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AIR FORCE NUCLEAR SECURITY

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

FEBRUARY 12, 2008

Printed for the use of the Committee on Armed Services

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AIR FORCE NUCLEAR SECURITY

TUESDAY, FEBRUARY 12, 2008

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The committee met, pursuant to notice, at 9:33 a.m. in room SR–325, Russell Senate Office Building, Senator Carl Levin (chairman) presiding.

Committee members present: Senators Levin, Bill Nelson, Warner, Inhofe, Thune, and Wicker.

Committee staff members present: Richard D. DeBobes, staff director; Leah C. Brewer, nominations and hearings clerk; John H. Quirk V, security clerk.

Majority staff member present: Madelyn R. Creedon, counsel.

Minority staff members present: Michael V. Kostiw, Republican staff director; William M. Caniano, professional staff member; David G. Collins, research assistant; Gregory T. Kiley, professional staff member; David M. Morriss, minority counsel; Christopher J. Paul, professional staff member; Lynn F. Rusten, professional staff member; Robert M. Soofer, professional staff member; and Kristine L. Svinicki, professional staff member.

Staff assistants present: Fletcher L. Cork, Kevin A. Cronin, and Jessica L. Kingston.

Committee members' assistants present: Jay Maroney, assistant to Senator Kennedy; Frederick M. Downey, assistant to Senator Lieberman; Christopher Caple, assistant to Senator Bill Nelson; Gordon I. Peterson, assistant to Senator Webb; Sandra Luff, assistant to Senator Warner; Anthony J. Lazarski, assistant to Senator Inhofe; Todd Stiefler, assistant to Senator Sessions; Mark J. Winter, assistant to Senator Collins; and Erskine W. Wells III, assistant to Senator Wicker.

OPENING STATEMENT OF SENATOR CARL LEVIN, CHAIRMAN

Chairman LEVIN. Good morning, everybody. This morning we welcome Lieutenant General Daniel Darnell, Major General Polly Peyer, and Major General Douglas Raaberg from the Air Force, and retired Air Force General Larry Welch, Chairman of the Defense Science Board Task Force on Nuclear Weapons. Lieutenant General Darnell, who is the Deputy Chief of Staff, Plans and Operations, and General Raaberg, the Director of Plans and Operations at Air Combat Command, conducted the initial investigation into what happened at Minot Air Force and Barksdale Air Force Bases last Labor Day weekend and why it happened.

Lieutenant General Peyer, Director of Resource Integration for the Deputy Chief of Staff, Logistics, Installations, and Mission Support, followed up with an investigation of the entire Air Force nuclear enterprise to see if the problems at Barksdale and Minot were part of a broader systemic Air Force problem. General Welch, at the request of Secretary Gates, reviewed the nuclear enterprise of the whole Department of Defense (DOD) to see if the problem was bigger than the Air Force, and unfortunately it is.

The issue this morning is very, very serious. Over a 2-day period last August, the Air Force lost control and knowledge of six nuclear warheads during what had become a routine effort to realign nuclear cruise missiles without warheads between Minot Air Force Base in North Dakota and Barksdale Air Force Base in Louisiana. Through an extraordinary series of consecutive failures of process, procedure, training, and discipline, the nuclear warheads flew on the wings of a B–52 bomber from Minot to Barksdale inside of cruise missiles. No one knew where they were or even missed them for over 36 hours. The warheads were not discovered until the missiles on which the warheads were loaded were being prepared to be moved to the weapons storage area after having been unloaded from the B–52 at Barksdale after a flight of over 1,400 miles.

While historically there have been nuclear weapons accidents with varying degrees of severity, no breach of nuclear procedures of this magnitude had ever occurred previously. Luckily, these weapons weren't stolen or permanently lost, or accidentally dropped from the wings of the B–52 bomber on which they flew, or jettisoned because of bad weather or mechanical problems, with the pilots not even aware that they were jettisoning nuclear weapons containing deadly plutonium.

Each one of the warheads has the explosive power roughly equivalent to seven times the explosive power of the Nagasaki nuclear bomb and ten times the Hiroshima nuclear bomb. If jettisoned and they didn't explode, incredibly dangerous nuclear material could have been spread for miles. That's why the safety precautions are so strict, with multiple redundancies.

The three investigations that have been conducted as a result of this incident have found that the underlying root cause is the steadily eroding attention to nuclear discipline in the Air Force and, indeed, the whole DOD. This inattention started at the end of the Cold War and has grown substantially worse over the last decade. From the results of General Raaberg's initial investigation, the Commander's Directed Investigation (CDI), it is clear that an erosion of adherence to rigid Air Force nuclear procedures and the "intricate system of nuclear checks and balances were either ignored or disregarded."

The problems existed at both Minot and Barksdale and reflect "a breakdown in training, discipline, supervision, and leadership."

General Peyer's blue ribbon review finds that the problems in the Air Force spread beyond Minot and Barksdale and begin with senior leadership and a lack of commitment to the nuclear mission and extend to shortcomings in training, inspections, and funding.

General Welch, your report finds that the scope of inattention goes even further and is, with a few exceptions, pervasive within the DOD.

There are 132 recommendations from these three reports. Some have been implemented. Most have not. This entire episode really is a wakeup call. As long as the United States has nuclear weapons, they must be handled with the utmost security and attention. Many of the details of this incident, the investigation, and corrective measures remain classified.

Given the situation on the Senate floor this morning, with I believe nine rollcall votes on amendments to the Foreign Intelligence Surveillance Act legislation beginning at approximately 10 o'clock, we're going to have, after the statements of our witnesses, one brief round of questions and then we will reconvene in S–407 of the Capitol for a closed session, and that is a change in location. We're going to meet in classified session in S–407.

So, Senator Inhofe, I believe you have an opening statement.

STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. I do, Mr. Chairman. Without objection, I'll read Senator Warner's statement. I'm told he asked if I would do that.

First of all, thank you for calling this hearing, and I join with you in expressing my deep concern over what may have been one of the most serious nuclear weapons handling and stewardship incidents in the last 60 years. Since the committee first found out about the incident, it has closely monitored in a bipartisan manner the ongoing efforts of the Air Force and the DOD to ensure accountability and to ensure this sort of event does not happen again.

I join our chairman in welcoming our witnesses and thank them for their efforts. I would like to especially thank General Welch again for answering the call and thank them for their efforts. I would like to especially thank General Welch again for answering the call of our Nation to serve, proving again that generals never really die; they just keep working.

Also, I want to welcome General Raaberg, who is a regular fixture there at the Vance Air Force Base. When I used to fly in my plane in there, he was kind enough to let me land there. So we finally had to write a new chapter in the book to make something work. Thank you.

I was impressed with the rapidity with which the Air Force began its investigation and coordinating information to Capitol Hill. The CDI was a logical first step. The Air Force-wide blue ribbon review and defense-wide Defense Science Board report on nuclear surety were also well-conceived efforts to get at the root problems and causes.

While the CDI concludes this to have been an isolated incident and the result of the actions of just a few airmen, there are other conclusions that speak to long-term degradation of discipline and adherence to established procedures. The lack of attention to details spanned two separate military installations. These conclusions seem at odds with each other. The witnesses should be expected to reconcile the differences.

One of the major tenets of our military is accountability. Our military leaders must be accountable to civilian authority and military subordinates accountable to our military leaders. Without a strong reliance on the chain of command, we are weakened as a Nation. I bring this up in light of where accountability has been

assigned in this incident. The witnesses will be asked if they are satisfied that we have properly placed accountability where it should reside.

One of the principal conclusions of the blue ribbon review is that the Air Force is spread thin because it has been at war for over 17 years. While I share the concern for the stress that our airmen have been under the past 2 decades, I would ask how that stress was allowed to manifest itself in the procedures used to handle our nuclear weapons and what safeguards were sacrificed that allowed that to happen.

How did we allow our adherence to nuclear codes of conduct to erode to this point? During the Cold War our forces handled over 9,000 deployed nuclear warheads. Under our Moscow Treaty obligations, we will reduce to no more than 2,200 warheads by 2012. But even if we had just one nuclear weapon, the point, as General Welch's report states, is that the complexity of the nuclear enterprise is not reduced. As long as we have these weapons, their military and political nature demands the most intense attention to their proper care. We must sharpen our focus on the extra care required in this nuclear mission.

Of greatest concern to me is how we ensure the events of August 2007 don't happen again. We need to focus more attention on how our inspection processes and procedures failed to alert us to the decline in discipline that led to the incident. Additionally, we need to reinforce our inspections and readiness reviews to understand and heed the signals of decline and reverse the downturn and before such incident happens again.

I look forward to your testimony and appreciate having this hearing, Mr. Chairman.

[The prepared statement of Senator Warner follows:]

PREPARED STATEMENT BY SENATOR JOHN WARNER

Chairman Levin, thank you for calling this hearing to receive testimony on the very grave and serious incident of the unauthorized movement of nuclear weapons from Minot Air Force Base, ND, to Barksdale Air Force Base, LA, in August 2007.

I join with you in expressing my deep concern over what may have been one of the most serious nuclear weapons handling and stewardship incidents in last 60 years. Since the committee first found out about the incident, it has closely monitored, in a bipartisan manner, the ongoing efforts of the Air Force and the Department of Defense to assure accountability and ensure this sort of event does not happen again.

I join our chairman in welcoming our witnesses, and thank them for their efforts. I would like to especially thank General Welch for once again answering the call of our Nation to serve, proving again that generals never really do retire.

I was impressed with the rapidity with which the Air Force began its investigation, and coordinating information to Capitol Hill. The Command Directed Investigation was a logical first step. The Air Force-wide Blue Ribbon Review and the Defense-wide Defense Science Board Report on Nuclear Surety were also well conceived efforts to get to the root problems and causes.

While the Command Directed Investigation concludes this to have been an isolated incident and the result of the actions of just a few airman, there are other conclusions that speak to long-term degradation of discipline and adherence to established procedures. The lack of attention to detail spanned two separate military installations. These conclusions seem at odds with each other. The witnesses should be expected to reconcile the differences.

One of the major tenets of our military is accountability. Our military leaders must be accountable to civilian authority, and military subordinates accountable to our military leaders. Without a strong reliance on the chain-of-command, we are weakened as a nation. I bring this up in light of where accountability has been as-

signed in this incident. The witnesses will be asked if they are satisfied that we have properly placed accountability where it should reside.

One of the principle conclusions of the Blue Ribbon Review is that the Air Force is spread thin, because it has been at war for over 17 years. While I share the concern for the stress our airmen have been under the past two decades, I would ask how that stress was allowed to manifest itself in the procedures used to handle our nuclear weapons, and what safeguards were sacrificed that allowed that to happen.

How did we allow our adherence to nuclear codes of conduct to erode to this point? During the Cold War, our forces handled over 9,000 deployed nuclear warheads. Under our Moscow Treaty obligations, we will reduce to no more than 2,200 warheads by 2012. But, even if we had just one nuclear weapon, the point—as General Welch's report states—is that the complexity of the nuclear enterprise is not reduced. As long as we have these weapons, their military and political nature demands the most intense attention to their proper care. We must sharpen our focus on the exquisite care required for this nuclear mission.

Of greatest concern to me is how we ensure the events of August 2007 do not happen again. We need to focus more attention on how our inspection processes and procedures failed to alert us to the decline in discipline that led to this incident. Additionally, we need to reinforce our inspections and readiness reviews to understand and heed the signals of decline, and reverse the downturn, before such incidents happen.

I look forward to your testimony, and the question and answer period. Our Nation deserves to be able to sleep at night knowing our nuclear arsenal is secure, in good hands, and will remain so. Our efforts here today and in the future must work towards that aim.

Chairman LEVIN. Thank you, Senator Inhofe.

I understand now that General Darnell is going to make an opening statement on behalf of our three Air Force witnesses; is that the intent?

STATEMENT OF LT. GEN. DANIEL J. DARNELL, USAF, DEPUTY CHIEF OF STAFF, AIR, SPACE, AND INFORMATION, OPERATIONS, PLANS AND REQUIREMENTS; ACCOMPANIED BY MAJ. GEN. DOUGLAS L. RAABERG, USAF, DIRECTOR FOR AIR AND SPACE OPERATIONS, AIR COMBAT COMMAND; AND MAJ. GEN. POLLY A. PEYER, USAF, DIRECTOR OF RESOURCE INTEGRATION, OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS, INSTALLATION AND MISSION SUPPORT

General DARNELL. Yes, sir.

Chairman LEVIN. Then, General Welch, the former Chief of Staff of the Air Force, will make a statement about the Defense Science Board (DSB) study.

So we'll start with you, General Darnell. Thank you all for being here and for your work on this matter.

General DARNELL. Thank you, Mr. Chairman. Chairman Levin, Senator Inhofe, and distinguished members of the committee: Thank you for the opportunity to provide you the Air Force way ahead for our nuclear enterprise. Let me request that our written statement be entered for the record.

Chairman LEVIN. It will be.

General DARNELL. Thank you, sir.

Throughout the history of the United States Air Force, our professionalism and dedication have guaranteed the soundness and surety of Air Force crews and weapons. From our Service's beginning, we have earned the trust of our national leadership and, most importantly, the trust of the American public. Unfortunately, in late August 2007 the Air Force flew weapons from Minot Air Force Base, North Dakota, to Barksdale Air Force Base in an unauthorized manner.

It's important to note that during the incident there was never any unsafe condition and the incident was promptly reported to our national leadership, including the Secretary of Defense and the President. These weapons were secure and always in the hands of America's airmen. However, as airmen we are accountable and we will assure the American people that the Air Force standards they expect are being met.

The commander of Air Combat Command immediately initiated a CDI. Without delay, the Secretary of the Air Force and the Chief of Staff of the Air Force engaged and initiated a series of specific actions: One, an immediate, successful 100 percent stockpile verification of U.S. nuclear weapons in the Air Force custody; two, a standdown of U.S. Air Force nuclear units for extra training and to emphasize attention to detail; three, Chief of Staff of the Air Force messages to all major commands and each individual airman on standards, discipline, and attention to detail, highlighting mission focus and checklist discipline; four, 100 percent limited nuclear surety inspections of all nuclear-capable units, with Defense Threat Reduction Agency oversight; five, Secretary of the Air Force visits to Barksdale Air Force Base, LA, and Minot Air Force Base, ND; and lastly, a blue ribbon review of policies and procedures focused on the entire Air Force nuclear enterprise. This review took into account operations, maintenance, storage, handling, transportation, and security.

The Air Force is working in partnership with other Federal agencies both inside and outside the DOD to conduct this analysis.

Additionally, the Secretary of Defense requested General Larry Welch to lead a DSB review of DOD-wide nuclear surety.

The root causes identified for the specific incident were unit level leadership and discipline breakdown among a small group of airmen at Barksdale Air Force Base and Minot Air Force Base. As a result of this incident, seven leaders within the Air Force have been removed from their positions, including one wing commander and two group commanders. Additionally, 90 people were temporarily decertified from duties associated with the nuclear mission.

Many of the actions following the incident are still ongoing. The blue ribbon review finds that the Air Force's policies, processes, and procedures are sound and that the Air Force commitment to the nuclear enterprise is strong. However, there are opportunities for improvement in the Air Force's nuclear enterprise.

The Air Force Nuclear General Officer Steering Group has assessed, validated, and assigned responsibility for implementing the recommendations from the commander-directed investigation, the blue ribbon review, and the DSB. As of the time of this hearing, nearly one-quarter of the recommendations are complete. These recommendations transcend all levels of the Air Force. Common throughout the CDI, the blue ribbon review, and the DSB are recommendations that focus the nuclear enterprise on the level of experience, knowledge, frequency of training, exercises, organizations, standardization, evaluation, and inspections.

The Air Force is committed to continuously improving its ability to fulfill the Nation's nuclear mission, grounded on our core values of integrity, service, and excellence, because it is a credible nuclear deterrent that convinces potential adversaries of our unwavering

commitment to defend our Nation. The Air Force portion of the Nation's nuclear deterrent is sound. We will take every measure necessary to continue to provide safe, secure, reliable nuclear surety to the American public.

Thank you again for the opportunity to appear before you today.

[The joint prepared statement of General Darnell, General Peyer, and General Raaberg follows:]

JOINT PREPARED STATEMENT BY LT. GEN. DANIEL J. DARNELL, USAF; MAJ. GEN. POLLY A. PEYER, USAF; AND MAJ. GEN. DOUGLAS L. RAABERG, USAF

I. INTRODUCTION

Chairman Levin and distinguished members of the committee, thank you for the opportunity to provide you the Air Force way ahead for our nuclear enterprise. Since the weapons-transfer incident of 30 August 2007, we have initiated multiple levels of review to ensure we have not only investigated the root causes of the incident, but more importantly taken this opportunity to review Air Force policies and procedures in order to improve the Air Force's nuclear capabilities. The Commander of Air Combat Command commissioned the Commander Directed Investigation (CDI), a tactical level investigation that focuses on the facts of the incident and determines accountability. The Chief of Staff of the Air Force (CSAF) commissioned the Blue Ribbon Review (BRR), an operational-level review that focuses on the entire Air Force enterprise including both the aircraft and Intercontinental Ballistic Missile (ICBM) and reviews policies, procedures. The Secretary of Defense commissioned the Defense Science Board (DSB) review, a strategic-level independent review that focuses on the Department of Defense (DOD) enterprise and joint organizations. The Air Force takes its nuclear obligations seriously, and will continue to take any measure necessary to deliver this strategic capability safely. Consequently, we have identified the actions required to both enhance our strengths and correct those areas needing improvement.

History of Incident

The United States Air Force has underwritten the national strategy for over 60 years by providing a credible deterrent force, and we continue to serve as the ultimate backstop, dissuading opponents and reassuring allies by maintaining an always-ready nuclear arm. Throughout our history, our professionalism and dedication has guaranteed the soundness and surety of Air Force crews and weapons on nuclear alert. From its beginning our Service has earned the trust of our national leadership and most importantly, the trust of the American public.

Unfortunately, in late August 2007, the Air Force flew nuclear weapons from Minot Air Force Base (AFB), ND, to Barksdale AFB, LA, in an unauthorized manner. Immediately, the Commander of Air Combat Command initiated an investigation into the incident. Soon after that investigation began, the Air Force began to analyze its policies, programs, procedures, and processes involving nuclear assets. Furthermore, the Air Force is working in partnership with other Federal agencies both inside and outside the DOD to conduct this analysis.

Without delay, the Secretary of the Air Force (SECAF) and the CSAF engaged and initiated a series of eight specific actions:

(1) An immediate, successful 100 percent stockpile verification of U.S nuclear weapons in the Air Force custody.

(2) A stand-down of U.S. Air Force nuclear units for extra training and to emphasize attention to detail.

(3) A CDI, a tactical-level incident-related investigation, to identify the root causes that led to the weapons-transfer incident, which had already begun.

(4) CSAF messages to all Air Force major commands and each individual airman on standards, discipline, and attention to detail, highlighting mission focus and checklist discipline.

(5) 100 percent Limited Nuclear Surety Inspections of all nuclear-capable units, with Defense Threat Reduction Agency (DTRA) oversight. This was in addition to previously scheduled NSIs.

(6) A SECAF letter to all airmen highlighting discipline and responsibility.

(7) SECAF visits to Barskdale AFB, LA, and Minot AFB, ND.

(8) A CSAF-chartered BRR of policies and procedures focused on the entire Air Force nuclear enterprise.

At the conclusion of the CDI, the SECAF and the Assistant Deputy Chief of Staff for Operations, Plans, and Requirements, then-Major General Richard Newton, held a press conference to outline the incident and summarize the findings of the initial investigation. Also during that press conference, General Newton discussed accountability measures that were taken as a result of the unauthorized weapons transfer. Seven leaders within the Air Force have been removed from their position, including one wing commander and two group commanders. Additionally, 90 people were temporarily decertified from duties associated with the nuclear mission.

Many of the actions following the incident are ongoing. The BRR represents a comprehensive, operational-level review of policies and procedures of the Air Force's strategic nuclear enterprise including aircraft, missiles, and sustainment missions. This BRR is an opportunity for the Air Force to improve its commitment to a sound nuclear enterprise. The nuclear surety inspections are complete with the exception of the 5th Bomb Wing at Minot AFB, which must be recertified for its nuclear mission. Additionally, the Secretary of Defense requested General (retired) Larry Welch to lead a DSB review of DOD-wide nuclear weapons surety.

