



DSB Newsletter



January 2000

Dr. Craig I. Fields, Chairman

Philip A Odeen, Vice Chairman

John V. Ello, Executive Director

Chairman's Corner

With new study initiatives beginning in 10 important areas, the year 2000 promises to be a most challenging and exceptionally demanding period for the Defense Science Board. In particular, I would like to express my thanks and appreciation to the following respective Chairs and Co-chairs who have agreed to lead these important and timely new DSB Studies:

- *Impact of DoD Acquisition Policies/Practices on Health/Competitiveness of US Defense Industry (Mr. Phil Odeen)*
- *Information Warfare – Defense (Mr. Larry Wright)*
- *Biological Technologies in Civil Support (Dr. George Poste)*
- *Unconventional Nuclear Warfare Defense (Mr. Roger Hagengruber)*
- *GPS, Phase III (Mr. Bill Delaney)*
- *T&E Capabilities (Mr. Dave Heebner)*
- *Air Force Space Launch Facilities (Mr. Pete Aldridge)*
- *Efficient Utilization of Defense Laboratories (Mr. Walt Morrow)*
- *Information in Support of PSYOPS in Military Conflict (Mr. Vince Vitto)*
- *Intelligence Needs for Civil Support (Dr. Ruth David/Mr. Peter Marino)*

I would also like to take this opportunity to call everyone's attention to Jack Gansler's recent memo soliciting nominations for the Year 2000 Eugene G. Fubini Award. This prestigious honor represents the highest recognition by the Secretary of Defense for outstanding technical & scientific advice to the Department of Defense over a sustained period of time. I urge all of you to actively participate in this nominating process so that we can identify a truly worthy candidate to follow in the tradition of Gene Fubini, John Foster and Joe Braddock.

Happy New Year to all!

Dr. Craig I. Fields

DSB MEETING DATES FOR 2000

- Spring Quarterly May 24-25
- Summer Study August 6-18
- Fall Quarterly September 27-28

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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. An overall roster of current Board members is included in this newsletter.

Task Force Status

- **1999 Summer Study on 21st Century Defense Technology Strategies**(Co-chairs: Mr. Larry Lynn & Mr. Donald Latham) The study, sponsored by USD(AT&L) and CJCS, examined the 21st century defense technology strategies to meet the national security challenges of the next two decades. Volume I of the Final Report was released in Nov 99 and Volume II is in security review. It is expected to be released in Feb 00. (Maj Yang)
- **AF Space Launch Facilities** (Chairman: Mr. Pete Aldridge) This study, sponsored by USD(AT&L), will assess future requirements for space launch ranges capable of meeting both national security space needs and civil and commercial needs. The Task Force is in process and an interim report is expected on 15 Feb 00. (Maj Yang)
- **Biological Defense** (Co-chairs: Dr. Josh Lederberg and Dr. George Whitesides) This study, co-sponsored by USD(AT&L) and DDR&E, will be a combined effort of the DSB and the TRAC. The study will assess the scope of activities conducted by the DoD to ensure its future preparedness to deter, defend against and respond to attack by biological weapons. The Task Force is in process with an expected completion in Apr 00. (CDR Hughes)
- **Biological Defense in Civil Support** (Chairman: Dr George Poste) The study, co-sponsored by USD(AT&L) and DDR&E, will examine DoD roles and capabilities in response to a biological attack, examine epidemiological prediction modeling and surveillance capabilities, assess the logistic adequacy of the supply chain for vaccine production, novel vaccine delivery techniques and the adequacy of vaccine development and verification technologies against known and potential diseases. The study will start in Feb 00. (CDR Hughes)
- **Coalition Warfare** (Chairman: Dr. Ted Gold) The study, co-sponsored by USD(AT&L) and CJCS, examined how best to make future U.S. military capabilities, embodied by JV2010, coalition compatible. The Task Force is complete. Awaiting draft report from Task Force Chair. (Maj Yang)
- **Creation and Dissemination of all Forms of Information in Support of PSYOPS in Time of Military Conflict** (Chairman: Mr. Vince Vitto) The study, co-sponsored by

USD(AT&L) and ASD(SO&LIC), is assessing the capabilities of the United States Armed Forces to develop programming and to broadcast factual information that can reach a large segment of the general public in a country like the Federal Republic of Yugoslavia. The Task Force is in process. (CDR Hughes)

