THE DISPATCH

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Program Manager's Corner

After nearly a full year's worth of system development, test and accreditation efforts, I am pleased to announce the fielding of Next Gen STARS-U. DTRIAC has developed an underlying infrastructure and set of online tools to assist our users in data discovery, access, and dissemination. Next Gen STARS will ensure users unfettered access to the current collection and the flexibility to grow to meet future data and user needs.

As part of our agile development process, there are opportunities to participate in the system evolution and we encourage users to take advantage of the new online Feedback and Report a Problem forms to help us improve your system. The first release of Next Gen STARS-C is scheduled for early April 2013 to coincide with the newly mandated SIPR CAC logon.

We hope the information contained in this issue helps continue to increase awareness of the DTRIAC and foster a sharing of information within the CWMD community. We are always happy to entertain articles from our readers for future issues. In this issue we also pay tribute to two significant contributors to our field of endeavor for a combined total of 100+ dedicated years of service to our nation. Mr. Leon Smith and Mr. John "Ace" Bilsky, Sr. passed away in October. Their service is remembered.

Please contact me directly if you ever have any questions or comments related to the DTRIAC. craig.hess@dtra.mil or (505) 846-2071.

Thanks,
Lt Col Craig Hess
DTRIAC Program Manager

Ask the IAC

How do I get a STARS Account?

In order to obtain access to the Defense Threat Reduction Agency's (DTRA) Scientific and Technical Information Analysis and Retrieval Systems (STARS), contact STARS Customer Support at the Defense Threat Reduction Information Analysis Center (DTRIAC) at 505-853-0854 or via e-mail at DTRIAC@dtra.mil. They will provide you with a STARS User Account Request form. Prior to completing the form and submitting it to them, you must ensure you meet a number of requirements. You must:

- Be a U.S. citizen
- Hold a FINAL DoD Secret/Top Secret Clearance or DOE L/Q Clearance (Interim clearances are not eligible)
- Have prior approval to access certain data within STARS, such as RD (Restricted Data), CNWDI (Critical Nuclear Weapon Design Information), and NATO (North Atlantic Treaty Organization)
- Obtain DTRA sponsorship

Ask the IAC *(continued)*

You can request access to the unclassified system (STARS-U), the classified system (STARS-C), or both systems. You can access STARS only through a Department of Defense computer network (i.e., U-net or nonsecure internet protocol router network [NIPRNet] for unclassified; S-net or secure internet protocol router network [SIPRNet] for classified)

Clearance Requirements

STARS-U and STARS-C are DTRA's online searchable databases than contain documents, photographs, diagrams, numeric data, software, and videos that support DTRA's mission. Due to the sensitivity of the data contained on these systems, you must have at least a DoD Secret or DOE L security clearance on file with DTRA. If you have only an interim clearance, you will need to wait until you receive a final clearance.

Your clearance information must be provided to DTRA in the form of a visit request (with the exception of DTRA personnel whose clearance information can be verified with DTRA's security office by DTRIAC). Your security office/department will need to submit your visit request to: ►►► ►►► ►►►

If your security office/department has access to the Joint Personnel Adjudication System (JPAS), the DTRA SMO Code is: GQDD614.

Visit Request

DTRA HQ
8725 John J. Kingman Rd. MS 6201
Ft. Belvoir, VA 22060
Attn: Visitor Control
FAX 703-767-7857
PHONE 703-767-6040

DTRA Sponsor

When you request access to STARS (except for DTRA military or DTRA federal employees), you must provide the name and contact information of a DTRA Military or DTRA Federal Employee who will act as your DTRA sponsor.

- For DTRA Contractors - STARS Customer Support requires written verification from your DTRA sponsor via e-mail that you have a justified need for access to STARS.
- For Non-DTRA U.S. Government Military and Federal Employees - STARS Customer Support requires written verification your DTRA sponsor via e-mail that you have a justified need for access to STARS.
- For Non-DTRA U.S. Government Contractors - STARS Customer Support requires written verification from your DTRA sponsor via e-mail that you have a justified need for access to STARS.

