



# DSB Newsletter



October 2005

Dr. William Schneider, Jr., Chairman

Mr. Vince Vitto, Vice Chairman

Mr. Brian Hughes, Executive Director

## Chairman's Corner

The reports from the 2005 Summer Studies are being completed, and the study chairs are in the process of briefing the results. Due to its applicability for homeland security, the Summer Study on Reducing Vulnerabilities to Weapons of Mass Destruction has been briefed both within DoD and other parts of the government such as DoE, DHS, and the Director, National Counter-Proliferation Center. Plans are also in the works to brief HHS, NSC, and components of DoS. The Summer Study on Transformation: A Progress Assessment is scheduled to be briefed to Secretary Rumsfeld in the near future.

Congratulations to Dr. Craig Fields as the 2005 Fubini award winner. His selection to this honor was announced at our summer session in Irvine. Craig's lifetime of service and accomplishments are well known across the department and especially to those of us on the board.

We have forged a relationship with our counterparts in the United Kingdom. The first combined Defense Science Board-Defence Scientific Advisory Council (DSB-DSAC) study is nearing publication, with ADM Bill Studeman and Dr. Anita Jones co-chairing alongside 2 members of the Ministry of Defence in London. I had the pleasure of meeting the DSAC Chairman on 13 October in London. We look forward to future combined efforts.

We are in the process of finalizing the topic(s) for next year's Summer Study. As the 2006 activities begin to take form, please mark your calendar with the meeting dates listed below.

*Dr. William Schneider, Jr.*

## DSB MEETING DATES FOR 2006

- 1-2 February 2006 – Winter Quarterly
- 7-18 August 2006 – Summer Study, Irvine CA
- 17-18 May 2006 – Spring Quarterly
- 18-19 October 2006 – Fall 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.

## Staff Changes

Since the last newsletter, we've added two new faces to the DSB staff. CDR Cliff Phillips is the new Navy Military Assistant and Mr. Karl Donerson is the new Executive Assistant. Both of them were at Irvine for the Summer Study and most of you have had the opportunity to meet them. Another change since the last newsletter is Ms. Debi Rose was promoted to the position of DSB Executive Officer. Congratulations Debi.

## Task Force Status

- **Operation Iraqi Freedom Lessons Learned** (Chair: Gen James McCarthy, USAF (Ret)). This study, co-sponsored by USD(AT&L), VCJS and CENTCOM, is examining current activities of Operation Iraqi Freedom to determine both near- and long-term technical and operational considerations that could be used to improve this operation and future campaigns initiated in the War Against Terrorism. **All Task Force reports have been released.** (LTC Dolgoff)
- **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.** (Lt Col Robertson)
- **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 in identification and tracking. 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.** (CDR Phillips)
- **Nuclear Weapon Effects Test, Evaluation and Simulation** (Chair: Dr. Mim John; Vice Chair: Dr. Jay Davis). This study is co-sponsored 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 been released.** (CDR Phillips)
- **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.** (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 is in draft.** (CDR Phillips)
- **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 has been submitted for release approval.** (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 has been released.** (Lt Col Robertson)
- **Future of the Global Positioning System (GPS)** (Co-Chairs: Dr. James Schlesinger and Dr. Robert Hermann) This study, co-sponsored 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 Security Review.** (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 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. **This Task Force is in progress.** (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 report is in draft.** (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 & Reconnaissance. **The report is in draft.** (LTC Dolgoff)
- **Test and Training Sub-scale and Full-scale 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 what extent alternatives

including modeling and simulation can supplement live testing. **This final report is awaiting release.** (CDR Phillips)

- **Management Oversight in Acquisition Organizations.** (Co-Chairs: Dr. Mim John and Dr. Ron Kerber) This study is co-sponsored 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 has been released.** (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 final report is in draft and review.** (CDR Phillips)
- **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. **The final report is in draft.** (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. **The final report is in draft.** (Lt Col Robertson)
- **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. **The final report is in draft.** (LTC Dolgoff)
- **Institutionalizing Stability Operations Within DoD** (Chair: Dr. Craig Fields) This study is sponsored by the Deputy Secretary of Defense. The Task Force is to determine the best way to organize DoD to conduct Stability Operations. The Task Force was asked to address a number of issues to include: what organizational change is needed within OSD Policy, the Joint Staff and the rest of DoD to manage implementation; what organizational change is needed within DoD to improve our ability to conduct or support stability operations; what should be the timing and sequence of organization change within DoD; and, what additional staffing is required for any new or reshaped stability operations entities in DoD? **The final report is in draft.** (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. **The final report is in draft.** (Lt Col Robertson)
- **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 TOR was signed 5 Oct 05.** (CDR Phillips)

#### [DSB Reports published since May 2005:](#)

- [Management Oversight in Acquisition Organizations](#)
- [Missile Defense Phase IV – Information Policy](#)
- [Nuclear Weapons Effects Test, Evaluation, and Simulation](#)
- [High Leverage Lessons Learned From Operation Iraqi Freedom](#)
- [Munitions System Reliability](#)

