



Indian Head Defense Alliance Presentation to BRAC R&A Staff

July 27, 2005



Indian Head Recommendations

- **Overturn the total DoD recommendations to create:**
 - Integrated Weapons and Armaments RDAT&E capability at China Lake
 - Integrated Weapons & Armaments Specialty Site for Guns and Ammunition at Picatinny Arsenal
- **Rationale for our recommendations:**
 - Severs existing synergy in energetics capability at Indian Head carefully constructed over last 40 years
 - Savings are significantly overstated
 - Significant movement of functions among numerous facilities are inconsistent with the goals of the construct proposed
 - Disrupts RDAT&E at other affected bases, e.g. Dahlgren, Crane, Pt Mugu, Pt Hueneme and other facilities



Indian Head Community Observations

- **Closure of NSWC, Indian Head was put on the table early and removed late (April 8, 2005) in the DoD BRAC process.**
- **Options to build on past consolidations at Indian Head were never studied – it was too late in the process. Missed the opportunity for Indian Head to be considered for additional consolidation of energetics.**
- **DoD designates Indian Head as the Energetics Center; however, removes, does not add, energetics work.**
- **Indian Head personnel loss appears minimal but has significant long term impacts to warfighting capability.**

Indian Head Background

- **Indian Head is the only full-spectrum energetics capability in DoD: S&T, design and development, in-service engineering, process development, scale-up and limited production.**
- **Most (800) energetics scientists in the world.**
- **Only R&D center for underwater warheads.**
- **Only R&D center for high-risk chemicals.**
- **Only torpedo fuel maker for US, NATO, Japan.**
- **Responsible for 70% of all explosives transitioned into service since 1985.**

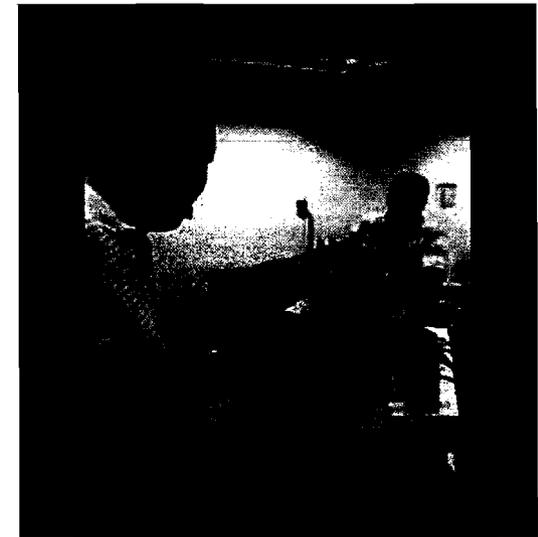
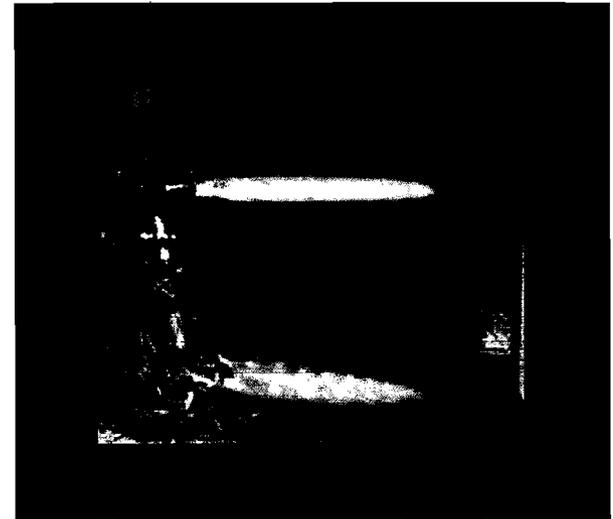


Indian Head Mission

- **Mission focused on energetics:**
 - “...explosives, propellants, pyrotechnics, reactive materials, related chemicals and fuels and their application in propulsion systems and ordnance...” Navy Energetics Leadership Board
 - Includes bombs, warheads, mines, fuzes, countermeasures, flares, obscurants, safe-arm devices, arming-fire devices, unguided rockets, missile rocket motors, ramjets, gas generators, gun projectiles and propelling charges and cartridge and propellant activated devices – Navy Energetics Leadership Board and Energetics IPT
- **Predominantly RDAT&E with significant Industrial workload**
 - Capabilities captured within Technical Weapons and Armaments JCSG and Industrial Munitions JCSG
- **Tenant organizations at Seal Beach, McAlester, Yorktown, and Earle that directly support energetics or complement energetics mission**
- **Prior BRACs and Navy decisions have consolidated energetics work at Indian Head**

Consolidated Energetics

- **Pentagon has consolidated energetics at Indian Head over last 40 years.**
- **Necessary due to exit of industrial base.**
- **Ongoing energetics consolidation at Indian Head 1966 – present:**
 - **2000: Naval Research Lab (Energetics)**
 - **1998: PHS&T - Earle NJ**
 - **1998: Joint CAD PAD Program**
 - **1998: Quality Evaluation Detachments**
 - **1994: White Oak Underwater Explosives**
 - **1993: Naval Ordnance Center**
 - **1990: Yorktown Explosive Loading**
 - **1988: Technical Center for Explosive Safety**
 - **1988: Yorktown Explosive Development**
 - **1977: Ordnance Environmental Support**
 - **1975: CAD PAD (Air Force & Army) - Frankfort**
 - **1973: CAD PAD (Navy) - Dahlgren**
 - **1966: CAD PAD RDT&E - Macon**



**DoD Recommendation:
Create a Navy Integrated Weapons and Armaments
RDAT&E capability at China Lake**

- **Realign Naval Surface Warfare Center Indian Head, MD, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, underwater weapons, and energetic materials, to Naval Air Weapons Station China Lake, CA.**
- **Realign Naval Weapons Station Seal Beach, CA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except underwater weapons and energetic materials, to Naval Air Weapons Station China Lake, CA.**
- **Realign Naval Surface Warfare Center, Yorktown, VA, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation to Naval Surface Warfare Center Indian Head, MD.**
- **Creates an .., “energetics center” at Indian Head, MD.**

Impact to Indian Head: Weapons & Armaments to China Lake

- **Moves non-energetics from Indian Head and Seal Beach to China Lake.**
- **Indian Head non-energetics capability predominantly in weapons simulation and test sets for fire control.**
 - **China Lake currently has no capability in this area.**
 - **Industrial capability for manufacture of test sets and simulators would remain at Indian Head.**
 - **Severs mission into two locations; Indian Head and China Lake.**
 - **Breaks single life-cycle responsibility.**
 - **Synergy of the work in this area lies more at Indian Head, but should a move outside of Indian Head be required, Dahlgren not China Lake, makes more sense.**

Impact to Indian Head: Weapons & Armaments to China Lake

- **Seal Beach's (a detachment of Indian Head) non-energetics capability is predominantly in test measurement and diagnostic equipment.**
 - **This is a Quality Evaluation function; not core to China Lake.**
 - **Seal Beach became a detachment of Indian Head in 1998 because the predominance of the Navy's Quality Evaluation takes place at Indian Head.**
 - **About 70% of the Navy's Quality Evaluation program resides within the Indian Head Division.**

