



## 8th Annual U.S. Missile Defense Conference

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### Introduction

Thank you for that kind introduction, General O'Reilly; and, thank you for your superb leadership of the Missile Defense Agency. Your efforts, and those of the talented and dedicated professionals of MDA, help to keep our Nation and our allies safe, and to protect our interests around the world.

It truly is a privilege for me to address this distinguished group, as we discuss the implementation of the Ballistic Missile Defense Review. This will not be an easy task. The confluence of technical complexities and diplomatic nuances, embedded in today's uncertain strategic environment, makes missile defense one of our Nation's most difficult challenges. Overcoming them will require the focused and collaborative effort of professionals of the highest caliber, like those in this room. And, charting a way forward will require our best and brightest in government, industry, and academia to pool their thoughts and perspectives.

That is why I am encouraged by this annual conference, and other similar venues, where novel ideas that are presented and deliberated can hopefully be refined into items for further evaluation and eventual action. We need abundant creativity, propelled by lofty aspirations but also a healthy dose of pragmatism, for we are dealing with very real, very significant challenges.

### The Strategic Environment and U.S. Strategy

Few countries—and certainly no non-state actors—can rival our Nation's collective military capability. As an Airman, I note that most nations do not have a comparable ability to operate in the air.

Consequently, some of these actors have turned to relatively less sophisticated and less expensive missile systems, in the hopes of achieving a similar effect of impeding freedom of action—in the air, and also on the sea and land. The number of nations that possess significant ballistic missile capability is growing—regrettably, to include those with dubious records of



flouting international norms, and contravening international treaties and political arrangements, by pursuing missile programs of concern, and proliferating advanced missile technology into the wrong hands. These actors—both state and non-state—who act inimically to our national interests and those of our international partners may use their missile capabilities to destabilize regional security and threaten international order.

Sometimes, these nations, despite international condemnation, publicly pronounce their intentions to pursue missile development; while at other times, they attempt to obfuscate their efforts with purported rocket and space-launch vehicle development, supposedly for scientific payloads and non-military purposes. However, as we very well know, the technology for—and design, fabrication, and function of—ballistic missiles, space launch vehicles, and rockets are essentially identical. A sounding rocket that is capable of carrying a scientific payload, or a space launch vehicle that can orbit a satellite, also could be used to deliver weapons, oftentimes with little modification. In fact, the same boosters occasionally have been used to deliver both weapons and non-military payloads.

Therefore, this is more than just a technology issue; it is a matter of estimating intent and calculating threat. This added dimension is rife with layers of nuance and overlap, and therefore will require a whole-of-government approach, implementing the various diplomatic, military, financial, intelligence, and associated elements in an integrated effort.

Although there is no treaty that *per se* bans the export of missile technology, the United States engages through other avenues such as the Missile Technology Control Regime, a 34-member political arrangement of nations that share a common interest in controlling the proliferation of missiles and militarily-sensitive, missile-related technologies. The Regime develops and self-enforces—through each member’s own national legislation and regulations—export controls that are designed to thwart the development of missiles that could be capable of delivering weapons of mass destruction. Under the lead of the U.S. Department of State—and involving the Defense,



Commerce, and Energy departments; the Intelligence Community; and on certain cases, the departments of Treasury and Justice—the U.S. Government effort under the auspices of the MTCR is an excellent example of a whole-of-government approach to preventing the spread of missiles, missile technology, and associated equipment.

Yet, despite these important, proactive efforts, proliferation still occurs to the extent that the report on the Ballistic Missile Defense Review concludes: “The threat posed by ballistic missile delivery systems is likely to increase while growing more complex over the next decade.” Therefore, while deterrence, diplomacy, and other proactive measures certainly are important and require our attention, we must be prepared for when our efforts are only partially effective or produce incomplete results.

## **Integrated Air and Missile Defense**

I would therefore like to discuss our efforts on missile defense and the Air Force’s contribution to the discipline. The first important point to make is that we cannot view missile defense as simply its own function, insofar as the threat is not merely a missile capability that is divorced from other military methods, or employed with the intent of achieving only limited objectives. Rather, the threat comprises a range of military capabilities—fighter and bomber aircraft, unmanned aerial vehicles, electronic warfare, information operations, and others—which, in the event of hostilities, would be employed with a salvo of cruise and ballistic missiles, in a coordinated manner to achieve a wider range of objectives.

