It is imperative that the incoming Administration of President-elect Donald J. Trump act immediately to enable and deploy promising rotorcraft that keep them relevant for the ensuing decades, and accelerate Future Vertical Lift.

RECOMMENDATIONS FOR THE TRUMP ADMINISTRATION:
1. Modernize the existing US military rotorcraft fleet by fully funding acquisition programs currently underway. These near-term investments will significantly improve capabilities within this decade.

In the early 2000s, the DoD did not field several advanced rotorcraft weapons systems that were developed. These were missed opportunities to modernize key elements of the fleet. Additional investment must now be made to make up for this deficit and modernize the legacy force.

The RAH-66 Comanche was the most advanced helicopter ever built. First, inadequate R&D funding levels during the Clinton Administration stretched out its development over two decades. Then, with only two prototypes completed, the Comanche had to be sacrificed in 2003 to field upgrades to the existing US Army rotorcraft fleet so it would remain viable in Afghanistan and Iraq. The Comanche funds were used to field the latest models of decades-old helicopter designs, specifically: the CH-47F/G Chinook (the first Chinook prototype flew in 1961), the UH-60M Black Hawk (1974) and the AH-64E Apache (1975). Improvements were also made to the OH-58D Kiowa Warrior (which first flew in 1966) — the aircraft that Comanche was originally supposed to replace — to stem the losses and improve effectiveness. This terrible choice was necessitated by the lack of sufficient funds for vertical lift aviation.

After the Comanche and two other attempts to replace the OH-58 failed (the Armed Reconnaissance Helicopter and Armed Aerial Scout programs), the Army was forced to remove the Kiowa Warrior scout helicopter from service — stating cost and obsolescence as the driving factors — to minimize the number of types in service.

The development of the V-22 Osprey for the US Marine Corps was similarly inadequately funded. Political volatility over a decade stretched out its fielding to at least one of the fatal accidents, while the Marines continued to lose high numbers of the aircraft that the Osprey ultimately would replace, the CH-46 Sea Knight (first flight 1959). The Corps’ other modernized rotorcraft, the UH-1Y Venom and AH-1Z Viper, have exhausted the alphabet for new models after the original prototypes flew in 1956 and 1965 respectively. The Marines have been successfully developing the CH-53K King Stallion heavy-lift helicopter to replace the venerable Super Stallion (whose YCH-53 prototype flew first in 1964), but this too has been decelerated due to inadequate funds available. The US Navy is also narrowing down most of its rotorcraft to the MH-60R/MH-60S Seahawks to reduce the number of aircraft types.

Meanwhile, the US Air Force is replacing its HH-60G Black Hawks with HH-60W Block II for search and rescue in lieu of a cancelled new aircraft program, and is finally beginning the process of replacing its ancient UH-1N Hueys. The service has been trying to field replacements for these two systems for more than a decade, but has been hampered by contracting blunders and a lack of resources.

As the above history highlights, inadequate funding has hampered the timely deployment of a robust military rotorcraft fleet. Upgrades to the latest models of aircraft originally designed during Vietnam have been painfully slow, and not without its negative consequences in terms of aircraft and lives lost; missions unable to be executed, and extremely high maintenance costs due to the harsh operational environments.

Additional funding for military vertical lift aviation is desperately needed in order to restore and enhance our nation’s military capabilities.

2. Fully fund next-generation engines and advanced sensor/avionics mid-term investments will advance military rotorcraft capabilities over the next two decades.

In the early days of the wars in Afghanistan and Iraq, American helicopters were outdated, underpowered and ill-equipped to fight in the high altitudes, hot temperatures and dusty/sandy environments. Many of the aircraft and lives lost during the conflicts were due to operating at high altitudes/temperatures that were far beyond those for which today’s helicopters were designed. Issues such as poor pilot visibility/awareness and insufficient engine power were directly responsible for a significant portion of accidents, while a lack of adequate missile warning systems resulted in multiple shootdowns.

