



GLOBAL MILITARY HELICOPTERS

Market Report 2018-2019



Introduction

The world's military helicopter fleets in 2025 look set to be dominated by the Sikorsky S-70, the Boeing Chinook, the Mil Mi-17 HIP, the Airbus PUMA/Super PUMA family and the Boeing AH-64 Apache, together with the NH90s, Leonardo AW101 MERLINS and AW139/149/169/189s.

The AW139 has proven popular with military operators, with more than 100 delivered or on order. The Irish Air Corps became the first military operator of the type, taking delivery of the first of six AW139s in August 2006. The type has since been delivered to 19 air forces, including those of Algeria, Pakistan, Qatar and the United Arab Emirates.

The AW149 is an enlarged military derivative with a larger fuselage and more powerful engines. Thailand has ordered five AW149 helicopters for the Royal Thai Army, and the type has been marketed to South Africa as a potential replacement for the ageing SAAF ORYX fleet. Leonardo hopes that the type might be selected to meet UK requirements for a future medium-weight, vertical-lift platform as a replacement for the Royal Air Force's fleet of PUMA HC.Mk 2s, which are

currently due to retire in 2025, and possibly for the Royal Navy's AW101 MERLIN HM.Mk 2s and HC MK 4/4As from 2035.

Tilt-rotors might be in more widespread service by 2025, with the 316mph V-22 likely to gain further customers, and the Leonardo AW609 gaining its first military customer in the shape of the UAE Air Force and Air Defence, which ordered three aircraft for SAR use by its Joint Aviation Command.

None of the promising compound helicopter and tilt-rotor designs and demonstrator programmes are likely to lead to frontline derivatives in any meaningful near-term timescale.

What this means is that most of the world's military helicopter fleets in 2025 will look much the same as today's, relying mainly on the same types, though tactics and doctrine will undoubtedly continue to evolve and there is likely to be a continuing growth of capability in defensive aids and self-protection systems and armament, missile warning systems and countermeasures, in blind landing systems and brownout protection and in sensor systems.

It is expected that battlefield helicopters will become increasingly 'connected' using datalinks to enable them to access and contribute to the wider picture – especially those with ISTAR capabilities or advanced sensors.

There is, however, a handful of new helicopters that will enter service between now and 2025, and some of these may have a significant impact. In the heavy-lift role the new Sikorsky CH-53K King Stallion is a general redesign of the CH-53E Super Stallion.

Now in flight testing, the King Stallion is planned to attain IOC in 2019, and the 227 helicopters on order will equip eight frontline USMC squadrons, one training unit, and one reserve squadron. The King Stallion is being marketed to Germany and Israel.

The Sikorsky S-70 enjoys a similar ascendancy in the medium lift segment, with the UH-60M now being the main variant offered in the US FMS contracts.

As well as the UH-60M, Sikorsky can offer a more 'customisable' alternative to the current US Army specification UH-60M in the shape of the S-70i (once known as the INTERNATIONAL BLACK HAWK), which is available through direct commercial sale.

When it comes to attack helicopters, aircraft such as the Boeing AH-64E Apache and Mil Mi-28N Havoc look set to continue to dominate the higher end of the market, with the Bell AH-1Z Cobra and TAI T-129 ATAK appealing to operators who need smaller, more agile and more responsive platforms. There is a growing number of cheaper, lighter alternatives, ranging from the MD Helicopters Defender, MD530F and 540F, the Boeing AH-6i Little Bird, the Bell 407GX and GT and NorthStar's Bell 407MRH.

The HARBIN Z-9, a license-built version of the AS-365N DAUPHIN, has already been widely exported.

The Z-10 is a heavier attack helicopter in broadly the same class as the A129 and Rooivalk, and could provide a robust attack helicopter capability for new operators.

Perhaps even more likely to win export orders is the Z-20 China Medium Helicopter (CMH), a 10t general purpose machine loosely based on the S-70C.

Since May 2015, China and Russia have been co-developing an advanced heavy-lift helicopter (AHLH) which is sized between the Sikorsky CH-53E and the Mil Mi-26. In the longer term this could provide a competitor to larger Western support helicopters in some markets.



Country-by-Country Programmes, Tenders and Requirements

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Afghanistan

India is to supply four refurbished Mi-24s to the Afghan National Defence and Security Forces “in the next few months”.