**DoD Recommendation:
Create an Integrated Weapons & Armaments Specialty
Site for Guns and Ammunition**

- **Realign Naval Surface Warfare Center Division Indian Head, MD, by relocating gun and ammunition Research and Development & acquisition to Picatinny Arsenal, NJ.**
- **Realign Naval Surface Warfare Center Division Earle, NJ, by relocating weapon and armament packaging Research and Development & acquisition to Picatinny Arsenal, NJ.**

Impact to Indian Head: Guns and Ammunition to Picatinny Arsenal

- **Moves Energetics (gun propulsion) from Indian Head to Picatinny Arsenal. Moves weapon and armament packaging RD&A from the PHST Detachment, Earle NJ to Picatinny.**
- **The science related to naval gun propulsion is a critical technology for the Navy that must be preserved.**
 - **Ordnance safety aboard ship is paramount.**
 - **Navy invests more than any other service to assure safety of energetics. “Sailors sleep on their Ordnance”**
 - **Navy has consolidated energetics at Indian Head over the past 40 years to leverage domain knowledge inside Indian Head.**
- **Picatinny does not have the facilities and equipment to perform Indian Head’s specialized naval energetics (gun propulsion) mission.**
- **People, facilities, and equipment used for energetics (gun propulsion) are also used for other energetics (missiles, rockets, warheads, CAD/PAD) at Indian Head.**

Impact to Indian Head: Guns and Ammunition to Picatinny Arsenal

- **Facilities and equipment to enable an equivalent capability are significant and underestimated by the Army and the TJCSG.**
 - **No interaction was allowed between the Indian Head technical folks and the Army to assure that the capabilities that were moving were fully understood and adequately addressed**
 - **Aggressive assumptions were necessary to make a payback of 13 years**
- **Both Aberdeen and Picatinny routinely use Indian Head for gun propellant R&D work.**
 - **Future Combat Systems propellant, others**
- **There will be no savings from personnel reduction**
 - **Additional personnel will need to be retained or hired at Indian Head as a result of the need to support non-gun energetics**

Impact to Indian Head: Packaging from Earle to Picatinny

- **Packaging, Handling, Storage, and Transportation (PHS&T) at Earle is a Detachment of Indian Head. Two issues:**
 1. **DoD recommendation severs the packaging from the handling, storage, and transportation; takes the “P” from the “HS&T”!**
 2. **This packaging mission will include all of the Navy’s weapons and armaments, not just guns and ammunition.**
- **Picatinny Arsenal is focused on ammunition packaging of conventional ammunition.**
- **Naval environment requires unique technologies and solutions; e.g. specialized non-conventional ammunition (missiles, rockets, torpedoes, warheads, vertical launchers, shock sensitive weapons).**

Impact to Indian Head: Packaging from Earle to Picatinny

- **Earle has done this work for years due to safety and insensitive munitions considerations:**
 - **Aligned by the Navy with Indian Head due to recognized synergy with Indian Head's energetics mission**
 - **Remained at Earle to provide instant access to current ship-loading operations, storage and transportation functions, which enables them to develop fast solutions to real world Navy problems**
 - **Small organization with key niche role; "world class" design capability with awards for innovative packaging designs**
 - **Only DoD integrated PHS&T organization due to unique Navy mission**
 - **Key to assuring safety of ordnance within the Navy logistics cycle**

Impact to Indian Head: Packaging from Earle to Picatinny

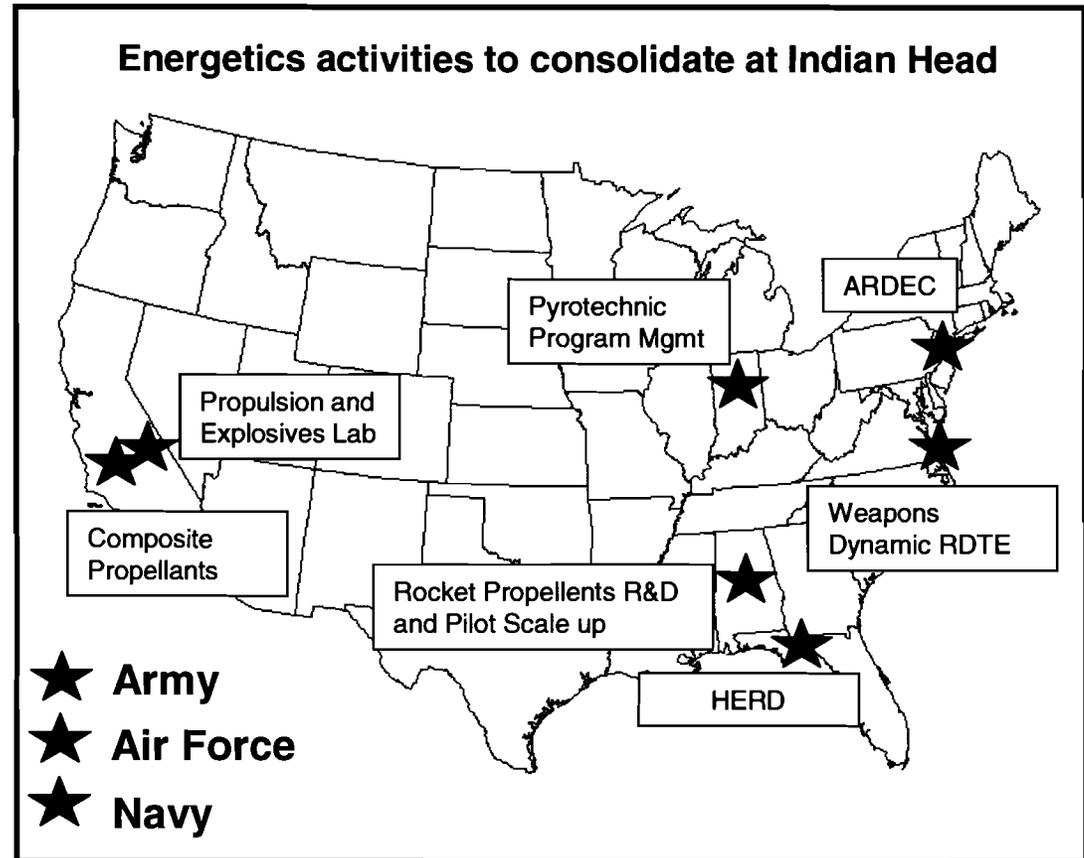
- **Significant inconsistency between recommendation and justification to create a joint PHS&T Center at Picatinny.**
 - **Does not consolidate the Army and other services' PHS&T activities that currently reside:**
 - **Army Missile Packaging (Redstone Arsenal, Huntsville, AL)**
 - **Army Transportation (McAlester, OK)**
 - **Air Force PHS&T (Wright Patterson AFB, Hill AFB, Warner Robins AFB)**
 - **Naval Aviation Support Equipment (NAWC Lakehurst)**
 - **Instead, moves a Navy activity that is already consolidated at Earle, NJ.**

