



# **DSB Newsletter**



May 2000

**Phillip A Odeen, Vice Chairman**

**Dr. Craig I. Fields, Chairman**

**John V. Ello, Executive Director**

## **Chairman's Corner**

*With our Year 2000 Summer Study Program now well underway, I want to express my thanks and appreciation once again to the chairpersons of our four inter-related Study initiatives:*

- *Defensive Information Operations – Mr. Larry Wright*
- *Defense Against Biological Weapons – Dr. George Poste*
- *Unconventional Nuclear Warfare Defense – Mr. Roger Hagengruber*
- *Intelligence Needs for Civil Support – Dr. Ruth David & Mr. Peter Marino*

*The challenges that DoD will be facing in this new century, regarding its Civil Support responsibilities, will surely be formidable and I can think of no more timely and appropriate initiative for the Board to undertake than this year's Summer Study Program. Again, my thanks to the chairpersons as well as to the many Board members and consultants who are participating in this important effort.*

*My thanks as well to George Heilmeier who has agreed to chair the Fubini Award Selection Committee along with Johnny Foster, Larry Lynn and Mike Carns. All of us will be looking forward to the results of their deliberations later this summer.*

*Finally, a special welcome to the following new Defense Science Board members, Dr. George Poste, Mr. Ron Kerber, Gen Mike Carns, USAF (Ret) and Dr. Anna Marie Skalka. We look forward to working closely with all of them in the challenging days ahead.*

**Dr. Craig I. Fields**

## **DSB MEETING DATES FOR 2000**

- 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**

- **2000 Summer Study Program** – The following four studies of this year's Summer Study Program will conclude on 6-18 Aug 00 at the Beckman Center, Irvine, CA.

- **Defense Against Biological Weapons** (Chairman: Dr George Poste) This study, co-sponsored by USD(AT&L) and DDR&E, is examining 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 Task Force is in process. (CDR Hughes)

- **Defensive Information Operations** (Chairman: Mr. Larry Wright) This study, co-sponsored by USD(AT&L) and ASD(C3I), is reviewing and evaluating DoD's ability to provide information assurance to carry out JV2010 in the face of information warfare attack. The Task Force has been organized into following subpanels: Organization, Legal, Policy, Technology, and Architecture. The Task Force is in process. (Maj Yang)
- **Intelligence Needs for Civil Support** (Co-Chairs: Dr. Ruth David and Mr. Peter Marino) The study, co-sponsored by USD(AT&L), ASD(C3I) & DCI, is considering the full spectrum of issues from deterrence through response, including attribution, and will evaluate collection, analysis and information management challenges. The Task Force is in process. (CDR Hughes)
- **Unconventional Nuclear Warfare Defense** (Chairman: Mr. Roger Hagengruber) This study, co-sponsored by USD(AT&L) and DTRA, is reviewing and evaluating DoD's current state of detection, identification, response, and prevention to terrorist, subnational, or other unconventional nuclear attacks to the U.S. The Task Force is in process. (LTC McPheeters)
- **AF Space Launch Facilities** (Chairman: Mr. Pete Aldridge) This study, sponsored by USD(AT&L), is assessing future requirements for space launch ranges capable of meeting

both national security space needs and civil and commercial needs. The final report is in review and is expected to be released in June. (Maj Yang)

- **Biological Defense** (Co-chairs: Dr. Josh Lederberg and Dr. George Whitesides) This study, co-sponsored by USD(AT&L) and DDR&E, is a combined effort of the DSB and the TRAC. The study is assessing 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 date of Aug 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. Task Force activities are now complete and a final draft report is expected shortly. (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 Study is now complete and the final report is in security review. (CDR Hughes)
- **Efficient Utilization of Defense Laboratories** (Chairman: Mr. Walter Morrow) This review is in response to the FY 2000 Defense Authorization Act directive for the Defense Science Board to conduct an analysis of the resources and capabilities of all the laboratories facilities. Since much of the desired analysis and activities have already been completed, the principle focus is to review all relevant Department of Defense laboratory efforts and studies, and provide a letter report of findings regarding DoD

compliance with the Congressional directive. This effort is in process. (LTC McPheeters)