II. ROOT CAUSES

We want to assure you that during the incident there was never an unsafe condition, and the incident was promptly reported to our national leadership, including the Secretary of Defense and the President. These weapons were secure and always in the hands of America's airmen. However, as Airmen, we are accountable and we will assure the American people that the Air Force standards they expect are being met. In addition, the wings at Barksdale AFB and Minot AFB are units with a proud heritage. It is important that we act to restore the confidence in these units and move ahead. Rest assured, we will.

The root causes identified for the specific incident were unit-level leadership and discipline breakdown at Barksdale AFB and Minot AFB. These breakdowns were due to leadership failures and a declining focus on the strategic nuclear bomber mission. Over time, the breakdown of leadership and discipline among a small group of Airmen at Barksdale AFB and Minot AFB fostered an environment which eroded the strict adherence to established procedures.

Specifically, one of the two pylons for this flight was not properly prepared because an informal scheduling process subverted the formal scheduling process. This was the result of a lack of attention to detail and lack of adherence to well-established Air Force guidelines, technical orders, and procedures.

In addition to discipline breakdowns at the unit level, a declining focus on the strategic nuclear bomber mission was cited as a root cause in the CDI. Since the end of the Cold War, aircraft units have taken on conventional commitments in the midst of an ever-increasing operational tempo and a continuously-shrinking force. Thus, the role of the strategic nuclear mission, especially in dual-tasked aircraft units, competed for time, attention, and focus. The turning point of this diminished focus began when aircraft came off nuclear alert status. At the same time, the Air Force began 17 years of continuous combat including conventional airpower commitments across the spectrum of regular and irregular war in numerous theaters of operation. Training in nuclear procedures became less frequent without the daily activity required by nuclear alert conditions coupled with the expanded commitments of dual-tasked units. As a result, nuclear-related experience-levels have declined within bomber and dual-capable units.

III. WAY AHEAD

The BRR is a comprehensive, thorough, operational-level review of Air Force policies and procedures of the Air Force's nuclear enterprise. Senior leadership in the Air Force sees the BRR as an opportunity to improve a sound nuclear enterprise. As such, the BRR examines the organizational structure, command authorities, personnel, and assignment policies, and the education and training associated with nuclear weapons. This analysis takes into account operations, maintenance, storage, handling, transportation, and security. The BRR finds that the Air Force policies, processes, and procedures are sound and that the Air Force commitment to the nuclear enterprise is strong. However, there are opportunities for improvement in the Air Force's overall support to the nuclear enterprise. Specifically, the BRR draws five general conclusions and offers recommendations to better organize, train, and equip the Air Force nuclear enterprise.

The BRR's five general conclusions are:

(1) Nuclear surety in the Air Force is sound and the nuclear weapons inventory in the Air Force is safe, secure, and reliable.

(2) Air Force focus on the nuclear mission has diminished since 1991, while the conventional commitment has expanded, the operations tempo has increased, and the number of airmen has declined. Operations Northern Watch, Southern Watch, Allied Force, Enduring Freedom, and Iraqi Freedom are but the most notable examples of the operations we have undertaken since 1991.

(3) The nuclear enterprise in the Air Force works despite being fragmented into a number of commands. For example, nuclear surety in the Air Force is sound among both the ICBM force under Air Force Space Command and the nuclear-strike aircraft under Air Combat Command.

(4) The declining amount of Air Force nuclear experience led to waning expertise. During the decline in nuclear experience, conventional experience grew exponentially. Today, with almost half the airmen it had during the Cold War, the Air Force fulfills a far greater number of conventional commitments, world-wide, than it did just 17 years ago.

(5) The Air Force nuclear surety inspection programs need standardization.

The BRR's recommendations range in scope and scale and can be categorized into those that can quickly be accomplished, those that are moderately complex and require more time, and those that require substantial resources and time. For example, strengthening the relationship with DTRA can be accomplished with relative ease; developing a comprehensive list of all critical nuclear-related personnel positions in other agencies will require some time; and resourcing a long-range replacement and recapitalization program for aging nuclear weapon systems and nuclear support equipment will require substantial resources and time.

The Air Force Nuclear General Officer Steering Group (AFNGOSG), an entity with 20 general officers from all disciplines across the Air Force nuclear enterprise and originally established in 1997, has assessed, validated, and assigned responsibility for implementing the recommendations from the CDI, the BRR, and the DSB. One of those recommendations already completed is for the chair of the AFNGOSG to be upgraded to a three-star general, specifically, the Deputy Chief of Staff for Operations, Plans, and Requirements. Given the collective nuclear experience on the AFNGOSG, we will depend on this group to track and ensure broadest implementation of the outstanding recommendations. As of the time of this hearing, nearly one-quarter of those recommendations are complete.

These recommendations extend to all levels of the Air Force. For example, one of the recommendations is to restructure the Air Staff to increase the visibility and focus of the nuclear enterprise, and the AFNGOSG is currently evaluating a number of alternatives to achieve this goal. Other recommendations include reviewing how the Air Force presents forces to combatant commanders, and the commonality of nuclear forces among the different Numbered Air Forces. Common throughout the CDI, the BRR, and the DSB are recommendations that focus on the level of experience, knowledge, frequency of training, exercises, inspections, standardization and evaluation, within our nuclear enterprise.

IV. CLOSING

The Air Force is committed to continuously improving its ability to fulfill the Nation's nuclear mission, grounded on our core values of integrity, service, and excellence because it is a credible nuclear deterrent that convinces potential adversaries of our unwavering commitment to defend our Nation. The Air Force portion of the Nation's nuclear deterrent is sound, and we will take every measure necessary to continue to provide safe, secure, reliable, nuclear surety to the American public.

Headquarters U.S. Air Force

Integrity - Service - Excellence

Unauthorized Transfer of Nuclear Warheads

Maj Gen Doug Raaberg
Investigating Officer

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Scheduling to Dispatch
3 Key Process Breakdowns

- No key documents used for scheduling or production meetings
- Munitions Squadron's formal printed schedule was not used
  - Informal 'working slides' were the de-facto schedule
- Supervision made changes without coordination

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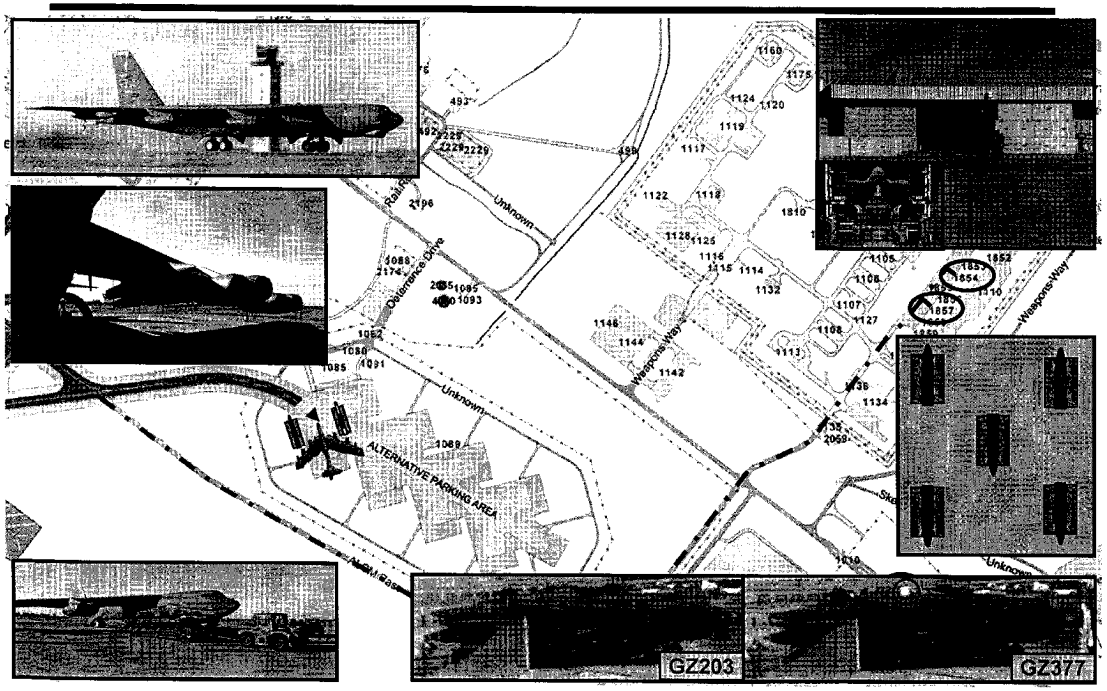
Door Opening to Wheels Up

5 Key Procedural Breakdowns



Recommendations

- DoD conduct top-level review of nuclear standards, guidance
- US Air Force establish Blue-Ribbon panel to review nuclear training
- Air Combat Command's Commander will recertify the tactical-ferry program prior to reinitiating B-52 ferry operations
- Adopt single, standard placard delineating nuclear from nuclear-inert, test, training payloads
- Standardize common nuclear custodial procedures
- Reinforce commanders' accountability of their nuclear ordnance

Headquarters U.S. Air Force

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Backup Slides

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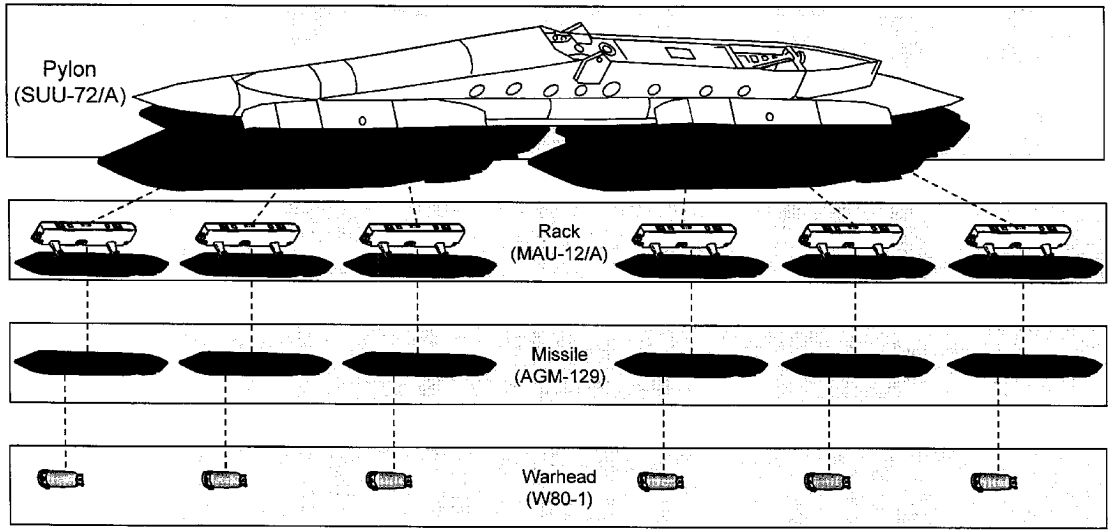
Pylons are Packaged for War…



Warheads are removed before tactical-ferry…

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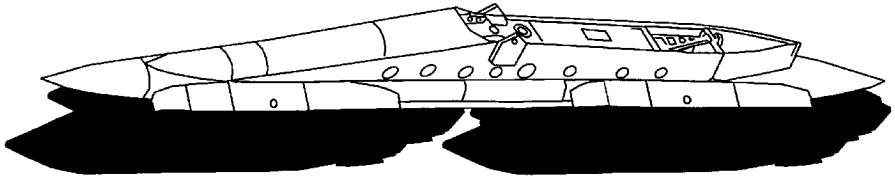
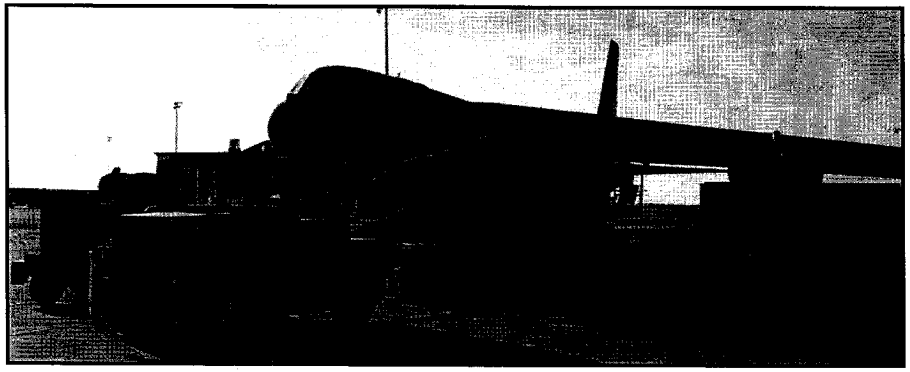
Pylons are Packaged for War…



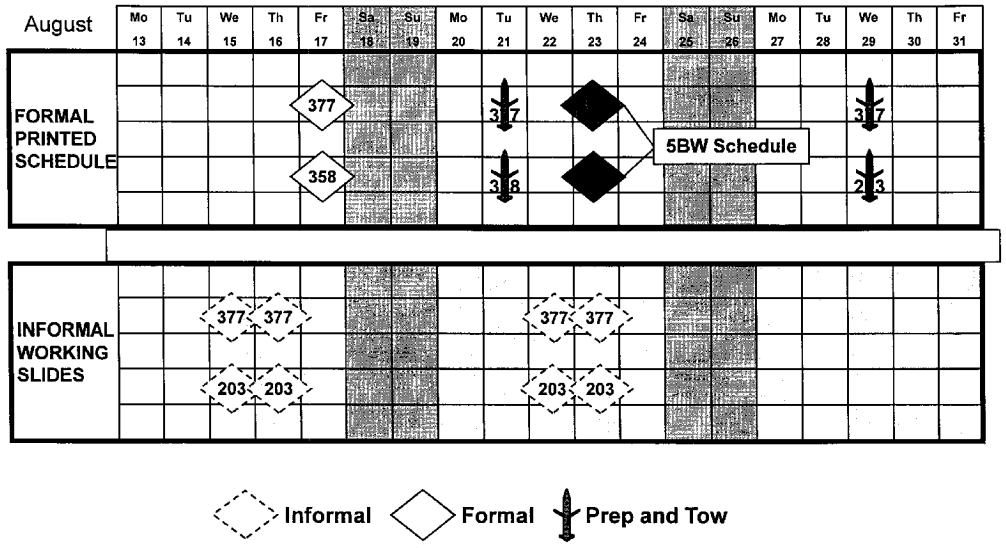


…with a 2 year "shelf life"

UNCLASSIFIED

Scheduling to Dispatch

3 Key Process Breakdowns



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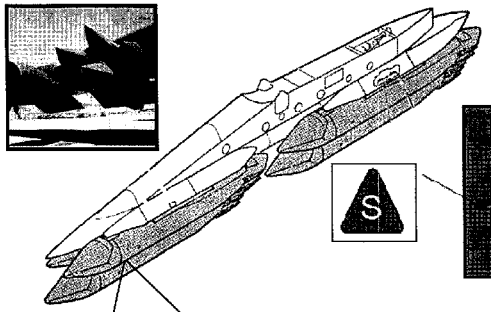
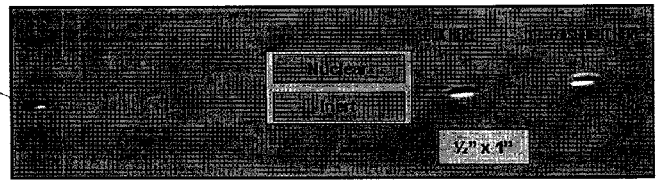
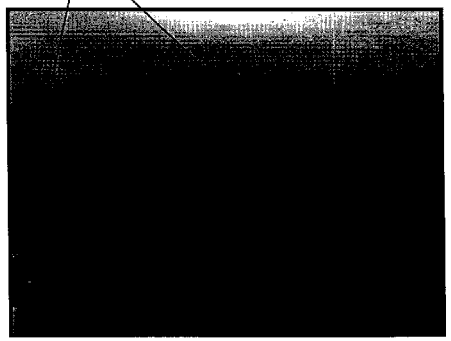
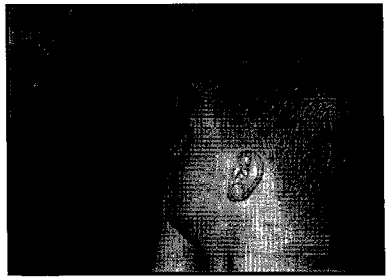
Exterior Inspection









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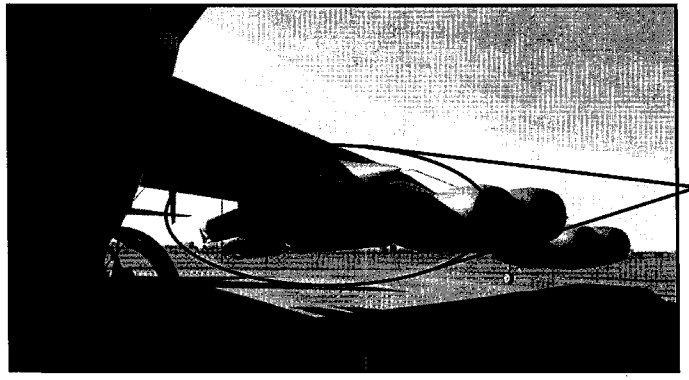
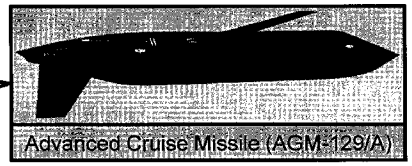
Points of Reference

- Common terminology is important
- Mixed storage is permitted
- Pylons are packaged for war





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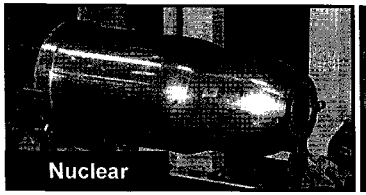
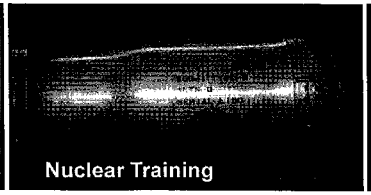
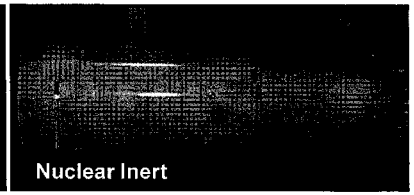
Common Terms are Important…

- Nuclear – W80-1 Warhead
- Nuclear Training – Ground: TYPE 3A,C,E Air: TYPE 3
- Nuclear Test – Joint Test Assembly (JTA)
- Nuclear Inert – Tactical Ferry







The payloads are mated in the missiles and stored pre-assembled…

1.0 Executive Summary

On 9 October 2007, the Chief of Staff of the Air Force (CSAF) appointed Major General Polly A. Peyer to chair an Air Force blue ribbon review (BRR) of nuclear weapons policies and procedures. On 19 October 2007, the Secretary of the Air Force (SECAF) announced the formation of the BRR in a press conference. The CSAF tasked the review to take an enterprise-wide look at United States Air Force (USAF) nuclear responsibilities. Specifically, the CSAF highlighted a need to examine organizational structure; command authorities and responsibilities; personnel and assignment policies; and education and training associated with the operation, maintenance, storage, handling, transportation, and security of USAF nuclear weapons systems.

The chair formed a cross-command, cross-functional team of 30 Airmen with a mix of ranks, skills, and experiences from five commands, Headquarters Air Force (HAF), the Air Force Safety Center, and the United States Navy (USN). The BRR team defined the nuclear enterprise as the spectrum of nuclear weapons management responsibilities, aircraft and intercontinental ballistic missiles (ICBM), within the USAF. The team visited 29 locations, met with 54 organizations, and interviewed 822 people. Additionally, the team researched more than 250 books, periodicals, reports, papers, publications, and documents. The results are organized in five areas:

- Leadership and Relationships
- Mission Focus and Culture, History, Safety, and Surety
- Training and Force Development
- Transportation, Accountability, Tracking, Scheduling, and Security
- Organization and Resources

As the United States (US) reduced its nuclear stockpile following the end of the Cold War, emphasis on nuclear weapons declined and the forces assigned to operate, maintain, and support the nuclear capability reduced accordingly, especially in flying units. The ongoing challenge to the USAF is how to achieve a focused, dedicated nuclear capability with a smaller, but equally professional work force.

This report contains 36 observations which lead to 5 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.
- USAF nuclear surety inspection programs need standardization.

This report outlines 36 specific recommendations which lead to 5 general recommendations:

- Communicate senior USAF commitment to the nuclear mission.
- Refocus and reinvigorate the USAF nuclear enterprise.
- Energize USAF commitment to better organize, train, and equip the nuclear enterprise.
- Develop a long-range Force Development strategy to support the USAF nuclear enterprise.
- Consolidate the USAF nuclear surety inspection program.