If you are not able to provide a DTRA sponsor, your request will be forwarded to the DTRIAC Government Program Manager for consideration. The DTRIAC Government Program Manager will make a determination based on the recommendation of the DTRA Government Scientific and Technical Information Manager.

STARS Account Creation

- STARS Customer Support will create the STARS account after your clearance/visit request is received and DTRA sponsorship information is confirmed. Each individual account is assigned an access profile allowing tailored access to data on STARS based on Department of Defense (DoD) distribution statements (A, B, C, D, E, and F) and various caveats (i.e., RD, FRD, CNWDI, ITAR, NOFORN, etc.). For example, a user will be able to view ONLY Distribution B data on STARS when his/her profile is assigned Distribution B access.
- A U.S. government contractor will be granted access to export controlled data within STARS only after verification that the contractor's employer (by company name) and the specific address provided are listed as being in good standing within the Defense Security Service (DSS) Industrial Security Facilities Database (ISFD).
- For U.S. contractors, access to data assigned Distribution B (distribution authorized to U.S. government only) and E (distribution authorized to DoD components only) is only granted by request and is approved on a case-by-case basis by the DTRIAC Chief Information Analyst.
- When your account is created, STARS Customer Support will provide you with a STARS account username and password. In addition to username and password, the STARS-U system requires authentication with a DoD Common Acces Card (CAC). In cases where you do not have access to a DoD CAC, STARS Customer Support will provide you with an RSA SecurID token for authentication. STARS-C access requires only a username & password.

Ask the IAC *(continued)*

STARS Account Expiration

- STARS accounts are set to expire (1) one year from the date created, (2) the same day as the expiration date of the account holder's visit request, or (3) the same day as the contract expiration date for U.S. government contractors, whichever comes first. All accounts are disabled upon expiration.
- STARS Customer Support will contact you one month before your account is due to expire to determine if you wish to renew your account. If you wish to renew your account, you will need to submit a new visit request to DTRA.

CBRNIAC Success Story

View of the active center gorge of mammalian acetylcholinesterase looking into the gorge cavity.

Through its technical area task (TAT) program, the Chemical, Biological, Radiological, and Nuclear Defense Information Analysis Center (CBRNIAC) was a component of the Chemical Biological Medical Systems (CBMS)-Medical Identification and Treatment Systems (MITS) Working Integrated Product Team team. This team supported the advanced drug development program to field an improved nerve agent treatment system, providing the warfighter with a more robust, broad-spectrum medical countermeasure following exposure to organophosphorous nerve agents. CBRNIAC managed and performed the chemical, manufacturing, and controls (CMC) non-clinical safety and efficacy studies, and developed the first in-human Phase I clinical trial protocol. The resultant data and protocol were required to support submission of an investigational new drug (IND) application to the Food and Drug Administration (FDA), which would allow initiation of safety and pharmacokinetic testing of a new chemical entity (NCE) in humans.

Led by a designated CBMS-MITS pharmaceutical program manager, a team of CBRNIAC subject matter experts (SMEs) and support staff were assembled to develop an advanced drug development plan based on the information about the NCE from the literature and expertise of the SMEs and the United States Army Medical Research Institute of Chemical Defense (USAMRICD). Over the course of approximately 2 years, the team executed the CMC laboratory and non-clinical safety and efficacy studies as well as submitted the electronic common technical document IND as specified in the advanced drug development plan.

The CBRNIAC program manager and team were able to deliver the full range of services required to achieve the goals and objectives of this phase of CBMS-MIT's advanced drug development program for testing the improved nerve agent treatment system in humans. The CBRNIAC funding mechanism allowed CBMS to efficiently fund and execute all required administrative, laboratory, and study activities in a manner that allowed for successful completion of the advanced drug development plan.

