

# FLEET SURVEY GUNSHIP HELICOPTERS PART 1



*A group of 10 Mi-17/171Sh 'Hips' is escorted by four Mi-24/35s over the snowy Czech countryside during an exercise. Jaroslav Spaček*



# European Gunships

Conflicts, budget cuts and training programmes mean the attack helicopter fleets within NATO's European air arms are in constant states of flux.

**Alan Warnes** and a team of *AFM* correspondents turn the spotlight on the gunships of Bulgaria, the Czech Republic, France and Germany in the first of a new series.

**H**ELICOPTER GUNSHIPS were all the rage in the latter part of the Cold War. On each side of the Iron Curtain, huge numbers of NATO and Warsaw Pact gunships prepared for a conflict that never came.

Bulgaria, Czechoslovakia, East Germany, Hungary and Poland all operated the Mi-24 *Hind*. Today the *Hind* is only flown in Europe by Bulgaria, the Czech Republic and Poland. While the Czech Republic operates 17 Mi-24V/35s, Poland maintains a fleet of 28 Mi-24D/W versions. After grounding its Mi-24V fleet, Bulgaria has since returned a single example to service.

Romania never operated the Mi-24 but did fly locally assembled IAR-330H Pumas, which could be armed. In the late 1990s and early 2000s, 30 Romanian IAR-330Hs were upgraded to the armed IAR-330L SOCAT standard.

Back in the Cold War days, the only NATO nation to fly dedicated gunships in Europe was the US Army, which fielded hundreds of AH-1 Cobras and subsequently introduced around 200 AH-64 Apaches. Today there are only around 30 US Army AH-64 Apaches left in Europe, flying from Ansbach-Katterbach Army Airfield in Germany.

However, European countries that once operated Bells, MBB Bo 105s or Gazelles that could be armed with rocket pods and guns have now re-equipped with dedicated gunships. Italy has the A129 Mangusta, while Turkey is developing its own T129 version, known as the ATAK. France, Germany and Spain all collaborated on the Tiger/Tigre, while Greece, the Netherlands and the UK went for the US option, the AH-64 Apache.

Today, the role of the European helicopter gunship is more likely to be focused on escorting convoys and troops in Mali, supporting the United Nations

Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). After years of battles in Iraq, Libya and Afghanistan, some air arms – including the UK's Army Air Corps – are now training their crews in what are called contingency operations, with the aim of practising for all roles and in all environments.

French Tigers are still flying offensive operations in Mali, against Islamist militants in the Sahel, where German Tigers will soon join them. Meanwhile, Turkish Army attack helicopters are heavily involved in the war against Kurdish forces in the southeast of the country. ▶

 Bulgaria

# Hind back from the brink



*Above: Mi-24V 'White 142' remained at Sofia for nearly ten years as it was originally earmarked for use as a prototype for a 'Hind' upgrade under an ill-fated contract between the Bulgarian Defence Ministry and Elbit Systems of Israel signed in early 2005. The contract was terminated in January 2007 and 'White 142' remained at the plant in a disassembled state until returned to service. Alexander Mladenov*

**P**ROVIDING BULGARIA'S attack helicopter capability, a 44-strong Mi-24D/V fleet (six Mi-24Vs and 38 Mi-24Ds), originally delivered between 1979 and 1986, was cut in half during 1999-2000. The type was suffering from a significant lack of serviceability due to the limited supply of vital and expensive spare parts, such as rotor blades, as well as expired engine and airframe time between overhauls (TBO) and total airframe time. In 2002-04, a dozen Mi-24Ds were sold to local intermediary arms companies, which in turn passed them on to foreign customers. Six were thus

delivered to the Ivory Coast between 2007 and 2010, while other *Hind-Ds* made their way to the US. Five more Mi-24Ds were sold to a Bulgarian arms dealer in December 2011, and by late 2016 at least two of these had been returned to airworthy status. As yet, there is no information on their export.

During the mid-2000s the six Mi-24Vs were the only *Hinds* remaining in operation with the Bulgarian Air Force, with one or two examples maintained in airworthy status at any time. The fleet was finally grounded in early 2010 due to service life expiry.

## Return to service

The Bulgarian Air Force eventually decided to reinvest in the six Mi-24Vs in order to retain a marginal attack capability. As a result, in 2014 the Bulgarian defence ministry (the authority dealing with the procurement of new aircraft and services for the existing fleet) signed a framework agreement for their general overhaul and life extension. The first, and

so far only, *Hind-E* covered by this agreement is Mi-24V 'White 142,' which completed an overhaul and life extension at the TEREM-Letets plant, at Sofia Airport/North Side in late November 2015. It was subsequently re-delivered to its permanent home, the 24th Air Base (24 Aviacionna Basa) at Krumovo near Plovdiv.

Mi-24V 'White 142' (c/n 150724) was originally manufactured at Rostov-on-Don, Russia, in February 1986. Its original 20-year overall service life expired in 2006.

After the long-delayed overhaul and life extension effort, the helicopter is now certified for another seven years' operation or 1,000 flight hours, whichever is reached first.

In late 2016 the Bulgarian defence ministry reportedly ordered the overhaul and life extension of another Mi-24V with local firm TEREM-Letets. This aircraft is expected to be returned to service late this year or early next. Following their life extension,

undertaken concurrently with the general overhaul and approved by design authority Mil Moscow Helicopter Plant, both *Hinds* could remain in service until at least 2022.

**Alexander Mladenov**

## Afghanistan

Czech *Hind* pilots and technicians participate in preparing Afghan flight and groundcrews to service and operate Mi-24/35 *Hinds* and Mi-8/17 *Hips*.

These specialists are members of the international Air Advisory Team (AAT) based at Kabul Airport, which teaches the Afghans to use these combat-proven helicopters effectively. On February 4 last year, the command of the former 438th Air Expeditionary Advisory Squadron (AEAS), which is now part of the AAT, was taken over by a Czech Air Force officer. Since then, the squadron has been renamed as the 311th AEAS, to recall the traditions of the RAF's No 311 (Czechoslovak) Squadron.

## Inventory

Mi-24V 1

*Five more aircraft are grounded, of which one is likely to be returned to service in 2017-18.*

## Gunship ORBAT

1/24 Vertoletna Avio Eskadrila  
(1/24 Helicopter Aviation Squadron)  
Krumovo  
Mi-24V

# Czech *Hinds* soldier on

**A** LONG WITH Bulgaria and Poland, the Czech Republic is one of the last countries within NATO ranks that still operates the Mi-24/35 *Hind*. Although it was long-expected that a Western-built armed light utility helicopter would replace the *Hinds*, nothing has materialised to date. The first four Mi-24Ds arrived in Czechoslovakia on August 24, 1978, and were followed by another 24 by 1982. They were supplemented by a further 31 more modern Mi-24Vs between 1985 and 1989, and a pair of Mi-24DU trainer variants delivered in 1985. When Czechoslovakia was divided between the Czech Republic and Slovakia on January 1, 1993, eight Mi-24Ds, one Mi-24DU and ten Mi-24Vs went to Slovakia. All these *Hinds* have been retired by both countries.

Today the Czech Air Force (Vzdušné síly Armády České) employs 17 *Hinds* comprising

seven Mi-24Vs delivered in 2003 and ten Mi-35s that followed in 2005 and 2006. All these helicopters were part of a payment by Russia to the Czech Republic to cover debts remaining from the communist era. The second batch differs in some minor technical respects, including a night vision goggles (NVG) capability, but the only visual difference is English stencilling inside the cockpits. Although the designation Mi-35 is used for the second batch, this is simply the export name for the Mi-24V version.

Czech *Hinds* are stationed at Náměšť nad Oslavou Air Base, having been moved here from Přešov AB in 2008. All *Hinds* are part of the 221st Helicopter Squadron (221 vrtulníková letka – 221 vrlt), a NATO Tiger Association unit, and are supplemented by four Mi-171Sh helicopters operated by 222 vrlt. Náměšť AB maintains the 'Biskajská' (Biscay) traditions,

which reflect the historical connection to No 311 (Czechoslovak) Squadron of the RAF's Coastal Command during World War Two. The Bay of Biscay was the main operational area of the unit and its Consolidated Liberators. In 2015 the base's historical connection saw Mi-35 3370 painted in a special colour scheme to commemorate the colours of Liberator 'PP-K', which flew from the UK to Prague in August 1945. The helicopter appeared at the 2015 Royal International Air Tattoo in the UK to celebrate the 70th anniversary of this event.

## Today's role

The main tasks of the Czech *Hinds* are the support of ground troops in combat, close air support including the destruction of small, hardened targets, inserting/extracting soldiers, troop transport, medical evacuation (medevac), reconnaissance, escort of other

helicopters or convoys, and combat search and rescue. During the Cold War the Czechoslovak *Hinds* were used to guard the Warsaw Pact's western border against slow-moving targets, mainly NATO helicopters. This capability is retained today, and the *Hinds* can be used to reinforce the national air defence system if needed. Although the Mi-24 is a dedicated combat helicopter, the Czechs use the type in day-to-day search and rescue duties covering the eastern part of the Czech Republic. This is a non-standard role, however, and the Mi-171Sh normally fulfils this duty.

The main weapon of the Mi-24V/Mi-35 is the chin-mounted movable 12.7mm (0.5in) calibre four-barrel 9-A-624 'Gatling' machine gun, with a maximum of 1,470 rounds. The Czech *Hind* can also be armed with up to eight 9M114 Shturm-V



Mi-35 3366 'Alien Tiger' was awarded the Best Tiger-Painted Aircraft Trophy at last year's NATO Tiger Meet held at Zaragoza, Spain. It is pictured over a Spanish training range accompanied by Mi-35 'Kosta' 3370, its World War Two Coastal Command camouflage and 'PP-K' codes, reflecting the traditions of No 311 Squadron, RAF. Jaroslav Špaček

(AT-6 *Spiral*) guided anti-tank missiles. Its impressive range of unguided weapons includes 80mm (3.15in) S-8 rockets and UPK-23-250 gun pods with twin-barrelled GSh-23 cannon that can fire up to 250 rounds. The pods can include two versions of the GUV container. One houses a machine gun with a single 12.7mm 9-A-624 – as in the helicopter's nose – and two 7.62mm (0.3in)-calibre 9-A-622 'Gatling' guns. The second option is a single 30mm 9-A-800 grenade launcher. It is also possible to carry four 100kg, four 350kg or two 500kg free-fall aviation bombs.

