

BASE REALIGNMENT AND CLOSURE 2005

**TECHNICAL CROSS SERVICE GROUP'S
NAVAL SUPPORT ACTIVITY CRANE, INDIANA**

**WEAPONS & ARMAMENTS RESEARCH, DEVELOPMENT & ACQUISITION, AND
TEST & EVALUATION, CENTER RECOMMENDATIONS**

**ANALYSIS AND ALTERNATIVES TO THE BRAC RECOMMENDATIONS
TO:**

"Realign Naval Surface Warfare Center Crane, IN, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat system security, and energetic materials to Naval Air Weapons Station China Lake, CA."

"Realign Naval Surface Warfare Center Crane, IN, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ."

SIBA, Inc.

Southern Indiana Business Alliance

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**BRAC 2005
TECHNICAL CROSS SERVICE GROUP'S
NAVAL SUPPORT ACTIVITY CRANE, IN
WEAPONS AND ARMAMENTS RECOMMENDATION**

1.0 INTRODUCTION

The Department of Defense has the primary goals in the 2005 BRAC round of increasing military value and reducing excess capacity in consonance with the Department's Transformation Goals. Guidelines included emphasis on joint operations, multi-disciplinary capability, and mitigation of encroachment and environmental issues.

The Naval Support Activity (NSA) Crane hosts the Naval Surface Warfare Center (NSWC) Division Crane and the Crane Army Ammunition Activity (CAAA); co-located mission commands that perform multi-functional and multi-disciplinary tasking across ordnance, electronics and electronic warfare (EW) products and systems. These two commands have jointly built a cross Service capability leveraging shared world-class facilities and human intellectual capital that focuses on development, acquisition, test & evaluation, sustainment, maintenance, distribution, and storage. In-depth integrated technical and industrial capabilities provide extremely agile and responsive complete support to Warfighters of all Services and Joint Special Operations commands.

NSA Crane, located in rural Southern Indiana has 63,000 acres; completely encroachment free; with no environmental issues; remote from potential terrorist threat; in close proximity to excellent road, rail and air transportation; with abundant power and water utilities; with extraordinary facilities; academic and industry partnerships; and, an almost unlimited technical workforce recruitment ability. NSA Crane gets very high marks when compared to DoD BRAC 2005 goals.

The following discussion covers the Naval Integrated Weapons and Armaments portion of BRAC 2005. It addresses in detail the recommendation to split and relocate a specialized, already integrated weapons and armaments capability from NSWC Crane Division to China Lake and Picatinny.

U.S. Special Operations Command (USSOCOM) and other Service customers, including the Navy, Marine Corps and Army, have over the last 25 years established a Joint Center of Excellence for quick response, high security 'Joint Special Missions' at Crane that represents the national center of mass in workload, facilities, and capabilities for these asymmetric requirements. Crane has been intensely utilized over the past few years (especially since 9/11) and has capabilities and capacities which were not disclosed due to their sensitive nature, and as a result we believe were not considered during the BRAC data calls and scenarios. This center has achieved a trusting relationship with the Special Missions Units asymmetric Warfighters through outstanding success in drawing on the integrated Crane specialized capabilities including special purpose weapons, ordnance/explosives, power sources, pyrotechnics, demolition items, visual augmentation devices, targeting devices, security systems, and more. The ability to draw on all these capabilities at one secure isolated site has enabled a hands-on systems approach, with a close Warfighter relationship, in solving these critical requirements quickly and efficiently.

Crane's integrated, multifunctional capabilities are not only well suited for support of Special Operations Forces (SOF), but provide the perfect environment for rapidly fielding solutions to the asymmetric threat challenges faced by our Warfighters. An unclassified example, in response to the attack on the USS *Cole* in 2000, is that Crane created the Integrated Radar Optical Sighting Surveillance System (IROSSS), an integrated weapons, electro-optic, radar, and software system that allows ships to quickly detect, identify and deter or engage threats. Crane took IROSSS from concept to the first fielded system in 11 months.

Special Missions are those requiring tight security and quick response to our Warfighters battling asymmetric threats. Figure 1 is just one example of the importance of Crane to the Warfighter in our responses to asymmetric attacks throughout our Global War on Terror. The weapons technology in these pictures has been touched once or multiple times by Crane through the RD&A, T&E, Prototyping, Production, Maintenance, Distribution and Storage processes.

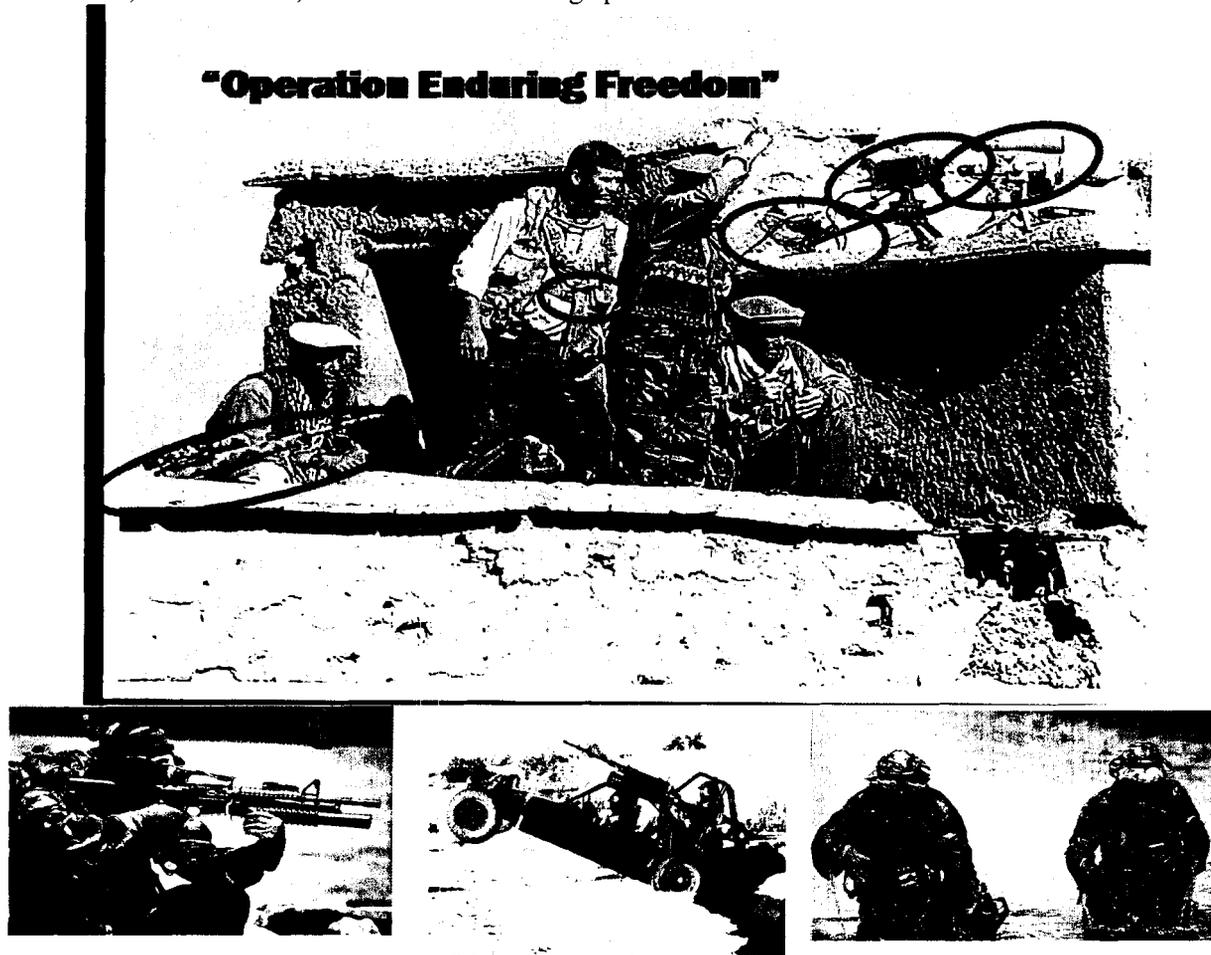


Figure 1. Special Missions Warfighters

This type of Special Missions support and relationship cannot be provided except by an activity with multifunctional, multidisciplinary capabilities with uniquely trained and developed skills, and with the ability to provide both information security and physical isolation.

We propose an additional recommendation to *“Create an Integrated Weapons & Armaments Specialty Site for Joint Special Missions at Naval Surface Warfare Center Crane, IN”* to officially recognize the existing capability and capacity at Crane. This will enhance military value, efficiency, joint operations, and provide a true, total capability specialty site for Joint Special Missions.

By retaining this Joint Special Missions capability that is unique to Crane, the BRAC concept of integrated DoD Centers of Excellence can be implemented in such a way as to increase the transformational value, cost efficiencies, and military value of the current recommendations. In addition, we believe that there is cause for concern in that the DoD BRAC current recommendation consolidates all guns and ammunition capability at one site, leaving the risk inherent in only a single site capability without geographical separation for risk reduction.

2.0 BRAC RECOMMENDATIONS

Recommendation 1: "Create a Naval Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center. Relocate all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat system security, energetic materials, to Naval Weapons Station China Lake, CA."

Recommendation 2: "Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition. Relocate gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ."