The observations and recommendations contained in Appendix H range in scope and scale from the ones which can be quickly accomplished to those which are more complex and require more time and potentially substantial resources to implement.

Previous reports and studies during the past 15 years identified many of these observations and recommendations but none have been as comprehensive as this report. A consistent observation permeating this BRR is the friction between the need for surety perfection and operating in an environment of tightly constrained resources. An opportunity to refocus the USAF's commitment to the nuclear enterprise exists in improving advocacy and realigning priorities. Taken in its entirety, this BRR advises the USAF to undertake this endeavor.

Recognizing there are always potential risks, the USAF has a sound nuclear surety program. That said, the BRR team observed areas needing enhancement. Some of the observations and recommendations may warrant further study or expanded resolution, but in this review the BRR team is confident that it has highlighted the relevant areas for improvement. The way ahead must reaffirm the USAF's long-standing commitment to the nuclear enterprise and prove an unequivocal dedication to supporting both deterrence and response. At the heart of this look to the future is a strategy to ensure the USAF nuclear arsenal remains safe, secure, and reliable.

Appendix H – Observation/Recommendation Matrix

Observation	Recommendation
Leadership and Relationships	
1. Leadership in the USAF's nuclear enterprise is professional and dedicated, but experience levels continue to decline.	Formalize a career development plan for officers, enlisted, and civilians to provide them with the depth and breadth of experience necessary for them to assume leadership positions in the nuclear enterprise. Provide focused, nuclear-related leadership training, such as the new Nuclear Weapons Center course, for Airmen prior to assuming command or supervisory roles in the USAF nuclear enterprise. Develop a reliable and easily accessible system to track nuclear experience across the USAF. *Observation 4 has the same recommendation.*
2. Nuclear-related aviator experience and expertise is diminishing within the bomber and dual-capable aircraft units.	Assess the frequency and impact of reduction in nuclear training due to demanding conventional requirements in dual-tasked aircraft units.
3. Intercontinental ballistic missile units find it difficult to attract and retain nuclear-experienced Airmen because of the perceived emphasis on and desirability of serving in space operations as opposed to intercontinental ballistic missile-related duties.	Develop a sufficient pool of officers with broad experience in intercontinental ballistic missile-related assignments to serve in key missile leadership positions, to include squadron, group, and wing commands. Expand career broadening opportunities (such as missile maintenance, systems engineering, program management, and policy-related assignments) both to retain officers in missiles and develop them for leadership roles in the intercontinental ballistic missile community.

Observation	Recommendation
4. The diminishing base of nuclear experience in some support specialties makes it difficult to select and prepare leaders for command and supervisory positions.	Formalize a career development plan for officers, enlisted, and civilians to provide them with the depth and breadth of experience necessary for them to assume leadership positions in the nuclear enterprise. Provide focused, nuclear-related leadership training, such as the new Nuclear Weapons Center course, for Airmen prior to assuming command or supervisory roles in the USAF nuclear enterprise. Develop a reliable and easily accessible system to track nuclear experience across the USAF. *Observation 1 has the same recommendation.*
5. USAF relationships with combatant commands for the presentation of forces are sound; however, United States Strategic Command noted some difficulty dealing with the USAF skip-echelon organizational construct.	Streamline the presentation of forces to a combatant commander as apportioned by the Joint Staff.
6. Disagreement over nuclear surety inspection standardization negatively affects the relationship between the USAF and the Defense Threat Reduction Agency.	Strengthen the relationship with the Defense Threat Reduction Agency by closing gaps in nuclear surety inspection methodology and standardization.
7. The USAF relationship with the OSD is strong, but there are concerns regarding USAF nuclear enterprise management.	Restructure Headquarters Air Force operations staff to form a directorate-level office which is singularly focused on nuclear matters. *Observation 8 has the same recommendation.* Evaluate OSD concerns in regard to resourcing and financial management to determine if further changes are warranted.

Observation	Recommendation
8. The USAF nuclear enterprise is large and diverse, so direct comparison with the United States Navy nuclear organization is difficult.	Restructure Headquarters Air Force operations staff to form a directorate-level office which is singularly focused on nuclear matters. *Observation 7 has the same recommendation.* Continue to develop the Nuclear Weapons Center as the USAF's Center of Excellence for acquiring and sustaining USAF nuclear weapons systems and associated handling and security equipment.
Mission Focus and Culture, History, Safety, and Surety	
9. Nuclear surety and security in the USAF are sound, but improvements can and should be made to enhance performance, particularly in light of evolving threats and the opportunities afforded by advanced technology.	Develop and field advanced technology to enhance nuclear surety and security.
10. Focus on the nuclear mission, especially in dual-capable bomber units, has diminished from the robust nuclear culture that existed during the Cold War.	Reinforce the primacy of the nuclear mission within the USAF by addressing organizational constructs, providing more robust training, and appropriately resourcing requirements. Communicate these actions to the force from the top down.
11. Existing forums for integrating USAF nuclear issues exist, but these disparate groups can and should be used more effectively to serve as an enterprise-wide integrating function.	Change the existing Air Force Nuclear General Officer Steering Group (AFNGOSG) charter to empower the group with appropriate authorities to implement Air Force-wide nuclear enterprise reforms. The AFNGOSG should be chaired by a lieutenant general.
12. Nuclear surety inspection criteria are being applied differently by each major command inspection team.	Consolidate responsibilities for conducting nuclear surety inspections (NSI) into a single USAF NSI team and conduct NSIs on a limited- or no-notice basis.
13. Bomber nuclear exercises are not meeting current requirements in frequency or scale.	Evaluate and enforce appropriate exercise guidance in regard to frequency and scale to ensure proficiency.

Observation	Recommendation
14. Doctrine is the cornerstone of military operations and training, but the current manual on USAF nuclear doctrine needs updating.	Publish revised Air Force Doctrine Document 2-1.5 (nuclear operations doctrine) and include the new version in strategic communication messages designed to reinforce the USAF's commitment to nuclear excellence.
15. Recent DoD and USAF guidance positively changed the USAF Personnel Reliability Program, but many commanders and administrators still consider the system to be needlessly cumbersome.	Conduct a USAF -wide Personnel Reliability Program (PRP) survey to identify potential areas for improvements to administrative and training processes while continuing to insist upon strict PRP compliance.
Training and Force Development	
16. Focus on nuclear training has shifted as a result of the increased combatant command requirements for conventional force capabilities.	Conduct a risk assessment of trade-offs between conventional and nuclear taskings and adjust priorities as appropriate.
17. Shortcomings exist in the training for munitions accountable systems officers, particularly on the Defense Integration and Management of Nuclear Data Services system.	Require the Nuclear Maintenance Officer's Course syllabus to place stronger emphasis on munitions accountable systems officer duties and responsibilities. Provide realistic, hands-on Defense Integration and Management of Nuclear Data Services system training to officer and enlisted students attending nuclear munitions courses.
18. Major commands and numbered air forces have created specific nuclear training programs that are external to the formal and institutionalized training curriculum oversight.	Review the various command-sponsored, nuclear-related courses and determine whether they should remain within each major command or be offered on an enterprise-wide basis.
19. The USAF needs to increase opportunities for presence and influence in key nuclear billets, especially in joint and interagency organizations, by filling these positions with highly-qualified individuals.	Develop a comprehensive list of all critical nuclear-related USAF billets, in the Air Force and other agencies, and ensure they are given the highest priority for assigning experienced Airmen.

Observation	Recommendation
20. The curricula of professional military education schools and courses devote at best only minimal time and attention to nuclear-related topics.	Increase the coverage of nuclear policy, technical, and operational issues at all levels of officer, enlisted, and civilian professional military education.
21. The USAF is not consistently leveraging educational opportunities to optimize follow-on assignments or presence in key nuclear billets.	Fill key billets in the nuclear enterprise with National Technologies Fellowship Program and/or Air Force Institute of Technology nuclear engineering program graduates.
Transportation, Accountability, Tracking, Scheduling, and Security	
22. The nuclear force requires clear and detailed direction in instructions and technical orders particularly in light of a less experienced workforce, especially in aircraft units.	Conduct a comprehensive review of all USAF guidance and instructions on nuclear-related operations, maintenance, security, and support to ensure clarity and reduce any potential ambiguity. Ensure strict compliance with published regulations and technical data.
23. Aging transportation and handling equipment is adding to the stress on units with a nuclear mission.	Develop and resource a long-range replacement recapitalization program for aging nuclear support equipment. *Observation 35 has the same recommendation.*
24. Accountability of nuclear weapons in the USAF is sound; however, additional experience and training for munitions accountable systems officers will enhance the current process.	Implement appropriate Air Force instructions to require 12-month experience and completion of the Nuclear Maintenance Officer's Course.
25. Custody and transfer processes of nuclear weapons between bases or commands are consistent; however, transfers of assets within a wing require auditable documentation.	Require signatures to document custody transfers as directed in the new revision of Air Force Instruction 21-204.
26. Advanced technology for accountability and tracking can enhance USAF custody of nuclear assets.	Evaluate and resource programs in use today, such as "MoveRight" and portal monitors, for potential implementation within the USAF.
27. Tracking location and status of assigned weapons and components is being accomplished using locally generated systems.	Develop and implement standard scheduling and tracking systems which improve the ability to track locations and status of assigned nuclear weapons and components.

Observation	Recommendation
28. Potential vulnerabilities in missile field convoy operations continue to be a key concern.	Develop and field a new payload transporter for missile field convoys.
29. Host nation security at overseas nuclear-capable units varies from country to country in terms of personnel, facilities, and equipment.	Investigate potential consolidation of resources to minimize variances and reduce vulnerabilities at overseas locations.
30. Changing and growing requirements have prompted USAF units to request nuclear security waivers.	Develop a long-range enterprise plan to reduce waivers through prioritized funding and resourcing.
31. To mitigate missile field security vulnerabilities, there is a critical need to fully fund a replacement helicopter and to fund the sustainment costs of the remote visual assessment.	Field a replacement helicopter as well as field and fully fund sustainment of the remote visual assessment.
Organization and Resources	
32. Current USAF nuclear organizational construct fragments nuclear weapons advocacy and policy.	Examine current organizational construct and process integration supporting the nuclear mission area and provide potential alternatives for improvement.
33. Manpower requirements in some nuclear-capable aircraft career fields and units may not be commensurate with total workload.	Review logistics composite models to determine if the challenges dual-tasked and prime nuclear airlift force units face in maintaining current mission qualifications and certifications (nuclear and conventional) are adequately reflected in each Air Force manpower standard. Review medical manpower requirements at bases with large Personnel Reliability Program populations to determine if adequate manpower requirements are documented and resourced.
34. Program budget decision execution may have caused resource allocation weaknesses in field support for the nuclear mission.	Assess nuclear mission career fields to ensure program budget decision reductions were appropriately targeted and left no seams in enterprise support.
35. Systems and equipment supporting the nuclear mission are aging and continue to impact reliability and availability.	Develop and resource a long-range replacement recapitalization program for aging nuclear support equipment. *Observation 23 has the same recommendation.*

Observation	Recommendation
36. Funding for second destination transportation to move nuclear weapons is inadequate.	Ensure nuclear weapon movement support systems receive sufficient funding to execute all required stockpile adjustments.

REDACTED 5/7/08

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Report No. H07L105141203 February 8, 2008

Inspector General

United States
Department of Defense

OVERSIGHT OF THE INVESTIGATION
DIRECTED BY THE COMMANDER, AIR COMBAT COMMAND
CONCERNING AN UNAUTHORIZED TRANSFER OF CLASSIFIED MATERIAL
FROM MINOT AIR FORCE BASE, NORTH DAKOTA
TO BARKSDALE AIR FORCE BASE, LOUISIANA
ON AUGUST 30, 2007

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H07L105141203

FEB - 8 2008

OVERSIGHT OF THE INVESTIGATION
DIRECTED BY THE COMMANDER, AIR COMBAT COMMAND
CONCERNING AN UNAUTHORIZED TRANSFER OF CLASSIFIED MATERIAL
FROM MINOT AIR FORCE BASE, NORTH DAKOTA
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ON AUGUST 30, 2007

I. INTRODUCTION AND SUMMARY

We initiated oversight of the investigation directed by the Commander, Air Combat Command (ACC), into an unauthorized transfer of classified material from Minot Air Force Base (AFB) to Barksdale AFB on August 30, 2007, in response to a request for independent review of the matter from the Chairman, Senate Armed Services Committee to the Secretary of Defense, dated September 5, 2007. At the same time, the Secretary of the Air Force asked this Office to oversight investigative and inspection activities initiated by the Air Force in response to the incident, and to follow-up on recommendations generated by those activities.[1] We focused our review on the following specific issues:

- Did the Air Force investigation thoroughly establish the facts regarding the incident?
- Did the investigation identify the root cause of the incident?
- Did the investigation reasonably assign accountability?

We found that the Air Force investigation thoroughly established the facts regarding the incident and identified the root cause. The report identified deviations from established safety, security, and transfer procedures that explained the circumstances and details of the unauthorized transfer.[2] We agreed that the evidence established an "erosion of adherence" to Air Force procedures. Regarding accountability, the Air Force investigation identified those individuals at the wing level and below whose actions contributed to this unauthorized transfer and whose dereliction may warrant disciplinary action. Based on our review of the Commander-Directed Investigation (CDI), as well as our interview of senior commanders -- to include the 8th Air Force Commander -- we found the Air Force assignment of accountability to be reasonable.

This report sets forth our findings and conclusions based on a preponderance of the evidence.

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[1] This report addresses the Commander-Directed Investigation only. Our oversight of the Air Force Limited Nuclear Surety Inspections is ongoing.

[2] At the start of a press conference announcing results of the investigation on October 19, 2007, the Secretary of the Air Force stated, "Normally it is our policy to neither confirm nor deny as to whether [there] were nuclear weapons involved. In this particular instance, I'm going to make an exception."

II. BACKGROUND

On March 14, 2007, an ACC Repositioning Order directed repositioning of cruise missiles between Barksdale AFB and Minot AFB. 2nd Bomb Wing at Barksdale AFB and 5th Bomb Wing at Minot AFB were action addressees on the Repositioning Order; 8th Air Force was an information addressee. The two bomb wings were given flexibility to schedule these tactical ferry missions every other week with alternating points of origin, and to schedule the tactical ferry missions around other requirements. Cruise missiles being ferried aboard B-52 aircraft were to have been properly prepared for flight, containing only inert payloads.

On August 30, 2007, during a tactical ferry mission, cruise missiles not properly prepared for flight and still containing classified material were transferred from Minot AFB to Barksdale AFB aboard a B-52 aircraft.

On August 31, 2007, General Ronald E. Keys, Commander, ACC, appointed Major General Douglas L. Raaberg, Director of Air and Space Operations, ACC, to conduct an investigation into the underlying facts and circumstances that led to the unauthorized weapons transfer during the tactical ferry mission. Major General Raaberg conducted over 70 witness interviews, including interviews of both the 2nd Bomb Wing Commander at Barksdale AFB and the 5th Bomb Wing Commander at Minot AFB. The 2nd Bomb Wing Commander, [redacted] took command at Barksdale AFB on July 26, 2007; the 5th Bomb Wing Commander, [redacted] took command at Minot AFB on June 5, 2007. The 2nd Bomb Wing and the 5th Bomb Wing, both subordinate commands of 8th Air Force, provide B-52 aircraft, aircrews and associated support personnel and resources to conduct global bomber operational taskings. Additionally, both wing commanders serve as installation commanders, with the 2nd Bomb Wing Commander providing support to 34 tenants, including Headquarters, 8th Air Force.

III. SCOPE

We established a team to provide independent oversight to the Air Force CDI. Our team traveled to Barksdale AFB on September 18, 2007, where we met with Major General Raaberg to review the scope and current progress of the Air Force investigation, and accompanied him to the Weapons Storage Area and the Integrated Maintenance Facility (preparation of missiles for tactical ferry missions takes place in the Integrated Maintenance Facilities at both Barksdale AFB and Minot AFB). From there, our team traveled to Minot AFB for additional on-scene review, and to review a draft of the CDI report.

General John D. W. Corley, who succeeded General Keys as Commander, ACC, approved the findings and conclusions of the Investigating Officer, and on October 19, 2007, senior Air Force officials announced the results of the CDI. On October 23, 2007, we obtained the Report of Investigation through the Air Force Inspector General.

b(6)
b(7)(C)

In December 2007, our team interviewed the officers who commanded the 2nd and 5th Bomb Wings at the time of the unauthorized transfer, and the Commander, 8th Air Force, to validate Air Force conclusions, to include accountability.[3]

Although the CDI report is classified, this oversight review is For Official Use Only to allow maximum utility. We believe the issues are fully addressed without the inclusion of classified information.

IV. FINDINGS AND ANALYSIS

Did the Air Force investigation thoroughly establish the facts regarding the incident, identify the root cause of the incident, and reasonably assign accountability?

Standards

Commander-Directed Investigation (CDI) Guide, dated July 7, 2006

There are no Air Force Instructions prescribing an investigative process; therefore, the Air Force Inspector General Complaints Resolution Directorate developed this guide to provide suggested procedures for commanders and their investigative teams to conduct prompt, fair, and objective investigations.

Paragraph 1.2, "Authority to Conduct CDIs," states, in part, that commanders "have the inherent authority to conduct a CDI to investigate matters under their command, unless preempted by higher authority."

Uniform Code of Military Justice (UCMJ), Article 92, "Failure to obey order or regulation"

Among the offenses encompassed by Article 92 is dereliction in the performance of duties. The elements of the offense of dereliction are:

- That the accused had certain duties;
- That the accused knew or reasonably should have known of those duties; and
- That the accused was (willfully) (through neglect or culpable inefficiency) derelict in the performance of those duties.

[3] Lieutenant General (Lt Gen) Robert J. Elder took command of 8th Air Force in June, 2006. 8th Air Force has more than 38,000 active duty, Air National Guard and Reserve personnel. As Task Force 204 Commander under U.S. Strategic Command, Lt Gen Elder is also responsible for monitoring all nuclear bomber, reconnaissance, and cruise missile operations. Additionally, he is the Joint Functional Component Commander for Global Strike and Integration, U.S. Strategic Command, and he commands the Air Force service component headquarters for cyberspace, global strike, and network operations.

Air Force Instruction 38-101, "Air Force Organization," dated April 4, 2006

This Instruction describes the objectives and principles of Air Force organization, and prescribes various levels and standard structures for organizations.

Paragraph 1.2.4, "Skip-Echelon Structure," states, in part, that "Major Commands (MAJCOM) sit on top of a skip-echelon staffing structure. MAJCOMs, wings, and squadrons possess the full range of staff functions needed to perform required tasks; numbered air forces (NAF), groups, and flights have no or minimal staff. These tactical echelons are designed to increase operational effectiveness rather than to review and transmit paperwork."

Facts

The tactical ferry mission on August 30, 2007, was the 6th of 12 planned flights to comply with the decommissioning aspects of the Moscow Treaty.[4]

The investigating officer organized the CDI report into three major phases:

- "Door opening to aircraft wheels up," identifying the individuals directly responsible for the missiles from the moment the Weapons Storage Area shelter was opened to the time the B-52 aircraft ferrying the missiles was airborne.
- "Scheduling to dispatch," identifying the individuals who had a direct hand in the scheduling of the tactical ferry pylons, oversight of maintenance actions, and eventual dispatch of the weapons.
- "Supervision to leadership," identifying the overall supervision to wing-level leadership at Minot AFB and Barksdale AFB, with emphasis on the contrast between the two bomber wings.

Door Open to Wheels Up

The Special Weapons Handling Section of the 5th Munitions Squadron (handling team) at Minot AFB is responsible for opening and closing the storage shelters to remove trailers loaded with pylons containing Advanced Cruise Missiles or Air Launched Cruise Missiles for transport to the Integrated Maintenance Facility for scheduled maintenance. Once the maintenance is complete, the handling team transports these trailers back to the storage shelters. Advanced Cruise Missiles or Air Launched Cruise Missiles prepped for tactical ferry contain only inert payloads. This tactical ferry preparation takes place in the Integrated Maintenance Facility. Once complete, the Integrated Maintenance Facility staff would tape a placard (8 1/2 x 11 paper) to the side of the pylon, indicating a "TAC FERRY PACKAGE" or a "TAC FERRY LOAD." Once the trailer containing a tactical ferry pylon is towed back to the shelter, local procedures require it to be coned off with bright orange

[4] The Moscow Treaty between the United States and Russia, also known as the Strategic Offensive Reductions Treaty, entered into force on June 1, 2003, limiting each side to 1700-2200 strategic nuclear warheads, but states that the parties can determine their respective force structures.

cones. These procedures requiring placards and orange cones are important in that Minot AFB, in compliance with current Air Force Instructions, stores a mix of munitions in the same shelter.

