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The well known-Blackhawk in action. The Sikorsky S-70 is a variant of this craft.

Contenders

Two light-utility Eurocopter EC135's and four Agusta Bell AB 139 utility helicopters have been selected by the Air Corps and the Department of Defence. The choice of these craft will present the Air Corps and the Defence Forces with a significant increase in training and operational capability. SIGNAL reports on the aircraft available for selection.

Although it's been said before, this is a time of change and new opportunity in the Helicopter wing of the Air Corps. Just over two years ago, the organisation was dealt a severe blow with the cancellation of the Medium Lift Sikorsky 92 project. Today, there is new optimism. The selection of both the EC 135 Utility Helicopter and the AB 139 Utility Craft will greatly enhance the roles and capabilities of the organisation. The Minister for Defence Willie O'Dea TD has officially sanctioned the purchase of these craft with contract negotiations scheduled to begin before the new year.

Light Utility Helicopters:

The primary role of the light utility helicopters within the Air Corps will be for pilot and crew training, although they will also be able to fulfill VIP and Air Ambulance missions. There were two contenders in this category, both from European companies.

■ Eurocopter EC 135

The Eurocopter EC 135 light twin, multi-mission helicopter that features a Full Authority Digital Electronic Control (FADEC) system for the state-of-the-art power management. From startup to shutdown, the FADEC system provides optimised performance, safety and fuel efficiency. The EC 135's aerodynamic fuselage, constructed from the latest composite technologies, contributes to its speed and range. Its Bearingless Main Rotor and Low Noise Fenestron tail rotor system offer increased manoeuvring capabilities. The cockpit can be either in conventional configuration or, with the "Avionique

Nouvelle" glass cockpit. The EC 135 has proved popular in relation to security and police aviation. Indeed the Air Corps already has an EC 135 in service with the Garda Air Surveillance Unit.

Specifications:

- Maximum takeoff weight 2,720 kg
- Maximum cruise speed 259km/h
- Range on standard fuel 620km
- Rotor Diameter 10.2m

■ Agusta A 109

The A109 Military is a lightweight, twin engine, eight-seat multipurpose helicopter. The high power available, allowing mission continuation even in the event of one-engine failure, together with systems duplication and separation, gives the A109 Military increased redundancy and

survivability contingencies. The integrated mission equipment package with the wide range of armament and day & night TADS make the A109 Military a popular multirole light helicopter. This allows the aircraft to fill different roles such as antitank, scout/light attack, escort/area suppression, patrol and reconnaissance and transport of men and materials. The main rotor is of the fully articulated type. The four blades, made of composite material, are designed to achieve high safety levels and on condition retirement. The A109M is powered by two Pratt & Whitney PW-206C or two Turbomeca Arrius 2K1 turboshaft engines, both with a Full Authority Digital Electronic Control (FADEC) system, are mounted side by side and drive a combining gearbox. The twin-engine reliability is completed by a fully separated



The Agusta A-109 Light Utility Helicopter.



Agusta Bell AB 139 Utility Craft

fuel system, dual hydraulic boost system, dual electrical system and redundant lubrication system for main transmission and engines. The fuselage is of aluminium alloy with extensive use of lightweight bonded honeycomb panels. Removable engine cowlings, numerous access doors, panel steps and grips allow easy maintenance, reducing inspection time. Easy access to the passenger/cargo compartment is provided by large sliding doors on each side of the helicopter while the crew has separate hinged and jettisonable doors. The landing gear is of the fixed wheel type.

Specifications:

- Maximum takeoff weight 3,000kg
- Maximum cruise speed 285km/h
- Range on standard fuel 965km
- Rotor diameter 11m

Utility Helicopters

The primary role of the utility helicopters will be support of the army. These helicopters must be capable of carrying eight fully-equipped troops over a distance of 120 nautical miles. They will also have the ability to do VIP and Air Ambulance missions. This category had four contenders from around the world, with two models by US-based Sikorsky, one by

American-European joint venture Agusta Bell and one by Eurocopter.

■ Eurocopter EC145

The EC 145 is a medium twin-multi mission helicopter powered by two Turbomeca Arriel 1 E2 engines. It has a strong service record and is used primarily by Securite Civile in France. With its spacious cabin and flat floor, the EC 145 can be configured for a multitude of missions such as passenger transport (up to nine passengers) VIP transport, SAR and EMS missions and law enforcement service operations.