- **Frequency Spectrum Issues** (Chairman: Mr. William Howard) The study, sponsored by USD(AT&L), ASD(C3I) and JCS/J-6, is examining the competing interest in, and access to, the RF frequency spectrum and its impact on military readiness and national security in the 21<sup>st</sup> century. The Task Force will hold its final meeting on 27-28 Jun. (Maj Yang)
- **Future Perspectives** (Co-chairmen: Dr. Robert Herman and Mr. Philip Odeen) This study, sponsored by USD(AT&L) is reviewing the findings, conclusions, and recommendations of the many DSB study initiatives taken since 1995. A summary report of this body of work is expected to provide useful insight for the Department as it moves to address the many demanding defense challenges that lie ahead. The Task Force is in process. (LTC McPheeters)
- **Global Positioning System (GPS) – Phase III** (Chair: Mr. William Delaney) This study, co-sponsored by USD(AT&L) and ASD(C3I), will provide an analysis and assessment of the current plan for enhancing GPS. A final report is expected to be released in early Jun 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), is reviewing DoD acquisition policies to assess the impact of those policies, practices and regulations on the health and competitiveness of US defense companies. A final brief is expected to be delivered to the sponsors in June. (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 Task

Force is in process. (CDR Hughes)

- **Nuclear Simulation** (Chairman: Dr. John Crawford) The study, sponsored by USD(AT&L), is reviewing 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 will provide a basis for assessing the adequacy of the overall program. The Task Force effort is now complete and a final draft report is expected shortly. (CDR Hughes)
- **Science and Technology Certification** (Chairman: Mr. Walter Morrow) This study, co-sponsored by USD(AT&L) and DDR&E, is addressing the National Defense Authorization Act requirement for the DSB to assess the effect of the Department of Defense decision to not program for at least two percent above the rate of inflation in its S&T budget for FY01-05. This task force is in process. (LTC McPheeters)
- **Software** (Co-chairs: Bob Nesbit & Marcus Hanson) The study, co-sponsored by USD(AT&L) and DDR&E, is assessing the conditions under which the procurement of defense software can appropriately use commercial practices so as to develop a strategy for defense software procurement that substantially incorporates such practices. The Task Force effort is now complete and a final draft report is expected shortly. (CDR Hughes)
- **Stealth Technology & Future S&T Investment** (Chairman: Dr. Robert Cooper) This study, sponsored by Director, Strategic and Tactical Systems, is exploring the relationship between low observable and electronic warfare technologies in providing future weapon system survivability. (Maj. Yang)
- **Super Computing Needs** (Chairman: Mr. Bob Nesbit) The study, co-sponsored by USD(AT&L) and DDR&E, is investigating 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 effort is now complete and a final draft report is expected shortly. (CDR Hughes)

- **Technology Capabilities of Non-DoD Providers** (Chairman: Mr. Walter Morrow) The Task Force, sponsored by USD(AT&L), is developing a template for how the DOD should acquire new technology and systems. The Task Force is also examining the ability of Non-DoD suppliers to provide warfighting technology, engineering, and test capabilities needed for future U.S. military forces. The final report is expected to be released in early Jun 00 (LTC McPheeters)
- **Test and Evaluation Capabilities** (Chairman: Mr. David Heebner) This study, sponsored by USD(AT&L) and DOT&E is conducting an analysis of what Department of Defense Test and Evaluation capabilities are required to support system development and T&E for Joint Vision 2010 and beyond. In addition, the task force is also addressing the Defense Authorization Act directive to the DSB to analyze the resources and capabilities of all T&E facilities and identify opportunities to achieve efficiency and reduce duplication of efforts. The Task Force is in process. (LTC McPheeters)
- **Training and Education** (Co-chairs: Dr. Joe Braddock and Dr. Ralph Chatham) This study, co-sponsored by USD(P&R), DDR&E and JCS/J-7, is analyzing 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 complete and a final draft report is expected shortly. (CDR Hughes)

*Since publication of the last DSB Newsletter, the following reports have been completed and released:*

- **Tactical Battlefield Communications – Dec 99**

- **Space Superiority – Feb 00**
- **Human Resources Strategy, Feb 00**
- **21<sup>st</sup> Century Defense Technology Strategies - Vol II, Mar 00**
- **Patriot Anti-Cruise Missile, Mar 00**
- **National Imagery & Mapping Agency, Apr 00**

### **Other Advisory Board Activities**

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

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

#### **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 Countermine Technologies**
- **C4ISR – Leveraging Commercial Applications**

The ASB FY2000 summer study is now in its sixth month and is well positioned to provide fairly detailed findings, conclusions and recommendations to the Chief of Staff when he attends the briefout scheduled for 1300, 27 July at Beckman Center. The study is organized around four panels: Operations, Sustain and Support, Information Dominance and Training. Each panel has three leaders: a civilian ASB member, a member who is a retired Army general officer, and a retired general officer from a sister Service. This year two faculty members from the United States Military Academy are participating in the study. In total, there are 170 participants in this year's summer study.

As the study title suggests, we are striving to define new ways and means for fighting and conducting land warfare 15-20 years hence. Study participation is broad and includes representatives from other Service Science Advisory Boards, and several 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 is also participating. The Commanders of Army Materiel Command and Defense Logistics Agency are providing senior representatives.