- **Frequency Spectrum Issues** (Chairman: Mr. William Howard) The study, co-sponsored by USD(AT&L), ASD(C3I) and JCS/J-6, will examine the competing interest in, and access to, the RF frequency spectrum and its impact on military readiness and national security in the 21st century. The Task Force is in process. An interim report will be made available in time to support the 2000 World Radio Conference which commences on 8 May 00. (Maj Yang)
- **Global Position System (GPS) – Phase III** (Chair: Mr. William Delaney) This study, co-sponsored by USD(AT&L) and ASD(C3I), is a quick analysis and assessment of our current plan for enhancing the GPS. Final out-brief is due by the end of Jan 00 with a final report to follow in 60 days. (LTC McPheeters)
- **Human Resources Strategy** (Co-chairs: Dr. John Foster & Gen. Larry Welch) This Task Force, co-sponsored by USD(AT&L) and USD(Personnel & Readiness), reviewed trends and opportunities to improve DoD's ability to attract and retain civilian and military personnel with the motivation and intellectual capabilities to serve and lead in civilian and military capacities. The final report is expected to be released in Feb 00. (LTC McPheeters)
- **Impact of DoD Acquisition Policies and Practices on Health and Competitiveness of US Defense Industry** (Chairman: Phil Odeen) This study, sponsored by USD(AT&L), will review DoD acquisition policies and to assess the impact of those policies, practices and regulations on the health and competitiveness of US defense companies. The Task Force will start in Feb and a final brief is expected on 10 April 00. (Maj Yang)
- **Improving Fuel Efficiency of Weapons Platforms** (Co-Chairs: Al Alm and VADM Richard Truly) This study, co-sponsored by DUSD(S&T) and DUSD(ES), will identify technologies that improve fuel efficiency of the full range of weapons platforms (land, sea and air) and assess their operational, logistical, cost and environmental impacts for a range of practical implementation scenarios. The study is in process. (CDR Hughes)
- **Information Warfare – Defense** (Chairman: Mr. Larry Wright) This study, co-sponsored by USD(AT&L) and ASD(C3I) will review and evaluate DoD's ability to provide information assurance to carry out JV2010 in the face of information warfare attack. The Task Force will be organized into 5 subpanels: Organization, Legal, Policy, Technology, and Architecture. The Task Force is in process and an interim report is expected in Jun 00. (Maj Yang)
- **National Imagery and Mapping Agency (NIMA)** (Co-chairs: Dr. Anita Jones and Mr. Peter Marino) The Task Force, sponsored by USD(AT&L), reviewed the objectives and plans of NIMA to meet the needs of the national and military intelligence customers as they enter the 21st Century. The final report is in security review and is expected to be released in Feb 00. (Maj Yang)
- **Nuclear Simulation** (Chairman: John Crawford) The study, sponsored by USD(AT&L), will review the operational, research, and management aspects of the Defense Threat Reduction Agency (DTRA) nuclear simulation program. The Task Force will determine whether the DTRA program is focused on near and far-term DoD needs and requirements and to provide a basis for assessing the adequacy of the program. The study is in process with an expected completed date of May 00. (CDR Hughes)
- **PACM** (Chairman: Gen Glen Otis) The study, co-sponsored by USD(AT&L) and BMDO, will examine the seeker technology upgrade for the Patriot Anti-Cruise Missile program. A progress report was provided in Dec 99 and the final report is due 15 Feb 00. (LTC McPheeters)