Argentina

Bell Helicopter announced the delivery of four Bell 412EP helicopters to the Fuerza Aérea Argentina (FAA, Argentine Air Force) from its production line at Mirabel, Canada in December 2017.

The Aviation service of the National Gendarmerie Argentina (GNA) will soon receive a new Leonardo AW169 helicopter.

Bahrain

The US Department of State has approved the possible sale of 12 AH-1Z attack helicopters to Bahrain.

Brazil

The Exército Brasileiro (EB, Brazilian Army) has approached the US government to purchase surplus US Marine Corps AH-1W attack helicopters.

The SuperCobra is one option to meet the army’s Procurement of Attack Capability project.

The Marinha do Brasil (Brazilian Navy) expected to receive a first H225M Super Cougar (designated AH-15Bs) helicopter equipped for anti-surface warfare (AsuW) in June.

A further four AH-15Bs will be delivered by August 2022. The Brazilian H-XBR programme includes 16 naval H225Ms. To date, seven UH-15 utility and three UH-15A combat search and rescue (CSAR) variants have been delivered.

Plans called for the 1st Reconnaissance and Attack Helicopter Squadron to receive its first two modernised Super Lynx AH-11B helicopters in May and a third in September. Eight AH-11As are being upgraded to AH-11B.

Bulgaria

A newly overhauled Mi-24 re-joined the Bulgarski Voennovazdushni Sili (BVVS, Bulgarian Air Force) fleet in December 2017.



Canada

Leonardo will provide a mid-life upgrade and fleet augmentation for the Royal Canadian Air Force's (RCAF's) fleet of CH-149 search and rescue (SAR) helicopters.

The Cormorant Mid-Life Upgrade Program (CMLU) will extend the service life of the aircraft to at least 2040. At the same time, the current fleet of 14 CH-149s will be increased by up to seven additional aircraft.

Chile

The first three S-70i Black Hawk helicopters on order for the Fuerza Aérea de Chile (FACH, Chilean Air Force) will arrive in August and the other three by the end of October.

China

Naval variants of the Z-18 include the Z-18J airborne early warning and Z-18F anti-submarine warfare helicopters.

Denmark

The Royal Danish Air Force (RDAF) has retired the Westland Lynx from service after 37 years of operations.



France

The first of 36 Tigre attack helicopters to be retrofitted to the HAD version has been delivered to the Aviation Légère de l'Armée de Terre (ALAT, French Army Aviation). Airbus Helicopters announced the delivery in December 2017.

Work to convert all 36 HAPs to HAD standard is expected to finish by the mid-2020s.

The French army has begun early definition work with Airbus Helicopters on the H160Ms it will obtain as part of a tri-service procurement.

In March 2017 Paris selected the developmental H160M to form the basis of its helicopter interarmées léger (HIL) programme, splitting 160-190 rotorcraft between the air force, army and navy to replace a sizeable fleet of aged types. Deliveries had been due to start in 2024, but this is likely to be pushed back when France publishes its defence spending plan later this year.

HIL will be the final part of a modernisation effort for the French army that will see it operating a 300-strong fleet of new-generation helicopters – comprising the H160M, Tiger and NH Industries NH90 – by 2024.

The French defence ministry has begun development of the Tigre Standard 3, the latest version of the Tigre/Tiger attack helicopter.

The upgrade is intended to keep the Tigre/Tiger in service beyond 2040.

The H160M has been selected to fulfil the French tri-service HIL (Joint Light Helicopter) light helicopter replacement programme. This will see 160-190 HIL helicopters replacing 420 Fennecs and Pumas for Army Aviation, Gazelles and Pumas for the air force and Alouette IIIs, Dauphins and Panthers for the navy, from about 2024.

First deliveries are due in 2028, with an eventual acquisition target of 169 examples.

Excluded from that acquisition are a replacement for the air force's Airbus Helicopters SA330 Puma medium-twins. Instead, France will in 2023 order 12 new helicopters of an unspecified type.

Deliveries of NH Industries NH90 rotorcraft will also continue over the period, with six examples to be retrofitted for use during special forces missions, for a targeted fleet of 10 helicopters. By 2025, the French army should also be operating 67 modernised examples of the Tiger attack helicopter.



Greece

Greece should later this year complete paperwork related to its planned acquisition of 70 Bell Helicopter OH-58D Kiowa Warrior armed scouts formerly operated by the US Army.

