

**Flight Plan for the Air Force
Nuclear Enterprise**

26 June 2013



U.S. AIR FORCE

Flight Plan for the Air Force Nuclear Enterprise



THE SECRETARY OF THE AIR FORCE
CHIEF OF STAFF, UNITED STATES AIR FORCE
WASHINGTON DC



JUN 26 2013


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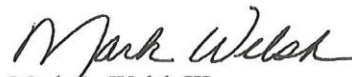
SUBJECT: Flight Plan for the Air Force Nuclear Enterprise

Airmen have made great strides to reinvigorate and strengthen the nuclear enterprise, and should take great pride in the hard work they've done in a short period of time to reclaim the trust and confidence of our Nation. As we move ahead, we must continue efforts to strengthen the enterprise, and we must never lose focus on this no-fail mission.

The attached *Flight Plan for the Air Force Nuclear Enterprise* is a long-term vision for the nuclear force. It outlines an Airman's perspective on deterrence, extended deterrence, and assurance of allies and partners, and describes the strategic vectors which will advance and monitor the overall health of the enterprise, its supporting infrastructure, and processes. The flight plan also builds on the *Vision for the United States Air Force* and provides the "how" for the nuclear enterprise implementation of that vision. All Airmen, regardless of specialty or current assignment, should understand the basics of the deterrence mission and its importance to the Nation and to our Air Force, and this document is a source of senior leadership vision, priorities, and direction for the nuclear enterprise.

The future will be challenging. Emerging nuclear powers will lead to a more complex, multi-dimensional security environment. National decisions will determine the makeup of our nuclear enterprise and force structure; however, regardless of the environment or force structure, we must have the focus and resources necessary for credible deterrence. Airmen must know nuclear deterrence is a critical mission with no margin for error. The Nation's nuclear expertise cannot be allowed to atrophy. Consistent, focused attention is necessary to meet the demands of twenty-first century deterrence and assurance.


Eric K. Fanning
Acting Secretary of the Air Force


Mark A. Welsh III
General, USAF
Chief of Staff

Executive Summary

This document from the Nuclear Oversight Board (NOB) guides long-term, continuous efforts to strengthen the Air Force nuclear enterprise (NE). It provides a strategic-level, Air Force-wide, perspective for all elements of the NE. It is designed to advance and monitor the overall health of the NE and its supporting infrastructure and processes. All Airmen should use this document as a source of senior leadership vision, priorities, and direction for the NE.

The document is divided in three sections; the first provides a high-level Air Force perspective on nuclear deterrence, extended deterrence, and assurance of our allies and partners. It describes functions and capabilities across the Air Force that contribute to effective deterrence and how those capabilities interact. The second section introduces five strategic vectors where continued progress is needed to strengthen, integrate, and mature the people, organizations, processes, and capabilities of the NE. The final section outlines methods senior Air Force leaders will use to govern the NE, using vector champions to develop and coordinate actions to continuously improve the NE.

The Air Force placed extraordinary emphasis on improving nuclear operations and surety over the last four years, with focus squarely on core nuclear deterrence operations (NDO) – and tremendous progress has been made. It is now time to take a wider view, improving integration between NDO and complementary and supporting Air Force missions while continuing to strengthen NDO.

Nuclear Deterrence: An Airman's Perspective

Nuclear weapons are extraordinary. Their effects are orders of magnitude beyond even the most advanced conventional weapons and deterring their use against the United States and our allies is essential to preserving our way of life. For this reason, as long as nuclear weapons exist, there will be no mission more important than maintaining nuclear deterrence and safeguarding the Nation's nuclear capabilities.

The nuclear deterrence mission has its origin in the very founding of our Air Force. Since that time, the Nation has been using Air Force nuclear weapons and delivery systems every day to deter our enemies and assure our allies. Performance of that mission requires global situational awareness, rapid decision-making, effective force management, and reliable force direction. For this reason, mission success requires that every Airman understand their role in the NE and contribute to its improvement.

Nuclear deterrence is not an anachronistic relic of the Cold War but some concepts are outdated; the Nation requires fresh thinking to meet the deterrence challenges of today's strategic environment. Deterrence in the twenty-first century demands credible, flexible nuclear capabilities, linked to comprehensive strategies and matched to the modern strategic

environment. That environment will continue to include nation-states with nuclear arsenals that could pose an existential threat to the United States. It will also include: multiple near-peer states with increasingly modernized nuclear capabilities that challenge regional stability; various nuclear aspirant states who resist global non-proliferation norms and whose emerging capabilities threaten U.S. allies; and non-state entities seeking nuclear capabilities. In the future, the flexibility and resilience of our triad of nuclear deterrent forces will continue to play an important role in strategic stability and underpin other tools of statecraft.

Deterrence, escalation control, and maintaining strategic stability will prove more challenging if nuclear proliferation continues. Methods that have proven successful with a peer competitor may not be as effective vis-à-vis a regional power or a non-state actor. Deterrence operations targeted at one actor may create unintended effects on other friendly or unfriendly actors or their allies. In the twenty-first century, one size will not fit all.

The Air Force provides ready and reliable nuclear forces for strategic deterrence, extended deterrence, and assurance in support of the President, our nation, and our allies. Maintaining the credibility of our deterrent requires a long-term commitment to our nuclear capabilities through investments in sustainment, modernization, and recapitalization.

Nuclear deterrence operations do not occur in a vacuum. All Air Force capabilities, including space, cyber, and conventional capabilities play a role in effective deterrence and provide options for decision makers. Airmen must understand the interactions of these capabilities and how to integrate them to achieve the desired deterrent effects.

Strategic Vectors for Advancing the Nuclear Enterprise

To advance and monitor the overall health of the Air Force NE and its supporting infrastructure and processes, the NOB is establishing vector champions with enterprise-wide responsibility for planning, integration, and oversight of continuous improvement efforts along five strategic vectors. These vectors provide high-level guidance to the NE, assist vector champions in development of action plans, and establish mechanisms to track progress along each vector. The vectors are:

Vector 1

Deliberately develop and manage an experienced cadre of airmen with nuclear expertise to support and conduct nuclear deterrence operations (NDO).

Vector Champion: AF/A1

Vector 2

Build, mature, and sustain robust Air Force organizations and processes to provide advocacy, support, and guidance for NDO.

Vector Champion: AF/A10

Vector 3

Ingrain continuous, rigorous self-assessment and improvement throughout the NE.

Vector Champion: AF/A10

Vector 4

Establish and maintain an integrated, strategic approach to meet the Nation's needs for Air Force-provided deterrence and assurance capabilities.

Vector Champion: AF/A10

Vector 5

Develop and foster Air Force critical thinking on deterrence and assurance.

Vector Champion: Air Education and Training Command

Execution

Vectors provide strategic level, long-term guidance to the NE. Successful execution requires that vector champions apply their understanding of deterrence principles and priorities to vector guidance in order to develop action plans for improvement, along with mechanisms to assess and track progress. Vector champions advocate for their plans at the NOB, implement actions within their authority, and request NOB support for plan execution, as necessary. Once approved, vector champions, with the support of the NIRI and NWG, track action plans and provide periodic updates to the NOB.

Strengthening is a continuous process and vector champions will continually evaluate progress and revise action plans as needed to further the goals of each vector. Progress and plans must be regularly monitored, assessed, and maintained to ensure continuous improvement in the NE.

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Introduction

This document from the Nuclear Oversight Board (NOB) guides long-term continuous efforts to strengthen the Air Force nuclear enterprise (NE). It provides a strategic-level, Air Force-wide perspective for all elements of the NE. It is designed to advance and monitor the overall health of the NE and its supporting infrastructure and processes.

