

CAN CANADA GET IT RIGHT **THIS** TIME?

\$18BN OF NEW HELICOPTER SPENDING ON THE TABLE

PART
TWO

BY
PAUL KENNARD

COURTESY
RCAF, BELL, BOEING,
AIRBUS HELICOPTERS



OH CANADA!

As a Staff Officer working in UK helicopter acquisition and upgrade programs in the mid noughties, tiring of the constant scar tissue forming and being ripped off on my forehead by repeated impacts with my desk in frustration, I often sought solace in the reflection that 'at least I'm not doing this job in Canada'. Paul Kennard examines Canada's helicopter procurement history and a way ahead.



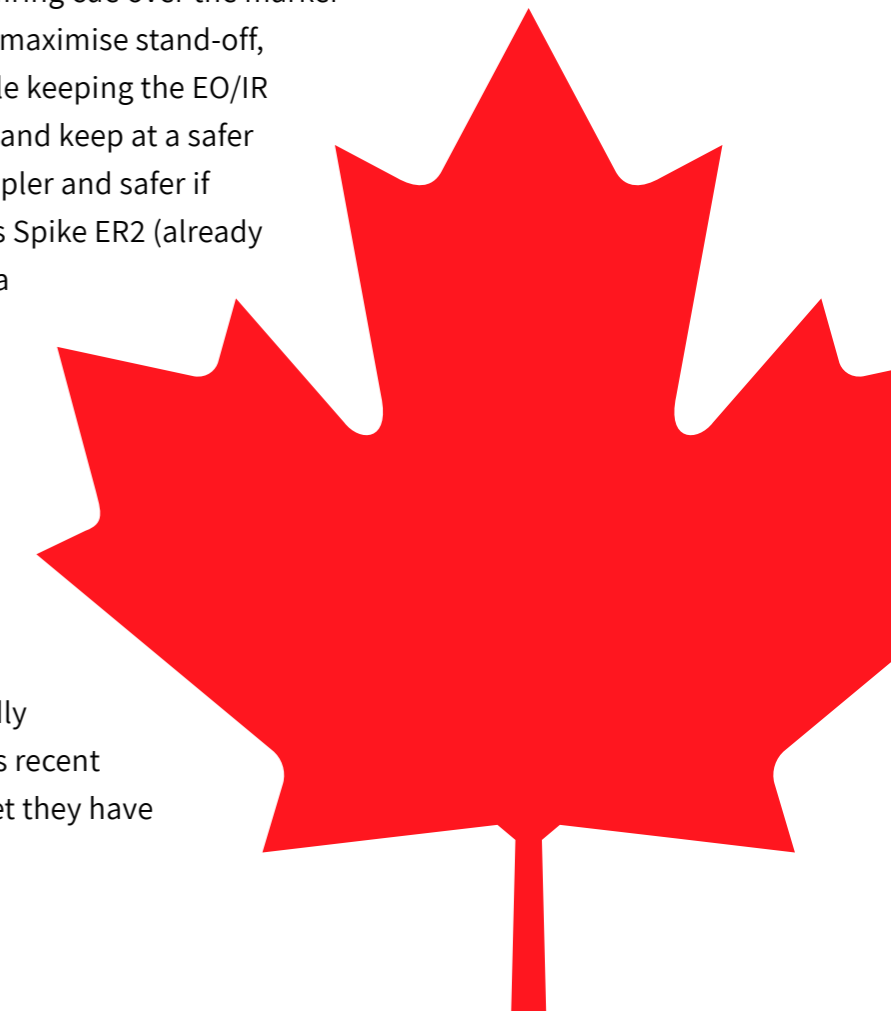
While the S-97 certainly embraces the future, nTACS may instead seek something a bit more conventional in the C4ISR/Attack role. For my money, the 'best in class' at the moment in these roles is probably the Leonardo Wildcat. Highly connected, capable of carrying extensive external stores, as well as carrying both a radar and advanced EO/IR system, the Wildcat seems to cover this brief well. The cabin can, like the S-97, carry small numbers of troops or cargo, while being developed for a joint land and naval use gives it basing flexibility. Wildcat should have few issues operating with the RCN's new River class destroyers, effectively Canadian produced versions of the UK-designed T26 City class frigate. Unfortunately for Canada, and Leonardo, Wildcat appears to be reaching a natural end to its production life - with only a few



aircraft orders likely. It will be unlikely to sustain into the 2030s timeframe as a viable production aircraft, unless an MLU or 'regeneration' is invested in. It's also an expensive aircraft, and in the naval role it is being crowded out of the market by the NH-90 NFH variant in Europe and the MH-60R/S pretty much everywhere else.

