SPOOKY CHOOKS - ADF set to SOAR past Air 8000

Trevor J Thomas/PHILADELPHIA

The Australian Army currently operates six CH-47D 'Chinook' helicopters, which form C Squadron, 5 Aviation Regiment, located in Townsville (Qld).

The twin-rotor helicopters have historically been employed by the Australian Defence Force (ADF) in a number of roles, including: troop and cargo transport; acting as a Forward Air Refuelling Point for 'Black Hawk' helicopters; and to effect aid to the civil community following natural disasters.

More recently, the aircraft have been employed in the Middle East and Afghanistan where they have developed a whole new role (ie: not just as a 'trash hauler') in the tactical employment of Special Forces and the conduct of special operations.

Prime Minister Howard confirmed 10 April, as part of announcements Australia would be increasing its forces in Afghanistan, that two upgraded 'Chinook' helicopters would return to that theatre by mid-2008.

Due to their high usage rates, upgrades to the fleet are said by Defence to be being "performed constantly". Presently, the aircraft are being modified with new T55-GA-714A engines under phase 5A of project Air 9000.

This project is to be completed by December 2007, and will sustain the aircraft to the end of their operating life (ie: 2025). A number of other enhancement projects are also underway, including upgrades to communications, seating, armament, survivability and the fitting of rescue hoists.

Having flagged 'first pass' approval of phase 5 of project Air 9000 in May's Budget, lessons learnt from the expanded roles taken on by Chinooks in overseas operations are understood to have driven a change in Defence acquisition policies, and meaning the Special Operations Command – Australia (SOCOMD-A) is likely to receive a significant enhancement to their strategic deployment capability.

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Key Points

- **The Department of Defence is understood to have funded** an engineering study to modify its new C-17A strategic airlifters to enable the aircraft to undertake in-flight refuelling utilising wing mounted pod/hose & drogue technology.
- **A C-17A can carry 111 tonnes of fuel in its existing tanks,** without impinging on its 75 tonne cargo payload. Modified as a KC-17, the aircraft could offload fuel at low speeds to helicopters equipped with extendable fuel booms.
- **Defence has reportedly lodged a proposal** with Government seeking approval to purchase a batch of latest-build CH-47F 'Chinook' helicopters customised for special operations, or in full US Army MH-47G special forces fit out.
- **The acquisition of new capability 'Chinook' helicopters** is expected to be funded via Joint Project 2097 ('Redfin'), and will complement the longer term phase 5B.2 of project Air 9000 upgrade of the Army's existing CH-47D helicopters.

Courtesy of an accelerated 'second pass' approval and the promulgation of a new 'Treaty on Defence Trade Cooperation', the ADF is prospectively set to acquire 3-6 Boeing CH-47F helicopters with elements of a customised special forces fit, or prospectively a number of new build MH-47G Special Operations Force (SOF) 'Chinooks' fresh off the Boeing Philadelphia production line.

Approval for new 'Chinook' purchases will also kick-start the Air 9000/5B rejuvenation program, and related expansion of the conventional cargo carrying capability of the existing CH-47D fleet.

According to Boeing officials, any Australian interest in upgrading its 'Chinook' fleet would need to be registered early - given the US Army's recent commitment to a substantive new (113 airframes) 'F'-model and related rebuild (339 airframes) program – as the lead-time for routine orders for a 'D' to 'F'-model upgrade was now pushing 24 months.

Similarly, the lead-time for a new build had moved out to 36 months. Nominal prices for an 'F'-model new build are US$25m, and a remanufacture $16m, net of engines and government furnished equipment (GFE).

The prospective MH-47Gs will provide the primary (but not sole), platform for growing SOCOMD-A force projection capabilities, especially the skill to rapidly insert and extract special mission operators in trying environments over long ranges (as most recently and significantly developed in Afghanistan), along with the potential to mount regional counter-terrorist strikes and recoveries.

ADBR understands that rather than being incorporated into project Air 9000, the new acquisition is to be resourced via a previously non-public phase of the SOF capability specific 'Project Redfin' (Joint Project 2097) mooted in the 2006-2016 Defence Capability Plan (DCP), and is currently with the Government for 'second pass' approval for public announcement as part of the 2007 Federal election campaign.

Presently, 61 MH-47Gs are on order (as a mix of remanufacture and new build) to equip the US Army's 160th Special Operations Aviation Regiment (SOAR), and to replace their existing fleet of 34 SOF Chinooks (MH-47E/D).

The Royal Air Force (RAF) has flagged a requirement to acquire eight MH-47Gs to replace its HC.3 'Chinooks' (a supposed low cost MH-47E) ordered in 1995, but never delivered due to systematic failures in their procurement and systems integration. Boeing officials did state the US "was not exporting 'G' models at the moment, but …"

Any ADF acquired MH-47Gs (or SOF customised Fs) will be operated by an expanded 171st Aviation Squadron, and assigned in direct support of SOCOMD-A. The new helicopters will be based at Holsworthy (NSW) with the SOF-dedicated squadron of 12 Sikorsky S-70A-9 'Black Hawks', which themselves are ul-

timately to be replaced by Eurocopter MRH-90 helicopters being acquired under project Air 9000.

The MH-47G is essentially a CH-47F (they are built on the same line), but with a range of additional mission-specific features focused on the SOF role, and including: additional mission systems and in-flight refuelling (IFR); extended range fuel system (ie: larger side 'sponsons' for twice the fuel capacity); shipboard compatible systems engineering; heavy machine gun provision; a rescue winch; and a fast rope insertion and extraction system (FRIES).