A new generation of advanced rotorcraft engines is now under development by the US Army. The last time the US military fielded an all-new engine design was for the V-22 Osprey (first flight 1989), though that engine was also a derivative of an older design. All fielded American helicopter engines today are based designs of the 1960s and 1970s.

The US Army now has three advanced turboshaft engine programs underway in different size classes and for different potential applications.

The Improved Turbine Engine Program (ITEP) is competing two revolutionary new designs for the Apache and Black Hawk, which will likely both continue flying until beyond 2050. In the 3,000 shp class, the engine will provide 50% more power and use 25% less specific fuel consumption, ITEP will save lives, fuel and maintenance cost. Both the Apache and Black Hawk are proven platforms that will be around for decades to come.
It is imperative that the incoming Administration of President-elect Donald J. Trump act immediately to ensure and accelerate modernization of the existing military rotorcraft, hampered by contracting blunders and a lack of resources. As the above history highlights, inadequate funding has hampered the timely deployment of a robust military rotorcraft fleet. Upgrades to the latest models of aircraft originally designed during Vietnam have been painfully slow, and not without its negative consequences in terms of aircraft and lives lost; missions unable to be executed, and extremely high maintenance costs due to the harsh operational environments.

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The Improved Turbine Engine Program (ITEP) is competing two revolutionary new designs: the Future Affordable Turbine Engine (FATE) program will demonstrate technologies applicable to 5,000–10,000 shp engines that would be compatible with installation in the CH-47 Chinook. Demonstration goals include an 80% improvement in power-to-weight, 20% improvement in design life, 35% reduction in specific fuel consumption and 45% reduction in production and operating costs. The Alternate Concept Engine (ACE) program will test an advanced variable speed turbine and other innovative technologies. The program is focused on reducing operational and life cycle costs, and the logistical footprint for both the engine and future rotorcraft.
As this issue went to press, it appears that the US Congress will pass a Continuing Resolution to fund the US federal budget through April 2017. This means that the government will continue to operate at fiscal 2016 levels through seven months of fiscal 2017, which began on Oct. 1. Under the Continuing Resolution, no new programs can be initiated, which includes the Joint Multi-Role (JMR) Technology Analysis of Alternatives (AOA) — the first funds that will prepare for the future FVL allocation.

Although the National Defense Authorization Act (NDAA) of 2017 has passed, the Pentagon is funded through the Department of Defense Appropriations Act, which stalled in the Senate in separate fiscal 2017 funding bills. AHS International and the Vertical Lift Consortium, the House Appropriations Committee’s Defense Subcommittee (HAC-D) in April had proposed an addition of $11M to the Army’s Joint Multi-Role (JMR) funding line for fiscal 2017. If this additional funding is approved in the final Defense Appropriations Bill, the Continuing Resolution precludes the Army from proceeding with additional JMR tasks planned for these funds until the additional budget is issued under law.

The Republican-controlled Congress decided to wait until the new Trump Administration is firmly in place in order to make changes to the fiscal 2017 budget that align with President-elect Donald Trump’s priorities. The Trump Administration plans to ask for supplemental fiscal 2017 defense funding soon after taking office to help “rebuild our military.” Other major issues awaiting the new Administration are the fiscal 2018 budget (to be submitted to Congress in March), another increase to the national debt ceiling (March), and the repeal of the “Sequestration” funding caps.

Included in the NDAA are several noteworthy policy changes. One is that, by February 2018, the responsibilities of the Undersecretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) are to be split between the Undersecretary for Acquisition and Sustainment (A&S), and the Undersecretary for Research and Engineering (R&E), the latter of which will be the No. 3 position in the Pentagon.

Over the years, AHS International has been instrumental in preserving and augmenting funding for both civil and military rotorcraft research. This includes restoring funding for NASA-rotorcraft research in fiscal 2002, saving the National Full Scale Aerodynamics Complex (NFAC) from closure in 2003, and saving NASA’s Rotary Wing Project from cancelation.