CBRNIAC: Defense & Homeland Security Information

CBRNIAC: The Premier Resource for Authoritative CBRN Defense and Homeland Security Scientific and Technical Information

The Chemical, Biological, Radiological, and Nuclear Defense Information Analysis Center (CBRNIAC) is a full-service Department of Defense (DoD) information analysis center serving as the focal point for DoD chemical, biological, radiological, and nuclear (CBRN) defense scientific and technical information (STI). Operated by Battelle Memorial Institute under contract to DoD, CBRNIAC is managed by the Defense Technical Information Center (DTIC) under the DoD IAC Program Office.

CBRNIAC core program acquires, processes, generates, synthesizes, and disseminates authoritative CBRN defense and homeland security information through its no-cost inquiry services, database resources, website, quarterly newsletters, information products, briefings, and expositions.

CBRNIAC serves the combatant commanders; warfighters; the reserve components; the CBRN defense research, development, and acquisition community; and other federal, state, and local government agencies. CBRNIAC assists these agencies in implementing high-priority research and development (R&D) initiatives by

- identifying and acquiring relevant data and information from all available sources and in all media;
- processing data and acquisitions into suitable storage and retrieval systems;
- identifying, developing, and applying available analytical tools and techniques for the interpretation and application of stored data and acquisitions;
- disseminating focused information, data sets, and technical analyses to managers, planners, scientists, engineers, and military field personnel for the performance of mission related tasks;
- anticipating requirements for CBRN defense STI; and
- identifying and reaching out to emerging CBRN defense organizations.

The scope of the CBRNIAC includes all aspects of CBRN defense technology.

CBRNIAC has a collection of over 212,000 CBRN defense and homeland security documents and information resources in a variety of formats. CBRNIAC also maintains access to a wide range of journals, magazines, and newsletters on CBRN defense and homeland security topics. Some databases are accessible only by CBRNIAC staff, while others can be accessed by individuals after sponsoring agency registration requirements are met.

CBRN Scientific and Technical Analysis Research Tool (START), CBRNIAC's online, menu-driven database, contains a completely digitized, unclassified collection of over 212,000 citations of documents that cover all CBRN defense and homeland security subject areas. Of these citations, over 200,000 correspond to documents at CBRNIAC, while the rest are available through other collections. Search results can be obtained through the CBRNIAC inquiry services.

The CBRNIAC Technical Area Task (TAT) program provides a task order contract vehicle for efforts beyond the scale of core program services to include:

- Basic and applied research and development (including laboratory, surety agent, and pathogen work)
- Information collection
- Studies and analyses
- Training
- Engineering design
- Databases
- Test and evaluation
- Conferences
- Low-rate production
- Modeling and simulation
- Technical consulting
- Prototyping

The CBRNIAC Knowledge Management (KM) program integrates CBRN defense and homeland security subject matter expertise, content research, and dissemination technologies to create information management systems.

For more information about CBRNIAC or learn more about the CBRNIAC TAT process, visit CBRNIAC online at http://www.cbrniac.apgea.army.mil.

Collateral Effects Experimental Data

A Summary Review by Thomas Mazzola, TASC and W.R. (Russ) Seebaugh, consultant

From the mid-1990s through the mid-2000s, a large volume of experimental data related to the collateral effects of conventional munitions detonations in facilities holding chemical and biological warfare agent simulants was collected. Recently, DTRA J9ISR has funded an effort to retrieve and summarize such data as an aid to decision support provided by DTRA Technical Reachback. That effort is briefly summarized here with citations to sources for further information.

The so-called first Gulf War was over 20 years ago. At that time, the Defense Nuclear Agency (DNA) provided assistance to warfighters in the field, but it was based only on handbook answers meant to protect soldiers from chemical and biological (CB) weapons used against them. The mission was to destroy or disable suspected CB munitions in place to render them unusable. However, questions remained:

- How much CB material survived and was released that might do harm?
- What remained after a strike?
- Was the mission accomplished?
- Was it accomplished with acceptably low side effects or collateral effects?