Scheduling to Dispatch

One of the two pylons was not properly prepared for the tactical ferry mission. The CDI determined that the catalyst for this failure began in the scheduling process. Testimony established that the section supervisors did not bring the schedule or planning documents to scheduled meetings, but rather took notes on what was being discussed for the following week. The CDI Investigating Officer summarized the failures of supervisors as "too much trust and no verification."

Supervision to Leadership

The CDI report found a breakdown in training, discipline, supervision and leadership. Citing failures in Minot's "maintenance scheduling-to-dispatch processes" and Barksdale's "operational focus," the CDI report recommended the removal of 15 individuals from Command/Supervisory positions (three Colonels, four Lieutenant Colonels, one Major, two Chief Master Sergeants, one Senior Master Sergeant, two Master Sergeants, two Technical Sergeants), and the removal of two Captains from Instructor/Evaluator orders. Additionally, the report identified 13 individuals (one Lieutenant Colonel, one Captain, one Senior Master Sergeant, two Master Sergeants, three Technical Sergeants, three Staff Sergeants, and two Senior Airmen) whose culpability rose to a level of a violation of the UCMJ. These individuals are suspected of dereliction of duty for their failure to follow standard procedures.[5] The Commander, ACC, tasked the Commander, 12th Air Force, Lieutenant General Norman R. Seip, to review the CDI report and independently assess the culpability of all Air Force members who were involved with the weapons transfer.

As part of our oversight review, we interviewed the officers who commanded the 2nd and 5th Bomb Wings at the time of the unauthorized transfer, and the Commander, 8th Air Force. Both wing commanders took command while the tactical ferry program was already in progress -- neither of the wing commanders gave any indication that accountability for the incident went above the wing level, and confirmed our initial assessment that the Air Force CDI reasonably assessed accountability for the incident.

5th Bomb Wing at Minot AFB

[redacted] a command pilot, requalified in the B-52H aircraft in May 2007, prior to taking command of 5th Bomb Wing on June 5, 2007. His previous assignment was Vice Commander, 28th Bomb Wing, a B-1 aircraft wing at Ellsworth AFB. General Corley relieved [redacted] of command of 5th Bomb Wing in October 2007. At the time of our interview on December 5, 2007, [redacted] had not seen the CDI report, and was assigned to ACC Headquarters at Langley AFB.

[redacted] told us that ACC conducted a preparatory Nuclear Surety Staff Assistance Visit shortly after he took command of the 5th Bomb Wing, and that nothing in the visit report indicated

[5] The CDI report recommended 23 individuals total for consideration for some type of removal/disciplinary action -- seven individuals are in both categories.

b(6)
b(7)(C)

that there were any major issues. Of note, the CDI report stated that Nuclear Surety Staff Assistance Visits tend to be more stringent than two other types of nuclear-related inspections (Nuclear Surety Inspections and Nuclear Operational Readiness Inspections), and that the January 2006 and June 2007 Staff Assistance Visit reports of 5th Bomb Wing did not reveal an impending [negative] trend.

[redacted] testified that he participated in the early August 2007 Global Thunder exercise, a U.S. Strategic Command directed exercise. This was [redacted] first opportunity as a wing commander to see the aircraft generation cycle with weapons and assess the wing's performance. He was well aware of the foundation of the tactical ferry program between the wings, to include the close ties between the 5th Munitions Squadron at Minot AFB and the 2d Munitions Squadron at Barksdale AFB, to build a meticulous flow plan for transferring Air Launched and Advanced Cruise Missiles.

[redacted] told us that he believed the procedures in 5th Bomb Wing were adequate to ensure that the proper munitions were taken out of the Weapons Storage Area to execute the tactical ferry mission. The procedures mirrored the handling of classified material, and the checklists established for the process were sufficiently clear. He understood that the procedures were discussed when 5th Bomb Wing initially prepared their briefing to address the requirements of the ACC Repositioning Order.[6] He also noted that when he visited the Integrated Maintenance Facility during his immersion briefings as the incoming wing commander, the staff discussed the procedures, assuring him, "They were not going to screw it up."

In response to questions with regard to factors that may have contributed to the incident, [redacted] responded that the number of personnel assigned to the bomb wing was sufficient to correctly accomplish the tactical ferry mission, munitions squadron personnel held the required Air Force Specialty Codes and levels of experience to perform the mission, and the wing's operations tempo was not a cause of the incident. Additionally, [redacted] offered no specific evidence that a lack of resources within the wing contributed to the incident.

2nd Bomb Wing at Barksdale AFB

[redacted], a command pilot, requalified in the B-52H prior to taking command of 2nd Bomb Wing on July 26, 2007. His previous assignment was the Commander, 509th Operations Group, 509th Bomb Wing, a B-2 aircraft wing at Whiteman AFB.

[redacted] testified that he participated in the early August 2007 Global Thunder exercise, just two weeks after he took command. However, the 2nd Bomb Wing did not accomplish any aircraft operations with weapons during the exercise. The CDI found that unlike the 5th Bomb Wing, the 2nd Bomb Wing appeared to have unilaterally reduced the number of times they exercised bombers to meet STRATCOM's plans.

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[6] The 5th Bomb Wing's briefing was prepared prior to the first tactical ferry mission (before [redacted] took command of 5th Bomb Wing) in response to the ACC Repositioning Order, that required the bomb wings to submit an Operational Risk Management Plan to ACC prior to the first tactical ferry mission.

b(6)
b(7)(C)

During the course of the interview, [redacted] offered no specific evidence that insufficient personnel, lack of resources, or operational mission taskings were contributing factors in the tactical ferry incident. In discussing the Flying Hour Program in the 2nd Bomb Wing, [redacted] testified that while the wing was "squeezed for flying hours," based on the number of training and deployment requirements, the availability of flying hours was "not a driver at all" in the incident. Similarly, with regard to the availability of personnel to accomplish the mission, [redacted] noted that from an aircrew perspective, the current Air Force-wide drawdown did not impact the wing's ability to properly preflight and execute the tactical ferry mission.

8th Air Force

Lt Gen Elder took command of 8th Air Force in June 2006. An experienced B-52 command pilot, Lt Gen Elder previously commanded both the 5th Operations Group and 5th Bomb Wing at Minot AFB.

Lt Gen Elder testified that there was nothing that 8th Air Force, ACC, or Headquarters Air Force did or failed to do that contributed to the incident. He told us that he and everyone else entrusted with the nuclear mission were shocked by the incident. Moreover, he noted that while he was satisfied with the procedures used for tactical ferry missions, he was not content with the manner in which the procedures were executed in this case. Regarding the ACC Repositioning Order, Lt Gen Elder confirmed that the ACC tasking directly to the bomb wings complied with current Air Force policy of "Skip-Echelon."

Lt Gen Elder also highlighted changes that would be incorporated in future tactical ferry missions once ACC recertified the wings and granted authorization to resume the program.[7] He testified that future missions would not be considered logistical movements, but rather training events in which personnel dealt with each step as if they were handling live weapons. Such missions would include full-complement B-52 aircrews (rather than the three person crews used for previous tactical ferry missions) and appropriate security protection procedures. Further, personnel involved in the missions would be required to verify each missile's payload by looking through its inspection port.

Discussion

We determined that the Air Force conducted a thorough and rigorous investigation in accordance with the CDI Guide. The three phases of the investigation established facts that depicted an erosion of adherence to Air Force procedures, and identified deviations from established safety, security, and transfer procedures that explained the circumstances and details of the unauthorized transfer. The CDI team reviewed reports of Nuclear Surety Inspections and Nuclear Operational Readiness Inspections of the 5th Bomb Wing going back to 1996, and found no pronounced event or finding that pointed to a clear indication that Minot AFB was lax in its adherence to accepted procedures.

[7] In testimony before the House Armed Services Committee, the Secretary of the Air Force stated, "We are satisfied that with recertification, the tactical ferry program could resume in a safe manner."

b(6)
b(7)(C)

The unauthorized transfer was a breakdown in training, discipline, supervision, and leadership. The CDI report identified the failures of the Special Weapons handlers, both as a team and as individuals, as the root cause of the unauthorized transfer. We agreed that the CDI team's audit of the maintenance logs showed that higher headquarters directed changes to the original weapons rebasing and tactical ferry flow plans did not contribute to the transfer of the incorrect pylon.

Regarding accountability, the UCMJ, Article 92, states that a person is derelict in the performance of duties when that person willfully or negligently fails to perform duties, or when that person performs them in a culpably inefficient manner. The UCMJ requires that three elements be met for dereliction in the performance of duties: that the accused had certain duties; knew or reasonably should have known of the duties; and willfully or through neglect or culpable inefficiency, was derelict in the performance of those duties.

The CDI reviewed Air Force-level direction, the ACC Repositioning Order, and the 8th Air Force Commander's role as Task Force 204 Commander. The CDI found the 5th Bomb Wing's maintenance personnel and 2nd Bomb Wing's aircrew at fault, and recommended they be held accountable by their commanders.

Specifically, the CDI report identified 13 individuals whose culpability rose to a level of a violation of the UCMJ -- these individuals are suspected of dereliction of duty for their failure to follow standard procedures. The Commander, ACC, tasked the Commander, 12th Air Force, to review the CDI report and independently assess the culpability of all Air Force members who were involved with the weapons transfer. Additionally, the report recommended the removal of 15 individuals from Command/Supervisory positions, and the removal of two individuals from Instructor/Evaluator orders.

We confirmed through our interviews with the 5th and 2nd Bomb Wing Commanders and the 8th Air Force Commander that the failures occurred at the wing level and below. We found no evidence that any senior officials were derelict in the performance of their duties. We noted that any potential accountability for the incident at 8th Air Force Headquarters (a skip-echelon structured organization) was limited from the inception of the tactical ferry missions, as that organization was not an action addressee on the ACC Repositioning Order. Furthermore, the evidence did not establish that insufficient personnel, lack of resources, or operational mission taskings were contributing factors in the incident.

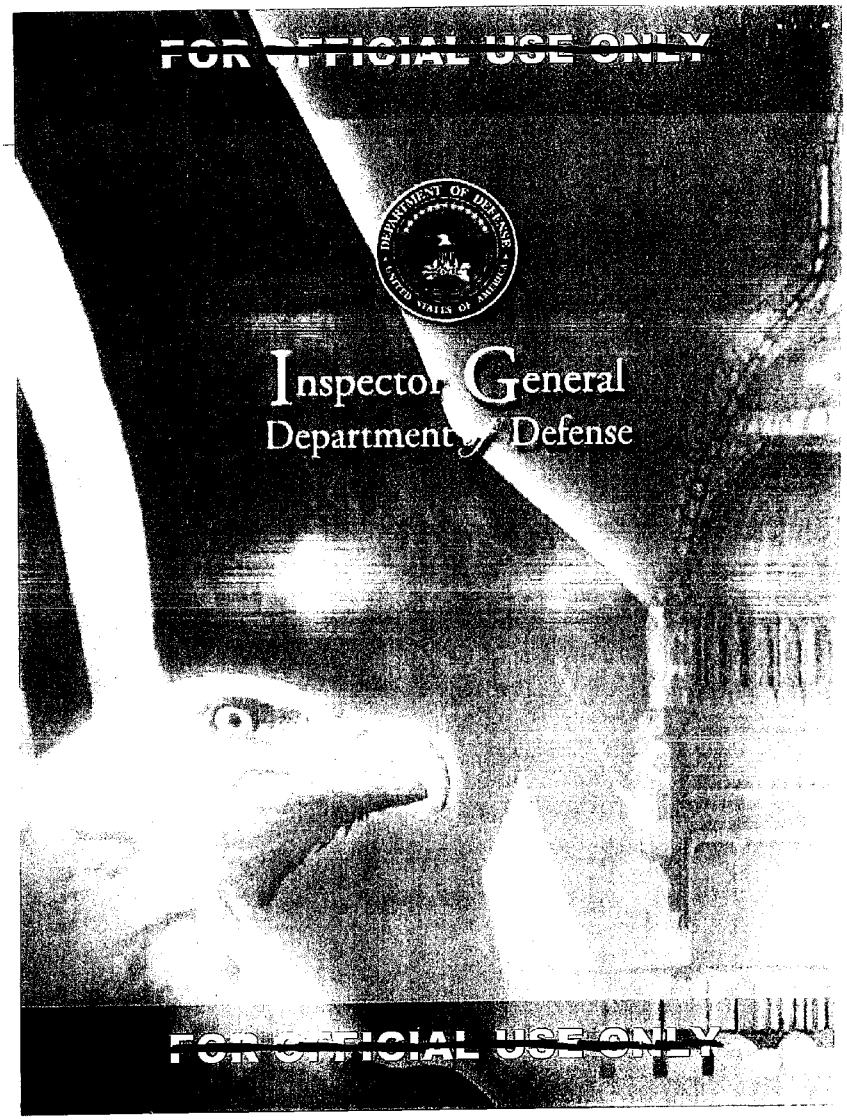
V. CONCLUSIONS

We concluded that the Air Force CDI thoroughly established the facts regarding the incident, identified the root cause of the incident, and reasonably assigned accountability.

VI. RECOMMENDATIONS

We noted that the recommendations of the CDI Investigating Officer were extensive, to include establishing a Blue-Ribbon panel to review all nuclear training procedures.[8] Additionally, the Secretary of Defense asked General Larry D. Welch, U.S. Air Force (Retired), to lead an ongoing Defense Science Board standing task force on nuclear weapons surety, to review security procedures and look more broadly at DoD policies and procedures to ensure all factors that led to the incident are explored and addressed. We have no further recommendations in the matter.

[8] The Air Force Chief of Staff tasked Major General Polly A. Peyer to chair the Blue Ribbon Review and make recommendations as to how the Air Force can improve its capability to safely and securely perform its nuclear weapons responsibility.



Chairman LEVIN. Thank you, General.

General Welch?

STATEMENT OF GEN. LARRY D. WELCH, USAF [RET.], PRESIDENT AND CEO, INSTITUTE FOR DEFENSE ANALYSES

General WELCH. Thank you, Senator Levin. I can be very brief since your opening comments addressed many of the issues in our report.

Our report contains specific findings and recommendations on each of the three levels of cause factors. It was released yesterday.

It is unclassified. It is 27 pages long, including appendices. Those three levels of cause factors are:

First, the proximate cause that is the failure to sustain and follow credible procedures and processes. Those deficiencies have been addressed in detail by the Air Force reports.

Second is focus and that has to do with the dramatic reduction in the number of senior DOD officials with dedicated focus on the nuclear enterprise.

The third level is the environment in which the enterprise operates, and that has to do with the perception at all levels in the nuclear enterprise that the Nation and its leadership do not value the nuclear mission and the people who perform that mission.

[The information referred to follows:]

The Defense Science Board Permanent Task Force

on

Nuclear Weapons Surety

Report on the Unauthorized Movement of Nuclear Weapons

February 2008

(Revised April 2008)

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 DSB Permanent Task Force on Nuclear Weapons Surety completed its information gathering in December 2007. In April 2008 a data error was discovered and the report revised accordingly. Specifically, report *Section III: Nuclear Enterprise Focus* was updated to reflect that the Strategic Air Command tanker force was reassigned to the Air Mobility Command (vice Military Airlift Command).

This report is UNCLASSIFIED and releasable to the public.

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

DEFENSE SCIENCE
BOARD

February 8, 2008

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE (ACQUISITION, TECHNOLOGY & LOGISTICS)

SUBJECT: Defense Science Board Permanent Task Force on Nuclear Weapons Surety

I am pleased to forward the final report on the Defense Science Board Permanent Task Force on Nuclear Weapons Surety: Report on the Unauthorized Movement of Nuclear Weapons.

The study's participants assessed the systemic causes of this incident and have provided recommendations to strengthen nuclear weapons surety.

William Schneider Jr.
Chairman

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DSB PERMANENT TASK FORCE ON NUCLEAR WEAPONS SURETY

18 Dec 2007

MEMORANDUM TO THE CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Defense Science Board Permanent Task Force on Nuclear Weapons Surety

Attached is the Task Force report on an independent assessment of the systemic causes of the August 30 unauthorized movement of nuclear warheads from Minot AFB, North Dakota to Barksdale AFB, Louisiana. Based on the information and insights gained from investigating and assessing these systemic causes, the report includes 16 recommendations to strengthen nuclear weapons surety. The report reflects the unanimous findings and recommendations of the participants reflected in Appendix B.

Larry D. Welch, General, USAF (Ret)
Task Force Chairman

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Section I: Background

Bottom Line

This unauthorized weapons movement incident can be a just-in-time rescue if lasting corrective actions are implemented now. The process and systemic problems that allowed such an incident have developed over more than a decade and have the potential for much more serious consequences. This time, the harm was limited to impact on confidence and careers and the incident is beneficially focusing needed attention on multiple aspects of the nuclear enterprise. It has dramatized the need for uncompromising processes and procedures, clear focus on the unique demands of the enterprise at multiple levels of the national security structure, and an environment that attracts, nurtures, and guides the right numbers of the best and brightest as stewards of this uniquely powerful national security force. It also highlights the need for clearly understood and competently executed responsibilities and accountabilities at all levels in the enterprise. There are currently significant deficiencies in meeting each of those needs. At the same time, the Task Force found concerted efforts underway in the operating forces to return to appropriate standards of competence and focus following the 30 August 2007 incident to include a supplement to the Air Force Instruction addressing specific deficiencies that permitted the unauthorized movement.

The Department of Defense (DoD) has received authoritative and credible reports of declining focus and an eroding nuclear enterprise environment for at least a decade with little in the way of effective and lasting response. Some findings and recommendations from those reports, particularly relevant to conditions surrounding the unauthorized movement incident, are described in Section IV of this report. This incident has provided a fresh opportunity to address these deficiencies. There is little mystery regarding what needs to be done or how to do it. The nuclear enterprise performed at all levels with the needed competence for decades. This report is intended to briefly summarize what needs to be done to restore that performance across the nuclear enterprise.

Tasking

The Defense Science Board (DSB) Task Force on Nuclear Weapons Surety was tasked by the Under Secretary of Defense for Acquisition, Technology and Logistics (USD [AT&L]) and the Commander, U.S. Strategic Command to conduct an independent investigation of the unauthorized transfer of nuclear warheads between Minot Air Force Base, North Dakota, and Barksdale Air Force Base, Louisiana on 30 August 2007. The task is to identify root and systemic causes and provide recommendations to help strengthen DoD nuclear surety programs and practices.

This report addresses the issues most directly related to the strategic nuclear forces. Further work will be done and reported separately early in 2008 by the Task Force to address any relevant tactical nuclear force issues that are different from the strategic forces issues. Beginning in Section II, this report addresses three related sets of surety issues:

- Procedures and Processes
- Nuclear Enterprise Focus
- Nuclear Enterprise Environment

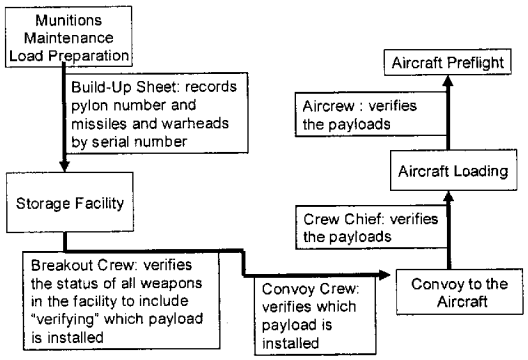
Nuclear Weapons Movement Background

The task of moving cruise missiles between Minot AFB and Barksdale AFB was part of a cruise missile reposturing program. In support of that program, warheads are removed from the advanced cruise missiles at Minot AFB and the nuclear-inert missiles are then transported to Barksdale AFB. Some of the missiles are moved via ferry on B-52 aircraft. This ferry mode is referred to as tactical ferry. The standard configuration for cruise missiles is six cruise missiles mounted on a pylon. Two six-missile pylons are carried on the B-52, one under each wing.

Two such pylons of nuclear-inert missiles were to be transported from Minot AFB to Barksdale AFB on a Barksdale B-52H on 30 August 2007.

The procedures for movement of a nuclear weapon or nuclear capable cruise missile from access to the storage facility to completed loading on the ferry aircraft is illustrated in Figure 1 below. This illustration depicts the Task Force's understanding of the procedures in effect at the time based on a review of existing directives and checklists and discussions with leadership in the bomber wings. It does not necessarily depict the processes that were in routine use by individual teams.