## Capable, but dated

Czech *Hinds* are regular participants in international exercises, both on Czech territory (Ramstein Rover, Ample Strike) and abroad (European defence helicopter exercises, mountain flying or NATO Tiger Meets). These exercises bring Czech pilots up to date with the tactics and interoperability skills needed within NATO's working environment.

Significant efforts are given to mountain flying and brown-out training, preparing crews for operations where this might be needed. Improved co-operation has been ensured through the installation of a second radio set over the past few years. This enables the crew to operate on two different frequencies simultaneously. The Czech Air Force is progressively introducing night vision goggle (NVG) sorties into regular training and operations. Pioneers in these skills were the Přerov helicopter pilots,

who received Russian-made goggles with the *Hips* and *Hinds* delivered during 2005 and 2006. Today, crewmen within both the Náměšť squadrons use modern NVGs and are able to conduct all manner of operations at night.

In the ranks of 221st Helicopter Squadron are dedicated display pilots, who present their helicopters at airshows in the Czech Republic and abroad.

Although the *Hind* is still a capable gunship and can fulfil all the missions for which it was designed, it is technologically outdated. The main deficiencies are its lack of modern avionics, mission planning and self-defence systems, and communications links. The Shturm guided missile is obsolescent. However, modernisation of the *Hinds* with new systems and weapons would be extremely expensive, even without taking into account the political hurdles in trying to obtain spare parts from Russia.

Nevertheless, the *Hinds* delivered in 2003 are already going through general overhauls with LOM Praha, the Czech Republic's state enterprise aircraft and helicopter repair factory. Current plans call for the *Hind* inventory to be replaced by 12 Western-made utility helicopters with a combat capability.

The first of these new helicopters should arrive in the country by the end of 2019. This means the *Hinds* will serve until at least 2020 on current plans. **Jaroslav Špaček**

## France

# Busy Tiger but low availability

*A 4e RHFS Tigre HAP in the mountains. Special forces Tigre aircrews are required to maintain qualifications for operations in all manner of environments: mountain, desert, arctic, jungle and blue-water. This aircraft is fitted with 22-round launchers for 68mm rockets. Henri-Pierre Grolleau*



*An S-8 is unleashed from its B-8V20 pod. The S-8 is the helicopter's primary unguided rocket and replaced the less reliable and smaller S-5. Jaroslav Špaček*

LED BY the DGA (Direction Générale de l'armement – French Procurement Agency), initial studies on what is now known as the Tigre attack helicopter began in 1976. These were followed by a Franco-German agreement signed in 1984. The French Army Aviation (Aviation Légère de l'Armée de Terre – ALAT) intended to buy up to 215 Tigres, but the end of the Cold War and increasing costs saw this number reduced to 120, then 80 and finally 60 by the end of the 2000s. In 2015, the French Defence Minister Jean-Yves Le Drian opted to order 71 airframes, in order to have

67 online and match the UK Army Air Corps' Apache fleet.

By November 2016, 60 had been delivered. Of these, 39 were of the HAP (Hélicoptère Appui-Protection – air support and protection helicopter) variant. These are equipped with a 30mm gun turret, and up to four pods of unguided 68mm (2.68in) rockets and four air-to air Mistral (dubbed ATAM) missiles. The initial HAC variant (Hélicoptère Anti-Char – anti-tank) evolved into the HAD (Hélicoptère Appui-Destruction – air support and destruction) variant with up to eight Hellfire missiles and 14% more power. The Spanish Army

es,



was first to select this variant. Airbus Helicopters will convert all the HAPs to HAD standard. This work has already begun, and is to finish by the mid-2020s.

Due to a lack of spare parts, the availability rate is extremely low – less than 30%. Budget restrictions in the 2010s led to this critical situation, which is why so few Tigres, around six of the 60 delivered, are deployed overseas. Airbus Helicopters is responsible for upgrades and conversions from HAP to HAD, while maintenance is led by the Atelier Industriel de l'Aéronautique (AIA) at Clermont-Ferrand in central France.

Alongside the European procurement agency, the Organisation Conjointe de Coopération en matière d'Armement (OCCAR), France is already studying a new standard for the fleet. This should include a new air-to-ground missile dubbed MAST-F that will replace both the HOT anti-tank missile system

(fitted on French Gazelles) and Hellfire (on the Tigre HAD variant) in the next decade.

Some minor modifications have been made over the years to improve operational capabilities. In 2011, bulletproof panels were added alongside the cockpit windows to protect the two pilots. A video recorder was added to the helicopter

in 2011, to store imagery from the roof-mounted Stryx targeting turret. An upgrade is planned for the Stryx to enable ground commanders and other helicopters to monitor the combat zone.

### In combat

From July 26, 2009 until February 3, 2013, the French Tigre went to war for the first time in Afghanistan. The French command authority wanted to strengthen its helicopter force there after the failings highlighted in the 'Uzbeen ambush', when ten French personnel were killed in an attack on August 18, 2008. ◉

### French Tigre availability

	2011	2012	2013	2014	2016
	No/Rate	No/Rate	No/Rate	No/Rate	No/Rate
Tigre	35/34%	37/30%	40/22%	44/17.4%	60/24%

Source: French Parliamentary Defence Committee

## Gunship ORBAT

The ALAT gunship order of battle is presently in a state of flux as helicopters are delivered and units re-equip.

### 1er RHC Phalsbourg

1er Régiment d'Hélicoptères de Combat

*Note: Has now begun re-equipping with Tigre HAD (and NH90 Caiman). The normal strength is 25 aircraft, but only half have been delivered to date.*

### EOS 6/4e RHFS Pau-Uzein

Escadrille des Opérations Spéciales (EOS) 6/4e Régiment d'Hélicoptères des Forces Spéciales

*Note: One of two special operations helicopter units. Will eventually have up to eight Tigres, but currently has only between four and six.*

### 5e RHC Pau-Uzein

5e Régiment d'Hélicoptères de Combat

*Note: The regiment currently has only Tigre HAPs, and will receive its first Tigre HADs (new and upgraded HAPs) as soon as the 1er RHC is fully equipped. The normal strength is 25 helicopters.*

### GAMSTAT Valence

Groupement Aéromobilité de la Section Technique de l'Armée de Terre

*Note: One Tigre HAD is permanently based here, but can be used for trials by Airbus Helicopters or the DGA test centre at Istres, near Marseilles.*

### EFA Le Luc

École Franco-Allemande — Franco-German School

*Note: Uses eight Tigre HAP and HAD for operational conversion. The German Army also trains its pilots there, using its own Tiger UHT. All French Tigres currently used in Mali are assigned to the 5e RHC and 4e RHFS (between four and six Tigre HAPs) while the 1er RHC (two Tigre HADs) deployed there in September 2016.*



**Above: Forward Operating Base Morales-Frazier in Nijrab, Afghanistan, 40 miles from Kabul, was the main French holding point in Kapisa Province. US Army OH-58D Kiowa Warriors also used the drop zone as a Forward Advanced Refuelling Point (FARP).** Jean-Marc Tanguy

At the time, only two Caracal helicopters were able to support the troops in contact. Before deploying to Afghanistan, the Tigres were upgraded with encrypted communications and bulletproof panels, while crews were trained in the Alps to experience conditions similar to those in the Afghan mountains.

Many lessons were learned during the helicopter's deployment. One aircraft was lost in combat during the night of February 4, 2012, when it crashed into a mountain during bad weather. A pair of French Air Force Caracals rescued the crew. Up to four Tigres deployed simultaneously from the Kabul French Battalion, alongside Gazelle, Cougar and Army/Air Force Caracals. When they left Afghanistan in February 2013, after 2,600 combat missions and 4,215 flight hours,



**A Tigre from the 5e RHC returns from a mission over northern Afghanistan in November 2012. Four Tigres were deployed to Kabul at that time.** Jean-Marc Tanguy

BPC *Mistral*, the mission was supported by Caracals flown by the 4<sup>e</sup> RHFS and the air force's Groupe Aérien Mixte 56 (GAM 56) 'Vaucluse' – the flying unit of the Direction Générale de la Sécurité Extérieure (DGSE), the French external intelligence agency.

A first Tigre was sent to Mali two days after the beginning of the war with the jihadists in the north of the country, on January 13, 2013. Here the type was used by the 4<sup>e</sup> RHFS and the 5th Combat Helicopter Regiment (5<sup>e</sup> Régiment d'Hélicoptères de Combat – 5<sup>e</sup> RHC) for both conventional and non-conventional missions. During the course of an operation in 2013, one aircraft was hit by 26 rounds of ammunition. It was severely damaged but managed to limp back to its base.

Two HADs were sent to the Central African Republic (CAR) on November 24, 2014 and returned to France in 2016 before being dispatched to Mali. On January 29, 2015 two Tigres were used to destroy four pickups in the CAR, while another such vehicle was put out of action in October 2015.

By December 2016, around six Tigres (two of which were HAD versions) were on station in Gao, Mali, for operations in the Sahel. The arrival of the HAD enables beyond-line-of-sight Hellfire targeting, using French MQ-9 Reaper unmanned aerial vehicles (UAVs) deployed to Niamey, Niger. Targeting of this nature was demonstrated in Djibouti during 2014, when an air force Mirage 2000D employed an ATLAS pod. No Hellfire missiles have been fired in combat to date. **Jean-Marc Tanguy** ◉

the Tigres had fired 19,000 rounds of 30mm ammunition and 420 68mm rockets.

During the 2011 Libyan Civil War, only two Tigres were available for night flying, because too many HAPs were involved with the mission in Afghanistan. The French helicopter force operated from the French Navy amphibious vessels (bâtiment de projection et de commandement – BPC) *Tonnerre* and then *Mistral* (see *Why Mistral Matters*, January 2017, p44-49).