The reconnaissance helicopters, related weapons and other equipment, should be delivered from later this year. Initial operational capability is expected during 2019.

Greece will become the third nation to introduce surplus OH-58Ds via the EDA programme, with Croatia having received 16 of the aircraft from 2016 and Tunisia in the process of fielding 24 examples.

Indonesia

All eight AH-64Es ordered by the Tentara Nasional Indonesia – Angkatan Darat (TNI-AD, Indonesian Army) have been delivered.

The Indonesian Navy (Tentara Nasional Indonesia-Angkatan Laut, or TNI-AL) has received two more AS565MBe Panther helicopters from state-owned aeronautical company PT Dirgantara Indonesia (PTDI). The aircraft were received on the 9th January and commissioned on the same day. Also commissioned were four AS550 Fennec helicopters destined for the Indonesian Army. Indonesia ordered 11 AS565MBe Panther helicopters in 2014 to bolster the TNI-AL's embarked aviation and anti-submarine warfare capabilities.

Kazakhstan

Kazakhstan has placed an order for an additional four Mi-35M helicopters.

Kazakhstan received an initial four Mi-35Ms in December 2016 and in January last year Russian Helicopters announce that the country had ordered four more. The latter are due for delivery later this year.

Lebanon

Lebanon will receive six MD Helicopters MD530G armed scouts and the same number of Boeing Insitu ScanEagle unmanned air vehicles via a new military assistance package from the USA.



Mexico

The US State Department has approved the possible Foreign Military Sale to Mexico of MH-60R multi-mission helicopters. On the 18th April Congress was notified of the package, which includes eight helicopters and is worth an estimated \$1.2bn.

Montenegro

The Army of Montenegro Aviation received the first of three Bell 412EPs on the 13th April.

Two new-build Bell 412EPI helicopters will arrive before the end of the year. All three will be used for pilot training.

Netherlands

Boeing is to upgrade six of the Royal Netherlands Air Force's current 11 CH-47D Chinooks to the latest F-model standard. Deliveries of the modernised heavy-lift helicopters are scheduled to start in 2021.

The RNLAf will see its fleet of 28 AH-64D Apaches – flown by 301 Squadron at Gilze-Rijen Air Base and 302 Squadron at Fort Hood, Texas – remanufactured to AH-64E Apache Guardian configuration in the 2022-24 timeframe.

The upgrade will enable the Apaches to remain in service until 2050.

Remanufacturing 28 existing RNLAf AH-64Ds to AH-64E standard is the best solution for continued service.

Other projects included in the plan are the delivery of 14 new CH-47Fs to replace the current 11 CH-47Ds of 298 Squadron at Gilze-Rijen and modification to the same Multi-Year II Common Avionics Architecture System (MYII CAAS) standard of the current six CH-47F(NL) aircraft operated by 298 Squadron and Fort Hood-based 302 Squadron scheduled for 2020-22.

The Koninklijke Luchtmacht (Royal Netherlands Air Force, RNLAf) is to continue flying its AS532 Cougar helicopters until at least 2030. Today 12 helicopters are fully operational.

Nigeria

The Nigerian Air Force (NAF) has taken delivery of two more Mi-35Ms.

Norway

An additional Luftforsvaret (Royal Norwegian Air Force, RNoAF) AW101 Srs 612 has been delivered to Norway.



Pakistan

Four Mi-35M *Hind* attack helicopters for the Pakistan Army Aviation Corps have arrived in Pakistan.

Currently Pakistan has just four *Hinds* on order, however, the nation's army has expressed interest in acquiring up to 20 examples. Pakistan has signed an agreement with Turkish Aircraft Industries (TAI) for 30 T129 attack helicopters, it was disclosed on the 24th May.



Philippines

Two former Royal Jordanian Air Force AH-1 attack helicopters are to be acquired, free of charge, by the Philippines.

Poland

PERKOZ, is a planned replacement for the Mi-2 helicopter

Portugal

The Força Aérea Portuguesa (FAP, Portuguese Air Force) has confirmed the AW119 MkII Koala will succeed its Alouette III fleet. A contract for five aircraft was signed last December, but the Portuguese Court of Audit returned the case to the defence ministry, requesting additional documentation.

