 is comparable to our MiG-29C and therefore we are reviewing what the next steps will be to acquire a new fighter aircraft”* adds the Base Commander.

The largest contingent of aviation assets is located at Kala (Qala) Air Base, which has undergone some reconstructions with a new large hangar area for maintenance and storage of helicopters. This new facility was officially opened in March 2018 as part of further modernizations within the Azerbaijan Air Force. The majority of the helicopter force consists of a number of ‘Hind’ variants: Mi-24V/ P, Mi-35M and Mi-24G ‘Super Hinds’.







### A mix of helicopters

The fleet of Mi-17-1V 'Hip-H' doubles, as light attack and assault platforms next to the more common tasks of troop transport. For this purpose the Mi-17-1V's can be equipped with a variety of weapon systems: the 'Lahat' (Skybow) an advanced light weight laser homing missile which is highly effective against a variety of target types, including ground targets, ships and helicopters at ranges up to 8 km.

The 'Lahat' can hit static or moving targets, including moving helicopters with pinpoint accuracy. It is built by IAI, Israel and in use with the Azerbaijan Air Force for two years and was supported by Elbit during its introduction. Azerbaijan has been the first export customer for this system. It is solely used by the Mi-17-1's unlike the 'Baryer' system which can be interchanged between the Mi-17-1 and Mi-24V fleet. Simultaneously with the introduction of the 'Lahat' the long range missile system 'Spike' ER has been introduced within the Azerbaijan Armed Forces, the weapon system can also be used on the Mi-17-1.

Recently, in March 2018, a fifth squadron (Special Operations) became operational with the Bell-412 helicopters. A total of three of this type were acquired in 2016 from Canada sources stated. "In January 2018 a number of pilots was trained over a two-month period in a "train-the-trainer" concept. Besides the three Bell-412s also a Bell-401 and MD-530 were acquired, all sporting black colors. "Both types are currently not operational as pilots have not been trained yet" according to Major Zaur Agayev one of the pilots of the Special Operations Squadron.

### Upgrading the Hind

Major Agayev graduated from the Turkish Air Force Academy and will be one of the instructor pilots within the fifth squadron. Currently one pilot is already in Pakistan to become an Instructor Pilot for the Bell-412.

The Mi-24V fleet was upgraded in the second quarter of 2003. Currently about nine Mi-24Vs are operational with Second squadron, an additional nine were upgraded in 2013 to Mi-24G 'Super Hind' standard (Gecə) which stands for "night". The upgrade program was based on cooperation between South African Company "Advanced Technologies and Engineering" (ATE) with Ukrainian companies "Aviakon" and "Luch" design bureau from Kiev.

The Azerbaijani Mi-24G is largely based on the ATE's Super Hind Mk4. The core avionics kits are similar to the Mk4 version. The equipment kit (based on the Denel Rooivalk) comprises of an ATE's developed mission computer, navigation system, NVG rangefinder as well as the Kentron Cumulus Argos 550 gyro stabilized multisensor targeting and surveillance system integration TV and IR sensors and a laser rangefinder.

Most striking differences are the redesigned nose and cockpit which contributes to weight reduction and improved sight from the cockpit. The mission equipment is lighter in weight and offers NVG capabilities. Cockpit equipment includes two multirole 6x8 inch flight control and data displays, a Doppler GPS system.

The main stay of the 'Hind' fleet consists of the Mi-35M of which twenty-four were supposed to be acquired in 2010. Deliveries were completed by January 2014. During the reporters visit in May 2018 Mi-35s were noted at Kala Air Base.



## The Mi-35 upgrade

The Mi-35's are equipped with night vision goggles, a turret-mounted IRTV-445MGH infrared TV thermal imaging system and new countermeasures equipment. The weapons package comprises of 9K114 'Shturm'-V (AT-6 'Spiral') anti-tank missiles, 80 mm S-8 and 240 mm S-24 unguided rockets, as well as either a single 12.7 mm 9-A-629 machine gun or two 7.62 mm 9-A-622 machine guns/one 30 mm 9-A-800 grenade launcher. In addition, they can operate with 50 kg (110 lb.) to 500 kg (1,100 lb.) bombs.