“Energetics Center” at Indian Head

- **Recommendation creates an “energetics center” at Indian Head; no additional energetics missions move to Indian Head.**
- **Instead, moves gun energetics to Picatinny Arsenal:**
 - **Consolidation of guns taken from a scenario (Tech-0002) to relocate all RDAT&E work from Indian Head (to Picatinny and China Lake)**
- **Consolidates only those capabilities currently at the Indian Head Division Yorktown Detachment**
 - **Currently integrated into Indian Head business and technical base**
 - **Unique mission area focused on explosives, pressed and melt cast**
- **Missed the opportunity to consolidate Navy energetics R&D at Indian Head:**
 - **Small part of China Lake workload that they are having difficulty sustaining was not evaluated**
 - **Energetics workload is being re-located to China Lake and Picatinny**

Potential for Smart Consolidation at Indian Head

- Energetics is infrastructure intensive.
- High direct labor due to expensive, complex processes.
- Best way to realize savings is through a consolidation of direct labor to the site with a complete energetics life cycle capability and robust environmental footprint.
- Pentagon should stay on track and complete full energetics consolidation at Indian Head.



Additional Considerations

- **Unequalled success in nurturing and sustaining energetics technical competency**
 - **Strong technical staff, growing, adding new PhD's**
 - **Linked with the University of Maryland Center for Energetics Concept Development (CECD) to provide educational and research**
 - **Energetics Technology Center (ETC) being established in Charles County**

Alternatives to Overturning Recommendations

- **Remove Indian Head from the action to consolidate guns at Picatinny**
 - Gun capability is predominantly (all but 1 or 2 work-years) energetics
- **Move Dahlgren's Energetics (explosive warheads) to Indian Head vice China Lake and Picatinny**
 - Indian Head develops the explosives for underwater & surface warheads
 - Indian Head retains underwater warheads and creates synergy with Dahlgren's surface warheads
 - Technical knowledge can be preserved since people are within commuting distance
- **Evaluate moving China Lake energetics R&D to Indian Head**
 - Small capability that has been difficult and costly to sustain at China Lake
 - Allows China Lake to focus on Weapon Systems and utilize Indian Head as the Energetics R&D Center (Industry Model)
 - Minimal additional facilities needed at Indian Head to accommodate China Lake energetics R&D

Alternatives to Overturning Recommendations

- **Realign the Indian Head weapons simulation R&D capabilities to Dahlgren vice China Lake**
 - **Work is more closely aligned with Dahlgren Weapon Systems Integration mission**
 - **Workforce will be more likely to be retained due to proximity of Indian Head and Dahlgren**
- **Retain Earle as a Navy Detachment of Indian Head**
 - **Assures continued focus on safety in handling ordnance aboard ship and in port**
- **Retain test measurement and diagnostic equipment at Indian Head's Seal Beach Detachment**
 - **Has no relation to China Lake's Weapons and Armament mission.**
 - **Increases sustainment cost of remaining mission**

Summary & Conclusions

- **Overturn the total DoD recommendations to create:**
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- **Rationale for our recommendations:**
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Back Up Slides

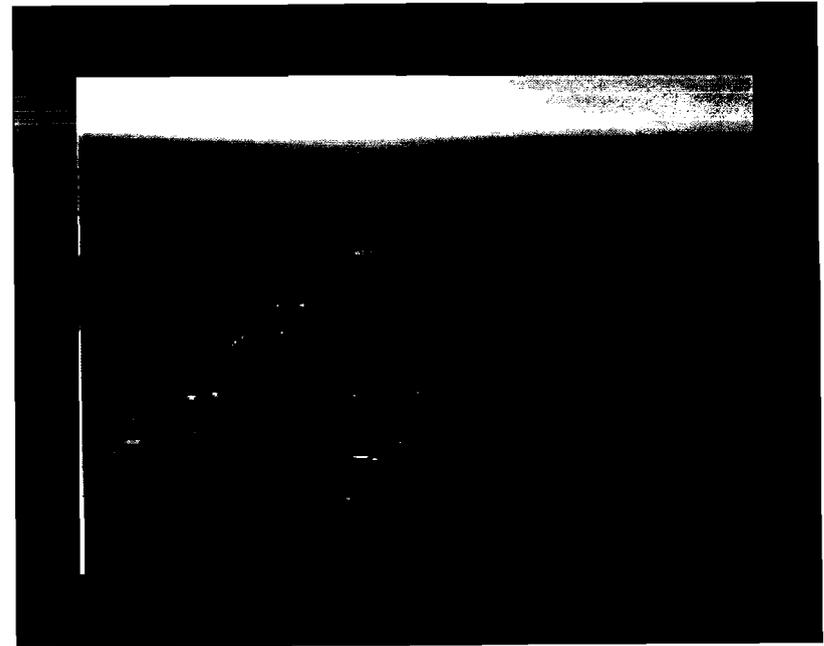
Relevant – Iraq and Afghanistan

- **Thermobaric bomb fielded in 68 days.**
- **Shoulder launched Multi Purpose Assault Weapon (SMAW) in 270 days.**
- **All CAD/PADs supporting ALL aviators.**
- **Training and deploying EOD techs to assist in Iraq and Afghanistan.**
- **Exploiting IEDs as key member of Combined Explosive Exploitation Cell (CEXC) and Terrorist Explosive Device Assessment Cell (TEDAC).**



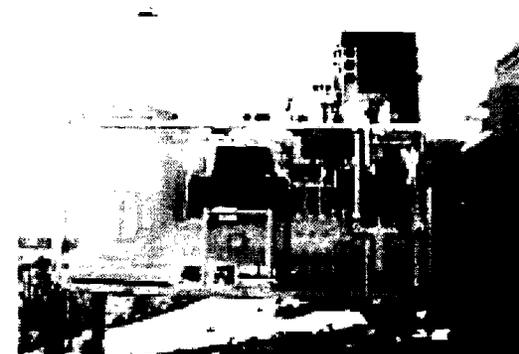
No Encroachment

- Not encroached.
- Peninsula bordered by water and Federal / State land.
- Space, facilities, and environmental footprint to grow.
- Majority of energetics testing conducted indoors using instrumented bomb-proof facilities to research/analyze energetics materials and to minimize environmental damage.



Environmental Realities

- **\$100M invested in environmental compliance.**
- **Environmental compliance takes years of effort and expertise to obtain permits.**
- **Transfer of compliance is not an automatic.**
- **Recent actions since BRAC 95:**
 - **Air pollution control system to remove acid gas and heavy metal emissions**
 - **Continuous Propellant Twin Screw Extruder decreases HAZMAT and air emissions compared to batch processing**
 - **Joint venture with Sweden called Closed Loop Energetics and Volatile Emissions Reduction reduces VOC emissions by 95%**
 - **Installation of low nitrogen oxide burners reduces 250 ton/year of NOx**
 - **Installation of an ultraviolet radiation system to destroy volatile emissions**
 - **Significant waste water improvements**



Efficiency / Cost to Move

- BRAC 93' & 95' Indian Head closure scenarios rejected due to cost.

