

# WILDCAT SHARPENS THE CLAWS OF THE LYNX

The AgustaWestland Lynx has been the multi-purpose favourite of the British Forces for decades. Now it starts a new chapter with the arrival of the updated and upgraded Lynx Wildcat.

WORDS Dave Calderwood  
PHOTOGRAPHY AgustaWestland/Les Wilson



\*Familiar yet different... the Lynx Wildcat retains much of the overall look of its predecessor, but is significantly altered.

**F**ORTY years is a long time in the lifecycle of any production helicopter. In the realms of military equipment, it's an eternity. Yet the AgustaWestland Lynx reaches that landmark in two years, and not only is it going strong, it has just received a complete makeover to extend its life by decades.

The new Lynx, as before to be used widely by the British Army and Royal Navy and referred to until now as the 'Future Lynx', is to be formally known as the AW159 Lynx Wildcat.

As part of a UK Forces-wide E10bn rotorcraft overhaul programme, AW will commence deliveries of 62 of the new model to the Army and Royal Navy in 2014 and 2015 respectively. The Wildcat's first flight in November 2009 will be nearly four decades on from the the 1971 first flight of the original.

It's a testament to the original design, and the care with which updates were carried out during its lifespan, that the Wildcat updates are still rooted in the original design statement rather than a 'start from scratch' basis.



\* Navy Wildcat looks the more different from existing Lynx, carrying updated sonar and anti-sub gear.

The primary changes to the Lynx are found in three major areas: the avionics and weaponry packages, the airframe and structures, and the powerplant.

The Wildcat benefits from twin LHTEC CTS800-4N turbines, producing 1,362shp each - up from the 1,120shp Rolls-Royce units in 'old' Lynx. The Lynx is already one of the fastest helicopters in military service - in fact a Lynx holds the world helicopter speed record - but in standard trim, its cruise is 132kt. The Wildcat cruise will show a significant improvement to 160kt, and perform better in hot-and-high conditions.

Featuring an uprated transmission, the main rotors are unchanged and retain the existing semi-rigid four-blade design, but to the rear there is a new tail rotor, redesigned boom, and the addition of a stabilised horizontal tailplane.

**COMMON PLATFORM, DIFFERENT ROLES**

The differing demands of Army and Navy deployment will require two quite different versions, each with very differing avionics and weaponry sets.



\* One of the reasons UK forces love the Lynx is its sheer versatility, and if anything Wildcat will improve that.



\* Above: Existing Lynx used increasingly in Afghan theatre where Apaches can't match its load-carrying abilities.

\* Below: Powerful new radar combines with improved thermal imaging and target designation lasers. The new RN Wildcats can't be called sleek, however!

The two variants will of course have a high degree of commonality in airframe and systems, 98%, and be able to switch between Army and Royal Navy roles, principally through the changing of role-specific equipment.

The Army variant will perform a range of tasks on the battlefield including reconnaissance, command and control, transportation of troops and materiel, and the provision of 'force protection' - real sharp-end stuff. The Army will initially receive 34 aircraft.

The Royal Navy variant (initially 28 to be delivered) will provide an agile maritime capability providing anti-surface warfare capability and force protection, and also operate in support of amphibious operations. They will be an important element of ship defence against surface threats and can carry out an anti-submarine role, as well as acting as a light utility helicopter.

Their capability will be a significant advance on that provided in both Iraq and Afghanistan by the current Lynx fleet.

**THE BEST EQUIPMENT**

The Wildcat will be equipped with the Selex Galileo Seaspray 7400E radar system along with a greatly improved thermal imaging device which will provide identification and laser weapon target designation for the Future Air-Surface Guided Weapons.

This is intended to meet the military '90th-percentile' level for potential survivable crashes with crashworthy and armoured crew seating, crashworthy passenger seating, a 'role fit' armoured cabin floor and wire strike protection system.

The aircraft is also equipped with a Smiths Industries Integrated Health and Usage Monitoring System (HUMS) for improved safety and reduced cost of ownership.

The tactical and aircraft systems will be displayed in a new Thales glass cockpit with four large multifunction displays.



\* Recently revised semi-rigid four-blade rotor assembly will be retained, vital for carrier-borne use.

*'A greatly improved thermal imaging device will [target] designate for Future Air-Surface Guided Weapons'*



\* New tail boom design and horizontal tail-plane are instant identifiers of the new Wildcat. Tail rotor new too.



\*Thales are primary suppliers of avionics; increased load-carrying ability will boost strike capability.

**A NAME WITH PEDIGREE**

The name 'Wildcat' recalls the name given to the Grumman F4F which was widely used during WW2 - aptly enough as a carrier-based fighter - and was another aircraft which surprised with its versatility over the years. That aircraft ceased operational service in 1945 but some flying aircraft remain, including one in the collection of the Imperial War Museum Duxford.

Shortly after the name announcement, the news also broke that a new Naval Air Squadron (NAS) will be the Wildcat Fielding Squadron. 700W NAS was commissioned on 14 May 09 and replaces the Lynx Operational Evaluation Unit (LOEU).

The 700 Squadron name has been applied, with a number of different suffixes, to 18 different units since 1940. During WW2 the Squadron flew Walrus floatplanes and gained a number of battle honours against both surface and submarine units, and then became a maintenance test pilot training squadron.

From 1955 onwards the squadron took on the trial and evaluation role that has continued to this day.

Most recently, 700M was formed to equip with the Merlin helicopter, before that 700L introduced the Lynx. Back in 1963/4, 700W was the intensive flying trials unit for the Wasp helicopter.

Speaking of the new model and its Naval deployment, Rear Admiral Simon Charlier, Chief of Staff Aviation and Carriers, said, "In this Centenary year of Naval Aviation, as well as reflecting on the great history of the Fleet Air Arm, it is appropriate that we look to the future. 700W will be a key part of that future and Wildcat a very significant increase in capability compared to the existing Lynx."

The new Squadron is already actively involved with the design and development of the Wildcat and will form part of the Combined Test Team with AgustaWestland, QinetiQ and Rotary Wing Test Squadron (Boscombe Down) that will bring the aircraft into service.

700W NAS will conduct operational evaluation and the conversion training of Lynx aircrew and maintenance staff.

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*'The two variants will have some 98% commonality, and be able to switch between Army and Royal Navy roles'*



**UPGRADE DETAILS**

**CURRENT LYNX**

LYNX MK9  
CRUISE SPEED 132kt  
RANGE 285nm (standard)  
CREW 2 or 3  
ROTOR DIAMETER 12.8m  
DISC AREA 128.7sq m  
LENGTH 15.2m  
HEIGHT 3.785m  
MAX WEIGHT 5,307kg  
EMPTY WEIGHT 3,030kg  
POWERPLANT 2 x Rolls-Royce Gem, producing 1,100shp each

**FUTURE LYNX**

AW150 LYNX WILDCAT  
CRUISE SPEED 160kt  
RANGE 420nm  
CREW 2 or 3  
ROTOR DIAMETER 12.8m  
DISC AREA 128.7sq m  
LENGTH 15.2m  
HEIGHT 3.735m  
MAX WEIGHT 6,000kg  
EMPTY WEIGHT tbc  
POWERPLANT 2 x LHTEC CTS800-4N, producing 1,362shp each