After the conflict, a new program was funded to gain better understanding and to develop capabilities, tools, and tactics. This program was the Counter Proliferation Advanced Concept Technology Demonstration (CP ACTD), aimed at filling a number of gaps drawn from the Gulf War events. A new Collateral Effects Team was assembled at DTRA to help work this multidisciplinary problem. Modeling and simulation tools were developed and applied under this program, including the Hazard Prediction and Assessment Capability (HPAC). The CB facilities component of HPAC was partly developed and validated under the ACTD effort. HPAC is still heavily used, and this effort seeks to preserve and continue use of the foundational test data.

The CP ACTD was conducted at White Sands Missile Range, New Mexico, from 1995 into 1999. It contained test series named DIPOLE ORBIT, DIPOLE TIGER, and DIPOLE JEWEL and involved the detonation and effects of static and live weapons in various structures containing stimulants of CB agents.

The DIPOLE ORBIT series of tests addressed dry biological agent stored in a bermed concrete structure; four test events provided usable collateral effects information. DIPOLE ORBIT 1 was a static detonation of a BLU-109 warhead in the center of a structure measuring 19 x 23 m. The simulants were *Bacillus thuringiensis (Bt)* and *Bacillus subtilis* var. *niger (Bg)* powder, diluted with aluminum oxide and mixed with indium oxide and dysprosium oxide tracers for determination of simulant kill.

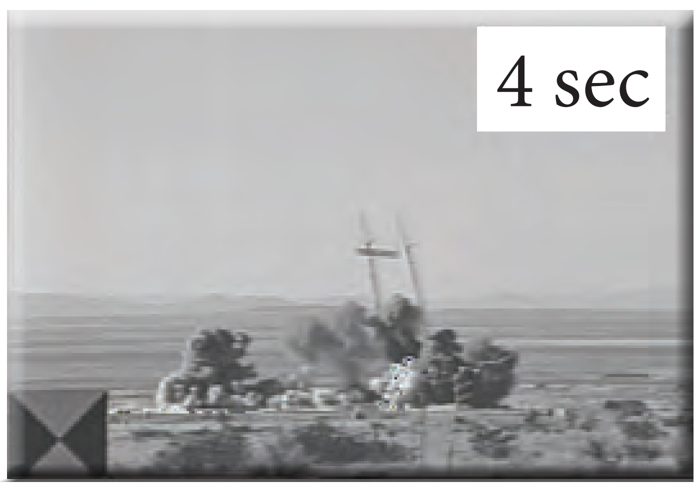

Figure 1. *DIPOLE ORBIT 1 Plume and Crane Array*

The primary sampling system was the aerial or crane array as pictured in Figure 1. Many individual samplers were vacuum aspirated; some of the others were open collectors. Additional measurements included pressures and temperatures inside the facility, structural response, depressurization time of the structure, mass of tracers and simulants, viability and particle sizes of simulant sampled at various locations, and positions and dimensions of the resulting plume or cloud lofted from the structure and transported down range by the winds. Taken together, such data helps to characterize the phenomena occurring during the event and to develop and validate associated models.

The DIPOLE TIGER series involved chemical agent storage in a soft precast concrete panel structure. DIPOLE TIGER 1 was a static detonation of a Tomahawk land-attack missile--conventional warhead in the upper story of a two-story structure approximately 15 x 15 x 10 m in size. The chemical simulant triethyl phosphate (TEP) was placed in two tanks--one exposed to the fragment spray from the weapon and one not exposed.

Collateral Effects Experimental Data *(continued)*

Instrumentation on this test included pressures and temperatures inside the facility, structural response, depressurization time of the structure, mass of tracers and simulants, and positions and dimensions of the resulting plume. Released agent was tracked using Fourier transform infrared (FTIR) spectrometers and ground samplers. A posttest photograph shown in Figure 2 illustrates the destroyed structure with the target tank on the left.

The DIPOLE JEWEL series considered chemical agent production and storage in a buried multi-room hardened concrete structure. On event DIPOLE JEWEL 5 the simulant TEP was placed in a single large tank for the air drop of a BLU-109 penetrator.

