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THE HOLIDAY PERIOD IS TRADITIONALLY deemed the ‘silly season’ as the usual movers and shakers disappear on holiday and the hard news dries up.

So it came to pass that the revelation in January of the German student who hurled a puppy at a group of Hell’s Angels before escaping on a stolen bulldozer was overshadowed by the Swedish cleaning woman who ‘stole’ an empty commuter train and crashed it into a house (both true).

Such high jinks aside, one announcement that did come out of the US in January could have long-term and far-reaching implications for the military helicopter sector.

Turning away other suitors, Boeing has started a courtship with Sikorsky, signing a teaming agreement on 13 January to work together on the first phase of the army’s Joint Multi Role (JMR) Technology Demonstrator programme.

For the rest of the rotorcraft industry, this must make a truly intimidating pairing. Boeing’s tandem-rotor expertise and involvement in the V-22 programme combined with Sikorsky’s work on the S-97 coaxial compound aircraft provide a depth of experience that will be invaluable in developing a medium Future Vertical Lift (FVL) aircraft that ‘greatly surpasses’ the DoD’s currently fielded VTOL fleet.

Both companies also have an established and proven manufacturing capability, supplying around 80% of the US Army’s current fleet of helicopters.

The two OEMs most famously previously teamed up on the RAH-66 Comanche project, which was cancelled in 2004 after an outlay of almost $7 billion and only two prototypes built.

Despite the high profile failure of that effort, rotorcraft aficionados still look back on the actual capabilities of the aircraft with some longing.

With everything seemingly riding on the FVL project beyond 2025, it is hardly surprising that the two rotorcraft giants have doubled down in their attempt to secure the lion’s share of this work. Can we see this as an indicator of wider consolidation in the rotorcraft industry, however?

Speaking at Eurocopter’s annual meeting with the press in Paris on 24 January, company president and CEO Lutz Bertling suggested otherwise.

‘The combined capabilities of Boeing and Sikorsky will make this a strong contender, no doubt. Yes, they can undust some of the Comanche files, although they are a bit old now so maybe they are not worth dusting off. From our point of view, in terms of what we can offer – and I am not disclosing any partnerships here – we believe our offering for JMR will be extremely attractive,’ he said in response to the inevitable question about the teaming arrangement.

‘Some people are saying this is a sign of future consolidation... I believe this is reading a bit too much into it. I don’t see this as a hidden announcement of the next consolidation step. I’ve seen some statements like that, but I believe this is going too far.’

While wholesale consolidation may still be some years off, it is clear the rotorcraft industry in the US has come to the realisation that the old way of doing business with the DoD has irrevocably changed.

At the AUSA Aviation conference in Washington DC at the start of January, the current budgetary constraints being felt by the army cast a long shadow over proceedings.

Industry leaders spoke of the need to do more with less, to further leverage the developments being made in commercial rotorcraft technology, and to invest company R&D funds in the right areas.

There were also renewed warnings by executives of the likely loss of industrial capability if the army’s Armed Aerial Scout does not proceed and the JMR/FVL effort is delayed.

In the light of such uncertainties, the teaming of the two major ‘incumbents’ in the sector must be regarded as prudent for the companies themselves, as well as providing a warning shot for their rivals.

Tony Skinner, Editor

‘Industry in the US has come to the realisation that the old way of doing business with the DoD has irrevocably changed.’
The first operational deployment of the Dutch NH90 NATO Frigate Helicopter (NFH) has commenced on board the Royal Netherlands Navy frigate HrMs De Ruyter. The surface combat vessel left its home port of Den Helder on 20 January, and is now heading towards the Gulf of Aden to join Operation Atalanta, an anti-piracy maritime initiative conducted by the EU Naval Force that has been active since December 2008.

Defence Helicopter Command’s 860 Squadron at Naval Air Station De Kooy had expected to receive its first full operational capability (FOC) NH90 NFH in late 2012. However, due to delays, the first FOC-configured aircraft is now expected to arrive in the Netherlands on 25 January, leading to a single NH90 in ‘meaningful operational capability’ (MOC) configuration embarking on De Ruyter.

Integrating the NH90 with the Zeven Provinciën-class air defence frigates (LCFs) did not prove easy. The first trials with the ship’s DCNS Samahe entrapment and deck handling system were conducted in early 2008, but integration problems were not solved until October 2012, when the navy managed to ‘park’ an NH90 in the hangar of an LCF with the system for the first time.

A total of seven MOC-standard NH90s was present at De Kooy in late 2012, only one of which was mission-capable. One airframe is heavily cannibalised, while all maintenance activities on another two have been halted due to inadequate servicing capacity. Two more NH90s were being modified with an anti-piracy kit, which consists of additional ballistic protection. The aircraft stationed on board De Ruyter is one of the airframes that was modified by Eurocopter Deutschland personnel in December. Meanwhile, Belgium’s first NH90 Tactical Transport Helicopter (TTH) was handed over by NH Industries during a ceremony at the Eurocopter plant in Marseille-Marganean on 21 December. The helicopter had been completed according to FOC specifications on the French production line before delivery, and performed its first flight on 18 September.

It is the first of four NH90 TTHs on order, and will be based at Beauvechain Air Base, home of the 1st Helicopter Wing of the Belgian Air Component, in the near future. According to a recent Belgian MoD statement, two more NH90 TTHs will be delivered in 2013, with the fourth aircraft in 2014.

By Pieter Bastiaans, Breda

Royal Netherlands Navy deploys first NH90 at sea

Italian AH-129D approved for maritime operations

The Italian Army and Navy signed a technical agreement on 23 November 2012 for the use of the AgustaWestland AH-129 Mangusta on board military vessels, it has been confirmed.

The agreement provides that the pilots of the Mangusta will be taught how to operate aboard ships by navy instructors, who will first be ‘licensed’ to fly the AH-129D. Two of these will teach army pilots the procedures of operating from the decks of Italian ships.

The agreement retains dedicated crews for the army helicopters and does not call for mixed army/navy crews.

The development of the new doctrine is part of the National Capacity of Projection from the Sea project, which set out to establish a joint expeditionary force to conduct sea-based operations anywhere in the world.

During the delicate phase of an amphibious landing in a ‘hostile’ environment, the presence of fire support, such as that provided by the AH-129D, is seen as potentially decisive for establishing a bridgehead. Even during the later stages, the Mangusta can provide cover for ground troops using the navy ships as a base, without the need for ground logistical support.

The AH-129Ds are currently undergoing an avionics upgrade for integration of the new Toplite III targeting pod and the Spike-ER air-to-ground missile, both built by Rafael.

By Davide Daverio, Milan

THE ITALIAN ARMY AND NAVY SIGNED a technical agreement on 23 November 2012 for the use of the AgustaWestland AH-129D helicopter on board military vessels, it has been confirmed.

The agreement provides that the pilots of the Mangusta will be taught how to operate aboard ships by navy instructors, who will first be ‘licensed’ to fly the AH-129D. Two of these
CH-47F to join IAF fleet

NEW DELHI HAS CONFIRMED its purchase of 15 Boeing CH-47F Chinook heavy-lift helicopters for the Indian Air Force (IAF), sealing the fate of the Russian Mi-26T. Both types had qualified for technical trials, but it is understood that the former scored higher on life-cycle costs, a vital ingredient in all RfPs released by India.

‘The cost of the contract will depend upon the outcome of the contract negotiation with the L1 vendor [lowest bidder], which has not yet concluded,’ Defence Minister A K Antony announced in parliament on 5 December.

The IAF’s field evaluation trials for the CH-47F ‘found them to be compliant with all the stated air staff qualitative requirements’, according to Antony, who added: ‘Divulging further details… may not be in the interest of national security.’

Boeing is expected to finalise the contract by April, and deliveries are scheduled for completion within 54 months of signing.

The Chinook’s primary mission is to move troops, artillery, ammunition, fuel, water, barrier materials, supplies and equipment on the battlefield, says Boeing. Its secondary missions include medevac, disaster relief and SAR.

Russia’s entrenched position in Indian arms procurement is slowly giving way to a change in the geopolitical scenario, as the US sets to carve a niche in the defence environment there. India emerged as the second largest US FMS customer in 2011, with imports worth $4.5 billion. Boeing has also been awarded contracts for ten C-17 transports and 12 P-8I multi-mission maritime aircraft.

The Indian MoD is also in the final stages of procuring 22 Boeing AH-64D Apaches in a deal valued at $1.3 billion, although a defence official told Defence Helicopter it was likely the Chinooks would be cleared before the attack helicopters, as they were urgently required.

By Neelam Mathews, New Delhi

Chinese attack helicopters displayed for the first time

TWO SECRETIVE CHINESE ATTACK helicopter designs were shown to the public for the first time following the opening of Airshow China in Zhuhai in November. Both the Changhe Z-10 (WZ-10) and Harbin Z-19 helicopters were photographed arriving at the show on 12 November, and later took part in the flying display.

Specific detail of the projects remain unclear. The Z-10 programme dates back to the 1990s, and was originally developed under the guise of the commercial Chinese Medium Helicopter to garner foreign support. Pratt & Whitney Canada provided its PT6-67C turboshaft as the initial powerplant for the aircraft before being fined by the US Department of Justice and State Department for violations of defence trade restrictions.

Lack of a suitable engine has since forced the designers to take a number of measures to reduce the weight of the Z-10.

According to reports in the Chinese media, around 24 aircraft have been built, and the first Z-10 squadron is understood to be operational. It is currently unclear how many examples will be acquired by the People’s Liberation Army (PLA).

Meanwhile, the Z-19 is a Z-9 derivative, with a tandem cockpit configuration and a significantly modified forward fuselage. The existence of the aircraft emerged in 2010 with the release of pictures on the Internet of a Z-19 in PLA markings. A further development of the Z-9W attack helicopter, it is likely the Z-19 will serve in the light attack/scout role, leaving the Z-10 for traditional combat helicopter missions.

By Tony Skinner, Zhuhai

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NEWS ANALYSIS

Boeing and MD Helicopters on collision course over AAS contenders

BOEING IS ENGAGED IN A DISPUTE WITH MD Helicopters (MDH) over the latter’s development of the MD 540F as a militarised aircraft, it has emerged.

