

DSB Newsletter



May 2005

Dr. William Schneider, Jr., Chairman

Mr. Vince Vitto, Vice Chairman

Mr. Brian Hughes, Executive Director

Chairman's Corner

Thank you for the service you render to the nation as members of the Defense Science Board. The only thing I can offer in return is the knowledge that the products you create through the countless hours you donate to the board greatly impacts the Department and other elements of the government. An example of this in the last few weeks is positive activity on Capitol Hill as a result of the 2004 Summer Study on Transition To and From Hostilities. Two separate bills were introduced (one in the Senate and another in the House) that were almost exclusively based on the reports from the 2004 Summer Study.

Both Summer Studies for 2005 are well underway. These studies, <u>Reducing</u> <u>Vulnerabilities to Weapons of Mass Destruction (Mr. Larry Lynn and Mr. Bob</u> Nesbit, co-chairs), and <u>Transformation: A Progress Assessment</u> (Gen Larry Welch and Dr. Bob Hermann, co-chairs), have each met several times. Sub-panels are researching and developing their products. If you are not already involved in one of these studies, time is running out.



DSB MEETING DATES FOR 2005

• 5-6 May 2005 – Spring Quarterly

- 1-12 August 2005 Summer Study, Irvine CA
- 19-20 October 2005 Fall Quarterly

DSB Secretariat Staff

Mr. Brian Hughes, Executive DirectorMs. Debra Rose, Executive AssistantLTC Scott Dolgoff, Army Military Assistant

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Membership

The Board continues to actively solicit suggestions for highly qualified scientific and technical candidate members, with special emphasis on women and minority candidates. Prior Task Force participation offers an individual, OSD, and the Board an opportunity to determine a person's interest and suitability to Board activities and is a desirable prerequisite to membership on the Board.

Staff Changes

Cheryl Navarro retired on the 1st of April after 37 years of government service. Her service in the DSB over the past few years as both the Executive Officer and Executive Assistant has been greatly appreciated. We will miss her and wish her the best as she moves on to the private sector.

Office Move

The Pentagon Renovation project is now impacting the wedge where the DSB Office resides. The office will move from its current location at 3D865 to 3C553 in the next few weeks.

Task Force Status

- Operation Iraqi Freedom Lessons Learned (Chair: Gen James McCarthy, USAF study, co-sponsored (Ret)) This bv USD(AT&L), VCJS and CENTCOM, is examining current activities of Operation Iraqi Freedom to determine both near- and longterm technical and operational considerations that could be used to improve this operation and future campaigns initiated in the War Against Terrorism. The Operation Iraqi Freedom main report has been completed. Three Phase IV supporting reports are completed and being readied for printing. (LTC Dolgoff)
- Quarantining Guidance for the Severe Acute Respiratory Syndrome (SARS) **Epidemic** (Chairman: Dr. Joshua Lederberg) co-sponsored This study, bv Acting USD(AT&L) and the Assistant Secretary of Defense (Health Affairs), is chartered to assess quarantining guidance for the Severe Acute Respiratory Syndrome (SARS) epidemic, to include existing doctrine and process by which quarantine policy is generated; methods, technologies and legal

doctrine to allow safe transport of personnel through quarantined areas; identification and tracking of exposed individuals; and features of SARS guidance which may be applicable to future infectious disease outbreaks. **The Interim Report has been released**. (Lt Col Robertson)

