Report of the
Defense Science Board
Permanent Task Force on
Nuclear Weapons Surety

Independent Assessment of The Air Force Nuclear Enterprise

April 2011

Office of the Under Secretary of Defense for
Acquisition, Technology and Logistics
Washington, D.C. 20301-3140

This report is a product of the Defense Science Board (DSB).

The DSB is a Federal Advisory Committee established to provide independent advice to the Secretary of Defense. Statements, opinions, conclusions, and recommendations in this report do not necessarily represent the official position of the Department of Defense.

The Task Force completed its information gathering in November 2010. The report was in security review from 17 Dec 2010 until 4 March 2011.

This report is unclassified and cleared for public release.

OFFICE OF THE SECRETARY OF DEFENSE
3140 DEFENSE PENTAGON
WASHINGTON, DC 20301–3140

DEFENSE SCIENCE BOARD

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS

SUBJECT: Final Report of the Permanent Task Force on Nuclear Weapons Surety on an Independent Assessment of the Air Force Nuclear Enterprise

I am pleased to forward the final report of the Defense Science Board Permanent Task Force on Nuclear Weapons Surety on an Independent Assessment of the Air Force Nuclear Enterprise. The Deputy Assistant to the Secretary of Defense for Nuclear Matters and the Secretary of the Air Force requested the Permanent Task Force to conduct an independent assessment of progress towards the goal of reinvigorating the Air Force nuclear enterprise in support of the strategic nuclear deterrent mission.

The Task Force set forth a set of recommendations to move beyond the corrective actions initiated following a series of incidents in 2007 and 2008.

I endorse all of the study's recommendations and encourage you to forward the report to the Secretary of Defense.

Paul A. Kaminski

Dr. Paul Kaminski
Chairman

OFFICE OF THE SECRETARY OF DEFENSE
3140 DEFENSE PENTAGON
WASHINGTON, DC 20301–3140

DEFENSE SCIENCE BOARD

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

Subject: Final Report of the Permanent Task Force on Nuclear Weapons Surety on an Independent Assessment of the Air Force Nuclear Enterprise

The final report of the Independent Assessment of the Air Force Nuclear Enterprise is attached.

The Air Force leadership implemented extraordinary measures following two serious incidents in 2007 and 2008. These measures included policy, inspection, organization, and leadership changes. The report finds that these measures have been effective in their intended purpose of re-establishing the professionalism expected of personnel in the nuclear enterprise. While these measures were appropriate and effective, some are not sustainable or desirable for the long term.

In addition to identifying the benefits of the extraordinary measures, the report provides a description of undesirable effects of continuing the extraordinary measures for the long term and makes recommendations on the path to continued assured professionalism in the Air Force nuclear enterprise. More specifically, the report discusses and provides recommendations in the areas of logistics, organization and guidance, the inspection regime, operations, personnel and morale, and the personnel reliability program.

The Task Force received the full support of all levels in the Air Force nuclear enterprise in performing this independent assessment.

Larry D Welch, General, USAF (Ret)
Chairman
Permanent Task Force
Nuclear Weapons Surety

Contents

Tasking 7

Some Root Causes and Unintended Consequences 8

The Air Force Nuclear Enterprise 9

*Figure 1: The Air Force Nuclear Enterprise Before 2008** *9*

*Figure 2: The Current Air Force Nuclear Enterprise** *10*

Bottom Lines 12

New Leadership Attention 12

Divided Authority and Accountability 13

Oversight and Inspection 14

Enlisted Personnel Management 15

The Personnel Reliability Program 15

New Senior Leadership Attention 16

Focus 16

Changes in Organization 16

Air Force Global Strike Command 16

Impact of Other Changes in Organization 17

Figure 3: The Logistics Issue Resolution Chain as Seen by the Wing Commander *19*

Oversight and Inspection 21

Table 1: Days of Special Effort at Minot AFB *22*

Operations and Maintenance 26

Logistics and Maintenance 26

Table 2: Logistics Support Organizations *26*

Figure 4: Re-Entry System/Re-Entry Vehicle (RS/RV) Engineering Requests *27*

Operations – Missile Wings 27

Operations – Bomb Wings 28

Maintenance and Sustainment – Missile Wings and Munitions Support Squadrons (Europe) 29

Table 3: Migration of Senior Nuclear Weapons Maintenance (2W2) NCOs *29*

ICBM Warhead Sustainment 30

Munitions Support Squadron (MUNSS) 32

Some Common Bottom Lines for ICBMs and MUNSS' 32

U.S. Air Forces in Europe 34

Guidance versus Direction 36

Enlisted Personnel Management 37

The Personnel Reliability Program (PRP) 38

Summary of Recommendations 42
Logistics 42
Organization and Guidance 42
The Inspection Regime 43
Operations 43
Personnel and Morale 44
Personnel Reliability Program 44
Appendix A: Terms of Reference 46
Appendix B: Task Force Members 48
Appendix C: Findings from Prior Reports on the Incidents 49
U.S. Air Force Blue Ribbon Review (BRR) on Nuclear Weapons Policies and Procedures (February 2008). 49
DSB Permanent Task Force Report on the Unauthorized Movement of Nuclear Weapons (February 2008). 49
Investigation into the Shipment of Sensitive Missile Components to Taiwan (May 2008). 49
Secretary of Defense Task Force on DoD Nuclear Weapons Management (September 2008). 50
Appendix D: Acronyms 51

Tasking

Some two years after major changes to the structure of the Air Force nuclear enterprise and the level of attention to the Air Force to the enterprise, the Deputy Assistant to the Secretary of Defense for Nuclear Matters and the Secretary of the Air Force tasked the Permanent Task Force to conduct an independent assessment of progress towards the goal of reinvigorating the Air Force nuclear enterprise in support of the strategic nuclear deterrent mission. The Task Force began the task in August 2010 and completed the task in November 2010.

On each visit to nuclear mission-related activities, it was clear to the Task Force that the nuclear enterprise leadership at every level had encouraged their people to be open and candid and their people responded accordingly.

Some Root Causes and Unintended Consequences

The need for increased attention to the Air Force nuclear enterprise was highlighted by the August 2007 unauthorized transfer from Minot AFB to Barksdale AFB and the inadvertent shipment of nuclear weapon components to Taiwan in 2008. While these incidents demanded urgent corrective action, a number of earlier decisions had an important negative impact on the overall enterprise. Dealing with these impacts required and will continue to require a broader enterprise systems approach.

The earlier decisions impacting logistics support continue to have significant negative impacts on that support. For example, prior to execution of the 1995 BRAC recommendations, expertise and experience for Air Force nuclear logistics sustainment had been vested in the Special Weapons Directorate (SWD) at the San Antonio Air Logistics Center (SA-ALC). The Directorate had served the enterprise with experience and expertise for several decades. With BRAC implementation of the decision to close the SA-ALC, the SWD functions were spread among six Air Force organizations based on perceived compatibility with their other mission assignments. Very little of the special expertise in the SWD was preserved in the system.

Management and maintenance of the ICBM re-entry system components were transferred and consolidated with other missile system components at the Air Logistics Center in Ogden, Utah. Among the casualties was specialized management for nuclear weapon components.

Other nuclear-related components fell under general commodity management systems in the Air Force and in the Defense Logistics Agency (DLA). Again, elimination of the SWD and its special attention led to applying standard supply chain processes to Nuclear Weapons-Related Materiel (NWRM). This practice included eliminating stock listings for special components based on a scope of demand criteria being used for other supply items. As a consequence, satisfying the need for these components can now require a two-year acquisition process.

There were also significant impacts on operations that required system wide corrective action. With the disestablishment of Strategic Air Command, the operating forces were first assigned to Air Combat Command and then the ICBM force was reassigned to Air Force Space Command. The end result was two major air commands responsible for segments of the strategic nuclear operating forces.

To regain the needed focus on logistics support for the nuclear enterprise, the Air Force leadership elected to focus activity at the Air Force Nuclear Weapons Center at Kirtland AFB. The Center, created in March 2006, has authority over ICBM and nuclear warhead support activities at Hill AFB and ALCM sustainment support activities at Tinker AFB. The intended functions were to encompass much of the former function of the SA-ALC's SWD. The Center also inherited a range of other responsibilities to include Air Force nuclear weapons modernization and life extension programs.

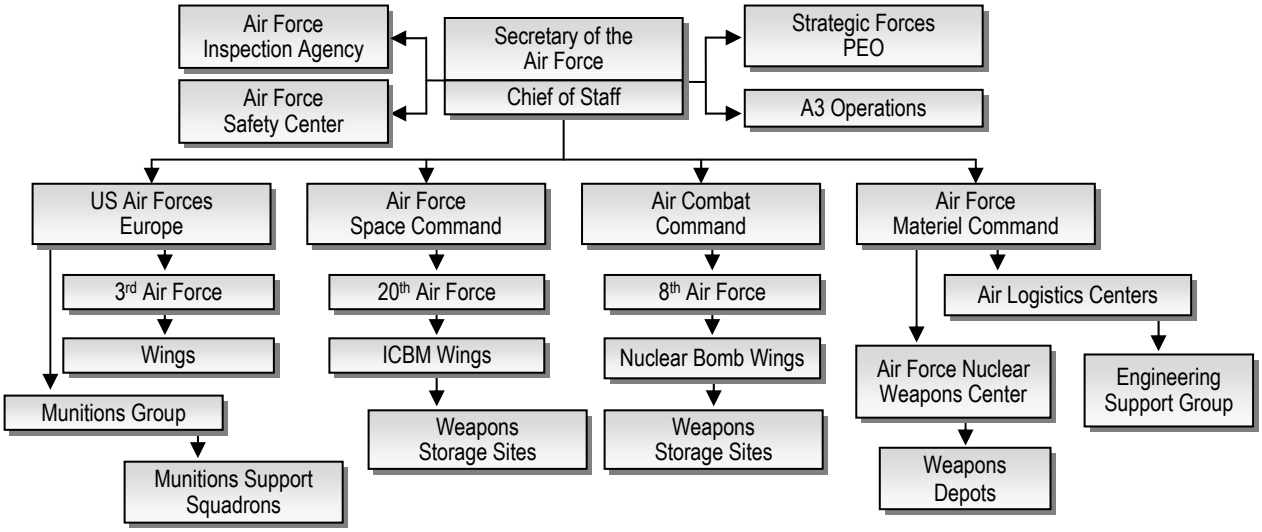
The Air Force decision in October 2006 to consolidate cruise missiles further exacerbated a strained storage and integrated maintenance facility.

To regain focus on the strategic nuclear deterrence mission, the Air Force stood up Global Strike Command with responsibility for Air Force strategic nuclear forces.

The Air Force Nuclear Enterprise

The Air Force Nuclear Enterprise is composed of the Air Force nuclear forces, supporting logistics structure, command and control organizations, weapons sustainment and modernization activities, and activities of relevant headquarters, agencies, and centers. The enterprise and the recent changes are illustrated in the following figures and narrative.

Figure 1: The Air Force Nuclear Enterprise Before 2008*



* Not comprehensive, e.g. 55th Wing, AF Global Logistics Support Center

Figure 1 above shows the Air Force nuclear enterprise as it evolved from the disestablishment of Strategic Air Command in 1992 to 2008 when the Air Force leadership initiated significant organizational changes. Before the changes, nuclear forces were assigned to three major air commands and supporting logistics responsibilities were assigned to Air Force Materiel Command. The principal staff oversight in Headquarters Air Force was an element within DCS Operations (A3).

In addition to the nuclear bomber mission, Air Combat Command was responsible for two conventional bomber wings and some 20 fighter, reconnaissance, command and control, electronic warfare, and other wings. They were also the gaining command for Air Force Reserve and Air National Guard units. In addition to the three ICBM wings, Air Force Space Command was responsible for acquiring, launching, and operating military space systems, and providing the supporting ground systems. Consequently, in terms of people and resources, nuclear operations were not predominant in either command. Further, in addition to the three nuclear bomb wings, 8th Air Force was responsible for conventional bomber operations and cyber operations.