In the land domain, there is a resurgence in multi role LUH capable of delivering the C4ISR and Attack functions. I recently flew the Airbus H145M equipped with the H-Force weapons and sensor system, which on paper at least would be a perfect fit for the RCAF. The aircraft was capable of carrying a variety of weapons, from machine guns, cannon, and a suite of guided and unguided weapons (I flew it with a gunpod and a Laser Guided Rocket pod). Equipped with a high quality Wescam EO/IR camera and targeting system, slaved to a Thales Scorpion Helmet Mounted Display and Cueing System (HMDCS), I was able to complete the full sequence for the 'Find' and light attack roles.

First I used the EO/IR to acquire the target, then energised the Laser Range Finder to get an accurate distance. I slewed the laser target marker to guide the rocket (all in the HMDS) over the target, then flew to put the target in range, pitched up to put the firing cue over the marker to give the rockets a ballistic assist to maximise stand-off, then 'shot', pulling off to one side while keeping the EO/IR 'on target' (to reduce risk of exposure and keep at a safer distance) then conduct BDA. Even simpler and safer if shooting a long range weapon such as Spike ER2 (already integrated with the H-145M) cued via a Launched Effect (LE) or 3rd party. All in all, a flexible LUH that costs a fraction of an AH-64, and is smaller, lighter and quieter. Of course, it lacks the sophistication, survivability and ultimate systems integration of a dedicated AH, but for many cost conscious nations, it's a credible answer. Germany would hardly be considered 'cost conscious' with its recent massive uplift in defence spending, yet they have



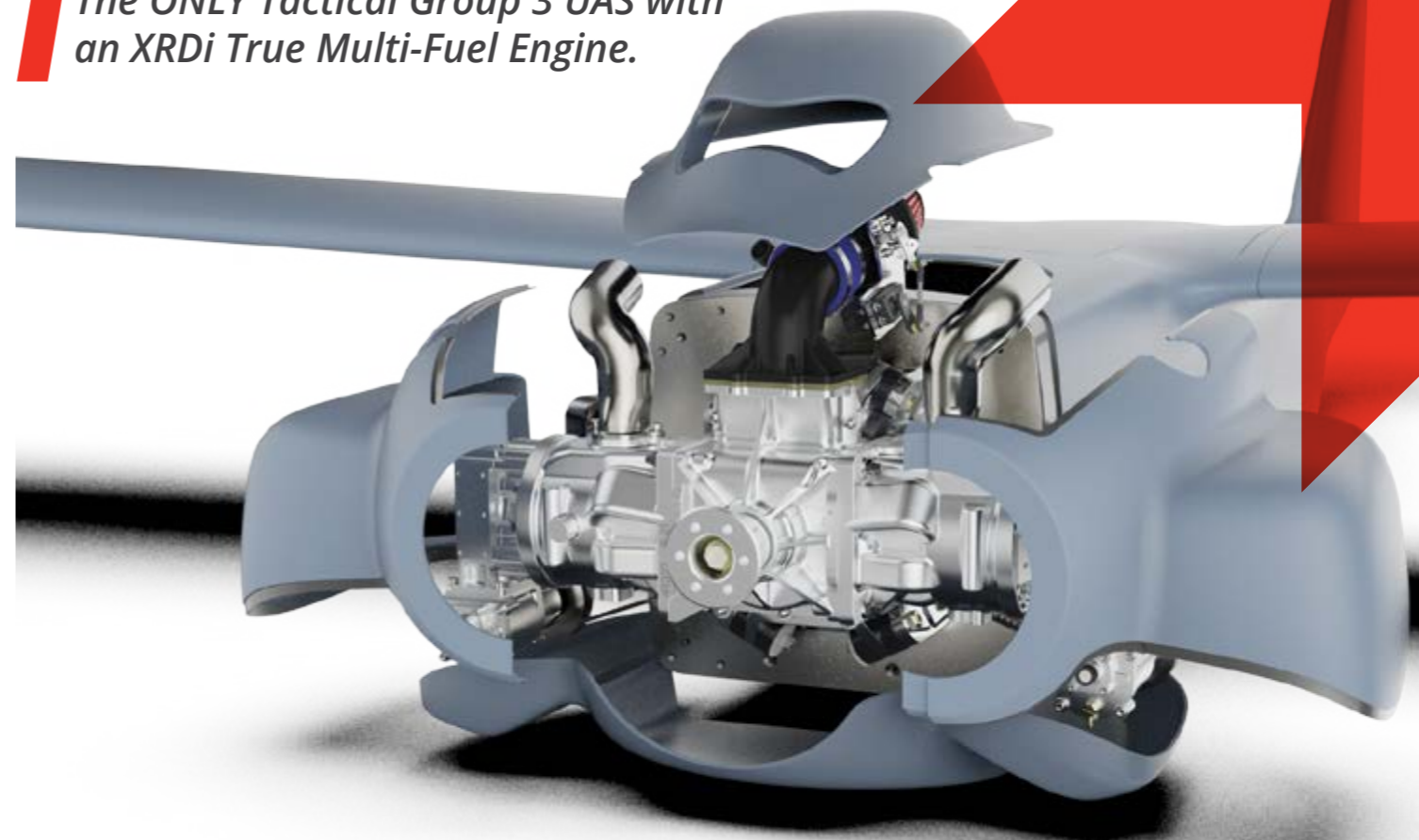
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opted to retire the Tiger and replace it with a fleet of 82 H-145Ms rather than pursue the Tiger 3 upgrade.