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

**Dr. Frank Akers – Chairman**

**Dr. Lawrence Delaney – Vice Chairman**

**COL Heather Ierardi – Exec. Secretary**

**Mr. Wayne Joyner - Executive Assistant**

The Army Science Board held its General Membership Meeting at Ft. Leavenworth, Kansas 12 to 14 October 2005. In addition to welcoming new members, we closed out several of our FY05 studies which were briefed to the Secretary of the Army. Under the direction of the Chairman, Dr. Frank Akers, we began forming the new studies for FY06. The Army Science Board (ASB) is undertaking a wide range of studies in 2006 that examine emerging technologies that enhance the modular force as well as lay the foundation for equipping the future force. New topics being explored include Business Transformation, Military Support to Civil Authorities and Wireless Network Potential. Additionally, ASB efforts continue on three ongoing studies addressing Information Operations, Modularity and Countering the Asymmetric Threat. Once approved by the Secretary of the Army, these studies will be posted on the ASB website: <https://webportal.saalt.army.mil/main/asb.htm>.

The kick off Plenary Session for the FY06 studies is scheduled for 7-8 December 2005 in the Washington DC Area.

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

**Mr. Mark Lister – Chair**

**Dr Sujata Millick - Program Director**

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

## **Air Force Scientific Advisory Board (SAB)**

**Ms. Heidi Shyu – Chair**

**Prof. Ann Karagozian – Vice Chair**

**Lt Gen Don Hoffman – Military Director**

**Col Charles D. Bowker – Executive Director**

**Urban Operations.** The Urban Operations team met with 1 MEF/CC at NAS Miramar, CA on 5 May. The team also met with Dr. David Kay on 17 May. The Executive Panel held a telecom on 20 May and the study was briefed to the CSAF on 6 July. On 9 August, the team met for a final read through on Vol 1.

**Domain Integration.** The team met 10-13 May in Rosslyn, VA and presented the study outbrief to the CSAF on 7 July. They revisited the CSAF on 5 August. A study brief was presented to AFMC/CC at Wright-Patterson AFB, OH on 18 August. A brief to Maj Gen Latiff, at the NRO, is scheduled for 19 October.

**Near Space.** The team met 13 May at Los Angeles, CA. The team presented a briefing to DARPA on 9 June, an outbrief to the CSAF on 6 July, and a briefing to AFSC/CC, Gen Lord in Colorado Springs, CO on 8 August.

**Systems-of-System Engineering.** The team met 16-18 May in Rosslyn, VA. They presented the study outbrief to the CSAF on 7 July, and to Lt Gen Hoffman and AF/XI, Lt Gen Hobbins on 7 October.

**Advisory Groups.** The Human Systems Wing Advisory Group met at Brooks City Base, San Antonio, TX on 18 May. An Air Force Operational Test and Evaluation Advisory Group outbrief was presented to Gen Scott on 26 May.

**Automatic Target Recognition.** The study was outbriefed to the CSAF on 14 June.

**SAB Briefings.** Briefings were presented to AWC/CC at Maxwell AFB, AL on 11-12 July and to AFRL/CC, Gen Lamy, in Dayton, OH on 25 July. The SAB presented an initial inbrief for Lt Gen Hoffman, the new SAB Military Director and SAF/AQ, on 23 August. Ms Shyu met with Lt Gen Hoffman on 1 September. The SAB chairs met with the USECAF on 30 September to discuss the upcoming Quick Look study on Fuel Conservation.

**SAB New Members.** SAB New Member Training was conducted 16-17 August. New Member Orientation for Fall Board was held on 4 October.

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

**S&T Quality Reviews.** Dr. Barbara Wilson, S&T Chair, met with Mr. Jaggars on 19 July to discuss S&T Quality Reviews. A preparation meeting for the 2005 AFRL/VA S&T Review was held in Dayton, OH on 19 August. The S&T Kickoff was held 13-14 September at Woods Hole, MA. The MLQ site visit was conducted 19-20 September at Tyndall AFB, FL. AFRL/HE S&T site visits were conducted at Brooks City Base, San Antonio, Texas on 21 September and at Mesa, AZ on 23 September. An additional AFRL/HE S&T site visit is scheduled for 17-21 October at Wright-Patterson AFB, OH. The AFRL/MN S&T site visit is scheduled for 24-28 October at Eglin AFB, FL. AFRL/ML and AFRL/VA S&T reviews are scheduled for 31 October - 4 November at Wright-Patterson AFB, OH.

**Summer Session.** The SAB's annual Summer Session was 20 Jun – 1 Jul 2005 in Irvine, CA. The SAB Summer Session includes general board business and time for the studies to meet and write their reports.