All Airmen should use this document as a source of senior leadership vision, priorities, and direction for the NE. It is not intended to supplant any programming guidance nor outline specific force structures; however, it may be used by planners, programmers, and others to inform their efforts. This document was developed from a wide variety of national, Department of Defense (DoD), and Air Force guidance; internal Air Force reports; and assessments of the NE using guidance from the Secretary of the Air Force (SecAF), the Chief of Staff of the U.S. Air Force (CSAF), and the NOB.

Background

During a fifteen-year period following the end of the Cold War, our attention to the nuclear mission wavered, resulting in two major incidents highlighting, "...an unambiguous, dramatic, and unacceptable decline in the Air Force's commitment to perform the nuclear mission."¹ The Air Force responded with strong structural, procedural, and cultural corrective actions to reinvigorate the NE. The SecAF and CSAF chartered and co-chaired the four-star level NOB and the three-star level Nuclear Issues Resolution and Integration Board (NIRI) to provide senior level oversight and guidance for the NE. Crucial to reinvigoration, the Air Force created Air Force Global Strike Command (AFGSC) and the Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration (AF/A10) and enhanced the role of the Air Force Nuclear Weapons Center (AFNWC) to provide the focus, leadership, advocacy, and accountability that were lacking in the NE. Additionally, the Air Force created a new Air Force Corporate Structure (AFCS) nuclear deterrence operations (NDO) panel (AF/A8PN), consolidated oversight of nuclear acquisition programs under the Assistant Secretary of the Air Force for Acquisition (SAF/AQ), and appointed a program execution officer for strategic systems (PEO/SS) within SAF/AQ dedicated to nuclear weapon systems acquisition, investment, and programming support.

A Defense Science Board study in early 2011 stated that "...extraordinary measures have been effective in correcting many of the deficiencies in the operating forces and in rebuilding the

¹ Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management Phase I: The *Air Force's Nuclear Mission* (Washington, DC: Office of the Secretary of Defense, 2008), 2.

culture appropriate to the nuclear weapons enterprise.”² This report also found that “some of these measures...are not sustainable for the long term”³ and that results were “yet to be reflected”⁴ in several areas. During a 2012 CSAF directed assessment of the NE conducted by AF/A10, many Airmen voiced that, to ensure a lasting result, efforts to strengthen the NE must continue for the foreseeable future. Many also expressed the need for a continuing mechanism to guide institutional excellence and ensure the Air Force did not allow the decline to re-occur. This document is a direct result of that assessment and the strategic vectors outlined in Section 2 trace their roots to the assessment findings.

Outline and Use

Section 1 describes Air Force thinking on nuclear deterrence, extended deterrence, and assurance of allies and partners. It also outlines the Air Force’s commitment to sustain and modernize our capabilities to meet the changing demands of future environments.

Section 2 describes five strategic vectors where continued progress is needed to continue to strengthen, integrate, and mature the Airmen organizations, and processes of the NE. These vectors provide high-level guidance and enduring objectives to better integrate and continuously improve the NE.

Section 3 describes how senior Air Force leaders will oversee and manage the NE, including the use of vector champions to develop and coordinate enterprise-wide objectives and actions to strengthen the NE. These vector champions will build action plans with tasks, milestones, and metrics that advance their vectors and report progress to the NOB and NIRI on a recurring basis.



² *Report of the Defense Science Board Permanent Task Force on Nuclear Weapons Surety: Independent Assessment of the Air Force Nuclear Enterprise* (Washington DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2011), 12. Overall report classified Secret/Formerly Restricted Data.

³ Ibid.

⁴ Ibid.

Section 1

Nuclear Deterrence: An Airman’s Perspective

Introduction

Nuclear weapons are extraordinary. Their effects are orders of magnitude beyond even the most advanced conventional weapons and deterring their use against the United States and our allies is essential to preserving our way of life. For this reason, as long as nuclear weapons exist, there will be no mission more important than maintaining nuclear deterrence and safeguarding the Nation’s nuclear weapons capabilities.



"What you do here, particularly the nuclear mission, is the bedrock of our security. It is what stands in the background and looms over every action this country takes on the world stage. It is the foundation for everything we do."

Ashton B. Carter
Deputy Secretary of Defense
Nov 2, 2012, Minot AFB, ND

The nuclear deterrence mission has its origin in the very founding of our Air Force. Stewardship of these weapons and weapon systems require extraordinary focus and extraordinary leadership. Professional and dedicated Airmen, deployed worldwide, execute the nuclear mission 24/7 to ensure safe, secure, and effective nuclear forces.

Effective deterrence requires global situational awareness, rapid decision-making, effective force management, and reliable force direction supported by the full spectrum of AF air, space, and cyberspace capabilities. The Nation uses these weapons and delivery systems every day to continuously deter our enemies and assure our allies. For this reason, mission success requires that every Airman understand and execute their role in the NE and contribute to its improvement.

Maintaining strategic deterrence and stability at reduced nuclear force levels while sustaining a safe, secure, and effective nuclear arsenal, were two major goals identified in the 2010 Nuclear Posture Review Report (NPR).⁵ In the years since, policy makers and military leaders continue to reinforce the importance of deterrence and assurance. The 2012 Defense Strategic Guidance states: “We will field nuclear forces that can under any circumstances confront an adversary with the prospect of unacceptable damage, both to deter potential adversaries and to assure U.S. allies

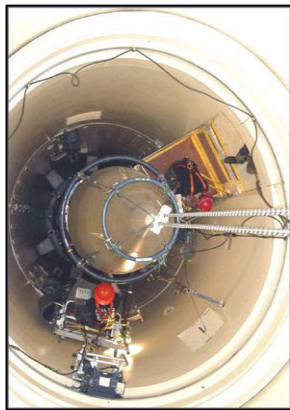
⁵ *Nuclear Posture Review Report* (Washington, DC: Office of the Secretary of Defense, 2010), iii.

and other security partners that they can count on America's security commitments.”⁶ The Air Force Chief of Staff, General Mark A. Welsh III, has emphasized that “our Nation will rely upon our nuclear forces for decades to come, and we must continue to conduct deterrence operations to dissuade adversaries from aggression, extend protection to our allies and partners, and provide assurance guarantees to maintain security relationships and support nonproliferation.”⁷

According to the Defense Strategic Guidance, “credible deterrence results from both the capabilities to deny an aggressor the prospect of achieving his objectives and from the complementary capability to impose unacceptable costs on the aggressor.”⁸ Deterrence is created by decisively influencing an adversary's decision-making process and encourages restraint by credibly threatening to impose unacceptable costs or deny benefits.⁹ Despite changes in the international security environment, nuclear deterrence will be required for the foreseeable future. A noted author recently highlighted, “...as long as nuclear weapons are around, even in small numbers, deterrence is the safest doctrine to deal with them.”¹⁰

Twenty-First Century Deterrence

Nuclear deterrence is not an anachronistic relic of the Cold War. DoD guidance makes clear the continuing need for strategic deterrence, requiring our forces to be “...capable of deterring and defeating aggression by any potential adversary.”¹¹ Twenty-first century deterrence demands credible, flexible nuclear capabilities, linked to comprehensive strategies and matched to the modern strategic environment. That environment will continue to include nation-states with



nuclear arsenals that could pose an existential threat to the United States. It will also include: multiple near-peer states with increasingly modernized nuclear capabilities that challenge regional stability; various nuclear aspirant states who resist global non-proliferation norms and whose emerging capabilities threaten U.S. allies; and non-state entities seeking nuclear capabilities. In the future, the flexibility and resilience of our triad of nuclear deterrent forces will continue to play an important role in strategic stability and underpin other tools of statecraft. The 2010 NPR report defines how these forces contribute to our security, stating “the fundamental role of U.S. nuclear weapons, which will continue as

⁶ *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, DC: Office of the Secretary of Defense, 2012), 5

⁷ Gen Mark A. Welsh III, *CSAF Letter to the Airmen of the Nuclear Force*, (Oct 17, 2012)..