Figure 1: Process and Procedure Bomber Weapons Movement Flow



The first step in the procedure for moving the weapons from the storage facility is for the breakout crew to open the storage facility and to verify the status of all the weapons in the storage facility before any other activities occur in the facility. Verifying the status requires verifying which payload is installed and checking the safety status of each missile. Current guidance permits storing nuclear training, test, or inert devices in the same storage facility with nuclear weapons. Since there is no externally apparent difference between cruise missiles with these various payloads, to preclude confusion with such intermingling, pylons of missiles with

nuclear training, test, or inert devices are required to be physically identified by readily visible means.

After the initial verification task is completed, the convoy crew (tow team) verifies which payload is installed and connects the tow vehicle to the munitions trailer carrying the pylon of six missiles. On arrival at the aircraft, the crew chief accepts the load after verifying the payloads. The load crew then completes the loading process and checks the status of each missile after completing the load. Before accepting the load, the aircrew is to check each weapon on each pylon to verify the payload in each of the missiles and the safety status of each missile.

The Incident

A comprehensive description of the incident is provided in the classified Air Combat Command report: *The Unauthorized Transport of Nuclear Weapons.* The following is a brief unclassified synopsis.

The movement plan identified two pylons of nuclear-inert missiles to be transported by tactical ferry on 30 August 2007. Subsequently, personnel of the Minot Munitions Maintenance Squadron changed the plan to prepare and transport a pylon of missiles closer to expiration dates for limited life components in lieu of one of the planned pylons of missiles. That change was reflected on the movement plan but not in the documents produced from the internal work coordination process at Minot. The documents produced from this process are used in daily operation and they continued to list the originally scheduled two pylons of weapons. As a consequence, one of the originally scheduled pylons of cruise missiles had not been prepared for tactical ferry. When the breakout crew accessed the storage facility, they did not properly verify the status of the weapons in the facility as required by established procedure and they failed to note that the missiles on one of the pylons on their internal work document still contained nuclear warheads.

Although procedure requires three subsequent verifications (by three different groups) of the payload installed in the cruise missiles, those procedures were not followed. The weapons were then flown to Barksdale and downloaded from the aircraft. The convoy crew at Barksdale, following the proper procedure, determined that the missiles on one of the pylons contained nuclear warheads.

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Section II: Procedures and Processes

Discussion

The Task Force found that, over time, procedures at the B-52 bases were compromised by processes that simplified work without adequate review and consideration of the risks. For example, the initial verification of the status of the weapons in the storage facility should take about 45 minutes. This verification is to be completed before any other action takes place. But, over time, to speed the process, breakout and convoy crews had established a process of concurrent activity. In this case, the breakout and convoy crew were connecting the trailer to the tow vehicle while the initial status verification was underway.

As stated above, there is a requirement to identify pylons of nuclear-inert missiles with readily visible markings. Past practice involved placement of placards on multiple sides of the pylon and orange cones around the pylon. However, the Task Force could find no written directive that specifically described the required identifying means. Over time, the practice at Minot was reduced to an 8 x 10 piece of paper placed somewhere on the pylon.

In the past, there was a requirement for a formal change of custody physically verified by serial numbers, recorded, and signed on a formal document when weapons moved from breakout crew to convoy crew to crew chief to aircrew. That practice was discontinued for bomber weapons although it is still the practice for Intercontinental Ballistic Missile (ICBM) warheads. The reason given for the difference is that ICBM warheads routinely move off the air base to missile sites while bomber weapons are moved only on base for exercises. In any case, the still existing verification procedures were not followed either when the breakout crew conducted the initial verification and then turned the weapons over to the convoy crew or when the convoy crew passed the weapons to the crew chief or when the crew chief passed the weapons to the aircrew. While this breach of procedure might be attributed to the belief that, in this incident, nuclear weapons were not involved, subsequent discussions with other breakout crews, convoy crews, load crews, and aircrews indicated significant confusion over procedural requirements for movement of nuclear-capable cruise missiles. For instance, the breakout crew and aircrew checklists require that the crew "verify which payload is installed." Some did not interpret "verify" as requiring a physical check. In any case, whatever the nature of "verification," there is nothing in directives or checklists that would suggest that the requirement is different for the various payloads thought to be in the cruise missile – live warhead, inert device, test device, or training device. That is, there is one checklist for handling nuclear-capable cruise missiles that should apply regardless of the payload installed.

There was not a clear understanding regarding who has explicit responsibility and accountability for any movement of special weapons outside the nuclear weapons storage area. The Task Force found significant confusion about delegation of responsibility and authority for movement of nuclear weapons.

Procedures and Processes -- Findings and Recommendations

Findings:

- Over time, nuclear weapons movement procedures for bomber weapons have been compromised for expedient work processes. This evolution has occurred without adequate review and approval above the wing level.

- There is confusion over applicability of nuclear weapons handling procedures for nuclear weapons systems that do not contain nuclear warheads.
- The practice of storing nuclear munitions/missiles in the same facility with nuclear-training, nuclear-test, and nuclear-inert devices can lead to confusion and unnecessary access to nuclear weapons.
- The various levels of inspection activities have failed to detect these changes in process which compromised established procedure. The Nuclear Operational Readiness Inspection process requires only limited mission performance, sometimes generating as few as one aircraft.

Recommendations:

- ***The Secretary of the Air Force should direct that Air Force directives be revised to provide clear direction to:***
  - ***Re-establish that the Wing Commander is the approval authority for any movement of nuclear weapons or nuclear-capable cruise missiles on the installation outside the nuclear weapons storage area.***
  - ***Re-establish formal change of custody requirements for any movement of nuclear-capable cruise missiles outside the weapons storage area to include serial number verification and custody change documentation using a formal document signed at each change of custody.***
  - ***Direct that nuclear weapons not be stored in the same facility with non-nuclear munitions/missiles to include nuclear-capable cruise missiles with payloads other than nuclear warheads.***
  - ***Require that Nuclear Operational Readiness Inspections include comprehensive evaluations of all tasks required to generate the full rapid response nuclear bomber force commitment for the inspected unit and supporting activities outside the unit to include tanker support.***

Implementing these recommendations and the more comprehensive recommendations in the Air Combat Command report is an essential step toward correcting deficiencies in processes and procedures but cannot, by themselves, ensure that an incident of this or greater magnitude will not occur again. Additional attention is needed to ensure that the surety of nuclear weapons receives appropriate attention at multiple levels and to provide confidence in the needed understanding and competence at multiple levels of the nuclear enterprise. Attention, understanding and competence, at multiple levels, will require restoring authority, responsibility, accountability, focus at appropriate levels, and valuing the activities at all levels.

Section III: Nuclear Enterprise Focus

Declining Focus

Since the end of the Cold War, there has been a marked decline in the level and intensity of focus on the nuclear enterprise and the nuclear mission. The decline in focus took place gradually as changes were made to policies, procedures and processes. However, when comparing the current level of focus to that of 1990, the aggregate change is dramatic. The Task Force and several of the senior DoD people interviewed believe that the decline in focus has been more pronounced than realized and too extreme to be acceptable. The decline is characterized by embedding nuclear mission forces in non-nuclear organizations, markedly reduced levels of leadership whose daily focus is the nuclear enterprise, and a general devaluation of the nuclear mission and those who perform the mission. There are at least eight underlying changes that played a role in this decline. The issue is not whether these were necessary or desirable. There are good reasons for most of the changes listed and some of them are clearly positive. The issue is the cumulative effect on attention to the nuclear enterprise. The changes are:

- End of the Cold War and demise of the Soviet Union,
- Reduction in the size of the nuclear forces,
- Dispersal of responsibility for nuclear matters throughout the enterprise: OSD, Joint Staff, Strategic Command, Air Force,
- Disestablishment of the Air Force Strategic Air Command,
- Assignment of multiple non-nuclear missions to U.S. Strategic Command and strategic forces at all levels,
- Recurring drives to reduce headquarters and headquarters manning, and the competition for people,
- Lack of any significant nuclear force modernization programs in the acquisition system, and
- Demands of multiple military contingencies.

Enterprise Dispersal

With the disestablishment of Air Force Strategic Air Command (SAC) in June 1992, the four operational elements of the Air Force strategic forces – ICBMs, bombers, strategic reconnaissance systems, and the tanker force -- were dispersed to three separate major operational air commands.

The ICBM mission was transferred first to Air Combat Command and then to Air Force Space Command. The logic of the move to Air Force Space Command was based on a perceived similarity in personnel skills required for space operations and ICBM operations. The Task Force found that the ICBM forces remained tightly focused on their mission, with 20th Air Force and the ICBM wings committed solely to the strategic nuclear mission focused on sustaining a high state of readiness. However, the missile wing designations were changed from Strategic Missile Wing to Space Wing which has been interpreted by some in the ICBM force as de-emphasizing the nuclear mission.

The bomber force and the strategic reconnaissance force were assigned to Air Combat Command (ACC) which had been predominantly a tactical fighter and tactical reconnaissance command.

The SAC tanker force was reassigned to the newly established Air Mobility Command and given expanded responsibilities.

The end result is that the strategic nuclear mission was dispersed among three major operational commands none of which had strategic nuclear forces or operations as a central focus or body of expertise.

In past years, the Air Force found it wise to move the tactical airlift force from Tactical Air Command, the predecessor of ACC, to the then Military Airlift Command and to move the special operations forces to a newly formed Air Force Special Operations Command. In each case, the underlying reason was the difficulty in providing the needed focus on the demands of these unique missions in a predominantly fighter command. Given this historical experience, there was concern over retaining focus on strategic bomber and strategic reconnaissance forces within ACC. To help ensure a continuing focus, these forces were assigned to 8th Air Force (AF) which has, since early in World War II, been regarded as a strategic bomber command. However, 8th AF subsequently has been assigned multiple additional non-nuclear missions, its headquarters has been significantly reduced in manning, many authorized nuclear-related positions have not been filled (13 of 31 positions unfilled in the Air Force component to U.S. Strategic Command), and the training, operations, and maintenance functions have been moved from 8th AF to headquarters Air Combat Command in a skip-echelon concept to consolidate and reduce overall headquarters manning. Hence, 8th Air Force had no day-to-day responsibility for B-52 operations, training or maintenance.

Continuing Complex Demands

Beginning with the implementation of the Strategic Arms Reduction Treaty (START) agreement and accelerated by the end of the Cold War, the Department of Defense has focused on reducing nuclear forces and nuclear weapons with the goal of moving from over 9,000 deployed strategic nuclear warheads in the late 1980s to no more than 2,200 in 2012. However, the complexity of the nuclear enterprise has not been reduced proportionately to those numbers. Figure 2 below shows the numbers of different types of nuclear systems as one indicator of that persistent complexity.

Figure 2: Change in Nuclear Force Composition

1990	2007
Air Force Systems	Air Force Systems
3 bomber aircraft types	2 bomber aircraft types
2 cruise missile types	2 cruise missile types
3 ICBM types	1 ICBM type
7 strategic warheads	5 strategic warheads
3 dual-capable fighters	2 dual-capable fighters
2 tactical weapons	1 tactical weapon
Navy Systems	Navy Systems
2 submarine types	2 submarine types
2 SLBMs	1 SLBM
1 cruise missile	1 cruise missile
2 strategic warheads	2 strategic warheads
1 tactical weapon	1 tactical weapon

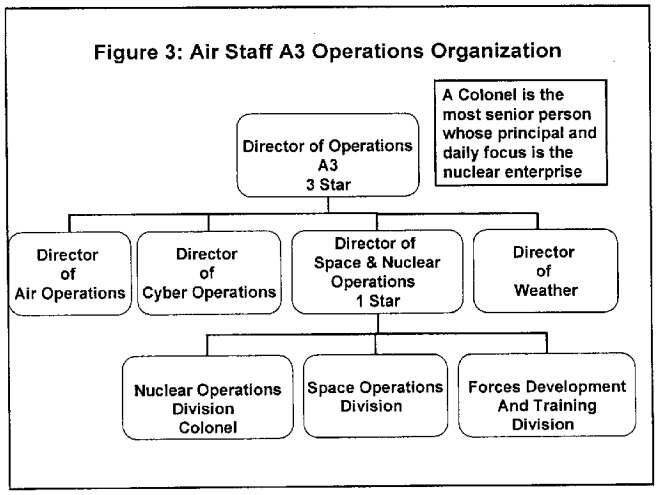
While the size of the overall nuclear force and numbers of deployed weapons have been greatly reduced and the numbers of different types of nuclear systems have been reduced somewhat, this does not translate to a reduction in complexity. Instead, the nuclear mission is, in some respects, more complicated today. The New Triad requires integration of nuclear, advanced conventional, non-kinetic, defense, and infrastructure issues into a single strategic deterrence concept. The Nuclear Posture Review (NPR) also levies complex demands on the nuclear enterprise. The reduction in the size of the nuclear forces requires that the remaining force be no less competent.

The Level of Focus

In contrast to the need, the level of accountable individuals whose principal focus and daily business is the nuclear enterprise has been reduced from senior flag officer or senior civilian at the end of the Cold War to Colonels/Captains or mid-level civil servants today.

There has been little change in focus at the operating levels in the Navy and in the ICBM force up through the numbered air force (20th Air Force). Otherwise the decline is characteristic across the DoD. In each case, in each headquarters, the change in focus could be justifiable. Still, when this occurs across virtually all of the relevant headquarters, the aggregate result is a precipitous decrease in attention to the nuclear enterprise.

Figure 3, showing the Air Staff A-3 (Operations) organization, is an example of the current placement of dedicated nuclear focus in current DoD organizations. The level of nuclear enterprise focus in other organizations is similar and is shown in Table 1.



There has been little change in the Navy operational and technical organization and focus managing the nuclear enterprise. While the attack submarines no longer routinely carry nuclear weapons, the submarine forces retain their nuclear legacy and nuclear focus. The principal focus on systems and procedures continues to be in the Strategic Systems Programs (SSP) organization commanded by a Rear Admiral – virtually unchanged from the Cold War organization. However, the decline in the level of focus within the Navy Staff is similar to that seen in the Air Staff.

Table 1 summarizes the change in level of focus across a broader set of organizations to illustrate the major downgrading of the level of attention accorded the nuclear enterprise.

Table 1: Change in Level of Primary Focus

Organization	1990	2007
Secretary of Defense	Assistant to the Secretary of Defense (ATSD) for Atomic Energy – direct report for safety & security (Senate-confirmed appointee)	Deputy ATSD Nuclear Matters (SES) w/ multi-mission ATSD reporting to USD/AT&L
OSD/Policy	Deputy Assistant Secretary for Nuclear Forces and Arms Control (SES)	Director, Strike Policy Integration (GS-15)
Navy Staff	Director, Strategy and Policy N51 (O-7)	Head, Global Strike & Nuclear Policy (GS-15)
Joint Staff	Deputy Director, Operations (O-8)	Chief, Strategic Operations Division (O-6)

Air Staff	Deputy Director, Forces (O-8)	Chief, Nuclear Operations Division (O-6)
Combatant Command	Commander, U.S. Strategic Air Command* (4 Star)	Chief, Division (O-6)
Major Air Command	Commander, Air Force Strategic Air Command* (4 Star)	Chief, Strategic Operations Division,(O-6)
Numbered Air Force Bomber Commands	Commander, 8th Air Force (3 Star) Commander, 15th Air Force (3 Star)	Commander, 8th Air Force (multi-hatted, multi-mission) (3 Star)

* Commander and Staff dual-hatted as Air Force MajCom and Combatant Command

The reduction of the level of focus on the nuclear mission in U.S. Strategic Command is a natural result of the growth in global missions assigned to that command with a consequent dilution of the nuclear mission. The additional missions were those that were consistently neglected between contingency operations.

- Space;
- Global strike and integration;
- Intelligence, surveillance and reconnaissance;
- Network warfare;
- Information operations;
- Integrated missile defense; and
- Combating weapons of mass destruction.

These are global missions requiring global attention and USSTRATCOM remains the logical combatant command for these global missions. However, this proliferation of mission demands was a factor in the reduced level of attention to the nuclear enterprise as it fell to below the level required to provide the needed oversight and support to the nuclear mission. Even so, there are no B-52 assets assigned to or under the operational control of USSTRATCOM. Hence the command that some assumed had daily operational interest in strategic nuclear bomber operations has no daily authority or accountability for these forces.

There are always priority choices within the larger mission set and the strategic nuclear deterrent mission must be first priority even if it requires fewer resources than some of the added missions. The issue, here, is not to debate what the weapons are for or their applicability to the 21st century deterrence task. The issue is that we have the weapons and their military and political nature demands intense attention to their proper care.

The reduction in focus is also reflected in the B-52 nuclear mission. During interviews with B-52 aircrews and weapons handling crews, the typical estimate of the share of their time spent on the nuclear mission varied from 5% to 20%. Heavy focus of a segment of the strategic nuclear bomber force on conventional operations for an extended period is not new. What is new is focusing the entire B-52 force predominantly on the conventional mission as the accepted permanent or semi-permanent state of affairs.

Further evidence of the mindset is found in the formal training courses. The formal training course at Barksdale that provides transition training for all new B-52 crews includes no flight training for the nuclear mission. The same is true of the B-52 Weapons Instructor Course. Instead, these courses include a single simulator mission dedicated to the nuclear mission. The instructor aircrews are not nuclear qualified. Hence, the focus is almost completely on conventional weapons operations. After graduation from transition training, the new aircrew, for example, can deploy to Guam for 120 days in a conventional-only role before becoming qualified in the nuclear role. This reinforces the perception that nuclear qualification is not a critical element of B-52 mission qualification and the first priority is to be involved in conventional weapons B-52 operations.

A number of decisions about wing-level operations can only be seen as an effort to minimize the cost of the nuclear mission with inadequate consideration for the nuclear commitment. The most obvious example is moving deployed cruise missiles from the base where most of the nuclear-capable B-52 bombers are located. Hence, focus on the nuclear mission will be further complicated by the need for temporary deployments between bases for hands-on nuclear weapons training and exercises, and by the need to deploy aircraft between bases for the B-52 rapid response commitment.

The net result is that the de facto primary mission of the bomber force has become overwhelmingly conventional operations focused. Again, there are credible reasons for this. Most important among them is that the strategic bomber force has conventional capabilities that are increasingly important to a wide variety of non-nuclear contingency operations. This is not a new phenomenon. Strategic nuclear bombers have been widely used in non-nuclear contingencies for decades. The issue today is not the use of strategic nuclear forces in non-nuclear contingencies. The issue is the balance and the attitude.

While broad statements about attitudes are always risky, there was a set of attitudes detected by the Task Force that was succinctly described by an experienced B-52 aircraft commander, saying: "The nuclear mission is all about procedures; the conventional mission is about operational results." It seemed readily apparent that, over time, handling bomber weapons and nuclear activities have come to be considered an exercise activity rather than a serious operational activity. That is, the exercise is to break out some weapons, load them on a B-52, download the weapons and return them to storage. In contrast, during the Cold War, while people in the strategic nuclear bomber business understood that their primary mission was strategic deterrence and if they were successful they would never have to deliver a weapon, every part of the activity was based on the need to be sure that they could deliver a nuclear weapon if deterrence failed. In other words, the attitude was highly operational. This difference is not surprising given that the majority of personnel handling bomber nuclear weapons, from breakout crew to aircrew, have never experienced nuclear alert. This change in attitude has had a major impact on the overall environment and culture in the bomber force.

To restore a balance in mission focus and influence attitudes, the Task Force considered the wisdom of assigning all Air Force nuclear forces to a single numbered air force. While there are some attractive features of such a solution, it would require a major restructuring among multiple commands and would almost certainly have other unintended consequences. Instead of providing focus, it could be counterproductive in that it could delay, rather than facilitate, correcting the current deficiencies. Instead, the Task Force recommendations focus on restoring full attention to the rapid response nuclear deterrent bomber commitment. To do that, the operational elements of

the nuclear enterprise from squadron to combatant command must have a need to focus on the operational mission. The only reasonably certain way the Task Force could find to do that is to make each level responsible and accountable for the strategic bomber force as their daily work. That will require giving operational control of some part of the B-52 force to the Air Force component to USSTRATCOM (Task Force 204) which will also demand daily operational attention in USSTRATCOM headquarters.