In Somalia, two HAPs were flown by the 4th Special Forces Helicopter Regiment (4<sup>e</sup> Régiment d'Hélicoptères des Forces Spéciales – 4<sup>e</sup> RHFS) to support a covert operation on January 12 and 13, 2013 to free a French agent held by the al-Shabaab Islamist group in Mali. Launched from the

## Inventory

Tigre HAP 18/27+

Tigre HAD 39++

+ 27 on order, aircraft now being upgraded to Block 2. ++ Originally 40, but one written off, while another was severely damaged in Mali in 2013.



**Above: The Tigre proved to be as adaptable in dusty Mali as it was in Afghanistan. Six Tigres are now operating in this country with both conventional and special operations pilots. Pictured here are pilots from the 5e RHC at Gao. In the background is a Spanish C-130 that supports France's Operation Barkhane.** Jean-Marc Tanguy

## Joint French and German training

At the beginning of the Tigre program, France and Germany agreed to train their pilots and mechanics at two bi-national schools. The École Franco-Allemande (EFA — Franco-German School) opened in July 2003 at Le Cannet-des-Maures (also known as Le Luc), near Toulon Naval Base, and is dedicated to pilot training. The local countryside offers suitable flying zones, with almost no major cities in the vicinity. The region is also typically sunny for ten months of the year.

The EFA's task was to reduce the cost of operational conversion between the two countries. In practice, only the four-axis, full-mission simulator, the computer-added training and the cockpit procedures trainer, which represent 65% of the students' flying hours, are shared, and each country flies its own version of the Tigre/ Tiger. French instructors teach French trainees and the same is true for the Germans, but the working language is English. Due to a lack of spare parts owing to the highly intensive Mali operations, France had to manage its Tigre fleet carefully between 2013 and 2015. As a result, some of the Tigres at the base were transferred to the operational ALAT fleet.

The first practical course began in 2006. At the time, France had nine Tigres (HAP and HAD) and Germany six UHTs at the base.

In addition, the EFA has flown MBB Bo 105s and Gazelles. Up to 70 trainees from each country can be educated at the EFA each year and 325 French and German employees work at the facility. Mechanics from the two countries are trained at Fassberg, Germany.

Australia and Spain have made good use of the school. In 2011, Australian instructors were taught here, as were two Spanish instructors.

Le Cannet-des-Maures is the third largest air base in France, with an impressive 80 helicopters, 30,000 movements and 15,000 flight hours per year.



 Germany



# What role for German Tigers?

**T**HE HEERESFLIEGER (German Army Aviation Corps) Tiger story is a complex one, involving delays in deliveries, financial cutbacks and contract disputes. At the outset of the Tiger programme in the 1980s, West Germany had a requirement for 212 Tigers. With the end of the Cold War in 1991, the need was cut to 120, then 80. Finally, on March 13, 2013 the German

defence ministry appeared to draw the line under the Tiger order saga, by announcing it had signed a memorandum of understanding with Eurocopter (now Airbus Helicopters) for 57 examples. However, even this was far from straightforward.

The agreement calls for 68 aircraft to be delivered, but the Heeresflieger will retain 57 and Airbus is to buy back 11.

In Germany, the attack helicopter is known as the Unterstützungshubschrauber Tiger (Support Helicopter Tiger).

Germany initially deployed the helicopter to Afghanistan in 2013. Airbus Helicopters upgraded three batches of four Tiger UHTs to the Afghanistan Stabilization German Army Rapid Deployment (ASGARD) configuration through a programme launched jointly with the German defence ministry in late 2011.

The modifications included the addition of new defensive

### Gunship ORBAT

École Franco-Allemande (EFA)	Le Cannet-des-Maures	Tiger UHT
KHR 36 'Kurhessen'	Fritzlar	Tiger UHT



**Top:** A pair of German Tigers prepares to depart on a training mission. *Timm Ziegenthaler*  
**Right:** A Heeresflieger Tiger UHT from the only operational unit, KHR 36, taxis out at its home base of Fritzlar. Unlike their French counterparts, the German Tigers have mast-mounted optics. *Timm Ziegenthaler*  
**Above:** One of the Tiger UHTs upgraded for the ASGARD mission on a test flight from the Airbus Helicopters facility at Donauwörth during early 2014. *Airbus Helicopters*  
**Above right:** A typical German Tiger load-out — a Stinger and a pod for 70mm unguided rockets. *Timm Ziegenthaler*

systems, sand filters for the MTR390 engines, and enhancements to the communications suite. The last of the 12 modified Tiger UHTs, 74+34, was handed over to the Heeresflieger at Airbus Helicopters' production facility in Donauwörth, Germany on March 6, 2014. It joined Combat Helicopter Regiment 36 (Kampfhubschrauberregiment 36 — KHR 36) 'Kurbessen', based at Fritzlar: the only operational Heeresflieger Tiger unit.

Four German Tiger UHTs were sent to Afghanistan in December 2012 for the ASGARD deployment, which lasted from January 30, 2013 to June 30, 2014. They operated from Mazar-i-Sharif Air Base performing reconnaissance, ground support, and convoy protection duties.

The Tigers flew 1,860 hours during 260 missions supporting NATO ground troops, Afghan security forces, and humanitarian relief operations following floods there. None of the four Tigers fired a shot in combat, which the Bundeswehr attributed to the helicopter's psychological impact, the 'shows of force' being sufficient to counter any threats. On January 11, 2017 the German Government approved the



deployment of four Tigers and four NH90 medical evacuation helicopters to Mali to replace the Royal Netherlands Air Force (RNLAf) Apaches and Chinooks being withdrawn.

The UHT can carry PARS (Panzerabwehr Raketensystem) 3 LR fire-and-forget missiles, as well as HOT 3 anti-tank missiles and 70mm (2.75in) air-

to-ground rockets in 19-tube Forges de Zeebrugge (FZ) pods. Four FIM-92 Stinger missiles can be mounted on the pylons for air-to-air combat. Unlike France's HAP, the UHT has no integrated gun turret, but a 12.7mm (0.5in)-calibre gun pod is carried when necessary. The UHT has a mast-mounted sight, which incorporates second-generation infrared and CCD TV cameras with a range of 11 miles (18km).

Helicopter training for the German pilots is carried out at the École Franco-Allemande (EFA — Franco-German School) at Le Cannet-des-Maures near Nice in southern France — see the section on France. **Alan Warnes**



### Inventory

Tiger UHT 40/57+

Total of 68 on order but Airbus Helicopters will buy back 11.



# European G



 Greece

## Apache on the prowl

The first of 20 AH-64A Apaches ordered by the Elliniko Aeroporia Stratou (EAS, Hellenic Army Aviation) arrived in Greece in June 1995. In a deal worth \$675m, all had been delivered by the end of the year. The army had previously relied on old Bell UH-1 helicopters fitted with door-mounted machine guns for its offensive capability.

A 2003 order for 12 Block II Apache Longbows (locally designated AH-64DHA)

modernised the army's gunship capabilities. However, it was not until February 2010 that the helicopters were officially accepted into service, due to contract disagreements related to Greece's financial difficulties.

Of the 32 Apaches delivered, one AH-64A and three AH-64DHAs have been lost. The most recent accident, on September 20 last year, involved an AH-64DHA that ditched in the Aegean Sea.



Top: An EAS AH-64A hovers over a lake close to its Stefanovikio base. Above: An Apache pilot checks the helicopter's avionics. All photos Chris Lofting

# Gunships

## PART 2

**AFM** correspondents continue their review of Europe's helicopter gunships, covering Greece to Poland in this second part.



Both crew were rescued.

The AH-64As fly with 1 Tagma Epithetikon Elikopteron (1 TEEP, 1 Attack Helicopter Battalion), and the AH-64DHAs with 2 TEEP. The two battalions have been consolidated under 1 Taxiarchia Aeroporias Stratou (1 TAXAS, 1 Army Aviation Brigade) at Stefanovikio, about 200 miles (320km) north of Athens, 2 TEEP moving in from Megara in 2012 to join the resident 1 TEEP.

Both units fly by day and night over the whole of Greece, including the Aegean islands. They regularly co-operate with Greek Special Forces and participate in national and international exercises.



*An AH-64DA taxis out at Stefanovikio for a night mission.*

The EAS once planned for two 24-aircraft Apache battalions, but the country's parlous economic situation rendered this impossible. Plans to upgrade the entire A-model fleet to a configuration similar

to that of the AH-64DHA (which led to four D-model options not being exercised) were first mooted in 2006. In 2010, the upgrade's scope was reduced to just 12 aircraft, with Boeing urging the Greek Government

### Gunship ORBAT

1 Tagma Epithetikon Elikopteron (1 TEEP, 1 Attack Helicopter Battalion)	AH-64A
2 TEEP	AH-64DHA

to find the necessary funds. But modernisation plans were not included in Athens' five-year spending plan for 2006-10 or subsequent years, and the upgrade has failed to come to fruition.

In recent years the Hellenic Armed Forces have formed a strong relationship with the Israel Defense Forces (IDF), leading to several relatively high-profile exercises taking place between the two nations. It is rare to see the Greek military operating outside its homeland, but the burgeoning relationship saw the Greek Army deploy to Israel's Ramon Air Base in early September 2015 as part of Exercise Blue and White Glory. The activity involved AH-64s, CH-47 Chinooks and NH90s conducting a variety of attack missions and simulated rescues of downed pilots over the Negev Desert alongside the IDF.

Israeli sources have stated that the co-operation is an outcome of geopolitical developments in the region, mainly the severance of bilateral defence ties with Turkey, which had previously been considered Israel's regional partner. A major contributing factor for the EAS is Israel's use of both the AH-64A and D, albeit in different configurations to the Greek Apaches.

It is unlikely that Greece will take advantage of its newfound co-operation with Israel and its impressive aerospace industry to upgrade its Apache fleet, however. There is likely to be little or no change to the attack helicopter fleet while the Greek Government has far more pressing demands on its budget. **Mike Green**

## Inventory

AH-64A	19
AH-64DHA	9



Above: In the mid-2000s, Stefanivikio's ramp was rebuilt to house the Greek Apaches.



## Upgrading the Mangusta

**A**FTER A series of in-depth Esercito Italiano (EI, Italian Army) studies, Agusta began design work on a new combat helicopter in 1978. Basing its plans on Cold War requirements, the army called for an aircraft armed with TOW missiles and tailored for the anti-tank mission. It had to be small, nimble and light.