Three CONUS major air commands had responsibilities for weapons storage and maintenance on operating bases. Within the operating wings, the wing commander was responsible and accountable for all activity on the operating base required to meet mission requirements. In the

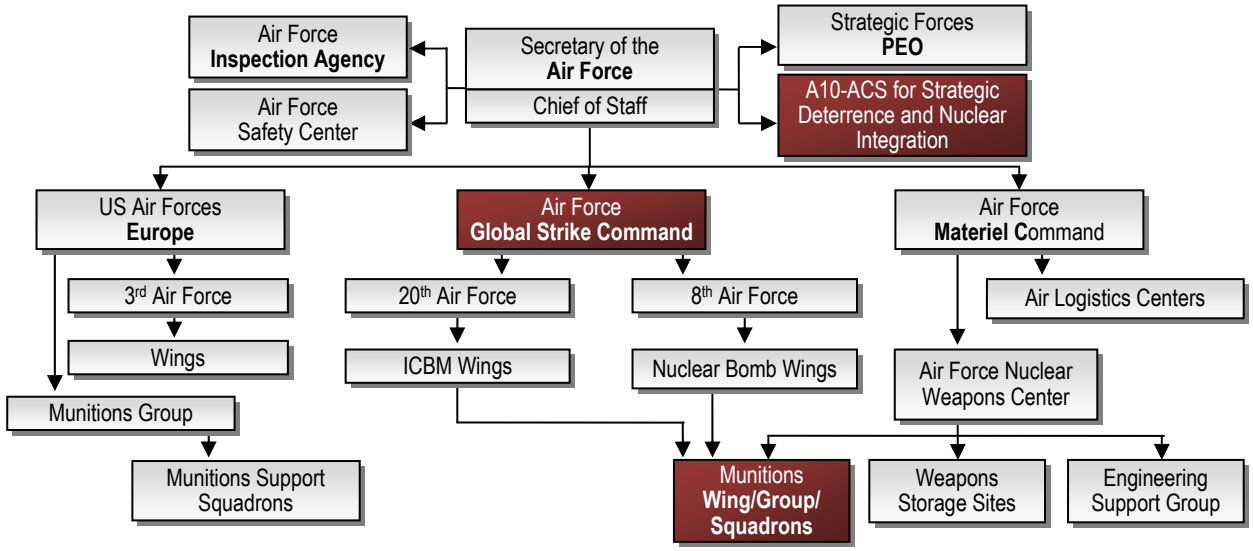
case of the dual-wing base (Minot), the bomb wing commander was responsible for storage and maintenance for both the ICBM and bomber assets.

Two logistics centers provided the principal support of the enterprise. The Ogden ALC supported ICBM forces and the Oklahoma City ALC supported bomber forces. The Air Force Nuclear Weapons Center at Kirtland was established in 2006 to provide more focused oversight of the CONUS weapons storage sites along with other nuclear systems support responsibilities.

In Europe, the munitions support squadrons provided maintenance in support of NATO. Fighter Wings also supported the NATO mission.

The supporting air refueling forces were transferred to Air Mobility Command on disestablishment of Strategic Air Command. There were and are other elements of the nuclear enterprise not shown on the chart such as the 55th Wing at Offutt AFB, but those listed were principal elements of the structure that had day-to-day nuclear forces and support responsibilities.

Figure 2: The Current Air Force Nuclear Enterprise*



* Not comprehensive, e.g. 55th Wing, AF Global Logistics Support Center

Figure 2 above shows the current Air Force nuclear enterprise. New organizations are shown in red. In addition, A10 staff agencies focusing on nuclear matters have been created at Air Force Materiel Command and Air Education and Training Command headquarters. The most significant change in command of forces is the creation of Air Force Global Strike Command (AFGSC) and assigning all Air Force strategic nuclear forces to that command.

The two principal logistics changes are the assignment of weapons storage and maintenance responsibilities at the operating bases for CONUS nuclear forces to the Air Force Nuclear Weapons Center (AFNWC). Other additional responsibilities have also been assigned to the AFNWC. The conventional bomber forces (B-1B) remain assigned to Air Combat Command.

Requirements for dual-capable aircraft (DCA) have been adjusted in the nuclear enterprise structure in Europe, but the U.S. DCA mission and relationship to NATO has not changed.

The impact and consequences of this structure are discussed in subsequent sections of this report.

Bottom Lines

New Leadership Attention

The Task Force visited the three major air command headquarters, the Nuclear Weapons Center and other activities at Kirtland, activities at Hill AFB including the Ogden Air Logistics Center (OO-ALC), four of the six strategic nuclear-mission wings and had discussions with the commanders of the other two wings. The Task Force also visited a Munitions Support Squadron (MUNSS) and the DCA Fighter Wing. After extensive discussions and observing operations and logistics, the Task Force believes the Air Force leadership can have high confidence that, with few exceptions, the operating and direct support forces understand their mission and the demands of their mission, and are a professional, disciplined, and committed force.

The Air Force leadership instituted and has to date sustained a set of extraordinary measures to deal with the issues highlighted by the 2007 unauthorized transfer of nuclear weapons and the 2008 accidental shipment of nuclear weapons-related materials. While there are continuing challenges, the extraordinary measures have been effective in correcting many of the deficiencies in the operating forces and in rebuilding the culture appropriate to the nuclear weapons enterprise.

However, some of these measures, appropriate to the situation over the past two years, are not sustainable for the long term and are becoming counterproductive in that they create an extraordinary burden on the operating forces rather than focusing sharply on areas still requiring additional attention. The current inspection regime is a prime example. There are areas still requiring special attention and the inspection regime should be focused on these areas. These areas include logistics support and personnel support appropriate to the priority of the nuclear deterrence mission.

Accounting for Nuclear Weapons-Related Materiel (NWRM) is greatly improved, but remains challenging. Consolidation of NWRM, adapting the Defense Logistics Agency (DLA) data system for Air Force NWRM, and extraordinary vigilance at the operating level has greatly improved the situation. The current state of progress is the result of what has been properly characterized as a heroic effort. With the progress to date, the leadership can have high confidence in accounting for and controlling the NWRM that are in the system. However, given the state of accountability in 2008 and the magnitude of NWRM, the Air Force leadership should not yet assume that NWRM accounting is flawless.

Recommendation: ***The Air Force leadership should maintain realistic expectations regarding the state of accounting for NWRM.***

The Air Force leadership has stated clearly that sustaining an effective nuclear deterrent force is first priority and several tangible actions reinforce that declaration. Given this commitment, the Task Force had extensive discussions at multiple locations to discover the impact of reinvigoration on the operating forces. The following is a widely held set of views at the operating force and direct support levels regarding the current state.

- Reinvigoration has produced:

- Increased attention to the nuclear enterprise at senior levels.
- A return to high standards of professionalism in the nuclear operating forces.
- More coherent operational focus under a single major air command.
- New organizations directing more and more focused attention to the nuclear mission.

- The "priority one" declaration by the senior leadership is yet to be reflected in:
  - An environment of trust on the part of the leadership appropriate to the dedication and professionalism of the operating forces.
  - Budget and program priority impacting the fielded forces.
  - Replacement or upgrade of old support equipment central to the mission.
  - Directives and technical orders providing the level of detail appropriate to nuclear operations.
  - Personnel policies and actions more tailored to the special demands of the nuclear mission.

Each of the items listed as "yet to be reflected" is discussed in this report with specific recommendations. One of the issues impacting perceptions in the operating forces is the gap between the sense of time urgency in higher headquarters and that in both the operating forces and the supporting workforce at the air logistics centers. The perceived business-as-usual approach in planning and acquisition is inconsistent with the state of long-term neglect of logistical support for the nuclear weapons enterprise as experienced in the operating forces. This is important for the effectiveness of the mission and for the morale of the workforce.

Recommendations:

The Secretary and Chief of Staff of the Air Force should direct that:

> ***The needs of the nuclear enterprise to sustain the force are given priority and the choices for corrective action are oriented to long-term sustainment rather than the lowest near-term cost path.***

The Air Staff and Air Force Materiel Command should give:

> ***Funding and program priority to logistics support essential to the nuclear deterrence mission commensurate with the priority of the nuclear deterrence mission.***
>
> ***Urgent attention to replacing 40-+ year-old warhead and missile maintenance support and test equipment at the operating wings and the air logistics centers and to replacing the Weapons Maintenance Trucks at the Munitions Support Squadron (MUNSS) sites (Europe).***

Divided Authority and Accountability

The complexity of the logistics chain can impede the pace of resolving emerging or long-standing logistics limitations on supporting the operating wings ability to perform their mission. A unique logistics and maintenance organization was introduced at the wing level in the strategic forces as part of the increased focus on the nuclear enterprise. This structure, centralized under the Nuclear Weapons Center, was appropriate when the operating forces were assigned as additional missions to two major air commands. With the formation of Global

Strike Command, this structure is now adding complexity and confusion without commensurate added value.

The bifurcation at the operating base level of responsibility for the mission between the operational wing and the munitions organization is contrary to important principles of Air Force organization which assigns mission responsibilities within a clear chain of command. This bifurcation is creating unintended complexity and negative perceptions.

Recommendation: ***The Secretary and the Chief of Staff of the Air Force should direct that action be initiated to assign all base-level operations and logistics functions to the strategic Missile and Bomb Wings reporting through the numbered air forces to the Air Force Global Strike Command.***

Oversight and Inspection

A rigorous inspection program remains essential to safe, secure, and effective operations. However, excesses have developed that are becoming counterproductive. The inspection program needs to be more sharply focused on areas where issues persist. The continuing intense and across-the-board level of inspection and exercise activity is perceived by some in higher headquarters to be a continuing need until a zero-defect culture can be reestablished. When overdone, the level of inspection and exercises are counterproductive and lead to an unrealistic zero-risk mindset.

The continued level of oversight and the broadly applied inspection regime is creating a perception that the higher headquarters leadership believes they can and must *inspect in* quality. It also creates a climate of distrust. It leads to a perception in the operating forces that the leadership does not trust them to perform professionally. This leads them to question the motives of the higher headquarters leadership. Further it is creating a leadership mindset where satisfying a Nuclear Surety Inspection team, for example, can supplant, or at least compete with, focus on readiness to perform the assigned nuclear mission.

Recommendations:

The Secretary and the Chief of Staff of the Air Force should direct that:

> ***The intense inspection regime is sharply refocused on areas of continuing concern rather than serving as a substitute for chain of command leadership and management.***
>
> ***Action begin for a phased return to a normal schedule for the operating forces – a single Nuclear Surety Inspection (NSI) each 18 months and a Nuclear Operational Readiness Inspection (NORI) each 18 months. DNSIs as needed to meet the Chairman, Joint Chiefs of Staff direction, conducted with NSIs.***

The Commanders of Global Strike Command and Air Force Materiel Command should direct that follow-up re-inspections and special inspections are conducted only to address unsatisfactory ratings or significant negative trends. For other discrepancies, the wing commander or the munitions squadron (MUNS) commander is accountable for closing out the discrepancies.

The Commander of USAFE should direct that follow-up re-inspections and special inspections are conducted only to address unsatisfactory ratings or significant negative trends. For all other discrepancies the wing commander or the MUNSS commander is accountable for closing out the discrepancies in communication with the appropriate inspection agency.

Enlisted Personnel Management

The intersection of multiple issues impacting munitions, missile maintenance, and bomber maintenance career fields calls for increased attention and flexibility to meet the needs of the operating forces.

The career fields which are critical to maintaining the strategic nuclear deterrent seem to be largely managed in a business-as-usual fashion with assignment policies that do not take full advantage of special experience identifiers in meeting the special needs of the nuclear enterprise.

Of special interest are the numbers and assignment of Master Sergeants (MSgt-E7) and Senior Master Sergeants (SMgt-E8) in critical career fields. On average, it takes about 16 years to produce a qualified MSgt and 19 years to produce a qualified SMSgt. Hence, there are long-term consequences related to the management of this resource.

Recommendation: ***The Headquarters Air Force A1 should direct special attention to providing the needed qualified people to the operating forces in the career fields that are both fragile and critical to the nuclear mission.***

The Personnel Reliability Program

The DoD guidance on the Personnel Reliability Program (PRP) has improved significantly since 2004. In contrast, the practice in the Air Force has continued to deteriorate.