When we consider this broader operational view, it becomes inescapably evident that we must plan and execute air and missile defense with a holistic perspective, and in an integrated and balanced manner. To be blunt: we cannot separate air and missile defense; we instead must integrate them.

## **Control of the Air**

Regardless of whether these threats are to our homeland, or in regions around the world where our interests lie and our personnel operate, the United



States Air Force provides control of the air. In Europe, for example, we partner with our NATO Allies to conduct air policing with a combination of radars, and to operate Quick Reaction Alert aircraft and Combined Air Operations Centers, identifying and sometimes intercepting unannounced or unidentified aircraft in NATO airspace.

These combined efforts assure safety and sovereignty, and ensure freedom of action for friendly forces on other battlefields, with minimal threat of air attack. We achieve this through the counterair function, which has both offensive and defensive elements to protect friendly forces, by negating an adversary's ability to achieve the effects that they desire from their air and missile capabilities. From a Joint doctrinal perspective, the counterair mission includes integrated air and missile defense as a subset. The Air Force, through its suite of offensive strike capabilities, can help to prevent the launch of enemy air and missile assets, and also provides defensive capabilities to defeat enemy aircraft and cruise missiles that attempt to penetrate defended airspace where friendly forces have established control.

In the near- to medium-term, the more immediate and likely threat of missile attack will come from short- and medium-range systems, with intermediate-range systems becoming a growing threat as they develop in the longer term. Some of these systems are still crude; but, especially considering the ongoing efforts to improve these technologies, they nonetheless pose a risk. Moreover, our partners and allies in those regions depend on our ability to counter the growing threat from multiple angles—technologically, diplomatically, and militarily. Therefore, we must work deliberately on all fronts.

### ***Command and Control of Air Assets***

Recognizing the strategic reality of growing missile threats from regional actors, the BMDR report directed the missile defense community to concentrate its efforts more heavily at the theater level, and to ensure our ability to command and control theater forces and capabilities. This command-and-control function, in addition to establishing control of the air, is another to



which the U.S. Air Force is particularly well-suited to contribute. The authority to integrate, command, and control air defenses resides with the area air defense coordinator, or “AADC,” which is a function of the Joint Force Air Component Commander, or “JFACC.” The Air Force is well-poised to continue to fulfill these roles—not exclusively to be sure, but well-poised nonetheless—insofar as the doctrinal predisposition is to grant JFACC and AADC responsibilities to the Service that has the preponderance of air and space capabilities, and the ability to integrate, command, and control them. With its existing Combined Air Operations Centers—a construct that is organized along theater lines—the Air Force effectively integrates, commands, and controls air, space, and Air Force cyber assets at the theater level, with effects that permeate all three levels of war. Command and control—binding all of the disparate Joint capabilities toward their balanced, coherent, and integrated employment—is, in fact, one of the Air Force’s most significant enduring functions, and is one that should be leveraged here, to integrate all of the sensors and shooters that the various Services bring to the air and space control and missile defense missions.

In particular, the BMDR directed us to further examine ballistic missile defense in the European theater of operations. There, MDA has developed the phased adaptive approach, incorporating a land-based version of the Aegis SM-3 Block IA interceptors; Terminal High-Altitude Area Defense, or “THAAD,” radars; and airborne sensors. However, the command and control of this future integrated air and missile defense, which all Joint and Allied partners will be able to employ, requires additional development. There are ongoing efforts to design the architecture—hardware, software, facilities, and coordination mechanisms—to operate on both NATO and U.S. systems. The Air Force is especially appreciative of the staunch support from MDA’s senior leadership in helping to design situational awareness tools for integrating air defense—something that the Air Force does well right now—with missile defense, for which we currently are improving our capabilities.