The result was the A129 Mangusta, the first purpose-designed European attack helicopter, the initial prototype of which recorded its official maiden flight on September 15, 1983 (preceded by an actual first flight on September 11). Development took around seven years, including four prototypes and a ground test vehicle. An order for 60 helicopters saw the first Mangusta delivered to the Aviazione dell'Esercito (AVES, Italian Army Aviation) at Viterbo on October 6, 1990.

### Units and upgrades

The first production batch comprised 15 helicopters to an initial configuration, lacking FLIR and with a limited HeliTOW fire-control system. They were delivered to the Centro Aviazione (Aviation Centre) for operational evaluation and training, before 49° Gruppo Squadroni

'Capricorno', 5° Reggimento 'Rigel' at Casarsa re-equipped. In 1996, 48° Gruppo Squadroni 'Pavone', 7° Reggimento 'Vega', at Belluno converted, 49° Gruppo simultaneously moving to 7° Reggimento.

After the first 45 helicopters were delivered, budgetary problems halted production, but opened a development window for a third and final batch of 15 helicopters. Feedback

from overseas deployments, including work in Somalia, and the end of the Cold War, had suggested the need for new capabilities and equipment.

Separately, Agusta had begun work on the more capable and versatile A129 International. Featuring more powerful 1,362shp Allison/AlliedSignal LHTEC T800 engines, a strengthened airframe, new transmission, five-bladed main rotor, larger fuel tanks and a



### Gunship ORBAT

Unit	Base	Variant
1° Gruppo Squadroni 'Auriga'	Viterbo	AH-129C*
27° Gruppo Squadroni 'Mercurio', 5° Reggimento 'Rigel'	Casarsa	AH-129C/D
48° Gruppo Squadroni 'Pavone', 7° Reggimento 'Vega'	Rimini-Miramare	AH-129C/D
Mission Prima Parthica/Air Task Group Griffon	Erbil, Iraq	AH-129D

\*On loan from other units as required

new chin turret mounting a 20mm M197 Gatling gun, the International's maximum take-off weight increased to 11,233lb (5,100kg). The International failed to attract export orders, however, but the Italian Army was keen to introduce some of its improvements into its third production batch.

The prototype of this new version, known to the Army as the A129 EES (Elicottero Esplorazione e Scorta, escort and scout helicopter) was ready in 1998. It lacked the International's new engines, some of its avionics improvements and AGM-114 Hellfire missiles, and its maximum take-off weight was increased to only 10,132lb (4,600kg).

In December 1998, the Armamenti Aeronautici e per l'Aeronavigabilità (ARMAEREO, Airworthiness and Aviation Armaments Agency) approved the production of the third batch to EES, or CBT (Combat) standard, with the introduction of a new FLIR, a Northrop Grumman LISA-200 INS/GPS, and provision for new external fuel tanks and asymmetric underwing loads.

The first series production A129 CBT, officially designated A129C in service, was delivered to AVES in October 2002 and assigned to its training unit, 1° Gruppo Squadroni 'Auriga' at Viterbo.

The two A129 battalions had been reorganised in 1998, 49° being reassigned to 5° Reggimento, while 48°

*The nose of an AH-129D shows the new Toplite III OTSWS. The M197 and its ammunition feed are also prominent. Leonardo via Riccardo Niccoli*

moved to Rimini-Miramare. During 2000, both units and their parent regiments were integrated into the new 'Friuli' Airmobile Brigade.

During A129C production, Agusta retrofitted the existing aircraft to the same standard. Subsequently a new contract was signed, equipping the entire fleet with a new self-defence suite, including an ELT-157 radar-warning receiver, MILD 5 missile launch warning system, and chaff and flare dispenser system. Under ARMAEREO's new Mission Design Series introduced in 2006, the A129C was officially redesignated AH-129C.

## Operations

The Mangusta was first deployed on peacekeeping operations, in Somalia, in 1993-94. In 2005-06 it operated in Iraq under

Operation Antica Babilonia (Ancient Babylon), while ten AH-129s were deployed to Afghanistan in 2009-14.

In 2010 a new Mangusta upgrade was launched, aimed at modernising and sustaining some equipment, and introducing new weapons systems. The work included the Rafael Toplite III Observation, Targeting, and Spike Weapon System (OTSWS), integrated by AgustaWestland and Selex ES. A state-of-the-art electro-optical system, OTSWS comprises CCD-TV cameras, a third-generation FLIR and a laser designator/rangefinder.

The system includes Spike-ER, a multi-purpose missile with a range of around 8,748 yards (8,000m) that can be launched in 'fire-and-forget' mode and 'fire, observe and

update' modes, thanks to a fibre-optic wire. Spike is carried in four-round launchers.

The upgraded Mangusta is designated AH-129D. A first modified helicopter completed testing with AgustaWestland in December 2012, and the first series helicopter was delivered to 5° Reggimento 'Rigel' in September 2013.

There are plans to convert 32 Mangustas to AH-129D standard by 2018, with the remaining 16 helicopters remaining as AH-129Cs. The latter will mainly be used for training and for less demanding operations, while the D-models will be employed in complex situations and overseas missions.

The AH-129D was deployed to Afghanistan in November 2014, to enable weapon system testing in a difficult environment. Since May 2016, four AH-129Ds have been used in Iraq to protect the Italian forces fighting against the so-called Islamic State in the Mosul area, and for personnel recovery missions, in teams that included UH-90 helicopters.

With the Mangusta fleet at 48 helicopters, surplus machines will be withdrawn. The type is nonetheless destined to serve for at least another ten years, following an Italian parliamentary decision of November 2016 to move ahead with a new combat helicopter that should be in AVES service by 2025. **Riccardo Niccoli** 🇮🇹

## Inventory

(Planned by 2018)

AH-129D	32
AH-129C	16



*Top: Two 7° Reggimento 'Vega' AH-129C helicopters in the Alps near Bolzano airport. Their crews were training for a deployment to Afghanistan. Riccardo Niccoli*

*Above: The Centro Addestramento at Viterbo includes a number of AH-129Cs for flying training. It operates Mangustas when needed, sometimes on loan. Mike Green Right: Flying live-fire trials in Sardinia, this AH-129D is loaded with underwing Spike-ER missiles. Leonardo via Riccardo Niccoli*



 Netherlands



Effective and efficient  
**Apaches**

**T**HE KONINKLIJKE Luchtmacht (KLu, Royal Netherlands Air Force, RNLAF) took delivery of 30 Boeing AH-64D Apaches in 1998-2002, but had started Apache operations two years earlier with 12 AH-64As leased from the US Army and flown by 301 Squadron. The 'Alphas' arrived at Gilze-Rijen in November 1996 and the last six were returned to the US in February 2001, after the majority of the RNLAF's own Apaches had been delivered.

Eight RNLAF Apaches (serials Q-02, Q-03, Q-06, Q-07, Q-11, Q-12, Q-27 and Q-28) never reached the Netherlands, having been delivered from the Boeing factory in Mesa, Arizona, to Fort Hood, Texas, for training; the RNLAF had established the Netherlands Apache Training Detachment (NATD) at Hood Army Airfield (AAF) in 1998. The remaining 22 AH-64Ds entered service with 301 and 302 Squadrons at Gilze-Rijen.

**Five flights**

As the result of force reductions announced in 2003, 302 Squadron stood down in 2005 and 16 of the 22 Netherlands-based Apaches were assigned to 301 Squadron, along with the disbanding unit's personnel. The remaining six Apaches were declared surplus for budgetary reasons. Efforts to sell them failed and in 2006 the government authorised the stored Apaches to become operational reserves for the RNLAF. They have since been modified to the same standard as the other aircraft and returned to 301 Squadron's operational strength.

Today, 301 Squadron has five flights, named Diablo, Havoc, Hawkeye, Phoenix and Thunder. Like the other Dutch helicopter squadrons, it is assigned to Defence Helicopter Command (DHC), which officially stood up on July 4, 2008. The squadron has 20 Apaches in its inventory. Two

have been lost: Q-20 went down in Afghanistan on August 29, 2004, due to miscommunication between the pilots about who was in control of the helicopter; and Q-15 crashed in Mali with the loss of both crew on March 17, 2015, after a technical failure.

The NATD was transformed into the Joint Netherlands Training Detachment (JNTD) and declared operational on January 1, 2012. Around the same time, the Dutch detachment moved from Hood AAF to Robert Gray AAF, and added three CH-47F(NL) Chinooks to its fleet, which were joined by a fourth in 2015.

The JNTD was redesignated as 302 Squadron and formally integrated into the DHC on November 25, 2013. It facilitates five high-quality, realistic joint air assault training courses for Royal Netherlands Army air assault infantry and Royal Netherlands helicopter crews every year. In addition, the squadron conducts two annual

initial mission qualification courses for Apache and Chinook flight crews. After concluding their basic training with the US Army's Flight School XXI at Fort Rucker, new Apache and Chinook pilots proceed to 302 Squadron.

**Overseas deployments**

Since the late 1990s, Dutch Apaches have been involved in several NATO and United Nations-led international operations. The first was in 1998-99, when 301 Squadron deployed two AH-64As to Bosnia-Herzegovina to support Stabilisation Force (SFOR) ground troops.

The 'Delta' made its mission debut in 2001, when four 302 Squadron aircraft operated in Djibouti from February to June, providing air cover should an extraction of Dutch troops serving the United Nations Mission in Ethiopia and Eritrea (UNMEE) be required. The helicopters were delivered straight to Africa



*Flying over Uruzgan province in southern Afghanistan, this 301 Squadron AH-64D has AMASE pods on its wings. Dutch Apaches supported ISAF troops almost continuously between March 2004 and November 2010. All photos Kees van der Mark*



*A Dutch Apache fires unguided 70mm (2.75in) folding-fin aerial rockets at the Bergen-Hohne training grounds in northern Germany, during the annual Helicopter Weapons Instructor Course.*

from the factory in Mesa on board a US Air Force C-5B.