3.0 BRAC RECOMMENDATION ANALYSIS

To facilitate a robust joint analysis during BRAC 2005, the Secretary of Defense chartered seven Joint Cross-Service Groups (JCSGs) to make realignment and closure recommendations related to common business-oriented support functions. This functional, stovepipe alignment, while addressing previous BRAC issues, has a potential weakness in that it does not provide for aggregation and analysis of multifunctional/multidisciplinary capabilities and capacities of co-located organizations across the JCSGs and Services. We believe the Crane Joint Special Missions Specialty Site was undervalued as a result of this data analysis approach. The following supporting analysis is based on precepts that were derived from the DoD and Joint Cross-Service Group goals and objectives contained in their guidance documentation.

3.1 BRAC Precept – High Military Value

3.1.1 *BRAC Data*

A review of the detailed data provided by DoD has revealed the following:

- The Technical Joint Cross-Service Group (TJCSG) used the first four 2005 BRAC criteria to develop military value. These criteria are:
 - The current and future mission capabilities and the impact on operational readiness of the total force of the Department of Defense, including the impact on joint Warfighting, training, and readiness.
 - The availability and condition of land, facilities, and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions), both at existing and potential receiving locations.
 - The ability to accommodate contingency, mobilization, surge, and future total force requirements, both at existing and potential receiving locations, to support operations and training.
 - The cost of operations and the manpower implications.

(DoD Base Closure and Realignment Report Volume 12, 19 May 2005, page 21)

- Crane Indiana was not identified to the Infrastructure Executive Council (IEC) as a Joint Base (NSWC Crane Division/Crane Army Ammunition Activity). Twelve other bases were identified as Joint Bases. (BRAC 2005 Infrastructure Executive Council (IEC) Meeting Minutes of 2 May, 2005)

3.1.2 Data Analysis

The key to enhancing these BRAC recommendations is Military Value. The Military Value of these functions at Crane, given the structure of data calls and scenarios, were not looked at in the aggregate context of Crane's joint Army and Navy integrated, collaborative functions, so critical in positively impacting the current recommendation. Understanding the aggregate Military Value, through jointness, connectivity, and functional integration is essential. The overall impact of consolidating functions at a few massive sites, based on Military Value, can still be achieved without losing a truly unique capability at Crane.

NSWC Crane performs its critical role in support of Special Missions Units for customers in a collaborative and integrated environment across related technologies and functional areas. This aggregate collection of functions which result in such outstanding work in support of Joint Special Missions was not assigned a Military Value. **In other words, this integrated collection of activities performing complementary functions were assigned separate Military Value scores that did not reflect the aggregate Military Value required by Joint Special Missions.** Only functional Military Value was considered, not capability based Military Value. As a result, the functions at Crane which are integrated to become the Joint Special Missions capability were graded much lower than if they had been evaluated as the system of functions. If we do a comparison of the integrated Military Value for Special Missions utilizing available scores contained in the Technical JCSG and Industrial JCSG portions of the BRAC report that relate to the Joint Special Missions function, the resulting scores are identified in Table 1.

Military Value Category	Joint Base Crane, IN	China Lake, CA	Picatinny, NJ
TJCSG Weapons Technology D&A	0.2292	0.4982	0.5251
TJCSG Weapons Technology Research	0.1754	0.5062	0.5272
TJCSG Weapons Technology T&E	0.0930	0.6391	0.0564
IJCSG Maintenance - Small Arms/Personal Weapons*	0.5203	0	0
IJCSG Maintenance - Conventional Weapons*	0.3220	0	0
IJCSG Munitions - Production	0.4836	0	0
IJCSG Maintenance - Electro-Optics/Night Vision/FLIR*	0.5645	0	0
IJCSG Munitions - Munitions Maintenance*	0.1951	0	0
IJCSG Maintenance - Electronic Comps. (non-airborne)*	0.4314	0	0
IJCSG Maintenance - IMA Ordnance/Weapons/Missiles*	0.1706	0.0592	0.0512
Total Integrated Military Value for Special Missions	3.1851	1.7027	1.1599

* Maintenance capability includes maintenance, prototyping, and limited production.

Table 1. Integrated Military Value for Special Missions

The above scores do not reflect the Military Value provided to the Special Missions Warfighter in the areas of testing and training that are provided by the Crane Glendora Lake facility and the Indiana National Guard at Camp Atterbury and Muscatatuck that are discussed in the following High Capacity and Transformational sections of this document. These facilities were not evaluated and given Military Value scores in the BRAC 2005 documentation.

Additionally, the BRAC Military Value analysis did not account for the current performance, or effectiveness of an activity performing a particular function; only whether the activity performs the function. Therefore the high quality and timeliness of work provided by Crane was not part of the BRAC Military Value computations reproduced in the above table.

While the first recommendation identified above is one of three DoD Weapons & Armaments Centers of Excellence recommended in the BRAC report, the second recommendation only provides for a single DoD specialty site for Guns & Ammunition, in violation of one of the two Technical JCSG BRAC principles covering geographic separation and competition of ideas.

We believe that if the integrated Joint Special Missions capability had been assigned a Military Value, Crane would have been number one nationally, not just significantly above China Lake and Picatinny as shown in Table 1. Crane's approach to supporting Joint Special Missions has historically produced higher quality work, reduced transition times to the Warfighter's rapid fielding process, increased ordnance safety and configuration management, and all at a lower unit cost than non-Crane programs.

- USSOCOM and other Special Missions customers have established a unique quick response/secure capability at Crane Indiana over the past 25 years, required for Special Missions.
- Crane has a workforce trained in applying governmental laws and regulations (including Weapon Systems Explosives Safety Review Board (WSESRB)) that provides classified rapid response in support of Joint Special Missions acquisitions, development and fielding efforts. This support fulfils the Special Missions time critical requirements for providing asymmetric responses to asymmetric attacks.
- Synergy has been achieved with the co-location of NSWC Crane Division and Crane Army Ammunition Activity creating the multifunctional character of Crane Indiana. These two activities cover the full spectrum of RD&A, T&E, Prototyping, Production, Maintenance, Distribution and Storage.
- This multifunctional capability at Crane Indiana has been applied to the multidisciplinary needs of the Army, Navy, Air Force, Marine Corps, Department of Homeland Defense, and other Government Agencies in Special Purpose pyrotechnics, demolition materials, small arms and minor caliber weapons, associated ammunition, power sources, visual augmentation devices, targeting devices, combat system security, and command communications.
- This multifunctional, multidisciplinary capability and capacity located in one location at Crane Indiana has transformed into a lean organization maximizing on the existing synergies to provide the SOF Warfighter with the best technological tools and devices in the shortest timeframe.
- This vital capability and capacity within DoD has been wrapped within a greater conventional Program support at Crane, to enhance non-disclosure of unique classified and sensitive capabilities and capacity.
- This specialty area does not appear to have been evaluated separately due to its classified and sensitive nature. One clear indication of this significant Military Value is the tremendous NSWC Crane Division Special Missions workload growth since 9/11.

3.2 **BRAC Precept – High Capacity**

3.2.1 *BRAC Data*

A review of the detailed data provided by DoD has revealed the following:

- The 11 December 2004 TJCSG Capacity Analysis Report states that 8 parameters were to be used to measure the physical infrastructure and the technical output of the DoD facilities. Early in the capacity analysis phase, two issues arose. The first was how the components reported data. Data were reported organizationally, which does not align specifically with the definition of technical facility. The second issue arose due to different respondents interpreting and answering questions based on inconsistent definitions. To deal with the issue of respondents answering by organization, the TJCSG aggregated the data from all respondents in a technical capability area for a function by combining all records in the “bin” by physical location, as identified by zip code. To deal with the issue of respondents answering questions inconsistently, the TJCSG assessed technical capacity using work years, physical capacity, and test hours for the quantitative capacity analysis. (BRAC 2005 TJCSG Final Capacity Analysis Report, 19 May 2005, page A-6)

3.2.2 *Data Analysis*

The inconsistency in data collected from separate components did not provide the TJCSG with visibility of related data from all activities at Crane necessary for them to aggregate and consider. Therefore, the true capacity at Crane Indiana, including both the Navy component (NSWC Crane Division) and the Army component (Crane Army Ammunition Activity), has not been adequately identified to the TJCSG or the BRAC Commission.

Crane Army Ammunition Activity (CAAA) is a significant pillar in the national munitions organic industrial base. They produce and renovate conventional ammunition and ammunition related components. They perform ordnance manufacturing, engineering, and product acceptance in support of production, in collaboration with the NSWC Crane technical workforce on Navy munitions.

Maintaining this capacity at Crane capitalizes on recently constructed, unencumbered facilities that are equipped with modern technology, and environmentally permitted open air training and testing ranges. These indoor and outdoor facilities are jointly utilized by multiple disciplines for environmental and function testing of energetic and mechanical/electrical devices.

Open Air Ranges were assigned to the Education and Training JCSG. This Range data was not provided to the Technical JCSG for them to consider as part of the T&E Military Value. Test Range capacity is critical to the Weapons & Armaments, Guns & Ammo, and Joint Special Missions centers.

Crane environmental permits, jointly used by Crane Army & Navy, allow disposal of self-generated and off-site energetic waste streams. Rural Crane Indiana does not have the encroachment problems or environmental issues being experienced by the DoD facilities on the east and west coasts.

Indiana also contains two major test and training facilities operated by the Indiana National Guard – Camp Atterbury, a premier testing, training and mobilization facility, and Muscatatuck Urban Training Center. Special Operations Forces routinely train at these facilities in support of enhancing tactical training procedures. These facilities were not identified to the Technical JCSG or BRAC Commission for aggregation and consideration. Additionally, NSWC Crane has the Lake Glendora test facility which supports underwater ordnance testing and asymmetric warfare training. The combination of Crane, Camp Atterbury and Muscatatuck provides a unique, world class solution to Joint Special Missions requirements, within a low visibility environment preferred by these unique customers.