Recommendation: ***The Secretary and the Chief of Staff of the Air Force should direct an immediate adjustment to Air Force guidance/practices to remove PRP-based restrictions and monitoring demands that exceed those required by DoD direction.***

New Senior Leadership Attention

Focus

The Air Force leadership at multiple levels has taken decisive action to correct deficiencies, reinvigorate, and further strengthen the Air Force nuclear enterprise. These actions include changes in priorities, organization, authorities, and processes. There is a clear message from the Secretary of the Air Force and the Chief of Staff that they consider nuclear deterrence to be the Air Force's first priority mission. This is reflected in the Air Force statement of priorities with "Continue to strengthen the Nuclear Enterprise" as the first priority. It is also reflected in the Air Force Core Functions with "Nuclear Deterrence Ops" as the first listed function. These actions have generally produced the intended results in the operating forces. They have been less successful in providing logistics and personnel support commensurate with the mission priority.

Changes in Organization

Three organizational changes were intended to bolster both the fact and perception of restoring the priority accorded the nuclear enterprise:

- Creating an Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration (A10) in Headquarters Air Force (HAF),
- The formation of Air Force Global Strike Command as a major air command responsible for Air Force strategic nuclear forces, and
- Creating and strengthening the Air Force Nuclear Weapons Center at Kirtland AFB, New Mexico, and a set of subordinate organizations, responsible for nuclear sustainment to include activities inside CONUS weapons storage areas (WSAs) and for a broad range of additional nuclear enterprise responsibilities.

Air Force Global Strike Command

The formation of Air Force Global Strike Command has produced a nearly universally positive response in the nuclear operating forces. The potential negative aspect is the fact that while the mission responsibilities of the command are declared first priority, it has been commanded by a lieutenant general while all but one of the other operational and support commands are commanded by four star officers. This is widely noted in the strategic operating forces.

The Air Force Global Strike Command commander and staff have a clear understanding of their responsibilities and are taking a broad range of steps to include:

- Clarifying and expanding direction to make it more appropriate to the demands of the nuclear mission,
- Daily oversight of operations and maintenance to ensure the readiness of the force, and
- Addressing long-neglected logistics issues.

The command is transmitting a clear set of values:

- Individual responsibility for mission success,
- Critical self-assessment of performance,

- Uncompromising adherence to directives,
- Superior technical and weapons system expertise,
- Pride in nuclear heritage and mission,
- Respect for the worth and dignity of every airman,
- Safety in all things large . . . and small.

The Task Force lists this set of values as a contrast to the implications of some other approaches to strengthening the nuclear enterprise discussed in this report.

In contrast to the skip-echelon organization that broke chain of command responsibility for operations and training in the bomber force up to 2008, 8th Air Force and Air Force Global Strike Command are clearly responsible for daily operations and training in the B-2 and B-52 forces. The AFGSC Command Center interfaces with 8th Air Force and 20th Air Force and their units on a 24/7 basis. The philosophy is micro-informed, not micro-management. Authorities and accountability are clear.

Impact of Other Changes in Organization

The changes in organization have contributed significantly to the intended increased emphasis on the nuclear enterprise and these were valuable in addressing the urgent issues. At the same time, some have the potential for negative impacts when continued beyond the period of urgent need. Extraordinary measures appropriate to an urgent situation may not be appropriate or sustainable for long-term mission accomplishment.

The Headquarters, Air Force A10 organization was stood up on November 1, 2008 to provide a singular focus on nuclear matters in the Air Force headquarters. This organization has served the intended purpose and has been effective in increased focus on the nuclear enterprise. The potential negative impact is the possibility that key Deputy Chiefs of Staff with nuclear enterprise responsibilities could feel less obligated to place the needed emphasis on those responsibilities. The Task Force met with the Air Force A1, A3/5, A4/7, A8, and people from the A9 and discussed this issue. Any such tendency is currently countered by the continuing attention of the Secretary and the Chief of Staff. It is not clear that this will continue to be the case or that the A10 should be a permanent fixture. The continued success of this overlapping arrangement is dependent on personal attention and is not a normal Air Force institutional arrangement. In any case, it creates confusion in subordinate organizations as to who has the responsibilities and authorities to address their issues.

A second consequence is major air command mirror imaging of HAF as reflected in the A10 functions at AFMC and Air Education and Training Command (AETC). This is not the case at Air Force Global Strike Command where all aspects of the staff are focused on the nuclear enterprise. There is a long-standing arrangement in USAFE that concentrates nuclear expertise and attention in a directorate in the USAFE A3. Again, support of the nuclear enterprise requires the attention of the major staff agencies. This issue is further complicated by responsibilities assigned the Air Force Nuclear Weapons Center (AFNWC) with the stated intent to clear up previously ambiguous chains of command. The advertised function of the AFNWC is sustainment, that is, logistics support of the operating wings. That is also a key role of the

AFMC/A4. Our discussions with the A4 and staff and with the AFNWC leadership made it clear that both understand their responsibilities for sustaining the nuclear enterprise.

In addition to the role and authorities of the AFMC/A4 and the AFNWC Commander, there is the role of the AFMC A10. Given that the A10 is a colonel, the A4 is a major general and the Commander, AFNWC is a brigadier general, the role and authority of the A10 must depend heavily on the AFMC Commander. Again, this is not a normal institutional arrangement. At this level, the A10 position could add confusion rather than value in spite of the quality and experience of the people in the A10. This is also quality and experience that is needed elsewhere in the nuclear enterprise.

The AFNWC has been staffed with quality people with important and relevant objectives and has made significant contributions to restoring an appropriate level of professionalism in the operating forces. The issue for the AFNWC, the AFMC/A10, and the AFMC/A4 regarding the nuclear enterprise is clarity in roles. Related to that issue is the scope of responsibilities that AFMCI 90-204 ascribes to the AFNWC. It could be interpreted as devolving responsibilities to AFNWC that would logically be assigned to the major air command headquarters - Air Force Global Strike Command and Air Force Materiel Command. The described scope of those responsibilities is well beyond a reasonable expectation for the center. Before the disestablishment of Strategic Air Command, many of these responsibilities were shared between Strategic Air Command Headquarters and Air Force Logistics Command Headquarters requiring a significant part of the attention of both commanders and key staff.

A related issue is the complex chain of command from the maintenance units in the field to the authority and capability to address their needs. The chain of command for the workforce in the munitions squadron (MUNS) – key players in the readiness of the nuclear forces -- passes through four levels en route to access the authority and resources to provide support needed to perform its mission. The chain is from the munitions squadron to the group to the wing to the AFNWC to the System Program Office (SPO). Even beyond that chain, it is likely that action by AFMC/A4 will be required to resource solutions. In addition, the Strategic Forces Program Executive Office has yet another reporting chain. This long and complex chain of command would be less of a concern if the maintenance operations had been well supported before the new organizations were created. A subsequent section of the report will provide evidence that this has not been the case. Hence, there is a need for rapid response.

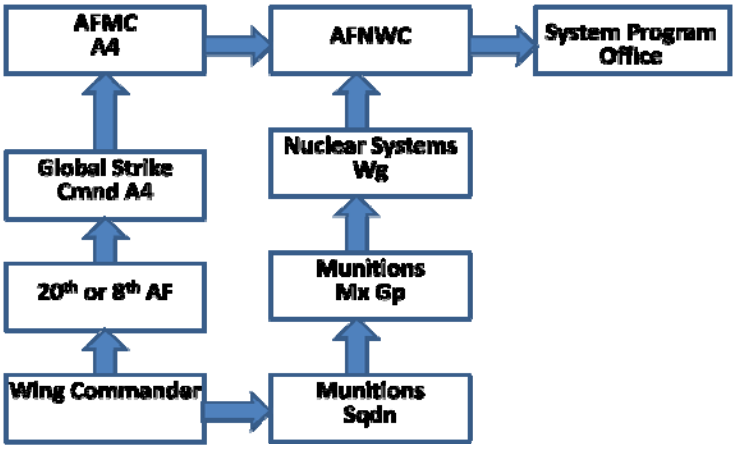
The organizational changes have had the intended effect of increased attention in many of the right places. Long-standing neglect in important areas is being addressed. However, the operating forces have seen only limited positive impact to date and significant negative impact. The Task Force heard expressions of disappointment from multiple levels – most notably among the enlisted force maintaining the nuclear weapons. Part of the problem is the apparent difference in timeliness expectations. It has been two to four years since organizational changes were put in place. The facts are that higher headquarters have been working to address the issues that concern the workforce whose mission is sustaining the weapons. Further, people at the higher headquarters believe they have made important strides in addressing the problems. Since the solutions to many of the problems require development, a multi-year timeframe seems reasonable to higher headquarters. It seems less reasonable to the workforce because

they have been dealing with the problems for a longer time. One Senior Master Sergeant expressed what the Task Force perceived to be a view held by many when he said: "They have been admiring problems for two years that we have been living with for ten years."

The division of responsibility at the wing level is not at the root of the shortfalls in logistics support. These issues have developed over a period of at least a decade and a half. Further, the Task Force found no evidence that the current division of responsibility between AFGSC and AFMC at the operating base is creating conflict or tension in the operating wings. In practice, the wing commander and the munitions squadron commander relate as though the MUNS is part of the wing.

Still, the complexity of the organization and confusion about roles and relationships can complicate and delay action to address the issues. Figure 3 below is one view of the organization and relationships.

Figure 3: The Logistics Issue Resolution Chain as Seen by the Wing Commander



This is not the only view since the actual flow of information and authority depends on individual personalities and relationships. For example, wing commanders treat the munitions squadron as an integral part of the wing. They seek to ensure that the same information moves through both the operational command chain to Air Force Global Strike Command and the logistics chain to the Air Force Nuclear Weapons Center. Further, it is not clear that there are separate chains to the AFMC/A4 and the AFNWC. Still, the operational and logistics chains are separate chain of command structures. Bypassing any part of the structure would require a subordinate commander to bypass his immediate commander which is not a normal military process. In any case, the ICBM or bomber SPO is often the locus of the expertise needed to address issues. Hence, the simplest, shortest path to involve the SPO would seem to be desirable.

A more central issue is that the arrangement is contrary to at least two principles that govern Air Force operational unit organization elsewhere in the Air Force. The first is unity of command at multiple levels – maintenance group, missile and bomb wing, and major air command. The second is clear accountability. The Air Force culture is that the wing commander has "buck-stops-here" accountability for the performance of all mission assets on his or her base. This is not true of the current organization in the strategic nuclear wings. The wing commander is not

accountable for the maintenance and storage of the weapons that are central to the mission. Without that accountability, it is difficult to see how the wing commander is accountable for the most basic demand of his mission - meeting nuclear alert and response requirements.

The arrangement also creates unintended perception issues. AFGSC and the wing commander can be perceived as inferior in scope and responsibility to other operational major air commands and wings. For the munitions squadron, the chain of command moves them from being an integral part of the operational unit to an appended support organization. These perceptions are not desirable in what is declared to be the first priority operational mission of the Air Force.

***Recommendations*: The Secretary and the Chief of Staff of the Air Force should direct:**

An action to assign base-level operations and logistics functions to the strategic Missile and Bomb Wings reporting through the numbered air forces to the Air Force Global Strike Command.

A reexamination of the continued utility of the set of special headquarters organizations.

A revision of the set of responsibilities ascribed to AFNWC in AFMCI 90-204 to sharply focus on the sustainability of the nuclear enterprise with other responsibilities assigned to Headquarters Air Force, Headquarters Air Force Materiel Command, and Air Force Global Strike Command.

Oversight and Inspection

Regarding the two incidents that highlighted the need for intense attention to the nuclear enterprise, as stated earlier in the report, the changes in priority and processes are having the desired effect. The risk of an unauthorized transfer of a nuclear weapon is now near zero and will remain so as long as there is leadership attention and clear direction. The solution has been, for the most part, a return to the processes, discipline, and culture that served the nation well for more than half a century.

There is also intense attention to the issue of accountability and control of Nuclear Weapons-Related Materiel. Increased attention has improved the NWRM situation greatly, but the condition of the system in 2008 and the scope, magnitude, and distribution of NWRM make this a continuing work in progress. The leadership can have confidence in the organization and attention to NWRM. The leadership can also have confidence in accounting and control of NWRM that has been identified as NWRM.