As part of the Stabilisation Force Iraq (SFIR), six Apaches from 301 and 302 Squadrons deployed to Tallil Air Base, Iraq, between May 2004 and April 2005.

The largest international commitment to date was the almost continuous presence of 301 Squadron's Apaches in Afghanistan between early 2004 and late 2010, supporting the NATO-led International Security Assistance Force (ISAF). After operating six AH-64Ds from Kabul International Airport between March 2004 and March 2005, the squadron returned in April 2006, flying from Kandahar Airfield in support of the Dutch ground forces building up Dutch bases in Uruzgan province.

In October 2006, the Apaches relocated from Kandahar to the Dutch-Australian Army base near Tarin Kowt, Uruzgan, where they remained until November 2010. After redeploying to Afghanistan in 2006, the six (later five) Apaches flew more than 1,200 missions and 7,000 hours for ISAF.

Currently, four AH-64Ds – and three 298 Squadron CH-47Ds – are operating out of Gao in Mali, supporting UN-led

Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) ground troops. The Apaches started operations in Africa in May 2014 and will remain in the region until replaced by Heeresflieger Tigers in the first half of this year (see *Continental Europe News*, March 2017, p10).

## Upgrades

Dutch Apaches have been – and still are – subject to several modification programmes. By 2009, all had the new Lockheed Martin Arrowhead Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensor (MTADS/PNVS) fitted. This can be used in combination with the Integrated Helmet and Display Sight System (IHADSS).

For the deployments in Iraq and Afghanistan, the RNLAf introduced 13 Terma-built Apache Modular Aircraft Survivability Equipment (AMASE) systems in 2004, carried in wing-mounted pods. The equipment was acquired as an interim solution and will be replaced by a US-built integrated electronic self-defence system similar to that acquired for the Dutch Chinooks, in a programme set to run until 2025.

The entire fleet is also

subject to Block II modification with the installation of new communications equipment, including HF radio, replacement of some analogue systems with digital equivalents, upgrade of the identification friend or foe (IFF) system to Mode 5 standard, and installation of a blue forces tracker and new data modem.

Fort Hood-based Q-03 was the Dutch Block II prototype, modified by Boeing in Mesa, Arizona. It was handed back to the Defensie Materieel Organisatie (DMO, Dutch Defence Materiel Organisation) during a ceremony on November 14, 2013, and re-entered service with 302 Squadron the following month.

Boeing modified the eight Fort Hood-based Apaches, but the RNLAf's Logistics Centre at Woensdrecht is upgrading the Gilze-Rijen based aircraft. Work on 301 Squadron's Apaches started in the summer of 2014 and the first upgraded helicopter (Q-18) returned to the unit on May 28, 2015. The Block II upgrade programme is scheduled for completion by 2019. Finally, in a separate programme also lasting until 2019, Apache weaponry is set for improvement.

**Kees van der Mark** ◊

## Gunship ORBAT

301 Squadron	Gilze-Rijen
302 Squadron	Robert Gray AAF, Fort Hood, Texas

## Inventory

AH-64D	28
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*The Apache Demo Team has become a familiar sight at airshows in the Netherlands and abroad. The team used specially painted Q-17 from 2011-14, but it has since been returned to its standard colours.*

## Apache Demo Team

In 2002, the RNLAf became the first air arm to fly a full Apache display routine. The Apache Demo Team continued flying until 2005, when it won the Sir Douglas Bader Trophy for the best individual flying display at the Royal International Air Tattoo at RAF Fairford. Due to operational deployments, it was not until 2010 that the team re-formed and it remains active. It had a specially painted AH-64D at its disposal for the 2010-14 seasons (Q-19 in 2010, and Q-17 thereafter).



 Poland

# Hind soldiers on

**A**LTHOUGH APPROACHING obsolescence, the Mi-24 remains Poland's most potent helicopter. Four brand new Mi-24Ds first entered Polish service, landing at Leźnica Wielka on September 20, 1978, where the 37. Pułk Śmigłowców Transportowych (37th Transport Helicopter Regiment) was based. The unit became combat ready in mid-1979, but the *Hinds* were not publicly revealed for four years.

The *Hind* squadron was later redesignated as 8. Eskadra Śmigłowców Szturmowych (8. EŚS, 8th Attack Helicopter Squadron), subordinated to 49. Pułk Lotnictwa Wojsk Lądowych (49th Army Aviation Regiment) at Pruszcz Gdański.

By the end of 1984, 16 more Mi-24Ds had been delivered (tactical numbers 13, 14, 15, 16, 74, 75, 76, 77, 56, 57, 58, 59, 60, 61, 84 and 85, subsequently

renumbered 013, 014, 015, 016, 174, 175, 176, 177, 456, 457, 458, 459, 460, 461, 584 and 585, respectively). That same year, the helicopters were upgraded with the Ł-166W Ispanka active infrared interference system and ASO-2W flare dispensers.

## Mi-24W

In April 1986, 3. EŚS was subordinated to 56. Pułk Śmigłowców Bojowych (56. PŚB, 56th Combat Helicopter Regiment) at Inowrocław-Latkowo and began conversion to the latest *Hind* variant, the Mi-24V, designated Mi-24W in Polish service. The first four of 16 delivered landed in Poland on April 21, 1986, flown by Russian pilots, as all the Mi-24Ds had been.

By June 24, all the Mi-24Ws (727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738,

739, 740, 741 and 742) had been delivered to Inowrocław. In the following June 733 crashed, leading to the purchase of aircraft 956 from the USSR; it was delivered in May 1991.

Shortly afterwards, a five-ship Mi-24W display team (including a solo) was formed at Inowrocław. Its formal debut was during an airshow at Poznań-Ławica on August 25, 1991. The team gained popularity and performed at most of Poland's major airshows until 1998, although it never had an official name.

After it disbanded, the team's

traditions were transferred to Pruszcz Gdański, where 49. PŚB was based with Mi-24Ds. A four-ship team officially known as *Skorpiony* (the *Scorpions*) flew between 2000 and 2007, displaying for the first time during the Radom Air Show in 2000. Today, only a two-ship formation flies at the important Polish shows.

## More Mi-24Ds

A few years after the country's reunification, in the mid-1990s the German Government decided to dispose of former East German military





The accompanying photos were taken during the regular Mountain Flight Training exercise, which sees four to six 'Hinds' deploy to Nowy Targ, near the Tatra Mountains, close to the Slovakian border. All photos Rich Cooper

UB-32 unguided rocket pods and 9M17P Falanga (Skorpion) anti-tank guided missiles. Two were used as a spare parts source.

Wojskowe Zakłady Lotnicze 1 (WZL-1, Military Aviation Maintenance Works No 1) at Łódź overhauled the other 16 for service with 49. PŚB at Pruszcz Gdański, alongside the original Mi-24Ds delivered from Russia. The ex-German helicopters received new tactical numbers and the first, 167, was delivered to Pruszcz Gdański on October 23, 1996. As more helicopters arrived, 49. PŚB added a second squadron in 1997.

Ironically, of Hungary's Mi-24W and Mi-24P helicopters, only Mi-24Ps 335 and 336 saw service. The rest were stored for many years and never flew again.

In 2001, 3. Eskadra Śmigłowców Ratownictwa Bojowego (3rd Combat Search and Rescue Squadron) was formed under 49. PŚB, equipped with four Mi-24D (later joined by one Mi-24W) and four Mi-2RL helicopters.

At the same time, talks were held on the possible modernisation of 40 Mi-24s, but in the event only a few were modestly upgraded with third-generation night-vision goggle

equipment. This included the Mi-24 Hinds that had served the Nationalen Volksarmee (National People's Army) before the collapse of the Berlin Wall.

Hungary and Poland were offered the helicopters, the

Hungarians reacting first. They chose the best, more up-to-date Mi-24W and Mi-24P aircraft, leaving the Poles with older Mi-24Ds. Poland took 18, delivered by train, complete with all their navigation and radio systems, and weapons including

### Inventory

Mi-24D	13
Mi-24W	15

### Gunship ORBAT

49. Baza Lotnicza (49. BL, 49th Air Base)	Pruszcz Gdański	Mi-24D/W
56. Baza Lotnicza	Inowrocław	Mi-24D/W



Above: During Mountain Flight Training the 'Hinds' are flown in around three or four daily waves to train for low-level flying in mountainous terrain under the watchful eye of instructor pilots.

Left: Mi-24D 272 was one of six Mi-24Ds that underwent a limited upgrade for service in Iraq.

(NVG) capability, Garmin 155XL GPS navigation system, TACAN, ILS and integrated HF/VHF/UHF radio equipment. Their engines were replaced with TW3-117WMA-SBM1Ws, offering a longer time between overhaul.

The active and passive self-defence system was also upgraded, with the KT-01AW Adros replacing the obsolete Ł-166W, while some aircraft also received exhaust gas diffusers. The initial upgraded helicopter, Mi-24W 730 was flown again for the first time in December 2006 and delivered to Inowrocław in late March 2007.

## Combat ops

At the end of 2004, Polish *Hinds* were selected to support the Polish military contingent in Iraq. Six Mi-24Ds (174, 213, 271, 272, 276 and 277) went through a limited upgrade before heading to Kuwait and onward to Iraq, where they became operational on January 23, 2005.

The type served in Iraq for five years, 12 aircraft – 174, 213, 271, 272, 276, 277, 456, 457, 458, 459, 460 and 461 – rotating through the detachment, although only nine returned to Poland at the mission's conclusion. Three aircraft were harvested of useful spares and remained in Iraq, 276 and 277 being left as hulks, while 213 was destroyed.

Back home, the Mi-24 fleet was in decline. The majority of withdrawn aircraft were Mi-24Ds; in 2011, only 15 of these remained in service. As of 2008 the Polish defence



*Delivered in the first half of the 1980s, Mi-24D 461 was upgraded for operations using night-vision goggles and served with the Polish military contingent in Iraq.*

ministry was planning to buy 12 Mi-24W or Mi-24P helicopters, but the idea was abandoned.

## W to Afghanistan

For many years, the Mi-24D had flown only with 49. PŚB at Pruszcz Gdański, while 56. PŚB operated the Mi-24Ws at Inowrocław, but now the variants were mixed between the two regiments. The changes were necessary because in January 2009, after another minor upgrade, the Mi-24W was sent to support Polish military operations in Afghanistan.