⁸ *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, 4.

⁹ *Deterrence Operations Joint Operating Concept* (Washington, DC: Department of Defense, 2006), 5.

¹⁰ Therese Delpech, *Nuclear Deterrence in the 21st Century: Lessons from the Cold War for a New Era of Strategic Piracy* (Santa Monica, CA: RAND Press, 2012), 1.

¹¹ *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, 4.

long as nuclear weapons exist, is to deter nuclear attack on the United States, our allies, and partners.”¹²

For over sixty years, the Air Force has provided extended deterrence to our allies and partners. Extended deterrence enhances stability in potential hot-spots around the world and demonstrates our commitment to regional security alliances and partnerships. Both extended deterrence and assurance are critical to U.S. non-proliferation goals, as, without this credible security guarantee, some allies might perceive a need to develop their own nuclear weapons. Extended deterrence and assurance drive specific force structure and capabilities requirements different from those of traditional strategic deterrence.

Deterrence, escalation control, and maintaining strategic stability will prove more challenging if nuclear proliferation continues. Methods that have proven successful with a peer competitor may not be as effective vis-à-vis a regional power or a non-state actor. A regional power with limited conventional capabilities can have a disproportionate effect on regional stability in their region if they gain nuclear capabilities. And, deterrence operations targeted at one actor may create unintended effects on other friendly or unfriendly actors or their allies. In the twenty-first century, one size will not fit all. Linear extensions of Cold War theories, analysis, and constructs are not sufficient in a multi-polar and proliferated world. Maintaining deterrence and stability in this environment will require more advanced thinking on deterrence than the Cold War and solutions may place increased emphasis on the flexible capabilities provided by Air Force.

Amid this change, the United States is committed to reduce the number of nuclear weapons in its arsenal. Airmen must recognize that reductions in warheads and platforms are not just adaptations to the existing strategic environment; reductions could actually reshape the environment. At some point, changes in the environment will require that we adopt different strategies for deterrence and assurance. Less is not just less: less is different. What we value in capabilities and attributes of our weapon systems, and how potential adversaries and allies view them, may change as numbers go lower. At any force level, we must maintain capabilities that ensure stability and provide the national leadership with important options during a crisis.

The Continuing Value of the Triad

The triad is structured to provide the President options that mitigate risk across a range of adversaries and scenarios. This includes risk from pre-emptive strike; systemic failure of a warhead or delivery system; technologies or targeting strategies that reduce the effectiveness a given weapon system; or technological surprise. As U.S. force structure is reduced, maintaining the balance of attributes that gives strength and synergy to the triad in order to minimize risk and preserve options will become even more important.

¹² *Nuclear Posture Review Report*, vii.

The Air Force believes a triad of Air Force intercontinental Ballistic missiles (ICBM) and bombers and Navy ballistic missile submarines provides the best blend of deterrence attributes. The responsiveness of ICBMs, the flexibility of bombers, and the survivability of submarine launched ballistic missiles provide synergistic attributes that manage risk and provide options that address all scenarios of strategic deterrence, extended deterrence, and assurance. This synergy means that triad forces are intricately linked. Changes to the structure and posture of an individual leg of the triad affect the remaining legs and, more importantly, influence the perceptions of adversaries, allies, and neutral parties.

Air Force Contributions to Nuclear Deterrence and Assurance

The Air Force provides ready and reliable nuclear forces for strategic deterrence, extended deterrence, and assurance in support of the President, our nation, and our allies. Air Force



bombers and ICBMs provide two legs of the triad while our nuclear command, control, and communications (NC3) and intelligence, surveillance and reconnaissance (ISR) capabilities provide the President with the tools to maintain situational awareness and employ all strategic forces. Together, our dual-capable bombers and fighters provide the backbone of America's extended deterrence and assurance capabilities for our allies. The Air Force is committed to providing these capabilities as long as the Nation needs them.

Our forces must remain responsive, survivable, flexible, and lethal to deter emerging threats and to meet the Nation's needs for

strategic stability. Credible extended deterrence requires the ability to demonstrate resolve to both friends and adversaries. It requires flexible and responsive forces with a global reach and whose lethality can be tailored to any situation. Assurance requires forces that can provide presence to demonstrate our commitment to friends and allies.



The ICBM force is essential to protecting the nation from either nuclear attack or nuclear blackmail. It does that by maintaining the highest readiness levels and geographic dispersal. Air Force ICBMs are lethal and responsive. They hold a full range of high-value targets at risk, with the highest level of alert and at the lowest overall cost of any leg of the triad. The on-alert posture increases decision time and options for national leaders in a crisis while complicating adversary decision-making and targeting. The highly visible, homeland-based ICBM force provides: unique contributions to maintain strategic stability; supports conflict resolution below the nuclear threshold; and denies adversaries



credible nuclear coercion options. It creates an unacceptable threshold for an adversary as even a large-scale nuclear attack on the American homeland cannot be assured of success.

Bombers are the most flexible delivery platform and are the most effective at signaling national resolve – essential attributes for deterrence, assurance and escalation control. Bombers offer the widest range of options and weapons effects, with both penetrating and standoff capabilities. This unique employment flexibility, with scalable, deep strike capabilities, provides credible deterrence options for a wide range of scenarios that are emerging in the multi-polar world of the twenty-first century. Penetrating capabilities provide options that can be rapidly adapted or



terminated as situations evolve. Standoff capabilities allow bombers to hold a wide array of targets at risk, without requiring conventional air superiority, even in anti-access environments. In crisis, bomber generation reinforces stability by greatly increasing survivability and responsiveness in the Triad. Placing bombers on alert, dispersing them, or deploying them to forward locations

provides potential adversaries, allies, and partners a visible signal of U.S. resolve and positions them to serve as a rapidly available and credible means of extended deterrence and escalation control. Finally, bombers can be recalled after launch, providing another dimension for visibility, signaling, and escalation control.

Dual-capable fighters (DCA) serve as a credible and visible demonstration of American commitment to extended deterrence and assurance. Primarily deployed in support of the North Atlantic Treaty Organization (NATO), DCA have contributed to the security and stability of the alliance for over sixty years and provide both flexibility and escalation control.

Nuclear deterrence operations do not occur in a vacuum. The ability to reliably detect, report, and respond is stabilizing and key to effective deterrence. All Air Force capabilities, including space, cyber, and conventional capabilities play a role in effective deterrence and provide options for decision makers. Airmen must understand the interactions of these capabilities and how to integrate them to achieve the desired deterrent effects. This is particularly important when conducting conventional operations against a nuclear-armed adversary.

Robust ISR and NC3 ensure that the President has the maximum possible decision time in all scenarios and strengthens strategic stability, particularly at lower force levels. The Air Force is the main provider of ISR and NC3 capabilities supporting all phases of deterrence operations – situation monitoring, decision making, force management, and force direction.

Reconnaissance in support of nuclear operations provides decision makers at the highest levels with the ways and means to receive timely and meaningful intelligence during a crisis. These



assets provide: indications and warning data; information on enemy intent; nuclear operations strike assessments; and battle damage assessment reporting. This collection and dissemination of intelligence plays a crucial role in reshaping and adapting strategic plans. Warning systems are critical for enabling informed and timely decision-making by the President. Survivable, enduring, command and control (C2)

capabilities are required to disseminate warning information and nuclear control orders and add significant resilience to the NC3 system of systems. Resilient NC3 also contributes to stability by convincing adversaries that they cannot execute an attack against the US or our allies without suffering crippling consequences.