This progress is evidence of the value of an extraordinary level of oversight and inspection activity appropriate to address the urgent need identified from the 2007 and 2008 incidents. The types of inspections include:

- Nuclear Surety Inspection (NSI)
- Defense Nuclear Surety Inspection (DNSI)
- Joint Nuclear Surety Inspection (JNSI)
- Limited Nuclear Surety Inspection (LNSI)
- Nuclear Operational Readiness Inspection (NORI)
- Maintenance Standardization Evaluation (MSE)
- Operations Standardization Evaluation
- Logistics Capability Assessment Program (LCAP) or Team (LCAT) evaluation/inspection
- Nuclear Staff Assistance Visit (NSAV)
- Nuclear Surety Staff Assistance Visit (NSSAV)

NSAVs/NSSAVs were not intended as inspections. They are listed here because they have evolved into inspections by any definition. The only distinction is that the unit is not given a formal grade. In general, the SAV team is not, as intended, chartered to respond to the unit commander's stated need. Instead, it assesses areas identified by the SAV team or higher headquarters. An NSAV occurs six months prior to a unit's scheduled NSI. In both Air Force Global Strike Command and USAFE, the results are reported to higher headquarters and unit commanders are required to respond to write-ups just as they do with an NSI. Several commanders expressed the view that NSAVs have become the higher headquarters staff defense against the possible embarrassment of a unit in their command failing an NSI.

As noted, the Task Force saw and heard convincing evidence that the level of oversight and inspections has been successful and has served the intended purpose in the operating forces. Further, there is no question about the importance of a rigorous inspection program. But, the current intense and pervasive regime seems to have been institutionalized as the accepted approach to producing quality work. An unintended consequence of the increased oversight is

the workload in the wings – both the operating and logistics wings. A particularly compelling example is Minot with two operational wings. Table 1 below portrays the impact on the leadership and people performing the mission at Minot.

Table 1: Days of Special Effort at Minot AFB

Year	High Level of Special Effort- Major Inspection, Congressional Visit	Significant Level of Special Effort - Major Exercise, Higher Headquarters Visit	Medium Level of Special Effort	White Space Including Week-ends & Holidays
2008	190*	98	72	69 total
2009	204	192	73	65 total
2010 thru Aug	168	114	75	25 total

* For all categories, there are multiple activities, sometimes three or four on many of the days.

The white space situation (the last column) at Barksdale and in USAFE units is similar in impact to that portrayed in Table 1. There are few days, to include weekends and holidays, when the wing commanders can focus on just their missions. The Task Force noted a similar level of inspection and exercise activity at the 2nd Bomb Wing at Barksdale and in the 748th Supply Chain Management Group (SCMG) at Hill AFB. There are multiple causes of this excessive activity:

- Multiple headquarters and centers with overlapping responsibilities and lack of clarity,
- Continued focus on past problems, and
- Wing and group commanders' preoccupation with dealing with inspections.

The Task Force did not attempt to rank order the causes. In the case of the third cause, the Task Force noted that, at one wing, the commander expressed the goal of a generation exercise a month. To the extent there is excessive unit-generated exercises, the unit commanders receive a steady drum beat of exhortations to do more self inspection. Self inspection is clearly important to quality. Still, self inspection should reduce the need for higher headquarters inspection rather than becoming another subject for evaluation and exhortation during inspections.

A common complaint in both the operational and logistics units is that the inspections are so frequent that the unit has neither enough time nor resources to correct deficiencies. In this case the resource issue is people. The same people who prepare for inspections are occupied by the inspection and must carry out the corrective action after the inspection. Their perception is that they are on an activity wheel driven by inspections, not by the demands of their mission. The Task Force saw evidence that this perception is justified.

A perception (and frustration) among USAFE units is that LCAP inspections are unnecessarily duplicative since nuclear maintenance is thoroughly inspected during an NSI. USAFE munitions

support squadrons cannot understand the requirement for a separate nuclear logistics inspection given the extent of the NSI.

Furthermore, the level of inspection and exercise intensity is having an adverse effect on the readiness of the B-52 wings as they interfere with aircraft maintenance activity at the same time the wings are experiencing significant shortages in experienced crew chiefs and rapid turnover in other experienced maintenance people.

It is useful to note, once again, that the rigorous corrective action to deal with the unauthorized transfer has been effective and the current situation is not in need of anything like the level of oversight indicated in Table 1. Also, as noted, effective action to preclude a repeat of the Taiwan shipment error is underway and making impressive progress from what is correctly characterized as a superhuman effort. They need better data systems and resources, not more inspections.

This continued intense and broad scope system of inspections and higher headquarters visits can be interpreted as a philosophy of inspecting in quality. In fact, the Task Force heard comments from some higher headquarters' flag officers indicating the view that inspecting in quality will be necessary until the culture of special attention to nuclear operations is reestablished at the operating wings. The Task Force saw and heard evidence that this culture has been largely reestablished in the operating forces. In contrast, the supporting system has not yet fully recovered the capabilities and culture that existed in the Special Weapons Directorate at the San Antonio Air Logistics Center nor has a satisfactory level of logistics support been reestablished. Further, the Task Force did not detect a sense of urgency commensurate with the oversight activity shown in Table 1 and described for other units.

The most positive interpretation of the continued broad and pervasive level of special oversight and inspection of the operating forces is that the leadership does not yet trust the operating forces to perform effectively under the authority of a normal Air Force chain of command. The most negative interpretation would be that some levels of the leadership are more concerned with the risk to their professional careers than with supporting the operating forces. The Task Force heard both interpretations from NCOs of all ranks and from company grade officers. Regardless of the interpretation, the Task Force concludes that continuing the broad, pervasive level of inspection and exercises has become counterproductive. The pervasiveness of the inspection activity stands in the way of the wings establishing the operating rhythm essential to an effective operation. The operating forces understand the demands of the mission. They do not understand the demands of the inspection and exercise regimes. They also understand they must do everything possible to ensure that they do not fail an NSI regardless of the impact of such a focus on the operational mission and sometimes regardless of the impact on the unit's people.

One of the consequences of the pervasive inspection impact on unit operations was characterized at two locations as nuclear paranoia, the perception being that good people (particularly civilian employees) are avoiding assignments that subject them to the inspection and oversight regime that has become institutionalized in nuclear operations and logistics activities. Nuclear paranoia may also be impacting the attitude towards being identified as having nuclear expertise though the evidence of this was anecdotal and limited.

The Task Force also heard discussion of the role of the Air Force Inspection Agency (AFIA). That role has evolved to both a core augmentation to major command inspection teams and an oversight and quality control role on virtually every NSI/DNSI. The AFIA role seems appropriate and useful. Still, the combination of major command inspectors, AFIA inspectors and observers, DTRA inspectors and observers, AF Safety Center observers, combatant command observers, and, in Europe, NATO observers grows the inspection teams. It is not unusual to have eight or ten inspectors from the multiple agencies observing a technical operation carried out by two technicians. In the case of a NSI/DNSI for a Munitions Support Squadron in Europe, it is not uncommon to have 80 to 90 inspectors examining a unit with a total unit manning of less than 150.

Further, the level of detail in the inspection, the judgment about what is major and what is minor, and a number of new and seemingly illogical rules raise credibility issues. Four examples illustrate the trend towards excess.

- A recent new safety rule demands that no technician in a WMT be closer than one inch from a wall when the fire set cables are exposed on an asset lest an unknown source of electrical current leap to the firing set. This rule applies to a WMT which, itself, is a faraday cage, enclosed in a lightning protected aircraft shelter. This is particularly difficult to comply with in a work area designed for four people when they are being observed by multiple inspectors, all declaring that they must actually see the technician perform each step of the procedure.
- There is an Air Force requirement for the Supply Chain Management Group at the ALC to maintain two years of paper printouts of usage factors. Since all this information is available electronically, the printouts have no practical use. This requirement produces about 400,000 pages of printout each quarter demanding storage cabinets for eight quarters worth of virtually worthless paper. Still the Logistics Compliance Assessment Team religiously checks to be certain that the full eight quarters of printouts are properly maintained. Missing paper data can be a major write-up. The unit's answer to why the inspectors do that is "because they can."
- Inspections of technical operations in USAFE are conducted on training assets (not war reserve assets). These assets have seen heavy use and have numerous nicks and scratches. The inspection team typically requires that the technician go through the process of inspecting, assessing with reference to tech data, and recording each of the defects. This alone can consume more than an hour at the outset of an operation where the total task execution time is normally about 30 minutes. It is difficult to explain to the technician why he has to repeatedly demonstrate during a single operation that he knows how to correctly identify and characterize defects on a worn training munition. This is an issue at the nuclear bomber bases in CONUS as well.
- There is also the matter of the most basic trust. The complaint of several technicians is that if the inspectors do not actually see the technician perform a particular step because the inspectors are conversing among themselves or otherwise distracted, inspectors will not accept that the technician performed the step. In at least one case, it caused the failure of an NSI. This sort of attitude is interpreted by the working technician as evidence that the official direction given the inspector is to assume that

those they are observing are not doing the task properly until proven to the inspector. Since these are nuclear operations, there are always at least two technicians at work and there is no reasonable basis for inspectors automatic discounting of the word of a trusted technician team.

- An additional price of the numbers of observers/inspectors that insist on physically observing technical operations is a level of interference and artificiality that calls into question the validly of the entire inspection process. As an example, for USAFE operations it can take an hour and a half when using the proper procedure to clear an inspection and observer party into an aircraft shelter to observe a technical or loading operation.
- The issue of groups of inspectors also applies to non-technical operations. In the case of a recent NSI at a MUNSS in Europe, there were nine inspectors examining the PRP records of a unit with 142 people on PRP with one PRP monitor in the unit.

<u>Recommendations:</u>

The Secretary and the Chief of Staff of the Air Force should direct that:

The intense inspection regime is sharply refocused on areas of continuing concern rather than serving as a substitute for chain of command leadership and management.

Action begin for a phased return to a normal schedule for the operating forces – a single Nuclear Surety Inspection (NSI) each 18 months and a Nuclear Operational Readiness Inspection (NORI) each 18 months. DNSIs as needed to meet the Chairman, Joint Chiefs of Staff direction, conducted with NSIs. For the logistics units subject to Logistics Capability Assessment Team inspections, the normal frequency should be 18 months.

The numbers of inspectors from multiple organizations is tailored to the size and complexity of the operations of the unit.

The numbers of inspectors physically observing technical and loading operations in controlled facilities is the minimum required to verify the proper performance of the task.

The Commanders of Air Force Global Strike Command and Air Force Materiel Command should direct that follow up re-inspections and special inspections are conducted only to address unsatisfactory ratings or significant negative trends. For other discrepancies, the wing commander or AFMC MUNS commander is accountable for closing discrepancies.

The Commander of US Air Forces in Europe should restrict the total size and complexity of an inspection team to that which is appropriate to the size and complexity of the nuclear operations of the inspected unit.

Operations and Maintenance

Logistics and Maintenance

The Task Force elected to visit the Ogden ALC since many of the logistics issues identified on visits to other organizations were focused on the support for ballistic missiles and ballistic missile warheads. There are a number of organizations relevant to the support of ballistic missile sustainment. Some are located at Hill AFB and some at Kirtland AFB. There is a variety of reporting channels - directly to the OO-ALC, to the AFNWC, or to AFMC's Air Force Global Logistics Support Center. Table 2 lists some of the relevant organizations.