Figure 2. *DIPLOLE TIGER 1 Posttest Structure and Tank*

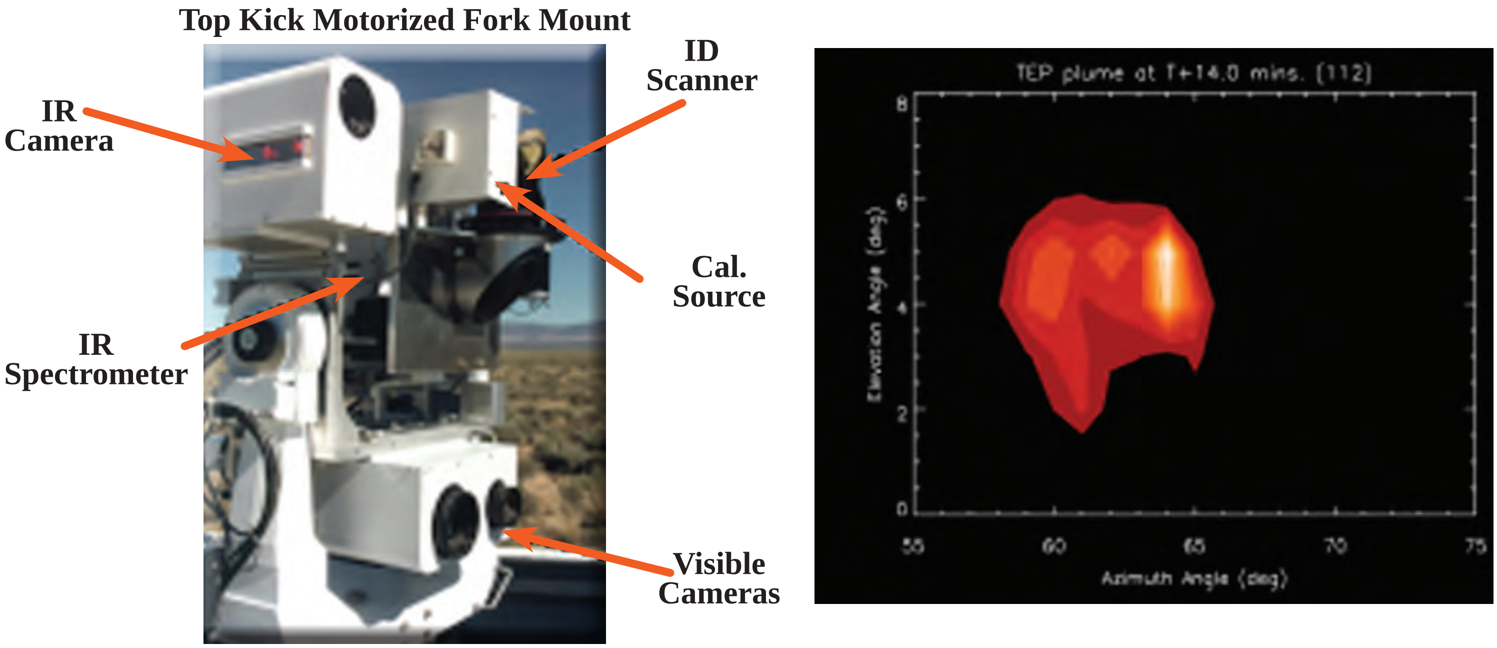

Figure 3*. Infrared (IR) Instrument Setup and Typical FTIR Plume Scan Results for TEP*

One FTIR sensor system and a representative plume measurement are displayed in Figure 3. The instrument scanned the field before and during passage of the cloud. Differences between the cloud and background gave the processed cloud spectrum. The analyzed TEP column densities at 14 min are pictured here. TEP mass in the cloud was derived from multiple triangulated systems at a range of times.

Lessons learned from all of the CP ACTD events were summarized by the test director; most concentrated on weapons and tactics. However, the ability to predict collateral effects as a part of the critical mission planning phase was highlighted as a key accomplishment for the sponsor. The conclusion of the ACTD was “Objectives Met.”