The Mi-35M has a number of improvements compared to the legacy Mi-24V. The main rotor system is of the Mi-28 and has an X-shape tail rotor. The main rotor's fiberglass blades have new aerodynamic profile. The Mi-35M also has upgraded turboshaft engines. Stub wings were shortened in order to further reduce weight. The Mi-35M is fitted with upgraded avionics and improved sensor package, including night vision system.

New compared to the Mi-24V are an electro-optical rangefinder/targeting systems with thermal imaging guidance channel, satellite positioning and navigation system, electronic multifunction displays, onboard computer and new generation jam-proof communications equipment. The Mi-35M can deliver different weapons; eight 'Ataka-V' or 'Shturm-V' anti-tank missiles and 'Igla'-V air-to-air missiles, unguided rockets (S8) or bombs.

The nose turret is fitted with a GSh-231 23 mm twin-barrel cannon. The landing gear of the Mi-35M is no longer retractable. This reduced overall weight. As one of the Mi-24 pilots stated "The Mi-35 is like a bear, heavy so we try to keep the material light we carry with us". Round the clock two Mi-24V/Mi-35Ms are on QRA and can be airborne in 8 minutes from initial alert.

Kala Base Commander concludes "Our focus is now to have two Mi-17-1's compatible with the NATO Operational Capabilities Concept (OCC). We hope to join a NATO initiated exercise in 2019 in order to have the opportunity to gain experience, see what we are worth and share our knowledge".



# GERMAN AIR FORCE CH-53

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

Jeroen van Veenendaal looks at the big, but agile workhorse of the Luftwaffe, the CH-53 Sea Stallion.



*A German Air Force CH-53 taxiing.  
Photo by Jeroen van Veenendaal*

## The history

Helicopter Transport Wing 64 was founded in 1966. When the wing was disbanded in April 1994, personnel and equipment were absorbed by the other air transport wings of the German Air Force. As Helicopter Wing 64 it was re-established on 1 October 2010 when the helicopters previously assigned to Air Transport Wing 62 and Air Transport Wing 63 formed a new unit.

In 2011, the German armed forces went through a series of structural changes. Because of insufficient funding, the air force's NH90s were concentrated in the army and the air force implemented the former army CH-53. The helicopter wing staff was transferred from Holzdorf to Laupheim.

The wing consists of three flying squadrons of CH-53s and one flying squadron of H145M. The 1st and the 2nd CH-53 squadrons are at Laupheim and the 3rd CH-53 squadron is located in Holzdorf. The main task of the 3rd squadron is to do the training missions. They are educating the young pilots when they transfer from basic helicopter training on the EC-135 to the CH-53.

Helicopter Wing 64 is the largest flying wing within the German Armed Forces. Sizewise, it is close to 2,5 Eurofighter wings. The different locations are not easy for wing commander Lt. Col. Christian Mayer. *"The distance between Laupheim and Holzdorf is approximately 550 km. The wing is planning to have an extra location, which will be Diepholz, lower saxony in 2019."*

## CH-53 versions

Within the German Air Force, there are four types of CH-53 aircraft. Lt. Col. Mayer explains: *"We have four models: the G, GS, GE, and GA. And the Gs are the oldest, they are the basic model. The GS are the workhorses in the missions abroad because they have the Electronic Warfare systems, upgraded communications systems and they have the external fuel tanks. They still fly with the analog cockpits. The GA model has a digital cockpit but lacks the range and the Electronic Warfare capabilities of the GS version. At the moment we have only 20 GS helicopters."*

## Education of the CH-53

Because of the age of the helicopters, maintenance takes up a lot of time. That means almost no CH-53GS versions are left in Germany, they are all operating in missions abroad, for example in Afghanistan. Thanks to the external fuel tanks, the total flight endurance is six hours. As a comparison, the GA model has an endurance of one hour forty minutes. A short range like this is critical for Afghanistan because there are not many safe landing sites to refuel.