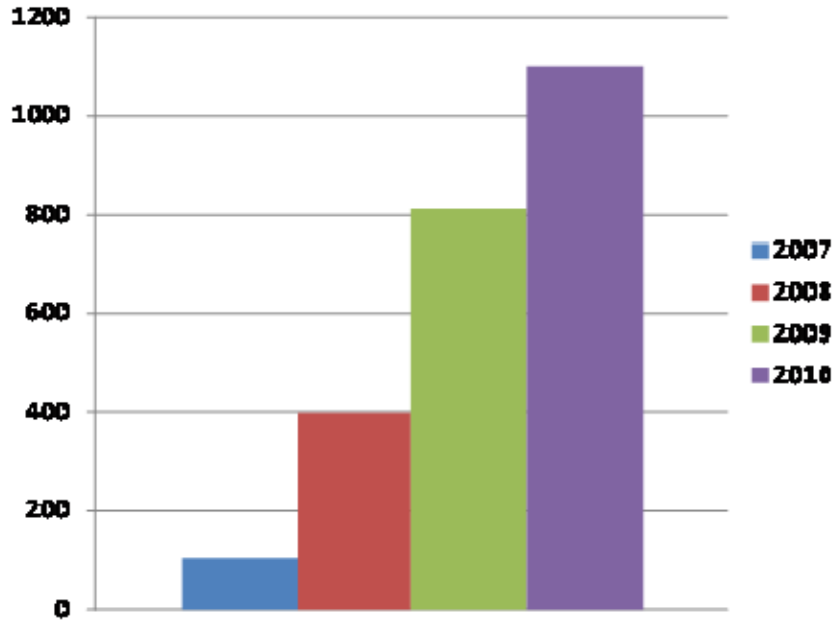
Table 2: Logistics Support Organizations

Organization	Reports to	Location	Function
ICBM Systems Division	AF Nuclear Weapons Center	Hill AFB	System Program Office Engineering Support
498th Nuclear Systems Wing (NSW)	AF Nuclear Weapons Center	Kirtland AFB	KUMMSC Support Munitions Sqds
708th Nuclear Sustainment Sqd (NSUS)	498th NSW	Kirtland AFB	Stockpile management of DOE support to DoD
309th Missile Mx Group (MMXG)	Ogden Air Logistics Ctr	Hill AFB	Depot repair for RS/RV Minuteman III Mk12/Mk21
748th Supply Chain Management Group	AF Global Logistics Support Center	Hill AFB component	Supply Support NWRM management

With the exception of the 708th NSUS, the issues with the maintenance and logistics organizations impacting either the strategic forces or those in Europe were similar:

- Aging equipment central to their mission with little or no urgency in plans to replace the equipment.
- Low priority in spite of the declaration of the primacy of the nuclear mission. Plans to provide the needed support to include such seemingly mundane needs as connecting cables repeatedly frustrated by demands to find cheaper solutions. Hence the usual response is stretched or delayed programs such as the replacement for the Re-entry System Test Set (RSTS), a 40+-year-old piece of essential test gear with a currently planned replacement date of 2017. The Task Force noted that it took only about this length of time to develop and field the F-15 and F-16 fighter aircraft.
- Reductions in manpower at the same time as increases in workload. Figure 4 offers one illustration of the increase in workload.

Figure 4: Re-Entry System/Re-Entry Vehicle (RS/RV) Engineering Requests



There are multiple reasons for the escalating growth in demand for engineering support from the ICBM Systems Division:

- Continued aging of systems being supported and support equipment.
- Reduced experience in the units maintaining the equipment.
- Inadequate and outdated technical data with manpower as a prime reason for technical data backlog.
- An environment of risk avoidance leading to referrals for engineering judgments formerly made by maintenance supervisors.

Virtually all of these causes of increased workload and reduced efficiency are evident across the maintenance and logistics activities in the operating wings and the logistics wings and groups.

***Recommendation:* The Air Force A1 should direct a zero-base assessment of the logistics center and operating unit engineering and maintenance manpower requirements considering the aging of the equipment.**

Additional recommendations relevant to this discussion are found in the following sections on operating wings.

Operations – Missile Wings

Missile operations crews are committed to their mission, but most were not volunteers for missile duty. They perceive a lack of knowledge of and respect for their mission from within the larger Air Force. This perception is reinforced by both large and small signals. Many of the current crews experienced the trauma of having their Strategic Missile Wing renamed "Space Wing" and replacing the distinctive missile badge with a space badge. Further, as they attend professional military education at all levels, they note that there is little in the curriculum about

their mission and they perceive that their classmates attach little value to that mission. As a seemingly small but still irritating matter, as a missile crew watches the computer display for their mission briefing before starting each period of duty, they see the official classified Air Force screen saver which features a single weapons system – an F-22. They also note that Air Force recruiting ads and posters, defense industry advertising, and other forms of Air Force public relations activity seem to ignore the ballistic missile mission. This combination makes it difficult for the leadership in the operational forces to convince the crews that their service is valued commensurate with the declared priority of their mission.

Recommendations:

The Secretary and the Chief of Staff of the Air Force should direct that Air Force public relations and promotional messages include the nuclear forces in portraying the Air Force mission and focus.

The Secretary of the Air Force, the Chief of Staff, and commanders at all levels should frequently reinforce the primacy of the nuclear deterrence mission with communications to Headquarters Air Force, the Major Air Commands, and the nuclear operational forces and logistics support organizations.

Operations – Bomb Wings

The attitude in the Bomb Wings is generally positive. Their mission demands a high ops tempo, but they seem to deal with it effectively. Still, the effort to refocus the wings on the nuclear mission is challenging -- it remains difficult for aircrews to be truly immersed in the nuclear mission. No single wing can meet the rapid reaction nuclear requirement. Consequently, the commitment is shared on an ad hoc and piecemeal basis between Bomb Wings. This may be the best approach given the current force distribution, but it makes it difficult in a selected part of the unit to maintain a high degree of focus on operational readiness to perform the strategic nuclear mission.

In order to be ready to assume the nuclear commitment, crews must retain some level of focus on the nuclear mission while deployed elsewhere for commitment to continuous presence. In spite of senior leadership focus, many crews value these deployments and the conventional mission above the nuclear mission. Again, part of this attitude stems from what they perceive as the wider Air Force attitude towards the nuclear bomber mission. This is exacerbated by the widely reported internal debates in the Pentagon about the future of the bomber leg of the nuclear triad. The internal Pentagon debate is well known in the operational bomber units. As in the case of the Missile Wings, B-52 crews are subjected on a daily basis to the F-22 Air Force classified screen saver which reinforces their perception that the fighter aircraft mission dominates Air Force attention and priorities. And, there is a general perception that the nuclear mission is ancillary to the crews other demanding missions. This combination of factors is a continuing obstacle to convincing the B-52 force that the nuclear mission is first priority.

Recommendation: The Commander, Air Force Global Strike Command should direct moving from the ad hoc approach to meeting the nuclear bomber commitment to a formal program that is insulated from other demands.

Maintenance and Sustainment – Missile Wings and Munitions Support Squadrons (Europe)

The workload for missile and weapons maintenance has increased significantly with the reductions in manpower, reductions in experienced NCO supervisors, failures of support equipment, and inadequate technical data. These conditions are not the result of reorganization nor will further reorganization be the solution to the need.

With the formation of new higher headquarters organizations, nearly 48% of the MSgts and SMSgts in the Nuclear Weapons Maintenance (2W2) career field (nuclear munitions maintenance) are at higher headquarters creating policies for or inspecting the 52% that provide NCO leadership in the operating wings. This number is well known among the 52%. Table 3 shows the staff positions manned *from* field resources as of August 2010. Due to reduced overall numbers, this is a fragile career field and requires special attention to ensure the needed level of expertise and quantity of qualified people in the operating force.

Table 3: Migration of Senior Nuclear Weapons Maintenance (2W2) NCOs

Organization	Current Authorization
HAF/A10	1 SMSgt
AFIA	2 MSgt
AFGSC	1 SMSgt; 4 MSgt
AFSC	2 MSgt
DTRA	2 MSgt
EUCOM	1 MSgt
STRATCOM	2 MSgt
USAFE/A3NM	1 MSgt
USAFE/IG	1 MSgt
AFMC/IG	3 MSgt
AFMC/A10	1 SMSgt; 1 MSgt
AFMC/A4	3 MSgt
AFNWC/LG	1 MSgt
ICBM SYSTEMS DIVISION (HILL)	2 MSgt
49TH T&E Sqd	2 MSgt
708 NSUS	1 SMSgt; 6 MSgt
709 NSS	1 MSgt
710 NSS	1 MSgt

Recommendation: ***The Air Force A1 should initiate a program to ensure a priority balance such that the operating forces have the needed senior NCO leadership from the 2W2 career field to include immediate action to address the mismatch between senior NCOs supervising***

work in the units and senior NCOs overseeing and inspecting the performance of operational and logistics units.

ICBM Warhead Sustainment

The slow response to inadequate technical data increased the ICBM nuclear munitions maintenance workload. Munitions components are received at the missile wings from the weapons depot and from other sites. Before assembling components for loading on a Minuteman missile, the technician must inspect the condition of the component. The inspection frequently reveals small defects (nicks and scratches, mostly cosmetic in nature) that are not addressed in the technical data. On discovering these defects, the munitions maintenance organization has no choice but to document the defects, return the asset to storage, and send the paperwork to the ICBM Systems Division for an engineering judgment.

Since it takes about a half day to prepare an item for inspection and another half day to document the defects and return the item to storage, each such incident costs a day's productivity for a crew. This had occurred 55 times May 2010 through August 2010 at the 15th MUNS. In 52 of those cases, the engineering judgment ultimately rendered was that the item was serviceable. This means 52 days of needless lost productivity in a single missile wing in the period noted.

The AFNWC has been working this situation for two years. While the options for correcting this deficiency are well understood – pre-inspection and documentation before shipment, rapidly changing the tech orders, and/or on-site judgment – there seemed to be time-consuming obstacles to any of the solutions. With this condition as a contributor, munitions maintenance people work excessive shifts and weekends to meet the need for warheads for deployed missiles.

Recently, the AFNWC identified four technical orders (tech orders) that cover the areas making up over two-thirds of the cases where inadequate tech data necessitated engineering assessment. Two of these tech orders have been expanded and re-issued. At the time of this report, the other two were still in work. This action should significantly reduce this particular obstacle to efficient munitions maintenance in the missile wings.

An all-too-common response from junior airmen to senior master sergeants to questions about their future plans was that they had enough of the working conditions and state of logistics support and they were leaving either the career field or the Air Force. Several declared that it wasn't the long hours of work that bothered them; it was the long hours when they could not do their work because of tech orders, support equipment issues, and inspections.

There is a more fundamental cause of this situation. In the past, the judgments regarding the cosmetic defects causing some of this problem were rendered by experienced munitions maintenance people in the WSA. With the drive for zero defects, this became unacceptable to some levels of nuclear enterprise leadership. The fallacy is the goal of zero cosmetic defects in 30-year-old weapons. This is neither achievable nor necessary. If the standard is peer-reviewed engineering assessment for cosmetic defects, then the system has crossed the threshold to zero risk. In the worst case, there could be some slight risk that a faulty judgment regarding a small

nick or scratch could cause a warhead to fail on re-entry. Again, this issue contributes to the perception of distrust of the professional qualification of the workforce.

<u>Recommendations:</u> The Commander, Air Force Nuclear Weapons Center should:

Direct immediate action to reestablish risk management and trust in the technician's judgment versus risk avoidance on cosmetic defects with the needed technical data and training program to support that judgment.

Provide on-site engineering support until processes are in place to separate the cosmetic defects in RV components requiring engineering analysis.

Support equipment for ICBM munitions and missile maintenance is old and at the end of its useful life. The Re-entry System Test Set (RSTS) was delivered in the 1960s and includes 1950s technology. There are plans to replace it with a Full Operational Capability but not until 2017. Given all the other needs across the Air Force, the decision has been that this is the right priority. However, this is the test set that verifies MM III re-entry systems (Mk12, Mk12A, and Mk21) and re-entry vehicle integrity. Maintenance technicians perceive this 2017 replacement date as a mismatch between stated mission priorities and logistics support priorities.

Failure to replace seemingly simple pieces of support equipment such as connecting cables is a major irritant and obstacle to productivity. The same is true of support equipment for missile maintenance. Again, over the past two years this has received attention with a contract that was to deliver new cables in late 2010. While the Task Force heard complaints about this problem from each of the missile wings, there was no indication that the workforce knew that help is on the way. This illustrates the need for a more proactive approach to informing the troops.

Vehicles essential to transporting and removing/installing missiles and post-boost vehicles in the silos provide an example of acquisition decisions that seem to lack meaningful consultation with the people who perform the mission. At least this is a perception among people who use this vital equipment. The tractors are modern 2003 and 2009 models. Since cab-over tractors are no longer produced in the U.S. for commercial trucking use, the decision was to change new procurement to the industry standard tractors. The problem is that the additional length of the industry standard tractor reduces maneuverability making them difficult to impossible to maneuver on some of the launch sites. The new tractors were procured as a commodity item with no consideration of special demands of the nuclear support mission.

Further, while the transporter erector trailers have been upgraded, the most essential piece of equipment, a complex hoist, is 40-years old with no known plans for replacement. When the transporter erectors were refurbished some 20 years ago, the envisioned refurbishment included a new hoist. The added expense of the new hoist led to direction that a cheaper program be developed. This is another example of a lowest cost, stop-gap approach to support equipment essential to the Air Force's first priority mission. There is still no program to replace the hoists.