The importance of collateral effects was recognized, and HPAC gained credibility and usage. Although successful, there was more to learn. A follow-on to this successful ACTD, aptly named CP2 ACTD, was then conducted. Additional series, DIPOLE YUKON, DIPOLE ZODIAC, and DIVINE CANBERRA, were conducted in the 1999–2003 time period.

Collateral Effects Experimental Data *(continued)*

Both ACTD series are included in the full set of data being reviewed and archived. A summary of the test data is shown in Figure 4. The vertical columns are grouped by structure type that corresponds to strength; the rows are associated with the type of agent/simulant.

The green, yellow, and red stoplight scheme suggests the extent of characterization that exists for each category; green indicating well covered and red, not covered. Individual test events in each bin are listed in the boxes. Note that there is a good deal of red. Fortunately, there are a large number of subscale test events that augment the full-scale data in the figure.

	Confined (Very Hard)	Semi-Confined (Hard)	Semi-Confined Soft (Industrial)	Unconfined (In the Open)
Chemical	DIPOLE JEWEL 4 DIPOLE JEWEL 5 DIVINE CANBERRA 2 DIPOLE ZODIAC 2 (Better characterized)	(No information)	DIPOLE TIGER 1 DIPOLE TIGER 2 (Limited information)	(No information)
Dry Biological	DIPOLE EAST 159 HUMBLE YUCCA (Better characterized)	DIPOLE ORBIT 1 DIPOLE ORBIT 3 DIPOLE ORBIT 5 DIPOLE ORBIT 6 DIPOLE YUKON 1 (Better characterized)	(No information)	(No information)
Wet Biological	(No information)	MIDWAY FUSCHIA 1 MIDWAY FUSCHIA 2 MIDWAY FUSCHIA 3 (Better characterized)	DIPOLE EAST 169 (Limited information)	(No information)

Key

- Better characterized
- Limited information
- No information

Figure 4. *Agents and Structures on ACTD*

To make this large, complex set of data more accessible, we have created a test data index. This is a series of spreadsheets, organized by information group. Such groups include parameters that characterize the test setup; those that characterize key aspects of the post detonation environment, such as pressure; and a collection of key results of the test, such as viable mass expelled. The index is intended to be a quick guide, suitable for searching. The complete data sets are captured in a number of references. These are often included in program summaries and assessments, often as reports from symposiums or results meetings. A thorough index of tests and data references was developed under DTRA funding.

This includes yearly collateral effects/consequence assessment test summaries giving the associated highlights and a grand summary in Experimental Data Integration for Validation and Verification of NBC Source Models (DATASUM). Behind all of this are individual experimenter technical reports. These data sources are not always readily available. As many as possible are being collected for reference at DTRA Reachback. When this project is complete, we expect the holdings to be accessible through DTRIAC STARS, the long-term archive.

In a near-term use of such data, we are advocating for selection of a small, but significant subset of test cases for use in validation of CB facility source term models. There is a rich set of events and data, but none of it is perfect. Some future effort is needed to define such benchmark cases. We will be looking for willing collaborators.

We acknowledge the support and encouragement for this work from David Myers, DTRA/J9ISR, and Rick Fry, DTRA/J9CBI, who have managed related programs and projects for many years.

DTRIAC as the Data Commons for DTRA

Throughout the 20th century, the culmination of a scientific investigation was a report or journal article that summarized the available data, recorded the critical conditions of the experiment, and drew conclusions from the data. In general, the actual data resided in notebooks and filing cabinets; if it was retained, it was by the individual researcher or research institution.

This intellectual property became the wellspring from which each institution or research team could derive new knowledge and understanding. In the 21st century, there is a growing recognition of the value of data itself and the need to create digital commons where data can be shared throughout the research community.

DTRA, with the DTRIAC collection, holds one of the earliest versions of such a commons with its extensive collection of data from aboveground and underground nuclear tests. Nuclear weapons development and testing can be viewed as one of the first big science efforts requiring integrated, multidisciplinary teams to collect and interpret the data. DTRIAC was chartered as aboveground testing ended for the explicit purpose of retaining and building on data from tests that now could not be repeated.