A Boeing executive confirmed to Defence Helicopter that the company was considering legal action against MDH following its pursuit of the US Army’s Armed Aerial Scout (AAS) programme, effectively pitting the MD 540F against Boeing’s AH-6i Little Bird.

AgustaWestland, Bell, Eurocopter and Sikorsky are also developing their own contenders for the AAS requirement to replace the army’s venerable OH-58 Kiowa Warrior.

MDH first unveiled the armed MD 540F at the Quad A exhibition in Nashville in April 2012. At the time, company representatives said they did not expect there to be any clash with Boeing, as the two types were aimed at very different markets.

However, with the aircraft now in direct competition for any AAS contract, it appears that Boeing feels it has grounds for legal recourse.

FREE OFFERING

When approached by DH for clarification of the grounds for any possible legal action, Boeing did not respond. An MDH spokesman said the company would ‘not comment directly on this ongoing dispute’, but did confirm it believed it was free to offer the MD 540F for the AAS.

At issue is likely to be the final terms of the 1999 sale of Boeing’s light commercial helicopter product lines – including the MD 600N, the MD 900 Explorer and the MD 500 series – to MDH, then an indirect subsidiary of Netherlands-based RDM Holding. Patriarch Partners, acquired MDH from RDM in 2005.

While MDH became the type certificate holder for the MD 500 as part of the transaction, Boeing owns the right to market the Little Bird as a military platform. Boeing also kept ownership of the NOTAR anti-torque system, although MDH was granted a licence to use the technology on existing and future aircraft.

One industry source with past experience of the MD 500 series told DH that MDH may be in a position to market the 540F as an armed helicopter because it is in a significantly different configuration to the AH-6i.

Further muddying the waters is the fact the two companies have signed an agreement to collaborate on production of the AH-6i for the international market, with MDH supplying the airframe and Boeing carrying out the mission systems integration.

PACKING A PUNCH

When it launched the aircraft in April, MDH did not shy away from aiming the 540F at the military market, with CEO Lynn Tilton describing it as a ‘lethal fighting machine’.

According to the company, the aircraft’s weapons systems include fixed forward-firing rockets and guns, laser-guided rockets and Hellfire missiles.

‘The 540F will carry much of the same punch as the heavier attack helicopters at a fraction of the acquisition expense and life-cycle operation costs,’ Tilton said in a statement. ‘Using precise aim points and laser-guided missiles and rockets, the MD 540F will be able to destroy enemy armour and infantry positions with little collateral battle damage.’

The prototype MD 540F, which has now flown around 50 hours, took part in a volunteer flight demonstration in September for the US Army as part of its process to evaluate potential AAS solutions already on the market.

The aircraft is expected to be priced from $6.5 to $8 million depending on the sensor/ armament fit. Civil certification is expected to be completed in early 2015.

Saudi Arabia is now likely to be the launch customer for the AH-6i, following an FMS purchase of 36 aircraft announced in 2010 (see p14). MDH received a $40 million contract for 12 MD 530Fs as part of the same FMS package, with deliveries expected from April.

By Tony Skinner, London
NEW TOOLS FOR NEW RULES

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ITALIAN NH90 HELICOPTER

detachment in Afghanistan has been initially hampered by problems such as windshield cracks and poor availability of spare parts, it has emerged.

However, commanders have expressed overall satisfaction with the performance of the aircraft to date and its integration with the wider battlespace – Task Unit Nemo reached full operational capability with the NH90 in theatre at the end of September, according to the Italian MoD.

Five Italian Army Aviation NH90 Tactical Transport Helicopters (TTHs) were deployed to Herat Province by US C-17s, with the first aircraft arriving on 20 August and the last on 22 September. This is the first time the NH90 has been deployed to the Afghan theatre.

According to Task Unit Nemo’s official first impression report, which has been seen by Defence Helicopter, the poor availability of spare parts has hampered the deployment and led, in some instances, to the ‘cannibalisation’ of aircraft parts.

The unit has also experienced some problems due to windshield cracks. This seems to be a recurring problem with the NH90, as Finnish aircrews experienced similar problems during Exercise Hot Blade 2012. However, NH Industries is understood to have developed a solution that should better counter the effects of expanding and shrinking windshield material due to hot weather conditions.

In general, Italian officials appear pleased with the performance of the NH90 in its ‘Enhanced Initial Operational Capability’ configuration. The report revealed that, despite some shortcomings, the Italian NH90 TTH is coping better with the hot and high conditions in the Afghan theatre than previously anticipated, and offers good dust resistance and overall robustness.

IMPROVED PERFORMANCE

The arrival of the type has strengthened Task Force (TF) Fenice, the army aviation battalion that supports Italy’s troop contingent in Regional Command-West. Low-light night-flying capabilities have also significantly improved with the introduction of Configuration 3 of the Thales TopOwl helmet-mounted sight/display.

The Italian NH90s are equipped with two Dillon Aero M134D 7.62mm Gatling guns to provide suppressive fire if needed, while additional ballistic protection has been installed to improve survivability. Upgraded General Electric T700 engines are also fitted, which, according to the reports, have provided better performance than expected.

The NH90s sent to theatre have not undergone any structural modifications to meet the extreme flight conditions of the area, and judging from published photographs, it seems that no external air particle separators have been fitted either.

This would indicate that the NH90 test and evaluation team from the Italian Army Aviation Training Centre at Viterbo is convinced the engine’s own inlet particle separators provide adequate protection.

Less than a month after the official start of deployment, the Italians were given an opportunity to test the quality of the NH90 TTH in the field. On 13 October 2012, Operation Grasshopper was launched to transport a battalion of the 207th Afghan Corps to Gulistan Province. More than 250 Afghan troops, along with the 9th Alpini Regiment of the Italian Army, were transported from Farah by six multinational CH-47 Chinooks, aided by two Afghan Air Force Mi-17s.

The NH90 was used as a C2 station by the mission commander, but it also had responsibility for the protection of ground troops during the critical phase of the operation, exploiting both the M34D miniguns mounted on the side doors and special forces snipers.

During the three days of activity, the helicopters completed nine missions, racking up more than 100 hours of flight time. TF Fenice personnel were reportedly happy with the performance of the NH90 within a multinational framework, and the aircraft sparked interest from the staff of the other nations.

What stood out most during the operation was the new communications system with Have Quick encryption, which made it possible to communicate directly with other aircraft active in the area of operations.

Col Salvatore Annigliato, TF Fenice commander and NH90 pilot, expressed satisfaction with the helicopter to CH, including its response in critical situations, and praised its advanced avionics.

To date, the five NH90s of Task Unit Nemo have taken part in all missions assigned by ISAF, thanks to the work of the technical staff in maintaining the helicopter, earning plaudits from Annigliato.

By Pieter Bastiaans, Breda, and Davide Daverio, Milan
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Heavy metal revival

The UK’s fleet of Chinooks is undergoing a significant modernisation process, with extensive upgrades taking place alongside acquisition of new airframes. Patrick Allen visited RAF Odiham to find out more.

In December 1980, the Chinook HC Mk 1 first entered service with 240 Operational Conversion Unit at RAF Odiham. No 18 (Bomber) Squadron, the first operational Chinook unit, re-formed at Odiham in August 1981, and the RAF Chinook Force has been active ever since.

Between 1992 and 1995, the Chinook Mk 1s returned to then Boeing Helicopters in Philadelphia to undergo a mid-life update to Mk 2 standard. Since then, the fleet has flown around 12,000 hours per year until 2007, when this increased by 33% to 16,000 hours – the highest flying rate of any military CH-47 user in the world.

In 2009, this figure increased again by around 3,000 hours a year. By the end of 2011, the RAF Chinook fleet of 46 aircraft, including those deployed to Afghanistan, were flying more than 18,500 hours a year.

AIRCRAFT ADD-ONS

For operations initially in Iraq and then Afghanistan, the Chinook Mk 2/2A fleets were fitted with various operational enhancements and role equipment, largely through UORs.

In 2003, eight aircraft were also updated with a night enhancement package (NEP), including a nose-mounted FLIR, Display NVG (DNVG) and moving map, while some were retrofitted with the more powerful Honeywell T55-L-714A engine. However, such ad-hoc additions proved to be unsustainable, especially in low-light conditions.

As a result, a £290 million ($460 million) upgrade programme named Project Julius was initiated in 2008 to deliver more powerful engines and an advanced digitised cockpit. It will result in the existing fleet of 46 Chinook Mk 2/2As and 3s being re-designated as Mk 4s and 5s respectively.

At Odiham, RAF Chinook Force commander Gp Capt Dominic Toriati, told Defence Helicopter that Project Julius was much more than a glass cockpit, rather a ‘whole solution’.

‘The RAF Chinook fleet was first introduced in the early 1980s, and over the years has had some pretty significant upgrades, including NEP equipment bolted onto the old analogue cockpit [FLIR screens, DNVG, knee map etc]. These add-on, non-integrated solutions, when operating at low level in low ambient light conditions, were proving unsustainable, and the safety case for the aircraft wasn’t standing up.

‘The RAF needed a clear path to addressing these non-integrated solutions, and this was the driving force for the modernised cockpit.’ (For more, see p36.)

He continued: ‘Project Julius has given us an integrated solution which satisfied the ergonomics and human-machine interface that the previous analogue cockpit didn’t, and a capability we can maintain safely, which was one of the key requirements.’

Project Julius will see the existing RAF Chinook fleet of 38 Mk 2/2As and eight Mk 3s upgraded with the Thales TopDeck glass cockpit display system (CDS). Additionally, Honeywell was awarded a £128 million contract to provide the T55-L-714 engine to replace the current T55-L-712F.

STRIPPED DOWN

Under Project Julius, the existing RAF Chinook fleet was being upgraded with the Thales TopDeck CDS glass cockpit. (All photos: author)
TopDeck CDS cockpit, the more powerful engines, the FADEC and specific role equipment. The entire RAF fleet of Mk 2/2A/3s should be upgraded by mid-December 2015.