Its primary armament in-theatre comprised the chin-mounted, four-barrelled YakB-12.7mm gun, UPK-23-250

underwing gun pods containing 23mm GSz-23 guns, 7.62mm PK machine guns fired from the cabin windows and UB-32A pods for 57mm S-5 unguided rockets.

Three Mi-24Ws were written off as a result of the Afghanistan operation. Aircraft 742 was blown up by US troops after being damaged, Mi-24W 727 was damaged in transit and was written off in Poland together with 737, which had been damaged in a landing accident in Afghanistan.

In 2011, 56. PŚB at Inowrocław was redesignated as 56. Baza Lotnicza (56. BL, 56th Air Base), while 49. PŚB at Pruszcz Gdański became 49. BL. Both units were subordinate to

1. Brygada Lotnictwa Wojsk Lądowych (1. BLWL, 1st Army Aviation Brigade).

In 2012, Poland exhausted its anti-tank guided missile stockpile. Initial attempts to secure new stocks for the Mi-24 failed. The Mi-24D had been able to fire the laser-guided 9M117P Skorpion and radio-guided Falanga (AT-2 *Swatter*) missiles, but these were seldom used in practice and replaced by the radio-guided 9M114 Kokon and Shturm-W (AT-6 *Spiral*) used on the Mi-24W.

The helicopters could also carry FAB, OFAB and BETAB bombs weighing up to 500kg (1,100lb), or other underwing stores up to a maximum load of 2,646lb (1,200kg).

The *Hind* has suffered several accidents in 35 years of Polish service, but only two Mi-24 crew have died (in 2003 and 2009). Time is now running out for the type, although in late 2016 13 Mi-24W and 15 Mi-24D helicopters remained in service. The latter will no longer be overhauled and will be gradually withdrawn from service.

The Mi-24W will operate until at least 2022, after which a new combat helicopter will be introduced under the Kruk (Raven) programme. In December 2016, the government announced that it would buy 16 attack helicopters in 2017, for deliveries between 2019-22. A second batch of 16 helicopters will be purchased subsequently.

**Marcin Przeworski**



*Above: The Polish 'Hind' fleet is set to serve until around 2022, after which it will be replaced by a new combat helicopter to be procured under the Kruk (Raven) programme. Among the contenders are the Bell AH-1Z Viper, which will likely face competition from the Airbus Helicopters Tiger, Boeing AH-64E Apache and the Turkish Aerospace Industries T-129.*


**FLEET SURVEY** GUNSHIP HELICOPTERS **PART 3**



# European Gunships

## PART 3

In the latest instalment of **AFM's** review of Europe's helicopter gunships, coverage moves to Romania, Spain and Turkey.

 Romania

## Tank-busting Pumas

*Left: One of the Puma SOCATs from Flotila 71 Aeriană shows off the most common training configuration. The SOCAT is equipped with four rocket pods, 20mm cannon and forward-facing self-defence sensors, while the pilots wear MiDASH helmets. The SOCAT can also carry Spike XT-5 and XT-8 ER missiles. Liviu Dniștran*


IN THE 1970s, Romania acquired a licence to build the SA330 Puma, locally named IAR-330. Designed as a transport helicopter, the SA330 and the IAR derivative have been transformed into many different versions and outgrew their original mission. There are several variants of the IAR-330 Puma serving the Forțele

IAR Brasov and Elbit Systems developed the SOCAT upgrade in the 1990s. It transformed the IAR-330 into a modern, multi-mission, gunship. Among its enhancements were state-of-the-art avionics, including mission control computers and a joystick for operating the armament and optical systems, and an



*Above: A Puma SOCAT from Câmpia Turzii during a 'mixed' mission. While fully combat ready, the SOCAT can also carry personnel into and out of conflict zones. In this case, special forces were training for deployment to Afghanistan. Liviu Dniștran*

Aeriene Române (FAR, Romanian Air Force) but the most advanced is the SOCAT (Sistemul Optoelectronic de Cautare si lupta Anti-Tanc, or optoelectronic search and anti-tank combat system) helicopter gunship. The main mission of the SOCAT is anti-tank warfare, but it can also perform close air support (CAS), combat search and rescue (CSAR), reconnaissance, search and rescue (SAR) and troop/materiel transport.

electro-optical system for target location, acquisition and aiming. Both pilot and co-pilot received multi-function displays and the Modular Integrated Display and Sight Helmet (MiDASH) from Israel's Elbit providing data visualisation and night vision. A self-defence system protects against radar threats and laser targeting by deploying chaff and flares. The SOCAT fulfils its anti-tank role with unguided rockets, 

### Gunship ORBAT

Flotila 71 Aeriană (71st Air Base)/Escadrila 713 Elicoptere (713 Helicopter Squadron)	Câmpia Turzii
Flotila 95 Aeriană/Escadrila 952 Elicoptere	Bacău

up to eight 'fire-and-forget' anti-tank guided missiles (Rafael Spike XT-5 and XT-8 ER), and the GIAT (now Nexter) THL 20 turret-mounted cannon that is directed using the helmet sight or manually aimed using a joystick.

A total of 25 IAR-330 Pumas were upgraded to SOCAT standard and were initially distributed among Otopeni, Tecuci and Bacău air bases. Currently, the SOCAT is in service at Câmpia Turzii and Bacău.

The Romanian SOCAT has participated in national and international exercises. The most notable mission was in 2005 when four SOCATs were deployed in Bosnia and Herzegovina where they flew more than 1,200 hours in support of the European Union Force (EUFOR) Althea mission.

For now, the future of the Puma SOCAT in FAR service is secure. The IAR Brasov factory is still capable of building new helicopters and providing support for the existing airframes.

The company also offers an engine upgrade, replacing the Turbomeca Turmo IVC with the Turbomeca Makila. This upgrade was among those made to the UK Royal Air Force's Puma fleet, which brought them to HC2 standard, and also to the United Arab Emirates IAR-330 Puma SM. The engine upgrade increases the helicopter's performance while operating in 'hot and high' conditions and improves load capacity and operating range. The Brasov factory will also start production of the Super Puma Mk1 (H215) helicopter this year in a new facility established with Airbus Helicopters.

Another useful upgrade would be the addition of a ground-proximity warning system (GPWS).

In November 2016, Bell Helicopter and IAR Brasov signed a memorandum of understanding regarding a possible collaboration on the AH-1Z attack helicopter. The addition of a bespoke attack helicopter to the Romanian armed forces would add to the security of the country at a time when the regional environment is unstable. Until then, the Puma SOCAT will continue to perform its mission. **Liviu Dnistran**

## Inventory

IAR-330 SOCAT 20



**A**N ATTACK HELICOPTER was long a requirement of the Ejército de Tierra (ET, Spanish Army) and, in particular, among the aspirations of the Fuerzas Aeromóviles (FAMET, Army Air Mobile Forces). At the beginning of the 1970s, the then Aviación Ligera del Ejército de Tierra (Army Light Aviation) purchased eight AH-1G HueyCobras to create the nucleus of a future attack helicopter unit. However, the lack of funds for additional aircraft meant the eight AH-1Gs were finally transferred to the Spanish Navy. In 1974 three Alouette IIIs were acquired, these being equipped with sights and a 20mm cannon plus the ability to fire anti-tank missiles. They were immediately sent to the Spanish Sahara where they undertook armed patrol missions together with a number of OH-58A Kiowas equipped with Miniguns.

Between 1980 and 1983 the Spanish Government acquired 73 MBB/CASA Bo105 helicopters (11 supplied by MBB and the remainder built under licence

by CASA) mainly to equip the recently created Batallón de Helicópteros de Ataque I (BHELA I, Attack Helicopter Battalion 1) based at Almagro in Ciudad Real province. Three versions of the type were acquired: Light Observation Helicopter (LOH), Anti-Tank Helicopter (ATH) armed with HOT missiles, and Ground Support Helicopter (GSH) armed with a 20mm Rheinmetall cannon.

At the end of the 1990s studies to replace the veteran Bolkows got under way. Although the AH-64 Apache was seen as an ideal candidate, political considerations led to the selection of the Eurocopter Tigre. In July 2003 the Spanish defence ministry announced the

decision to purchase 24 Tigre helicopters at a cost of €1,515m, plus options for six additional Tigres that were never exercised.

To meet the requirements demanded by the ET, a new version of the Tigre was developed, with the Spanish designation Tigre Helicóptero de Ataque y Destrucción (HAD, attack and destruction helicopter). It is equipped with new MTR390-E engines with 14% more power enabling it to operate at higher altitudes and temperatures, with greater armament capacity, aircrew ballistic protection, the substitution of the analogue data recording system by a digital system, a second radio and an improved electro-optical system.

## Gunship ORBAT

Batallón de Helicópteros de Ataque I (BHELA I, Ciudad Real-Almagro Attack Helicopter Battalion 1)

## Inventory

Tigre HAP	6	Plans to upgrade the HAPs to HADs have now been dropped
Tigre HAD	18	Includes prototype HAD, which is likely to become the 18th HAD



# s with Tigres

**Above:** Tigre HAD ET-711 is one of three Block 2s delivered to Almagro air base on December 14 last year. Ejército de Tierra via Roberto Yáñez

**Below:** BHELA I based at Almagro operates the Tigres, which are replacing the last few Bo105s. A Tigre HAP (nearest) is escorted by a Tigre HAD after taking off from Colmenar Viejo air base. The major external difference is the engine housing, as the HAD has a newer MTR390-E powerplant. Roberto Yáñez



The HAD version is equipped with Rafael Spike ER anti-tank missiles, new 70mm rocket launchers, a new IFF system, an updated electronic warfare suite from Spanish firm Indra, as well as a cannon with an increased rate of fire. Industrial offsets included the construction in Spain of a new Eurocopter (now Airbus Helicopters) factory. This is responsible for building all aircraft in the Spanish contract as well as the rear fuselages of all the other Tigres/Tigres.

Pending the arrival of the HAD version, an agreement was made to deliver six Tigre HAP (Helicóptero de Ataque y Protección, attack and protection helicopter) aircraft, which would in time be brought up to HAD standard. Budget issues mean these will not now be upgraded.