The NextGen STARS system is explicitly designed to meet the DTRA's needs for a digital data commons. In the October 2012 issue of Briefings in Bioinformatics, Wruck, Peuker, and Regenbrecht discuss several key attributes of a data management strategy for large-scale, bioinformatics projects and other multi-investigator research and development programs.

The new STARS system already provides many of these attributes: fine-grained access control, support for data standards (DoD Discovery Metadata Standards), assistance in metadata annotation, and support for publications. In the future, STARS will also support connectivity to other resources including federation with the DTIC collections.

The overall architecture is extensible to enable other key attributes, including support for modeling data, integration with heterogeneous data management systems, and additional analysis and modeling functionality.

The new STARS open architecture will provide a digital commons to meet DTRA's data management needs for ongoing scientific efforts. This will enable DTRA to maximize the utility of DTRA's scientific and technical information to meet their counter-weapons of mass destruction (WMD) mission

In Tribute

Leon D. Smith

Leon D. Smith, a pioneer in the nuclear weapons field, passed away on 14 October 2012 in Albuquerque at the age of 92.

"The nation has lost one of the founders of our strategic deterrent. I was honored to know Leon Smith. Our thoughts and prayers go out to Marie, his wife of more than 70 years, and all their family members," said Maj. Gen. Garrett Harencak, commander of the Air Force Nuclear Weapons Center in Albuquerque.

Born 24 June 1920, he was drafted into the U.S. Army during World War II after attending the University of Wisconsin-Madison. He began his military service as a private in field artillery and later was sent to study communication at Yale University, electronics at Harvard University, and radar at the Massachusetts Institute of Technology. Upon completion of his education, he was commissioned as an Air Corps 1st Lt. and served in the ordnance squadron of the 509th Composite Group.

While with the 509th, he participated in the development, testing, and delivery of atomic bombs, specifically those that were dropped in Japan, the "Little Boy" and the "Fat Man." He is quoted as saying, "As one of three weaponeers in the program, I lost a coin flip or I would have been on the Enola Gay on the August 6 mission over Hiroshima."

In 1946, he left the Army and began working as a civilian electrical engineer in the bomb fuzing group at Sandia National Laboratories, when it was attached to the Los Alamos Scientific Laboratory. As part of this group, he served as a weaponeer for Operation Crossroads, the first postwar nuclear test.

While at Sandia, he initiated systems engineering in 1955 and went on to direct various groups, including components, weapons development, and monitoring systems, before retiring in 1988. He is credited with leading revolutionary developments in weapons technology, including work on components such as the permissive action link, that continue to play a major role in the national commitment to nuclear weapons safety, security, and use control.

On 29 September 2011, he was part of the first class of eight people inducted into the "Order of the Nucleus" at the National Museum of Nuclear Science and History in Albuquerque.

Until his death, he was a dedicated patriot and shared his stories from the beginning of the nuclear age to all who would listen – there was never a shortage of people wanting to hear him speak. He gave a presentation to airmen of the 898th Munitions Squadron at Kirtland AFB on 19 November 2010 and another to airmen at Whiteman AFB, MO, (home of the 509th Bomb Wing) on 17 May 2012.

He is survived by his wife of 71 years, Marie; three sons; five grandchildren; and five great-grandchildren.

A memorial service was held 18 October 2012 in Albuquerque, followed by interment at Santa Fe National Cemetery.

Memorial contributions may be made to Animal Humane New Mexico, 615 Virginia St. SE, Albuquerque, NM 87108.

John F. "Ace" Bilsky, Sr.

Former DTRA employee John F. "Ace" Bilsky, Sr., passed away on 10 October 2012 in Clinton, MD, at the age of 80.

Born 15 August 1932 in Scranton, PA, he enlisted in the U.S. Navy upon graduation from West Scranton High School and served for two years. He later enlisted in the U.S. Air Force and proudly served his country for an additional twenty years. He joined the Defense Threat Reduction Agency on 12 October 1988 where he worked until his retirement on 27 June 2001.