3.3 **BRAC Precept - Transformational**

3.3.1 *BRAC Data*

A review of the detailed data provided by DoD has revealed the following:

- The Secretary of Defense initiated the BRAC 2005 process to rationalize the Department's base infrastructure within the United States in support of the Department's long-term strategic capabilities...Continuous defense transformation is part of a wider governmental effort to transform America's national security institutions to meet 21st-century challenges and opportunities. Just as our challenges change continuously, so too must our military capabilities. The purpose of transformation is to extend key advantages and reduce vulnerabilities. We are now in a long-term struggle against persistent, adaptive adversaries, and must transform to prevail. (DoD Base Closure and Realignment Report, Volume I, Part 1 of 2: Results and Process, May, 2005, pages 3 thru 6)

3.3.2 *Data Analysis*

Crane is a transformational leader providing high Military Value to the Warfighter. Crane has been innovative and in the forefront in implementing Business & Process Re-engineering (B&PR), LEAN principles, and Technology Roadmapping. NSWC Crane's five year B&PR result has been a net recurring annual savings of \$30.5M, a reduction of 234 overhead workyears from 959 to 725, and an increase in customer orders from \$594M to \$1.1B. The implementation of LEAN principles across the Crane codes is further producing significant recurring annual savings. These actions have resulted in Crane being one of the most cost effective DoD installations. In addition to NSWC Crane and CAAA, as mentioned earlier Indiana also is home to the Indiana National Guard's Camp Atterbury, a premier training and mobilization facility, and Muscatatuck Urban Training Center. The combination of NSWC Crane, CAAA, Lake Glendora test facility, Camp Atterbury and Muscatatuck provides a unique, world class solution to Joint Special Missions RD&A, T&E, and Training requirements.

Crane has refined the transformational style of adapting Commercial Off The Shelf (COTS)/Non Developmental Item (NDI) products into tailored acquisition approval processes to achieve quick response solutions required to counter asymmetric threats. This transformational acquisition capability has evolved out of the fact that Crane historically has not been a "traditional DoD RDT&E laboratory" but rather a technology integrator. This balancing of COTS/NDI adaptations versus pure development is still transformational to most existing DoD RD&A activities. The broad product base that this acquisition style has been applied to at Crane has provided DoD with a critical mass of human capital, properly trained in applying governmental laws and regulations that govern classified rapid development and fielding efforts. The Military Value to the Special Missions Warfighter of this transformational acquisition style is validated by the significant increase in customer assignments.

The rapid data collection, risk assessment, and safety review process has been in place at Crane since 1994 with a stellar safety track record. This Transformational acquisition process has been applied to Special Missions ammunition, pyrotechnics, demolition materials, small arms weapons and gun mounts, electro-optics/night vision equipment, laser targeting devices, power devices, and other electronic equipment such as that required for training & development of Special Forces Operations Strategy & Tactics in Close Quarters at multiple training locations.

Crane is a center of mass for developing and supplying critical products to the Special Operations Forces from all Services through this transformational acquisition process. Therefore, Crane's Joint Special Missions support is critical to the Global War on Terror.

3.4 **BRAC Precept - Low Risk**

3.4.1 *BRAC Data*

A review of the detailed data provided by DoD has revealed the following:

- The COBRA Model Standard Factors for personnel which could not be overridden included:
 - Civilians Not Willing To Move: 6.00%
 - Civilian Turnover Rate: 9.16%
 - Civilian Early Retire Rate: 8.10%
 - Civilian Regular Retire Rate: 1.67%

(COBRA Model training Power Point Presentation 6/8/2005)

3.4.2 *Data Analysis*

The risk with these Weapons and Armaments recommendations is that Military Value of a Center of Excellence is questionable when, as based on prior BRACs, only 10% - 15% of the people required will actually relocate to the Center of Excellence. Most engineers/techs currently supporting ordnance (guns, ammo, weapons) have an average of 15-20 years experience. This represents a significant level of expertise that DoD and the Joint Special Missions commands will be losing.

Crane is the leading hi-tech facility in the whole of Southern Indiana, employing in excess of 1500 Engineers, Scientists, and Technicians. These personnel support multiple products at Crane, with approximately 600 personnel supporting functions related to weapons and armaments systems in the Joint Special Missions area. These Engineers, Scientists, and Technicians are predominantly graduates of the Indiana engineering and technical Universities and colleges, including Notre Dame, Purdue, Indiana, Rose Hulman, University of Evansville, Indiana State, Vincennes, and Ivy Tech. Crane's location in a low cost of living, rural environment results in extremely low turnover of this intellectual capital.

The human capital at Crane, integrated with its academic support from local renown public and private universities are jointly providing cutting edge technologies and concepts to meet the challenges of today's Warfighter. Many of the Crane workforce as graduates of these academic institutions, have developed strong relationships with their professors and the current graduate students. These contributing professors and graduate students will not move to educational institutions located near the receiving activities to retain this collaboration, so the benefit to the Warfighter will be lost.

Integration of Energetic material chemistry and physics with mechanical and electronic control mechanisms (Ordnance Engineering) is not a curriculum provided at any college or university in our country. These critical skills are only learned over several years on the job from senior personnel. Historical evidence proves that very few personnel from the losing activity make geographic transfers to the receiving activities. During this critical Global War on Terror, the United States cannot afford to lose this currently trained human capital capacity located at Crane.

The currently proposed movement of Weapons & Armaments and Guns & Ammunition from NSWC Crane to China Lake and Picatinny poses a significant level of risk and cost to Special Missions. The currently proposed realignment fractures the existing integrated capability and capacity, and will require the use of several specialty sites to obtain the same capability. Crane's collaboration of government/contractor/academia at a single location provides a low risk option through competition of ideas (COTS/NDI adaptation versus pure development) by retaining a separate site from Picatinny, having a similar combination of technologies and functions.

3.5 **BRAC Precept - Return on Investment (ROI)**

3.5.1 *BRAC Data*

A review of the detailed data provided by DoD has revealed the following:

- The first recommendation is identified as having a 7 year break even point for Return on Investment, occurring in 2015, and only a recurring savings of \$59.6M. The net of all costs and savings during the implementation period is a cost of \$148.7M. This provides DoD with a net present value of the savings over 20 years of \$433.4M. (COBRA Realignment Summary Report (COBRA v6.10) Created 5/3/2005, Technical JCSG, TECH-0018DR Final With Footnotes, page 1 of 120)
- The second recommendation is identified as having a 13 year break even point for Return on Investment, occurring in 2021, and only a recurring savings of \$11.3M. The net of all costs and savings during the implementation period is a cost of \$81.2M. This provides DoD with a net present value of the savings over 20 years of only \$32.6M. (COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, page 1 of 111)
- Crane has one of the lowest costs per work year of the activities evaluated by the Technical JCSG for these recommendations.

• Crane	Civilian Locality Pay Factor:	1.109
	Area Cost Factor:	1.05
	Per Diem Rate (\$/Day):	\$86
• China Lake	Civilian Locality Pay Factor:	1.109
	Area Cost Factor:	1.27
	Per Diem Rate (\$/Day):	\$157
• Picatinny	Civilian Locality Pay Factor:	1.193
	Area Cost Factor:	1.20
	Per Diem Rate (\$/Day):	\$157

(COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, pages 30 thru 34 of 111)

- The guidance allows a 15% reduction against all government personnel moved. (COBRA Realignment Summary Report (COBRA v6.10) Created 5/3/2005, Technical JCSG, TECH-0018DR Final With Footnotes, page 2 of 120) (COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, page 2 of 111)
- The guidance allows a 15% reduction against all contractor personnel and directs showing a \$200K Misc. Recurring Savings for each contractor eliminated. (COBRA Realignment Summary Report (COBRA v6.10) Created 5/3/2005, Technical JCSG, TECH-0018DR Final With Footnotes, page 2 of 120) (COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, page 2 of 111)

- According to the COBRA Realignment Summary Report, the first BRAC recommendation above eliminates 2,403 government civilian jobs in 8 economic regions, and re-establishes/relocates 2,043 of those positions at China Lake, CA (a reduction of 360 positions, or a 15% reduction in personnel). (*COBRA Realignment Summary Report (COBRA v6.10) Created 5/3/2005, Technical JCSG, TECH-0018DR Final With Footnotes, pages 25 thru 27 of 120*)
- According to the COBRA Realignment Summary Report, the second BRAC recommendation above eliminates 808 government civilian jobs in 7 economic regions, and re-establishes/relocates 688 of those positions at Picatinny Arsenal, NJ (a reduction of 120 positions, or a 15% reduction in personnel). (*COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, pages 24 thru 26 of 111*)

3.5.2 Data Analysis

When doing an ROI analysis on such a broad spectrum including a tremendous volume of data, standard formulas are utilized to provide standardization such as in the COBRA model. Unfortunately, standardization sometimes produces inaccurate results as appears to be the case in these two recommendations. The standardized data used in these recommendations actually rewards an activity that is large, inefficient, and costly; and penalizes activities that continue to increase their 'market share' of the RD&A, T&E market through quick responses in providing quality products while maintaining a small FTE and facility footprint, at a low cost to the Warfighters and ultimately to the tax payers.

As stated earlier, Crane has created a net recurring annual savings of \$30.5M from five years of B&PR, at an investment of only \$18.1M, providing a net present value of savings over the 20 years of approximately \$610M. This effort has included a reduction of 234 overhead work years from 959 to 725 and resulted in an increase in customer orders from \$594M to \$1.1B.