- **Software** (Co-chairs: Bob Nesbit & Marcus Hanson) The study, co-sponsored by USD(AT&L) and DDR&E, will determine the conditions under which the procurement of defense software can appropriately use commercial practices and to develop a strategy for defense software procurement that substantially incorporates such practices. The Task Force is in process. (CDR Hughes)
 - **Space Superiority** (Co-chairs: Mr. Edward Aldridge and Dr. Robert Hermann) This study, co-sponsored by USD(AT&L) and ASD(C3I), will provide recommendations on how best to respond to the evolving space environment in a manner which will preserve U.S. leadership, superiority and dominance in national security space capabilities. This effort was organized into five subgroups: GPS, SBIRS, Space Surveillance, Threat Assessment and Organization. Final report is expected to be released in Feb 00. (Maj Yang)
 - **Stealth Technology & Future S&T Investment** (Chairman: Dr. Robert Cooper) This study, sponsored by Director, Strategic and Tactical Systems, will explore the relationship between low observable and electronic warfare technologies in providing future weapon system survivability. The Task Force is complete. Awaiting draft report from Task Force Chair. (Maj. Yang)
 - **Super Computing Needs** (Chairman: Bob Nesbit) The study, co-sponsored by USD(AT&L) and DDR&E, will investigate the rapidly changing super computing technology which offers DoD an opportunity to explore new alternatives to existing capability, especially in the areas of distributed networks and multi-processor machines. The Task Force is in process. (CDR Hughes)
 - **Tactical Battlefield Communications** (Chairman: Dr. Michael Frankel) Sponsored by USD(AT&L), ASD(C3I), and JCS/J-6, this Task Force has been chartered to determine U.S. needs for wireless communications on future battlefields and the adequacy of communication architecture plans to fulfill those needs. The final report is expected to be released in Feb 00. (Maj Yang)
 - **Technology Capabilities of Non-DoD Providers** (Chairman: Mr. Walter Morrow) The Task Force, sponsored by USD(AT&L), will develop a template for how the DOD should acquire new technology and systems. The Task Force is examining the ability of Non-DoD suppliers to provide warfighting technology, engineering, and test capabilities needed for future U.S. military forces. This Task Force is in process. (LTC McPheeters)
 - **Training and Education** (Co-chairs: Dr. Joe Braddock and Ralph Chatham) This study, co-sponsored by USD(P&R), DDR&E and JCS/J-7, will analyze the impact of training techniques and the potential future learning environment upon the warfare proficiency of our military forces, active and reserve components, and that of potential adversaries in the context of Joint Vision 2010 warfare. The study is in process with an expected completion date of Feb 00. (CDR Hughes)
- Since publication of the last DSB Newsletter, the following reports have been completed and released:***
- **21st Century Defense Technology Strategies, Vol I, Nov 99**
 - **Globalization & Security, Dec 99**

Other Advisory Board Activities

Army Science Board (ASB)

Mr. Michael J. Bayer - Chairman
COL Len Gliatta - Executive Secretary

1999 ASB Studies:

Overarching Summer Study

- Technical and Tactical Opportunities for Revolutionary Advances in Rapidly Deployable Joint Ground Forces in the 2015-2025 Era

Special Studies

- Army Counterintelligence Technologies
- C4ISR – Leveraging Commercial Applications

The ASB FY2000 summer studies kicked off with a leaders meeting on 15 Dec. The first plenary session occurred on 13-14 Jan at the Institute for

Defense Analysis. Among the presenters were the Under Secretary of the Army, Honorable Bernard Rostker, and the Vice Chief of Staff of the Army, GEN Jack Keane. The framework and study schedules were announced during the meeting. The study will be conducted under the organization of four panels, Operations, Sustain and Support, Information Dominance and Training. Study participation will include representation from other Service Science Advisory Boards, and general officers from the Army and Air National Guard, USMC, and the Army and Air Force Reserve. In addition, the Science Advisor from the Marine Corps Combat Development Command will also be participating. The TRADOC Commander is making available knowledgeable officers from various schools. The Commanders of Army Materiel Command and Defense Logistics Agency are also providing senior representatives. This year two faculty members from the United States Military Academy will participate in the study. For the second year in a row, Cadet Command is furnishing the study with four technically oriented ROTC cadets. They were selected from a national application pool to participate on a part time basis during the academic year and on a full time basis at the Beckman Center this coming Jul. In addition, two West Point Cadets have been selected to participate.

The summer study panels are scheduled to meet on a monthly basis until the summer study report writing session scheduled to occur at the University of California, Beckman Center, Irvine, California from 17 to 27 Jul 00.

For more information on ASB activities visit, <http://www.sarda.army.mil/home.htm>

Naval Research Advisory
Committee (NRAC)

Dr. Patrick H. Winston – Chairman
Ms. Diane Mason-Muir – Program Director

Task forces:

- **Optimized Surface Ship Manning (Summer Study)** This effort assessed Navy efforts to optimize manning on surface ships.

This included a review of previous relevant studies, current programs in U.S. and foreign navies, and relevant technology opportunities. The report is pending final approval for release to the public.