Prior to delivery, a Boeing/Vector team at Fleetlands undertakes preflight testing of completed aircraft to check all the systems and overall airworthiness before they are delivered back to Odiham.

The TopDeck CDS digital cockpit comprises four main (6x8in) colour displays, two standby flight displays, updated communications interfaces and two new air data computers.

The cockpit display/mission avionic system has been designed to ease cockpit workload, allowing a significant increase in situational awareness and safety, especially at night, during low ambient light levels or red illumination periods, when there is no visible moon and little or no ambient light.

The human-machine interface is centralised and critical information, including primary flight and tactical data, is continuously presented on the four main displays. The cockpit is also fully NVG compatible, with DNVGs providing critical flight data directly onto the pilot’s line of sight without the need to look down into the cockpit.

Also delivered as part of the project was the Thales-developed Ground Mission Support System (GMSS), an On-board Mission Planning System (OMPS) and a rear crew workstation, sometimes referred to as the ‘third cockpit seat’.

REHEARSAL PLAN

Toriati explained: ‘It’s all about reducing crew workload and improving flight safety. The GMSS allows the entire mission and flight plan to be loaded and rehearsed prior to walking out to the aircraft. Once the flight plan has been stored in the GMSS, the mission can be tested and replicated (moving map, waypoints, route timings etc) at the pre-mission planning stage, then loaded into the aircraft system.

‘The clever thing is the OMPS is in the form of a tablet (one located in the cockpit and one at the forward crew workstation), which allows the crew to manipulate the flight plan in the air.’

He continued: ‘An upgraded navigation system, which plays into the cockpit MFDs, provides a high-grade, blended navigation picture ranging from imagery to raster or vector mapping. The FLIR picture can also be displayed on one of the four MFDs, and together with the pilots’ DNVG displays this helps improve situational awareness and reduce risk even on the darkest nights.’

Toriati noted that a FLIR capability was now available across the entire Chinook fleet, and was a key enabler for immediate response team aircraft in Afghanistan.

‘Again, this is to help reduce risk when operating in low ambient light,’ he explained.

‘All our pilots go through an in-depth course to learn how to use FLIR during dark nights and exploit the system to reconnoitre potential landing sites for obstructions. The Chinook fleet has gained a high degree of competency operating with DNVGs, and together with FLIR this has helped to reduce the risk during low-level night operations.

‘With their own crashworthy seat and workstation, which includes comms’
navigation equipment and their own OMPS tablet, the crewman now helps to add capacity to the crew in a way not seen before. He can help offload navigational or communications tasks during high-workload phases, all helping increase crew efficiency and situation awareness, and reduce risk.

**Fleet Modernisation**

The first upgraded Chinook Mk 4 (ZA677) took flight at Gosport on 9 December 2010. Later that month, the first of two Mk 4s were delivered to the UK’s Rotary-Wing Test & Evaluation Squadron (RWTES) at MoD Boscombe Down, Wiltshire, followed by the second aircraft in January 2011.

By August 2011, four Mk 4s were operating with the RWTES combined test team at Boscombe Down. This allowed the squadron to begin a comprehensive trials and evaluation programme and obtain the necessary aircraft release to service and provide an initial operational capability (IOC) prior to the aircraft entering service with the RAF in May 2012.

Turning towards the introduction of the Mk 4 at Odiham and the digital conversion, Toriati noted: ‘By May 2012, there were six Chinook Mk 4s in Odiham and the initial release to service allowed the first of our qualified helicopter instructors (QHIs) to begin training on the aircraft, initially under the auspices of Boeing.

I have enough engineers to deliver my day-to-day engineering effort with the current Mk 2 and Mk 3 fleet. At no point throughout this programme have we reduced our operational output. I have my day-to-day, including our UK standing commitments, high-readiness tasking, and Mk 3 fleet. At no point throughout this programme have we reduced our operational capability (IOC) prior to the aircraft entering service with the RAF in May 2012.

The first three Mk 6s are due to achieve IOC by 2015, with all 14 declared as having full operational capability by 2017.

The MoD announced its intention to purchase additional new-build Chinooks as part of the Strategic Defence and Security Review released in October 2010. These new CH-47Fs will be built by Boeing in Philadelphia at its recently renovated Ridley Township facility for delivery from 2013-2015.

The aircraft will have a new machined monolithic airframe and be equipped with the Thales TopDeck CDS cockpit and UK-specific role equipment. The Mk 6 will differ slightly from the upgraded RAfR Chinook Mk 4/5 by being equipped with a full digital automatic flight control system.

**New-build Chinook Mk 6s**

In late August 2011, the UK MoD confirmed a £1 billion ($1.6 billion) contract with Boeing to provide 14 new-build CH-47F helicopters, designated Chinook Mk 6s, including associated support for the first five years.

The first three Mk 6s are due to achieve IOC by 2015, with all 14 declared as having full operational capability by 2017.

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The RAF has the highest flying rate of any military Chinook user in the world.
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Although no firm programmatic direction had been announced at the time of writing, considerable US attention was focused on the US Army's Armed Aerial Scout (AAS) efforts during the latter half of 2012. This culminated in a series of voluntary flight demonstrations (VFDs), designed to provide industry with the opportunity to inform army recommendations and eventual DoD decisions.

Meanwhile, a number of activities were also unfolding in the international scout/light attack helicopter arena. One of the most recent examples involved the delivery of six Bell Huey IIs to the Lebanese Air Force on 12 December 2012. The aircraft will augment the country's ageing fleet of UH-1H aircraft and be used to meet present and future challenges posed by internal and border security threats, evacuations, SAR and drug interdiction missions.

**FMS CASE**

The December delivery marked the culmination of an FMS transaction originally announced by the Defense Security Cooperation Agency (DSCA) on 20 July 2012. Furthermore, army aviation representatives in December confirmed delivery of the fifth of eight planned shipments of Bell Iraqi Armed 407s, and noted the remaining weapons-configured aircraft will arrive in the second quarter of 2013. The sale of Bell 407s under the FMS mechanism was originally announced by the DSCA in 2008, and the company was awarded a $60 million contract for 24 helicopters the following year. While the company supplied the commercial 407 airframes, the US Army oversaw the militarisation process, which included airframe modifications for weapons carriage/use and new electronics. In 2011, L-3 Communications Wescam received a $21.2 million contract for 22 MX-15DI surveillance and targeting turrets for installation on the Iraq 407s. Bell was also awarded a $1.5 million contract for contractor logistics support for 30 Model 407 helicopters for the 12-month period.

Iraq also signed for 24 EC635 light twin-engine helicopters under a 2009 agreement with Eurocopter valued at €360 million ($480 million). Reports suggest the aircraft have been outfitted with the Stand Alone Weapons System developed in conjunction with South Africa’s Denel Dynamics.

Other notable scout/light attack programme milestones included the delivery to Ecuador’s MoD of its first two Eurocopter AS550 C3 Fennec helicopters in October 2012. The deliveries were made under a 2010 contract for seven AS550 C3s and two AS350 B2s, which were delivered in December 2011. The agreement contemplates delivery of two Fennecs per year until 2015.

**ROTARY REPLACEMENTS**

In its announcement of the milestone, Eurocopter said it was in discussions with the Ecuadorian MoD about an additional order for the aircraft, as the armed forces progressively replace their Gazelle and Lama helicopters, some of which have been in service for decades. Company representatives noted that Ecuador had one of the first armies in Latin America to...
A number of militaries around the world have been focusing on developing their scout/light attack capabilities further. Scott R. Gourley explores recent developments.

MARKET OVERVIEW

A number of militaries around the world have been focusing on developing their scout/light attack capabilities further. Scott R. Gourley explores recent developments.

integrate Eurocopter aircraft into its fleet, which now comprises more than 20 platforms, including two AS350 Bs, two AS350 B2s, three SA 315 B Lamas, two SA 316 B Alouettes, seven SA 342 Gazelles and five AS332 Super Pumas. Just a week earlier on 10 October 2012, Argentine company Fábrica Argentina de Aviones (FAdA) conducted the maiden flight of its first domestically assembled Z-11 (CZ-11W) helicopter.

The development reflects a joint programme agreement signed in October 2011 between FAdA, China’s Avicopter and the latter’s parent company CATIC. Although the first aircraft was assembled from a kit sent from China, FAdA and the Argentine government have plans to add domestic content in the future.

Another relevant effort – still pending final acquisition – was formally announced more than two years ago, with the October 2010 notification by the DSCA of a possible FMS to Saudi Arabia. In addition to a requirement for 36 AH-64E Apaches and 72 UH-60M Black Hawks, it identified a Saudi desire to purchase 36 AH-6i light attack helicopters and 12 MD 530F aircraft.

US government representatives acknowledged that the AH-6i production contract had not been awarded as of late December 2012, but added: ‘The US Army, Saudi Arabia and Boeing are working to achieve an award in the next few months.’ Depending on the eventual timing of this, Saudi Arabia could serve as the launch customer for the AH-6i.

INDUSTRY APPROACH

In the meantime, the AH-6i programme provides several examples of how industry is approaching the scout/light attack marketplace as it exists at the beginning of 2013. ‘We are fielding the AH-6 internationally first,’ explained Mike Burke, director of army attack rotorcraft business development in the global strike division at Boeing Military Aircraft.

Reflecting on estimated international market requirements in the scout/light attack arena, he pointed to a Boeing internal assessment that ‘there are somewhere around 1,500 pretty old, outdated, daylight-only short-range weapon system kinds of aircraft that are in some of the defence forces around the world’. He said ‘I would think that in today’s environment, unless you can convince the enemy to only attack you during daylight, a number of those countries would like to have a very capable night precision reconnaissance and attack capability that is also useful in the daytime.’

For instance, I used to fly the old S-model [AH-1] Cobras, [where] pilots were provided with NVGs to fly with. But the sight system could only be used during daylight – it didn’t have a
night sight. And on top of that, the weapon system was the TOW missile, which had a maximum effective range of 3,750m.

‘So that meant if you had to use the aircraft to fight a tank in the daylight, you had to go nose-to-nose inside the maximum effective range of a tank in order to try to get a shot at it. And a lot of helicopter pilots don’t like these sorts of situations.’