Munitions Support Squadron (MUNSS)

At the MUNSS sites, weapons maintenance must be performed inside the protective aircraft shelter. The central piece of support equipment to provide this maintenance capability is the Weapons Maintenance Truck (WMT). These trucks were designed for a 20-year life more than 20 years ago. While it is common for systems to be used beyond their design life, the wear and tear on these trucks has far exceeded the design operating environment. For example, they were designed to deliver the needed capability in the aircraft shelter, not for extensive road travel. In practice, these trucks must travel some distance to a main operating base for routine maintenance. Further, the WMTs were procured and delivered with no planned sustainment package. The MUNSS sites often depend on temporary WMT loans from other sites.

The Task Force heard mostly positive comments about the performance of the engineering detachment, Det 1, responsible for maintenance/sustainment of the weapons vaults and portions of the WMT (hoist, electrical systems). However, the operating units also described how Det 1 was undermanned for the sustainment demands placed upon it. Det 1, under the 498th Munitions Maintenance Group at Ramstein, comprises 21 personnel, mostly engineers, to service all of these aging systems.

The maintenance issue is further exacerbated by the failure to plan for and procure a sustainment package for these systems. Hence, parts and support can take an extended period for routine needs. As an example, a WMT from one of the sites has been under repair at Ramstein for more than a year. At the time of our visit, it was awaiting tires to complete the work. These are standard heavy truck tires.

The current plan is to replace the WMTs with the Secure Transportable Maintenance System in 2014. A prototype has been in existence for some two years. When MUNSS people take their 20-year-old essential equipment to a main operating base for repair, they notice the fleet of relatively new fuel trucks populating the flight line supporting the conventional tactical fighter mission.

An issue common to other nuclear operations is the lack of supply priority. Part of the issue is infrequent demand for some parts and the failure to plan for a sustainment package. But part of the issue is priority. It is not difficult to understand that when there is competition for assets between the forces in combat and everyone else, the priority will properly go to forces in combat. Still there should be at least sensitivity to the needs of the nuclear enterprise which are often small compared to others. For example, an inquiry about the status of an order for a small number of night vision goggles for the security forces assigned to the nuclear mission was answered by the item manager with the information that the units need was priority 2 with more than 200 priority 2 orders ahead of these security forces.

Some Common Bottom Lines for ICBMs and MUNSS'

There are other examples, but the examples above demonstrate three key points:

- Slow response to tech order and equipment issues sends a negative message and adds to the workload of munitions maintenance personnel, requiring extraordinary efforts to sustain the mission.

- The “lack of a nail” syndrome is real. Paying attention to all the bits and pieces of support equipment needed to sustain the mission is as important as major pieces of equipment.
- The process of designing and procuring new support equipment whether it be large tractors or the need for connecting cables should be made on the basis of long-term effectiveness rather than the immediate cost. Decisions should also include consulting the people who use the equipment to support the mission at the operating units. Consulting people in the headquarters is not a substitute.

<u>Recommendations:</u>

The Secretary and Chief of Staff of the Air Force should direct that:

The needs of the nuclear enterprise to sustain the force are given priority and the choices for corrective action are oriented to long-term sustainment rather than the lowest near-term cost path.

The Air Staff and Air Force Materiel Command give funding and program priority to logistics support essential to the nuclear deterrence mission commensurate with the priority of the nuclear deterrence mission.

The Air Staff and Air Force Materiel Command give urgent attention to replacing 40+- year-old warhead and missile maintenance support and test equipment at the operating wings and the air logistics center and to replacing the Weapons Maintenance Trucks at the MUNSS sites.

The Commander, AFGSC and Commander, AFNWC should direct a greatly increased communications effort to keep the operating forces informed about actions underway to address their support issues.

The Commander, AFGSC should ensure that equipment peculiar to support of nuclear operations is treated as specialized equipment before reverting to a commodity approach.

U.S. Air Forces in Europe

USAFE nuclear forces have a set of special challenges to include:

- The operations are unique.
  - The Munitions Support Squadrons each support and are supported by a different allied air force.
  - There is a key US NATO Dual-Capable Aircraft (DCA) tasking.
- The units are subject to both USAF and NATO directives. These directives are sometimes in conflict due to varied update cycles or due to unresolved conflicts.
- The units are subject to USAF, DTRA, and NATO inspections and inspection criteria.
- There is high turnover in essential personnel, sometimes with most of the senior leadership changing over a short period.

The unique nature of the NATO DCA tasking raises some issues with readiness criteria and with inspection teams. The requirement is to be capable of bringing a required DCA squadron to the required readiness within a specified time. To meet this requirement, it is clear that the wing must sustain certain capabilities at constant readiness, e.g., security forces, systems maintenance and control, and command and control systems and capabilities. At the same time there is time to bring other capabilities from a lower state of readiness to the required level. The issue is the need for clear definition of what is required on a daily basis. This leads to concerns about the difference between what the wing commander believes is required to meet the NATO DCA capability and timing requirement, and the desire of an NSI team to assess capabilities that the wing does not need to keep at a constant state of readiness. Additionally, the wing must continuously meet its ongoing combat operations requirements leading to constant change in forces assigned to meet the NATO requirement.

The mismatch between USAF and NATO directives and inspection requirements can have an adverse impact on NATO strike evaluation (STRIKEVAL) operations. For example, USAF directives permit towing a nuclear loaded aircraft only as a last resort in an emergency while NATO rules permit such towing as needed to meet the generation requirements. Given the distribution of aircraft and munitions at some locations, this can result in NATO STRIKEVAL scenarios that are difficult if not impossible to meet with USAF directed limitation. In such cases, the wing commander must comply first with USAF directives.

The impact of the rapid turnover in Europe is exacerbated by at least two personnel policies or practices. The need is to maintain a high level of nuclear operations and maintenance experience and competence. However, it at least appears that assignments to the key DCA Fighter Wing are made with attention to factors than can override attention to nuclear experience. There is a reluctance to allow people to extend in Europe when they volunteer and their experience is important to DCA operations. Part of the reason for the reluctance is that many assigned to an unaccompanied tour at a specific base overseas are promised that at the end of this unaccompanied tour they will be assigned to fighter units in USAFE. The end result is a flow of people who have no nuclear experience into the key DCA wing in Europe. This same set of policies impacts the MUNSS sites. This is particularly important at these sites since they

are small (typically less than 150 total assigned) and sometimes are one deep in critical experience.

Recommendations:

The Commander, US Air Forces in Europe should:

Direct the USAFE A3 to provide clarity on the elements of the DCA mission that require continuous readiness and those that can be brought to the needed level within the prescribed time.

Identify the disconnects between NATO and USAF directives that impact nuclear operations and establish a working body with NATO to resolve the differences.

The Air Force A1 should direct a reexamination or clarification of the policy or practice opposing voluntary extensions for nuclear-experienced people in Europe and the criteria for assignments from non-nuclear missions to the DCA mission units.

Guidance versus Direction

A continuing issue in the nuclear forces is the adequacy of direction. The Air Force move to the philosophy of the Air Force Instruction versus the Air Force Regulation probably achieves its intended purpose in other activities. The philosophy seems to be to describe what is to be done, to give guidance, and to leverage the experience and talents of Air Force people to do the job more effectively and efficiently. It would be difficult to fault that proposition were it not contrary to the demands of the nuclear mission where the premium is on doing things exactly right and as prescribed every time. There is little room for ad hoc innovation in the nuclear operations and maintenance business.

A common answer by senior NCOs in the nuclear enterprise to a question about the difference between an instruction and a regulation is that the first provides guidance (some say suggestions or philosophy), the second provides direction. One of the difficulties with guidance versus direction is different interpretations by unit supervisors, staff assistance teams, and inspectors. In the nuclear business, room for interpretation, innovation, and increased efficiency is more likely to be an obstacle than an enabler. One such innovation, simultaneously inventorying the storage facility while preparing the load for transport to the flight line, was a factor in the unauthorized transfer incident in 2007. Another factor was a different interpretation of what constituted verification of the payload in the cruise missiles being transported. In these areas the concept of guidance has now been replaced with clear direction to include processes that neither require nor allow interpretation. In other areas, clearer direction is still needed.

Global Strike Command is in the process of providing that direction. The command is nearing completion of work to bring some 190 documents that provide guidance and direction up to the standard needed in the nuclear enterprise.

Recommendations:

The Secretary and the Chief of Staff of the Air Force should direct review of the approach to guiding nuclear operations to ensure it is direction with adequate detail vice guidance that leaves the details open to interpretation.

The Commander, Air Force Global Strike Command should complete the ongoing AFGSC work to supplement AFIs as needed to provide clear direction for nuclear weapons operations.

Enlisted Personnel Management

There are a number of intersecting issues that could lead to a perfect storm in critical NCO leadership and supervision in the maintenance fields. Specifically, there are four issues:

- The draw on experienced MSgts and SMSgts to man oversight organizations,
- High year tenure (HYT),
- Inflexible enlisted assignment policies and practices for all ranks below E-9, and
- Some MSgts and SMSgts departing for greener pastures.

The draw on experienced senior NCOs is addressed elsewhere in this report. The issue in the operational units with high year tenure is inflexibility. The purpose of HYT to prevent stagnation in the senior NCO population is understood and is not, in itself, an issue. The issue is that the operating forces assume there will be no waivers and are reluctant to ask for them. In a small career field like the 2W2 field, a single, experienced MSgt or SMSgt may be unusually important to the mission for some period of time until a replacement is on board and up to speed. The issue on enlisted assignment policies is the perception and perhaps the fact that the system does not pay adequate attention to special experience identifiers. Hence, base of preference or some other assignment policy factor may send a C-17 crew chief to a B-52 wing without appreciation for the very different demands for the B-52 crew chief. The greener pasture in the fourth bullet above is almost anywhere except the current working conditions and demands.

The end result of the senior NCO assignment issues is that in one of the bomber wings, the turnover rate for MSgts in the nuclear maintenance career field in a single year was 70%. For SMSgts, it was 100%.

At the same wing, turnover rate in weapons loaders was 30%. Crew chief manning was at 75%. The Nuclear Issue Resolution and Integration (NIRI) Board is aware of the consequences of these intersecting issues and provides the following assessment of critical skills:

- Nuclear Weapons Maintenance (2W2) – at a critical point
- Missile and Space Maintenance (2M0) – at a level of concern
- Aerospace Maintenance/Heavy Crew Chiefs (2A5) – at a level of concern
- Munitions, Missile Maintenance (21M) (a munitions officer AFSC) – at a level of concern

The most optimistic assumption expressed to the Task Force was that, over time, these career fields will be manned in the operating forces to the same level as the rest of the Air Force (85%).

Recommendation: ***The Air Force A1 should develop and implement a process for special management of nuclear career fields – those in which small numbers create special challenges.***

The Personnel Reliability Program (PRP)

The following discussion, findings, and recommendations are similar to those included in the 2004 Permanent Task Force (then called the Joint Advisory Committee) report on Air Force Nuclear Surety Inspections (NSI). The DoD guidance on PRP has improved significantly since 2004. In contrast, the practice in the Air Force has not improved. The importance of this program dictates that it be coherent, well managed, and reasonably attainable. The program continues to suffer, in some cases increasingly so, from fundamental deficiencies that work against the program's purpose and importance.

According to the DoD 5210.42 Regulation and Air Force Manual 10-3902, the purpose of the PRP is "to ensure that each person selected and retained for performing duties associated with nuclear weapons or nuclear command and control systems and equipment is emotionally stable and physically capable, and has demonstrated reliability and professional capability."[1] In identifying potentially disqualifying or decertifying information the guidance states that in evaluating certain traits or conduct (such as alcohol use, drug use, medical condition, poor attitude, lack of motivation), "certifying and reviewing officials shall ensure there is no reasonable doubt of an individual's reliability . . ."[2] This is a high but attainable standard. Earlier language called for reliability beyond any doubt -- an unattainable standard.

Discussions with commanders and PRP monitors make it clear that there has been continuing escalation in pursuit of absolute goals. In fact, when commanders were asked specifically about the DoD described standard for PRP reliability, none quoted the DoD guidance. This continued focus on absolute assurance of reliability has produced important dysfunctional aspects in the program to include the use of suspension and decertification actions as risk avoidance measures. Risk avoidance permeates the structure and practice of the program.

Current practices produce an environment of distrust, implying that the people selected and qualified for demanding nuclear duties and who are critically important to the mission are not sufficiently trustworthy to live an acceptable daily life. It then follows that they must constantly reestablish reliability. Even the *possibility* of Potentially Disqualifying Information (PDI) leads to temporary decertification until it is established that there has been no compromise of reliability. Based on this fundamentally flawed assumption, the PRP repeatedly reexamines the history of each individual.