In 2008, AHS worked on Capitol Hill to initiate the FVL program, and has been actively supporting FVL in the ensuing years. In fiscal 2014 and 2015, AHS worked with the Senate and House Appropriations Committees to successfully add $114M and $10M respectively to the Army’s JMR budget.

To learn more about AHS advocacy efforts, go to www.vtol.org/advocacy.

AHS Applauds New Federal Conference Guidelines
By Mike Hirschberg, AHS International Executive Director

As a result of outreach by many US federal government science and technology (S&T) agencies and by scores of professional technical societies — including AHS International — the White House Office of Management and Budget (OMB) issued an update to its overly harsh 2012 policy on conferences. OMB Memorandum M-17-08, “Amending OMB Memorandum M-12-12, Promoting Efficient Spending to Support Agency Operations,” was signed by OMB Director Shaun Donovan on Nov. 25, 2016.

This new policy rescinds the draconian OMB direction (M-12-12) that required pre-approval to attend conferences — initially interpreted to include technical conferences like the AHS Forum and our other Technical Meetings — and dictated incredibly wasteful reporting requirements. In addition, under M-17-08, the prior spending caps have not been renewed. The limitations that do remain in place are specifically stated to be only applicable to agency-sponsored/hosted “conferences,” like the General Service Administration (GSA) has been doing for years.

A doubting of what the Army is investing is needed to deliver these revolutionary capabilities to our warfighters faster, with greater innovation and competition for future military rotorcraft requirements.

The leap-ahead potential for FVL; the US Army, the lead sponsor, is promoting around $200B.

Due to the Pentagon’s limited funding for vertical flight, the trend over the last two decades in government investment has been an increasing expectation and requirement for cost share by industry partners to maximize what can be achieved with the government funds. In the case of JMR, industry is likely paying a total of the cost of the two flying demonstration efforts in the hopes of winning production contracts under FVL and accelerating the program.

The initial operational capability (IOC) for the first mission capable capability set is 2028, and is capability forward and trying to do its part to reach IOC sooner, but current efforts are not resourced to move more quickly. Additional DoD funding is required to accelerate FVL and create a more robust R&D program for FVL that encompasses the full-range of high pay-off technical advancements — including next-generation rotors, drivetrains, engines, flight controls and sensors, and improved survivability.

A serious consequence of this dependence on industry self-funding military aircraft development is that companies must spend their limited internal R&D investment resources on government-defined efforts, which diminishes (and in some cases eliminates) the capability to innovate beyond the government’s vision and tolerance for risk. Moreover, recent government initiatives, such as Better Buying Power 3.0, are limiting the intellectual property protections in cost-share agreements. Together these and other factors are dramatically dampening the extent of invention. An increase in investment in vertical flight aircraft for basic research science and technology, and R&D is necessary to re-establish US prominence and robustness in the world.

A doubting of what the Army is investing is needed to deliver these revolutionary capabilities to our warfighters faster, with greater innovation and competition for future military rotorcraft requirements across the spectrum of light, medium, heavy and ultra-heavy FVL capability sets.

Payoffs for Generations
In addition to reducing the risks to America’s service members from helicopter accidents and hostile action — and maintaining a strong, capable defense for the uncertainties in the coming decades — a leap-ahead in capability is realizable in the next generation rotorcraft.

Accelerating current rotorcraft modernization efforts, improving rotorcraft systems like engines and sensors, and fully funding FVL will pay huge dividends for the security of the United States and its allies. This will also serve to restore America’s global leadership in rotorcraft innovation and improve its standing in the increasingly competitive world market.

Note: a summary of this article appeared on AviationWeek.com on Nov. 11, 2016.

What do you think? Please send your comments on our AHS Applauds New Federal Conference Guidelines to director@vtol.org.