Finally, global reach requires global logistics. Air refueling will remain a requirement for supporting nuclear operations for the foreseeable future and plays a critical role supporting ISR and resilient NC3. As with bombers, air refueling assets can be placed on alert, dispersed, or forward deployed as a visible signal of American resolve. Prime Nuclear Airlift Force (PNAF) provides the critical air transportation component of the logistical movement of nuclear weapons and related material. PNAF supports nuclear weapons life-cycle sustainment and is also essential for international treaty compliance and non-proliferation programs that sequester global weapons-grade nuclear material — top national priorities requiring safe and secure airlift.



“Since Curtis LeMay we’ve been the best in the world and we remain that way. The nuclear mission, continuing to strengthen the enterprise, is still our number one priority in the United States Air Force and it will remain that way.”

General Mark A. Welsh III
Chief of Staff, U.S. Air Force
Sep 18, 2012, AFA Conference

Sustainment, Modernization, and Recapitalization

Maintaining the credibility of our deterrent requires a long-term commitment to our nuclear capabilities through investments in sustainment, modernization, and recapitalization. This commitment is reflected in both national guidance and Air Force programs, recognizing the constraints of a challenging fiscal environment. The NPR directed a range of actions to ensure the continued viability of strategic capabilities across the Services. These included analyses of alternatives (AoA) for ICBM and air-launched cruise missile (ALCM) follow-ons, enhancements to the B-2 bomber, a B61 life extension program, and studies to strengthen NC3 capabilities.¹³

The Air Force is committed to providing the Nation the capabilities it demands. This includes ready and capable nuclear delivery platforms and weapons, NC3 capabilities, expert personnel,

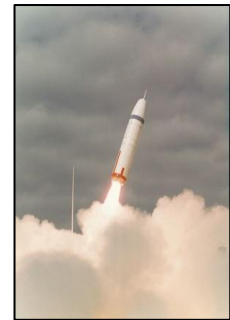
¹³ Ibid, 23-27.

and the physical infrastructure and supporting equipment needed to sustain them. The CSAF has emphasized this commitment from the highest levels of the Air Force, “As your Chief, I want you to know that stewardship of a safe, secure, and effective nuclear deterrent remains the #1 Air Force priority. Our focus will not waver.”¹⁴

The Air Force has programs in place to maintain effectiveness of the Minuteman III into the 2030s and is committed to development of a successor to the Minuteman III that will provide the nation a responsive and stabilizing ICBM capability for decades to come. The AoA for the ground-based strategic deterrent (GBSD) is setting the stage for ICBM recapitalization.



Investments to sustain the MMIII are also building the technology foundation for GBSD. Even with that leveraging, both the Air Force and Navy face fiscal challenges in the recapitalization of our strategic ballistic systems. Cooperation between the Services will help reduce those challenges. Air Force and Navy will share knowledge to increase program efficiency and reduce recapitalization costs. While our systems are different and



technological diversity is an important hedge, we will pursue as much commonality and adaptability as is prudent. For instance, it is critical that we share technological insights from the ICBM demonstration/validation program; and, likewise, the Air Force must take maximum advantage from the Navy Mk5 fuze replacement program. Other promising areas for collaboration include propulsion and guidance technology, and warhead modernization.

The B-52, with ALCM, continues to provide a flexible, visible, and effective standoff capability. We continue to modernize the B-52 and, with proper sustainment, it will remain an effective stand-off asset until a replacement is available. ALCM life extensions will maintain its effectiveness until the late 2020s. B-2 modernization is one of our highest priorities and is essential to ensure that our long-range direct-strike asset remains capable of penetrating in anti-access and area denial environments. However, even with planned modernization, our ability to hold targets at risk with the current bomber force, in either a direct strike or stand-off mode, will diminish over time. The nuclear-capable Long-Range Strike Bomber (LRS-B) and Long Range Stand-Off (LRSO) missile are the Air Force programs that, together, will address this eventual shortfall. LRS-B will ensure we have the global reach to provide direct strike options in anti-access environments. LRSO, compatible with the B-2, B-52, and the LRS-B, will provide flexible and effective stand-off capabilities in the most challenging area denial environments.

¹⁴ Gen Mark A. Welsh III, *CSAF Letter to the Airmen of the Nuclear Force*, (Oct 17, 2012).

Legacy dual capable aircraft and the B61 bomb family will meet our DCA commitments for



extended deterrence and assurance to our NATO allies into the 2020s. F-35 nuclear integration and the B61 life extension program will allow us, and our allies, to transition in the early-mid 2020s from legacy DCA capabilities to a weapon system that will continue to be effective in the more challenging anti-access environments of the twenty-first century.

The Air Force, in concert with our partners in the Department of Energy and the National Nuclear Security Administration, is committed to the B61 gravity bomb life extension program. This program will enhance warhead safety and security, consolidate weapon mods to reduce stockpile size and life-cycle costs, and maintain capabilities to meet our NATO commitments.

Only the President of the United States can authorize the employment of our Nation's nuclear weapons, so NDO requires ISR and NC3 systems to provide national leadership with situational awareness, advance warning, and command and control capabilities. Deterrence, stability, and escalation control requires that these capabilities endure nuclear attack so that no adversary can contemplate a disarming first strike. The Air Force will continue to sustain survivable and endurable capabilities that perform these functions.

The Air Force is committed to the maintenance and modernization of the situational awareness platforms of the Nation's space and ground-based missile warning system. Continued sustainment of the legacy Defense Support Program and fielding of the highly elliptical orbit and geosynchronous orbit components of the Space-Based Infrared System are critical to ensuring worldwide surveillance so that no attack can go undetected or unattributed. Viability of the United States Nuclear Detonation Detection System remains critical to informing the National Military Command, Presidential decision process, and for nuclear force management. Sustainment of ground-based radars, such as the Ballistic Missile Early Warning Systems and the Perimeter Acquisition Radar Characterization System, provides assurance that an attack against the homeland can be quickly characterized to enable a prompt reaction by C2 and maximize Presidential decision time. The Air Force will pursue fielding of the Mobile Ground System upgrade to sustain survivable and endurable missile warning systems and ensure mission viability in the future.



NC3 remains a key Air Force priority and we have made significant initial strides in assessing NC3 and are taking preliminary steps to modernize and reinvigorate this critical capability. Modernization of protected military satellite communications is critical to the Air Force and Joint warfighting capability and brings the NC3 system-of-systems together. Sustainment of Milstar and fielding of the Advance Extremely High Frequency constellation and the Family of Advanced Beyond the Line of Sight Terminals are critical to maintaining NC3 capabilities.

Section 2

Strategic Vectors for Advancing the Nuclear Enterprise

The strategic vectors described in this section are intended to guide the continuous strengthening of the NE and will be used by Senior Air Force leadership during oversight and governance. These vectors provide high-level guidance for the NE as a whole, assist vector champions in development of action plans, and facilitate the development of metrics that will enable the NOB and NIRE to monitor progress as described in Section 3. Each level of command should use these vectors to create improvement plans and tasks appropriate to their level to supplement those developed by the vector champions. And, airmen at all levels should use these vectors to guide their contributions to the strengthening of the NE. The vectors are:

Vector 1

Deliberately develop and manage an experienced cadre of airmen with nuclear expertise to support and conduct NDO.