The net present value of savings over 20 years for each of the existing recommendations appears to significantly depend upon the arbitrary 15% reduction of government FTE involved in the scenario from each of the losing activities. For NSWC Crane this equates to a reduction of 34 government personnel for the Weapons & Armaments scenario and a reduction of 35 government personnel for the Guns & Ammunition scenario. Based on the COBRA formula these reductions in the Crane workforce equate to a net present value of savings over the 20 years of approximately \$39.6M for the Weapons & Ammunition scenario and \$40.7M for the Guns & Ammunition scenario. With having gone through significant B&PR processes and LEAN principles, a lot of the capability to reduce the Crane supporting FTE infrastructure identified in the BRAC report has already been accomplished and reflected in the data provided for the scenario data calls. **This greatly brings the use of this FTE reduction to produce recurring annual savings into question.** Eliminating this identified savings based on Crane FTE reductions reduces the net present value of savings over 20 years by approximately 9% for the Weapons & Armaments scenario and turns the Guns & Ammunition scenario into a net present value of cost.

The contractor figures in the COBRA data assume an arbitrary 15% reduction in contractor positions at the receiving site and an excessive annual recurring savings of \$200,000 per position eliminated. At Crane Indiana, the contractor cost per year is less than half of that amount. This makes use of this value in the COBRA model suspect.

Work being performed at NSWC Crane is not duplicative of that currently being performed at the recommended receiver sites. The work being performed at Crane is similar in function but is in support of different customers and for different commodities. Therefore, the work does not represent redundancy, and therefore does not provide justification for the arbitrary 15% workforce reduction at the receiving sites to perform the same level of support (quality and quantity) to the Warfighters.

As noted in the above data, Crane has a lower overall geographic cost associated with providing this support to the Warfighter than either China Lake, CA or Picatinny, NJ, which does not appear to have been utilized in the COBRA model in computing labor related costs/savings for each scenario. The FY 06 Senior Engineer stabilized rate for Crane is \$141,000, China Lake is \$191,300, and Picatinny is \$172,000. Moving these functions to the two recommended locations will increase the cost to the DoD Resource Sponsors and ultimately to the tax payer, further reducing the projected annual recurring savings for these two recommendations.

As stated in the Low Risk section of this paper, a much smaller percentage of the existing work force at the losing activities than utilized in the BRAC report will actually move to the receiving activities. This will require the receiving activities to incur a major expense in hiring and training new personnel to replace the large percentage of government personnel that will choose not to relocate. The required ordnance expertise does not exist out in the general public workforce looking for jobs. The receiving activities will also have to incur the expense of soliciting contractors and awarding a contract(s) to provide support currently being provided at the losing activities by contractors. The Warfighters will have to incur a slowdown in response time during the learning curve that the new employees at the receiving sites will have to progress through as they learn about the processes at the new locations that will be different than their current location or totally new to them if they are a new hire. This all has an associated cost as well as the previously stated risk. The associated financial cost does not appear to have been quantified anywhere in the COBRA model in computing the labor related costs for each scenario. Therefore there will be unidentified financial costs to both scenarios that are not currently contained in the scenario ROI computations that will further reduce any identified cost savings over the 20 year period.

The BRAC 2005 recommendations to relocate Weapons & Armaments and Guns & Ammunition fall outside 83% of the DoN recommendations that obtain a return on investment within 4 years. Since the return on investment for these recommendations are obtained in 7 and 13 years respectively at China Lake and Picatinny, versus the DoN's stated goal of 4 years, there is inherent risk in obtaining and maintaining sufficient funding and resources over these extended periods.

The risk of maintaining sufficient funding over the long payback periods increases the risk in achieving 3 of the 4 BRAC principles. The 3 principles at risk are (1) save money, (2) improve operational readiness and jointness, and (3) maintain quality of service. It is these risks that drove the DoN to a goal of 4 years for return on investment for BRAC recommendations.

The addition of a Joint Special Missions Specialty Site at Crane Indiana to the Technical JCSG recommendations appears to provide for a lower one-time implementation cost for the overall recommendation and will provide a greater actual annual recurring savings to the Department.

- No one-time implementation cost for Crane facilities required to be replicated at Picatinny or China Lake.
- No one-time implementation cost for transfer of Crane personnel to receiving sites.
- No failure to save money and maintain quality through inability to meet 15% personnel reduction identified in COBRA model for transfer of work from NSWC Crane.
- No one-time hiring and training costs for replacement of personnel not transferring from Crane to new locations.
- No increase in annual recurring FTE labor rates/contractor costs from current Southern Indiana locality.

3.6 **BRAC Precept – Impact on Existing Communities**

3.6.1 ***BRAC Data***

A review of the detailed data provided by DoD has revealed the following:

- The first recommendation identified above, assuming no economic recovery, could result in a maximum potential reduction of 375 jobs (258 direct jobs and 117 indirect jobs) over the 2006-2011 period in the Martin County, IN, economic area, which is a 4.4 percent of economic area employment. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 10, May 2005, page Tech-16*)
- The first recommendation identified above realigns 193 civilian positions to NAVAIRWPNSTA China Lake, CA and eliminates 34 civilian positions. (*COBRA v6.10 Created 5/3/2005, Technical JCSG, TECH-0018DR Final With Footnotes, page 15 of 120*)
- The second recommendation identified above, assuming no economic recovery, could result in a maximum potential reduction of 421 jobs (289 direct jobs and 132 indirect jobs) over the 2006-2011 period in Martin County, IN, economic area, which is a 4.9 percent of economic area employment. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 10, May 2005, page Tech-21*)
- The second recommendation identified above realigns 201 civilian positions to Picatinny, NJ and eliminates 35 civilian positions. (*COBRA Realignment Summary Report (COBRA v6.10) Created 4/27/2005, Technical JCSG, TECH-0018B, page 16 of 111*)
- A recommendation of the Industrial JCSG, assuming no economic recovery, could result in a maximum potential reduction of 221 jobs (152 direct jobs and 69 indirect jobs) over the 2006-2011 period in the Martin County, IN, economic area, which is a 2.6 percent of economic area employment. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 6, May 2005, page Ind-25*)
- A recommendation of the Medical JCSG, assuming no economic recovery, could result in a maximum potential reduction of 99 jobs (68 direct and 31 indirect jobs) over the 2006-2011 period in the Martin County, IN economic area, which is a 1.2 percent of economic area employment. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 8, May 2005, page Med-18*)
- The impact of the local economic area for each installation considered for closure or realignment was assessed during the scenario analysis process using an Economic Impact Tool that provided a uniform methodology for estimating the total direct and indirect job changes associated with a closure or realignment scenario. The DoN is very concerned about economic impact and has made every effort to fully understand all of the economic impacts its recommendations might have on local communities. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 2, May 2005, page DoN-5*)

3.6.2 Data Analysis

Although the DoN has stated specific intentions to be sensitive to regional economic impacts, there is no mention in the BRAC Report that DoD/DoN recognizes any special impacts to the Martin County, IN economic region. This lack of acknowledgement for economic impact is despite the fact that this region is the second worst impacted area in the US, when compared to 241 other regions affected by BRAC recommendations.

The total number of positions affected at Crane by all BRAC recommendations is higher than the BRAC recommended 767 direct and 349 indirect jobs. DoD appears to have made a calculation error and did not accurately count contractors. This brings the total direct positions impacted to over 800 engineers/ technicians/logisticians. This will raise the total economic impact to a number approaching 14%. These direct jobs include predominantly highly trained professional series employees such as managers, engineers, scientists, engineering technicians, computer programmers, and information technology specialists. These employees currently perform functions in high technology areas such as Special Purpose Munitions, Special Purpose Weapons, GPS Guided Navy Fuzes, GPS Guided Munitions, Laser Guided Bombs/Weapons, and other 21st century weaponry of the future such as high-energy lasers and electromagnetic guns.

4.0 CONCLUSIONS

The current BRAC recommendations optimize at the generic Weapons and Armaments level (i.e. those products that can be reasonably expected to have the broadest application across all Services and can be delivered through an open and visible acquisition process), BUT sub-optimize by eliminating a truly Transformational capability, developed over the past 25 years, to provide quick, competent, and invisible support for our asymmetric Warfighters.

This sub-optimization significantly fragments the Joint Special Missions Military Value of cross-Service capabilities sharing world-class facilities and human intellectual capital. These Crane Indiana capabilities focus on development, acquisition, test & evaluation, sustainment, maintenance, distribution, and storage for Special Missions customers. The existing recommendations break apart this integrated Joint Special Missions capability and capacity creating a major loss of synergy and an increased cost to the RD&A programs.

The following additional recommendation complies with the second BRAC principle to provide competition of ideas through geographic separation and continuity of operations in the event of an unexpected disruption. The alternative also results in a lower one-time implementation cost for the overall recommendation, and further enhances the Military Value of the DoD Centers of Excellence concept.

This addition to the Technical JCSG recommendations provides an official title to an existing joint Service capability and capacity that meets the DoD BRAC 2005 primary goals and objectives. This Specialty Site capitalizes on the synergy of the existing critical mass of Ordnance Engineering coupled with electro optics/electronics expertise at NSWC Crane, the Ordnance Depot/Industrial capability of CAAA, the unique training/testing capability at the Lake Glendora test facility, and the Indiana National Guard's Camp Atterbury and Muscatatuck Urban Training Center, to form an unequaled Joint Special Missions capability in Indiana.