- Patriot System Performance (Co-Chairs: Gen Mike Williams, USMC (Ret) and Mr. Bill Delaney) This study, co-sponsored by Acting USD(AT&L) and the Director, Defense Systems, is chartered to assess the recent performance of the Patriot System in OPERATION IRAQI FREEDOM from deployment through use across the threat spectrum, to include logistical, doctrine, training, personnel management, operational and material performance. The Task Force should also understand the causes of all fratricide incidents during OPERATION IRAQI FREEDOM. The Final Report has been released. (Lt Col Robertson)
- Critical Homeland Infrastructure Protection (Co-chaired by Dr. Mim John and Dr. Ron Kerber) This study is co-sponsored by Acting USD(AT&L) and the Assistant Secretary of Defense for Homeland Defense. The Task Force is chartered to assess best practices for protecting US homeland and recommending installations various to enhancing security and approaches protection of these facilities. The Task Force is to assess shortfalls, identify promising technology and/or processes, recommend methods to reduce manpower requirements, identify issues associated with military and private responsibilities for critical facility protection. The final report is in draft. (Lt Col Robertson)
- 2004 Summer Study: Transition To and From Hostilities (Co-Chairs: Dr. Craig Fields, and Mr. Phil Odeen) The study, sponsored by the Secretary of Defense, is tasked to address the transition to and from hostilities, and will be comprised of seven Panels. The Final Report and all supporting papers have been released. (LTC Dolgoff)
- Identification Technologies of the Future (Chair: Dr. Delores Etter; Vice-Chair: Mr. Jeffery Harris) This study is co-sponsored by Acting USD(AT&L) and the Director, Defense Research and Engineering. The Task Force is chartered to assess current

technologies and operational concepts to identify and track individuals and material. The investigation should encompass defense, intelligence, and commercial systems including promising technologies in the labs which are not yet deployed. **The final report is in Security Review.** (LTC Dolgoff)

- Nuclear Weapon Effects Test, Evaluation and Simulation (Chair: Dr. Mim John; Vice Chair: Dr. Jay Davis) This study is cosponsored by Acting USD(AT&L), Director, Operational Test and Evaluation and Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs). The Task Force is chartered to develop a comprehensive understanding of DoD needs and specific requirements for Nuclear Weapon Effects test, evaluation and simulation. The final report has completed Security Review. (Lt Col Robertson)
- Future Strategic Strike Skills (Chair: Mr. Walter Morrow) This study is co-sponsored by Acting USD(AT&L) and Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs). The Task Force is chartered to assess current skills available, identify new skills and recommend a strategy for achieving and maintaining the future strategic strike skill set. The final report is in draft. (Lt Col Robertson)
- Identifying Sustaining US and Department of Defense/UK Ministry of Defence Defense Critical Technologies (US Co-Chairs: Admiral William Studeman and Dr. Anita Jones; UK Chair: Dr. Julia King) This study is a joint US Defense Science Board and UK Defence Scientific Advisory Council effort. The Study is chartered to develop a methodology to identify unique defense technologies as well as commercially developed technologies needing augmentation to fulfill defense niche areas and apply this methodology to develop a list of defense critical technologies. This study is in progress. (Lt Col Robertson)
- **Mobility** (Chair: GEN William Tuttle, USA (Ret)) This study is co-sponsored by Acting USD(AT&L), and Director, Defense Systems. The Task Force is chartered to develop a comprehensive understanding of how the strengths and weaknesses of current military transport relate to the general structure of future mobility. **The final report is in Security Review.** (LTC Dolgoff)

- Missile Defense Phase IV (Information Policy) (Co-Chairs: Gen Larry Welch, USAF (Ret) and Dr. William Graham) This study, co-sponsored by Acting USD(AT&L) and the Missile Defense Agency, will assess the state of intelligence understanding of the capabilities, motivations, and attitudes of potential adversaries, and the impact of specific types of missile defense information on adversary capability to develop and have confidence in countermeasures. The final report is being reviewed for classification. (Lt Col Robertson)
- Future of the Global Positioning System (GPS) (Co-Chairs: Dr. James Schlesinger and Dr. Robert Hermann) This study, cosponsored by Acting USD(AT&L) and the Assistant Secretary of Defense (Networks and Information Integration), will assess the range of issues dealing with Galileo or other future radio navigation satellite systems. This will include capabilities and services within GPS to ensure its viability in commercial markets, the impact on frequency spectrum use, access and denial issues, and possible alternatives. The Task Force should also assess areas the DoD should seek partnering relationships outside the DoD. The final report is in draft. (Lt Col Robertson)
- Munitions System Reliability (Chair: MGEN Ken Israel, USAF (Ret.)) This study is co-sponsored by Acting USD(AT&L) and the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict. The Task Force will assess the failure rates of U.S. munitions, review ongoing efforts to reduce unexploded ordnance resulting from munitions failures, and identify measures to reduce the threat failed munitions pose to friendly forces and noncombatants. The final report is in draft. (LTC Dolgoff)
- High Performance Microchip Supply (Chair: Dr. Bill Howard) This study is cosponsored by Acting USD(AT&L), the Director, Defense Research and Engineering, the Deputy Under Secretary of Defense (Industrial Policy), and the Assistant Secretary of Defense (Networks and Information Integration). The Task Force will assess the ability of the DoD to obtain radiation hardened and limited quantities of special purpose microchips in a secure and timely manner to meet emerging needs. The Task Force will address alternatives to achieving a