Despite this, the six HAP helicopters underwent a systems upgrade in 2013. These helicopters were used to start training the first crews at the École Franco-Allemande (Franco-German School) at Le Luc, near Marseille, France.

The first example arrived in Spain in December 2005, followed by two more each in 2006 and 2008, and the last HAP was handed over in 2010. While these examples were being delivered, development of the HAD was under way, first in France and then at the Airbus Helicopters factory in Albacete. Meanwhile, the facilities of BHELA I at Almagro were being prepared for the new aircraft with the construction of modern hangars and a simulation centre to train pilots and weapons systems operators. At the same time, the process of retiring the different versions of the Bo105 had begun, although some are expected to remain operational until 2018.

The HAP Tigres demonstrated their value when three aircraft were deployed to Afghanistan between March and November 2013 as part of the International Security Assistance Force (ISAF) mission, despite not yet having all the specifications required by the Spanish Army. They undertook missions with the Spanish detachment, covering the redeployment of convoys from the provincial base at Qala-i-Naw to the Forward Support Base at Herat, as well as flying reconnaissance missions and



Equipped with two 19-round 70mm rocket launchers and four Mistral missiles, Tigre HAD ET-707 undergoes a test flight at the Albacete factory. Roberto Yáñez

supporting other militaries. The first Tigre HAD of the 18 that will eventually serve the FAMET undertook its first flight on July 29, 2013 after being assembled by Airbus Helicopters in Albacete. After test and acceptance flights, BHELA I received its first two production Block 1 Tigre HADs in December 2014, followed by one in February and one in September 2015 (see below). Three Block 2s, with enhanced

weapons, engines and sights followed in December 2016 and another three are due to follow shortly. Another six are due by the end of 2017, with the last two being handed over in 2018. The first four Tigre HAD Block 1s are due to be retrofitted by Airbus Helicopters and the first (HA.28-07, 10008, ET-707) was sent to Albacete on December 15 last year. **Roberto Yáñez and Alex Rodriguez**

## Spanish Tigre HAP/HAD

Serial	Code	Version	Deliveries etc
5001	F-ZWBZ	Tigre HAD	prototype, probably to become HA.28-24
HA.28-01	ET-701	Tigre HAP	delivered December 2005
HA.28-02	ET-702	Tigre HAP	delivered March 2006
HA.28-03	ET-703	Tigre HAP	delivered June 2006
HA.28-04	ET-704	Tigre HAP	delivered March 2008
HA.28-05	ET-705	Tigre HAP	delivered September 2008
HA.28-06	ET-706	Tigre HAP	delivered January 2010
HA.28-07 (10008)	ET-707	Tigre HAD	delivered December 2014
HA.28-08 (10009)	ET-708	Tigre HAD	delivered December 2014
HA.28-09 (10010)	ET-709	Tigre HAD	delivered February 2015
HA.28-10 (10011)	ET-710	Tigre HAD	delivered September 2015
HA.28-11 (10041)	ET-711	Tigre HAD	delivered December 2016
HA.28-12 (10042)	ET-712	Tigre HAD	delivered December 2016
HA.28-13 (10043)	ET-713	Tigre HAD	delivered December 2016
HA.28-14 (10044)	ET-714	Tigre HAD	to be delivered 2017
HA.28-15 (10045)	ET-715	Tigre HAD	to be delivered 2017
HA.28-16 (10065)	ET-716	Tigre HAD	to be delivered 2017
HA.28-17 (10066)	ET-717	Tigre HAD	to be delivered 2017
HA.28-18 (10067)	ET-718	Tigre HAD	to be delivered 2017
HA.28-19 (10068)	ET-719	Tigre HAD	to be delivered 2017
HA.28-20 (10069)	ET-720	Tigre HAD	to be delivered 2017
HA.28-21	ET-721	Tigre HAD	to be delivered 2017
HA.28-22	ET-722	Tigre HAD	to be delivered 2017
HA.28-23	ET-723	Tigre HAD	to be delivered 2018
HA.28-24	ET-724	Tigre HAD	to be delivered 2018



## Turkey

TAI is using this T129 prototype, P6, to develop the helicopter in addition to the nine T129As and 50 T129Bs currently on order. Alan Warnes

# OLD AND NEW

MUCH OF the focus in the Kara Kuvvetleri Komutanlığı (Turkish Land Forces, TLF) gunship community is on the brand new T129, although the AH-1P/S/W Cobras have carried out the lion's share of work until recently. The first gunship helicopters were delivered to the TLF in 1990, when the first of ten AH-1W Super Cobras arrived. Since then around 30 more Cobras, including the older AH-1P/S and TAH-1P have been delivered from US Army stocks. The Cobras have borne the brunt of the action against the separatist PKK (Kurdistan Workers' Party) over the years, although they are now being assisted by the T129. There have been several Cobra accidents, most of them in combat. Over the years the AH-1s have received various upgrades,

which include the installation of night-vision systems and self-defence systems. The TLF operates around eight AH-1Ws and more than 20 AH-1P/S Cobras, which are seeing active use in operations. The helicopters operate in harsh conditions in the southeast of the country, and under increasing threat from PKK man-portable air defence systems (MANPADS). An AH-1W was shot down by a PKK SA-18 Grouse MANPADS last May. Immediately after entering service in April 2014, the T129 was deployed to Malatya, southeast Turkey, home of the 2nd Army HQ. Since then, most of its time there has been taken up supporting operations against the PKK. The T129 is deployed in co-ordinated attacks with Baykar Makina Bayraktar TB2 tactical unmanned aircraft

## Gunship ORBAT

1nci Kara Havacılık Alayı (1st Army Aviation Regiment)	AH-1P, AH-1W	Ankara-Güvercinlik
2nci Kara Havacılık Alayı	AH-1P, AH-1W, T129	Malatya-Tulga
3uncu Kara Havacılık Alayı	AH-1P	Izmir-Gaziemir
7nci Hava Grup (7th Air Group)	AH-1P, AH-1W	Diyarbakır
Kara Havacılık Okulu (Army Aviation School)	AH-1P, AH-1W, T129	Isparta





# EW: Cobra and T129

systems and artillery units.

Rebel pilots used a small number of T129s during the coup attempt on July 15 last year. The helicopters attacked several government buildings including the headquarters of the National Intelligence Centre, the Police and the Turkish Grand National Assembly, and protesting crowds. Upon the failure of the coup attempts, rebel pilots

landed their T129s and AH-1Ws back at the 4. Ana Jet Üs (4th Main Jet Base), now known as Mürted but formerly Akıncı.

After a lengthy evaluation period, a contract for 59 T129 attack helicopters, with an option for 32 more, was signed in September 2007 between AgustaWestland, Turkish Aerospace Industries (TAI) and the Turkish

Savunma Sanayii Müsteşarlığı (SSM, Undersecretariat for Defence Industries). The helicopter, which is based on AgustaWestland's A129I Mangusta, made its first flight in August 2011.

Due to urgent operational requirements, SSM exercised an option for nine helicopters with initial operational capability (IOC). The IOC helicopters are

designated as T129A while the serial production versions are known as T129Bs. The first three T129As entered service in April 2014 and deliveries were completed in November 2015. As of January 2017, nine T129As and ten T129Bs were in service with the TLF.

The T129 is powered by two LHTEC CTS800-4A turboshaft engines with full-authority

*A pair of AH-1P Cobras of the 1st Army Aviation Regiment based at Güverçinlik fly over the outskirts of Ankara en route to the training area.*  
Dirk Jan de Ridder



digital engine control (FADEC). The engines are each rated at 1,360shp (1,014kW) for twin-engine operation and 1,618shp (1,207kW) maximum contingency OEI (one engine inoperative). The CTS800-4A meets the extreme 'hot and high' requirements of the TLF, with a service life of 6,000 flight hours and the need for just six tools for maintenance.

Aselsan developed the T129's avionics suite and an indigenous mission computer is at the core of the aircraft. It helps to run all the aircraft systems, including the ASELFLIR-300T targeting and identification system, helmet-mounted cueing and display system (HMCDS), VMFD-68 colour multifunction displays and CDU-900Z central display unit. A millimetric-wavelength fire control radar, designated MilDaR, is being developed by Meteksan and is currently undergoing integration tests.

The T129's armament includes a 20mm M197 chain gun in the nose and weapons carried on four hardpoints, two on each of the stub wings. These include the 2.75in (70mm) Cirit laser-guided rocket, UMTAS (Uzun Menzilli Tanksavar Sistemi, long-range anti-tank missile), Stinger air-to-air missile as well as 2.75in unguided rockets and machine gun pods.



**Above:** The UMTAS long-range anti-tank missile is one of the T129's main weapons. Alan Warnes

Roketsan develops the T129B's two primary weapons, the Cirit and the UMTAS. Cirit, unlike its rivals in the market, is not a modification of an existing unguided 2.75in rocket, but a completely new design. It began serial production in 2012 and is operational with the TLF as well as its first export customer, the United Arab Emirates.

The UMTAS is a multi-role guided missile, equipped with an imaging infrared guidance system backed by a two-way RF data link to provide various launch modes including lock on after launch (LOAL) and lock on before launch (LOBL). The UMTAS carries a tandem armour-piercing warhead

to a range of more than five miles (8km). A laser-guided version, the L-UMTAS, is also in production for the T129 and has been tested from Turkish Navy S-70B Seahawk helicopters.

## T129 versions

The first T129 version to enter TLF service was the T129A, also known as Erken Duhul Helikopteri (EDH, early delivery helicopter). The \$450m contract for nine EDHs signed in November 2010 was part of a requirement for 42 helicopters. The T129A weapon configuration consists of only the 20mm turret gun and 2.75in unguided rockets. These helicopters will progressively be upgraded to

T129B standard. The main difference between the B1 and B2 is their electronic warfare capability: the T129B2 will be equipped with radar warning receiver, radio frequency jammer and laser warning receiver. Additionally, the T129B1 will incorporate the Aselsan 9681 V/UHF radio communications system.

The main series production phase consists of two sub-variants: the T129B1 and T129B2. A total of 29 T129B1 and 21 T129B2 aircraft will be produced. So far, ten T129B1s have been delivered to the TLF. Deliveries of the T129B2 are expected to start in 2018.