**Fall Board.** The annual SAB Fall Board was held 5-7 October in Rosslyn, VA. The Fall Board includes welcoming new members, saying good-bye to departing members, and assigning board members to upcoming studies. Ms Heidi Shyu assumed the duties of Chair, vacated by Dr. Dan Hastings, and Prof Ann Karagozian assumed the duties of Vice Chair, vacated by Ms. Shyu. The FY06 study topics announced include, *Defense Against UAVs*, *Space Survivability*, *Fuel Conservation*, and *Rapid, Affordable Experimentation*.

**Publishing Status.** The following 2004 studies have been published:

- *Networking to Enable Coalition Operations, Vol.2*
- *Operationalizing Space Launch*
- *Academic Audit of AFIT Programs in Systems Engineering*

The following 2005 studies are pending publication:

- *Air Force Operations in Urban Environments*
- *Domain Integration*
- *Automatic Target Recognition*
- *Systems-of-System Engineering for Air Force Capability Development*
- *Persistence at Near Space Altitudes*

## **Defense Business Board (DBB)**

**Chairman: William (Gus) Pagonis**

**Vice Chairman: Michael Bayer**

**Acting Executive Director: Kelly Van Niman**

The DBB's Performance-Based Management Task Group Report FY05-1 is available on the website ([www.dod.mil/dbb](http://www.dod.mil/dbb)). This report makes recommendations to the Secretary of Defense regarding the adoption of a performance-based management system for civilian employees in the Department of Defense, where performance standards are aligned to organizational goals, and reviews and appraisals are handled accordingly.

The DBB has released Part I of its Task Group reports on the Military Postal System and Healthcare for Military Retirees. Copies of these reports can be obtained from the Executive Director, 703-697-2346. Part II of these reports will be finalized during the next quarterly Board meeting on December 1, 2005.

# Defense Science Board Active Task Forces

**Green – Army Mil Assist**

**Light Blue – Air Force Mil Assist**

**Dark Blue – Navy Mil Assist**

ID	Task Force	TOR Date	Finish	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05
1	<b>IRAQI FREEDOM LESSONS LEARNED</b>	12/14/01	6/16/05	All Reports Released							
2											
3	<b>CRITICAL HOME AND INFRASTRUCTURE PROTECTION</b>	1/20/04	11/30/05	Report in Draft							
4											
5	<b>IDENTIFICATION TECHNOLOGIES OF THE FUTURE</b>	10/21/03	11/15/05	In Security Review							
6											
7	<b>NUCLEAR WEAPON EFFECTS TEST, EVAL &amp; SIM</b>	1/21/04	6/8/05	Final Report Released							
8											
9	<b>FUTURE STRATEGIC STRIKE SKILLS</b>	2/24/04	12/15/05	Report in Draft							
10											
11	<b>IDENTIFYING &amp; SUSTAINING US DOD / UK MOD CRIT TECH</b>	4/21/04	12/15/05	Report in Draft							
12											
13	<b>MOBILITY</b>	2/20/04	10/21/05	Awaiting Release							
14											
15	<b>FUTURE OF THE GLOBAL POSITIONING SYSTEM</b>	4/9/04	11/1/05	In Security Review							
16											
17	<b>MISSILE DEFENSE PHASE IV (INFORMATION POLICY)</b>	4/13/04	6/10/05	Final Report Released							
18											
19	<b>MUNITIONS SYSTEM RELIABILITY</b>	4/30/04	10/5/05	Final Report Released							
20											
21	<b>RED LESSONS LEARNED</b>	8/30/04	1/16/05	In Progress							
22											
23	<b>MANUFACTURING TECHNOLOGY</b>	9/17/04	11/25/05	Report in Draft							
24											
25	<b>FORCE PROTECTION IN URBAN &amp; UNCONV ENVIRONMENTS</b>	9/21/04	12/15/05	Report in Draft							
26											
27	<b>SUB-SCALE AND FULL-SCALE AERIAL TARGETS</b>	10/22/04	10/25/05	Awaiting Release							
28											
29	<b>MANAGEMENT OVERSIGHT IN ACQUISITION</b>	11/12/04	5/5/05	Final Report Released							
30											
31	<b>ROLES AND AUTHORITIES OF DDR&amp;E</b>	12/20/04	12/15/05	Report in Draft							
32											
33	<b>2005 SS: REDUCING VULNERABILITIES TO WMD</b>	1/10/05	11/30/05	Report in Draft							
34											
35	<b>2005 SS: TRANSFORMATION: A PROGRESS ASSESSMENT</b>	1/13/05	11/30/05	Report in Draft							
36											
37	<b>IMPROVISED EXPLOSIVE DEVICES</b>	2/10/05	12/15/05	Report in Draft							
38											
39	<b>NUCLEAR CAPABILITIES</b>	4/1/05	12/9/05	Report in Draft							
40											
41	<b>STABILITY OPERATIONS</b>	8/23/05	11/1/05	Report in Draft							
42											
43	<b>VTOL/STOL</b>	6/23/05	6/30/06	In Progress							
44											
45	<b>SOFTWARE ASSURANCE</b>	10/5/05	8/15/06	In Progress							