While working for DTRA, he and Mr. Herb Hoppe (Logicon/RDA) performed a detailed security review prior to the first printing of the publication, "Defense Nuclear Agency, 1947-1997," which documents the history of DTRA. The Preface to this document includes the following recognition: "DTRA extends its appreciation to Mr. Bilsky and Mr. Hoppe for their thorough professional review. This review was complex, with many issues needing resolution. Throughout they made valuable contributions and their stimulating questions improved the final product substantially."

He is survived by his wife of fifty-four years, Jean (Babe); son, John, Jr., and his wife, Cindy; and two grandchildren. He was preceded in death by two brothers and three sisters.

Services were held 15 October 2012 at the Andrews Air Force Base chapel in Maryland, as well as 17 October 2012 at St. Peter & Paul Roman Catholic Church in Scranton, PA. Interment followed at St. Peter and Paul Catholic Cemetery in Scranton.

The family has established a memorial fund in his honor. Contributions can be made directly to Andrews Federal Credit Union (The Bilsky Memorial Fund – Account #820155963), Building 1677-D Street, Andrews AFB, MD, 20762.

DTRIAC Collection Additions

DTRA Technical Notes

DTRA-TN-11-002, High-Value Hardened Target Test Support; Task Order Summary Report
DTRA-TN-11-003, Select Full-Scale Plume Release Tests Conducted, 1995-2007
DTRA-TN-11-004, Small-Scale Tests of Blasts in Vertical Shafts from Internal and Embedded Detonations
DTRA-TN-11-005, Small-Scale Tests to Evaluate Concepts for Massive Ordnance Weapons Against Blast Doors in Tunnels
DTRA-TN-11-006, Scale Model Tunnel and Blast Door Tests to Support Divine Warhawk 6A
DTRA-TN-11-007, Small-Scale Tests of Blast Doors in a Y-Branched Tunnel and with Multiple Simultaneous Charges
DTRA-TN-11-008, Small-Scale Tests of Blast Doors with Large Explosive Charges Outside a Tunnel
DTRA-TN-11-009, One-Twelfth-Scale Effects Tests of a Massive Smart Bomb Concept Weapon Against Tandem Blast Doors in a Tunnel

DTRA Internal Reports

DTRA-TR-12-20, Sensor Deployment Planning Tool Table Top Exercise
DTRA-TR-12-25, Feasibility of Detecting Precursors and Process Gases Using LWIR Spectral Sensors
DTRA-TR-12-26, Effects of Viewing Angle on Long-Wave Infrared Detection of Precursor Gases
DTRA-TR-12-33, Biological Effects of Nuclear Explosions (BENE) Domain Guide
DTRA-TR-12-42 Vols. 1&2, Special Report on Lessons Learned (1985-2011);
Vol. 1, Fire Protection and Life Safety Issues in U.S., Allied Nations and Warsaw Pact National Security Related Underground Facilities (UGFs) (An Operational Perspective);
Vol. 2, Handbook of Recommended Design Practices (Fire Protection and Life Safety Design Guidelines for Special Purpose Underground Structures)
DTRA-TR-12-46, Next Generation Structural Composite Using Surface Grown Carbon Nanotubes

DTRA Small Business Innovation Research

SBIR, Biological and Chemical Agent Neutralization Using Electromagnetic Radiation

This Quarter in History

October 16, 1964
China detonated its first atomic bomb.

November 1, 1952
IVY MIKE, the first hydrogen bomb, was tested by the United States at Eniwetok in the Marshall Islands. Its detonation was the first successful test of the staged fusion design.

November 16, 1942
Los Alamos Ranch School was selected to be the site for the atomic bomb nuclear laboratory. The government purchased the land from the school and homesteaders and began shipping in supplies and personnel necessary for the Manhattan Project soon after.

December 2, 1942
Enrico Fermi produced the first controlled nuclear chain reaction in a squash court in Chicago, Illinois.

December 1978
The Nuclear Test Personnel Review program was established to track long-term health effects of exposure to fallout on personnel.