And, the Air Force is pleased also to contribute to the command and control, along with existing infrastructure, of future integrated air and missile defense architecture. At Ramstein Air Force Base in Germany, we have an air operations center, the 603rd; and, the senior Air Force officer in theater, the Commander of United States Air Forces Europe, or “USAFE,” which we believe are optimally located, and doctrinally predisposed, to coordinate NATO and U.S. command and control efforts for any future European integrated missile defense. Admiral Jim Stavridis, the Commander of U.S. European Command and NATO Supreme Allied Commander Europe, has cast USAFE and the 603rd in that role to integrate the “shooter” capabilities that are provided by the sister components from the Navy and Army—an effort that is proceeding very well.

Like with all of our other endeavors, our allies will be increasingly a part of this effort, adding both capability and complexity. They will obviously want to—and, they should—participate in the command and control of the assets that will defend their areas of interest. Whether they contribute forces such as Patriot or others, provide sensors and radars, or just host these assets, their involvement will be essential. From an operational perspective, the USAFE Commander, who is dual-hatted as a NATO commander, will lead an effort on behalf of Admiral Stavridis, to develop a concept of operations for this international capability.

An equally important priority for the Air Force is the development of air- and space-based sensors, because our ability to track, target, and engage enemy missiles is fully contingent upon our ability to find them. We will continue to work closely with MDA to develop and integrate new sensors into our existing architectures, as well as to formulate new tactics, techniques, and procedures. We will also work to prepare a new cadre of integrated air and missile defense professionals who, with excellence, precision, and reliability, will “operationalize” this emerging capability.

Finally, the Air Force is pursuing, as well, kinetic capabilities to contribute to the integrated mission. The air-launched hit-to-kill, or “ALHK,” concept has the potential to leverage the inherent speed, range, and flexibility of airpower to



deliver precision and lethality, and therefore is getting a deserved and thorough look. It emphasizes engagements of enemy ballistic missiles in the first one-third of their trajectory—boost and early ascent phase—while maintaining a capability for descent and terminal phase engagements. In our view, ALHK would provide complementary capabilities for the Ballistic Missile Defense System—or “BMDs”—providing a substantial degree of agility to offset uncertainty, surprise, and risk.

Recognizing the prospects for this concept, the Air Force and MDA co-sponsored a study to examine the operational feasibility of the air-launched hit-to-kill concept, and to determine if it should be established as a program of record. The study concluded that ALHK is technically viable and operationally feasible, and offers the potential for positive campaign-level impact. It does not, however, come without cost, which, in a fiscal environment of flattening budgets and decreasing purchasing power, is something that we must carefully consider. Therefore, in addition to the findings above, the study team recommended a detailed cost-benefit study and the pursuit of key knowledge points before the Air Force and MDA commit to a substantial acquisition effort. This is a carefully considered and prudent approach, and we look forward to closing on these recommendations in the not-too-distant future.

## Conclusion

I am very encouraged by the partnership between the Air Force and MDA. It is the sort of collaboration that is required for our Nation to defend itself, its interests, and those of our international partners, from the threat of missiles in the hands of our adversaries. As technology continues to advance, missiles will be increasingly capable of greater ranges, payloads, and accuracy. As the BMDR report noted: “It is difficult to predict precisely how the threat to the U.S. homeland will evolve, but it is certain that it will do so.”

We must prepare for that eventuality by increasing our efforts to stem the tide of missile proliferation and that of associated technologies and equipment. This will require the collective efforts of the international community of responsible nations, involving all the appropriate elements of effective



statecraft. On a parallel technology track, we must continue our research, development, testing, and evaluation efforts to field new counter-systems, and to develop the corresponding architecture that enables their appropriate balance and integration.

I said it before: we must be committed for the long haul. Ensuring the next generation of technology and integrated missile defenses will require individual creative brilliance, meticulously harnessed to achieve our collective innovative genius.

It will take bold vision and determined leadership, like that of General O'Reilly and his MDA team.

And, it will demand not just a whole-of-government effort, but a “whole-of-Nation” approach, involving our partners in industry and academia as well.

So, at this conference, I ask you to thoughtfully internalize all of the technical presentations by the eminently qualified presenters; provide candid feedback; debate, deliberate, and help us to devise ever more feasible solutions.

I am very grateful for all of your professional efforts in this endeavor, and I look forward to our continued partnership in common cause, for the defense of our Nation. Thank you.