Lift Off

the Air Corps & the EC135

SIGNAL Magazine takes a look at one of the two new types of utility helicopters being brought into operational service in the Defence Forces. The first of these in service is the Eurocopter 135 (EC135) which represents great advances in terms of technology and operational capability. Later this year the first of a consignment of six medium lift Augusta Bell 139 (AB139) helicopters will arrive.

When compared to its predecessor, the dogged Alouette, the new Eurocopter 135 (EC135) utility helicopters represent a massive leap into the future in terms of technology, capability, training and of course, professional expertise. The acquisition and delivery of the EC135's is the first phase of an exciting acquisition process in the Air Corps which, in the wake of the arrival of the Pilatus PC-9 trainer aircraft in 2004, will mean a rapid transformation of the helicopter wing's roles and functions and concurrently the operational capabilities of the entire organisation.

The two EC135 helicopters arrived late last year and already they have made a significant impact on the ability of the Air Corps to operate on a far more effective level. The cost of these contracts, including the acquisition of the four Augusta Bell (AB139) helicopters, represents an investment of well over 60 million euro. "This investment is hugely significant in terms of how the Air Corps functions," says Commandant Padraig Conneely, Commander of 303 Squadron. "It's still very early days in terms of how we operate with the EC135, so it's hard to quantify its lasting impact - but it's

already apparent how far advanced the craft is compared to what we were working with beforehand."

Comdt Conneely cites safety and functionality as the major assets of the EC135. "The craft has two engines, which obviously makes a massive difference from a safety and operational perspective." He adds that the flight system aboard the EC135 enables pilots to work in conditions that would simply not have been possible with the Alouette, Dauphin or Gazelle. "The helicopter uses state of the art flat-screen technology, presented in a user friendly format. A large 6 x 8 inch screen is used for displaying a map which corresponds to the Irish National Ordnance Survey map, in addition to the NATO standard military grid-reference system."

For helicopter pilots, such as Captain Jerry Morgan and Lieutenant Jake McCarthy, the professional and operational learning curve which the EC135 has placed them on is something which they very welcome. "The nett result with the new craft is that we're able to fly more often, in more challenging environments, for a longer length of time. It's a whole new way for us to operate," says Captain Morgan. "The onboard Forward Looking Infra Red (FLIR) system for instance, enables us to fly at night; but while this is standard modern equipment it has enhanced and improved our capability to conduct night operations." Indeed, this improved capability has already been displayed through an increase in emergency medical flights and training and operational integration with other elements of the Defence Forces. The FLIR system constructs images of the surrounding environment using the infra-red portion of the electromagnetic spectrum and uses thermal energy to create a real time picture of the landscape, using digital image processing to improve the visual quality. In a military sense, FLIR is very useful since it detects heat which is difficult to camouflage and can see through smoke, fog, haze and other atmospheric obscurants.

The EC135 (previous page) is a major improvement on craft such as the Dauphin (above) and the Alouette (above right).

The craft is deceptively large in size considering its manoeuvrability. There are two engines on the craft; PW 206B engines that also have a full authority digital engine control (FADEC) system, the first Air Corps craft with this system, which provides electronic oversight and control for both engines. This system enhances safety and reduces pilot workload, allowing the pilot to concentrate on operational issues while the onboard computer manages the engines. "The very fact that we have two engines on these craft is an obvious operational and safety boost," says Captain

Morgan. “We can now react to any problems in flight in a far better manner as we have a second engine which makes serious problems far easier to react to.

“What we have now are two helicopter types which enable us to fulfil the roles for the Air Corps assigned by Government and which enable us to satisfy the service level agreements with other agencies such as government departments or the Health Services Executive (HSE).

“It’s a very flexible craft, so it can land on any sort of decent terrain,” adds Lt McCarthy. “The whole country is now in range for us, and we can plan our flights quickly and in a fashion which optimises the capabilities of the EC135. We have also developed a neo-natal capability which will enhance the Emergency Medical Service (EMS) that the Air Corps provides. The craft can be quickly adapted to working in an EMS capacity with the fitting of a specially designed EMS kit. ”

Of course, the core strength of the EC135 is that it enables training of pilots and the maintenance of flying skills at a far higher level then was previously possible. “The avionics onboard the EC135 make a huge difference” says Captain Morgan. “It has greatly improved our air mobility capabilities and as a result the Air Corps will now be able to integrate with the Army on operations and training.” The acquisition of the EC135’s and the forthcoming AB139’s also means that helicopter operations have received an equipment boost commensurate with their counterparts in fixed-wing operations. “While we have always believed that the Air Corps offers the individual excellent opportunities in terms of professional, operational and personal development, the acquisition of craft like the EC135 and the AB139 can only enhance this attraction.”

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On a maintenance viewpoint, the EC135 is a welcome change focusing on fixing problems as opposed to having to continually maintain aged craft to keep them fit for flight. “This will result in a less intensive maintenance regime compared to the present fleet,” says Padraig Conneely, the officer commanding 303 Squadron which runs all helicopter maintenance. “Currently, the Alouette requires

maintenance after just 25 hours of flight time; the EC135 will not require maintenance intervention until after it has reached 400 hours of flight time." The EC135 also supports a software based diagnostic which means that a computer programme can literally analyse the craft and identify any problems. "For instance, with this programme we can identify any problems such as over-torque, when the craft may have been forced beyond its optimum capabilities. It makes it far easier for us to manage the craft and ensure its longevity."

For engineer Commandant Con Barber, the arrival of these craft will allow officers to focus more clearly on defined roles. "Instead of having to focus almost exclusively on keeping ageing helicopters in the air and carefully monitoring each craft's air hours, the Air Corps can focus more on the job that they should be doing, which primarily for our pilots will be integrating with the Army."

The recently acquired Pilatus PC-9 (above) the EC 135 in action (below)

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