Vector 2

Build, mature, and sustain robust Air Force organizations and processes to provide advocacy, support, and guidance for NDO.

Vector 3

Ingrain continuous, rigorous self-assessment and improvement throughout the NE.

Vector 4

Establish and maintain an integrated, strategic approach to meet the Nation's needs for Air Force-provided deterrence and assurance capabilities.

Vector 5

Develop and foster Air Force critical thinking on deterrence and assurance.

Vector 1 – Deliberately develop and manage an experienced cadre of airmen with nuclear expertise to support and conduct NDO.

Vector Description

Airmen are the backbone of our deterrent capabilities. Meeting future deterrence challenges will require that we invest in and get the most out of each Airman. The stringent nature of the NDO mission demands sound judgment and a sound understanding of nuclear surety only possible with exceptional technical expertise, meticulous adherence to standards, and persistent critical thinking. These traits are developed over time in nuclear professionals through proper training and experience focusing on the daily deterrence mission. To meet the demanding requirements of the mission, and because many of our people flow into and out of NDO throughout their careers, special attention must be given to the development and tracking of personnel with NDO skills. Collaborative efforts are required to develop Airmen who can meet the global leadership challenges of the twenty-first century; including rigorous technical training, specified developmental education, and focused assignment policies and processes. These concerns apply equally to all of our Total Force Airmen. This vector is complementary to Vector 5.

Vector Champion: AF/A1

Objective

The overall objective of this vector is to provide a cadre of well-trained, competitive, and motivated professionals at all levels in NDO career fields with sufficient depth and breadth of experience, and in sufficient number, to execute, manage, and lead the NE in the twenty-first century. Our Airmen must have fulfilling career paths and efforts should be focused to produce, over both the short- and long-term, pipelines of talent for this demanding mission. Force development processes must be established and formalized for critical NE career fields. Education and training must meet the specific requirements of the NDO mission to develop nuclear professionals. As mentioned above, NDO does not occur in a vacuum, so education programs must ensure that all Airmen understand the importance of effective twenty-first century deterrence operations to the Nation, and how integration across the entire Air Force mission set achieves deterrent effects.”



Action Plans and Initial Path

The Human Capital Strategic Plan developed by the Deputy Chief of Staff for Manpower, Personnel and Services (AF/A1) provides a starting point for developing action plans under this vector. Plans should consider the application of the full set of personnel policies and practices throughout the NE to continue rebuilding expertise for the mission area. Integration of these policies and practices (recruitment, selection, assessment, training and development, promotion,

compensation and recognition, selection of senior leadership, and workforce planning) is a key challenge, as development and sustainment of deterrence professionals requires managing a diverse workforce across functional and command lines. Initiatives must ensure that policies and practices reinforce each other and seek to eliminate conflicts and inconsistencies.

Initiatives must consider both NDO and support activities for NDO. For example, the ability to achieve weapon system modernization or a new strategic system is reliant on an active and robust acquisition corps, well versed in the unique needs of the NE. Additionally, ensuring nuclear expertise in research and development is vital to initiating technology examination and development from the most basic level through modernization program initiation.

Areas for initial action plan development include: finalize and implement a NE Human Capital Strategy; codify the AF/A10 functional authority roles and responsibilities; formalize initiatives



such as enlisted development teams and education courses (Nuclear 200-400); validate and increase understanding of new initiatives (key nuclear billets, nuclear special experience identifiers); explore strategic Total Force solutions, including civilian workforce development; and execute requirements determination cycle to ensure relevant force development. Communication and engagements plans that support educational objectives should also be

considered. This list is not intended to be all inclusive and may be modified based on the vector champion's analysis and action plan development priorities.

Background

Several assessments of the Air Force nuclear enterprise raised concerns about the quantity of nuclear experts, depth of the nuclear expertise, and quality of Air Force processes for building expertise. They found that the erosion of nuclear expertise resulted from a reduced focus on development and management of nuclear subject matter experts and inadequate education and training programs and guidance for personnel in the nuclear mission. In response, the Air Force instituted a broad range of initiatives to reverse this trend. These included: billet additions to the NE; billet structure evaluation and key billet identification; manpower studies; curriculum revisions for technical training and professional military education (PME); development of specialized continuation training; designation of AF/A10 as the functional authority for management of human capital in the NE; and development of the Nuclear Enterprise Human Capital Execution Plan. MAJCOMs and centers also began deliberate developmental programs for airmen in their commands.

The 2012 AF/A10 assessment found indications of progress in human capital development. Initial actions are building a foundation to produce trained, seasoned nuclear professionals with a

better understanding of nuclear stewardship responsibilities. However, due to the long lead times for human capital processes, it could take years for new initiatives to create significant improvement at all levels of the force, and continued action and monitoring will be needed to ensure desired outcomes.

Although overall manning is high, some individual career fields still have low inventory and several enlisted career fields have low levels of experience. The imbalance between manning at lower and higher skill levels is reflective of the Air Force as a whole; however, it creates significant challenges to the NE as it works to overcome the erosion of expertise.

Many initiatives were just beginning to be implemented when the 2012 assessment was conducted and were not formalized or codified in Air Force instructions (AFIs), mission directives, or recognized processes. Some of the more difficult solutions were not fully implemented and require continued coordination or integration. The AF/A1 Nuclear Enterprise Human Capital Strategic Plan addresses some of these issues; however, it was not published at the time of the assessment.



Vector 2 - Build, mature, and sustain robust Air Force organizations and processes to provide advocacy, support, and guidance for NDO.

Vector Description

Organizations and processes provide the structure for successful long-term strengthening and sustainment of the NE. Organizations must have properly aligned missions, lines of authority, and adequate manning and resources. Policy and guidance must be clear, complete, and deconflicted across the NE. Many organizations and processes involving the NE are still maturing. As they mature, and as mission requirements change over time, organizations and processes must adapt and continue to improve to effectively support the NE. NDO is supported by and operates within key institutional processes.

Organizational structures must support effective advocacy of NE requirements within and across these Air Force-wide processes and the external processes of key mission partners. The NOB, NIRI, and Nuclear Working Group (NWG) provide forums for governance of the NE; ensure institutional focus, and reinforce efforts of leaders at all levels.



Vector Champion: AF/A10

Objective

The overall objective of this vector is to continue to mature NE organizations and processes. We must continue to monitor and assess organizational health and performance; identify, evaluate, and resolve gaps and seams; and explore options to better organizationally align the NE for future success. Successful organizational and process changes will be codified; underperforming ones will be recommended for termination. Organizations, processes, and guidance must provide focused advocacy; clear, unambiguous lines of authority; and, adequate resources at each level of the NE. Organizations must clearly understand their responsibilities and be held accountable for providing required support and efficiently executing their processes.

Action Plans and Initial Path

Action plans should include assessments of solutions previously implemented to determine those that should be continued and institutionalized and those that may no longer be required. Assessments should include: identification of possible gaps and seams in mission areas, organizations, processes, and guidance; assessment of opportunities for consolidation of functions; codification of successful, enduring organizations and processes; and, elimination of low-reward processes. Organizational assessments should include evaluations of resources and assets, including manning, appropriate grade structure, and infrastructure. Another area of

emphasis is continued improvement of guidance for the NE to: ensure clarity and accuracy; identify gaps and eliminate redundancy; and assess functional community support to NDO.

Areas the vector champion should consider for initial action plan development are: corporate ownership/planning for critical nuclear infrastructure, facility, and equipment certification (including support equipment); program development, materiel integration, and alignment; and facility deviations/risk management. These action plans should be integrated with action plans developed for infrastructure from Vector 4. Plans should drive continuous improvement in NE guidance to ensure clarity and accuracy, and assess the effectiveness of functional community support to NDO. Due to the cross-functional nature of many NE programs, the vector champion will assess NE advocacy within the AFCS and evaluate gaps and seams in core function lead integrator (CFLI)/core function master plan (CFMP) processes.