Burke continued. ‘Now, with the [AH-6i] aircraft that we have, you can go after that same tank at night, at ranges up to 8km, and identify the tank, laser the tank and kill the tank, without it even knowing you are there. Attack helicopter pilots like that sort of situation a lot better. ‘That’s the concept we are after. That’s the frame of mind I believe exists in these military departments around the world, and there are a number of them. They don’t have large budgets, but they certainly have needs.’

CUSTOMER COOL-DOWN

While Jordan had appeared to be the most likely launch customer for the AH-6i in recent years, following indications of a direct sale agreement from the country, this new prospect appears to have cooled.

‘On the Jordan purchase, we had put together a pretty good package, and then the Arab Spring happened. At the moment, Jordan has some pretty difficult issues on its northern border [with Syria],’ added Burke.

‘So, in all of the discussions we have had with the leadership in the past, they continue to support the AH-6 as something that they need to have to replace their very old Cobras and some of their other aircraft. But they have asked us to be patient, because at the moment almost all of their resources and efforts are focused on their northern border.’ In terms of additional interest in the platform reported from the Chilean military, he noted. ‘We’ve had some pilots from Chile come up and fly the AH-6. They are kind of interested in it, so we are pursuing that as a campaign – along with the other owners of the other 1,500 aircraft.

‘We’re just in the beginning stages of this, so let me just say that there are a number of countries we have yet to pursue. Our plans for 2013 are to broaden our reach into some of these other countries, and get more visibility over this aircraft.’

UNMANNED OUTLOOK

One sign of changing tactical philosophies can be found in the modernization interests of South Korea. In parallel with its ongoing attack helicopter deliberations, the country is apparently exploring the possibilities of introducing unmanned capabilities in the scout/light attack arena.

‘There are a number of these old MD 500-series aircraft in the RoK [Republic of Korea] Army, observed Burke. ‘Again, they are daylight-only. They are also difficult to maintain, and the weapon systems are not very capable. ‘But Korea is also looking at possibly modifying some of those into unmanned systems. So our unmanned Little Bird took a trip to Korea at the beginning of December 2012 and demonstrated its ability to fly autonomously in front of the Korean customer, and that was very successful. So, I think it represents another avenue where we can demonstrate Boeing’s good products and engineering prowess.’

In addition, the RfI has ongoing manned helicopter projects in the form of the Attack Helicopter (AH-X) and Korean Attack Helicopter (KAH) programmes. For the heavier former requirement, the country placed a request for a possible FMS sale of 36 of either the AH-64D Apache or AH-1Z Cobra, which are competing with the T-129.

Companies that have expressed an interest in the KAH requirement include Boeing, Eurocopter and Bell, while Korea Aerospace Industries has ambitions to build on its experience with the Surion/Korean Utility Helicopter project.

While many international requirements are growing in importance, some potential customers may be waiting to see the programme direction that the US Army takes in its own KAS efforts. Despite the completion of FFOs for those competitors with flying candidates, the AAS remains mired in budgetary uncertainty, leaving the path forward for industry unclear.

Candidate aircraft include AgustaWestland’s AW169 (although the AW139 was flight tested), Bell’s OH-58F, Boeing’s AH-6i, EADS North America’s AAS-72X = EC645, MD Helicopters’ MD 540F, and Sikorsky’s S-97 Raider.

‘There were nine different helicopter companies that they visited,’ noted Burke. ‘Only five of them had flying aircraft. So, there are a number of industry folks who have told the army that they have a viable solution to the current [US Army AAS] problem. So, you could conclude that it would be hard to ignore those kinds of numbers, and we view that as positive.’

MULLING OVER

However, army officials are now asking for more details on the various proposals, as well as more time to mull over the decision. While the Defense Acquisition Board was expected to make a decision to move forward around the second quarter of 2013, this has now been pushed back until later in the year, and an RFP might not be issued before mid-2014.

At the recent AUSA Aviation conference in Washington, DC, industry leaders warned of the dangers of further delays to the AAS project. If the programme does not go ahead, the next new-build development would be the joint Multi-Rotor programme, which, if delayed, could mean a gap of some 40 years between the army’s last new-build helicopter and the next generation. The concern is that some of the engineering skills needed to progress a new build aircraft might be lost as a result.

Additional reporting by Darren Lake
Despite the gradual disengagement in Afghanistan, pending NATO’s full withdrawal from combat operations in 2015, investment is continuing to pour into several helicopter-launched air-to-ground missile and rocket development initiatives, Tom Withington reports.

By 2015, save for some military advisors and perhaps a number of special forces personnel continuing to train local security elements in combating what is expected to be a continuing Taliban and al-Qaeda threat, the international military presence in Afghanistan will have largely ceased.

The past decade of conflict has seen a heavy reliance on helicopters to perform close air support (CAS), manoeuvre and logistical assistance in the Afghan theatre. The importance of helicopters in the CAS role has led to a corresponding trend of innovation by weapons engineers in developing new air-to-ground ordnance for rotorcraft alongside upgrading existing systems.

Similarly, NATO air operations over Libya in 2011 underscored the useful role that the attack helicopter can perform in prosecuting targets in built-up areas where the employment of fast jet launched air-to-ground weaponry may carry a comparatively higher risk of collateral damage. While NATO’s presence in Afghanistan may be winding down, these development efforts are not, as the helicopter’s role as a versatile CAS platform is assured for the future.

FIRING UP

One of the most prevalent helicopter-launched ground attack missiles in service today is Lockheed Martin’s AGM-114 Hellfire series. The missile is currently in production for all the US armed forces, and 20 foreign military customers. The weapon continues to sell well around the globe, with the UK MoD announcing in July a £29 million ($46.5 million) order for the missile in a variety of configurations. Final delivery is expected by the end of 2013.

Guided by semi-active laser homing and millimetre-wave radar (MWR), Hellfire is available outfitted with a high-explosive anti-tank (HEAT) warhead (AGM-114K). A further variant, the AGM-114L, carries the same warhead, but is designed to be used with the Lockheed Martin/Northrop Grumman Longbow fire control radar.

Other Hellfire models include one optimised for surface targets, buildings and lightly-armoured vehicles, and one for anti-armor, anti-personnel and coastal targets. The missile is known for its accuracy, ease of use and versatility.

Aviation ordnancemen place a Hellfire missile on an MH-60 Sea Hawk. (Photo: USN)
Armoured vehicles (AGM-114M), and another outfitted with a thermobaric warhead designed for use against multi-storey buildings and caves (AGM-114N). The anti-tank AGM-114 K has been augmented by the AGM-114K-A, which has a blast-fragmentation warhead for use against undefended targets in open ground. Lockheed Martin is cycling the Hellfire through yet another modernisation effort in the form of the AGM-114R HeliFire II. This retains the semi-active laser guidance of the legacy missile, while adding an inertial navigation system in place of its gyroscopes. These changes are designed to increase the weapon’s responsiveness, enabling it to ascertain its position as soon as it is activated.

Sharing a similar level of fame as the AGM-114 series is the Raytheon BGM-71 Tube-launched, Optically tracked, Wire-guided (TOW) air-to-ground weapon that first entered service in 1965. Like Hellfire, TOW has been manufactured in several variants, including the original BGM-71A, the BGM-71D outfitted with an enhanced warhead, the BGM-71E carrying a tandem warhead and the BGM-71F equipped with a top-attack mode.

New additions to the family include a bunker-busting weapon and the TOW 2B Aero, which has an increased stand-off range of around 4km. The company recently announced it had performed tests on a new propulsion system developed by ATK for the missile, which would double its range and reduce flight time.

**Continental Completions**

At the European level, MBDA continues its work on the PARS 3LR missile to equip the German Army’s Eurocopter Tiger UHT attack helicopters. The missile entered production in October 2012, completing its test and validation phase the previous month, and the company is jointly producing the weapon in collaboration with Germany’s Diehl BGT Defence.

The PARS 3LR uses passive IR guidance and has an operational range of around 7km, effecting the destruction of its target with a 9kg tandem HEAT warhead. The missile has been designed to engage mobile and stationary targets, including heavily armoured vehicles.

It can be fired in salvo against a number of different aim points and has a true fire-and-forget capability, as the launching aircraft can rapidly vacate its position once the target has been designated and missile launched.
SPIKE FAMILY. Because in battle you should expect the unexpected.

Spike, the multi-purpose family of weapon systems allows you to react to combat realities in real-time. A communication link enables to attack non-line-of-sight targets, abort and carry out surveillance and damage assessment.

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<td>SPIKE - MR</td>
<td>Infantry</td>
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<td>SPIKE - LR</td>
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One of the attractions of the DAGR is that it can effectively equip any helicopter configured to deploy Lockheed Martin’s AGM-114 Hellfire.

Similarly, Raytheon is progressing with its Talon air-to-ground rocket, which has been developed in cooperation with Emirates Advanced Investments of the UAE.

The laser-guided rocket was declared ready for production in November 2012, following operational demonstrations. Like both the DAGR and BAE Systems’ WGU-59B Advanced Precision Kill Weapon System (APKWS), Talon is a guidance kit for Hydra-70 rockets. Along with the DAGR, Talon could be contender for the US Army’s guided rocket requirements.

USMC operations in Afghanistan have been enhanced by the APKWS, deployed on the rotorcraft the service operates in-country – chiefly Bell AH-1W SuperCobra and AH-1Z Viper gunships. Operational testing of the APKWS was completed in February 2012, and as of October last year around 100 rockets had been used on Operation Enduring Freedom.

To date, BAE Systems has received a 925-round low-rate initial production contract for the APKWS, along with an order for an additional 950 examples.

GUIDANCE POSITIONING

One crucial difference between the DAGR and the APKWS is that the latter guidance kit is positioned on the mid-section of the rocket, as opposed to its nose – the logic being to reduce the potential of damage to the seeker caused by the efflux of adjacent rockets being launched. The US Army was originally involved in the APKWS programme, but it withdrew from the initiative in 2007, leaving the USMC to continue support of it. It has also emerged that the USN is preparing to send the APKWS to sea, with a rapid deployment capability effort under way by Naval Air Systems Command’s PMA-242 Direct & Time Sensitive Strike Weapons office to fit the system to the MH-60S.