5.0 RECOMMENDATION

It appears that the concept of DoD centers put forth by the Technical JCSG can be enhanced to add additional Military Value by preserving the specialty site at Crane Indiana for 'Joint Special Missions'. In summary:

Additional BRAC Recommendation:

1. ***Create an Integrated Weapons & Armaments Specialty Site for Joint Special Missions at Naval Surface Warfare Center Crane, IN.***

This additional recommendation can be accomplished by adding the additional recommendation above, and deleting the following subparagraphs from their respective BRAC Recommendations identified in Section 2 above:

1. "Realign Naval Surface Warfare Center Crane, IN, by relocating all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat security, and energetic materials to Naval Air Weapons Station China Lake, CA. (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 10, May 2005, page Tech-15*)
2. "Realign Naval Surface Warfare Center Division Crane, IN, by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ." (*Department of Defense Base Closure and Realignment Report Volume I Part 2 of 2 Detailed Recommendations, Section 10, May 2005, pages Tech-20*)

Since this Integrated Weapons & Armaments Specialty Site for Joint Special Missions already exists at Crane, there are no required Realignment recommendations to be attached to this new recommendation. Justification for this new recommendation can be generated from the data analysis comments contained in this white paper; there is no cost involved in this recommendation so there is no Payback period; and there is no Economic Impact on Communities.

By adding this new Recommendation and deleting the two NSWC Crane Realignment recommendations under the existing two recommendations, the implementation costs for the existing recommendations should be reduced and the adverse Economic Impact on Communities caused by the two recommendations will be reduced.

Library

BASE REALIGNMENT AND CLOSURE 2005

**INDUSTRIAL CROSS-SERVICES GROUP
NAVAL SUPPORT ACTIVITY CRANE, INDIANA**

ELECTRONIC WARFARE RECOMMENDATION

**ANALYSIS OF AND ALTERNATIVE RECOMMENDATIONS TO DOD
BRAC RECOMEMENDATION**

**"Realign Naval Support Activity Crane, IN, By Relocating The Depot Maintenance
Workload And Capacity For ALQ-99 Electronic Warfare To Fleet Readiness Center
Northwest, Naval Air Station Whidbey Island, WA."**

SIBA, Inc.

Southern Indiana Business Alliance

30 June 2005

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BRAC 2005
INDUSTRIAL CROSS-SERVICES GROUP
NAVAL SUPPORT ACTIVITY CRANE, IN
ELECTRONIC WARFARE RECOMMENDATION

1.0 INTRODUCTION

The Department of Defense had the primary goals in the 2005 BRAC round of increasing military value and reducing excess capacity in consonance with the Department's Transformation Goals. Guidelines included emphasis on joint operations, multi-disciplinary capability, and mitigation of encroachment and environmental issues.

The Naval Support Activity (NSA) Crane hosts the Naval Surface Warfare Center (NSWC) Division Crane and the Crane Army Ammunition Activity (CAAA); co-located mission commands that perform multi-functional and multi-disciplinary tasking across ordnance, electronics and electronic warfare (EW) products and systems. These two commands have jointly built a cross service capability leveraging shared world-class facilities and a human intellectual capital that focuses on development, acquisition, sustainment, maintenance and distribution. In-depth integrated technical and industrial capabilities provide extremely agile, responsive, and complete support to Warfighters of all services.

NSA Crane, located in under-populated Southern Indiana has 63,000 acres, completely encroachment free; with no environmental issues; remote from potential terrorist threat; in close proximity to excellent roads, rail, and air transportation; with abundant power and water utilities; with extraordinary facilities; academic and industry partnerships; and, an almost unlimited technical workforce recruitment ability. NSA Crane gets very high marks when compared to DOD 2005 BRAC goals.

This discussion covers the Industrial Joint Cross-Service Group portion of BRAC 2005 recommendation to realign ALQ-99 EW Depot from NSA Crane to Fleet Readiness Center (FRC) Northwest. It is obvious from this analysis that the BRAC process did not take advantage of Crane's high military value and model installation attributes. There were no scenarios to investigate re-locating anything to Crane. In fact, if the BRAC EW recommendations remain, EW capabilities will be fragmented across the country and will negatively impact the existing synergy in the joint and transformational EW Specialty Site at Crane.

We are offering an alternative recommendation to establish an EW Specialty Site at NSA Crane. This recommendation greatly strengthens Military value and provides a much higher ROI when compared to the BRAC recommendation.

2.0 BRAC RECOMMENDATION

“Realign NSA Crane, IN by relocating the Depot maintenance workload and capacity for ALQ-99 EW to Fleet Readiness Center Northwest, Naval Air Station Whidbey Island, WA.”

3.0 BRAC RECOMMENDATION ANALYSIS

The BRAC recommendation was analyzed by utilizing the Department of Defense primary goals of reducing excess capacity and increasing military value in consonance with the Departments' Transformational Goals. Guidelines include emphasis on joint operations, multi-disciplinary capability, and mitigation of encroachment and environmental issues. The analysis will show the BRAC recommendation to be in violation of the BRAC precepts.

3.1 BRAC Precept – High Military Value

It is impossible to tell from the BRAC data the overall technical and industrial EW military value as the data was not collected in this format. However, Crane's EW military value is the highest for Electronic Warfare as reported under the Industrial Joint Cross-Services Group Summary Military Value Report for maintenance and 2nd under the Technical Joint Cross-Services Group Analysis and Recommendations for Sensors, Electronics, and EW D&A. From past experience, we believe Crane is number *ONE* in DoD technical EW military value, as well as industrial.

Crane is the leading hi-tech facility in the whole of Southern Indiana, employing in excess of 1,500 Engineers, Scientists, and Technicians. These personnel support multiple products from power systems to EW, with approximately 700 personnel supporting functions in the EW Specialty Site. The recommendation to move the ALQ-99 Depot from a very high EW military value activity (Crane), to a very low EW military value activity (Whidbey) is in violation of the importance BRAC placed on military value.

3.2 BRAC Precept – High Capacity

The BRAC criteria included movements from low to high capacity. It was also a goal to reduce the overall DoD footprint. The BRAC recommendation moves the ALQ-99 Depot from a high EW capacity activity to a low EW capacity activity. It also requires the military construction of additional capacity at NAS Whidbey Island. This is being done while Crane has over 700 personnel and world-class facilities and equipment in support of joint service EW systems. In addition to the costly MILCON at Whidbey Island, the issue of outdoor microwave radiation requirements for testing of microwave antennas and Radomes must also be addressed. The approval and establishment of microwave radiation testing capability required for the AN/ALQ-99 at Crane is very expensive and time consuming. The ALQ-99 movement requires extensive equipment and facility buildup at Whidbey that duplicates those at Crane. The military construction at Whidbey Island increases EW excess capability and is a violation of the BRAC capacity precept...

3.3 BRAC Precept – Jointness

Crane is an EW Specialty Site supporting *Joint Services EW and Microwave Systems* for the Navy, Air Force, Marine Corps, Army, Coast Guard, and multiple countries. Services, platforms, and systems supported include:

Navy

- (Airborne) • EA-6B (AN/ALQ-99, USQ-113, ALQ-218 V1)
- (Airborne) • F/A-18 C/D & E/F (ALQ-162, ALQ-165 ASPJ & ALQ-214 IDECM RFCM)
- (Airborne) • EA-18G (ALQ-218 V2, Communications Countermeasures system)
- (Airborne) • Next Generation Jammer
- (Airborne) • Low Drag RAM Air Turbine
- (Airborne) • E2-C (Advanced Hawkeye)
- (Airborne) • P3 Special Mission Avionics / EP-3 Arias
- (Airborne) • Multiple Aircraft (IR Countermeasures/Expendables)
- (Surface) • SLQ-32, SLQ-49, WLR-1, SQQ-82, Mk 245, NULKA, IR/Chaff Decoys
- (Sub-Surface) • BLQ-10, SSSY-1, MOIS, CCS

Air Force

- B-52 Stand-Off Jammer
- Advanced Material Decoy

	<ul style="list-style-type: none"> • B-1 (Off-board countermeasures (Chaff, IR, and Microwave Deception) • Multiple Aircraft (ALQ-131, ALQ-135, ALQ-152, ALQ-155, ALQ-161, ALQ-184)
Army	<ul style="list-style-type: none"> • Wolfpack (Expendable, autonomous, ground-based monitor/jammer) • Demilitaration technologies for ordnance based EW (Flares, Chaff, etc.)
Marine Corps	<ul style="list-style-type: none"> • JSF (Electronic Attack Studies) • EA-6B (AN/ALQ-99, USQ-113, ALQ-218 V1)
Coast Guard	<ul style="list-style-type: none"> • WLR-1
NATO	<ul style="list-style-type: none"> • Threat seeker trials (IR measurements of foreign assets)
SOCOM	<ul style="list-style-type: none"> • Fleet Testing (IRCM)
US/Australia/Canada	<ul style="list-style-type: none"> • NULKA

The BRAC recommendation fractures a truly *Joint EW Specialty Site* that supports all services. It moves *one* system's Depot operation to a single service, in fact a single platform (EA-6B aircraft) within a single service. This violates the BRAC jointness precept. It also violates the Office of Secretary of Defense (OSD) guidelines of capability basing (EW) vice threat basing.

3.4 **BRAC Precept – Cross-Functional**

Crane provides support across the life cycle for a large number of EW systems. The support is multi-functional, including engineering, acquisition, logistics, maintenance, and supply support. There are several other functional areas at Crane that support the EW Specialty Site including microwave tubes, power systems, interconnect devices, physical repair, failure analysis, antenna testing range, anechoic chambers, solid-state devices, corrosion control, wind tunnel, composite repair, and commercial off-the-shelf (COTS) technology.