The summer study outbrief is 27 July at the Beckman Center located on the campus of the University of California, Irvine.

*In March we launched the study, "Countermine Warfare and Joint Opportunities for the Future."* This effort is a follow on to last year's NRAC countermine summer study. The current effort brings together panelists from both the ASB and NRAC for the purpose of assessing mine identification and neutralization technologies, optimizing Army mine clearing doctrine, and identifying opportunities for conducting rapid mine clearing operations with minimum risk to friendly forces. Special attention will be paid to assessing opportunities to execute mine clearing in the Marine Corps' operational concepts and in both the Army's newly formed Brigade Combat Team and the "Objective Force." The panel will also make recommendation with respect to restructuring existing programs while developing a technology investment plan and roadmap.

At the behest of Mr. Art Money, ASD(C3I), the ASB has formed a panel composed of members drawn from the ASB, AFSAB, NRAC, and DIA S&T Advisory Board. The purpose of the panel is to provide advice and counsel to the ASD(C3I) on issues relating to technology, policy, architecture, joint interoperability, inter-Service coordination, and commercial standards.

The following reports were posted to our website during the past quarter:

- **Enabling Rapid and Decisive Strategic Maneuver for the Army Beyond 2010**
- **Concepts and Technologies for the Army Beyond 2010**
- **Prioritizing Army Space Needs**

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 (99 Summer Study)** This effort assessed Navy efforts to optimize manning on surface ships. It included a review of previous relevant studies, current programs in US and foreign navies, and relevant technology opportunities. The report has recently been approved for release. It is currently being distributed.
- **Unmanned Vehicles for Mine Countermeasures (99 Summer Study)** This effort addressed the application and identification of alternatives for Unmanned Vehicles (UVs) in Mine Countermeasures (MCM). The panel reviewed current programs under development to determine gaps and overlaps and made recommendations for future UV requirements. NRAC will host a workshop in an attempt to identify new ideas regarding sensors (biomimetic, etc.) for detecting buried mines. The workshop is designed to emphasize new talent and ideas from all disciplines. Based on the workshop results, a follow-on task force on surf zone sensors may be initiated.
- **Global Positioning System (GPS) Vulnerability** This study examines the vulnerabilities of the GPS which provides accurate position, velocity, and timing information to military users anywhere in the world. The classified report has been forwarded to the Assistant Secretary of the Navy (Research, Development and Acquisition) requesting approval to make limited distribution.
- **Commercial Science and Technology Report** This study focused on pursuing an improved understanding of European commercial science and technology investment strategy in areas that are related to

the Department of the Navy's dependence upon commercial off-the-shelf technology and products. The report is being edited.

- **Command Center of the Future (2000 Summer Study)** The purpose of this study is to recommend a Department of the Navy strategy for developing a next generation Maritime command and control capability. The panel is currently conducting fact-finding meetings prior to the Summer Study meeting.
- **Quality of Life (QOL) (2000 Summer Study)** The purpose of this study is to examine QOL issues for Sailors and Marines in order to anticipate what they will be for the new Department of the Navy of the 21st century and identify what the responses to the new challenges will have to look like. The panel is currently conducting fact-finding meetings prior to the Summer Study meeting.

The NRAC 2000 Summer Study will be held on 17-28 July at the Space and Naval Warfare Systems Center, San Diego, CA. For more information on NRAC activities visit, <http://nrac.onr.navy.mil/webpace/default.html>

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

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

Col Gregory Bishop is slated to be the new SAB Executive Director on 1 July 00. This year's studies are underway. The C2 study is a new addition since the last DSB newsletter. The chairs for the studies are:

- **C2 – the Path Ahead:** Dr. Peter Worch
- **S&T and the AF Vision:** Dr. Bill Ballhaus
- **Hypersonics:** Dr. Ron Fuchs
- **Battlelabs Quick Look:** MGen Don Lamberson., USAF (Ret)
- **ECIT Facility Quick Look:** MGen George Harrison, USAF (Ret)

Future meeting dates:  
**10-21 Jul, Summer Study Session @ Hayes**

Conference Center, San Jose, CA  
20-22 Sep, S&T Quality Review Kickoff, Woods  
Hole, MA

For more information on SAB activities or past reports, please visit our new website at: <http://www.sab.hq.af.mil/index.htm>