Nuclear Enterprise Focus -- Findings and Recommendations

Findings:

- While the size of the nuclear force and the deployed nuclear weapons stockpile has been greatly decreased, the complexity of the mission remains demanding. Despite these complex demands, the level of focus on the nuclear enterprise has been drastically reduced.
- The nuclear enterprise within OSD has been dispersed and downgraded with the responsibilities of the principal office within USD (AT&L) expanded to include chemical and biological weapons, and the nuclear enterprise within USD (Policy) subordinated to ASD/SOLIC which has a wide-ranging portfolio.
- With no strategic nuclear bomber forces under the operational control of the combatant command or its Air Force component and the skip echelon approach that removed 8th Air Force responsibility for B-52 operations, training, and maintenance, there was no headquarters above the wing that focused on the strategic nuclear mission.
- The level of focus within major headquarters from Joint Staff to Air Force major command was drastically reduced with little apparent consideration or understanding of the impact of such reduction across virtually all such headquarters.
  - The daily focus on the nuclear mission within the Joint Staff has been reduced to an O-6 Strategic Operations Division chief.
  - The nuclear mission within the USSTRATCOM has been dispersed across 24 offices within the headquarters. The most senior officer whose daily focus is on the nuclear enterprise is an O-5 in an O-6 billet.
  - The positions maintaining daily focus on the nuclear mission within Air Force and the Navy Staffs has been reduced to that of O-6 (Colonel/Captain).
  - The nuclear mission within the Air Force has been dispersed from a single-focused strategic command to three operational commands that have had little or no focus on the nuclear mission. With that dispersal, the level of daily focus on the strategic nuclear bomber mission was reduced from senior flag-level to O-6 level.
- The conventional roles of the B-52 force so dominate the nuclear role that there is minimum daily attention to the nuclear role outside the restricted area where nuclear weapons are stored and maintained. Moving nuclear weapons from where the majority of B-52 strategic bombers are based is likely to further complicate focus on the nuclear mission and further devalue the nuclear mission.
- The B-52 initial training and advanced weapons school both largely ignore the nuclear mission. There are no flying sorties devoted to the nuclear mission in either course.

- Over time, handling bomber nuclear weapons has come to be regarded as an exercise activity rather than a serious operational activity.

Recommendations:

- *The Secretary of Defense should:*
  - *Establish an Assistant Secretary of Defense for the Nuclear Enterprise, reporting directly to the Secretary, to assist the Secretary in ensuring continued attention to nuclear policy, acquisition, technology, surety, and command and control. This is not intended to replace the acquisition functions of USD (AT&L) or the functions of the other undersecretaries.*
  - *Direct that the Air Force dedicate the full rapid response commitment to the nuclear mission on a continuous basis, rotating the commitment among the B-52 squadrons. During the rotation to the nuclear commitment, the unit would be OPCON to Task Force 204 (the Air Force nuclear bomber component to USSTRATCOM) and would focus on training for the nuclear deterrent mission.*
- *The Commander, U.S. Strategic Command should establish a flag-level office within J-3 or J-5 whose daily focus is the nuclear enterprise and the conventional missions of strategic nuclear assets. All headquarters nuclear policy, operations, training, surety, and C2 responsibilities should be assigned to this office.*
- *The Secretary of the Air Force should direct the consolidation of existing Air Force technical organizations into a single technical organization (using Navy SSP as a model) reporting directly to the Air Force Chief of Staff, led by a Major General that has full responsibility and accountability within the Air Force for, and only for, nuclear systems and procedures.*
- *The Air Force Chief of Staff should:*
  - *Ensure that Task Force 204 has the needed authorizations and is fully manned to meet the full rapid response nuclear commitment.*
  - *Ensure that nuclear career fields, enlisted and officer remain viable and adequately manned to provide a continuing "no defects" culture within the nuclear enterprise.*
  - *Establish an office within A-3/A5 in the Air Staff headed by a flag officer whose daily business is the nuclear enterprise.*
- *The Chief of Naval Operations should establish an office within N3/N5 headed by a flag officer whose daily business is the nuclear enterprise.*
- *The Commander, Air Combat Command should:*
  - *Ensure that 8th AF has the full resources, authority, and accountability for daily B-52 operations – nuclear and conventional.*
  - *Direct that the B-52 initial training course at Barksdale and the B-52 Weapons School course include flight training in the nuclear mission.*

Section IV: Nuclear Enterprise Environment

Discussion

The Task Force repeatedly heard the perception in the force that the nuclear forces and the nuclear deterrent mission are increasingly devalued. Consequently, the Task Force reviewed earlier reports from the Defense Science Board, the Joint Advisory Committee on Nuclear Weapons Surety (the forerunner to the DSB Permanent Task Force on Nuclear Weapons Surety), and various other organizations and commissions over the past 15 years that have addressed the level of support and oversight accorded the nuclear enterprise. This was a small part of a much larger set of reports from a wide range of authoritative sources, to include the Air Force, which reported similar concerns. These reports provide information and insights on the impact of devaluing the nuclear mission and therefore the nuclear enterprise. The reports reflect a concern that, over this period, there has been a steady long-term trend minimizing the perceived importance of the nuclear deterrent to national security. Some examples of the language in these reports follow:

Joint Advisory Committee Report on the Nuclear Readiness of the Department of Defense, 1995

- Strategic bombers – Overall the operational units continue to exhibit pride and high competence in the nuclear bomber mission. However, the organization and focus on bomber force readiness for the strategic nuclear mission have changed radically in the past six years – removed from daily alert (Sept 1991); SAC disestablished and bombers transferred to ACC (June 1992); Nuclear ORIs halted in early 1990's (reinstated in March 1996). The current ORI structure does not explicitly include nuclear, thus conveying an important message to the wing about the priority of the mission.
- While there remains a rich pool of nuclear bomber experience in the units and higher headquarters, this residual pool will be short lived unless consciously and carefully renewed at all levels. The JAC does not presume to judge what the readiness requirements should be for heavy bombers. The JAC did observe that it is not clear that there is a match between readiness and practice. Diluting Major Command attention to the bomber nuclear mission will inevitably be reflected in the attitudes of unit commanders and aircrews as turnover continues to replace commanders and aircrews whose experience is rooted in the nuclear mission.
- Nuclear Expertise – There is reason for concern about the long-term quantity and quality of nuclear weapon expertise within the DoD as the size of the DoD nuclear community shrinks and the interest level declines.
- Senior Management – more expertise needed in OSD and JCS and involvement in planning, programming and oversight for nuclear weapons support. OSD ATSD's attention to nuclear matters is stretched by competing responsibilities with other weapons of mass destruction.
- The Navy and Air Force provide smart buyer, technical expertise for nuclear weapons systems. But, DoD does not have the structure in place and the expertise at all the levels required to be a smart customer of the DOE supplier of nuclear warheads and support. The JAC recommends that the mission of the Defense Nuclear Agency be sharply

refocused to help provide critical staff nuclear expertise to the Secretary of Defense and the Chairman of the Joint Chiefs of Staff.

Defense Science Board Task Force on Nuclear Deterrence, 1998

- It is imperative that the general decline in the value accorded nuclear expertise be reversed now. Without a sharp reversal in the decline, there will be little incentive for the best and brightest to enter this key field.
- The level of attention and expertise varies widely across DoD. At the OSD level and in the Navy and Air Force, the acquisition oversight function continues with a high degree of expertise. In contrast the policy functions are fragmented with responsibilities divided between various offices in USD (Policy) and USD (A&T) and with reduced senior-level attention in the Services. There is need for technical expertise at multiple levels. Over the past several years, there has been an effort to fashion the needed support in the Defense Special Weapons Agency (DSWA). However, DSWA was not given the charter and control of resources needed to fill this role. There is continuing uncertainty about the future of nuclear expertise available to senior DoD leaders as this function is being assigned to the newly organized and more diverse Defense Threat Reduction Agency (DTRA). DTRA appears to have the charter in this area but will need strong support to meet the need.
- USSTRATCOM has stepped into the vacuum to perform some functions neglected during the general drawdown of nuclear forces and reduced interest in nuclear matters. But again, they have done so on a piecemeal basis, without a corresponding clear charter. A more comprehensive charter would provide better assurance of comprehensive coverage of the needs. Nuclear expertise in the remaining operational units assigned nuclear readiness tasks continues at a high level. The situation in the Service staffs is less positive though the Air Force has initiated important steps to restore focus on this need and the Navy SSP continues to provide focused attention to nuclear systems.
- The need for attention to the nuclear deterrent, is clearly stated in the May 1997 Report to Congress from the Secretary of Defense.
    - Sustainment (of the nuclear deterrent) is most likely to be successfully accomplished…if a set of interrelated conditions are achieved:
        - The capability is clearly and consistently given priority by the Department's senior leaders
        - All of the physical components that make up the capability are regarded as limited-life
        - Career paths exist for both military and civilian personnel that attract and retain sufficient numbers of personnel with appropriate qualifications
        - The program involves a complete end-to-end capability (development-deployment-operations)
        - The magnitude of the activity is sufficient to support achievement of the preceding conditions

- Some indications of the current state of attention: Some policy declarations/documents have minimum emphasis on nuclear deterrence – Joint Vision 2010, 1997 and 1998 CJCS Posture Statements to Congress, USAF Global Engagement: A Vision for the 21st Century. This lack of emphasis on the nuclear deterrent has been noted in nuclear forces and support activities.
- Service Focus – Air Force. Air Force Headquarters (and ACC Headquarters) attention to nuclear issues suffered a precipitous decline immediately following the end of the Cold War with the emphasis on downsizing and dismantling nuclear forces. The major Air Force nuclear modernization programs were terminated or sharply curtailed. Strategic Air Command was disestablished and its Air Force responsibilities divided among Air Force Space Command for ICBMs, Air Combat Command for bombers and Air Mobility Command for tankers. Responsibility for weapons went to an Air Logistics Center under the newly combined Air Material Command. Hence, Air Force nuclear forces responsibilities were subsumed in commands where the nuclear deterrent was not a major part of the day-to-day focus of the command, In the case of the bombers; this was exacerbated by the increasing focus on the non-nuclear mission of the bomber force. The resulting decline was graphically illustrated when the responsible command stopped nuclear operational readiness inspections for a period of three years. The Air Force Chief of Staff, responding to this problem, established a special directorate to focus attention on nuclear issues. Yet, this directorate is focused on the nuclear deterrent and on counter-proliferation – one is to deal with illegitimate activities, the other is dedication to maintaining a legitimate, valuable contribution to national security.
- The most difficult issue and the one with the most long-term implications is the widespread perception in both the Navy and Air Force that a nuclear forces career is not the highly promising opportunity of the past era.
- The Air Force has been through a serious bathtub of focus on managing, tracking and nurturing nuclear qualification in support forces and staffs. Following some problems surfaced by inspections, the AF Institutional Support Review identified an urgent need for attention to personnel matters for nuclear experienced people.
- The demands on the SSBN force and their focus have changed little since the end of the Cold War other than some reduction in patrol rates.

Defense Science Board Task Force on Nuclear Capabilities, 2006

- Since the end of the Cold War, DoD senior-level attention to nuclear weapons management has been minimal at best. The Assistant to the Secretary of Defense for Atomic Energy's focus was expanded to include chemical and biological that have little in common with nuclear matters except the generic term of weapons of mass destruction (WMD).
- The Air Force has eliminated a major command focused on nuclear capabilities and has changed the headquarters organization dealing with nuclear matters several times in recent years and has no headquarters office or organization with nuclear in the title. Within the Navy the Strategic Systems Programs (SSP) organization has remained intact and effective. But that is largely a matter of a longstanding, tightly integrated and focused organization that has existed with little change in organization and status since 1957.

- Nuclear weapons have always been and continue to be more instruments of national policy than weapons of military operations. Hence, even during the Cold War, nuclear weapons required special organizations and approaches in DoD. These were generally dedicated, nuclear-unique, organizations and programs at the DoD staff level, in the military departments and in the combatant commands. Since the end of the Cold War, with the escalation of other national security challenges, nuclear matters have slipped even further toward the edge of DoD's mainstream attention. With perhaps one exception – the Navy Strategic Systems Programs -- the nuclear-dedicated organizations were disestablished, vitiated, or tasked with additional missions that, in various degrees, submerge the nuclear weapons activities. Nuclear weapons need to be addressed within the context of the NPR and the overall strategic posture, to include non-nuclear capabilities. Still, nuclear weapons remain unique in their policy implications, their effects, and the demands of safety and security. Hence, a competent and committed structure for nuclear weapons within the DoD needs to be re-established
- In DoD there are three key needs – creating an Assistant Secretary of Defense for Strategic Weapons (ASD [SW]), strengthening the Nuclear Weapons Council, and strengthening the role of the U.S. Strategic Command.
- The relationship between an "Assistant to the Secretary" of Defense and other DoD authorities has, over time, become cloudy and inconsistent. For this and other reasons, the Task Force believes that the Office of the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ATSD [NCB]) should be changed to a new office/position -- the Assistant Secretary of Defense for Strategic Weapons (ASD [SW]), reporting to the Deputy Secretary of Defense, with authorities that are clear and well understood.
- Within the ASD (SW), a Deputy Assistant Secretary of Defense for Nuclear Weapons (DASD [NW]) would be established and have responsibility for the nuclear aspects of strategic weapons. The DASD (NW) would have the nuclear weapons responsibilities of the current ATSD (NCB) and the nuclear weapons aspects of global strike-related programs. The ASD (SW) would work closely with the USD (AT&L) to better ensure oversight of the status and responsiveness of DoD's contractor/industrial base for nuclear weapons.
- The functions of the Defense Threat Reduction Agency (DTRA) in support of the U.S. strategic posture remain crucial. In this new construct, DTRA would report to the ASD (SW). DTRA would continue to provide strong support directly to combatant commanders.

Bottom Line from Reviewed Reports

While each of these reports appeared to be well received by the relevant senior leadership at the time of each report, very few of the recommendations were implemented with lasting effect and there has been no reversal of the decline in visible senior level attention to the nuclear enterprise.

Nuclear Enterprise Environment – Current Task Force Findings and Recommendations

Findings:

- Public debate about the nuclear deterrent, the long-term future of nuclear weapons, approaches to sustaining the deterrent, and related subjects is inevitable and necessary as the world environment changes. There are legitimate questions about all these issues. Still, this debate cannot be allowed to obscure the most obvious and relevant facts about the nuclear enterprise. We still have a large stockpile of nuclear weapons and will almost certainly have a significant stockpile for a very long time. Those are the only facts needed to understand the need for sustained, intense attention to the nuclear enterprise and to robust nuclear weapons surety.
- While this assessment was motivated by a specific incident of unusual magnitude, there are a large number of reports commissioned by the DoD on existing or developing concerns with the nuclear enterprise that have produced few lasting course corrections.

Recommendations:

- ***The national security leadership should declare, unequivocally and frequently, that a reliable, safe, secure, and credible nuclear deterrent is essential to national security, and is a continuing high national priority.***
- ***The Secretary of Defense should establish a mechanism to ensure that the lessons from this incident produce institutional and environmental change for lasting attention at the right levels to the nuclear enterprise.***

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Appendix A: Terms of Reference

THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

ACQUISITION, TECHNOLOGY AND LOGISTICS

OCT 1 2 2007

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Terms of Reference – Defense Science Board (DSB) Permanent Task Force on Nuclear Weapons Surety – Command and Control Issues

The DSB Permanent Task Force on Nuclear Weapons Surety is to conduct an independent and objective review of nuclear surety practices.

Your assessment should identify root and systemic causes and provide recommendations to help strengthen DoD nuclear surety programs and practices. The Task Force shall cover all areas of concern or risk in an effort to prevent failures in nuclear surety processes.

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

General 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.

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.

John J. Young, Jr.
Acting

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Appendix B: Task Force Membership

Task Force Members

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

Dr. Harold M. Agnew, *Independent Consultant*

Vice Admiral Lyle G. Bien, USN (Ret), *Independent Consultant*

Dr. John C. Crawford, *Independent Consultant*

Dr. John S. Foster, Jr, *Northrop Grumman Corporation*

Dr. Sydell P. Gold, *Independent Consultant*

General James P. McCarthy, USAF (Ret.), *USAF Academy*

Admiral Richard W. Mies, USN (Ret.), *Science Applications International Corporation*

Major General Thomas H. Neary, USAF (Ret.), *Science Applications International Corporation*

Dr. Robert L. Selden, *Independent Consultant*

Rear Admiral Robert H. Wertheim, *USN (Ret.), Independent Consultant*

Task Force Advisors

Major General Kenneth L. Hagemann, *USAF (Ret.), Independent Consultant*

Mr. Jan R. Smith, *Institute for Defense Analyses*

Executive Secretary

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

DSB Secretariat Representative

Mr. Brian Hughes, *OUSD (AT&L)/DSB*

Task Force Support

Ms. Brenda Poole, *SAIC*

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Appendix C: Meetings

- Principal Deputy, Office of the Deputy ATSD for Nuclear Matters, OSD AT&L
- Director, Strike Policy & Integration, SO/LIC OSD Policy
- Chief, Emergency Response Branch and Nuclear Surety Advisor, Joint Staff
- Director, Space & Nuclear Operations (AF/A3O-S) Air Staff
- Chief, Nuclear Surety Branch (AF/A3O-SNS) Air Staff
- Chief, Munitions and Missile Maintenance Division (AF/A4MW) Air Staff
- Security Forces Directorate, Nuclear/Physical Security Branch (AF/A7SO), Air Staff
- Deputy, Nuclear Weapons Surety & Policy, Navy Strategic Systems Programs (SSP) Manager, Transit Protection System, Navy SSP
- Chief, Nuclear Operations Branch, U.S. Nuclear Command & Control System Support Staff (NSS)
- Commander, 20th Air Force
- 20th Air Force organizations – A3, A4, A7
- Commander, 90th Space Wing
- 90th Space Wing organizations – Operations, Maintenance, Safety, Security Forces
- Commander, Navy Strategic Weapons Facility (SWFPAC)
- Commander, Marine Security Forces at SWFPAC
- U.S. Coast Guard at SWFPAC (mission affiliation with submarine transit)
- Commander, 8th Air Force
- Task Force 204 representatives
- Commander, 2nd Bomb Wing
- 2nd Bomb Wing organizations – Operations, Maintenance, Medical, Security Forces
- Interviews with 2nd Bomb Wing personnel – aircrews, load crews, wing weapons maintenance crews, prep crews, planners, munitions accountability
- Commander, Air Combat Command (ACC)
- Director of Air and Space Operations, Headquarters ACC
- Commander, USSTRATCOM
- USSTRATCOM organizations – Joint Functional Component Command – Global Strike and Integration, J5 Plans and Policy Directorate, J87 Global Strike Division, J31 Space Branch, J38 Nuclear Operations C2 Branch, STRATCOM IG
- Commander, 5th Bomb Wing
- Commander, 91st Space Wing
- 5th Bomb Wing Organizations – Weapons Load, Security, Munitions, Maintenance, Handling
- Interviews with 5th Bomb Wing personnel: Load Teams, Munitions Maintenance Crews, Flight Crews

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Appendix D: Acronyms and Initializations

ACC	Air Combat Command
AFB	Air Force Base
ASD (SW)	Assistant Secretary of Defense for Strategic Weapons
ASD/SOLIC	Assistant Secretary of Defense for Special Operations & Low Intensity Conflict
ATSD	Assistant to the Secretary of Defense
ATSD (NCB)	Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs
CJCS	Chairman of the Joint Chiefs of Staff
DASD (NW)	Deputy Assistant Secretary of Defense for Nuclear Weapons
DoD	Department of Defense
DOE	Department of Energy
DSB	Defense Science Board
DSWA	Defense Special Weapons Agency
DTRA	Defense Threat Reduction Agency
ICBM	Intercontinental Ballistic Missile
JAC	Joint Advisory Committee on Nuclear Weapons Surety
JCS	Joint Chiefs of Staff
NPR	Nuclear Posture Review
OPCON	Operation Control
ORI	Operational Readiness Inspection
OSD	Office of the Secretary of Defense
OSD ATSD	Office of the Secretary of Defense Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs
SAC	Strategic Air Command
SES	Senior Executive Service
SSBN	Ship, Submersible, Ballistic, Nuclear (Ballistic Missile Submarine)
SSP	Navy Strategic Systems Programs
START	Strategic Arms Reduction Treaty
TOR	Terms of Reference
U.S.	United States
USAF	United States Air Force
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USSTRATCOM	United States Strategic Command
WMD	Weapons of Mass Destruction

General WELCH. We have specific recommendations for addressing each of those three and I'll be pleased to address those during questions. Thank you, sir.

Chairman LEVIN. Thank you, General.

There are only a few of us here, so we should have some time. Let's try 6 minutes so we make sure we get in at least one round before the first vote occurs in the Senate.

