



# DSB Newsletter



May 2006

**Dr. William Schneider, Jr., Chairman**

Mr. Vince Vitto, Vice Chairman

Mr. Brian Hughes, Executive Director

## *Chairman's Corner*

In addition to the 21<sup>st</sup> Century Strategic Technology Vectors Summer Study, USD(AT&L) signed a Terms of Reference for the 2006 Summer Study on Information Management for Net-centric Operations on 15 March. Mr. Vince Vitto and Dr. Ron Kerber will co chair this effort. Both summer Studies are well underway and have held several meetings. If you are not already involved in one of these studies, time is running out.

For all those participating in this year's summer study, please keep the 7-18 August 2006, Irvine, California, meeting dates in mind as your summer schedules fill up.

The DSB is operating several Task Forces. Many of these have started-up in the last few months, and some of these efforts are on shortened timelines. In addition, there are pending Task Forces which are expected to form in the next month or two.

Your support and contributions are important for the continuing improvement of the Department of Defense.

*Dr. William Schneider, Jr.*

## *Future DSB meeting dates*

- 7-18 August 2006 – Summer Study, Irvine CA
- 18-19 October 2006 – Fall Quarterly
- 9-10 May 2007 – Spring Quarterly
- 6-17 August 2007 – Summer Study, Irvine, CA
- 24-25 October 2007 – Fall Quarterly
- 7-8 February – Winter Quarterly

DSB WEBSITE: [www.acq.osd.mil/dsb](http://www.acq.osd.mil/dsb)

## 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.

## Task Force Status

- **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 installations and recommending various approaches to enhancing security and 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.** (Maj Lominac)
- **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 has been released.** (CDR Phillips)
- **Identifying and Sustaining US 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). The 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. **The final report has been released.** (CDR Phillips)
- **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. **The report is in draft.** (CDR Phillips)
- **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. **The final report has been released.** (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 on-going Joint Urban Operations initiatives, and evaluate efforts in Intelligence, Surveillance & Reconnaissance. **The final report has been released.** (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 assessed 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. **A classified report has been completed, an unclassified version is in security review.** (LTC Dolgoff)
- **2005 Summer Study on Transformation: A Progress Assessment** (Co-Chairs: Gen Larry Welch, USAF (retired), and Dr. Robert Hermann) This Summer Study is co-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. **Volumes 1 and 2 of the final report have been released.** (CDR Phillips)
- **Improvised Explosive Devices** (Co-Chairs: Dr. Delores Etter, and Mr. Robert Stein) This Task 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. **A classified report has been completed.** (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 Defense<sup>3</sup> (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 21<sup>st</sup> 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. **A classified report has been completed.** (LTC Dolgoff)
- **VTOL/STOL** (co-chairs: ADM Don Pilling, USN (Ret) and Dr. Bill Howard). The task force is sponsored by USD(AT&L) and Director, Defense Systems. The task force is to assess what features and capabilities Vertical Take-Off and Landing (VTOL)/Short Take-Off and Landing (STOL) aircraft should have in order to support the nation’s defense needs through at least the first half of the 21<sup>st</sup> century. **The task force is in progress.** (CDR Phillips)
- **Software Assurance** (chair: Dr. Bob Lucky). The task force is sponsored by USD(AT&L), ASD(NII) and Commander, STRATCOM. The task force is to assess the risk the DoD runs as a result of foreign influence on its software and to suggest technology and other measures to mitigate that risk. **The task force is in progress.** (CDR Phillips)
- **2006 Summer Study on 21<sup>st</sup> Century Technology Vectors** (co-chairs: Dr. Bill Graham and Dr. Ted Gold). The Summer Study is to determine the operational capabilities to support the National Security objectives of the 21<sup>st</sup> Century. Once the operational capabilities are determined, the study will then identify the science and technology requirement that will support those capabilities and compare it to current science and technology planning as well as transitioning those technologies to a capability. **The summer study is in progress.** (CDR Phillips)
- **2006 Summer Study on Information Management for Net-Centric Operations** (co-chairs: Mr. Vince Vitto, Dr. Ron Kerber). This summer study will assess the Department’s strategy, scope and progress

toward achieving a robust and adaptive Net-Centric DoD Enterprise. It will examine: the operational value enabled by networks and networking and their impact on innovations across the Enterprise; the underlying framework, architecture, processes and organizational structures necessary for delivering the power of information to the DoD enterprise; and, assess the state of the art in knowledge utilization, with focus on information discovery, sharing in a secured networked environment, visualization and collaboration. **The summer study is in progress.** (LTC Dolgoff)