Working in tandem with the CH-47F/MH-47Gs new Rockwell Collins Common Avionics Architecture System (CAAS), is a forward looking infra red (FLIR) sight and Terrain Following/Terrain Avoidance (TF/TA) radar linked to an enhanced navigation capability, which provides the MH-47G with the capability to fly in all-weathers at very low altitudes.

Perceived public sensitivities about the ADF acquiring such special (or 'offensive') systems like the MH-47G, is thus likely to see the acquisition presented as a CH-47F with MH-47G features.

This is especially so given the rejuvenation (and prospective expansion) of the conventional 'Chinook' fleet to CH-47F standard will most likely see these helicopters embracing some of the more common MH-47G features, such as its extended range fuel system, thus allowing for operational savings via a common fleet management approach.

Several options have been prepared under Air 9000/5 for upgrading the CH-47Ds to 'F'-models given pressures on Boeing's production line, including a mix of new build and rebuild, especially if funding is authorised for an increase in conventional 'Chinook' numbers from six to 8-10 (implying a total fleet of around 12).

By way of a common production line with the CH-47Fs, most G model systems are installed during the final stages of helicopter manufacture. Boeing's development of the F/G was also the basis of the new HH-47H, recently selected by the US Air Force for its new Combat Search And Rescue (CSAR) capability. Final contract award, however, has been delayed due to challenges lodged by competitors regarding the conduct of the selection process.

The HH-47H is effectively an F/G model, but enhanced with a dual rescue winch, larger side door, environmentally controlled patient area, rotor blade de-icing, wire strike protection and improved Electronic Warfare Self-Protection (EWSP).

Such configuration flexibility within the latest generation F/G/H of 'Chinooks' thus provides the ADF with plenty of choice in terms of final capability selection.

While the acquisition of a batch of MH-47Gs will provide a significant boost to SOCOMD-A capability, in order to maximise their utility, the ADF will also need to consider the acquisition of a dedicated IFR tanker, or the conversion of an existing airlift platform in a manner that would be capable of offloading fuel to helicopters.

The ability to offload 5 tonnes of fuel to an airborne MH-47G (which has a maximum normal capacity of 6.5 tonnes), would likely extend their range by a further 600 nautical miles (1,080km).

Such an increase in range would enable an ADF force (with IFR tanking) to carry out long range (for helicopters) SOF deployments and recoveries (ie: such as hostage rescue missions), without the need to formally secure conventional runways enroute to land and refuel.

The RAAF's new fleet of project Air 5402 EADS CASA KC-30B Multi-Role Tanker Transports (MRTTs), are not suitable for the helicopter IFR role because they lack the ability to safely sustain the comparatively slow speeds (105-120 knots) needed to formate with helicopters.

IFR-capable Lockheed Martin KC-130 'Hercules' transports are regularly used by US forces to provide fuel to MH-47s on extended operations. Other IFR-capable helicopters exist (but not in the ADF's inventory), and the new Airbus Military A400M is designed for an IFR capability as standard, but is not yet proposed for acquisition by Australia.

A third contender for the IFR 'Chinook' tanker could be a modified Boeing C-17A 'Globemaster III' airlifter, which can fly slowly enough to offload fuel from its 111 tonne internal fuel load (ie: the same as the MRTT), compared to the 49.2 tonne load of the A400M, and 26 tonne load of the KC-130J.

To this extent, the Defence Materiel Organisation is understood to currently be investigating an IFR modification to the RAAF's recently-declared Initial Operating Capability C-17As, based on an existing Boeing KC-17 study that would incorporate two wing pod mounted hose & drogues, and an IFR management system. ADBR

ORDERS BEING TAKEN FOR CHRISTMAS?: The Government is considering for approval before Xmas a Defence Department submission to acquire additional 'Chinook' helicopters for the Army. Having considerably expanded their role in Afghanistan into the tactcal deployment and recovery of Special Forces (SF), the new aircraft are likely to be CH-47F models with SF modifications, or full-blown versions of the US Army's MH-47G (far L), which both come off a common production line at a Boeing plant in Philadelphia. The new Australian Chinooks will be equipped with an air-to-air refuelling probe (L) and will come with a fully upgraded Rockwell Collins avionics and mission system package (R). The new Chinooks will be based alongside the current 'Black Hawk' fleet (being replaced by MRH-90s under project Air 9000) at Holsworthy in NSW, to which the Federal Government has funded substantial facility upgrades to support special operations deployment and training (far R).

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CAE to simulate special forces 'Chinook'

US-based CAE confirmed 20 August the US Army's 160th Special Operations Aviation Regiment – Airborne had accepted and put into service a new CAE-built MH-47G 'Chinook' combat mission simulator, replicating the newest variant of the Boeing-built 'Chinook' helicopter designed specifically for rapid movement of special operations forces and equipment for counter-terrorism actions, strategic intelligence strikes, tactical reconnaissance, infiltration, re-supply, extraction, and interdiction operations during night, day, adverse weather, and limited visibility conditions.

The Australian Department of Defence is currently examining upgrade proposals for its six CH-47D 'Chinook' helicopters, with one favoured plan being to rotate three new CH-47Fs into Army service as units return from overseas operations, incrementally supplemented by at least three new aircraft to yield a total fleet of nine to twelve 'Chinooks'.

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