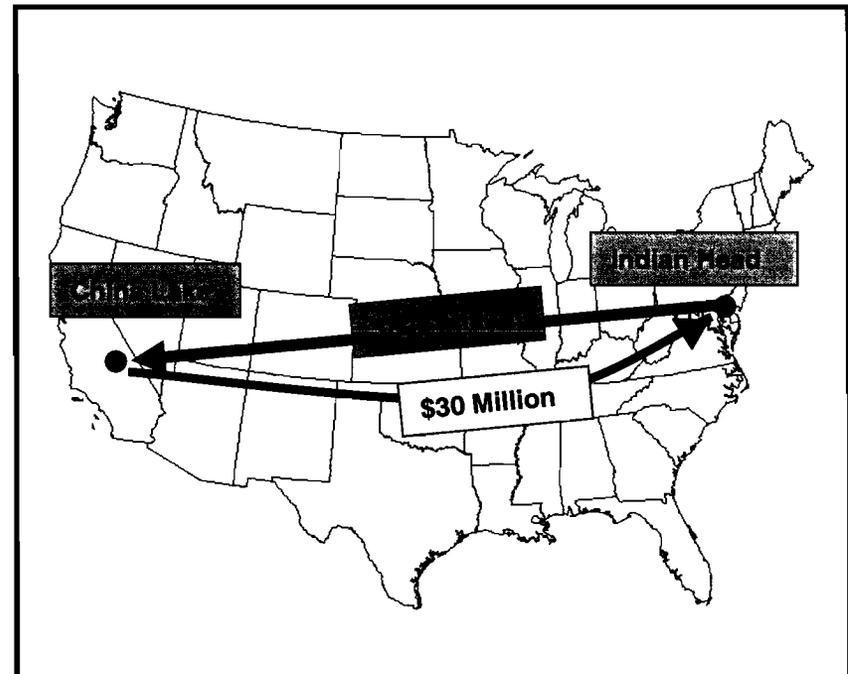
- Navy 95' certified data estimated \$800M to move IH to China Lake.

- \$69M invested in IH since BRAC 95.

- July 99 DoD plan to change claimancy to NAVAIR and move to China Lake rejected.

- **Current Activities:**

- \$40M in savings/cost avoidance and 300 indirect labor work years eliminated.
- 40% reduction in facility costs via demolition, shutdown, consolidation: 974 to 503 buildings / 2.1M sq ft to 1.2M sq ft.



Joint

Total Personnel: >3000

JITC-DISA
250 personnel



IH, NSWC
1774 Personnel



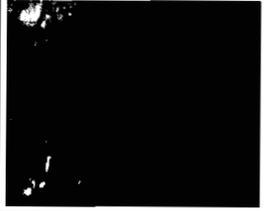
CBIRF, USMC
394 personnel



Logistics Center, Atlantic
182 Personnel



Joint EOD Center
326 personnel



NOSSA (Ordnance Safety)
113 Personnel



Anti-Terrorism

- Home to the Chemical Biological Incident Force (CBIRF)
- 400 + Marines
- CBIRF location based on threat
- Real world response:
 - Anthrax attack response October 2001
 - Ricin attack response February 2004

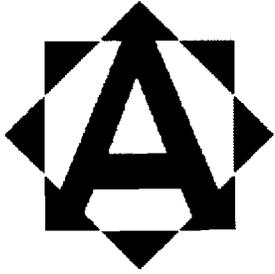


Community Matters



- ✓ **Strong community support**
- ✓ **Excellent Quality of Life**
- ✓ **Affordable housing**
- ✓ **School testing above US average**
- ✓ **Room to accept more students**
- ✓ **Technical programs to ensure new energetics scientists**
- ✓ **Close to Washington DC**





Point of Contact

- **This briefing was prepared by the The Indian Head Defense Alliance**
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THE NEWS REVIEW

Wednesday
August 4, 1999
Volume 10, Number 15

It's official: China Lake to grow

By ELIZABETH BABCOCK
News Review Community Editor

The underlying sense of fear that the Navy could pull up stakes can be put to rest today.

Significant additional workload will come to China Lake, Navy sources confirmed. Not only is the huge research, development, test and evaluation center here to stay,



Gerald Schiefer

but it's likely to grow. "It's a done deal," said Gerald R. Schiefer, a former China Lake technical director who is one of the key members on a triservice senior steering group that created an important Defense Department report recommending the changes. "What remains are decisions on how it will be implemented."

In the works are a transfer of energetics work from the Naval Surface Weapons Center, Indianhead, Md., to China Lake and a plan to reassign cognizance over all of the Navy's energetics and missile programs to the Naval Air Systems Command.

The Indianhead move is already under way, and the other actions will follow in the next few years.

When Under Secretary of Defense Jacques S. Gansler signed the cover letter on the report and forwarded it to Congress on July 9, he made the plan official.

Although Schiefer is modest about his own contributions to the

massive effort, others are more forthcoming. "We all owe Gerry Schiefer a big ticker-tape parade," said Sandee Schwarzbach, an operations research analyst in the Weapons Division's concept, analysis, evaluation and planning organization.

The report, entitled "A Plan To Streamline DoD's Science and Technology, Engineering, and Test and Evaluation Infrastructure," has the blessing of all members of the Joint Chiefs of Staff, as well as the secretaries of all the services.

It takes a four-pronged

approach: internal-plans from each service, a plan for initiatives across the services, a cost-based management tool to collect data from all defense research, development, test and evaluation activities and initiatives in the test and evaluation area.

(OVER) →

August 4, 1999

Continued from Page A1

The cross-service part of the report identifies a total of 47 planned actions, some that can be implemented immediately and others that require further study. But the key changes for China Lake are found in the Navy's internal plan.

Specific changes the plan spells out are "to move the claimancy of NSWC Indianhead, as an organization, from Naval Sea Systems Command to Naval Air Systems Command in order to consolidate all energetics efforts under one command" and "to transfer all atmospheric weapons related work and weapons personnel in NAVSEA, regardless of command and site, to NAVAIR."

The report goes on to state that "Organizational changes are being initiated and workload movements will occur as soon as practicable, but in concert with program requirements and personnel assignments."

Members of Rep. Bill Thomas' staff, reached yesterday for comment in the midst of intense tax-cutting strategy sessions, said Thomas is studying the report.

"It confirms what the congressman has always said — if you ever study anything based on a level playing field, China Lake always wins because of your people, your location and your proven record of always responding above and beyond the call," said District Representative Kevin McCarthy.

With completion of that report, Schiefer, who has spent most of his work life in Washington since 1989, announced his decision to retire, effective this past Monday. (See related story, page A8.)

China Lake officials declined to

comment on the significance of the report, but were glowing about Schiefer's contributions over the past several years.

"His focus on what's good for the USN and the nation has resulted in benefit beyond measure," said NAWCWD Commander Capt. Bert Johnston. "I can think of no one who has had a bigger or better impact on the Navy's RDT&E infrastructure."