LUH such as the H-145M can not only cover 'Find' and light attack. Looking at the nTACS high level 'needs', such an airframe could play a key role in supporting SOF (Germany uses the aircraft already in the SOF role) as it has a useful cabin, is relatively small for Urban Operations, and, if painted carefully, blends in with civil traffic. It is being suggested that the SOF support element of nTACS might be an early candidate for delivery. The H-145M is in full rate production, and there are existing users that the RCAF could approach for SOP/TTP support.

LUH can also support domestic disaster relief and internal security operations - the US already uses the H-145 as the LUH-72 Lakota for exactly these roles. The H-Force weapons can be removed and the hoist and EO/IR retained to conduct SAR and relief missions - building national resilience.

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Finally, the H145M will have one clear advantage over its peers. The RCAF's Future Aircrew Training (FAcT) program has selected the H135 as the future basic and advanced helicopter trainer. Operated by SkyAlyne (a Joint Venture between CAE and KF Aerospace), some 19 H135s (to be known as CT-153 Junos) will start to arrive this year. The H135 and H145 share essentially the same cockpit, avionics and mission systems, as well as flying qualities. From next year every RCAF helicopter pilot will be, essentially, qualified on the H-145M too - just a modest 'differences course' to cover the role kit being required.

The matter of training is important. The RCAF's ambition to acquire platforms capable of fulfilling the attack and 'Find' roles will require considerable upskilling. RCAF helicopters have not routinely been armed with sophisticated weapons, and extant TTPs will be orientated towards 'Lift' and 'SOF functions. If the RCAF were to opt for a dedicated AH, such as the AH-64, there might be a justification for a 'Tac Weapons' schoolhouse on H-145M to learn the basics of the AH role and weaponing before moving to the more expensive AH platform.

Finally, mobility. This must be assumed, along with the SOF support requirement, to be amongst the first



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deliverables out of the nTACS construct. As noted earlier, the CH-146 is approaching the end of its useful life, and replacement aircraft will be needed from the mid 2030s. It's not just the Griffon that nTACS will need to consider, however. The CH-147Fs will be around two decades old by the mid 2030s and at least some consideration will be required of their long term future.

For the Griffon replacement, the timing is truly tantalising.

Canada is a big country. Getting anywhere quickly via helicopter is impossible, both East to West between coasts and, increasingly, south to north where Canada's responsibilities and bases in the Arctic are of growing strategic importance. The RCAF's need to recapitalise the CH-146 comes just as the US will be mass producing the Bell MV-75 tiltrotor, an aircraft that could truly shrink the country and provide a high-end warfighting capability for both conventional and SOF users. As a CH-146 replacement it would be nothing short of transformational. In terms of payload, speed and range, it would enable the RCAF to rapidly project vertical lift air power rapidly anywhere in the nation if sensible



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basing strategies were employed. The aircraft's ability to self-deploy over long distances would align with the nTACS requirement to enable expeditionary deployment, and it would be highly interoperable with the US Army and other potential users such as the USMC and NATO partners. The aircraft is being 'born digital' and is embracing the Modular Open Systems Approach, promising the ability to upgrade and refit the aircraft swiftly and efficiently into the future - important in an epoch where tempo and adaption are expected to be key factors. While numbers are as yet uncertain, it would be pragmatic to assume that the US Army will seek to purchase over 500 MV-75s, maybe many more, making the purchase price via FMS 'bucket pricing' attractive. However, of course, with a Bell facility in-country, the temptation to assemble, integrate and support aircraft will be strong. For SOF, the 160th SOAR is slated as an early adopter of the MV-75, with the provision of several of its key mission systems included in the baseline Critical Design Review (CDR).