New weapons are also on the horizon. For example, Thales is working on the laser-guided Lightweight Multi-role Missile (LMM), which will provide a low-cost, high-precision air-to-ground weapon able to equip unmanned aerial vehicles (UAVs) as well as helicopters.

Flight tests of the missile and static firings have already been performed using a Schiebel S-100 Camcopter VTOL UAV, with further trials planned in the future. In terms of manned rotorcraft, the LMM will equip the AgustaWestland AW159 Lynx Wildcat helicopters purchased by the British Army and Royal Navy. The rationale behind the programme is to provide an air-launched capability against a wide range of targets, and a limited means to engage heavily armoured tanks and some air-to-air targets.

The lightweight design increases the number of rounds that a rotorcraft can carry, while at the same time it provides a comparatively small warhead engineered to improve precision and reduce collateral damage.

On the other side of the Atlantic, Raytheon is working on the AGM-176 Griffin short range...
GPS- and laser-guided missile, which has already performed a firing trial from an OH-58D scout helicopter, as well as several other platforms.

The design philosophy behind the AGM-176 mirrors that employed on the LMM – to develop a precise, yet lightweight, weapon a helicopter can carry several more examples of, compared to existing rotorcraft air-to-ground ordnance.

The AGM-176 has been designed in two versions – the aft-launched ‘Alpha’ intended for fixed-wing gunships, and the forward-firing ‘Bravo’ for use on both fixed-wing combat aircraft and helicopters.

Lockheed Martin and Raytheon are both pressing ahead with the semi-active laser and MWR-guided Joint Air-to-Ground Missile (JAGM), which was originally envisaged as having IR guidance, although this requirement appears to have been dropped by the US Army on cost grounds.

Lockheed Martin received a contract to extend the JAGM technology demonstration programme in August 2012, while Raytheon secured a similar agreement in December. The contracts cover continuing work on the missile’s guidance section.

The JAGM initiative aims to replace a range of weapons in the US armed forces’ inventory, including the BGM-71 TOW and AGM-114 Hellfire families, plus the AGM-65 Maverick air-to-ground missile.

The US Army will use the JAGM on board its AH-64D/Es and OH-58D/FS, while the USMC will outfit its Bell AH-1Z Vipers and the USN its Sikorsky MH-60R/S maritime support helicopters with this weapon. When fired from rotary-wing platforms, the missile will have a range of 16km and is expected to enter service in 2016.
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Sea change

Russia’s naval helicopter force is in the midst of a significant redevelopment. Alexander Mladenov takes a close look at the current status of the force and future plans.

A
ter almost two decades of hardship and aggressive downsizing, Russian Naval Aviation’s (RNA’s) helicopter force is set for considerable near-term growth and acquisition of a new set of mission capabilities.

Naval aviation’s rotary-wing assets – totalling around 90 machines – are currently serving with five composite helicopter squadrons: one in each of the Russian Navy’s Northern, Baltic and Black Sea Fleets; and two assigned to the Pacific Fleet, as well as a dedicated training unit at the 859th Naval Aviation Combat Training Centre in Yeisk on the Azov Sea in southern Russia.

Within each Fleet’s HQ structure, there is a directorate of naval aviation responsible for the day-to-day operational training and logistics support of its component air bases.

ANNUAL AVERAGES

Currently, the availability rate is maintained at around 50%, and thanks to sharply increased fuel supplies and maintenance funds since 2009, average flying time is now between 100 and 120 hours per pilot each year. This is a significant improvement over the 1990s and early 2000s, when flying hours were abruptly cut to about 20-30 a year, and only aircrews that were trained during the Soviet era flew workload-intensive operational missions.

RNA’s shipborne ASW and SAR rotary-wing fleet is solely comprised of the coaxial Kamov Ka-27/29 family (NATO reporting name Helix). Rugged and dependable, and with a lot of hours left on the airframes, these machines are scheduled to remain in service until at least 2025, or even beyond.

The majority of RNA Helixes that are in operation were built in the mid- and late 1980s. The Ka-27PL (Helix-A) is the dedicated ASW version, while the Ka-27PS (Helix-D) is the SAR and utility transport model, which is also actively used for anti-piracy missions in the Gulf of Aden.

The Ka-27PLs have also been involved on a regular basis in ‘combat duty’ missions guarding Russia’s territorial waters, operating from ships or shore bases. The helicopters assigned to the Northern and Pacific Fleets are performing regular patrols in an effort to search for and track US and other foreign submarines that are attempting to monitor the movements of Russian nuclear-missile armed submarines during their transit to or from designated patrol areas in the Pacific or Atlantic Ocean.
There are also a small number of Ka-29 (Helix-B) assault transport helicopters still in RNA service, with a few examples assigned to each of the four fleets, operated by their respective composite helicopter squadrons, together with the Ka-27PL/PS.

As of 2013, it is thought that the Ka-29 is only in active service with the Northern Fleet, while the Helix-Bs of the other three fleets are being held in long-term storage due to lack of maintenance funding.

ON THE GROUND

The land-based rotary-wing types operated by RNA include around a dozen Mi-8T/P/MT/MTV utility/passenger/tactical transport and SAR helicopters – included within the structure of the relevant squadrons and detachments – assigned to each of the four fleets. In addition, there are eight special-mission Mi-8 variants outfitted for the EW role that are serving with the aviation component of the Black Sea Fleet.

Until March 2011, there was also one independent rotary-wing squadron assigned to the Baltic Fleet, based in Chkalovsk, equipped with Mi-24VP/P attack helicopters and Mi-8MT assault transports and tasked with naval infantry battlefield support and various fleet support duties. However, during the RNA restructuring effort in early 2011, the unit was handed over to Russian Army Aviation.

RNA’s most extensive near-term aircraft procurement programme has been launched thanks to the rapid introduction of the Mistral-class amphibious assault, command and power projection ships, commissioned in June 2011 and mainly intended for control of the littoral regions.

The first of four ordered ships for the Russian Navy will be ready by 2014, and each of these vessels’ aviation groups is expected to include 16 helicopters. These will be a mixture of Ka-52 attack helicopters and Ka-29 assault transports – the exact ratio will depend on specific mission requirements.

The navalised version of the Ka-52 for RNA, designated the Ka-52K and named by Kamov as Katran (prickly shark), has been selected as the new shipborne attack type and will be operated...
from the Mistral-class ships. It is currently at an advanced stage of development, and will feature folding rotor blades and stub wings, life support systems for the crew members, emergency flotation gear and anti-corrosion treatment on the fuselage.

In the longer term, the shipborne Ka-52K may receive a new fire control radar set, supporting the employment of anti-ship missiles, but the first production machines will retain the mission system and weapons fit of the land-based version.

**DELIVERY TIMES**

The Russian Navy is expected to buy around 50 Ka-52Ks, the first of which are already in production. The new type is slated to enter service with RNA by late 2014 or early 2015, coinciding with the delivery of the first Mistral-class ship for the navy. According to Russian Helicopters, the first Ka-52K is expected to be handed over to the Russian MoD in 2013.

Prior to commissioning the first Mistral-class vessel, which is already in production at the STX shipyard in St Nazaire, France, the Ka-52K had been slated to undergo its initial naval flight testing and evaluation effort on the deck of the aircraft carrier Admiral Kuznetsov, assigned to the Russian Navy’s Northern Fleet.

The first Mistral-class ship is planned to be assigned to the Pacific Fleet, with its HQ in Vladivostok in far eastern Russia, which means the first squadron with shipborne attack helicopters is going to be formed within the structure of the RNA’s 7062nd Air Base at Nikolaevka.

The tried and tested Ka-29 will be used as the main assault transport helicopter of the aviation group, and the newly built examples are expected to receive an upgraded mission avionics suite based on the PNK-37 system borrowed from the Ka-52K.

In the long term, total procurement of new shipborne helicopters may exceed 100 units for forming the aviation groups of the four Mistral-class ships, and these will be distributed among the aviation components of the Northern and Pacific Fleets, while the Yeisk based training centre will also operate a small number.

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There is an ongoing programme for procurement of the Ka-31R AEW and over-the-horizon targeting helicopter for RNA. The initial batch, ordered in 2008, comprised two aircraft, and it is expected that low-rate acquisition of the type will continue. The newly procured machines are intended to be deployed with both the Northern and Pacific Fleets. The first RNA example was seen at Yeisk in June 2012.

The ongoing Ka-27M upgrade programme for the Ka-27PL ASW helicopters encompasses replacement of the outdated Osmonog mission suite with the new UltraS system, developed by Leninetz of St Petersburg. It is a derivative of the Novella mission suite integrated on the Bushind II-38 maritime patrol aircraft, and is tailored for use on helicopters by enhancing their detection capabilities and allowing integration of new-generation ASW missiles and guided depth charges, as well as adding anti-ship weapons to the Helix’s arsenal.

The Ka-27M also received the PNK-37 flight/navigation avionics suite, adapted from the Ka-52, and the Phazotron Kopyo radar, which has a maximum detection range of 250km against large ships.

**MULTIPLE MISSIONS**

With the new mission equipment, the Ka-27M is being transformed from an ASW-only shipborne platform into a multi-mission naval helicopter capable of performing roles as diverse as anti-piracy, radar/optical surveillance and over-the-horizon targeting of long-range shipborne air-to-surface missiles.

The upgrade programme for the aircraft was reportedly progressing at last, entering into the flight test and evaluation phase, and in 2011 photos were published of at least one Ka-27M prototype being tested in the air.

In May 2012, Russian Helicopters publicly revealed that the MoD had placed a production order for the upgraded Ka-27M, but no further details of the current state of the programme have been disclosed.

**LAND-BASED SAR REQUIREMENTS NECESSITATE THE INTRODUCTION** of a small number of new-generation affordable helicopters with modern mission suites to complement the Ka-27PS and Mi-8T/MVT.