Additionally, plans should include development of methods to monitor and assess of the impacts of long-term sustainment solutions on the NE, including supply chain management, nuclear weapons-related materiel (NWRM) management, and organizational initiatives such as the Future Intercontinental Ballistic Missile Sustainment and Acquisition Concept, product center realignment, and Air Force Materiel Command reorganization.

As an area of particular emphasis, the Air Force provides significant NC3 capabilities for the Nation. We must develop and integrate the organizations and processes needed to support this critical capability and continue efforts to baseline Air Force NC3 architecture and refine Air Force guidance. The vector champion must effectively integrate AF NC3 planning, operations, and capability delivery with national and departmental mission partners.

AFGSC, AFNWC, and AF/A10 were established and refined during reinvigoration and are critical in ensuring the health of the NE and are permanent Air Force organizations. Plans will include initiatives to further refine and mature these organizations to provide continuing support and advocacy to the NE. Plans should anticipate and provide recommendations to avoid potential overlaps or gaps and seams in roles, responsibilities, and authorities as these organizations continue to mature. One example of this type of organizational refinement was the transfer of responsibilities for certain munitions squadrons from AFNWC to AFGSC.

Background

The 2008 Schlesinger Report found that no single command within the Air Force had operational ownership of the nuclear deterrence and nuclear global strike mission.¹⁵ The 2008 Air Force Nuclear Task Force echoed this finding and determined that Air Force nuclear-related authority

¹⁵ *Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management Phase I: The Air Force's Nuclear Mission* (Washington, DC: Office of the Secretary of Defense, 2008), 49.

and responsibility was fragmented and was not aligned with nuclear deterrence mission requirements.¹⁶ Inadequate, insufficient, and conflicting guidance and policy from Headquarters Air Force, MAJCOMs, and combatant commands created a variety of challenges.¹⁷



To address these issues, the Air Force instituted several major organizational changes including the standup of AFGSC, AF/A10, and the expansion of the AFNWC. Additionally, many MAJCOMs created organizations dedicated to sustained nuclear mission focus and accountability. The SecAF and CSAF chartered the NOB and NIRI to provide senior-level oversight, integration, and guidance to the NE. These organizations and oversight bodies established new or revised existing processes and guidance to improve support to the NE.

The 2012 AF/A10 assessment found these organizational changes were one of the most important actions taken to reinvigorate the NE and are key enablers for ensuring gains in Air Force nuclear stewardship endure. It also found some of the initial actions taken to reestablish focus on the mission and provide “crisis” support may not be appropriate or sustainable over the long term. Continuing assessment and review is required to refine, mature and strengthen NE organizations and processes. Other organizations, processes, and guidance will also need to adapt as they mature. The assessment found that although we have made considerable progress, NC3 organizations and processes are still in their infancy and continued focus and attention is needed in this area.

¹⁶ *Reinvigorating the Air Force Nuclear Enterprise* (Washington, DC: Department of the Air Force, 2008), 59.

¹⁷ *Ibid*, 21.

Vector 3 - Ingrain continuous, rigorous self-assessment and improvement throughout the nuclear enterprise

Vector Description

Since its inception as a separate Service, the Air Force has provided the Nation a credible strategic deterrent underwritten by a culture of compliance, adherence to high standards, and critical self-assessment. Safe, secure, and effective nuclear deterrence operations require a comprehensive, integrated system of problem identification and solving using critical self-assessment, nuclear inspections, trend/root cause analysis, and communication of appropriate lessons learned.

Vector Champion: AF/A10

Objective

This objective is a continuation of the “reestablish a culture of accountability and rigorous self-assessment/self-improvement” objectives and vectors from the 2008 roadmap titled *Reinvigorating the Air Force Nuclear Enterprise*¹⁸ and follow-on CSAF vectors. This objective



is enduring; its central focus is codification of on-going processes and the creation and institutionalization of guidance, structures, and processes that hold nuclear Airmen at all levels accountable. It features self-discovery, bottom-up problem analysis/solving, and communication.

Success relies on continuous self-assessment and improvement that complement external inspection processes. Additionally, NE personnel must ensure that the findings of inspections, audits, and self-assessments are analyzed for root causes, identify recurring deficiencies and trends, and detect and address systemic problems.

Action Plan and Initial Path

Action plans should consider development of NE-wide methods to use inspection results and lessons learned to improve and enhance policy, processes, and unit performance. Those plans must not only institutionalize nuclear lessons learned processes, but also rapidly and effectively communicate those lessons and best practices across MAJCOMs, units, and the rest of the NE. Action plans should also be developed to enhance our treatment and institutionalization of root cause analysis (RCA). These should include RCA of minor deficiencies because they could be leading indicators of larger systemic problems.

¹⁸ Ibid, 19.

As a starting point for organizing action plans on inspection results and trend analysis, the vector champion should refer to AFI 90-201, *The Air Force Inspection System*, as it provides guidance for nuclear inspection programs and self-assessment programs. Initial steps should include methods to ensure consistency and quality of analyses within and across MAJCOMs, followed by centralized MAJCOM and Air Force NE trend analyses. This will assist in effectively identifying and resolving recurring deficiencies and developing, implementing, and communicating follow-up actions. Plans should also consider the continued use of the Air Force comprehensive assessment of nuclear sustainment (AFCANS) process, utilizing expertise across the NE to ensure focus on the critical sustainment actions needed to keep our aging weapon systems safe, secure, and effective. Future self-assessment processes must provide incentive for use and appropriate feedback mechanisms. For example, MAJCOM inspector generals and Air Force Inspection Agency should consider assessing and crediting unit self-discovery and Air Force institutional support should be allocated to resolve validated problems discovered through these efforts.

Background

The 2008 Roadmap affirmed a “culture of compliance” as one the “principal pillars to help us achieve sustained excellence in the stewardship of our nuclear deterrence capability.”¹⁹ The roadmap cited a “lack of clear accountability and effective processes to identify and correct systemic weaknesses through inspection and self-assessment programs.”²⁰ It established rebuilding a nuclear culture with success criteria relying on a robust self-assessment and inspection process that effectively uncovers, analyzes, addresses, and reviews systemic weaknesses. The Air Force instituted a series of corrective actions including revising inspection guidance, establishing independent inspection oversight, strengthening inspection processes, standardizing inspector training, implementing a four year test period that extends the nuclear inspection cycle from 18 to 24 months, and issuing root cause analysis guidance. The SecAF established trend analysis and resolution from nuclear surety inspections (NSI) as one of five focus areas for the NE in his 2010 nuclear update to the Secretary of Defense. Additionally, Air Force leadership saw a critical need for a comprehensive assessment of the effectiveness of sustainment activities across the NE and directed that the execution of AFCANS take place over a five year period. The actions stemming from this initial direction will be complete by mid-year 2013 when the fifth and final AFCANS report is issued. These findings and action items have provided needed attention and focus for improving nuclear sustainment.

The AF/A10 assessment found significant improvements in inspection guidance, processes, execution, standardization, and robustness. Some self-correcting behaviors are being created;

¹⁹ Ibid, 3.