The Crane EW Specialty Site is successful because the support functions of Research, Development and Acquisition, Test and Evaluation, and maintenance required are co-located and fully integrated. It is a *joint EW capability* with the resources to provide rapid response as needed by the Warfighter. The Site supports multiple EW systems across all Services. This supports the BRAC Cross-Functional precept. However, the BRAC recommendation minimally satisfies the Cross-Functional precept by consolidating the AN/ALQ-99 Depot to one of the numerous I level EA-6B sites. This stovepipes the maintenance process to a single service, single platform activity.

Crane was analyzed in the BRAC process by several "stove-piped" teams: Navy, Army, Industrial Cross-Service, and Technical Cross-Service. This tended to fragment its evaluation and not recognize its cross-functional integrated military value. The EW capability was evaluated by the Industrial and Technical Cross-Services teams separately. Yet, its value to the Warfighter lies in the integration of the industrial and technical capabilities.

3.5 **BRAC Precept – Transformational**

A major factor in establishing the Depot for ALQ-99, and numerous other EW and microwave systems and components at Crane was Crane's innovative approach to maintenance and extensive expertise and capability in microwave technology. Crane is a recognized leading activity in developing new and transformational maintenance processes in support of the Warfighter.

The BRAC recommendation only moves the ALQ-99 Depot from one location to another. No transformational changes in the maintenance process are involved. Approximately 60% of the ALQ-99 Depot workload originates from non-Whidbey sites. The BRAC action only combines the Depot with the

I level at Whidbey. Multiple other O and I level maintenance sites still exist and they will lose connection to the extensive EW Depot capabilities provide by Crane.

Crane, prior to BRAC, had already initiated virtual presence at all O and I level maintenance sites. When fully implemented, this will merge O, I and D level maintenance. Only the extremely difficult to repair assets will be moved back to the Depot for repair. This is done through using state of the art technology, making engineering and high-level technician expertise virtually available to the sailors in real time. Crane is the leading activity that can provide this state-of-the-art transformational support because of their EW and related technologies expertise. Through this technology, the EW technical data and expertise will be available to ALL ALQ-99 operating sites aboard ships, or land based at NAS Whidbey, MCAS Cherry Point, MCAS Iwakuni Japan, Reserve Units at NAF Washington DC, or the USAF Sembach, Germany Van Complex. With this approach, problems are resolved at the operating site, thereby minimizing the need to physically ship assets back to the Depot and minimizing the repair parts inventory.

The Crane approach is much more transformational and of higher military value than the BRAC proposal for several reasons.

- First, it enhances the readiness of the deployed Warfighter by quickly resolving the problem at the site and making that asset ready for issue.
- Secondly, it virtually connects the maintainer to Crane's vast EW capability allowing them to make changes in the EW system to meet new and evolving threats.
- It keeps the ALQ-99 maintenance integrated with the technical expertise and the cross-functional industrial and technical EW Specialty Site at Crane.

This alternative approach was validated by a Business Case Analysis (BCA) dated 22 November 2004. This analysis showed a ROI of 117.4% beginning on Fiscal Year 2007 to 950% for Fiscal Year 2010. This concept is currently being implemented. Some examples of its success include:

- NSA Crane installed a video learning capability at Whidbey to facilitate interaction between depot and I-level workers. Very early into the installation, Crane was able to view a transmitter chassis that was diagnosed as cracked and slated for depot level repair. Through video analysis, Crane EW engineers and technicians determined the crack to be superficial and the transmitter was returned Ready For Issue, negating the requirement to send it to the depot.
- NSA Crane provided materials and set-up for establishing new high-band radome maintenance at Whidbey Island. This virtual maintenance approach provides training and continuous interactive support, greatly reducing the total cost of ownership.

3.6 BRAC Precept – Low Risk

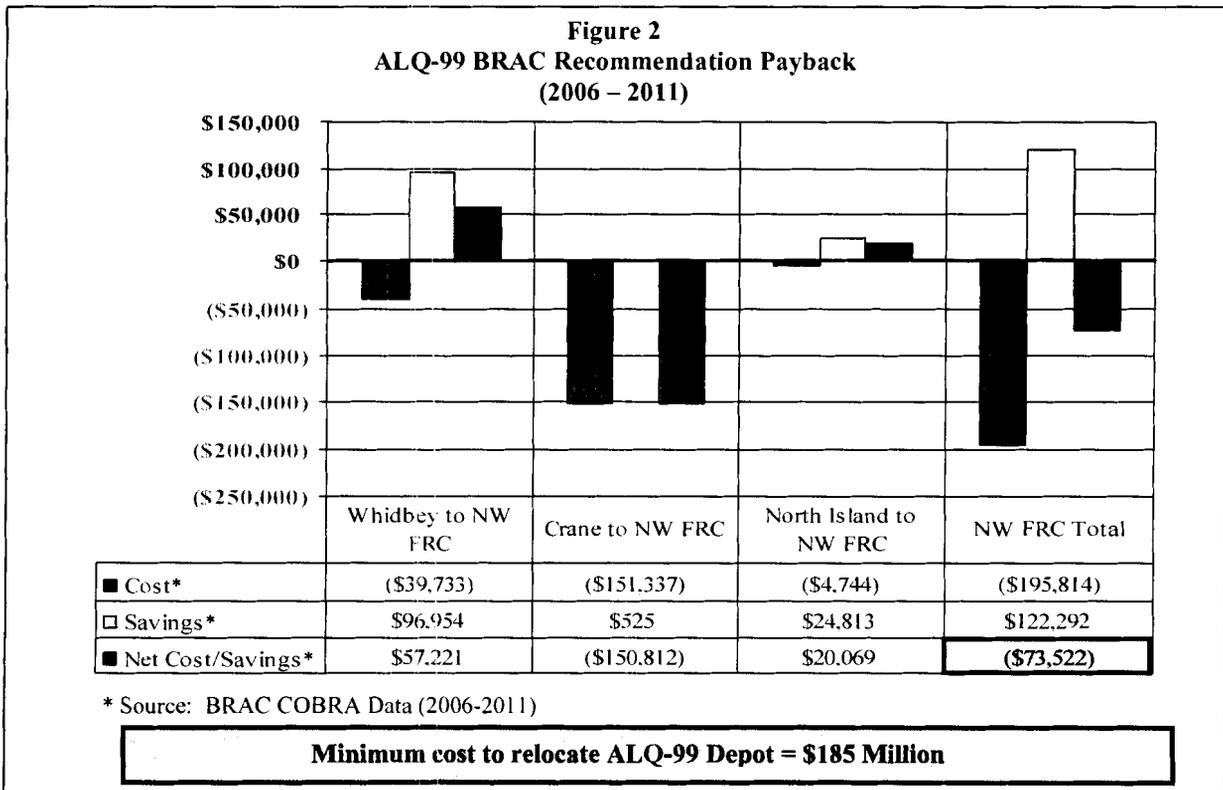
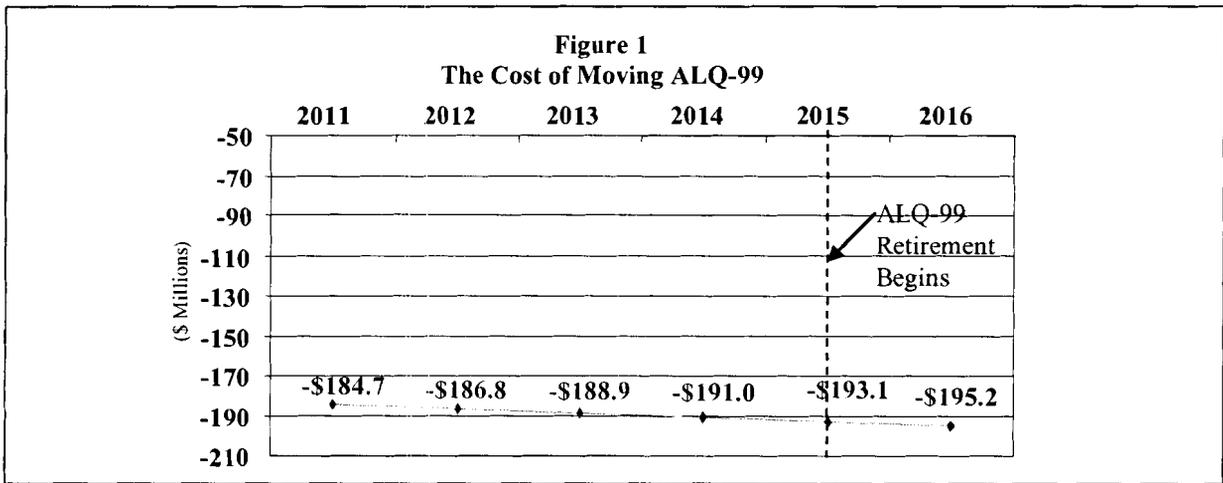
EW systems are technologically challenging. EW systems are extremely complex, with high technology, multiple sub-systems and components! EW is an enduring capability that requires utilization of emerging technologies. Microwave (MW) technology is the heart of EW systems and is a core capability at Crane. Examples of EW and associated technologies include: Radio Frequency (RF) Amplifiers, RF Antenna/Arrays, RF Receivers; RF Exciters, High Voltage Power Supplies, RF/Microwave Components; A/D & D/A Converters; Digital Beam Forming, Ram Air Turbine Generators, Composite Structures & Radomes, and of course, test, maintenance and operational software. ***Support of such systems cannot be moved indiscriminately and still maintain long-term Fleet readiness.***

EW Engineers and Technicians are not recent graduates, as schools teach very few EW concepts. EW Engineers and Technicians are grown over long time periods and once lost are difficult to replace.