- **Unmanned Vehicles for Mine Countermeasures (Summer Study)** This effort addressed the application and identification of alternatives for Unmanned Vehicles (UVs) in Mine Countermeasures (MCM) Operations. The panel reviewed current programs under development to determine gaps and overlaps and made recommendations for future UV requirements. The report is in the editing process. At the request of ASN(RD&A), NRAC will host a workshop in the spring as an attempt to identify new ideas regarding sensors (biomimetic, etc...) for detecting buried mines. The workshop will emphasize new talent and ideas from all disciplines. Based on the results from the workshop, a follow-on task force on surf zone sensors may be initiated.
- **NRAC GPS Vulnerability Report** This study examines the vulnerabilities of the Global Position System (GPS) which provides a common time and coordinate frame for conducting joint military operations. The classified report is pending final approval for release.

YEAR 2000 STUDY TOPICS

- **Quality of Life (Summer Study)**
- **Command Center of the Future (Summer Study)**
- **Aging Aircraft**

NRAC has no new Committee members.
For more information on NRAC activities visit, <http://nrac.onr.navy.mil/webpage/default.html>

Air Force Scientific Advisory Board (SAB)

Dr. Robert Selden - Chair
Col Robert Schraeder - Executive Director

On 16 Dec 99 Secretary Peters and General Ryan appointed Dr. Robert Selden as the next Chair of the Scientific Advisory Board, effective 1 Jan 00. Dr. Selden will assume the duties of the Chair from Mrs. Crawford and Dr. Ballhaus during the Summer Study Kick-Off meetings.

General Gregory S. Martin will relinquish his duties as the Military Director of the Scientific Advisory Board to Lt Gen Stephen Plummer in January. Gen Martin is leaving to assume command of the United States Air Forces, Europe. Lt Gen Plummer is assuming the Military Director duties (and those of the Principal Military Deputy, Assistant Secretary of the Air Force, Acquisition) from his present position as the Director of Programs, Deputy Chief of Staff, Plans and Programs.

The Kick-Off Sessions for this coming spring and summer's studies will be held at ANSER in Crystal City, 25-27 Jan 00. The chairs for the studies are:

- **World Ready in an Era of Limited Access:** Dr. Peter Worch
- **S&T and the AF Vision:** Dr. Bill Ballhaus
- **Hypersonics:** Dr. Ron Fuchs
- **BattleLab Quick Look:** Maj Gen (r) Don Lamberson.
- **ECIT Facility Quick Look:** Maj Gen (r) George Harrison

Future meeting dates:

17-18 Feb, S&T Panel

17-19 Apr, Spring Board Meeting

10-21 Jul, Summer Study Session @ Hayes Conference Center, San Jose, CA

The *S&T Quality Review* process for this year is complete, the Directorate reviews for this year having included Air Vehicles, Materiel, Weapons, Information, and Human Effects. The meeting for panel chairs to normalize the results of the individual reviews will be at ANSER and panel chairs for this year and last are invited to attend.

For more information on SAB activities visit, <http://ecs.rams.com/afosr/af/sab/edu/menu/any/sabindex.htm>

Study Updates:

- **Building the Joint BattleSpace**

InfoSphere. Gen McCarthy's outbrief of the study findings and recommendations to Mr. Peters and General Ryan led Mr Peters to direct that each Assistant Secretary and Deputy Chief of Staff on the Air Staff be briefed on the results, and that it become the Air Force vision in this area. The briefing and report are currently in the coordination process through the Air Staff for distribution approval.

- **Technologies for Leveraging Aerospace Power in Situations Other than Conventional War.** Volume I of the report is in review for approval for public release, and Volume II will enter the process shortly.
- **Ensuring Successful Implementation of Commercial Items (COTS) in Air Force Systems.** The report is in coordination for release.
- **Spectrum Management.** The outbrief is currently scheduled for February.
- **Test & Evaluation.** Dr. Jim Mitchell's *Air Force Test and Evaluation Infrastructure Study* has finally been signed out. It is currently available only to other official U.S. Government agencies or their contractors.

DIA Science and Technology Advisory Board

Dr. Michael Wartell – Chairman
Maj Don Culp – Exec Sec & Dir

The Science and Technology Board (STAB) has representation on the Senior Steering Groups for the four defense intelligence priority thrusts which are: **fix the database problem, intelligence integration to achieve a common operating picture, revitalize the workforce, and shape to meet the asymmetric threat.** Many STAB members will participate in supporting working groups, and the STAB is considering separate studies or other activities to augment these efforts. All other STAB panels have been put on hold for the present.

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DSB Task Force Timelines