MV-75 could certainly answer a lot of the nTACS

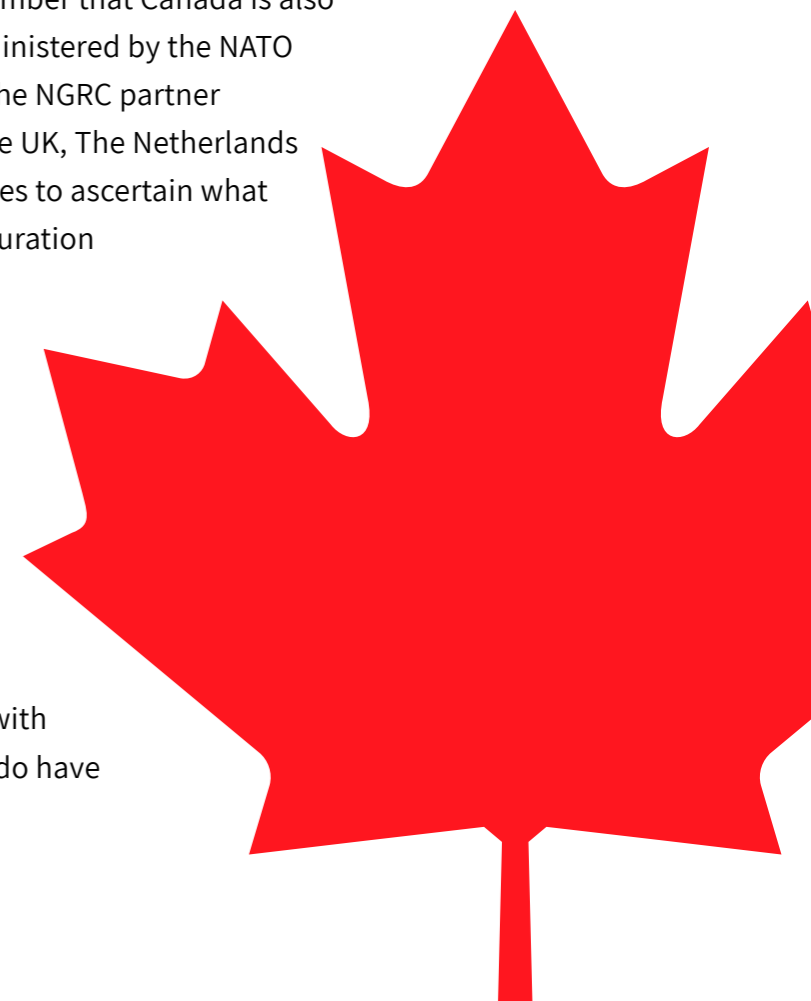


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problem set, but it's also important to remember that Canada is also a member of the NGRC program. Being administered by the NATO Support and Procurement Agency (NSPA), the NGRC partner nations (Canada, France, Germany, Italy, The UK, The Netherlands and Greece) are sponsoring a series of studies to ascertain what a NGR could look like at the platform configuration and systems level. While some nations will be keen to push for a production aircraft that aligns with their industrial strategies (France and Germany likely to favour an Airbus product, Italy a Leonardo one), the studies are teasing out the relative merits of compounded fast helicopters (such a Sikorsky's X2 technology and Airbus' RACER demonstrator) and tiltrotors - the latter via Leonardo who have an MoU with Bell to develop tiltrotor technology. Leonardo have



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just flown a Technology Demonstrator for the Next Generation Civil Tiltrotor (NGCTR) program, featuring a modified AW609 fuselage mated to some very ‘MV-75 like’ engines/nacelles and empennage. Canada will, doubtless, extract significant data to inform their detailed nTACS requirements, but given the internal ‘tyranny of range’ it faces, I can’t see they would want to opt for anything other than a tiltrotor.

If we assume that the Chinook will endure, either via new build CH-47F Block II or an MLU of the existing fleet, then the RCAF Tac Hel fleet post nTACS would be almost completely different. In an ideal world, and if the budget stretched, the RCAF would likely seek AH-64s as their prime AH, with a fleet of H-145Ms covering off the drone ‘quarterback’ role, as well elements of ‘find’, LUH tasks currently completed by the CH-146, as well as the disaster relief / national resilience roles, and potentially weapons training. The MV-75 becomes the backbone of the Mobility mission, backing up the CH-147s, while SOF could cherry pick types to form a RCAF version of the 160th SOAR with H-145Ms, MV-75s and CH-147s.

Only time will tell what combination of ambition, risk, budget, requirements and politics plays out this time. But the promise is good enough for me to now start looking at the mess of UK helicopter acquisition and contemplate the impact of my forehead on my desk without the soothing balm of thinking that at least Canada is in a worse place... ●

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Paul "Foo" Kennard is a former Royal Air Force CH-47 Chinook pilot, who specialised in Tactical Instruction, Electronic Warfare and Operational Test & Evaluation during a 23 year career, during which he flew operationally in Northern Ireland, Bosnia, Kosovo, Iraq and Afghanistan. Since leaving the RAF, he has established his own consultancy company where he continues to provide input into high technology rotorcraft and aerospace projects for governments and Industry. He is a key member of the NATO Next Generation Rotorcraft study team, specialising in Defensive Aids Suites, Degraded Visual Environment technology, Head Mounted Displays and teaming with unmanned aircraft.