Schiefer, in turn, praised the leadership team that will be responsible for implementing the big changes of the next few years.

"I have no qualms about leaving because of Bert and Karen [Dr. Karen Higgins, NAWCWD executive director] — that's a significant team," he said. Other leadership assets he mentioned are NAVAIR's top two officials, Vice Adm. John A. Lockard and Dr. Allan R. Somoroff, as well as Rear Adm. Joe Dyer and Dr. Don McEarlen, the Aircraft Division's top management team.

"In my mind, that's a significant team to handle all this change that's going to happen. I'm just very comfortable in getting on my horse and riding off into the sunset."

Until now, the sensitivity of his job as naval advisor for base consolidation and cross-service efforts has kept Schiefer from doing much to calm the fears of local citizens that the Navy would pull up stakes. But with the conclusion of his work, he said he now can emphasize that China Lake is here to stay.

He's in a good position to know that, since he's spent long, long hours since January 1994 collecting information to assist decision-making on base realignments and closures.

In 1994, in preparation for a proposed BRAC round, Schiefer and

his team developed a matrix of 112 items — such as size, number of patents, number and educational levels of employees — designed to measure what the team called "military value." In another study in 1995, the matrix encompassed 200 items.

"China Lake came out Number One both times," Schiefer said. "We've not been in any danger of closing."

He added that the main military installation offering competition to China Lake in terms of capabilities has been Eglin Air Force Base. "They have more than 463,000 acres," he said, "but they can only impact on 5,000 acres, all at sea level. That means there are things we can do that they can't do at all."

Adding that the Navy has no interest in performing its tests at Eglin, Schiefer pointed to a recent NAWCWD test where a missile launched at sea level, then flew several hundred miles over land to a hardened site. "That's the sort of thing we can do that can't be done elsewhere," he said.

While acknowledging that his intimate familiarity with the Navy's aerial weapons has been "very beneficial to China Lake," Schiefer emphasized that "I had to look out for the Navy and for the country first."

Schiefer said he feels comfortable in retiring, since "all actions we had pending have been completed." One of those actions ended on May 18, when he and other members of a high-level team completed a two-month effort to try to get Congress to authorize another base realignment and closure.

Although political realities doomed the BRAC team's effort to failure, Secretary of Defense William S. Cohen pointed out the importance of the effort in a personal letter of thanks he sent Schiefer.

"Although the authority was not granted, the tremendous amount of information and analysis generated will be very helpful to the Department as we continue to review our infrastructure needs," Cohen said.

Praising Schiefer as "a key participant in an extraordinarily demanding, high profile, and fast paced work effort," the Defense Department's top official noted that Schiefer's "accomplishments in gathering essential data about military installations were instrumental in anticipating Congressional concerns."

CHINA LAKE-

WSJ

From: [REDACTED]
Sent: Monday, November 15, 1999 1:38 PM
To: [REDACTED]
Subject: China Lake/Wall St Jrnl

Here's a better copy of the article.

THE WALL STREET JOURNAL
November 11, 1999

HEADLINE: As the Military Slims, a Soldier Costs More to Keep in Uniform
BY: CHRIS ADAMS, Staff Reporter of THE WALL STREET JOURNAL
BODY:

CHINA LAKE, Calif. -- Scattered amid the creosote bushes of the Mojave Desert here stand more than a dozen giant contraptions bristling with some of the U.S. military's most sophisticated electronics. About 2,700 miles of fiber-optic strands connect the devices to computers that simulate almost any anti-aircraft threat American fighter pilots could face anywhere in the world.

The Navy estimates that it spends \$16 million a year to operate and maintain this 500,000-acre swath of wired, wind-blown wilderness. Nearly two hundred people work at Echo Range daily so planes can swoop overhead to see, for example, if the latest American onboard jamming technology can thwart the newest enemy radar.

But most of the time, there isn't a plane in sight. Some months, total aircraft testing time at the range averages less than two hours per weekday. For all of January 1996, total testing time was 20 hours. Why operate such an expensive site and use it so sparingly? It's hardly a question of need.

Repeated government studies have concluded that the Pentagon has more than enough electronic combat ranges-Echo Range and two similar ones operated by the Air Force. One is just a few minutes away by jet at the Nellis Range Complex in Nevada; the other is at Florida's Eglin Air Force Base.

"Would the Navy build us again?" asks Ron Stepp, the Navy veteran in charge of running Echo Range. "I don't know. We're way expensive."

Indeed, four of the studies concluded that Echo Range is the least cost-effective to keep open. But bureaucratic turf wars, congressional pork-barreling and simple inertia have kept all three facilities up and, if not always running, taking leisurely strolls. At various times, senators and congressmen and the secretary of defense joined the fray to save one range or another. The issue has pitted the Air Force against the Navy and, at one point, one Air Force faction against another.

The long struggle over Echo Range helps explain a costly contradiction in the U.S. defense budget: Though troop totals have fallen in the past decade, the Pentagon is spending more than ever per troop.

For years, the debate over defense spending has focused on headline grabbing big-ticket items -- usually major weapons programs such as the F-22 fighter jet. But before the Pentagon buys a single rifle or pays a solitary grunt, it spends well over \$100 billion a year on its support infrastructure -- all the things needed just to make things hum. By far the biggest component of this spending is the so-called operations-and-maintenance, or O&M, budget, yet it receives almost no public scrutiny. It pays for many things: spare parts, equipment overhauls, environmental programs, training, child care, health care, cutting grass and painting barracks. It also covers much of the cost of running Echo Range and its counterparts.

Since the Cold War ended in 1989, the number of active troops and the level at which they train -- Army tank miles, Air Force flying hours and the like -- have dropped by more than a third. At the same time, O&M expenses have fallen at less than half that rate. Today, the Pentagon spends roughly \$70,000 a year per troop on O&M costs -- 30% more than it spent a decade ago, after adjusting for inflation.

There are some rational reasons: new environmental-cleanup directives, for instance, and growing medical expenses. And there's the obvious fact that constant peacekeeping and dictator-defeating operations have kept the downsized U.S. military extraordinarily active in the 1990s. But those factors aren't enough to explain the entire increase in per-troop O&M costs. Numerous government studies suggest that the O&M budget helps finance a system rife with inefficiencies: partly empty depots, underused testing facilities, commissaries that can't compete with neighboring Wal-Marts and warehouses crammed with tens of billions of dollars in inventory that may never be used.

The importance of the issue extends far beyond its fiscal impact. The O&M budget is the principal means by which readiness -- the speed at which military operations can be geared up -- is assured. And some military experts and congressional Republicans are becoming increasingly vocal in questioning the Pentagon's current state of readiness. Indeed, the Army has just concluded that two of its units are unprepared to go to war because they are too busy with peacekeeping efforts.

"The Department of Defense is burdened by a far-flung support infrastructure that is ponderous, bureaucratic and unaffordable," military experts on the National Defense Panel concluded in 1997. The General Accounting Office is even more blunt, finding in another 1997 report that "billions of dollars are wasted annually on inefficient and unneeded activities." In 1998, the Pentagon itself estimated excess base capacity at 23%, and said the figure for some functions -- including testing and evaluation centers and labs, a category that includes Echo Range -- was much higher.