The ALQ-99 movement requires extensive equipment and facility buildup at Whidbey that duplicates those at Crane. The EA-6B ALQ-99 system is a “sunset” system with retirement plans in 2014/2015. With the expected relocation of only 5% of the maintenance expertise from Crane to Whidbey Island, it is very doubtful the expertise can be developed at Whidbey prior to the retirement of the ALQ-99. It appears the complexity of EW systems and the EW capabilities resident at Crane have not been analyzed by DoD and Navy decision makers. The ALQ-99 movement is high cost and high risk.

3.7 BRAC Precept – Return on Investment (ROI)

The cost of establishing the ALQ-99 Depot at NAS Whidbey is approximately \$195M (See Figure 1) through 2016 based on BRAC scenario data. The ALQ-99 cost represents approximately 95% of the total cost for establishment of the entire Northwest FRC. Analysis of the data shows **no positive ROI for movement of the ALQ-99 Depot**, thereby violating the BRAC ROI precept. Excessive costs



are being incurred on an aging system going into retirement. Figure 2 depicts the BRAC Northwest FRC cost and savings.

After analysis of the BRAC data, it appears the projected cost savings are invalid. The one-time and recurring savings on page 5/12 of the COBRA Realignment Detail report raised some serious questions about the claimed savings.¹ These savings are explained within notes on page 8 of the COBRA data. The majority of the one-time savings are:

- A projected cost savings for spare parts is supporting Operational Forces. These spare part assets are available as needed to maintain readiness. Reducing numbers of assets in allowance or moving assets around does not constitute a real DoD savings. It simply locates the assets and their worth somewhere else.

The majority of the recurring savings is included under:

- A cost savings for Depot maintenance. These funds are expended whenever an asset is not capable of repair at O or I level and is returned to D level for repair. There are three possible ways that these savings can be generated. One is less failures, which is highly unlikely on an aging aircraft and system. Secondly, the I level capability to repair could dramatically improve, but this is not likely without any innovative changes in the maintenance process. Thirdly, if the movement of assets from I level to D level is not recognized or documented it would not eliminate the cost to repair. It would just move the cost to another account. This process would also drive the Navy Supply System to recalculate the new price of the effected asset upward to make up the difference. It appears these BRAC documented cost savings are questionable.

3.8 BRAC Precept – Impact On Existing Communities

Movement of the ALQ-99 comes with a very high price tag and questionable payback. According to the BRAC data, Martin County (Crane impact area) has the 2nd largest economic impact of any economic area (13.1% total for proposed BRAC realignments) in the BRAC study. This is catastrophic to an area that is already economically depressed.

Crane, Indiana has a much lower cost of living than Oak Harbor, Washington (NAS Whidbey Island) as indicated by the OSD BRAC database. This is indicative in the locality pay structure with Crane being 10.9% and Whidbey at 15.1%. This causes an automatic increase in labor costs of 4.2%. This will also have a significant impact on personnel moving a long distance across country. The median housing in Crane is \$98,773 and Whidbey \$223,100. This will not be affordable for most technicians.

4.0 CONCLUSIONS

EW is a critical product area for our transforming military dealing with today's asymmetrical threats. The EW technology has commonality across all Services and platforms. Crane has the critical mass of a joint EW Specialty Site. It has the ability to grow with unlimited space and no encroachment that would curtail high power microwave emissions. Realignment of additional EW support to NSA Crane from closing or other EW realignment should be considered.

Detailed analysis comparing maintaining the ALQ-99 Depot at Crane vice moving to Whidbey is in favor of maintaining the Depot at Crane. Crane is the best value in all of the major BRAC precepts including; military value, capacity, jointness, cross-functional, transformational, risk, ROI and impact on existing communities. The BRAC recommendation of moving the Depot to Whidbey violates all of the BRAC precepts and cannot be justified.

5.0 RECOMMENDATIONS

The analysis and conclusions warrant three recommendations that will increase military value and give a higher ROI:

1. Create a DoD EW Specialty Site at NSA Crane.
2. Delete the BRAC recommendation for relocating the ALQ-99 Depot workload and capacity from NSA Crane, IN to FRC Northwest, NAS Whidbey Island, WA.²
3. Change BRAC recommendations to move EW support functions from Fort Monmouth³, Fort Belvoir⁴, Naval Weapons Station Charleston⁵, Naval Submarine Base Point Loma⁵, and Naval Air Warfare Center Weapons Division Point Mugu⁶, which have **lower military value** to the **EW Specialty Site Crane with higher military value**. (See Attachment A)

¹ (COBRA v6.10) page 5/12: Department – Industrial; Scenario File – z:/Cobra/Maintenance/Working Cobra Submissions/MX 1.4P/IND0104 MX 1.4P 04272005.CBR;

² DoD Base Closure and Realignment Report, Volume 1, Part 2 of 2: Detailed Requirements, Section 6 Industrial Joint Cross-Service Group, Page 22.

³ DoD Base Closure and Realignment Report, Volume 1, Part 2 of 2: Detailed Requirements, Department of Army Section, Page 11.

⁴ DoD Base Closure and Realignment Report, Volume 1, Part 2 of 2: Detailed Requirements, Department of Army Section, Page 12.

⁵ Technical Joint Cross-Service Group, Section 10, Page 9.

⁶ Technical Joint Cross-Service Group, Section 10, Page 28.

Attachment A**Sensors & Electronic Warfare Consolidation
at
Naval Support Activity Crane**

Specialty Site Capabilities & Capacities: As indicated by industrial and technical military value scores and capacity information, Naval Support Activity (NSA) Crane possesses extensive capabilities to support multi-platform, multi-Service Sensors & Electronic Warfare (S&EW) systems. NSA Crane presently provides a full spectrum of Research, Develop & Acquisition, Test & Evaluation and Maintenance/Repair services and products for numerous Radio Frequency (RF) / Microwave based systems. This support covers land-based, surface/sub-surface and airborne S&EW systems, including Electronic Attack (EA), Electronic Protection (EP), EW Support (ES), Intelligence, Surveillance & Reconnaissance (ISR) and Radar systems. EW systems supported (ALQ-99 and SLQ-32) are extremely complex systems, comprised of multiple "black boxes" of widely varying RF, digital and analog technologies integrated together and controlled by operational software. NSA Crane capabilities outside of direct S&EW Divisions also bring a synergy for "one-stop shop" capability. These include capabilities for failure analysis, environmental testing, COTS/Diminishing Manufacturing Sources, printed circuit board/cables, and micro-miniature repair.

Fort Monmouth/Fort Belvoir – The Sensor and Electronic Warfare (S&EW) systems supported at these sites, such as MLQ-40 Prophet, Shortstop/Warlock, PRD-13, TPQ-36/37/47 and others are well within the capabilities and capacities of NSA Crane. Developmental efforts for new systems, such as Tactical SIGINT Payload, Aerial Common Sensor and block upgrade efforts to Prophet, are well within NSA capabilities and share process and technology similarities to on-going workload. Sustaining engineering and industrial efforts for Army S&EW systems are also well within the capabilities of NSA Crane. Opportunities for maximizing development of common technologies and sustaining support processes will be realized, reducing redundant efforts and individual Service costs and manpower requirements. NSA Crane also provides services and products related to logistics support (test equipment, publications, training, spares provisioning, asset management, etc). NSA Crane provides worldwide rapid reaction and sustained field support, providing technical support and repair for both operational systems and supporting test, evaluation and repair equipment.

NAWCWPNS Point Mugu – If relocated, NSA Crane, as an EW Specialty Site, provides a higher military value location than NSA China Lake. The EA-6B Weapons Systems Support Lab (WSSL) and Electronic Combat Systems Evaluation Lab (ECSEL) are specialty labs dedicated to support of EW systems performance analysis and operational software development and sustainment. NSA Crane currently has the capability and capacity for Software Support Activity (SSA) functions and currently executes SSA workload for the SLQ-32 shipboard EW system. NSA Crane's EA-6B weapons system hardware engineering and maintenance capabilities, combined with our SLQ-32 SSA capabilities, make for an ideal location for the EA-6B WSSL and ECSEL labs and associated workload.

In the cases of relocating S&EW workload, as delineated above, the Specialty Site at NSA Crane offers the greatest potential for minimizing relocation costs and maximizing the long-term benefits and transformation sought through the BRAC process. NSA Crane possesses comprehensive, state-of-the-art facilities and equipments that provide a dual-use capability for both technical and industrial support of S&EW systems. Our workforce of engineers, technicians, logisticians, and acquisition professionals are skilled and experienced in all aspects of development, fielding and sustainment of highly complex, multi-platform weapons systems and their associated logistics support systems. NSA Crane is the major support site for all DoD S&EW systems.

All of these systems are similar technologies to those supported in the EW Specialty Site at NSA Crane. Movement of these systems to NSA Crane would be more cost effective than the splintered movement in the BRAC scenarios. It would also re-locate EW systems to the activity with the highest EW military value and achieve BRAC goals.

Library

BASE REALIGNMENT AND CLOSURE 2005

**TECHNICAL JOINT CROSS-SERVICES GROUP
FORT MONMOUTH, NJ**

ELECTROCHEMICAL POWER SOURCES RECOMMENDATION

**ANALYSIS OF AND ALTERNATIVE RECOMMENDATIONS TO
DOD BRAC RECOMEMENDATION**

SIBA, Inc.

Southern Indiana Business Alliance

29 July 2005

1.0 Introduction

The Department of Defense (DoD) had the primary goals in the 2005 BRAC round of increasing military value and reducing excess capacity in consonance with the Department's Transformation Goals. Guidelines included emphasis on joint operations, multi-disciplinary capability, and mitigation of encroachment and environmental issues.