- **Defense Industrial Structure for Transformation** (chair: Dr. Jack Gansler) As the DoD transforms to meet the new challenges of today's national security environment, the DoD's industrial base will be impacted. This task force will determine the degree of change likely in the industrial base, what plans and policies the Department should develop in response to globalization and the impact of the possible reduction in competition among industrial base competitors. **The task force is in progress.** (Maj Lominac)
- **Defense Biometrics Program** (chair: Dr. Joe Markowitz) A quick turn around task force requested by USD(P) and VCJCS to determine the role of biometrics within the DoD's mission space and to recommend which DoD organization is best suited to advocate and advance biometrics. It will also examine science and technology activities that promote biometric advancement and effective operational support to the warfighter. **The task force is in progress.** (Maj Lominac)
- **DoD Energy Strategy** (co-chairs: Dr. Jim Schlesinger and GEN Mike Carns (USAF, Ret.)) The task force will re-examine DoD's energy usage practices and will recommend technologies, strategies and policy to achieve an assured energy supply for a broad range of military functions while simultaneously improving energy reliability and security, reducing system vulnerability and risk, reducing demand, and where feasible, stimulating commercially viable enterprises for possible incorporation into a national energy plan designed to achieve a meaningful level of energy independence nationwide. The scope of this assessment will include both supply and demand sides

of the energy equation for operations during peacetime and wartime, and for emerging defense missions in the homeland. **The task force is in progress.** (Maj Lominac)

#### [DSB Reports completed since Feb 2006:](#)

- **2005 Summer Study on Transformation: A Progress Assessment Volumes I and II**
- **2005 Summer Study on Reducing the Vulnerabilities to WMD (classified)**
- **Force Protection in Urban and Unconventional Environments**
- **US/UK Task Force on Defense Critical Technologies**
- **Future Strategic Strike Skills**
- **Improvised Explosive Devices**
- **Nuclear Capabilities (classified)**
- **Manufacturing Technology Program**

#### **Army Science Board (ASB)**

The ASB website is located at :  
<https://webportal.saalt.army.mil/main/asb.htm>.

#### **Naval Research Advisory Committee (NRAC)**

##### Ongoing Studies:

*Distributed Operations:* 2006 Summer Study. Chair: Dr. John Sommerer, Vice-Chair: BGEN Jim Feigley (USMC-Ret.). The study will focus on the extent to which a system of systems approach, enabled by emerging technologies in areas such as materials, communications, information technology, and nanotechnology mitigate the challenges posed by Distributed Operations (DO) scenarios. The study will determine the appropriate areas for technology insertion over the next several decades, identify feasible time phasing for exploration and implementation of technology options to address critical DO capability shortfalls, and address risk associated with pursuit of particular options.

*Software Intensive Systems:* Summer Study 2006.

Chair: Dr. Patrick Winston, Vice-Chair: Ms. Teresa Smith. The study will examine how systems engineering, model driven architecture, and modular software specification and implementation methods can be applied in a realistic manner to specifications, bidding, and engineering of new complex systems across multiple organizations. Particular opportunities include the application of ideas developed in industry for the decomposition of software systems into interacting modules with clearly defined interfaces in a comprehensive manner, touching multiple points in the acquisition process. This study will also investigate challenges with fielding computer-based acquisition tools in the context of existing Navy organizational structures, policies, and the overall workflow associated with the acquisition of new systems.

*Research Vessel Support for Ocean Sciences:* Chair Dr. Fernando “Frank” Fernandez, Vice-Chair Mr. Jim Wolbarsht. This study examines the rationale for the construction of a new generation of research vessels for the support of academic oceanography.

#### Upcoming Studies:

This summer NRAC will commence another study entitled *Biometrics*. The study will review Naval needs for human identification capabilities. It will examine current DoD and Naval programs and assess the adequacy of plans and programs to meet those needs, review emerging technologies that may provide new capabilities, and identify gaps where S&T investment is needed to meet Navy and Marine Corps needs.

#### Reports:

Two reports from the 2005 summer study session have been completed and are in process for release approvals. These include a study titled “Future Fuels” (Chair: Dr. A. Michael Andrews II, Vice-chair: Prof. William Weldon) to identify, review, and assess technologies for reducing fuel consumption and for producing militarily useful alternative fuels, with a focus on tactical ground mobility. The second study titled “Lighter Than Air Technologies” (LTA) (Chair: Prof. Walton E. Williamson, Vice-Chair: Mr. Richard Rumpf) examined the designs, capabilities, and projected costs for several LTA types of assets: Free-floating balloons, aerostats, and manned and unmanned airships, in the context of the Navy and Marine Corps roles in GWOT and in the traditional missions of providing a forward-deployed naval

presence.

The report on Venture Capital (Chair: Mr. Mark Lister), looking at identifying emerging standards and technologies in the technology sector that the Department of the Navy should incorporate into its technology roadmap for providing state-of-the-art capabilities to the Fleet/Force, is currently being drafted..

More information on NRAC can be obtained from the NRAC website at [www.onr.navy.mil/nrac](http://www.onr.navy.mil/nrac)

## Air Force Scientific Advisory Board (SAB)

**General Board Meetings.** Spring Board session was held 11-13 Apr in Las Vegas, NV. During Spring Board the SAB members received briefings at Nellis AFB, NV and were exposed to an aspect of the Air Force they normally do not get to experience. The visit allowed them to integrate a theater or command focus to compliment the data collection phase of ongoing study efforts. The next scheduled board meeting is Summer Session, which will be held 19-30 June in Irvine, CA.

**FY05 System-of-Systems Engineering (SoSE) Study Outbriefs.** The SoSE outbrief was presented to NII DASD’s on 15 Feb at the Pentagon.