The first procurement attempt made in early 2012, however, failed due to an insufficient budget. It called for ordering five militarised Ka-32A11BC SAR helicopters to equip four naval aviation shore bases. The budget allocated was equivalent to $540.7 million, translating to a unit price of $109.14 million.

One of the helicopters was intended for the training centre in Yeisk; two were to be delivered to the Pacific Fleet air base at Nikolaevka and the other two set for the Northern Fleet’s air base at Severomorsk-1. It is expected that this procurement procedure will be re-launched soon, following approval of a revised budget.

Russia’s 2012 defence budget also allocated funding for the procurement of one Ka-31R AEW helicopter, but just like the Ka-32A11BC purchase, the tender was cancelled because the funding proved insufficient - the budget was equivalent to $13.52 million. As a consequence, the Kumertau-based manufacturer KumAPE decided not to submit a proposal.

New requirements remain underfunded

**LAND-BASED SAR REQUIREMENTS NECESSITATE THE INTRODUCTION** of a small number of new-generation affordable helicopters with modern mission suites to complement the Ka-27PS and Mi-8T/MVT.

The mission avionics upgrade is planned to be combined with a comprehensive airframe life-extension programme to make the improved Ka-27M suitable for another 10-15 years of naval operations. The upgrade programme was launched in March 2003, but suffered significant delays, apparently due to lack of funding, as was the case with all aviation upgrade programmes in Russia during the 1990s and early 2000s.

In 2005-2006, however, the upgrade programme for the aircraft was reportedly progressing at last, entering into the flight test and evaluation phase, and in 2011 photos were published of at least one Ka-27M prototype being tested in the air.

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Russian Navy command authorities have also expressed interest in procuring a dedicated naval version of the Kamov Ka-62. A 6t-class helicopter, it is being touted for operations from the deck of Steregushchy-class corvettes, and the technical specification of the navalised Ka-62 is to be completed by the end of the year. It will introduce a folding main rotor and tail boom, as well as a dedicated mission suite with search radar and armament consisting of lightweight torpedoes.

The Ka-62 is intended for use in the ASW, maritime patrol and utility roles from a range of new-generation Russian Navy ships that are deemed too small to allow safe deck operations of the 12t Kamov Ka-27PL/PS, which requires a sizeable hangar.

**NEW REQUIREMENTS REMAIN UNDERFUNDED**

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**New requirements remain underfunded**
Countries within the Asia-Pacific region are heavily investing in their rotary-wing fleets, a direct result of significant economic growth in recent years. Jim Winchester reports on some of the latest activity.

The Asia-Pacific region has now become as important a defence market as Europe. As China’s military capabilities grow, many countries in the region are launching competitions or signing contracts for new transport, utility and maritime rotorcraft, and a number are acquiring attack helicopters for the first time.

One of the most important current acquisition programmes in Asia is India’s purchase of Apache and Chinook aircraft. Reversing decades of defence purchases from everywhere except the US, India has been on a buying spree in the country since 2008, acquiring C-130J and C-17A airlifters, P-8 maritime patrol aircraft and now possibly 22 Boeing AH-64E (formerly AH-64D) Block III Apaches and 15 heavy-lift CH-47F Chinooks.

PREFERRED BIDDER

In December 2012, Indian Defence Minister A K Antony announced that Boeing was the preferred bidder for the Indian Air Force’s (IAF’s) heavy-lift contract, countering a Rosoboronexport statement that the Mil Mi-26 was still in competition. Contract signature is expected in April 2013, with CH-47F deliveries completed within 54 months.

Meanwhile, late last year, India’s air force chief ACM N A K Browne confirmed that the country would buy the Apache. Mil’s Mi-28 was reportedly withdrawn after failing to meet key requirements of the tender during evaluation in 2011. No timescale for contract signature or fulfilment has been released.

India’s 197-aircraft Light Utility Helicopter (LUH) competition is running less smoothly. Already cancelled once, the contest faces another reset amid allegations of improper payments to middlemen in relation to the IAF’s VVIP helicopter contest, won by the AgustaWestland AW101 in 2009.

The LUH contenders are Kamov’s Ka-226T and Eurocopter’s A555/EC Fennec – the AW109 did not reach the fly-off stage. Although the VVIP decision is expected to stand, it is possible AgustaWestland will be blacklisted for violating Indian laws and the LUH bidding process suspended pending a probe into the middleman issue.

Australia’s major helicopter programmes have had their share of difficulties in the past couple of years. The Australian Army’s NH Industries MRH90 remains a ‘project of concern’ because of issues with engines and cooling fans. Currently, 12 of the platforms are in service with A Squadron of the 5th Aviation Regiment at Oakey, Queensland. Deliveries of the remainder of the 46-aircraft order have been suspended pending resolution of contractual issues. The 5th Aviation Regiment’s B Squadron is not expected to be fully equipped until 2015.

Retention problems in the army are an issue, with 22 helicopter pilots, including two
The RNZAF is replacing its 1960s-bought Bell 47G Sinox helicopters with the AgustaWestland AW109 Mako. (Photo: New Zealand Defence Force)

The 16-passenger Surion, which shares many features with the Super Puma and had its maiden flight in 2010, is the first rotorcraft developed in Korea, and its manufacturers see a market for up to 300 aircraft in the next 25 years. In mid-2012, the country’s Defense Acquisition Program Administration claimed the Surion failed some cold weather tests, and later announced two aircraft would be tested in Alaska in early 2013.

Delivery of the first production example to the Republic of Korea Army was expected before the end of 2012, but has not yet taken place. Korea’s attack helicopter programme approached a final decision in 2012, with the shortlisting of three types. The AW729, or T-129 Mangusta, offered jointly by Turkish Aerospace Industries and AgustaWestland, will compete with the Bell AH-1Z Venom and Boeing AH-64 for the requirement of up to 50 aircraft.

The Pentagon announced possible FMS sales for 36 of both the Apache and Venom platforms in September 2012, although this does not mean either will necessarily be chosen. Announced on 15 January, Seoul has selected the AW159 to meet its Maritime Operational Helicopter requirement. The contract for eight AW159s for the Republic of Korea Navy is the first export order for this new-generation aircraft, known as the AW159 Wildcat in UK service.

In a further deal agreed with AgustaWestland in December 2012, the Philippine Navy is to receive three AW109Ns (AW109E Power) multipurpose helicopters for operation from its Hamilton-class frigates in late 2013. A further two AW109s will be purchased later, the government announced in January 2013. The navy also has a requirement for four ASW helicopters for use with its expected purchase of two Maestrale-class frigates from Italy.

1st Aviation Regiment, leaving in the past year. Pilots of the Eurocopter ‘Aussie Tiger’-equipped 1st Aviation Regiment reportedly went on ‘strike’ in November 2012, following a third incident of fumes in the cockpit within the fleet of 22 armed reconnaissance helicopters.

**SEASPRITE REJECTION**
Following the rejection of the Kaman SH-2G(A) Super Seasprite, grounded since 2006 as it was unable to meet Australian military airworthiness requirements, the Royal Australian Navy (RAN) selected the Sikorsky MH-60R as its replacement in June 2011. Requirements, the Royal Australian Navy (RAN) selected the Sikorsky MH-60R as its replacement for operation from its new generation of frigates.

The initial delivery date of the first of 23 multirole helicopters was June 2014, but the RAN managed to secure two early production slots and will take delivery of two MH-60Rs at the factory in December 2013, with two more in February 2014. Australian specific modifications, including Link 16 and a voice data recorder, will be installed after delivery, and the first aircraft may be based at NAS Jacksonville, Florida, for initial training with 725 Squadron.

The Royal New Zealand Air Force (RNZAF) is continuing with the transition from its 1960s-vintage fleet of Bell UH-1H Iroquois and Bell 47G Sioux helicopters to modern NH90s and AgustaWestland AW109 LUH Makos. No 3 Squadron at RNZAF Ohakea currently has two elements, a legacy flight operating the UH-1, and the Helicopter Transition Unit flying the four (of eight) NH90s delivered to date and five Makos.

Teething issues with the NH90s have included lack of spare parts and technical publications; unreliable software development; a delay in essential equipment, including machine-gun mounts; and unsuitability of intake screens for flight in snow conditions. The New Zealand government is also negotiating with Kaman over the purchase of the RAN’s SH-2G Super Seasprites (dubbed SH-2I(2) for international sale). The RNZAF’s No 6 Squadron has had trouble keeping its five SH-2G(NZ)S serviceable, and now the navy has five helicopter-capable platforms, it cannot provide five ship’s flights.

Kaman’s proposed package includes 11 airframes, a spares package and simulator. New Zealand Defence Minister Jonathan Coleman said in November 2012 that he expected negotiations to be concluded ‘sooner rather than later’.

It is unclear how many Seasprites the RNZAF might put into service. The greater difficulty might be in crewing the additional aircraft, as providing enough pilots for the squadron has already proven challenging.

**ROK DUO**
The South Korea has two important ongoing helicopter programmes. The all-service Korean Utility Helicopter (KUH) requirement is being met by the Surion, a medium utility helicopter designed by Korea Aerospace Industries, with technical assistance from Eurocopter. The 16 passenger Surion, which shares many features with the Super Puma and had its maiden flight in 2010, is the first rotorcraft developed in Korea, and its manufacturers see a market for up to 300 aircraft in the next 25 years. In mid-2012, the country’s Defense Acquisition Program Administration claimed the Surion failed some cold weather tests, and later announced two aircraft would be tested in Alaska in early 2013.

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The Philippine Army, meanwhile, has had requirements for small numbers of combat utility helicopters (CUHs), attack helicopters and additional UH-1s since 2008. The CUH need is being met by PZL W-3 Sokół, six of which were delivered in 2012 from an order for eight.

The Philippines had planned to acquire ten AS350s in attack configuration from Eurocopter. These had been built for Pakistan, which had some problems funding them, so the manufacturer put them on the market. By the time the Philippine Department of National Defence (DND) was ready to acquire the aircraft in December 2012, Pakistan had resolved its problems and carried on with procurement, leaving Manila high and dry.

The DND is looking into other shortlisted participants from European countries, known to include the AW129 Mangusta. A separate tender issued in late 2012 calls for the supply of 21 Bell UH-1s.