Qatar

The Ministry of Defence of Qatar has announced contracts to buy 28 NYH90 and 16 H125 helicopters. The €3bn-plus deal includes 16 NH90 Tactical Transport Helicopters (TTHs) and 12 NH90 NATO Frigate Helicopters (NFHs). NH90 deliveries are expected to start before June 2022 and continue until 2025. The contract also includes 12 H125 training helicopters for the Qatar Armed Forces Air Academy.

It is reported that between 2019 and 2020 Qatar will receive 24 Boeing AH-64E GUARDIAN (D Apache Longbow) ground attack helicopters as the replacement for 12 SA341/342L Gazelles, at an estimated price of €2.1 billion.

Senegal

A contract awarded to Poland's Wojskowe Zakłady Lotnicze Nr 1 (WZL-1) overhaul facility in Łódź to refurbish three former Slovak Air Force Mi-24V attack helicopters for the Armée de l'Air Sénégalaise (Senegalese Air Force) has been completed.

Serbia

Serbia has begun efforts to acquire four Mi-35 combat helicopters and four Mi-17 transport helicopters from Russia.

South Korea

The Republic of Korea Marine Corps (RoKMC) has received two amphibious support variants of the KUH-1 Surion twin-engine light utility helicopter from the country's Defence Acquisition Procurement Agency (DAPA).

Spain

The NH90 NFH programme is planned to be implemented. These helicopters would be assembled in Albacete by Airbus Helicopters, with deliveries from 2023. However, the navy is reported to prefer Sikorsky helicopters to meet this requirement.

The US State Department has approved a possible sale of CH-47Fs to Spain. The 17 CH-47Fs are estimated to cost \$1.3bn.

The Ejército del Aire's (Spanish Air Force's) 402 Escuadrón, based at Cuatro Vientos, Madrid, is to receive a first AS332M1 Super Puma, after its overhaul at Airbus Helicopters, Albacete.



United Kingdom

Joint Helicopter Command is now looking at replacing the Puma and Merlin in the 2040-2050 timeframe! All 30 Merlin HM2s are now operational after being upgraded with new systems.

A £269m contract to Lockheed Martin for the Crowsnest system was announced in January 2017. This system will enable airborne surveillance and control (ASaC) Merlins to act as the 'eyes and ears' for the new carriers.

Crowsnest combines an improved version of the existing Thales Searchwater radar and Cerberus mission system with the existing Merlin HM2 fleet, producing ten role-fit kits and a full fleet modification for all 30 HM2s. IOC for the ASaC Merlin is scheduled for 2020, and it's likely to comprise around three aircraft at that point.

The seven Sea King ASaC7 helicopters, operated by 849 NAS, will remain in service until the second half of 2018, leaving an 18-month capability gap when the Royal Navy will not have an airborne early warning capability.

Full Operating Capability for Crowsnest, with six aircraft, should be achieved in early 2022, slightly ahead of FOC for HMS *Queen Elizabeth* in the carrier strike role in 2023.

The 25 Merlin HC3s transferred to the Royal Navy's 845 and 846 NAS are steadily being upgraded to HC4 configuration.

The first of 26 Commando Merlin Mk4 helicopters for the Royal Navy's Commando Helicopter Force (CHF) has been handed over. Service entry of the Merlin Mk4 is expected this summer and, under current plans, all 25 helicopters should be fully operational by 2023. Initial work is under way to replace the British Army's active fleet of 22 elderly Aérospatiale Gazelle AH1 helicopters, as the venerable type nears retirement.

The out-of-service date for the Gazelle could be accelerated from a current target of 2025 if the type becomes more costly to support due to a shortage of spare parts. Meanwhile, an acquisition process has begun linked to replacing part of the Royal Air Force's Boeing CH-47 Chinook fleet.

Boeing was awarded two contracts, on the 11th May and 9th June last year, to provide the first 38 AH-64E helicopters. The UK plans to acquire 50 AH-64Es in total.

Progress with the UK's Military Flying Training System (MFTS) programme has included the recent completion of deliveries of both the Juno HT1 (Airbus Helicopters H135) helicopter and Prefect T1 (Grob G 120TP-A) fleets. Six Juno HT1s arrived at the Defence Helicopter Flying School (DHFS) element of MFTS at RAF Shawbury, Shropshire, earlier this year leaving just one of the 29 on order still to arrive.

The first RAF student formally began training on the new type on the 7th April.



U.S.A.

Bell Helicopter's V-280 Valor tiltrotor demonstrator lifted vertically off the ground and hovered in ground effect for the first time in mid-December 2017.