The forward fuselage and nose section are based on the design of Eurocopter's EC 135 helicopter and give the pilot improved visibility. The rotor blades have the same profile as used on the EC 135 helicopter. The blades provide a significantly reduced vibration profile inside and outside the helicopter. The helicopter is fitted with an all glass Thales Avionics Meghas avionics suite with 4-axis dual digital autopilot and is configured for dual or single pilot instrument flight rules (IFR) operation. Meghas is part of Thales 'Avionique Nouvelle' suite. Meghas has two main display systems. The central panel display system (CPDS) comprises a vehicle and engine management display (VEMD) with

two active matrix liquid crystal displays and a caution and advisory display (CAD) for alarm and fuel management with one active matrix liquid crystal display. The flight control display system comprises four SMD45H 4in x 5in LCD smart multifunction displays for navigation and flight control. It is controlled by a Pelican modular rack with modules tailored to the application. Thales Avionics also provides the primary air data references (ADU 3000 air data unit and temperature probe), as well as the control panels.

Specifications:

- Maximum takeoff weight 3,585kg
- Maximum cruise speed 245km/h
- Range on standard fuel 670km
- Rotor diameter 11m

■ Sikorsky S 76

The S-76 has been popular with corporate, offshore oil, hospital, airline and government operators around the world for a number of years. The S-76 has the visual effect and large, unobstructed cabin of a corporate jet, with speed (up to 178 mph) and range (450+ miles) to match. It features dual digital autopilot, integrated avionics system, flight management system and an all-glass cockpit, making it possible to fly in almost any weather.

Composite construction gives the S-76 a light, strong, corrosion resistant airframe, to minimise maintenance and optimise fuel efficiency. Its rotor design and high-engine power offer pilots good maneuverability in confined areas. The S-76 can move sideways at 40 mph, holding a hover even in strong crosswinds. The speed and comfort of the aircraft is bolstered by low-vibration engineering, an elastomeric rotor system and titanium-spar rotor blades.

Specifications:

- Maximum takeoff weight 4,773kg
- Maximum cruise speed 269 km/h
- Range on standard fuel 1,112 km
- Rotor diameter 13.41 m

■ Sikorsky S-70 / UH-60L (Black Hawk)

The S-70 is an export version of the well-known UH-60L Black Hawk helicopter. The S-70 is powered by twin General Electric T700-GE-701C turboshafts plus the Improved Durability Gearbox and heavy-duty flight controls developed for the naval S-70B Seahawk. It is cleared to 22,000 lbs gross weight, and can carry 9,000 lbs external loads. New wide-chord composite main rotor blades and further engine upgrades are available for future performance requirements. An External Stores Support System (ESSS), consisting of removable four-station pylons, multiplies Black Hawk roles. With the ■ ESSS, the S-70 can carry additional fuel tanks for extended range in self-deployment up to 1,150 nautical miles. For anti-armor missions, it can carry 16 Hellfire missiles on the pylons, or a variety of other ordnance, including guns and rockets.

Specifications:

- Maximum takeoff weight 10,000kg
- Maximum cruise speed 294.4 km/h
- Range on standard fuel 563km
- Rotor diameter 14.1m

Agusta-Bell AB 139

The AB139 is a medium twin-turbine helicopter, which has been developed by Bell Agusta Aerospace, a joint venture of Bell Helicopter Textron, Inc. of the USA and AgustaWestland, jointly owned by Finmeccannica of Italy and GKN of the UK.

The AB139 is available in both civil and military configurations and is capable of carrying up to 15 passengers or 2,500kg (5,500lbs) useful load. Civil applications include passenger transport,

law enforcement, utility and offshore oil support. Other roles include search and rescue, cargo lift and air ambulance.

The aircraft comes with five-bladed fully articulated main rotor with four-bladed canted tail rotor giving high tail rotor ground clearance, heavy-duty nose-wheel tricycle landing gear retractable for higher speed. Full crashworthy systems and seats are standard while an icing protection system is optional. Refuelling is possible from either side.

Two large "plug-in" type sliding doors allow easy access to the cabin. The large baggage compartment is accessible from the cabin and externally through large doors on both sides.

The AB139 is powered by two Pratt & Whitney PT6C-67C turboshaft engines with Full Authority Digital Engine Control (FADEC). The engines have a maximum continuous power of 1,531hp (1142kw) each and give a maximum cruise speed of 290km/hr and a maximum range (without reserves) of 750km. Due to the power reserve of the engines, safe flight is

ensured with one engine inoperative (OEI) at maximum takeoff weight.

Specifications:

- Maximum takeoff weight 6,000kg
- Maximum cruise speed 290km/h
- Range on standard fuel 750km
- Rotor diameter 13.80m

Role of the Craft

A spokesperson for Agusta Bell, which has been successful in its bid to supply the AB139 told SIGNAL that the craft is ideal for the specified roles of the utility helicopter. "The AB 139 is a very positive choice. It's a new, modern craft with a strong future in terms of relevant technology and expansion of mission capability. It's a helicopter that we're extremely proud to be supplying to the Defence Forces."

Images used in this article are for visual and design purposes. They depict various craft classes only and may not represent exact procurement models.



Sikorsky S-76 Light Utility Craft.