General, I'm a little taken aback by your statement that there was never a safety issue and they were always under the control of American pilots. Did the pilots know they had nuclear weapons on board?

General DARNELL. Sir, they did not.

Chairman LEVIN. So, when you say they were under the control of the pilots, not knowing that you have nuclear weapons on board makes a difference, doesn't it?

General DARNELL. Yes, sir, it does. The intent behind that statement is to make it clear that they never migrated off the aircraft anywhere else.

Chairman LEVIN. In terms of safety, when nuclear weapons are on a plane and those planes are on a flight line, are there special precautions taken?

General DARNELL. Yes, sir, it's increased security on the flight line with security forces.

Chairman LEVIN. Was that increased security present here?

General DARNELL. At Minot it was not, sir.

Chairman LEVIN. It was not. Why do we have increased security when we have nuclear weapons on a plane on a flight line? Why do we provide that additional security?

General DARNELL. To ensure security of the weapon itself, because of the gravity of, obviously, anyone taking control of the weapon that should not have it.

Chairman LEVIN. The absence of that security at Minot represents a significant shortfall, does it not?

General DARNELL. It did in this case, sir, yes, sir.

Chairman LEVIN. Now, in terms of what happened here and the failures that occurred, let's go through very quickly what happened here: and stop me at any point here if what I'm saying is not accurate. The mistake was putting a pylon, which has six cruise missiles on it—and these cruise missiles were not supposed to have nuclear weapons loaded in them; they were supposed to have dummies, is that correct?

General DARNELL. That's correct, sir.

Chairman LEVIN. So the pylon that was loaded in error had nuclear weapons on it and these were the checks that failed us, these were the actions that were supposed to be taken that weren't taken. First, at Minot the payload checks were not performed by the handling team. Second, there was a deputy maintenance chief at Minot who noted the discrepancy and he never reported back to his supervisor that discrepancy between the pylon that was supposed to be on and the number of that pylon and the one that was on there. So the second failure was the deputy who noted the discrepancy not reporting it back to his supervisor.

Then the deputy did not request verification of the payload. The tow driver at Minot, who's supposed to perform payload checks, did not do so. The munitions scheduling officer or office at Minot failed to verify the status of the pylon as required prior to giving permission to move the pylon. The air crew is supposed to verify the missile status and the payload on all missiles, and they did not do so. The aircraft commander did not verify that each of the missiles had been checked and did not, as required, make an entry in his preflight log.

Now, so far am I on target?

General DARNELL. Senator Levin, I think that's pretty accurate.

Chairman LEVIN. Okay. Now, that's a lot of mistakes, a lot of checks and balances here that are supposed to work. None of those worked in this case. I think you folks in the Air Force would be the first to acknowledge the severity of not knowing that you're dealing with nuclear weapons and not taking the appropriate steps to secure them. You live with this every day. You understand the implications of the lack of security or lack of awareness that you have a nuclear weapon on board in terms of the potential for accident, and so I don't think you need a lecture from me at least on that subject. You're aware that this is a very significant failure, the likes of which we don't think has ever occurred before and hopefully will never occur again.

How many folks here would you say failed to carry out some duty that they were obligated to perform? How many different people along the line here?

General DARNELL. Senator Levin, I'm going to defer to the officer that did the investigation, but we initially decertified 90 personnel.

Chairman LEVIN. How many?

General DARNELL. 90. Now, as General Raaberg did his investigation he found that not all 90 were involved and restored their status. But initially we had 90 that were decertified.

I'll ask General Raaberg if he'd like to add anything to that.

Chairman LEVIN. How many approximately failed to perform a duty that they were obligated to perform?

General RAABERG. Sir, as you've aptly indicated, there were five specific procedures broken the day before and the day of the transfer of the tow. It's approximately 10 individuals involved in all five of those, not following the rules and not following the procedures.

Sir, you also mentioned that there were effectively three scheduling errors that caused them to actually transfer a nuclear-loaded pylon set of missiles to the aircraft. Sir, at that point the number of individuals involved in that is at least 10 to 15 in that particular realm.

Chairman LEVIN. So a total of 25?

General RAABERG. Sir, that's about right, plus the greater architect of the organizations and the units involved.

Chairman LEVIN. So, and this will be my last question; have disciplinary actions been taken to date? If so, without telling us who and what for the time being, just tell us, because these are personnel actions which I think would appropriately leave for a different setting. But against how many of those approximately 25 people would you say some action has been taken?

General DARNELL. Senator, it's my understanding that 13 were administered Uniform Code of Military Justice action. A total of 15 were administratively removed or affected by the incident.

Chairman LEVIN. They've not been returned?

General DARNELL. No, sir. Some have been returned, but received punishment for what, obviously, had occurred.

Chairman LEVIN. Thank you.

Senator Warner or Senator Inhofe.

Senator WARNER. Senator Inhofe.

Senator INHOFE. Just a couple of brief questions. First of all, I recognized General Raaberg and his fine service at Vance Air Force Base. I didn't say anything about General Peyer at Tinker Air Force Base. So this is old home week. I welcome you here.

General Welch, as I said when I was reading the statement of Senator Warner, you've come back out and I appreciate very much all of the work and the service that you continue to provide. Your report includes 16 recommendations to strengthen nuclear security. One of the recommendations was that the Secretary of Defense establish a mechanism to ensure that the lessons from the incident on August 30 produce institutional and environmental changes of lasting attention. My question would be, what mechanisms do you think we need to make sure that our successors aren't here 20 years from now addressing this same subject?

General WELCH. Let me answer that as briefly as I can. The reason for that recommendation is that the task force that I chair has been in business since 1992, although previously under a different name. Over the years there have been any number of deficiencies identified by the task force, by other DSB reports, though none of them as serious as this. In each case the deficiencies were addressed, corrective actions were implemented, but they didn't endure. Over time attention faded away, and then we encountered a new set of deficiencies.

That's the reason for the recommendation. Our recommendations regarding the level of focus in the Department, are to ensure there are flag officers and senior civilians at the right place, at the right level, whose daily focus is on the nuclear mission, and to insist that be sustained. I believe that's what's required in order to help ensure that this intense attention that we're seeing right now doesn't once again fade away in the future.

Senator INHOFE. General Darnell, when this first happened the first thing I did was draw a line between Minot and Barksdale, and it went right over Tulsa, OK. So I'm a little sensitive to the route there.

I think the most important question to ask, and you've all touched on it, but it wasn't really all that specific. Were the weapons ever armed or in danger of being armed? In other words, were the American people ever at risk of having a nuclear weapon get stolen or exploding?

General DARNELL. Senator, the weapons were never armed.

Senator INHOFE. They were never armed. I think there's an assumption everybody knows that, but certainly that wasn't covered very well back in August.

General DARNELL. The pylon itself was not powered up and as a result the weapons were not armed either.

Senator INHOFE. They're never armed during transporting?

General DARNELL. No, sir. This was what's called a tactical ferry mission. Obviously, we were anticipating a dummy load on the aircraft and there'd be no reason to power the pylon up.

Senator INHOFE. I think it's worth repeating.

I don't have any more questions.

Chairman LEVIN. Thank you.

Senator Nelson and then Senator Thune. Hopefully, if you get your rounds in we will be able to go to S–407 at that point. If not, we'll come back here. Senator Warner's waiving his questions?

Senator WARNER. I want to do that, but I want to follow on just one point that my distinguished colleague brought out. In no way do we forgive, or anyone else, the sloppiness and the breakdown in discipline and training and so forth. But the weapons were never armed, is that correct?

General DARNELL. That's correct, Senator.

Senator WARNER. As a consequence we could say that the American public was never in danger if there'd been an accidental dropping or otherwise of these weapons; is that correct?

General DARNELL. Yes, sir, that's correct.

Senator WARNER. Good.

General Welch, it's nice to see you again. It's a wonderful, wonderful time we had together over these 30 years Senator Levin and I have been on this committee. Glad that you're still very active on behalf of the interests of our country and your beloved Air Force. Thank you.

Chairman LEVIN. Just to clarify something that I said. Now, if these weapons had been jettisoned for whatever reason—there was mechanical failure or they had been jettisoned over water for whatever reason—could they represent a dangerous release of plutonium? Could that happen?

General DARNELL. Senator, it's not my understanding that that would be the case, but we'll have to clarify that for you.

Chairman LEVIN. You're saying that if these weapons were jettisoned over land——

General DARNELL. Yes, sir.

Chairman LEVIN.—that there could not be a release upon the destruction of these when they smashed into the ground, that there could not be a release of plutonium? Is that what you're saying, or you don't know?

General DARNELL. Sir, I don't know. I'd have to confirm whether that would be or not.

Chairman LEVIN. Does anyone here know? My understanding is it could be dangerous.

General PEYER. I'm a logistician, not a technician. But knowing the knowledge of how a system is developed, and that's part of the reliability of the system, is that there is no inadvertent detonation of the system——

Chairman LEVIN. No, I'm not talking about detonation. I'm talking about could the plutonium be released inadvertently if this weapon were smashed into the ground from 15,000 feet.

General PEYER. That piece I would not know.

[The information referred to follows:]

Plutonium dispersal is virtually impossible without a high explosive detonation. The W80 warhead is designed to resist detonation and remain intact in an accident or jettison scenario. The W80 utilizes insensitive high explosive (IHE) technology. IHE is designed to decompose rather than detonate in a fire. The weapons were never armed and the release of plutonium would have been highly unlikely in the event of a crash or jettisoning scenario.

Chairman LEVIN. Do you know, General Welch?

General WELCH. Yes, sir. The plutonium can't be released unless there's a high explosive detonation.

Chairman LEVIN. There's no possibility of release if jettisoned and it smashes into the ground?

General WELCH. Not unless there is a high explosive detonation, and that's very, very unlikely.

Chairman LEVIN. Unlikely. Impossible?

General WELCH. I'm reluctant to say anything is impossible. Let me say I can't imagine how it could happen.

Chairman LEVIN. All right. Then why are these so dangerous? Why do they need special inspection and security when they're on a flight line? Why is it important that a pilot even know that he has a nuclear weapon on board?

General WELCH. Because with a high explosive detonation you will indeed scatter plutonium. So the concern is to ensure that no one can have access to these weapons in a way that they can intentionally create a high explosive detonation. There are ways to do that.

Chairman LEVIN. Thank you.

Senator Bill Nelson.

Senator BILL NELSON. Mr. Chairman, that's the appropriate response. There's no assumption of detonation; however, in the crash of two planes in the late 60s or early 70s, plutonium was spread all over the place, and plutonium is lethal. Isn't that correct, General Welch?

General WELCH. Absolutely.

Senator BILL NELSON. Mr. Chairman, may I have my official opening statement put into the record?

Chairman LEVIN. It will be.

[The prepared statement of Senator Bill Nelson follows:]

PREPARED STATEMENT BY SENATOR BILL NELSON

Thank you, Mr. Chairman. When I learned about the nuclear weapons incident that occurred in August 2007, I was stunned. This is the probably the most egregious breach of nuclear weapons procedures that has ever occurred. Six nuclear weapons were unaccounted for, for over 36 hours.

To the Air Force's credit an investigation was immediately opened. General Raaberg, it appears that you had full access to everything you needed to complete your investigation and that your report was forthright and uncensored. I hope that that is truly the case.

There have now been three reports. What all three of the reports have revealed is that the events of August 2007 were not simply one-time errors, but an indication of a long erosion of discipline and attention to nuclear matters in the Air Force.

As General Welch stated in his report for the Defense Science Board, "The process and systemic problems that allowed such an incident have developed over more than a decade and have the potential for much more serious consequences." But, as General Welch also said it can be a "just-in-time rescue if lasting corrective actions are implemented now."

So, for this hearing today, the question is: Now what?

Senator BILL NELSON. General Darnell, these events show that the nuclear procedures were ignored by most everyone, and these procedures are designed to force multiple redundant opportunities to ensure that the weapons are safe and they're secure and that they're accounted for. In this case, the sloppiness and the lack of discipline and the lack of respect for the process didn't just happen overnight, and fixing the problems are going to take a while.

How long will it take to fix the problems and once fixed what steps should the Air Force take to ensure that we're not going to have this problem again?

General DARNELL. Senator, very good question. We have 124 recommendations that we are taking action on. 41 are complete. I would hesitate to give you an exact time line, but obviously we are very quickly implementing as many of the recommendations as we possibly can.

Where we started from an organization standpoint is we put some very key senior leaders into some key positions. As General Welch has mentioned before, I very soon will have a two-star general officer that will be in charge of nuclear matters on the Air Staff that reports to me, and that will be their sole duty.

We have a Nuclear General Officer Steering Group that I just chaired 2 weeks ago. We had representatives from every MAJCOM there, reviewed all of these 124 recommendations. We were able to assign Office of Primary Responsibility, in other words those responsible for implementing, and we're still working through exactly what the time lines will be.

The Nuclear Weapons Center we stood up nearly 2 years ago at Albuquerque. We'll have a brigadier general in charge of that organization in 2 months.

So from the top down, we have put some people in some key positions to ensure that we can get these recommendations implemented. I'll point out also that we put some other officers in some pretty key positions as well. Brigadier General Jonathan George is going to the Department of Energy. We have Lieutenant General Frank Klotz, who is our Assistant Vice Chief of Staff of the Air Force; Major General Dick Weber, who is my deputy, as well as Brigadier General Don Alston. I won't go through their bona fides, but they've all been squadron, group, and wing commanders, whether it be in the missile field or bomber organizations.

Senator BILL NELSON. General Welch, General Darnell was talking about all how they're correcting it in the Air Force. But in your investigation, this spills over into the DOD as well. So what do you think DOD is going to do to make sure this doesn't happen again?

General WELCH. As you say, we found this change in the level of focus on the nuclear enterprise to be Department-wide, and our report has specific recommendations on what has to be done to fix that. That is, you need flag officers or senior civilians whose daily focus is on the nuclear enterprise. You need it on the Air Staff, the Navy Staff, the major air commands, U.S. Strategic Command, the Joint Staff, et cetera, et cetera, et cetera.

Our feeling was that if you restore that level of focus, you have gone a long way towards having a long-term reliable fix on this discipline issue.

Senator BILL NELSON. General Darnell, there seems to be a disconnect here between the inspections and the actual performance. As a matter of fact, Minot usually received favorable inspection reports. So it seems that the inspections don't provide an accurate picture of the situation. So how does the Air Force address that?

General DARNELL. Senator, we've looked at that and, frankly, that's a valid observation and criticism. I will tell you that in any inspection there are going to be areas that you've isolated and

you're focused on and others that you're not looking at as closely. A team has a finite amount of time to do that.

We're looking at several different things actually. First of all, limiting the notice that we provide a unit prior to being inspected. We're looking closely at that. As you well know, if the unit's preparing to be inspected and they know when the inspection is and they've been given a significant amount of time, then they're going to prepare for it in certain ways. We think that there may be some value to a limited notice inspection for units, so we're looking at that.

Elements of our Nuclear Security Inspection and our Operational Readiness Inspection. We still think it's valid that we have them separated, but we think there are things about each inspection procedurally that could be tightened up. There has been some discussion about combining both. I think right now, I don't think we're leaning that way.

But I know General Sams, who is our Inspector General for the Air Force, has a number of proposals that he is working on that he will propose to the Chief of Staff in probably another 4 to 6 weeks.

Senator BILL NELSON. General Raaberg, you actually found where some of the inspection teams were cherry-picked. Is this a real problem in the Air Force?

General RAABERG. When I went back and looked at all the inspections, all the way back to 1996, to be a little more precise, in my report I indicated that there were in fact findings, some noncompliance. But those are not uncommon in any of those type inspections. In fact, generally they're cleared up either during the inspection or shortly after the inspection.

The key thing was there was no indicator that those deficiencies would be identified or any deficiencies identified in the inspections that led to this actual incident itself.

Sir, I'm not aware of the issue you were discussing just now.

Senator BILL NELSON. Are we talking, is your answer——

Senator WARNER. Has your time, I believe, expired?

Senator BILL NELSON. It probably has.

Senator WARNER. I think we'd like to accommodate Senator Thune.

Senator BILL NELSON. Of course.

Senator WARNER. Then our open session will be concluded. All the Senators are invited to put questions into the record. So I thank the Senator very much.

Senator Thune, you could wrap it up for us, and then we'll reconvene in S–407.

Senator BILL NELSON. Mr. Chairman, I just want one other question for the record. Is the cherry picking limited just to the nuclear inspections? He can supply that for the record.

[The information referred to follows:]

The review of past inspections conducted during the Commander's Directed Investigation (CDI) of the incident didn't reveal any evidence of "cherry picking."

The CDI that I led on behalf of the Commander of Air Combat Command did not assess the entire nuclear inspection process across the Air Force. The investigation was focused on past inspections that may have revealed issues to how the unauthorized transfer of nuclear warhead incident occurred. Therefore, I am not in a position

to comment on the nature of other inspections which were outside the review's assessment.

The Air Force Blue Ribbon Review (BRR) led by Major General Peyer documented in their report that the current Inspector General (IG) inspection process regarding Nuclear Surety Inspections was scheduled as much as 18 months in advance of the unit's visit. As such, local commanders were able to plan accordingly to ensure their unit's readiness was at peak performance for the inspection. This allowed commanders to pick their very best people, equipment, and often negotiate the visit schedule that best supported the unit's mission. This, the BRR found, led to many units' "cherry-picking" their best and brightest and in the opinion of the review, did not present the true capability of the unit. The BRR thus recommended the IG address the possibility of transitioning to a no-notice or very limited notice inspection process.

The Air Force is reviewing the nuclear inspection regime to determine if we need to make adjustments to the scope and timing of our inspection process.

Senator WARNER. Good.

Chairman LEVIN. Senator Thune.

Senator THUNE. Thank you, Mr. Chairman.

Thank you all very much for being here this morning. This is a very serious incident and I have a particular interest in it, serving both as the ranking member of the Readiness Subcommittee and on the Strategic Forces Subcommittee. I think this incident illustrates an important point and that is that everyone is human and humans make mistakes.

That said, obviously we can't tolerate mistakes on a subject that is this important. Our system has to be robust enough to protect us from human error. While I have every confidence in the system, while this subject is very much at the forefront of our minds, my concern would be that as we get farther away in time from this incident that we'll have the same loss of focus and perhaps erosion of procedures.

So what I'd like to do briefly this morning is I have some questions that I'd be happy to submit for the record, but I would like to at least ask a couple of questions, and maybe start with kind of the broad view, the 30,000 foot view, if you will. For that question, General Welch, I would simply say that your report discusses a long-term perception that nuclear forces and the nuclear deterrent mission are increasingly devalued.

I guess the question is, in your view how do we regain the focus and value of this mission, given current events in Iraq and Afghanistan?

General WELCH. Certainly the DOD and national security leaders have plenty to occupy their attention. But if you will search the Internet or anyplace else you might like to search for statements from the senior leadership emphasizing the importance of the strategic nuclear mission, I think you will search in vain. So that the people out in the field who maintain these weapons are bright people. They read, they listen. Unless they hear some statements from senior people in this government that what they do is important, they will only hear those who say that we should get rid of these weapons, that they're not important, that we don't need them any more. They hear that drum beat and it is widely publicized, and you don't hear the counter from leaders that say: Yes, it is important; nuclear deterrence remains a key issue.

So I don't think it's any more complicated than that, sir.

Senator THUNE. How would you gauge the current health of the DOD nuclear weapons surety and safety?

General WELCH. I think we have uncovered no safety issues, although there are some scenarios where two or three things can go wrong and you might be concerned. But most of our concerns have been about surety. If you look at all the areas and all the ways that we have to store and handle these weapons in order to perform the mission, it just requires, we believe, more resources and more attention than they're getting.

Now, that does not mean that the weapons are not secure. They are as secure as they have ever been. It just means that, as the standard goes up, which it has, there are technologies that can be brought to bear. Some are not brought to bear because of legal concerns. There are also resource needs that are identified, but there are other priorities.

We are not in the business of telling the Department what their priorities should be. We are in the business of identifying where we think the capability gaps are, and we have done so.

Senator THUNE. General Peyer, in your blue ribbon review you note: "A consistent observation permeating this review is the friction between the need for surety perfection and operating in an environment of tightly constrained resources." In your view, how do we best overcome that friction?

General PEYER. We've already taken many steps. Balancing the resources and the requirement is constantly on the plate of our senior leaders. So as we looked at the blue ribbon review and offered very specific areas where some investment and some resources could be applied to ensure and enhance our nuclear surety program, we've already submitted an unfunded requirements list. I believe that was submitted on Friday, and that would be for an unfunded list. As we go into the fiscal year 2010 program objective memorandum (POM), we will pick up on those and include those in our POM. So we've already begun that realignment of priorities within our budget.