The CH-53GA is an upgraded CH-53G version. It has a state of the art cockpit with multifunctional displays and a four-axis autopilot system. It is also equipped with satellite radios and satellite phone.

We spoke to Lt. Col. Patrick Schneider about his experience flying the CH-53 in German service. He has close to 1500 flight hours on the CH-53. Schneider always wanted to be a pilot. He explains: *"The basic thing about flying is almost the same in every helicopter, but of course the CH-53 is much bigger. The multi-crew cockpit is also a challenge for the pilot, but it is also easier when you have only a part of the work to do. One pilot is flying and one pilot is monitoring, doing all the cockpit work, working with the radios, taking care of the whole aircrew. There is also a technician in the cockpit supporting the pilot with supervising the engines. As a pilot, you have to do only your pilot job. When you are the aircraft commander you have to make sure that every one of the crew knows what the intentions are, so communication is key"*.

Schneider started as a Bo 105 pilot. *"In the Bo 105, a single pilot helicopter, you as the pilot were responsible for everything including radio communication, navigation, technical supervision and taking care of the passengers. Flying the CH-53 is easy. The big challenge of the CH-53 is to know the technical background. In case of an emergency or a malfunction of one of the systems we have to get very much in the technical background of the helicopter."*







### Advanced Certification Level

One part of the education and conversion to the CH-53—simulator training—takes part in Bückeburg at the International Helicopter Training Centre. In Bückeburg there are four full mission flight simulators for the CH-53.

They are intended for basic handling of the helicopter, how to start the engines, how to perform all the system checks, how to process the information from the instruments and training of emergencies. Schneider clarifies: *“We can perform normal flights in these simulators, but also train tactical flights and do instrument flight training. But the biggest advantage of the simulator might be that you can also train the whole spectrum of malfunctions. We can show our pilots what the helicopter is doing when an engine is on fire or when something happens to the driveshaft affects the entire system. You have to know what your instruments are showing you, how the helicopter sounds and feels like when there is a malfunction.”*

The basic flight training takes about 1 year. The pilot then has basic knowledge about helicopter flying and has the military license to fly a helicopter. After this year the pilot is transferred to the next helicopter system. From the first theoretical training to becoming a fully trained pilot in an air wing takes about three to five years. This depends on the availability of the helicopters. Schneider is an instructor pilot since 2010. As an instructor pilot, he works to continue training crews to get them to a higher level.



### Special operations

The main task of the CH-53 is to transport personnel and material. But special tasks also include supporting special forces of the army, the Kommando Spezialkräfte (Commando Special Forces, KSK) and navy. In November 2016 the Chief of Staff of the German Armed Forces decided that only the fourth squadron of the helicopter Wing—the H145M squadron—should be one of the Special Operations units in Germany. Lt Col Christian Mayer just recently became Wing Commander of the Helicopter Wing 64. He explains what role the CH-53 has in this: *“To give Special Ops Forces the whole spectrum of transport capabilities they need a helicopter with a size like the H145M, but also like an NH90, Black Hawk or Merlin up to a heavy transport helicopter like the CH-53. So there are always missions where there is a need for the transport capabilities the CH-53 can provide.”*

### Personnel recovery

CH-53s of the Air Force are also performing personnel recovery. In particular, the CH-53 GS is well suited for personnel recovery and search and rescue (SAR) requirements. It is large so it can contain medics as well as an extraction force, has a good range and has machine guns for self-defense.

The CH-53s are also equipped with an electronic warfare system to ensure that surface to air missiles (SAM) will not hit the helicopter. Lt. Col. Schneider gives an example of why the CH-53 is ideal for this type of mission:

*“When you look at Bosnia, it was of utmost importance to get downed pilots back safely. They were trying to do that with the UH-1 but found out that the UH-1 is not able to fly as far and carry as much personnel. You need an extraction force in there to go outside the helicopter, identify the personnel on the ground and come back with wounded pilots and return to your operating base.”*

Another duty is fire support and flood relief. The CH-53 has the capability to carry fire buckets and sling loads under the helicopter. This is not just a national task, in the past German CH-53 helicopters have assisted with wildfires in Greece for example. We also have been in Greece base to support there. In 2002 the Elbe river flooded. Civilians needed to be evacuated, and sandbags needed to be transported to hard to reach areas.