The V-280 is still tracking well ahead of Sikorsky-Boeing's SB-1 Defiant in the US Army's joint multi-role technology demonstration activity. The SB-1 – a high-speed design that uses co-axial rotors and a pusher propeller – was expected to fly in late 2017, but Boeing has pushed first flight back until early 2018.

Sikorsky has obtained military qualification for its armed S-70 Black Hawk, which adds a number of weapons to the utility helicopter.

According to its Aviation Plan, the USMC will acquire 200 CH-53K platforms for approximately \$29 billion and field them across eight active, one fleet replacement, two reserve, and two developmental/operational test squadrons. Deliveries are set to begin in fiscal year (FY) 2019. Due to the earlier delays, this is the same year that initial operating capability (IOC) is expected to be declared, with full operational capability (FOC), defined as “the transition of the last active component squadron”, not expected until FY 2029.

Backup aircraft inventory/attrition reserve deliveries will complete in FY 2031 when the programme of record reaches 200 aircraft. Sikorsky has also earmarked Germany, Israel, and Japan as target markets, given that they already field CH-53s.

The US Army has issued a request for information (RFI) for up to 120 Boeing AH-6 light attack and reconnaissance rotorcraft for Saudi Arabia and other undisclosed allied operators. The US Army is looking to acquire a further 35 Airbus Helicopters UH-72A Lakota training and support platforms to add to the more than 400 already delivered. The first of 412 Lakotas currently contracted was delivered to the army in October 2008.

The US Department of Defense has acquired another 16 UH-72A helicopters for the US Army. Work will be completed by September 2023.

Contract award came just days after the US Army increased its Program of Record (POR) for the Lakota, adding 35 aircraft to the previous total of 412. The US Marine Corps has taken delivery of its final UH-1Y Venom. The helicopter was the last of 160 UH-1Ys to be delivered to the US Marine Corps, comprising 150 new-build aircraft and ten converted from UH-1N airframes.

Although UH-1 deliveries are completed, with no further orders planned, deliveries of the type's sister aircraft, the AH-1Z Viper, are set to continue until 2022.



Unmanned systems sector

Australia is approaching the UAV challenge from a number of angles. The Royal Australian Navy's Project Sea 129 Phase 5 is looking to acquire a tactical UAV for offshore patrol vessels and frigates, which aircraft manufacturers are actively pursuing.

Austria's Schiebel has already provided its Camcopter rotary-wing UAV for an assessment by the service.

The Royal Australian Air Force, meanwhile, is acquiring both high – and medium- altitude systems under separate initiatives.

The **German navy** is also seeking ship-based UAVs under a number of initiatives, with rotary-wing UAV manufacturers again pitching their wares to the Berlin government. The Camcopter is on the list, with Schiebel working with German industrial partner Diehl.

France - Airbus Helicopters and its partner, Naval Group, have been contracted by France's DGA defence procurement agency to develop technologies for a projected rotary unmanned air vehicle (RUAV) to operate from warships.

U.S.A. - Bell Helicopter is continuing through the preliminary design review stage of its V-247 Vigilant unmanned tiltrotor, as it waits for its intended US Marine Corps customer to deliver precise requirements for the programme.





Shaping Future Rotary Requirements to Respond to Tomorrow's Threats

5 - 7 FEBRUARY, 2019
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This event will address a Full Spectrum Assessment of the Critical Issues Shaping the Military Helicopter Community

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Brigadier General Walter Rugen, Director Future Vertical Lift Cross Functional Team, US Army

Lieutenant General Payenda Mohammad Nazim, CG, Training and Doctrine, Afghan Armed Force

Lieutenant General Richard Felton CBE, Director General, Defence Safety Authority, United Kingdom MOD

Major General Christian Drouin, Commander, 1 Canadian Air Division, Royal Canadian Air Force

Major General Andreas Marlow, Commander, Rapid Forces Division, Bundeswehr

Brigadier General Ziad Haykal, Commander, Lebanese Air Force

Brigadier General Dimitar Ivanov, Base Commander (Transport and Helicopter), Bulgarian Air Force

Brigadier General Jeremy King, Acting Head Helicopter Systems Division, Capability Acquisition and Sustainment Group, Department of Defence, Australia

Brigadier General Nin Nun, Head of the Air Support and Helicopter Division, Israeli Air Force

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