trusted supply such as the creation of trusted foundries, testing, alternative manufacturing techniques, and future technologies. The Final Report has been released. (LTC Dolgoff)

- Employment of the National Ignition Facility (Chair: Gen Larry Welch, USAF (Ret.)) This study is co-sponsored by Acting USD(AT&L), the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) and the Administrator, National Nuclear Security Administration. The Task Force is to review the activation and early use plan for the National Ignition Facility (NIF) and address whether the programs are executable and balanced. The Task Force is also to assess if stakeholders are integrated into the plan and if the plan supports the goals of stockpile stewardship. The Final Reports (Volumes I and II) have been released. (Lt Col Robertson)
- Red Lessons Learned (Chair: Mr. Rich Haver) This study is co-sponsored by Acting USD(AT&L), the Under Secretary of Defense (Intelligence), and the Director, Defense Research and Engineering. The Task Force will assess what information our adversaries learn from U.S. military engagements, and particularly, what might they have learned from OIF and OEF. The Task Force is to identify what channels adversaries learn of our capabilities, and if there is evidence an adversary is adjusting to U.S. capabilities. In addition to the operational phase, the Task Force is to assess the preparation and stabilization phase as well. This Task Force is in progress. (LTC Dolgoff)
- Manufacturing Technology Program (Chair: Dr. Jacques Gansler) This study is co-sponsored by Acting USD(AT&L), and the Deputy Under Secretary of Defense (Advanced Systems & Concepts). The Task Force is to review the DoD Manufacturing Technology Program. The Task Force is to specifically address the program's investment strategy, program balance, programmatic and funding linkage, the ability of the program to mature and transition from laboratory to production, and the acquisition impact. This Task Force is in progress. (LTC Dolgoff)
- Force Protection in Urban and Unconventional Environments (Co-Chairs: Dr. Ted Gold and GEN Bill Hartzog, USA

(Ret.)) This study is co-sponsored by the Chairman of the Joint Chiefs of Staff, the Acting USD(AT&L) and the Director, Defense Research and Engineering. The Task Force is to review and evaluate force protection capabilities in urban and unconventional environments and provide recommendations to effect change to the future Joint Force. The Task Force is to consider various issues to include relevant experiences of other countries and capabilities of civilian agencies. The Task Force is to review current efforts to negate the effects of improvised explosive devices, review the ongoing Joint Urban Operations initiatives, and evaluate efforts in Intelligence, Surveillance & This Task Force is in Reconnaissance. progress. (LTC Dolgoff)

- Test and Training Sub-scale and Fullscale Aerial Targets (Co-Chairs: Mr. Bill Delaney and Gen Mike Williams, USMC retired)) This study is co-sponsored by the Acting USD(AT&L), the Director, Defense Systems, and the Director, Operational Test and Evaluation. The Task Force is to assess the future needs for sub-scale and full-scale aerial targets for developmental and operational testing. The Task Force is also examining to extent alternatives what including modeling and simulation can supplement live testing. This Task Force is in progress. (Lt Col Robertson)
- Management Oversight in Acquisition Organizations (Co-Chairs: Dr. Mim John and Dr. Ron Kerber) This study is cosponsored by the Acting USD(AT&L) and the Director, Defense Procurement and Acquisition Policy. The Task Force is to examine the structure within the Department for exercising acquisition authority and making acquisition decisions, and recommend options for improving checks and balances to protect the integrity of procurement decisions. The Task Force is to assess whether all major acquisition organizations within the Department have adequate management and oversight processes, and what changes might be necessary to implement such processes where needed. The Final Report is in staffing for release. (LTC Dolgoff)
- Roles and Authorities of the Director of Defense Research and Engineering (Co-Chairs: Mr. Don Latham, and Dr. Ted Gold) This study is sponsored by the Acting