²⁰ Ibid, 19.

however, RCA across the NE is in its infancy. RCA efforts are primarily tied to NSI processes and oriented principally to resolve major and critical inspection discrepancies. Nascent lessons learned practices within the NE should be grown and strengthened. While units continue to share inspection results on ad hoc bases, increased communication of post-inspection RCA findings in the NE should be encouraged and formalized. NSI trend analysis focuses on unit pass rates and should be expanded to identify potential NE-wide problem areas and to improve policy and processes. A bottom-up, internally-driven self-assessment culture that routinely uncovers deficiencies, identifies systemic weaknesses, and addresses those issues in a disciplined, accountable manner must be established.



Vector 4 - Establish and maintain an integrated, strategic approach to meet the Nation's needs for Air Force-provided deterrence and assurance capabilities.

Vector Description

The Air Force must demonstrate it is fully committed to long-term sustainment, modernization, and recapitalization of nuclear forces and supporting infrastructure that are required to meet national policy guidance. We must have an overarching strategy to support national guidance and provide the capabilities needed for deterrence and assurance, along with a clear, concise message to internal and external audiences to successfully advocate for resources.

Communicating that commitment begins with articulating to internal and external audiences the Air Force's overarching strategy to provide deterrence and assurance capabilities using clear, concise messages within the Air Force and DoD budgeting processes and in the broader public debate.

Vector Champion: AF/A10

Objective

The overall objective of this vector is to establish and maintain an overarching, publicly releasable, strategic narrative that communicates the Air Force's commitment to providing enduring capabilities required to support the Nation's deterrence, assurance, and stability objectives. It will articulate a holistic vision for the future, describing how the Air Force will continue to provide safe, secure, and effective nuclear deterrence capabilities as long as the Nation requires them. This will include a comprehensive and prioritized approach to meet these objectives through 2030 and beyond. It will encompass effective investment, sustainment, and recapitalization approaches that ensure doctrine, organization, training, materiel, leadership, personnel, and facilities solutions are aligned to these priorities.



Action Plans and Initial Path

This vector should take a macro-level approach, developing broad strategies across and above CFMPs but in more detail than documents such as the Air Force Strategic Plan and Air Force Operations Concept. Plans developed under this vector are not intended to replace the CFMP and will be consistent with current CFMPs and other programming and requirements documents. Action plans should use CFMPs as an initial input and refer to strategic system capabilities assessments for development of strategies and messages in support of this vector. The outputs should incorporate all the major nuclear-related programs across all MAJCOMs, focus on mission capabilities rather than specific programs or weapon systems (e.g. long-range strike vice B-52 or B-2), and include infrastructure and non-material programs and processes.

Action plans should include evaluation and prioritization of requirements and plans to sustain and modernize weapons systems and provide, maintain, or upgrade facilities supporting NDO, such as weapons storage areas, launch facilities, and runways, to ensure that the infrastructure is capable of supporting the mission. Strategic plans should describe an integrated and flexible investment, sustainment, and recapitalization strategy to support nuclear deterrence and assurance requirements. They should deconflict Air Force efforts – “connecting the dots” across MAJCOMs and AFCS panels, support Air Force planning needs, and reflect the operational environment.

Plans must include development of clear, concise messaging and direction to integrate and advocate for capabilities for the nuclear mission. Messages must communicate the Air Force commitment to preserve a credible strategic deterrent force through long-term sustainment, modernization, and recapitalization of systems, including: ICBMs through actions determined by the GBSD AoA; dual-capable bombers through LRS-B and LRSO; resilient NC3; nuclear support forces; and sustainment of the nuclear stockpile and nuclear infrastructure. Additionally, messages should communicate the importance of continued investment in dual-capable fighter bomber aircraft, with F-35 nuclear integration and the B61 life extension program, to provide the flexibility that is required for extended deterrence and assurance.



Areas for initial action plan development include: develop a strategy and narrative integrating across CFMPs to describe a holistic approach to provide deterrence and assurance capabilities; associated communication plans to articulate this strategy and Air Force priorities; early development planning (to include capability planning and analysis and concept development); and continuation and expansion of NC3 roadmap development.

One of the first products should be an integrated description of critical paths, key decisions, and required resources for major nuclear deterrence systems and capabilities, including platform modernization, warhead life extension programs and NC3. This should result in a holistic representation of plans for key nuclear related systems across all CFMPs and CFLIs.

Background

During the CSAF-directed 2012 AF/A10 assessment, several senior officers expressed a need for an overarching strategy and priorities for capabilities development and sustainment. While the establishment of the NDO panel in the AFCS, the designation of AFGSC as the NDO CFLI, and the development of the NDO CFMP have done a great deal to focus advocacy for the NE, many nuclear-related systems have multiple uses, and advocacy for these systems resides outside the NDO CFLI and NDO panel. Specific examples include DCA, ISR, NC3, and LRS-B. Also,

there are classified CFMPs and weapon systems master plans that focus on specific programs and have limited distribution. While the Air Force has programs to support the nuclear mission through sustainment, modernization, and recapitalization of our systems, we currently lack the comprehensive, integrated, and publicly releasable narrative necessary to communicate our commitment and advocate for enduring capabilities required to support the Nation's deterrence, assurance, and stability objectives.

NC3 is a particular challenge in this area. As NC3 systems and capabilities support several mission areas, advocacy for NC3 systems is dispersed across several AF panels. Also, NC3 is not just an Air Force program. The joint nature of NC3 adds complex inter-relationships as requirements, architectures, and guidance come from various national and Service sources and sustainment responsibilities are spread across different agencies. We have taken initial steps to evaluate NC3 requirements and establish Air Force governance structures and are proceeding with early capability analyses, but more work remains.



Vector 5 – Develop and foster Air Force critical thinking on deterrence and assurance.

Vector Description

National leadership, the Office of the Secretary of Defense (OSD), the Joint Staff, and combatant commanders rely on Airmen to provide: military advice; to develop twenty-first century deterrence concepts, policy, and doctrine; and to plan and execute NDO through the application of Air Force capabilities. The Air Force must develop a cadre of Airmen with a comprehensive knowledge of strategic deterrence and assurance theory, coupled with experience in nuclear deterrence operations, to answer that call. We must develop Air Force leaders who are prepared to use their knowledge and experience to provide thoughtful national leadership in twenty-first century deterrence policy and operations and to communicate the value of our capabilities to both internal and external audiences.

Vector Champion: Air Education and Training Command

Objective

The objective of this vector is to develop Airmen with a comprehensive understanding of deterrence and the ability to apply critical thinking to the deterrence challenges of the twenty-first century. This includes developing an Air Force vision for deterrence that will resonate with every Airman. We will instill in all Airmen an enduring professional understanding of the Air Force role in deterrence that is supported by conventional, space, cyber, ISR, and nuclear capabilities. We will deliberately develop Airmen and leaders who have the tools and expertise to advance critical thinking in these areas. We will foster an analytically-based understanding of the role of nuclear weapons in twenty-first century conflicts and examine how other countries view nuclear weapons and their thresholds for use. Successful execution of this vector will re-establish Air Force intellectual leadership in deterrence and assurance by engaging with the broader community to develop conceptual and pragmatic approaches to future deterrence and assurance challenges.



Action Plans and Initial Path

Action plans to advance intellectual capital will include development of curricula and training plans to instill critical thinking about deterrence in our Airmen and engagement plans to increase Air Force interactions in the broader deterrence community, including public, government, military, and academic circles. Airmen should be encouraged to develop papers and articles for publication in academic and professional journals and engage in forums on deterrence and assurance.

Plans to develop critical thinking must build a general understanding of the nuclear mission in all Airmen and provide for the development of a cadre of Airmen with deep comprehension of the theory and practice of deterrence and assurance. The Air Force has begun to re-emphasize nuclear deterrence in training and PME, but these efforts are in their infancy and require time and continued effort to mature.