Indeed, the problem is widespread, reaching far beyond this remote testing field. Consider:

At a Navy storage facility in Norfolk, Va., a General Accounting Office investigator in 1995 found 27 circuit-card assemblies, used on various planes and helicopters and valued at \$1,000, though only two were needed to satisfy war reserves or current operating requirements. And 10 more were on order, since the Navy computer automatically reorders some supplies without staff ever having to sign off. At other storage depots, the GAO found enough wiring harnesses for airborne radio communication systems to last 277 years and enough AP-1 central computers for the F-15 aircraft to last 109 years.

At Edwards Air Force Base about an hour down the road from China Lake, the Electronic Warfare Directorate recently expanded its Benefield Anechoic Facility -- a hangar 80 feet high and sporting the "biggest single-piece door in the world," says Lt. Col. Randy Kelly, who oversaw the facility until several weeks ago. Covering the walls, the floors and the ceilings of the vast room are dark cones of blue foam, which keeps out all electromagnetic waves. By simulating conditions at 60,000 feet, the chamber allows for testing of electronic systems without the cost of running a fighter down an open-air range.

The problem, according to the GAO, is that the Benefield facility offers the same testing environment as a similar Navy chamber in Maryland. Both the Air Force and the Navy are expanding their chambers, spending a total of \$512 million by the year 2002, some of it "to make the same electronic combat test upgrades," the GAO says. Lt. Col. Kelly says that for the past two years, the Air Force's Benefield chamber had no tests going on 40% of the time; the Navy, according to the GAO, insists it needs to expand its own chambers to handle future work.

Both the North Island Naval Aviation Depot in California and the Ogden Air Logistics Center in Utah can repair and maintain F/A-18 fighter planes. In the mid-1990s, the Ogden facility won a bid to repair some of the Navy's planes. But the Navy eventually canceled the contract, saying it wanted to keep repairs of the Navy plane within the Navy, even though the GAO concluded the Air Force could do the work for less money. One of the reasons Navy officials gave for canceling the contract was slow turnaround time by the Air Force repair center; the Air Force, however, responded that the Navy caused the delays, and pointed to more than 100 letters to Navy contracting officers complaining about them. Today, across all the armed services, maintenance depot facilities have excess capacity of between 25% and 50%, according to the GAO.

A 1997 Congressional Budget Office report found that the Pentagon's retail system -- comprising commissaries that resemble grocery stores and department stores -- is "not a cost-effective alternative to cash compensation" for active and retired military personnel. In other words, the U.S. would be better financially off if it were to boost wages for military personnel and let them buy their food, clothing and such at private-sector outlets, rather than continuing to run a vast, subsidized retail network of its own.

Pricing aside, the Pentagon's retail outlets are often far less convenient than private-sector shopping. The average commissary is open only 48 hours a week, is likely to be closed on Sundays, and can't carry the variety of goods that can be found at discount retailers like Wal-Mart.

The debate over downsizing and efficiency dominates the history of Echo Range in the 1990s. The facility opened in 1966 as an adjunct to an existing major Naval weapons-testing site. The California desert offered a nearly perfect environment for year-round testing, with rain a rarity (22 days a year) and visibility practically unlimited.

At its peak in the midst of the Cold War, base officials estimate, Echo Range employed more than 300 people. The range also was used to test other weapons systems, including the Tomahawk and HARM missiles, and the Navy's famed Top Gun pilots do some training here. Its most important achievement came in the 1980s, when its technicians simulated the anti-aircraft systems of a Soviet ship, allowing the Navy to perfect the defense systems on their fighters.

Mr. Stepp, a civilian employee at the range for 16 years, waxes nostalgic about those days: The "Soviet ship in the desert" was "our number one claim to fame, marketing niche, operational strength," he says. Now that the Soviet naval threat has been neutered, much of the equipment is mothballed.

"So now what?" Mr. Stepp asks, wistfully.

Today, Echo Range continues to conduct the sort of tests that are essential for America's cutting-edge fighters. U.S. warplanes are fully integrated weapons systems, able to track and deceive threats, communicate with command headquarters and engage in battle -- all at the same time. To remain effective, they must be tested and refined continually. Pilots also need constantly to hone their flying and fighting skills.

The problem is, Echo Range's customers -- the Navy, the Air Force and a few foreign allies -- haven't had very much use for it lately. In the post-Cold War era, there aren't as many new threats to America's air superiority, and there are fewer new aircraft to test. So the facility is open only four days a week. And though Navy records show it's available to test aircraft for 1,560 hours a year, it was used for only 576 hours in fiscal 1996 and 820 hours in fiscal 1997. (The range declined to release more recent figures; other records show that it expects usage to remain stable in coming years.)

That leaves Echo Range's 187 employees with a lot of downtime. Some of that is used to maintain and repair equipment, line up and plan tests and study the resulting data. Mr. Stepp contends that the employees stay plenty

busy, and he has argued for years against attempts to close his range in favor of the Air Force ranges in Nevada and Florida.

To bolster his case, Mr. Stepp provides a tour of the facility, restricted to nonclassified areas. He drives 25 miles from base headquarters to the range, passing a burro-crossing sign as he points out the spot that was once the set for another planet in a "Star Trek" movie.

Off in the distance, he passes what looks like a huge golf ball sitting on a ridge about 400 feet above the valley floor. It's called the "missile on a mountain." Inside the sphere and on the ground nearby, Mr. Stepp says, is just about everything needed to launch an antiaircraft missile: "If we had the missiles, we could launch at an airplane." When a plane zooms by, a seeker in the sphere fixes on the target and "we know what the missile is seeing," he says. The range's powerful computers collect hundreds of data points, from which the Navy can figure out what kind of decoys and jammers would work to evade the missile.

At his office, a nondescript building in a tiny complex of low-rise white buildings and trailers, Mr. Stepp takes a phone call to discuss an upcoming test -- proof, he says afterward, that the facility has plenty of work. He offers a slide show of the range's sophisticated equipment. The devices dotting the landscape, he says, house various "threat systems" with names like "spoon rest" and "bass tilt." If the Pentagon calls with word that a potential adversary has a new radar system, Echo Range technicians go to work.

The highlight of the tour are two 350-foot-tall wooden structures that look like teepee skeletons, built in the 1950s for various testing purposes. "At one time, when business was low, I was going to do some bungee-jumping," Mr. Stepp jokes.

One thing has kept some of the employees here busy for the past decade: a constant stream of studies that have required staffers to try to justify -- mostly successfully so far -- their existence. "You're putting dedicated man-hours of highly skilled people to work for months collecting and working the data," complains A.K. Rogers, Mr. Stepp's boss, in an interview.

The studies started back in 1990, as the Pentagon was first coming to grips with post-Cold War budget realities and looking for ways to scale back. Military planners quickly concluded that aircraft testing-and-evaluation, or T&E, sites such as Echo Range were a logical place to start. Such facilities illustrated the Pentagon's "greatest overlap in capabilities," one early report concluded.