## Fire support and flood relief

Lt. Col. Mayer remembers: *“The first day I was flying with my UH-1. I was starting a mission in the morning and flew up for 8-9 hours. We had to rescue the people by hoist from the roofs of houses. After this first day, the rescue mission coordinator asked me to take over his place. At that moment there were about 25 UH-1s and 5 CH-53s flying their missions. About five days later we established the rescue HQ at Holzdorf. This was an extraordinary experience, all of the 20 CH-53 helicopters were flying. There was a lot of metal in the air. It was a logistic super event to see all helicopters returning in the evening. The maintenance personnel did their job and we also flew missions during night time with Night Vision Goggles (NVG) transporting sandbags to stop the high water.”*

## Maintenance and overhaul

Maintenance on the German CH-53s is done by Airbus. The German government wants to source these contracts locally to make sure there are enough employment opportunities. This way the knowledge about the aircraft will also stay in Germany. The first four helicopters were originally built by Sikorsky, were shipped from the USA to Germany and then manufactured in license by VFW-Fokker at Speyer in Germany.

## International cooperation

Participation in international exercises is limited at the moment due to the availability of the helicopters and the restricted flight hours that come with that problem. This year the exercise focus will be on Special Operations support. One major exercise Lt. Col. Mayer looks to participate in is exercise Angel Thunder in the USA. *“Angel Thunder is the biggest personnel recovery exercise in the USA. We have participated with the CH-53 in 2015.*

*The idea is to participate again in the next couple of years. The exercise is very realistic and simulates a complex theater, including fixed wing support from A-10 aircraft for example. But at the moment it is too much to handle, we are focussing on special operations exercises that take place in Europe.”*

## Angel Thunder

But cooperation with other countries goes further than just visiting exercises. In 2019 the course director for the European APROC personnel Recovery course will be the former 64 Wing Commander. A few young pilots are sent to Israel for basic training on the CH-53. There are exchange pilots from the U.S. Air Force and the French Army. They are trained on the CH-53. Ideas from exchange pilots have been implemented before into the squadrons. German CH-53 pilots fly UH-60 Black Hawks, HH-60 Pavehawks in the USA, and Caracals in France.

## Future

The end of the lifespan of the German CH-53s is in sight. Mayer: *“The CH-53 is an old workhorse and we are coming up to the moment that the CH-53 should be replaced by a heavy transport helicopter.”*

The choice is the same as in 1966 when the German military evaluated both the CH-53 and CH-47 Chinook. *“At the moment talks are based around the CH-47F Chinook and the CH-53K King Stallion. The timeline to start replacing the current CH-53s is set for 2023 and the last CH-53 should be taken out of service in 2030.”* The CH-47 will have a lower price, but the CH-53K will have the capability to carry more personnel and cargo. The decision for the future heavy transport helicopter will be made 2019. There are signs that Helicopter Wing 64 will be split into two wings located in Holzdorf and Laupheim with the introduction of the new helicopter.

Wing Commander Mayer is always thinking ahead: *“We would like to establish up to two CSAR squadrons to have high-end Personnel Recovery covered and also the training squadrons comparable that we have now at Holzdorf. It is a mixed squadron - a training squadron, and an operational squadron. There is a plan for up to four flying squadrons at Laupheim. Three with the heavy transport helicopters and one with the H145M. This is still a rough plan. And three flying squadrons with heavy transport helicopter at Holzdorf.”*

He has faith in the future: *“All the people here are highly motivated with different backgrounds, which is good, it allows coming up with good and different ideas. I think this is an excellent Wing that is prepared for the future.”*



# THE NEXT ISSUE OF FLYMAG MAGAZINE

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

Rogier Westerhuis has spent some time on the ice, and brings us the story of the 109th Airlift Wing, and their special operations on the arctic, as well as Patrick Rogiers goes through the Polish MiG-29 in the next issue of FLYMAG.



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