ON THE OFFENSIVE

Having acquired 11 AW109 Light Observation Helicopters in 2006, the small Royal Malaysian Army Air Corps has prioritised the acquisition of attack helicopters. The Mangusta, Rosvalk, Tiger and Apache are potential contenders for the requirement of 6-12 aircraft.

The Royal Malaysian Air Force is acquiring 12 EC725s and upgrading 15 of its remaining Sikorsky S-61s to maintain its mandated fleet of 27 medium helicopters. Plans to transfer the latter aircraft to establish a transport squadron for the army have been dropped.

Meanwhile, the Royal Malaysian Navy plans to purchase at least six AS5 helicopter. Eurocopter has proposed a navalised EC725, and Sikorsky is pushing the MH-60R. Recent budget cuts have seen this programme delayed by at least a year, but a decision is expected in 2013.

Thailand has a need to replace 19 elderly UH-1H helicopters, but lacks the funds to achieve this with a single purchase. Bangkok’s approach has been to order small batches of replacements, beginning with a 6100 million (533 million) order for six EC725s in April 2012 for the CSAR role, followed by four more in August for SAR duties. Deliveries of the second batch are expected in 2015.

The first international customer for the AH-64E Guardian is Taiwan, which requested 30 aircraft in 2003 and signed a contract in 2011. Under Project Sky Eagle, the first six are scheduled for delivery in October 2013 and the remainder by July 2014. How such sophisticated attack helicopters will fit into Taiwan’s defensive scenarios is a topic of debate.

An order for 60 UH-60Ms for the Republic of China Army was made in 2010. Taiwan has been selling off or donating surplus UH-1s to South American countries, including Paraguay and Guatemala.

Meanwhile, in September the Indonesian government requested a batch of eight AH-64E attack helicopters as an FMS purchase. Indonesia’s Army Aviation Command currently operates a similar number of Mi Mi-35 gunships, as well as armed Mi-8s.

India struggles with offsets

INDIA’S COMPTROLLER AND AUDITOR

General (CAG), the watchdog audit body for government projects, has reprimanded the MoD for violating the 30% offset clause of five projects by giving waivers to outsource products from India.

The more than $376 million lost as direct foreign investment (DFI) that should have gone into the Indian aerospace industry includes $95 million offsets for an order to Rosoboronexport for medium-lift helicopters under a 2008 contract for procurement of 80 Mi-17V5s at a cost of $1.3 billion. Two mission-based training simulators were instead allowed as DFI by the MoD to Rosoboronexport.

The CAG report states: ‘We observed that in five offset contracts, equipment was being directly provided by the foreign vendor as DFI in kind without any value addition through the Indian offset providers [IOps].’ This assumes added significance, since procurement contracts with an offset obligation invariably involve loading of extra cost element on that account. Foreign OEMs can discharge their offset obligations only in the form of DFI in IOps.

The CAG report has opened up a lacuna in the Defence Procurement Policy that changes at regular intervals, but is not retroactive. Therefore, an RFP released in 2006 cannot take advantage of the changes made for the benefit of Indian manufacturing industry.

While we have the basics of the policy right, execution is vital – this includes selection of the right people, processes and implementation,’ a senior defence official said on condition of anonymity. Another drawback in India is the lack of certified mechanics and specialists in special processes in manufacturing and production that make local outsourcing for offsets challenging, he added.

In early January, Chief of Air Staff ACM N A K Browne inaugurated the medium-lift helicopter complex for the new squadron of 15 Mi-17V5 helicopters at the Indian Air Force’s (IAF) Pralod air base in Rajasthan, western India.

The pre-engineered hangars, the biggest of their type in the IAF, will increase the operational capabilities of the new facility close to the Pakistani border.

The Mi-17V5 has been built to the requirements of the IAF, and is equipped with new Klimov VK-2500 engines with an electronic control system, delivering enhanced power performance, which is particularly important in hot climates and at high altitudes.

A new navigation system has been developed for this version that shows all of the piloting and navigation information on four MFD screens, significantly reducing the crew’s workload, according to Russian Helicopters.

India recently ordered 71 more Mi-17s, of which 39 are for the IAF and the rest for the Border Security Force.

By Neelam Mathews, New Delhi

Several years ago the US Air Force (USAF) and Boeing defence company decided to acquire new F-16s for the USAF. At that time, the project was termed the F-16V and was intended to be a high-end F-16 variant.

The project was then renamed the Block 70 programme and was proposed as a retrofit package for existing Block 50/52 F-16s. The work is being performed under the F-16 Block MOD III contract that Boeing won in 2011.

According to a recent press release issued by Boeing, the Block 70 programme is now a separate contract in addition to the Block MOD III contract.

The Block 70 programme is intended to provide performance improvements under the following aspects:

- Cockpit: Enhanced Fight programme, an upgrade to the aircraft’s cockpit, including a new head-up display (HUD), improved communication and displays, and a fully integrated cockpit.

- Flight control systems: Advanced digital flight control systems, which will improve the aircraft’s handling characteristics and provide better control in high-performance flight.

- Weapons: Enhanced capability to carry a wider range of ordnance, including more advanced air-to-air and air-to-ground weapons.

- Avionics: Improved radar and electronic warfare systems, which will enhance the aircraft’s situational awareness and defensive capabilities.

- Mission systems: Integration of new mission systems, such as a targeting pod or a pod-mounted sensor system.

- Maintenance: Improved maintenance and support systems, which will reduce downtime and maintain the aircraft’s operational availability.

The Block 70 programme is being developed to meet the requirements of the US Air Force, and it is expected to enter service in the coming years.

The Block 70 programme was initially delayed due to technical issues and cost overruns. However, Boeing has made significant progress in recent months, and the programme is now on track to meet its scheduled delivery milestones.

The Block 70 programme is a major upgrade for the F-16 family and will provide the US Air Force with a more capable and versatile fighter aircraft. The programme is being closely monitored by the US government and the international community, as it represents a significant investment in the future of the F-16 fleet.
The importance of helicopters in military operations has resulted in armed forces around the world placing a high premium on effective pilot training. However, the interaction between service tradition and fiscal realities has resulted in diverse training models, with the biggest dividing line being between militaries that keep their training in-house and those bringing in third-party support.

The US Army Aviation Center of Excellence (USAACE), based at Fort Rucker, Alabama, has been home to the service’s overall aviation training programmes since 1973. In the area of military helicopter training, it produces aviation soldiers for the AH-64 Apache, UH-60 Black Hawk, OH-58 Kiowa and CH-47 Chinook.

‘The centre’s primary mission is to train army aviators for the future,’ said Kelly Pate, the USAACE’s chief of media relations. ‘Fort Rucker also trains military, civilian and international personnel in aviation-related and leadership skills.’

ENTRY LEVEL

The US Army’s 110th Aviation Brigade is tasked with training military helicopter pilots. The scope of its mission includes Initial Entry rotary-wing students in UH-60A, OH-58C and TH-67A+; Bell 206B JetRanger III helicopters; instructor pilots of the TH-67A+ (Bell 206B JetRanger III) helicopters; and UH-1H Iroquois. (Photo: USAF)

The Brigade also trains service members, including men and women who serve in the US Army National Guard, in aviation-related roles. The 110th Aviation Brigade is responsible for Army aviation training at Fort Rucker.

‘Aviation soldiers first complete initial training in the TH-67 trainer aircraft, and then are selected for advanced aircraft training,’ continued Pate. ‘Advanced aircraft include the Black Hawk, Apache, Kiowa and Chinook.’

The US Army’s 1st Aviation Brigade develops future aviation warfighting leaders, ranging from inducting soldiers fresh from basic training to carrying out aviation leader development for officers and warrant officers. This brigade also handles UAS training. In addition, the 2-13th Aviation Regiment (part of the 1st Aviation Brigade) at Fort Huachuca, Arizona, trains soldiers, marines and foreign students on the Shadow, Hunter, Gray Eagle and Warrior A UAS.

‘The USAF also performs helicopter training at Fort Rucker, with the 23rd Flying Training Squadron acting as the primary source of helicopter pilots for special operations, CSAR, missile support and VIP airlift.

The quickening tempo of military operations following 9/11 has changed the US Army’s approach to helicopter training. Prior to 2005, students would go to Fort Rucker and learn basic skills, according to Pate. In the transition to the advanced aircraft, a majority of the training was done at the unit level after they left Fort Rucker and went to their assigned unit,’ he explained.

‘While this approach worked for the US Army for many years, it was in the days when newly trained pilots had the time to learn the ropes with their units.

‘With the onset of Operation Enduring Freedom/Iraq Freedom, we realised we had to adjust our training because our students were leaving to go to war shortly after returning to their unit,’ continued Pate. ‘Based on that operational tempo, Flight School XXI (FS XXI) was designed and implemented.

‘FS XXI ensured students had helicopter overwater survival training and survival evasion resistance and escape training. By using more simulation, it enabled them to have more time in advanced aircraft. The result is that when they arrive at their unit, they need less training to be ready to deploy.’

OUTSOURCING TRAINING

Although the US government relies on in-house training for its military core, it does use third-party training when the situation warrants. The Bristow Academy in Titusville, Florida, is a case in point and offers a military training programme for pilots who work for the US government or foreign militaries that have been approved for training by Washington.

The programme is conducted by former military instructors, using a fleet of 75 Schweizer 300CBis and Bell 206B-3s. The Bristow programme mirrors the military instruction delivered by the US Army at Fort Rucker.

‘We provide military helicopter instruction, by request of the US Department of State, to South American militaries conducting counter-narcotics interdiction,’ said Gregory Popp, Bristow Academy’s business development manager. ‘We provide non-aviation officers in command of aviation units an orientation course to introduce the realities, capabilities and
limitations of aviation assets, so that informed decisions on deployment can be made.’

Sikorsky Training Systems also provides platform-specific training programmes to US and other military clients around the world. This includes the soon-to-open UH-60 Helicopter Flight Simulator Training Center at Melgar in Colombia. This new facility includes a full-motion Black Hawk simulator with an FAA Level D rating.