Soon after, the Pentagon ordered up a study aimed at reducing duplication rampant throughout the Defense Department. The goal couldn't have been clearer: "an aggressive interservice T&E consolidation effort." Instead, the study ended up focusing on avoiding additional duplication in the future, and the Defense Department told Congress it could be years before any consolidation savings were realized. The reason, according to a later report by the General Accounting Office: "service resistance to consolidating these existing test capabilities."

A few years later, a panel of officials from all the services looked at duplication at the testing facilities at Echo Range, the Nellis Range Complex in Nevada, which is managed by Edwards Air Force Base in California, and Eglin Air Force Base in Florida. In 1994, the panel decided that closing Echo Range would save taxpayers the most -- \$95 million over five years, compared to \$48 million if Eglin's facility were shut down. The Nellis range was considered too valuable an asset to close. The plan called for the consolidation to be complete no later than 1997. A year later, another study came to a similar conclusion.

The Navy fully participated in both studies. But it criticized their conclusions as "incomplete and flawed," according to the GAO, and it refused to consider closing its facility if the Air Force was going to retain both of its ranges.

Around this time, congressional interest in the issue intensified. Members from Western states criticized the anti-Echo Range proposals from within the Pentagon and proposed consolidating such military testing facilities into a complex in the Southwest. That prompted protests from senators from Florida and other Eastern states, who told the Pentagon in a letter that they were "gravely concerned" by the proposal and praised the previous pro-Eglin studies.

Another Pentagon multibranch study ordered by Congress then concluded that electronic combat ranges had 30% excess capacity. The result, according to a later GAO report on the earlier studies, was a "gentleman's agreement" that spared Echo Range: the Navy and the Air Force would consolidate within their respective services, rather than among the services.

The Pentagon disputes that there was any gentleman's agreement. Nevertheless, the Air Force volunteered to relocate its testing equipment from Eglin to Nellis a move that previous studies had concluded was less cost-effective than closing the Navy's Echo Range and that would leave the military with no major East Coast testing facility.

That deal prompted a rearguard action from the Air Force's Special Operations Command, based right near Eglin's runway. "Over the years, we have grown accustomed to having this special facility in our own backyard," one Special Operations commander said in a memo. "Should the proposed realignment occur, it will not be business as unusual for AFSOC." The people behind the deal scoffed at such complaints. "Requirements in yesterday's fiscal environment are conveniences today," one Pentagon official responded in a letter.

But the Special Operations Command called on some friends in high places -- the Florida congressional delegation. Republican Sen. Connie Mack in the Senate expressed his "surprise and dismay" at the plan to close Eglin and, with Democratic Sen. Bob Graham and GOP Rep. Joe Scarborough, ordered the GAO to investigate.

Once the GAO started poking around, Echo Range's Mr. Stepp shifted into high gear. He argued strenuously that the previous studies were flawed at best and biased at worst. To no avail: The GAO blasted the decision to scale back Eglin and save Echo Range, noting that the Pentagon previously had "produced three studies with a conclusion that China Lake is less cost-effective to keep."

Defense Secretary William Cohen also sided with the Florida lawmakers. "Let me assure you we share your concern," he told Sen. Mack in a May 1998 letter. "The Department has no intention of eliminating the electronic combat operational test and training capabilities needed to support the Air Force Special Operations Command," he wrote.

The Florida delegation also persuaded Congress to appropriate an extra \$5 million so Eglin could "maintain and improve its [electronic combat] capability" -- money that even the Pentagon said it didn't need because, as the previous studies had proved, it already had too much testing capacity.

In the end, the Air Force decided to transfer some Eglin testing systems to Nellis in Nevada. Even that limited move toward consolidation was delayed at the request of the Special Operations Command, and some of the equipment slated to be shipped out West will stay at Eglin at least through July 2001 -- and may be allowed to stay indefinitely. The rest will remain at Eglin.

Ironically, military officials themselves concede that the inefficiency and overlap uncovered in countless studies often applies to the studies themselves -- especially given the outcome.

"If you look at the history of the studies, new studies often roll in before or right at the time others are completed," says Mitchell Cary, a midlevel Air Force official well versed in the issue's acronym-heavy history. "There was the Board of Operating Directors study, and right at the

end of that it was announced there would be a look at T&E with BRAC."

Maj. Marc Shaver, a colleague, chimes in: "At the same time, they were already doing the test consolidation master plan."

"And Vision 21 came right on the end of that," adds Mr. Cary.

"Vision 21 was kind of cut short by the Quadrennial Defense Review, and then we went right into Section 912."

That last one came out this past summer. Its conclusion: The Pentagon's base-closing process was "specifically focused on reducing cross-service redundancies" but had resulted in "no significant actions." And, once again, the study recommended that the Pentagon consolidate its electronic testing ranges.

But even the Pentagon official who oversaw that study doesn't sound very hopeful. Stan Soloway, deputy undersecretary of defense for acquisition reform, says he isn't familiar enough with the specifics of electronic combat ranges to explain why all three ranges remain open after so many years of study. Speaking generally, however, he says the Defense Department is so "overlayered with management and the board and committee structure that it inhibits" real reform.

"If you have ... a convoluted enough structure, change becomes almost impossible," he says. "Can I sit here and suggest to you that this study has taken us several steps beyond those studies that were done earlier? Not really."

PERSONNEL & COST IMPLICATIONS at INDIAN HEAD due to DOD RECOMMENDATIONS

General

- Recurring savings are essentially achieved through the elimination of positions based on the premise that increased synergy will be achieved by consolidating functions at the macro-level without any consideration of breaking synergy resulting from shared facilities, equipment, skills and knowledge across lower level enabling technologies.
- Large number of eliminations over the entire Technical area will result in a capacity shortfall, as the current excess capacity is very small. Cannot determine, as future capacity requirements were removed from the released data.
- No Recurring Savings are achieved through shutting down facilities, as they are almost always joint utilized.
- Duplication of facilities and equipment will actually occur further increasing sustainment costs to DoD.

Gun Propulsion (energetics) - from Indian Head to Picatinny

Move 37 Eliminate 6 (16.2%)

- Energetics Center created at Indian Head & Specialty Site for Guns & Ammo at Picatinny.
- Indian Head gun data collected from a full closure scenario, with all work going to either China Lake (Weapons) or Picatinny (Guns and Ammo) - Therefore gun and ammo work identified was almost all energetics.
- Facilities, Equipment and People support multiple areas of Energetics – Therefore, facilities cannot be closed, equipment moved will have to be replaced, and skills lost will have to be replaced.
- Greater synergy will be broken across Energetics, than will be created at Picatinny - Savings through eliminations is not real.
- Indian Head Gun Propulsion requires very expensive Energetics facilities that would need to be duplicated at Picatinny.
- Picatinny showed no excess capacity, stated they would need MILCONs - Tech JCSG reduced to Amber Rehab and allowed only 25% .
- Only 25% of equipment required was allowed by Tech JCSG.