USD(AT&L). The Task Force is to examine the past and current roles and authorities of the Director of Defense Research and Engineering (DDR&E), and determine appropriate future roles and authorities for the DDR&E. The Task Force is to examine the DDR&E in relation to other senior science and technology and acquisition officials of the Military Departments and the Defense Agencies. **This Task Force is in progress.** (LTC Dolgoff)

- 2005 Summer Study on Reducing Vulnerabilities to Weapons of Mass Destruction (WMD) (Co-Chairs: Mr. Larry Lynn and Mr. Bob Nesbit) This Summer Study is co-sponsored by the Acting USD(AT&L) and the Assistant to the Secretary of Defense (Nuclear, Chemical and Biological Defense Programs). The Summer Study is to develop a national enterprise architecture to reduce the US vulnerability to WMD. The Summer Study is to assess which WMD modalities are the US most vulnerable to, and the functional "requirements" of envisioned WMD defense capability. The Task Force is to develop an overall architecture, examine current and planned US investments in WMD defense, and recommend a prioritized investment strategy. This Task Force is in progress. (LTC Dolgoff)
- 2005 Summer Study on Transformation: A Progress Assessment (Co-Chairs: Gen Larry Welch, USAF (retired), and Dr. Robert This Summer Study is co-Hermann) sponsored by the Acting USD(AT&L), the Under Secretary of Defense (Policy), the Under Secretary of Defense (Personnel and Readiness), the Director, Force Transformation, and the Director, Defense Research and Engineering. The Summer Study is to assess the Department's continuing transformation process. The assessment is to describe the current status of transformation efforts, identify appropriate transformation objectives, and recommend ways and means to meet emerging and persistent challenges. This Task Force is in progress. (Lt Col Robertson)
- Improvised Explosive Devices (Co-Chairs: Dr. Delores Etter, and Mr. Robert Stein) ThisTask Force is co-sponsored by the Acting USD(AT&L), Director of Defense Research and Engineering (DDR&E), and Director,

Defense Systems. The Task Force originated as a panel on the Force Protection Task Force before becoming a separate Task Force. This study is to explore methods and techniques to significantly reduce the effects of IEDs (i.e., injuries, casualties, hampered or disrupted operations) on U.S. and coalition forces in operations such as are currently being conducted in OIF. **This Task Force is in progress.** (LTC Dolgoff)

Nuclear Capabilities (Co-Chairs: Gen Larry Welch, USAF (retired), and Dr. John Foster) This Task Force is co-sponsored by the Acting USD(AT&L), and the Assistant to the Secretary of Defense3 (Nuclear, Chemical and Biological Defense Programs). The Task Force is to assess the current plan for sustaining the nuclear weapons stockpile and make recommendations for ensuring the future reliability, safety, security, and relevance of the nuclear weapons stockpile for the 21st century. The assessment is to describe the progress towards the goal of an integrated new triad and examine plans to transform the nuclear weapons complex. This Task Force is in progress. (Lt Col Robertson)

DSB Reports published since Jan 2005:

- Employment of the National Ignition Facility, Volume II (January 2005)
- Summer Study 2004: Transition to and from Hostilities - Supporting Papers (January 2005)
- Patriot System Performance (January 2005)
- High Performance Microchip Supply (February 2005)

Army Science Board (ASB)

Dr. Frank Akers – Acting Chairman Dr. Lawrence Delaney – Vice Chairman LTC Scott Haraburda – Exec. Secretary Mr. Wayne Joyner - Executive Assistant

February Plenary Meeting

The Army Science Board held its February Plenary Meeting on 24 and 25 February at the Institute for Defense Analyses in Alexandria, Virginia. Briefing topics included the following:

• LTG David Melcher, DCS G-8, discussed best business practices for the Army.