#### **FY06 S&T Reviews/Meetings.**

S&T discussions were held at the Pentagon with AF/CVA, Lt Gen Arthur Lichte, on 24 Feb. The S&T Quality Review outbrief was held at Wright-Patterson AFB, OH on 8 Mar. The S&T Outbrief was later presented to Lt Gen Lichte on 30 Mar. The FY07 S&T Kickoff meeting was held 25-26 Mar in Rosslyn, VA.

**FY06 Air Defense Against UAVs Study Meetings.** Study meetings were held on the following dates:

- 1-3 Feb in Rosslyn, VA
- 24 Feb via telecom
- 28 Feb-3 Mar in Rosslyn, VA
- 8-9 Mar at Tyndall AFB, FL
- 21-24 Mar in Rosslyn, VA
- 12-13 Apr at Nellis AFB, NV
- 26 Apr in Rosslyn, VA

The study is continuing its data-gathering phase and is beginning to formulate ideas on how to recommend actions that the Air Force can take to

mitigate the potential threat of hostile UAVs.

#### **FY06 Space Survivability Study Meetings.**

Space Survivability fact-finding meetings were held on the following dates:

- 6-8 Feb in Denver, CO
- 27 Feb-1 Mar in Dayton, OH
- 13-16 Mar at Vandenberg AFB, CA and Los Angeles, CA
- 29 Mar in Chantilly, VA
- 24 Apr in Chantilly, VA

Monthly SRG Telecons were held on 27 Feb, 24 Mar and 5 Apr. In May, the study team will receive final briefings at MIT Lincoln Laboratory in Boston, as well as begin report-writing efforts.

#### **FY06 SLE Study Meetings.**

Fact-finding meetings were held at Hurlburt Field, FL 16-17 Feb and at Wright-Patterson AFB, OH 15-16 Mar. On 21 Mar, the team met with SAF/XC at the Pentagon. The following day the study team met with AFC2ISRC leadership at Langley AFB, VA, followed by a meeting with JFCOM leadership in Portsmouth, VA. Fact-finding meetings were held 6-7 Apr at the USAF Academy in CO. SRG Telecons were held on 17 Mar, 31 Mar, and 28 Apr.

#### **FY06 Fuels Study Meetings.**

The Fuels study was outbriefed with DUSD (S&T) on 9 Mar. The study results were also briefed in Rosslyn, VA on 26 Mar to various officials representing the Air Force, Navy, and OSD.

**SAB Chair Meetings.** The SAB Chair met with the following:

- 22 Mar - Maj Gen Mike Worden, AF/A5X, to discuss cyber operations in war games.
- 23 Mar - Col David Bujold to discuss Long Range Strike issues.
- 29 Mar and 3 May - Lt Gen Hoffman to discuss SAB issues
- 24 Apr and 3 May - Dr. Lani Kass of the AF/Cyberspace Task Force to discuss how the SAB can assist in their CSAF/SecAF-directed effort.

**Publishing Status.** All of the 2005 studies have been released. The following 2006 studies are in review and pending publication:

- The briefing slides for the SAB's study on "Technology Options for Improved Fuel Efficiency" have been cleared for public release. The study team is currently

completing the written report.

## Defense Business Board (DBB)

In June 2006, the DBB will release recommendations on four integral and interrelated elements of Defense business transformation:

- Governance - Alignment and Configuration of Business Activities
- Roles and Responsibilities of a Chief Management Officer in the Department of Defense
- Innovation and Cultural Change
- Shaping and Utilizing the Senior Executive Service (SES) Corps

If you wish to receive a copy of these or prior reports, please visit our web site at [www.dod.mil/dbb](http://www.dod.mil/dbb).

## Defense Science Board Active Task Forces

Task Force	TOR Date	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06
Critical Homeland Infrastructure Protection	20-Jan-04												Report in Draft
Future Strategic Strike Skills	24-Feb-04												Final Report Released
Identifying & Sustaining US DoD / UK MoD Critical Technologies	21-Apr-04												Final Report Released
Red Lessons Learned	30-Aug-04												Report In Draft
Manufacturing Technology	17-Sep-04												Final Report Released
Force Protection in Urban and Unconventional Environments	21-Sep-04												Final Report Released
2005 SS: Reducing Vulnerability to WMD	10-Jan-05												Classified Report Completed
2005 SS: Transformation: A Progress Assessment	13-Jan-05												Vol I Released Feb 06 / Vol II Released Apr 06
Improvised Explosive Devices	10-Feb-05												Classified Report Completed
Nuclear Capabilities	1-Apr-05												Classified Report Completed
Future Need for VTOL/STOL Aircraft	23-Jun-05												In Progress
Software Assurance	5-Oct-05												In Progress
2006 SS: 21st Century Technology Vectors	13-Jan-06												In Progress
2006 SS: Information Management for Net-centric Operations	15-Mar-06												In Progress
Defense Industrial Structure for Transformation	2-Mar-06												In Progress
Defense Biometrics Program	13-Apr-06												In Progress
DoD Energy Strategy													In Progress

Army Mil Assist

Navy Mil Assist

Air Force Mil Assist