Senator THUNE. I appreciate that answer, that with constrained resources it's a challenge, and we're all facing the challenge of trying to do a lot of things with a lot of competing demands and a very limited amount of resources. But how do you think we got to where we didn't allocate enough to ensure nuclear weapons surety and safety, even in an environment where we have constrained resources?

General PEYER. Senator, our review found that we still have nuclear surety and it's a strong program. The constrained resources does drive some mitigation strategies that we have. A lot of times, if you don't have an asset you'll apply people instead of an asset that you don't have, for example a piece of equipment. Our aging infrastructure, test equipment for example, nuclear weapons test equipment, is 25 or 30 years old. So definitely a relook at recapitalizing that.

So as we've gone forward with our resource decisions we are always analyzing exactly where those shortfalls are and we work mitigation strategies to be able to reduce the risk.

Senator THUNE. I see my time is up. I think we have a vote on. So, Mr. Chairman, I do have a couple other questions, but I'd be happy to enter those for the record.

Chairman LEVIN. You could take another minute or 2 if you want.

Senator THUNE. Let me just, if I could, ask General Darnell. You're in charge of day-to-day operations for the Air Force and I understand that the Air Force recently put out a new instruction on nuclear weapons maintenance procedures. I guess could you talk a little bit about what that instruction changes, as well as some of the other steps that we've already taken that will ensure that there is an appropriate long-term fix?

General DARNELL. Senator, custody transfer and accountability have been several areas that we've looked at, as well as tightening up standards on logistics movements, security, and safety. We had some procedures, scheduling procedures, that were violated there at Minot and those have been fixed through a different venue, through Air Force Instruction 21–205.

Most of the focus has been there in the logistical area to ensure we tighten up those processes.

Senator THUNE. Thank you, Mr. Chairman.

Chairman LEVIN. Thank you, Senator Thune.

Let me just ask a couple more questions on this issue of whether plutonium can be spread without a detonation. Just checking with a member of my staff, who I think is an expert on the subject, it says that what happened in Spain in apparently the late 1960s or early 1970s, the reference that Senator Nelson made, was where two American planes crashed, there was no nuclear detonation, the weapons did not go critical, but plutonium was scattered, and they're still cleaning up that plutonium 30 years later.

So General Darnell, we'll need you to clarify that for the record if you would, or any of you, if you want to comment on that for the record. But it's a very important point.

Now, we want to secure these weapons in any event because we want to secure them against theft. We've spent a lot of time on securing nuclear weapons around the world. We have Nunn-Lugar, which spends billions of dollars securing nuclear material because we don't want them to fall into the wrong hands.

But the question of whether or not planes that either crash or have to jettison their weight because, their cargo, because they're going to crash or whatever, surely it makes a difference as to whether or not those pilots know they have nuclear weapons, and it makes a difference for a number of reasons. But one of them is that in the case of a crash or in case of jettisoning, according to our information, the weapons can indeed release plutonium, which would be highly dangerous without a nuclear or high explosive detonation or without going critical.

I would welcome any further comment from our panelists on that at this point if you want to add anything. But if not, I would ask General Darnell for the record if you would clarify this point.

[The information referred to follows:]

Plutonium dispersal is virtually impossible without a high explosive detonation. The W80 warhead is designed to resist detonation and remain intact in an accident or jettison scenario. The W80 utilizes insensitive high explosive (IHE) technology. IHE is designed to decompose rather than detonate in a fire. The weapons were never armed and the release of plutonium would have been highly unlikely in the event of a crash or jettisoning scenario.

Chairman LEVIN. Senator Warner, do you want to add anything before we go over to S–407 and vote, not in that order?

Senator WARNER. Yes. Mr. Chairman, I just wish to point out that it appears that you've had some clear manifestation here of a breakdown in culture and so forth. But the inspection regime did not catch it. Does this now require you to go back and examine how you're going to reestablish the inspection regime so that we won't have a repeat of this? In other words, if this thing had persisted, this type of breakdown in culture, for maybe a decade or more, clearly the periodic checks that go on just didn't work out. Now you have to write a new system of how you're going to inspect for these potential defects again?

General DARNELL. Senator Warner, that's an area that we're looking at very closely. Obviously, inspection-wise there are areas that could be tightened up. Lieutenant General Ron Sams, who is our inspector general, already has several proposals that he wants to take to the next meeting that he has with General Moseley and review those.

But as importantly is working with our Defense Threat Reduction Agency partners and others as well, and we're committed to doing that and we've already begun.

Senator WARNER. Anybody else want to comment on that?

General WELCH. Our report found that the problem with the inspections is the scope is just too limited. For operational readiness inspections, over time the scope has been more and more limited, to the point where they really don't demonstrate operational readiness.

Senator WARNER. That's a pretty dramatic observation, General.

Thank you, Mr. Chairman. I think we've had a good hearing.

Chairman LEVIN. Thank you, Senator Warner.

Now, we're going to adjourn to S–407 and we'll be coming in and out, a number of us, because we have eight rollcall votes scheduled in a row this morning, with 10 minutes each. So it's going to be a little bit chaotic. We very much appreciate all the work you've put in on this matter, and we will see you all up in S–407 as soon as we can get there.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN

SPAIN INCIDENT

1. Senator LEVIN. General Darnell, in the 1966 incident in Spain, there was a mid-air collision involving a B–2 and a tanker aircraft. When two of the nuclear weapons fell to the ground, the conventional high explosive in the nuclear weapon detonated. This explosion scattered the plutonium in the weapons over a broad area. A second accident occurred in 1968 when a B–52 crashed on landing and the resulting fire caused a detonation of the conventional explosive resulting in plutonium being scattered, although over a smaller area than in the accident in Spain. There was no nuclear detonation in either accident, correct?

General DARNELL. Correct, there was no nuclear detonation in either accident.

W80

2. Senator LEVIN. General Darnell, although the case on the W80 is designed not to break open, if it did, is there a possibility that the plutonium pit would also break, thereby exposing plutonium to the atmosphere?

General DARNELL. There is a very small, albeit not zero, probability of plutonium release by mechanical means (crush, puncture, etc.) in an aircraft accident. However

the safety features of the W80 virtually eliminates the possibility of plutonium release in normal environments, abnormal environments, and most combinations of abnormal environments.

3. Senator LEVIN. General Darnell, although the conventional explosive on the W80 is designed not detonate in the event of a fire, is it possible that there would nevertheless still be an adverse effect on the plutonium, depending on the temperature and duration of the fire?

General DARNELL. The W80 contains insensitive high explosive (IHE), as opposed to conventional high explosive (CHE) used in older designs. Some melting of the plutonium may occur, depending on the temperature and duration of the fire.

4. Senator LEVIN. General Darnell, if the case on the W80 cracked and there were a fire, what is the possible effect on the plutonium?

General DARNELL. The use of IHE in the W80 has various advantages over CHEs used in older designs such that it is less sensitive to abnormal environments. One such advantage is its resistance to detonation from induced heat from a fuel fire. Some melting of the plutonium may occur, depending on the temperature and duration of the fire. However, since the IHE would not detonate, no plutonium dispersal would occur.

5. Senator LEVIN. General Darnell, if the pylon or an individual missile was dropped during a severe storm, are there concerns about the effect on the W80 if the case cracked, or if the case remained intact?

General DARNELL. Any such event would be viewed with concern. However, the W80 was designed and tested to withstand conditions that might occur in transport and handling, to include being dropped while mounted in a cruise missile.

6. Senator LEVIN. General Darnell, are there any circumstances under which the conventional explosive in the W80 would detonate?

General DARNELL. The W80 contains IHE, as opposed to CHE used in older designs. IHE was developed to reduce vulnerability to fire and impact, and virtually eliminates the possibility of accidental high explosive detonation in normal environments, abnormal environments, and most combinations of abnormal environments.

QUESTIONS SUBMITTED BY SENATOR JOHN WARNER

NUCLEAR OPERATIONAL READINESS INSPECTIONS

7. Senator WARNER. General Peyer, recommendation 12 of the Blue Ribbon Review calls for the consolidation of responsibilities for conducting nuclear surety inspections (NSI) into a single Air Force NSI team and conducting NSIs on a limited- or no-notice basis. What is the difference between a NSI and a nuclear operational readiness inspection (NORI)?

General PEYER. An NSI is a compliance-based inspection that evaluates a unit's ability to manage nuclear resources and comply with all nuclear surety standards. A "Satisfactory" rating is given when a unit clearly demonstrates that it can reliably handle nuclear weapons in a safe and secure environment. NSIs are conducted at intervals not to exceed 18 months and include evaluations of weapons maintenance technical operations, storage and maintenance facilities, security, safety, and logistics movement, among others areas. Successful completion of an NSI validates unit nuclear surety and is the basis upon which Major Command Commanders certify their units to conduct nuclear operations. A NORI evaluates a unit's capability to meet their nuclear wartime operational mission requirements (i.e., operational employment of nuclear weapons). A unit must demonstrate the capability to safely and reliably handle nuclear weapons via an NSI before they can perform operations required by a NORI. There are instances where both inspections evaluate common tasks and both cover nuclear surety. An NSI provides more frequent checks on unit compliance related to nuclear surety rules.

8. Senator WARNER. General Peyer, which inspection reviews the entire process from when a weapon is scheduled for transportation to when it is loaded on the aircraft prior to departure?

General PEYER. Both NSIs and NORIs look at transportation of nuclear weapons. This is an example where NSIs and NORIs overlap one another. Transportation to wartime (combat) aircraft is inspected during both NSIs and NORIs. However, the peacetime transportation of nuclear weapons is only evaluated during NSIs (i.e.,

movement of a weapon via prime nuclear airlift (C–17)). Peacetime movement of nuclear weapons is not part of a unit wartime operational mission and is therefore not evaluated during a NORI.

9. Senator WARNER. General Peyer, recommendation 12 deals only with NSI. If the problem is potentially associated with nuclear operational readiness, then why is there not a corresponding recommendation to bolster NORIs, to include no-notice inspections?

General PEYER. While nuclear surety and operational readiness do overlap, several areas of our Blue Ribbon Review (BRR) charter were really directed toward elements that influence the likely outcome of NSIs, such as the training associated with the operation, maintenance, storage, handling, transport and security of U.S. Air Force nuclear weapons systems. However, the Defense Science Board Permanent Task Force on Nuclear Weapons Surety recently completed an independent assessment on the August 30, 2007, unauthorized movement of nuclear warheads. The report included a recommendation to review the scope, scale, and duration of NSIs and NORIs. This review is currently ongoing and the Air Force Nuclear General Officers Steering Group (AFNGOSG), comprised of the most senior leadership within the Air Force nuclear community, validated the need to conduct this review.

STATE OF THE NUCLEAR MISSION FORCE

10. Senator WARNER. General Peyer, in your report, you state that previous reports and studies over the past two decades identified many of the observations and recommendations contained in your report. One such report, the Vice Chief of Staff's Institutional Support Review/Special Management Review from 1998 is particularly mentioned having many parallel conclusions. If the state of the nuclear mission force was in decline for the past two decades, yet current inspection processes failed to demonstrate that decline, is not that an indictment of the current inspection regime?

General RAABERG. I don't believe that to be true. NSIs assess a specific unit's compliance with nuclear surety standards, and the unit's ability to reliably handle nuclear weapons in a safe and secure manner. The focus of NSIs is not on the overall nuclear mission force, nor do they assess Air Force cultural change. I would submit though, that despite the end of the Cold War, and the change from a nuclear-centered Air Force to a conventionally-centered Air Force, our inspection system has been a primary contributor toward keeping airmen focused on nuclear surety and nuclear operations. Our nuclear-capable units are inspected on an 18-month cycle, which is more frequent than our conventional operations. Over the years our inspection system has identified deficiencies and analyzed trends related to the decline in requisite nuclear experience throughout the nuclear community, and these deficiencies and subsequent corrective actions have been monitored by the Air Force's most senior leadership within the nuclear community . . . the AFNGOSG, as well as the Inspectors General responsible for conducting the inspections.

11. Senator WARNER. General Welch, in your report you also mention several reports over the past decade that called for a refocus on the nuclear mission. Despite the numerous studies, few, if any, inspections showed any concerns. If the state of the nuclear mission force was in decline for the past two decades, yet current inspection processes failed to demonstrate that decline, is not that an indictment of the current inspection regime?

General WELCH. As noted in the report, corrective actions were implemented for many of the findings in the reports, but the corrective actions were not lasting as attention to the mission waned above the wing level. The inspection teams performed their assigned functions to the apparent satisfaction of the leadership, The problem was that there was not a commitment to the stressing level of demand needed to discover the deficiencies.

EROSION OF PROCEDURES OVER TIME

12. Senator WARNER. General Welch, you state, "The process and systemic problems that allowed such an incident have developed over more than a decade and have the potential for much more serious consequences." However, both installations involved were certified through the current inspection processes as being capable of fulfilling their stated mission without reservation. Given the lack of ability of the inspection processes to uncover the systemic problems, how can we have confidence in the inspection processes?

General WELCH. As noted above, the individual inspections must stress the unit sufficiently to uncover deficiencies. In the past era, the inspected unit was required to generate the foil war plan capability. That stressing demand provided confidence in the inspection outcomes. My understanding is that the Combatant Command is demanding a return to that standard and that the Air Force will support it.

13. Senator WARNER. General Welch, if this has been a systemic problem, is culpability limited only to the two wing commanders?

General WELCH. I think it is clear that the neglect of the nuclear enterprise was widespread, there has been little push-back on that conclusion, and most of the entities with nuclear enterprise responsibilities are taking action to restore the proper level of attention.

NUCLEAR CODES OF CONDUCT

14. Senator WARNER. General Welch, Admiral Rickover, who is considered the Father of the Nuclear Navy, concerned himself very deeply and directly with establishing and maintaining the organizational culture of the naval nuclear propulsion program. In 1982, in a speech he gave at Columbia University which he titled, "Doing a Job", he described the essential elements of this organizational culture—including the following: "The man in charge must concern himself with details. If he does not consider them important, neither will his subordinates . . . it is hard and monotonous to pay attention to seemingly minor matters . . . but when the details are ignored, the project fails. No infusion of policy or lofty ideals can then correct the situation."

Are you confident that the recommendations laid out in the reviews of this matter, when implemented, will reestablish the organizational culture necessary to carry out a mission of such high consequence?

General WELCH. General LeMay established a similar culture in Strategic Air Command and that culture continued through decades of successors leading Strategic Air Command. That culture endures to a large degree in the Air Force ICBM forces. That same culture endures to a large degree in the Navy nuclear forces long after Admiral Rickover's departure. But these parts of the nuclear enterprise maintain a single focus on a single mission and that strongly supports a continuing culture. However, even in these forces, the culture is impacted by a decline in the level of senior attention to the mission and the widespread perception that what they do is of declining value in the public perception. In the case of the bomber forces, the decline in the culture was greatly accelerated by the demands on the bomber force for support of conventional operations, This demand is the product of an extraordinarily valuable capability to support ongoing combat operations. This demand multiplied and accelerated the impact of the decline in senior level and national attention.

The only assurance of a culture suitable to a mission of such high consequence is restored and lasting senior level attention and national support. Actions are underway to provide the first. I have no projection on the second.

DISTINGUISHING THE NUCLEAR MISSION FROM OTHER MISSIONS

15. Senator WARNER. General Raaberg, General Chilton, Commander, United States Strategic Command (STRATCOM), spoke to an audience in Washington, DC, last month and was asked to give his thoughts regarding how the nuclear mission compares to the other missions of STRATCOM. He gave the following answer: "We have a lot of balls we juggle every day in this command. All but one of them are rubber. One is crystal. Most of them that we drop, they're going to bounce. We can pick them back up, throw them back into the stream and juggle them. But the nuclear mission is a crystal ball. We cannot afford to drop that. This is a mission area where we as human beings are challenged to be perfect. We are not perfect. That is our challenge." Do you believe the Air Force has a similarly clear view of what distinguishes the nuclear mission from its other mission?

General RAABERG. Yes, I do. The Air Force nuclear mission is a "no fail" business. We have rigid procedures in place to help our airmen in their quest to be perfect. However, my investigation revealed an erosion of our nuclear focus in some areas. The calculus has changed over the years as we moved away from a nuclear deterrent bomber force on constant alert. We used to be near a 1-to-1 nuclear to conventional ratio. Today's ratio is closer to 1-to-20. Our challenge is to take the right measures to balance the equation and refocus our nuclear enterprise. We're moving

in the right direction to do just that as we prosecute the collective recommendations from the recent investigations.

As a side note, I didn't observe the same erosion in the Intercontinental Ballistic Missile Wing at Minot Air Force Base. Their calculus has remained constant over the years.

MISSION FOCUS AND TRAINING

16. Senator WARNER. General Peyer, appendix F of your review lists the many questions you posited to the wings. If you can, please summarize the answers you received to two of them: On mission focus, "Are inspection results indicative of unit capability?" and on training, "Do you believe Air Force training requirements adequately prepare the members of your unit to accomplish their nuclear responsibilities?"

General PEYER. These questions were presented to leaders at the squadron, group and wing levels. In response to the question, "Are inspection results indicative of unit capability?", there was almost an even split between those who stated 'affirmative' versus 'negative.' Those responding 'affirmative' indicated the inspections are a fair assessment. The negative responses were diverse, however, there was a recurring suggestion to conduct unannounced inspections, and this is a suggestion the Air Force Inspector General is exploring. While our current policies do not preclude nonotice inspections, the Inspector General is exploring the feasibility of requiring nonotice inspections. In response to the question "Do you believe Air Force training requirements adequately prepare the members of your unit to accomplish their nuclear responsibilities?", most respondents stated 'affirmative'. However, there were concerns that declining experience could potentially be linked to a reduction in training frequency and quality. Several recommendations in our BRR addressed training needs. One in particular recommended providing more robust training to U.S. Air Force personnel to reinforce the primacy of the nuclear mission (BRR Recommendation #3.2.2.3) and the Deputy Chief of Staff for Operations, Plans, and Requirements (AF A3/5) has taken this recommendation for action and is evaluating training needs.

ENHANCING NUCLEAR SCIENCE AS A CAREER FIELD

17. Senator WARNER. General Welch, your report, as well as the Blue Ribbon Panel report, both found that the nuclear mission has been devalued and that, as a result, it is challenging to recruit and retain the best and brightest young airmen into nuclear-related positions. The civilian nuclear power industry experienced similar challenges after the Three Mile Island incident, and the subsequent cancellation of most new power plant orders in the United States. This Nation is still dependent, however, on existing nuclear power plants for 20 percent of our electricity generation. How do we, as an Air Force, or as a Nation, address the challenge of attracting young people to fields, such as nuclear science, upon which our national security and our prosperity depend?

General WELCH. This question is well beyond the scope of the Permanent Task Force report so my answer is a personal view informed by more than two decades of interface with the Department of Defense (DOD) and the Department of Energy nuclear enterprise. Those who claim we no longer need a viable nuclear deterrent and those who oppose nuclear power plants receive widespread attention to include editorials in major newspapers and invitations to speak in public forums. In contrast, those who believe that nuclear capabilities remain critically important to national security and that nuclear power provides a safe and clean contribution to energy independence are largely silent. Further, when they emerge from the state of silence, they are unheard. Those who spend their daily lives in the nuclear enterprise are bright and well read and they are very aware of all of the above.

The supporters of a reliable, safe, and secure nuclear deterrent and supporters of nuclear power for electricity have a more compelling story and can claim to be more aligned with the interests of the American public. For example, the poster child for opponents of nuclear power is Three Mile Island. The poster child for those who support nuclear power should be 104 nuclear power plants in the United States that have been operating safely and efficiently for years, that meet one-fifth of the Nation's electrical power needs, and that could be expanded to meet a much larger share of that growing need. Yet, few Americans are aware of this large, safe, and efficient nuclear power industry in the United Stales. Until informed supporters of nuclear deterrence and nuclear power speak up, it will be difficult to attract and retain the needed talent

18. Senator WARNER. General Welch, how do we revive these fields as the prestige areas they once were?

General WELCH. The answer to 17 applies. In addition, within DOD, there must be clearly articulated and visible senior level support for the importance of the nuclear enterprise, regardless of the shrinking size of the enterprise needed to meet national security needs in the current and expected global environment.

[Whereupon, at 10:25 a.m., the committee adjourned.]

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