• LTG William Wallace, commander of Combined Arms Center (CAC), discussed his observations as commander of V Corps during OIF.

• LTG Keith Alexander, DCS G-2, discussed intelligence operations.

• Honorable Claude Bolton, Jr., ASA (AL&T), discussed where the Army is going. He spent the next 50 minutes answering questions from the ASB members. Following this, he presented the Certificate of Appreciation for Patriotic Civilian Service to departing Board members.

• COL Edward Martin, from the Army IED Task Force, discussed IED.

• COL Rickey Smith, Director, Futures Center (Forward), discussed the Army modular force.

• Honorable Francis Harvey, Secretary of the Army, discussed his thoughts involving the transformation of the Army. Following this, he personally awarded the Decoration for Distinguished Civilian Service to Dr. James Tegnelia, the departing Chair of the ASB.

April Update Meeting

The chairs from the summer studies and the task force studies presented updates of their studies to the ASB leadership. In addition to briefing the overview of their study to date, they briefed the status of addressing each element of the Terms of Reference, remaining issues for completion of the study, and additional support or resources needed.

Additional FY2005 Task Force Study

An additional task force study was created. This was the "Future Force Aerial Systems Capabilities" studies to investigate the adequacy of the current investment in rotorcraft technologies to support Force Application and Focused Logistics Joint Functional Concepts. This study is chaired by LTG(R) Jack Woodmansee.

June Plenary

The Army Science Board is planning on holding its June Plenary at Fort Belvoir, Virginia on 7 and 8 June 2005. The main focus of this meeting is for each study group to conduct their individual group meetings, along with preparation for the upcoming ASB Summer Study Report Writing Session from 11 to 22 July at the Beckman Center in Irvine, California. As a special treat, the special 50th Anniversary Edition of the Board's Bio-Book will be issued during this plenary meeting.

Publications

The following 2004 study has been released to the public: "Intra-Theater Logistics Distribution in the Central Command (CENTCOM) Area of Responsibility."

Executive Secretary

The Army Science Board welcomes Carolyn German as its new administrative assistant. The Board farewells its Executive Officer LTC Rick Shaw, who left to work for the Assistant Secretary of the Army for Manpower and Reserve Affairs. Good luck, Rick!

For more information on the ASB, visit: <u>https://webportal.saalt.army.mil/sard-asb/</u>

Naval Research Advisory Committee (NRAC)

Mr. John M. "Jack" Bachkosky – Chair Dr Sujata Millick - Program Director

Three studies from last year are approved for public release and on the NRAC web page. Those studies were:

Science and Technology in FORCEnet; Technology Acquisition Reform; and Electromagnetic Gun Technology Assessment.

NRAC has 3 reports going through final drafting. The NRAC Venture Capital Panel is concluding with its last fact finding mtg, and will draft its findings on optimum ways in which the Navy can effectively incorporate information and process from the venture capital world. The FY04 NRAC Summer Studies are preparing their final reports on **Sea Basing** and **Modular Science and**

Technology for Modular Mission Packages.

A third panel studying:

Science and Technology for Naval Warfare, 2015-2020, has concluded its work and is outbriefing DON leadership. The final report should be available in the next few months.

The FY05 summer study topics have been selected by ASN RDA. They include **Lighter than Air Technology** and **Future Fuels**. Fact finding is under-way, with the summer study in July providing an anticipated focused 2-week conclusion. An outbrief is scheduled to DON flag leadership on 4 OCT at the Pentagon.

For more information on NRAC activities visit <u>http://nrac.onr.navy.mil</u>.

Air Force Scientific Advisory Board (SAB)

Dr. Daniel E. Hastings - Chair Ms. Heidi Shyu - Vice Chair Lt Gen John D.W. Corley - Military Director Col Charles D. Bowker - Executive Director

New SAB Leadership Announced. The Acting Secretary of the Air Force selected Ms. Heidi Shyu as FY06 chair of the United States Air Force Scientific Advisory Board. Ms. Shyu replaces outgoing SAB chair, Dr. Daniel E. Hastings of the Massachusetts Institute of Technology. The Acting Secretary of the Air Force also approved the selection of Professor Ann Karagozian to be the FY06 SAB Vice Chair. Dr Barbara Wilson has been selected to Chair the Science & Technology (S&T) Reviews.