PHS&T from Earle to Picatinny

Move 54 Eliminate 9 (16.6%)

- PHS&T is a Detachment of Indian Head, integrated as a Department, and fully supported from Indian Head.
- PHS&T within the Navy is already consolidated within Indian Head Division at Earle.
- PHS&T is not consolidated within the Army - only Conventional Ammo at Picatinny.
- Most of PHS&T workload is not Conventional Ammo, but specialized ammunition.
- Greater synergy exists between PHS&T at Earle and Earle's Logistics mission than Picatinny's Conventional Ammo mission. - Savings through eliminations is not real.
- PHS&T is a World Class Organization consistently winning awards for their packaging designs. Will lose the knowledge base as most employees live 20 to 30 minutes south of Earle. Will not move and commute to Picatinny is over 2 hours.

Missile Simulation Design from Indian Head to China Lake

Move 80 Eliminate 14 (12.5%)

- Missile Simulation is full spectrum at Indian Head from design to fabrication to in-service support.
- Design personnel support development of Energetics process control systems
- Only Design portion relocated to China Lake.
- Greater synergy broken at Indian Head, than gained at China Lake - Savings through eliminations is not real.

Quality Evaluation (QE) from Seal Beach to China Lake

Move 20 Eliminate 4 (20%)

- A Detachment of Indian Head, integrated as a Department, and fully supported from Indian Head. This action does not close the Detachment.
- Determines if the Service life of fielded Ordnance and Weapons can be extended from a safety viewpoint.
- The majority of the Navy's QE Program (both NAVSEA & NAVAIR) is conducted by Indian Head Division (Indian Head, Seal Beach, & Yorktown sites).
- Requires a markedly different engineering discipline and frame of mind, not normally associated with RDT&A and benefits greatly from co-location and management with other QE workload. Was aligned with Indian Head Division ~7 Years ago for this reason.
- Synergy is greater with other Quality Evaluation Programs than combining it with Weapons RDT&A - Savings through eliminations is not real.

Proposed Priorities

- 1) Cancel Gun Propulsion from Indian Head to Picatinny
 - Part of our Core Energetics Mission/Workload.
 - Significantly builds the Energetics capability at Picatinny.
 - Makes continued Joint Consolidation of Energetics at Indian Head more difficult.

- 2) Cancel total recommendation - consolidation of Weapons at China Lake
 - China Lake still has an Energetics capability (~200 workyears).
 - ~2500 additional Weapons positions at China Lake will result in a labor rate we cannot compete with.
 - Missile Simulation Design & Seal Beach QE not part of Core Energetics Mission/Workload.

- 3) Cancel PHS&T from Earle to Picatinny
 - Not critical to Energetics Core capability, but important from a direct workload generation viewpoint.

White Paper
Issue for Consideration
Do We Need a Naval Integrated Weapons and Armaments Center at China Lake?

BRAC 2005 Commission Issue for Consideration: The DoD Technical Joint Cross Service Group increased personnel and workload at Naval Air Weapons Station, China Lake by over 50% of the current workforce (+2469 direct jobs), by selecting discrete functions from seven Navy facilities that have been previously consolidated by Service or BRAC Commissions. The creation of a “Naval Integrated Weapons & Armaments RD&A T&E Center at China Lake results in a disruption and weakening to seven Navy facilities that were already consolidated entities, does not close any bases, and increases overhead at a large number of bases to plus-up one base.

Background: The new Naval Integrated Weapons and Armaments Center at China Lake is one element of a large plus-up of work years resulting from the Joint Cross Service Group process. Additionally, NAWC Pt Mugu provides all of its high-end sensors, EW, and electronics RD&A to China Lake. This envisioned “Super Lab,” along with the USAF Super Lab at Eglin AFB and the Army Super Lab at Redstone Arsenal, fails to take into account careful consolidations of fixed-wing and rotary aircraft, energetics, and weapons systems integration across the NAVAIR and NAVSEA enterprises.

Specific Issues and Considerations: Seven Navy facilities will provide hundreds of work years to achieve the new mission envisioned at China Lake. However, none of the seven bases will close. For example, NAS Patuxent River is the Navy’s leader in fixed-wing and rotary-wing RD&A, T&E and was consolidated as a result of BRAC 93 and 95 to form the *NAVAIR Model*, one center that provides for full life-cycle development of tactical aircraft. Movement of 142 personnel from Patuxent River will disrupt aircraft separation simulation and software processes that are organic to and integrally linked to software, simulation, and testing of airframe R&D and design.

Indian Head NSWC provides another example; despite being designated as a joint center of energetics in the DoD BRAC 2005 recommendation, no energetics functions move to Indian Head as a result of this decision. Instead, Indian Head’s weapons and armaments RD&A and T&E are directed to move to China Lake. Similar to Patuxent River, energetics, including weapons and armaments RD&A and T&E has been consolidating at Indian Head via the majority of BRAC decisions, including the 1995 decision to relocate the White Oak NSWC underwater munitions functions to Indian Head. Finally, Dahlgren NSWC is designated as a specialty center for the system integration of naval surface weapons systems in the DoD BRAC 2005 recommendation. However, all weapons and armaments RD&A and T&E is also being removed from Dahlgren to China Lake.

Alternative Issues and Considerations:

Consolidated Joint Range at China Lake – Edwards AFB: The Education and Training had three areas of responsibilities, ranges among them. However, not a single range recommendation

was forwarded from this group. China Lake's strengths are not based on its technical competencies, but on large and accessible range space. Instead of forcing the work-loading of China Lake from a variety of high military value locations, efforts should be conducted to analyze the consolidation of China Lake to the USAF range architecture, specifically with Edwards AFB. This would alleviate the need to artificially inflate workload and return China Lake to a mission it is suited for: range operations.

Consolidated Joint Energetics at Indian Head NSWC: The Technical Joint Cross Service Group characterized Indian Head NSWC as a "center for energetics" but made no effort to further consolidate redundant and excess energetics capabilities to Indian Head. Specifically, it appears there were no scenarios to consolidate remaining energetics functions at Eglin AFB (HERD), energetics R&D at Picatinny Arsenal, and the energetics pilot plant at China Lake. All three activities represent small energetics capabilities that could be effectively consolidated at Indian Head.

Recommendations:

1. Analyze the viability of China Lake to absorb a large influx of people given workforce recruitment issues, unlikelihood of the majority of personnel to move, and significant and well documented environmental issues, including a paucity of water to support growth.
2. Analyze whether or not China Lake received scrutiny as a closure candidate or as a realignment candidate for consolidation with Edwards AFB or whether its designation as a Naval Integrated Weapons and Armaments Center precluded / minimized analysis of China Lake.
3. Analyze joint opportunities for China Lake and advantages of moving China Lake to Air Force control in a joint range arrangement with Edwards AFB.
4. Analyze joint consolidation of energetics at Indian Head by consolidating China Lake's energetics pilot plant to Indian Head.
5. Analyze the impacts of moving weapons separation, simulation and software functions from Patuxent River and the resulting impact to the NAVAIR model and processes for integrated fixed-wing aircraft design.