Plans should develop and implement a broad strategy of Air Force engagement in exercises, wargames, and seminars, as well as interactions with think-tanks and stakeholders.

Initial steps should include: fostering immediate critical thought and analysis on how to maintain stability as the United States and Russia reduce their nuclear arsenals while other actors increase their nuclear capabilities; increasing understanding of the interactions of nuclear deterrence and assurance in a region during a conventional conflict; and understanding crisis stability dynamics and escalation management during a conflict between nuclear-armed adversaries with a large imbalance in conventional capabilities. Further, study is required to understand the impacts of emerging capabilities on deterrence and assurance, including missile defense, cyber and network warfare, and advanced conventional capabilities.

Background

Once central to the Air Force identity, understanding of the nuclear mission, its requirements, and the severity of risk inherent in nuclear operations is now limited to a small community. The CSAF 2010 Vector called for the Air Force to “play an influential role in future nuclear policy



debates” and to “craft a comprehensive deterrence and crisis stability vision that builds on the Nuclear Posture Review.”²¹ The recently conducted 2012 AF/A10 assessment found that the Air Force has begun to reclaim influence in nuclear policy debates. However, our understanding of strategic deterrence and future deterrence concepts requires much more work.

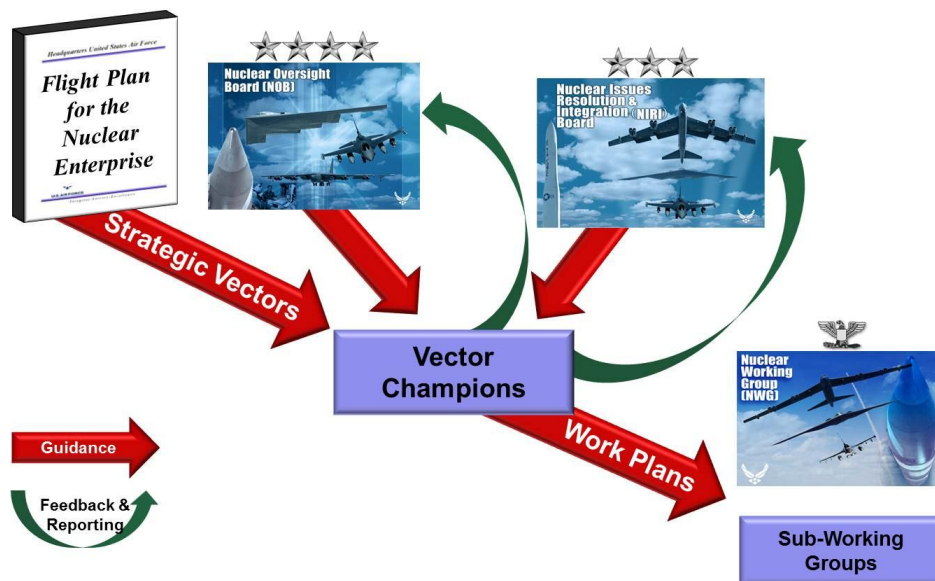
Deterrence will grow increasingly complex in the multi-domain environment of future conflict and our thinking needs to anticipate this new environment. A multi-polar, proliferated world requires new ideas, concepts, and analyses.

²¹ *CSAF's Vector* (Washington, DC: Department of the Air Force, 2010)

Section 3

Execution

The five strategic vectors in Section 2 provide a framework to coordinate Air Force-wide efforts that are needed to maintain the excellence in nuclear operations and strengthen the entire nuclear enterprise. The vectors provide strategic level, long-term guidance to the NE. Vector champions are responsible for the development, integration, and execution of efforts to advance along each vector. They are expected to use the principles and priorities from Section One and vector guidance from Section Two to conduct a “mission analysis” to determine the current state of their vector and identify any shortfalls, gaps, or areas requiring focus for improvement. From this analysis, and in coordination with other vector champions and mission partners, the vector champion will develop action plans for improvement along their vector for presentation to the NOB and NIRI. Once approved, the vector champion will execute action plans with the support of the NWG and assistance and oversight of the NOB and NIRI. While vector champions are MAJCOMs or Air Staff directorates, other NE commands and units are encouraged to use this process and develop their own action plans to foster local improvements.



Vector champions will ensure that appropriate mission partners and offices of coordinating responsibility are involved in the development and execution of each action plan. Individual action plans should be focused on resolution of a specific issue or set of related issues rather than attempting to develop a single plan to address the entire set of issues within a vector. Therefore, it is likely that several action plans will be developed and executed concurrently to support each individual vector. Action plans will contain specific objectives, tasks, measures and metrics, and milestones to achieve the desired results for that particular action plan. Plans must include periodic assessments that gauge progress and identify strengths and weaknesses. Where practical,

plans should include development of quality, standardized metrics in order to facilitate identification of trends and leading indicators to drive process improvements.

Each vector description contains guidance for the vector champion to consider when developing action plans. They include initial focus areas based on a review of existing NOB and NIRI taskers, assessment results, and ongoing initiatives. These guidelines are neither all-inclusive, nor directive; vector champions should conduct a complete, independent analysis to develop action plans. There is no set format for action plans because they should be designed to meet the specific requirements of the situation. Some possible templates or examples for action plans from recent efforts include the NE Human Capital Strategy, AFCANS, and the methodology and senior-level oversight the Deputy Chief of Staff for Logistics, Installations and Mission Support (AF/A4/7) developed to resolve NWRM issues.

Because the vectors are designed to be broad guidelines, there may be initiatives and actions that have effects across vectors. Vector champions must integrate these efforts to deconflict action plans and achieve the desired effects. Also, while the vector champion is responsible to the NOB for general progress and reporting for a vector, there may be instances where an organization other than the champion is better suited to be the office of primary responsibility (OPR) for a given action plan or set of tasks under a vector. These OPRs may be designated by the vector champion or tasked by the NOB or NIRI, as necessary.

Strengthening is a continuous process and this guidance is designed to provide long-term direction to the NE. Fulfillment of interim goals and objectives, the institution of certain programs, strategies, or action plans, or the completion of a given set of tasks does not mean that no further progress along a vector is needed. Vector champions should continually evaluate and revise action plans as needed to further the objectives under each vector. Once a specific action plan is complete, the vector champion will evaluate progress and develop subsequent action plans to foster continuous improvement for the NE.

List of Acronyms

AFCANS – Air Force Comprehensive Assessment of Nuclear Sustainment
AFCS – Air Force Corporate Structure
AFGSC – Air Force Global Strike Command
AFI – Air Force instruction
AFNWC – Air Force Nuclear Weapons Center
ALCM – air-launched cruise missile
AoA – analysis of alternatives
C2 – command and control
CFLI – core function lead integrator
CFMP – core function master plan
CSAF – Chief of Staff, United States Air Force
DCA – dual capable aircraft
DoD – Department of Defense
GBSD – ground-based strategic deterrent
ICBM – intercontinental ballistic missile
LRS-B – Long Range Strike-Bomber
LRSO – Long Range Stand-Off
MAJCOM – major command
NATO – North Atlantic Treaty Organization
NC3 – nuclear command, control, and communications
NDO – nuclear deterrence operations
NE – nuclear enterprise
NIRI – Nuclear Issues Resolution and Integration Board
NOB – Nuclear Oversight Board
NPR – Nuclear Posture Review
NSI – nuclear surety inspection
NWG – Nuclear Working Group
NWRM – nuclear weapons-related materiel
OPR – office of primary responsibility
PME – professional military education
PNAF – prime nuclear airlift force
RCA – root cause analysis
SecAF – Secretary of the Air Force



U.S. AIR FORCE