Additional 2005 Study Topic. In February, the SAB was tasked with an additional Quick Look Study, *Persistence at Near Space Altitudes*. The study Chair, Professor Ann Karagozian, and her team held their study kickoff 24-25 March in Los Angeles, CA.

Air Force Institute of Technology Center for Systems Engineering Audit. The Air Force Institute of Technology Center Audit was outbriefed to the AFIT/CC and AFM/CC on 6 January 2005. It was outbriefed to SAF/AQR on 12 January 2005. The outbrief was presented to the CSAF on 3 March 2005. The study report recently completed the security review process and will be published in May 2005.

S&T Outbrief. The Air Force Research Laboratory Science and Technology Quality Review was outbriefed to the CSAF on 21 April 2005.

Air Force Office of Scientific Research (AFOSR) Review. The next SAB AFOSR review is scheduled for 18-22 July 2005 in Arlington, VA at the Ballston Holiday Inn.

AFOTEC Advisory Group. The Air Force Operational Test and Evaluation Center Advisory Group met 22-23 March 2005 at Kirtland AFB, NM.

Spring Board. The SAB's annual Spring Board meeting was 12-14 April 2005 in Colorado Springs, CO. The Board visited the Space Warfare Center at Schriever AFB, the Air Force Space Command at Peterson AFB, and Cheyenne Mountain AFS. The SAB Spring Board includes general board business, time for the studies to meet and present their progress to the *SAB Senior Review Group*.

2005 Study Progress. The 2005 ATR study has completed fact-finding and is now in the report-writing phase. The findings and recommendations will be briefed to the CSAF on 14 June 2005. The remaining 2005 studies are still in fact-finding phase and will begin report writing during the Summer Session. The annual Summer Session will be held 20 June – 30 June 2005 in Irvine, CA.

Publishing Status. The 2004 *Human Systems Integration* report was published and distributed as FOUO. The following 2004 studies are pending publication:

- Networking to Enable Coalition Operations, Volume 2
- Operationalizing Space Launch

Updated Air Force Instruction (AFI) Published. On 18 March 2005, an updated AFI 36-110, *The Air Force Scientific Advisory Board*, was posted on the Air Force e-publishing website at http://www.e-publishing.af.mil.

SAB Secretariat (AF/SB). On 31 March 2005, SSgt Ebony Rodriquez left for a position in the Defense Investigative Agency (DIA). Her replacement, SSgt Horton, will arrive mid-May. Lt Col Tim Kelly was selected to attend the Industrial College of the Armed Forces (ICAF) from Aug 05-Jun 06. On 27 April 2005, Major Ann Johnson completed her dissertation for her PhD in Systems Engineering.

The DIA Advisory Board

Dr. Michael Wartell – Chairman Ms. Victoria Prescott – Program Manager & Executive Secretary

The DIA Advisory Board continues to support the full range of DIA missions. The second plenary meeting of FY05 was held on 16-17 February at the Defense Intelligence Analysis Center. In April, the Advisory Board organized a panel that included three university deans of students who took part in a discussion with the DIA leadership focused on workforce issues. The

panel stimulated ideas on how DIA supervisors can better engage with the large numbers of entry level employees new to the workforce. The discussion was very enlightening and quite useful for all participants. The three panels currently underway are in the process of wrapping up their tasks and will present their findings to the Director, DIA at the upcoming plenary meeting on June 22-23. The Soldier as Sensor panel is looking at how information from the soldier is received and used by DIA; the National Signatures Program panel is reviewing all aspects of the national signatures data base; and the Communications panel is examining DIA's internal communications strategies and is conducting a best practices study of internal communications at other organizations.

Defense Science Board Active Task Forces

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Light Blue – Air Force Mil Assist

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47 IMPROVISI	ED EXPLOSIVE DEVICES	2/10/05	11/15/05						In Progres	ss	
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49 NUCLEAR	CAPABILITIES	4/1/05	11/15/05					1	In Progres		