As one example of the consequences of this attitude, personnel are automatically suspended from PRP duties when referred by Air Force medical authorities to off-base medical treatment regardless of the nature of the referral. The individual must then report to base medical authorities to be reinstated. The DoD guidance does not require automatic suspension but instead requires follow-up after treatment. Individuals should be suspended only for cause, not for the possibility of cause. Hence, for off-base medical referrals and other situations where there is the possibility of compromise of reliability, suspension should come only after a determination that there is a reasonable likelihood of such compromise.

---

[1] DoD 5210-42 Regulation/AFMAN 10-3902, incorporating through Change 2, 2 November 2010, Nuclear Weapons Personnel Reliability Program (PRP), Chapter 1, C1.1. PURPOSE

[2] Ibid., Chapter 5, C5.1. POTENTIALLY DISQUALIFYING OR DECERTIFYING CRITERIA

This automatic suspension practice is an example of the zero-risk approach practiced in Air Force implementation of the guidance. This practice is a clear demonstration of distrust, is costly in productivity, and generates an enormous amount of additional and unproductive work for the unit, for medical personnel, and for inspectors. Given that maintaining our nuclear capabilities is totally dependent on the commitment of individuals in the PRP, this approach is wasteful and counterproductive.

The overall impact of unnecessary suspensions is added to other factors impacting availability of qualified people. For example, the typical unit is manned at 90% or less though there are exceptions. Added to this, it is not unusual to have another 10% suspended for PRP with a significant part of that 10% due to suspensions for authorized off-base medical care. The end result is security forces and maintenance people working extended and added shifts to compensate. This means that the risk of overworked people, including security forces, making an important error in judgment or performance is accepted while the risk of something disabling taking place during a dental appointment for a tooth filling is not.

A fallacy of the zero-risk approach is that it places a far too heavy and unnecessary burden on PRP. There are supervisors who observe people in PRP positions every day. Every nuclear operation requires the presence of two PRP-certified individuals. PRP should be an added aid to the commander to ensure reliability beyond a reasonable doubt. It should not and cannot be the guarantor of zero risk.

Recommendations:

The Secretary of the Air Force, the Chief of Staff, and commanders at all levels should provide:

> ***Clear direction that ensures understanding in all relevant communities that commanders are leading and managing a valuable human resource that is dedicated to performing the first priority mission of the Air Force and should be treated accordingly.***
>
> ***Clear direction that reinforces PRP is a commander's program intended to assist the commander in ensuring that people in PRP positions are capable of reliably and safely performing their duties.***
>
> ***Education and direction that the proper standard is to ensure reliability that leaves no reasonable doubt and that the PRP is one of the several tools available to the commander to meet that standard.***

The Secretary and the Chief of Staff of the Air Force should direct an immediate adjustment to Air Force guidance/practice to remove PRP-based restrictions and monitoring demands that exceed those required by DoD direction.

Some medical personnel who must provide advice to commanders state that the guidance is too vague leading to worst case assumptions in providing that advice. In contrast, the guidance on what constitutes a medically disqualifying condition for a pilot is clear, requires minimum interpretation, and serves the force well.

The vagueness of the medically disqualifying condition guidance (for temporary suspension or decertification) leaves PRP open to continuing interpretation by NSI inspectors and medical authorities, resulting in ratcheting of standards as information in inspection reports passes from unit to unit becoming de facto additions to standards. This practice has progressed to the point that the enormous effort required to meet standards has become counterproductive to ensuring a reliable workforce. Literally thousands of man-hours are expended to go beyond no reasonable doubt to seeking to meet a standard of total confidence, particularly total confidence that the records are perfect as demanded by the evolution in NSI standards.

It is unlikely that this consumption of additional man-hours makes a commensurate contribution to safety, security, and reliability of nuclear weapons operations. Still, commanders believe it is needed for confidence that NSI inspectors will give the PRP a satisfactory rating. Further, the personnel authorizations to perform this work are not consistent with the demands of the uncontrolled escalation of PRP standards.

As noted earlier, the stated standard for PRP reliability judgment is a high standard establishing reliability of an individual beyond reasonable doubt. The practice still seeks absolute confidence.

Recommendations:

The Secretary and the Chief of Staff of the Air Force should direct a task force be convened, made up of wing, group, and squadron commanders, senior enlisted supervisors, and competent medical authorities, to examine the current state of the PRP guidance and policies on criteria for suspension and decertification. The purpose is to provide a set of guidelines less subject to interpretation that support the standard of no reasonable doubt versus no doubt.

The Air Force A1 should provide a zero-base assessment of the PRP workload and provide the needed manning.

PRP was conceived and is repeatedly described as a program to help commanders ensure the continued reliability of the workforce. Hence it is a commander's program. In practice the PRP program has become dominated by medical considerations. This approach indicates an implicit assumption that personnel reliability is primarily a medical issue. This attitude is peculiar to the PRP and is clearly misguided. Medical considerations do not play this kind of dominant role anywhere else in the world of security and reliability. Further, the direction of medical orientation is often risk avoidance rather than intended to improve the quality of commanders' judgments.

For example, guidance (both DoD and Air Force) directs that use of authorized over-the-counter drugs beyond the manufacturer's recommended safe dosage could be considered drug abuse. With current direction, if the commander as certifying official *suspects* such improper use, he must suspend the individual from PRP duties and must consult the Competent Medical Authority (CMA). In response to that direction, an individual could be permanently decertified for taking three over-the-counter pills when the direction on the package specifies two.

At present, disparate pieces of information that could impact reliability are *all* treated as medical matters – from the determination of alcohol dependence, to the distinction between

juvenile marijuana experimentation and abuse, to the relation of traffic tickets to respect for authority.

At the wing and geographically separated unit, medical personnel are involved with much more than the medical aspects of the program. While PDI includes mental, physical, financial, legal, traffic, and domestic violence information, most PDI passes through the medical authorities. While non-medical records are maintained in the personnel world, the major burden for PRP records management resides in the medical function. This creates a burden for the base medical staff for which there is no manning and that has little relation to medical matters. Further, it replaces the responsibility of supervisors and commanders whose experience and knowledge make them the most qualified to make those judgments.

Recommendation: ***The Secretary of the Air Force, the Chief of Staff, and commanders at all levels should provide clear direction that the role of medical support is to provide medical advice when appropriate. The commander bears final responsibility and accountability for the reliability of people in his or her command.***

The practice of repeated reviews of PRP candidates' history by different individuals using different standards contributes to the continuing escalation of standards and criteria. It also places PRP-covered personnel at continuing risk of arbitrary judgments based on long-past history. The Task Force has heard enough anecdotes over more than a decade from reliable people to consider this a critical problem. In contrast, for even the most sensitive security clearances, the review reaches back to the last review or, in some exceptional circumstances as much as 10 years. The PRP re-certification examination can and has reached back to a high school football injury. Further, inspectors quiz unit commanders about the records of people cleared under a previous commander, criticizing them for not having personally validated past certifications.

Recommendation: ***The Secretary and the Chief of Staff of the Air Force should direct that the guidance for PRP re-certification specify that look-back is limited to the period since the last certification unless there is specific and documented reason to suspect an individual problem.***

Summary of Recommendations

The Air Force leadership should maintain realistic expectations regarding the state of accounting for NWRM.

Logistics

The Secretary and Chief of Staff should direct that:

- ***The needs of the nuclear enterprise to sustain the force are given priority and the choices for corrective action are oriented to long-term sustainment rather than the lowest near-term cost path.***

The Air Staff and Air Force Materiel Command should give:

- ***Funding and program priority to logistics support essential to the nuclear deterrence mission commensurate with the priority of the nuclear deterrence mission.***
- ***Urgent attention to replacing 40+-year-old warhead and missile maintenance support and test equipment at the operating wings and the air logistics center and to replacing the Weapons Maintenance Trucks at the MUNSS sites (Europe).***

The Commanders, AFGCS and AFNWC should direct a greatly increased communications effort to keep the operating forces informed about actions underway to address their support issues.

The Commander, AFGSC should ensure that equipment peculiar to support of nuclear operations is treated as specialized equipment before reverting to a commodity approach.

The Commander, AFNWC should:

- ***Direct immediate action to reestablish risk management and trust in the technician's judgment versus risk avoidance on cosmetic defects with the needed technical data and training program to support that judgment.***
- ***Provide on-site engineering support until processes are in place to separate the cosmetic defects in RV components requiring engineering analysis.***

Organization and Guidance

The Secretary and the Chief of Staff should direct:

- ***An action to assign all base-level operations and logistics functions to the strategic Missile and Bomb Wings reporting through the numbered air forces to the Air Force Global Strike Command.***
- ***A reexamination of the continued utility of the set of special headquarters organizations.***
- ***A revision of the set of responsibilities ascribed to AFNWC in AFMCI 90-204 to sharply focus on the sustainability of the nuclear enterprise with other responsibilities assigned to Headquarters Air Force, Headquarters Air Force Materiel Command, and Air Force Global Strike Command.***

- ***A review of the approach to guiding nuclear operations to ensure it is direction with adequate detail vice guidance that leaves the details open to interpretation.***

The Commander, AFGSC should complete the ongoing AFGSC work to supplement AFIs as needed to provide clear direction for nuclear weapons operations.

The Inspection Regime

The Secretary and Chief of Staff should direct that:

- ***The intense inspection regime is sharply refocused on areas of continuing concern rather than serving as a substitute for chain of command leadership and management.***
- ***Action begin for a phased return to a normal schedule for the operating forces:***
  - ***A single Nuclear Surety Inspection (NSI) each 18 months.***
  - ***A Nuclear Operational Readiness Inspection (NORI) each 18 months.***
  - ***DNSIs as needed to meet the CJCS direction conducted with NSIs.***
  - ***Logistics Capability Assessment Team or Program inspections each 18 months.***
- ***The numbers of inspectors from multiple organizations is tailored to the size and complexity of the operations of the unit.***
- ***The numbers of inspectors physically observing technical and loading operations in controlled facilities is the minimum required to verify the proper performance of the task.***

The Commanders of AFGSC and AFMC should direct that follow-up re-inspections and special inspections are conducted only to address unsatisfactory ratings or significant negative trends. For other discrepancies, the wing commander or the Munitions Squadron (MUNS) commander is accountable for closing discrepancies.

The Commander of USAFE should:

- ***Direct that follow-up re-inspections are conducted only to address unsatisfactory ratings or significant negative trends. For all other discrepancies the wing commander or the MUNSS Commander is accountable for closing out the discrepancies in communication with the appropriate inspection agency.***
- ***Restrict the total size and complexity of an inspection team to that which is appropriate to the size and complexity of the nuclear operations of the inspected unit.***

Operations

The Commander, USAFE should:

- ***Direct the USAFE A3 to provide clarity on the elements of the DCA mission that require continuous readiness and those that can be brought to the needed level within the prescribed time.***

- ***Identify the disconnects between NATO and USAF directives that impact nuclear operations and establish a working body with NATO to resolve the differences.***

The Commander, AFGSC should direct moving from the ad hoc approach to meeting the nuclear bomber commitment to a formal program that is insulated from other demands.

Personnel and Morale

The Secretary and the Chief of Staff should direct that Air Force public relations and promotional messages include the nuclear forces in portraying the Air Force mission and focus.

The Secretary of the Air Force, the Chief of Staff, and commanders at all levels should frequently reinforce the primacy of the nuclear deterrence mission with communications to Headquarters Air Force, the Major Air Commands, and the nuclear operational forces and logistics support organizations.