To better serve its foreign military customers, the company will be opening the Sikorsky Training Academy this autumn in Altus, Oklahoma. It will initially focus on Black Hawk pilots, and then move into other Sikorsky military platforms.

‘Many of our customers, particularly US government agencies and foreign militaries, have difficulty obtaining thorough standardised training for their flight crews and maintenance teams,’ said David Adler, president of Sikorsky Aerospace Services. ‘In particular, there is a lack of advanced mission training beyond basic conversion courses and currency training.

‘Establishing this centre is a significant step in enabling us to deliver comprehensive, tailored factory training curricula of the highest standard, capable of preparing our students for a wide variety of missions.’

The Royal Australian Navy’s (RAN) 723 Squadron has been operating helicopters since 1953, when it received three Bristol Sycamore HR50s. Some 60 years later, the same unit is spinheading the RAN’s military helicopter pilot training at HMAS Albatross, near Nowra on the south coast of New South Wales. To do the job, the squadron uses 13 Eurocopter AS350 B4 Squirrels – a far cry from the Sycamores of 1953.

**FORMAL INTRODUCTION**

‘723 Squadron introduces RAN pilots, aviation warfare officers (AvWOs) and aircrewman to helicopter operations prior to them undertaking operational conversions on the Seahawk and MRH90,’ said Cdr Matt Shand, commanding officer of the unit.

‘Pilots arrive at 723 Squadron after having conducted a period of fixed-wing training with the Royal Australian Air Force on the CT-4 and PC-9. Similarly, AvWOs join 723 Squadron after having conducted training on the Super King Air at the School of Air Warfare. Aircrewman are recruited from within the RAN and begin their aviation training directly at 723 Squadron.’

The current approach of the unit began in 2001, following the disbandment of the Australian Defence Force (ADF) Helicopter School in Canberra, which also used the Squirrel as its airborne training platform.

‘The training syllabus for all aircrew streams have seen subtle changes since 2001, to meet evolving practices in aviation training,’ continued Shand. ‘The Squirrel training platform has remained largely unchanged.’

Time is starting to catch up with the equipment, however. ‘The ADF’s Squirrel fleet is ageing and, as such, is exhibiting aspects common to ageing aircraft fleets worldwide,’ he noted. ‘Ageing aircraft typically require an increased maintenance effort over newer aircraft. Some bespoke military systems are becoming increasingly difficult and costly to support. The good news is that the Squirrel is widely used throughout the world, and consequently supply of common parts is not generally a problem.’

In the future, the RAN and the country’s army, which currently trains on Kiowas, will be moving away from military helicopters and exclusive in-house instruction for training new pilots. The ADF’s Project Air 9000 Phase 7 will deliver a new Helicopter Aircrew Training System (HATS) based on COTS twin-engined aircraft to instruct all navy and army helicopter aircrew.

‘The new HATS will replace the current navy and army helicopter aircrew training systems based on the Squirrel and Kiowa helicopters respectively,’ added Shand. ‘HATS will deliver helicopter aircrew training from a mix of...’
military and contracted aircrew instructors, and will receive fully contracted through-life support for up to 25 years after achieving a final operating capability.’

The Australian DoD released an open request for tender for HATS in January 2012, and is currently evaluating five submissions from major OEMs. ‘An application to government for the preferred tender is scheduled for the second half of 2013,’ Shand noted. ‘An initial operating capability is anticipated within the DCP stipulation of 2016-2018.’

Once HATS is in place, through-life support, including maintenance of the future training fleet, will be contracted under the construct. Australia is following in the path of the UK, where all three elements of the British armed forces have sent military helicopter trainees to the Defence Helicopter Flying School (DHFS) at RAF Shawbury in Shropshire, England, since 1997.

Shawbury has a long and proud history in flight instruction, having held its first courses on fixed-wing aircraft in 1917. The DHFS also provides helicopter training at RAF Valley and Army Air Corps Middle Wallop.

PRIVATE SCHOOL

What makes the DHFS unique is that it is privately run by FB Heliservices, a joint venture by Bristow Helicopters and Cobham Aviation Services. The company has run the school since its founding in 1997, under contract to the UK MoD. Students are trained on a fleet of 34 Eurocopter AS350 BB Squirrels and 11 Bell 412EP Griffins.

‘The DHFS provides the UK MoD with economies of scale in two ways,’ said Popp. ‘First, it is far more economical to provide initial training using Squirrels than more expensive military aircraft with capabilities that new pilots do not need access to. Second, the fact that FB Heliservices is responsible for purchasing and maintaining the training fleet saves the taxpayer in terms of capital costs. So, the army, RAF and Royal Navy get the trained pilots they need, but at a lower cost than if they did it in-house.’

The UK MoD is evidently satisfied with this arrangement, and in March 2012 renewed
its DHFS contract with FB Heliservices for four more years, with an option for two one-year extensions.

In Canada, training for military helicopter pilots is conducted by 3 Canadian Forces Flying Training School (3 CFFTS), based at CFB Portage la Prairie, Manitoba.

We operate a mixed fleet of ten Bell 206B-3 JetRangers and nine Bell 412CF Outlaw helicopters,’ said Lt Col Peter Fedak, 3 CFFTS commandant. ‘These are accompanied by one 206 desktop trainer, one 206 cockpit procedure trainer, one 412CF desktop trainer, one 412CF cockpit procedure trainer and one 412CF full-motion flight simulator.’

For decades, the Canadian Forces handled all elements of training at Portage la Prairie. That changed in 1992 when the property was transferred to Southport Aerospace and flight training support was contracted to Bombardier Aerospace.

‘This contract provided all base support services plus transferred all of the primary flight training instruction to civilians,’ continued Fedak. ‘Rotary-wing flight training was conducted by military instructors on the Bell 206 JetRangers that had been turned over to Bombardier under a lease arrangement.’

**ALLIED FORCES**

In 2005, the contract for Canadian military helicopter training was transferred to Allied Wings, a consortium of private contractors, including Atlantis Systems International, Canadian Helicopters and Kelowna Flightcraft.

Under this contract, advanced IFR and NVG training was added to the helicopter programme. Extensive simulation was also introduced with the addition of a 412CF full-motion flight simulator and a 412CF cockpit procedures trainer to the inventory,’ noted Fedak. Known as the ‘contracted flying training and support’ (CFTS) contract, the arrangement with Allied Wings runs until 2027.

In terms of the Canadian Forces’ overall flight training system, the helicopters are utilised as part of the Phase III portion of Royal Canadian Air Force pilot training. ‘This is the phase of training that culminates in the award of the CF pilot wings. Students will arrive in Southport [in Manitoba] after having conducted Phase I in Southport on the Grob G 120A and then Phase II either in Moose Jaw [in Saskatchewan] on the CT-155 Harvard II or in Southport on the Grob G 120A.’

The CFFTS’s Phase III rotary-wing course takes approximately six months. It begins with basic helicopter flight training on the Bell 206, followed by advanced visual, instrument, night and crew management training on the Bell 412CF.

The CFTS contract with Allied Wings allows the Canadian Forces to continue direct control of in-flight training, while delegating everything else to Allied Wings, including facility management, aircraft maintenance and academic/simulation activities for Phase III rotary-wing flight training.
The first upgraded RAF Chinook Mk 4 helicopters have now deployed to Afghanistan to begin operations. Under Project Julius, the entire RAF Chinook fleet of 46 aircraft are being upgraded with a Thales digital glass cockpit procured through prime contractor Boeing, together with upgraded Honeywell T55-714 engines (for more, see p10).

The £290 million ($460 million) upgrade programme will result in the existing fleet of Chinook Mk 2/2As and 3s being redesignated Chinook Mk 4s and 5s respectively.

The integrated cockpit includes: four multifunction displays; two standby flight displays; updated communications interfaces; two new air data computers; and a rear crew workstation, sometimes referred to as the ‘third cockpit seat’.

With an initial release to service granted in May 2012, RAF Chinook crews were able to begin their operational work-up on the Mk 4 before declaring an initial operational capability (IOC) in June 2012.

This in turn allowed the first RAF crews to operate the Chinook Mk 4 in support of UK security operations during the London Olympics from June to September 2012, prior to preparing for their deployment to Afghanistan.

In late August 2011, the UK MoD confirmed the £1 billion contract with Boeing to provide 14 CH-47Fs, designated Chinook Mk 6s, including associated support for the first five years. The first three helicopters are due to achieve IOC by 2015. A mixed fleet of 60 Mk 4s, 5s and 6s will have full operational capability by 2017.

The first Chinook Mk 6 is expected to arrive in the UK in late 2013. The Chinook Mk 6 will differ slightly from the upgraded Mk 4/5 by being equipped with a fully digital automatic flight control system.

On the transition from analogue to digital, Toriati conceded there were initial concerns that a force largely flying with an analogue display would have some issues about transferring across to the new system.

‘The opposite has proven to be the case,’ he stated. ‘Crews have really taken to the digital cockpit. Success breeds success – they love the new cockpit and systems.’

Looking towards the future, Toriati said: ‘At the moment we are fully committed to supporting operations in Afghanistan together with our other national standby commitments. We will incrementally introduce the Chinook Mk 4 into the fleet, again without any reduction in our overall operational capability.

‘Our plan is to operate a mixed fleet of Chinook Mk 2, 3s and 4s until the upgrade is completed, with individual squadron flights converting to the Mk 4. The RAF Chinook Force will remain the backbone of the JHC in the future.’

He continued: ‘Though heavily committed to operations in Afghanistan since 2006, we [the Chinook Force] have maintained a cadre of experienced pilots capable of operating throughout a range of contingency capabilities, including an amphibious/maritime capability.

‘The Chinook Force has recently deployed onto the French aircraft carrier Charles de Gaulle in support of Exercise Convo Marmouset in the Mediterranean, supporting joint training with the Royal Navy/Royal Marines and French forces.

‘The Chinook Force is extremely adaptable, and we have the skill set and capacity to help generate contingency operations to support UK defence wherever we are needed.’

RAF Chinook Force commander Group Captain Dominic Toriati talks to Patrick Allen about the changing face of the UK’s CH-47 fleet, following the first Mk 4 arriving in Afghanistan.
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