Intriguingly, the Turkish Police will also be a T129 operator, making it the first police force to operate a gunship. Contract negotiations for nine helicopters are under way, primarily for close air support of police special forces in anti-terror operations and border security in the mainly mountainous terrain of southeast Anatolia.

**Arda Mevlütoğlu**



## Inventory

T129A	9
T129B	10*
(T)AH-1P/S	>20
AH-1W	8
*50 on order	



**Above:** The T129 ATAK helicopter will replace all single-engine AH-1Ps in the near future. Dirk Jan de Ridder

# European



 **United Kingdom**

**T**HE BRITISH Army first ordered the AH-64D variant of the Apache attack helicopter in 1996 after a five-year procurement competition. It then took almost a decade to build the helicopters, train their crews and declare the first attack helicopter (or AH) regiment fully combat ready.

The Army Air Corps' (AAC's) new helicopters were soon dubbed the 'Queen's Apaches' by the employees of US aerospace giant McDonnell Douglas, which had modified their design to meet British requirements. This included fitting Rolls-Royce Turbomeca RTM322 engines, the UK-supplied Helicopter Integrated Defensive Aids System (HIDAS) and Bristol Aerospace CRV7 rockets as well as UK-standard radios.

The rest of the helicopter was made in the US, and included the Lockheed Martin Longbow



*Above: Apache AH1 ZJ203 from 4 Regiment takes part in Pashtun Rat 2010/1, one of the biannual Mission Rehearsal Exercises (MRXs) on the Salisbury Plain Training Area. After flying a training sortie, the Apache lands for a rotors-running refuel from the RAF's tactical supply wing. The exercises were designed to prepare troops for deployment to Afghanistan for Herrick tours. All units about to be sent to theatre would be placed in the same area of operations to simulate Helmand. This Apache is loaded with two reduced size, crashworthy external fuel system tanks, two inert Hellfire missile rounds, a CRV7 rocket pod and the M230 chain gun. Rich Pittman*

# Gunships

**AFM** concludes its review of Europe's helicopter gunship fleets with a focus on the British Army Air Corps Apache. **PART 4**



*A line-up of AAC Apaches at Royal Naval Air Station Merryfield, Somerset, during a major 16th Air Assault Brigade exercise held between Dartmoor and Salisbury Plain. Rich Pittman*

millimetre-wave radar and provision for AGM-114 Hellfire air-to-ground missiles.

A deal was struck with the then Westland Helicopters to be the design authority for the AAC variant and assemble the bulk of the 67 helicopters at its Yeovil site in Somerset. By the time the Apaches were delivered to the AAC, Westland had been fully absorbed by state-owned Italian defence company Finmeccanica (now Leonardo) and the type officially designated AgustaWestland Apache AH1 by the British Army.

AAC Apaches were subsequently upgraded with the Lockheed Martin Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensor (M-TADS/PNVS), or Arrowhead system, which dramatically improved the performance of the thermal optical sensors used by the helicopter's pilot and gunner.

## Afghan action

The first AAC AH squadron was declared combat-ready in October 2004, with 9 Regiment certified as ready for operations the following spring – just in time to begin preparing to deploy to Afghanistan as part of the British Army's 16 Air Assault Brigade in May 2006.

Over the next eight years, the AAC's six Apache squadrons each completed back-to-back tours in Helmand province, providing close air support for British and NATO troops fighting Afghan insurgents. When Prince Harry qualified as an Apache pilot and deployed to Afghanistan for a six-month tour of duty he dramatically raised the profile of the AAC's most powerful attack helicopter.

Even with the Apache fully committed to Afghanistan, the AAC achieved a notable first when it deployed a detachment of the type aboard the Royal Navy helicopter carrier HMS *Ocean*

during the 2011 Libya conflict as part of a tailored air group with RN helicopters. During the mission the Apaches flew 75 combat hours and fired 99 Hellfire missiles and 16 CRV7 rockets, destroying 107 targets including 54 enemy vehicles and two inflatable boats.

By April 2014 the Apache squadrons had flown 50,000 hours in Afghanistan, their presence overhead credited with turning the tide of battle many times. Although several Apaches were hit by small arms fire during their low-level missions over Afghanistan, none were shot down during Operation Herrick, as the UK mission was codenamed. One, however, was written off after being badly damaged in an accident in Helmand province.

During the Afghan war, the AAC established a readiness cycle to prepare Apache squadrons for deployment to Camp Bastion in Helmand,

## Inventory

Apache AH1	50*
*50 AH-64Es ordered in July 2016	

## Gunship ORBAT

### Wattisham Flying Station, Suffolk

#### 3 Regiment, AAC

653 Squadron (Apache Conversion Squadron)

662 Squadron

663 Squadron

#### 4 Regiment Army, AAC

656 Squadron

664 Squadron

### Army Aviation Centre, Middle Wallop, Hampshire

#### 7 (Training) Regiment, AAC

673 Squadron

under which the six Apache squadrons were concentrated in two units – 3 and 4 Regiments – both based at Wattisham Flying Station in Suffolk. ◀

Plans to operate three mixed Apache/Lynx AH7/9 regiments were dropped because of the need to streamline training and logistic support for the Apache Force. Meanwhile, AgustaWestland set up a depth maintenance hub at Wattisham so the Apaches could be overhauled on the same site as the operational squadrons.

The two AH regiments took turns to deploy to Afghanistan: their regimental headquarters deployed to Camp Bastion for a year at a time, each of their three squadrons spending four months in theatre. The other regiment remained at Wattisham to oversee routine and pre-deployment training for units heading to Afghanistan. The process then repeated, each regiment swapping roles.

The last Apache unit to deploy to Afghanistan, 662 Squadron, flew top cover for the final withdrawal of British troops from Camp Bastion in October 2014.

## US production

*As a subcontractor to AgustaWestland, Boeing built the first eight British Apaches and partially assembled the other 59 at its Mesa, Arizona, facility. Final assembly, flight test, delivery and support for the aircraft took place at AgustaWestland's Yeovil facility. Apache AH1 ZJ166 (ex N9219G), the first of eight British Apaches to be built at Mesa, made its inaugural flight on September 25, 1998, with official handover to AgustaWestland three days later. Rich Pittman*



*Above: An Apache AH1 prepares to lift off from a forward refuelling point during an exercise on Salisbury Plain. Note the black Hellfire Collective Training Missile (CTM) fitted on the port side of the Apache. The CTM pod can simulate targets for engagement as well as hits to the aircraft itself, and can communicate with other aircraft carrying the pod. It's often used in conjunction with a blue M34 Hellfire training round. Chris Lofting*



**Above:** *Wattisham-based Apache AH1 callsign 'Gunship 54' conducts whiteout snow landings on Netheravon Airfield, Wiltshire, during a Mission Rehearsal Exercise in February 2009. Whiteouts are similar in terms of visibility and type of approach to brownout conditions in the hot and sandy climate of Afghanistan, except that sand is a lot more abrasive on aircraft components, especially the rotor blades.* Rich Pittman

In the annual Ministry of Defence (MOD) spending round in 2015, it was decided to scale back the size of the Apache Force – reducing the operational fleet to 50, with surplus aircraft being cannibalised for spares. At the same time the number of frontline squadrons was reduced by two to four, with 3 Regiment's 653 Squadron re-roled as the aircrew operational conversion unit and 4 Regiment's 654 Squadron being disbanded.

### Contingency operations

Since the end of Operation Herrick combat operations, the Apache Force has undergone a 'reset' process to prepare for what the British Army calls 'contingency operations' – in effect, preparing for the unexpected. The basic concept of the readiness cycle has been retained since the end of the Afghan deployment, the two AH regiments taking turns to be at 'readiness for operations'.

Under this arrangement, each AAC regimental headquarters is on alert for a year at a time to deploy and act as a Joint Helicopter Force HQ for either 3 Commando Brigade of the Royal Marines or the army's 16 Air Assault Brigade. The operational regiment's two squadrons are also at readiness or alert to support these rapid reaction units.

One squadron is also held at very high readiness (VHR) to support

the UK Special Forces (UKSF) either domestically or overseas. Since early 2015, the VHR units have been called forward to Royal Air Force Akrotiri, Cyprus, to support the UKSF in Operation Shader in Iraq and Syria. Not much is known about this detachment's operations but its helicopters are clearly visible on publicly available satellite imagery of RAF Akrotiri.

### New equipment

With the US Army retiring its AH-64D variant Apaches and bringing the AH-64E into service, the British Army has been forced to follow suit to ensure long-term support costs are manageable. The AH-64E incorporates new computers and flight control systems, more powerful General Electric T700-GE-701D engines,

data links and the ability to control unmanned aerial vehicles from the cockpit in flight.

Last July, the MOD announced a \$2.3bn purchase of 50 AH-64Es to replace the AAC's Apache AH1s between 2021 and 2024. Unlike the original Apache procurement, the new batch will be assembled in the US at Boeing's line at Mesa, Arizona, so there will be minimal UK-specific industrial content, the AAC helicopters being virtually identical to their US Army counterparts.

Major changes are also to be made to how the AAC Apache Force is based, trained and supported. The Joint Helicopter Command, which controls all the UK's battlefield helicopters, is reviewing its basing structure as part of another MOD economy drive – which means the AAC will have to look again at the viability of Wattisham as the home for the force.

Boeing is also proposing to set up a European hub for helicopter training and maintenance in the UK. The AAC Apaches are expected to be part of the project, leading to the end of the Aviation Training International Limited-provided simulation service at Wattisham and the demise of the Leonardo-run depth support facility at the Suffolk base. **Tim Ripley**



**Above:** *A 673 Squadron Apache AH1 returns to the secure compound at Middle Wallop after a training flight. The unit, re-formed for attack helicopter training at the School of Army Aviation, Middle Wallop, in 2003, conducts conversion to type training on the Apache for both newly qualified and experienced army pilots. On completion, pilots are posted to their respective regiments to complete combat training. The squadron also conducts Qualified Helicopter Instructor training as well as refresher training for qualified pilots after non-flying tours of duty.* Rich Pittman