The Headquarters, Air Force A1 should:

- ***Direct special attention to providing the needed qualified people to the operating forces in the career fields that are both fragile and critical to the nuclear mission.***
- ***Direct a reexamination or clarification of the policy or practice opposing voluntary extensions for nuclear-experienced people in Europe and the criteria for assignments from non-nuclear missions to the DCA mission units.***
- ***Direct a zero-base assessment of the logistics center and operating unit engineering and maintenance manpower requirements considering the aging of the equipment.***
- ***Initiate a program to ensure a priority balance such that the operating forces have the needed senior NCO leadership from the 2W2 career field to include immediate action to address the mismatch between senior NCOs supervising work in the units and senior NCOs overseeing and inspecting the performance of operational and logistics units.***
- ***Develop and implement a process for special management of nuclear career fields – those in which small numbers create special challenges.***
- ***Provide a zero-base assessment of the PRP workload and provide the needed manning.***

Personnel Reliability Program

The Secretary, the Chief of Staff, and commanders at all levels should provide

- ***Clear direction that:***
    - ***Ensures understanding in all relevant communities that commanders are leading and managing a valuable human resource that is dedicated to performing the first priority mission of the Air Force and should be treated accordingly.***

  - ***Reinforces that PRP is a commander's program intended to assist the commander in ensuring that people in PRP positions are capable of reliably and safely performing their duties.***
  - ***The role of medical support is to provide medical advice when appropriate. The commander bears final responsibility and accountability for the reliability of people in his or her command.***
- ***Education and direction that the proper standard is to ensure reliability that leaves no reasonable doubt and that the PRP is one of the several tools available to the commander to meet that standard.***

The Secretary and the Chief of Staff should direct that:

- ***An immediate adjustment to Air Force guidance/practice to remove PRP-based restrictions and monitoring demands that exceed those required by DoD direction.***
- ***A task force is convened, made up of wing, group, and squadron commanders, senior enlisted supervisors, and competent medical authorities, to examine the current state of the PRP guidance and policies on criteria for suspension and decertification. The purpose is to provide a set of guidelines less subject to interpretation that support the standard of no reasonable doubt versus no doubt.***
- ***The guidance for PRP re-certification specify that look-back is limited to the period since the last certification unless there is specific and documented reason to suspect an individual problem.***

Appendix A: Terms of Reference

OFFICE OF THE SECRETARY OF DEFENSE
3140 DEFENSE PENTAGON
WASHINGTON, DC 20301–3140

DEFENSE SCIENCE BOARD

July 13, 2010

MEMORANDUM FOR THE CHAIRMAN, PERMANENT TASK FORCE ON NUCLEAR WEAPONS SURETY

SUBJECT: Terms of Reference – Defense Science Board (DSB) Permanent Task Force (PTF) on Nuclear Weapons Surety – Air Force Nuclear Enterprise Review

The DSB Permanent Task Force on Nuclear Weapons Surety is requested to conduct a broad, independent review of the Air Force (AF) nuclear enterprise to include organization, operations, logistics, and surety. Specifically, the PTF should review:

- Air Staff focus on the nuclear enterprise
  - Sustainment and modernization
  - AF corporate process changes
  - Enterprise consequences of Nuclear Posture Review/New START Treaty (NST)
  - Policies
  - Enterprise-Wide Cultural Indicators
- Leader Messages, Policies and Actions (promotion rates, investment)
- Airman Attitudes and Behaviors
- Activities and results of the Air Force Inspection Agency focus
  - Relationship between Secretary of the Air Force Inspector General and Major Commands Inspector General.
  - Measures of Effectiveness/Measures of Performance and Trend Analysis
  - Collaboration and Sharing of Root Cause Analyses
  - Nuclear Surety Inspection deficiency trend analysis nuclear enterprise-wide
- Air Force Materiel Command
  - Nuclear systems logistics organization and processes
  - The Nuclear Weapons Center at Kirtland, New Mexico
    - New Weapons Storage Area construct and impact on nuclear-related specialties,
    - New Strategic Systems Program Executive Office
    - Positive Inventory Control of Nuclear Weapons Related Material (NWRM)
    - NWRM Shipping
  - Technical Orders
  - ICBM Engineering and Management
  - Wright Patterson Air Force Base (Staff and Inspector General)

- Global Strike Command and 8th Air Force
  - 2nd Bomb Wing
  - 5th Bomb Wing
  - 509th Bomb Wing
- 20th Air Force
  - 341 Missile Wing
  - 91st Missile Wing
  - 90th Missile Wing
- USAFE
  - MUNSS and Main Operating Bases
  - Theater and Dual Capable Aircraft (DCA)-Mission unique issues (Weapons/System Maintenance, Personnel Policies, Personnel Reliability Program, Weapons Security)
  - Intermediate Readiness DCA Aircraft/Sqdns
- Personnel processes – Long-term development of nuclear expertise
  - Assignments
  - Human capital development
- ACC and AFSPC enduring relationships with AFGSC
  - ACC DCA Training Courses
- Impact of NST on AFGSC/ACC lines of Operation

The review will be sponsored by the Under Secretary of Defense for Acquisition, Technology and Logistics. The Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs is authorized to act upon the advice and recommendations of the Board.

Gen Larry Welch, USAF (Ret), will serve as the Task Force chairman. David B. McDarby, Defense Threat Reduction Agency, will serve as the primary Designated Federal Official.

Drawing upon the expertise and knowledge of members, special government employees, and previous related studies and reviews, the Permanent Task Force is the appropriate group to conduct this comprehensive Air Force nuclear review. Request the Task Force review commence as soon as practical.

The Task Force will operate in accordance with the provisions of P.L. 92-463, the "Federal Advisory Committee Act," and DoD Directive 5105.4, the "DoD Federal Advisory Committee management program." It is not anticipated that this Task Force will need to go into any "particular matters" within the meaning of title 18, United States Code, section 208, nor will it cause any member to be placed in the position of action as a procurement official.

Brian Hughes
Executive Director

Appendix B: Task Force Members

CHAIRMAN

General Larry D. Welch, USAF (Ret.), *Institute for Defense Analyses*

MEMBERS

Dr. Ted Gold, *Institute for Defense Analyses*

Mr. James Gosler, *Sandia National Laboratories*

Dr. James Tegnelia, *Sandia National Laboratories*

SPECIAL GOVERNMENT EMPLOYEES

Dr. G. Peter Nanos, *Johns Hopkins Applied Physics Laboratory*

Dr. Robert L. Selden, *Independent Consultant*

DESIGNATED FEDERAL OFFICIAL

Mr. David B. McDarby, *Defense Threat Reduction Agency*

DSB REPRESENTATIVE

Mr. Brian Hughes, *OUSD (AT&L)/Defense Science Board*

Appendix C: Findings from Prior Reports on the Incidents

U.S. Air Force Blue Ribbon Review (BRR) on Nuclear Weapons Policies and Procedures (February 2008).

The Chief of Staff of the Air Force established the BRR and its observations led to the following general conclusions:

- Nuclear surety in the USAF is sound, but needs strengthening,
- USAF focus on the nuclear mission has diminished since 1991,
- The nuclear enterprise in the USAF works despite being fragmented; declining USAF nuclear experience has led to waning expertise, and
- USAF nuclear surety inspection programs need standardization.

DSB Permanent Task Force Report on the Unauthorized Movement of Nuclear Weapons (February 2008).

Tasked by the USD (AT&L) and the Commander, U.S. Strategic Command. The DSB PTF articulated the need for:

- Uncompromising adherence to processes and procedures,
- Clear focus on the unique demands of the nuclear enterprise at multiple levels, and
- An environment that attracts, nurtures, and guides the right numbers of the best and brightest people as stewards of nuclear forces.

Investigation into the Shipment of Sensitive Missile Components to Taiwan (May 2008).

This Secretary of Defense-directed investigation found that the specific cause of the event was the Air Force and Defense Logistics Agency's sole reliance on, and lack of compliance with, existing supply system procedures to provide positive control of the four Mk12 forward-section re-entry vehicle assemblies. Other critical findings were:

- The ICBM engineering community lacked a clear major command owner resulting in the deterioration in the exercise of technical authority,
- Changes to Air Force policies and processes had degraded the level of control for sensitive missile components,
- Dispersed authority and responsibilities had created an environment ill-suited for setting and maintaining standards necessary for nuclear weapons,
- Lack of a culture that is internally driven to address systemic weaknesses had resulted in degraded performance, and
- The declining trend of Air Force nuclear expertise had not been effectively addressed.

In response, the Secretary of Defense directed the Air Force, Navy, and Defense Logistics Agency to conduct a comprehensive inventory of all nuclear weapons and related materials, and to complete a comprehensive review of materiel management procedures and processes in order to reestablish positive control of sensitive classified components.

Secretary of Defense Task Force on DoD Nuclear Weapons Management (September 2008).

The findings of this task force included:

- The Air Force had failed to establish adequate procedures and technical orders related to nuclear operations and support, and
- Air Force streamlining efforts along with personnel reductions and allocation decision had led to significant degradation in the nuclear mission.

The Task Force called for:

- An overhaul and standardization in the Air Force's nuclear inspection process,
- Steps to ensure that the staff assistance program is adequately resourced, realistic, and staffed,
- A focus on developing and managing nuclear-experienced personnel, particularly in maintenance and security, and
- Organizational changes within the Air Force to restore attention and readiness for the nuclear mission.

These independent and Air Force-generated reviews/reports echoed common themes and systemic issues:

- Decline over the decade in attention to the nuclear mission at multiple levels, to include the most senior leaders,
- Waning nuclear experience, leading to lack of expertise in nuclear leadership positions,
- Issues with Air Force procedures and technical orders,
- Lack of standardization across the inspection process, and
- Failures to attract, nurture, and track those in nuclear-related career fields.

Some of these issues were addressed quickly by the newly appointed Secretary of the Air Force and Chief of Staff. Actions to address the others have been underway for the succeeding two years. However, the pace of progress in some areas is slower than should be expected given the stated priority of the mission.

Appendix D: Acronyms

2M0 – Missile and Space Maintenance Technician

2W2 – Nuclear Weapons Maintenance Technician

A1 – Deputy Chief of Staff for Manpower and Personnel

A2 – Deputy Chief of Staff for Intelligence

A3/5 – Deputy Chief of Staff for Operations and Plans

A4/7 – Deputy Chief of Staff for Logistics and Installations and Mission Support

A6 – Deputy Chief of Staff for Communications

A8 – Deputy Chief of Staff for Strategic Plans and Programs

A9 – Deputy Chief of Staff for Analyses, Assessments, and Lessons Learned

A10 – Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration

AFGSC – Air Force Global Strike Command

AFIA – Air Force Inspection Agency

AFMC – Air Force Materiel Command

AFNWC – Air Force Nuclear Weapons Center

ALC – Air Logistics Center

ALCM – Air Launched Cruise Missile

BRAC – Base Realignment and Closure

CMA – Competent Medical Authority

DCA – Dual-Capable Aircraft

DLA – Defense Logistics Agency

DNSI – Defense Nuclear Surety Inspection

DoD – Department of Defense

DSB PTF – Defense Science Board Permanent Task Force on Nuclear Weapons Surety

DTRA – Defense Threat Reduction Agency

HAF – Headquarters Air Force

Hq. – Headquarters

HYT – High Year Tenure

ICBM – Intercontinental Ballistic Missile

ICBMSD – ICBM Systems Division

KUMMSC - Kirtland Underground Munitions Maintenance and Storage Complex

LCAP – Logistics Compliance Assessment Program (USAFE) Inspection

LCAT – Logistics Compliance Assessment Team (AFMC) Inspection

Mk12 – Minuteman III Re-Entry Vehicle with the W-78 Warhead

Mk21 – Minuteman III Re-Entry Vehicle with the W-87 Warhead

MMXG – Munitions Maintenance Group

MSE – Maintenance Standardization Evaluation

MSgt – Master Sergeant – E7

MUNS – Munitions Squadron (CONUS)

MUNSS – Munitions Support Squadron (Europe)

MX – Maintenance

NCO – Non-Commissioned Officer

NORI – Nuclear Operational Readiness Inspection

NSAV – Nuclear Staff Assistance Visit

NSI – Nuclear Surety Inspection

NSS – Nuclear Support Squadron

NSSAV – Nuclear Surety Staff Assistance Visit

NSUS – Nuclear Sustainment Squadron

NSW – Nuclear Support Wing

NWC – Nuclear Weapons Center

NWRM – Nuclear Weapons-Related Materiel or Nuclear Weapon Related Materiel

PDI – Potentially Disqualifying Information

PRP – Personnel Reliability Program

RSTS – Re-Entry System Test Set

RV – Re-Entry Vehicle

SAV – Staff Assistance Visit

SCMG – Supply Chain Management Group

SecDef – Secretary of Defense

SMSgt – Senior Master Sergeant – E8

SPO – Systems Program Office

STRIKEVAL – NATO Strike Evaluation

SWD – Special Weapons Directorate

USAF – United States Air Force

USAFE – United States Air Forces in Europe

USD (AT&L) – Undersecretary of Defense for Acquisition, Technology & Logistics

WSV – Weapons Storage Vaults