#### **Study Updates:**

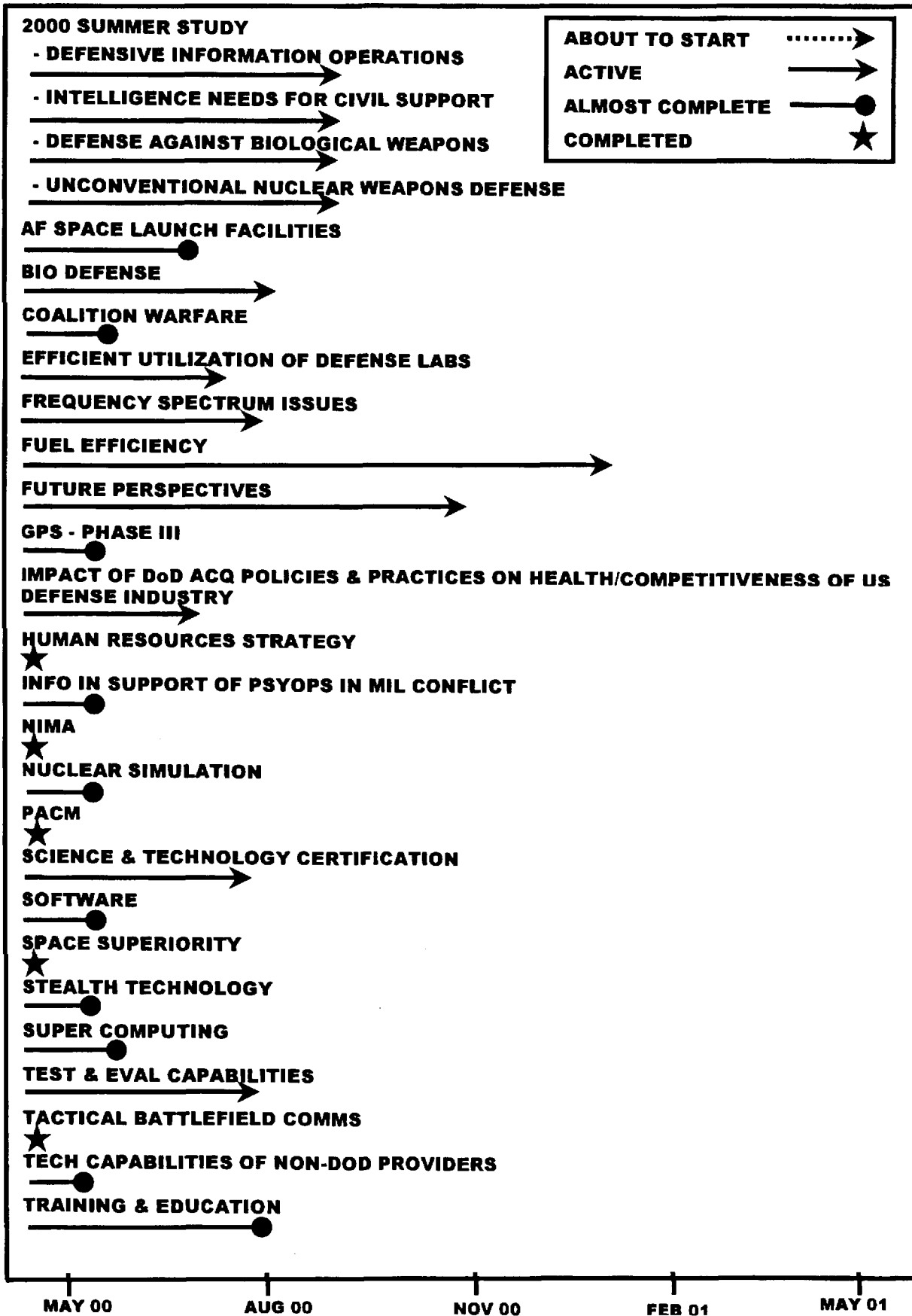
- **Building the Joint Battlespace Infosphere.** The briefing and report have been released for public distribution.
- **Technologies for Leveraging Aerospace Power in Situations Other than Conventional War.** Volumes I & II are in for final approval for public release.
- **Ensuring Successful Implementation of Commercial Items (COTS) in Air Force Systems.** The report and briefing have been released for public distribution.
- **Spectrum Management.** The CSAF was briefed on 6 Apr and the SecAF on 5 May. The report is in Air Staff coordination.

### **DIA Science and Technology Advisory Board**

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

The Science and Technology Advisory Board (STAB) continues its 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. STAB members have participated in supporting working groups, and will be initiating separate panel studies to augment these efforts. These panels will assess Human Intelligence (HUMINT) within the asymmetric threat context, expert tools for indications and warning (I&W), and enhancing workforce competency through expanded outreach or innovative partnerships with laboratories, academia and industry. The STAB will also be working with U.S. Joint Forces Command on long term planning to achieve interoperability of C2 and intelligence systems.

# **DSB Task Force Timelines**





## **Defense Science Board Members and Ex Officio**

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