The Naval Support Activity (NSA) Crane hosts the Naval Surface Warfare Center (NSWC) Division Crane and the Crane Army Ammunition Activity (CAAA): co-located mission commands that perform multi-functional and multi-disciplinary tasking across ordnance, electronics and electronic warfare products and systems. These two commands have jointly built a cross service capability leveraging shared world-class facilities and a human intellectual capital that focuses on development, acquisition, sustainment, maintenance and distribution. In-depth integrated technical and industrial capabilities provide extremely agile, responsive and complete support to Warfighters of all services.

NSA Crane, located in under-populated Southern Indiana has 63,000 acres, completely encroachment free: with no environmental issues; remote from potential terrorist threat; in close proximity to excellent roads, rail, and air transportation; with abundant power and water utilities; with extraordinary facilities; academic and industry partnerships; and, an almost unlimited technical workforce recruitment ability. NSA Crane gets very high marks when compared to DoD 2005 BRAC goals.

This discussion covers the Technical Joint Cross Service Group portion of BRAC 2005 recommendation to relocate Sensors, Electronics and Electronic Warfare (SEEW) functions at Fort Monmouth, NJ to Aberdeen Proving Grounds, MD and realign Ft. Belvoir SEEW to Aberdeen Proving Grounds and Army Research Laboratory, MD. SEEW moves specifically in question involve only electrochemical power systems functions.

Electrochemical power systems are a critical component of many DoD warfighting systems. These components also pose a significant technology barrier in their ability to support growing military power challenges.

NSWC Crane's Power Systems Division is home to the nation's most robust infrastructure supporting Research, Development, Acquisition, Test and Evaluation for electrochemical power systems. NSWC Crane currently supports the Navy, Army, Marine Corps, Air Force, DLA/DSCR, Missile Defense Agency and NASA.

2.0 BRAC Recommendations

Close Fort Monmouth, NJ. Relocate SEEW research, development and acquisition activities to Aberdeen Proving Ground, MD. Realign Ft. Belvoir SEEW to Aberdeen Proving Grounds, MD and Army Research Laboratory, MD.

3.0 BRAC Recommendation Analysis

The BRAC recommendation was analyzed by utilizing the Department of Defense primary goals of reducing excess capacity and increasing military value in consonance with the Departments' Transformational Goals. Guidelines include emphasis on joint operations, multi-disciplinary capability, and mitigation of encroachment and environmental issues. The analysis will show a BRAC recommendation that will enhance the BRAC precepts far beyond those currently proposed.

3.1 BRAC Precept – High Military Value

It is difficult to tell from the BRAC data the overall technical Electrochemical Power Systems military value, as the data was not available at this level of detail in the SEEW DTAP category. From past experience and using the BRAC 2005 military value ranking criteria, we believe that Crane would have been scored number *ONE* in DoD for Electrochemical Power Systems technical military value.

It appears that the Electrochemical Power Systems tasking at Fort Monmouth and Ft Belvoir were reported in the BRAC data calls as part of the SEEW category and evaluated by the Technical Joint Cross Service Group, as was the case for Crane. Also, Aberdeen was scored on their military value to SEEW. In three categories, Development and Acquisition, Research and Test and Evaluation, Crane exceeds the military ranking of Aberdeen (the facility set to gain the work).

Crane is the leading hi-tech facility in the whole of Southern Indiana, employing in excess of 1,500 Engineers, Scientists and Technicians. These personnel support multiple products from power systems to EW, with approximately 100 personnel supporting functions in the Electrochemical Power Systems Specialty Site.

3.2 BRAC Precept – High Capacity

The BRAC criteria included movements from low to high capacity. It was also a goal to reduce the overall DoD footprint. The BRAC recommendation moves the electrochemical power tasks at Fort Monmouth to very limited electrochemical power capability in Aberdeen. It also appears that this move is part of a requirement for a military construction project identified by Aberdeen. This is all while Crane has over 100 personnel and world-class facilities and equipment in support of joint service electrochemical power systems. This may duplicate facilities/equipment already in place and available at NSWC Crane. This is a violation of the BRAC capacity precept.

3.3 BRAC Precept – Jointness

Crane is an Electrochemical Power Systems Specialty Site supporting Joint Services Electrochemical Power Systems for the Navy, Air Force, Marine Corps, Army, Defense Logistics Agency and the Missile Defense Agency. Services, platforms, and systems supported include but are not limited to:

Joint Programs	Aircraft (Joint Strike Fighter, F/A 18 C/D, etc) Missiles (Sidewinder, HARM, ESSM, etc) International Space Station and Rescue Vehicle Satellite Advanced SEAL Delivery System Swimmer Delivery Vehicles Swimmer Transport Device Diving Equipment Night Vision Equipment THAAD Ground Based Interceptor STANDARD Missile 3 High Altitude Airship Defense Logistic Agency Engineering Lithium Battery Safety
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	Aircraft Battery Maintenance Manual Battery Charger Shelf-life Sub-Committee
Navy	All Submarine Programs STANDARD Missile FLEET Ballistic Missile
Air Force	Minuteman
Army	Tanks H-60 Patriot/ PAC 3 Army Tactical Missile System
Marine Corps	Prepositioning

The BRAC recommendation does not support a truly *JOINT Electrochemical Power Specialty Site*. It moves one agencies operation (Army) to yet another single service operation (Army). This violates the BRAC jointness precept.

3.4 BRAC Precept – Cross Functional

Crane provides support across the life cycle for a large number of Electrochemical power systems. The support is multi-functional, including research, development, engineering, acquisition, logistics, maintenance and supply support.

The Crane Electrochemistry Power Specialty Site is successful because the support functions of Research, Development and Acquisition and Test and Evaluation are co-located and fully integrated. It is a joint electrochemistry capability with the resources to provide rapid response as needed by the Warfighter. The site supports multiple electrochemical power systems across all Services. This supports the BRAC Cross-Functional precept. However the BRAC recommendation minimally satisfies the Cross Functional precept by consolidating the research, development and acquisition and test and evaluation in the same general vicinity for one service. It does not take advantage of the ability to take it a step further to all services. The current recommendation stovepipes the electrochemical power systems to a single agency (Army) with narrow capability focus (C4ISR).

Crane was analyzed in the BRAC process by several “stove-piped” teams: Navy, Army, Industrial Cross-Service and Technical Services teams separately. Yet, its value to the Warfighter lies in the integration of the functional capabilities and jointness.

3.5 BRAC Precept – Transformational

The BRAC recommendation only moves the electrochemical power systems tasks from one location to the other.

Emerging technology requirements for various systems and platforms place continuing increasing demands on power devices while requiring those devices to withstand a great deal of environmentally challenging scenarios. This pushes the DoD to have a very narrowly focused niche requirement. This niche requirement has stressed the small business base that serves this unique capability area. As proven by many studies, the power systems industrial base is fragile. Continuous improvements must be made in

pulling technology from industry to meet the DoD's most challenging requirements. During that improvement process, unique vendors must be understood and could best be handled from a DoD perspective and not from a single program/agency.

Considerable funding is spent each year on improvements to power. However, those improvement initiatives are fragmented. A good example of this fragmentation can be seen by looking at all the SBIRs that various program offices spend on power improvements. These are performed in a programmatic stovepipe and currently the collective benefit of the money spent on these initiatives is not being realized. The Missile Defense Agency (MDA) could serve as a model for a better way to leverage existing capability as they have pooled all of their programmatic SBIR resources into the hands of a few technical experts to manage. Crane has been chosen as the SBIR lead for MDA Power requirements. This process is just an example of transformational improvements that can be made by a synergistic approach. Benefits of such an approach include:

- 1) Reduces opportunity for accidental duplication
- 2) Single source of prioritization based on all program needs
- 3) Allows the power experts to perform the tasks (working in concert with the systems engineers)
- 4) Allows industrial base issues to be addressed on a more global level not just what is best for one program.

3.6 BRAC Precept – Low Risk

Electrochemical Power Systems used in DoD are technologically challenging to develop, assess, maintain and dispose. Today's electrochemistries are varied and are chosen to suit specific application requirements. They share peculiarities with each other but also have uniqueness. These stovepiped end item applications of electrochemistry don't routinely lend to shared innovative solutions to what might be common problems. In order to better take advantage of the common application of electrochemical technologies, systems engineering and product engineering must work together for a more cost effective, acceptable solution to today's military power requirements. NSWC Crane has successfully implemented this joint integrated approach even when the system engineering was performed at another location. This proposed move is low risk as the required expertise is already located at Crane, which has a proven record of successfully integrating product engineering with systems engineering. In BRAC 1995 functions were relocated from Mare Island, CA to NSWC Crane to align submarine battery work with existing product expertise.

3.7 BRAC Precept – Return on Investment (ROI)

Although no particular data is readily available in the BRAC data, it is obvious that it is more cost effective to move this work to a site that already has the expertise, facilities and equipment. This obvious ROI (less expenditure) would pale in comparison to the ROI in having a joint DoD electrochemistry center of excellence.

3.8 BRAC Precept – Impact on Existing Communities

According to the BRAC data, Martin County (Crane impact area) has the 2nd largest economic impact of any economic area (13.1% total for proposed BRAC

realignments) in the BRAC study. This is catastrophic to an area that is already economically depressed.

Crane, Indiana has a much lower cost of living than Aberdeen as indicated by the ODS BRAC database. This is indicative in the locality pay structure with Crane being 10.9% and Aberdeen being 16.0%. This causes an automatic increase in labor costs of 5.1%.

4.0 Conclusions

Electrochemical power systems are a critical component of many DoD warfighting systems (missiles, communication electronics, tanks, aircraft, ships, submarine, satellites, mines, etc.). These components also remain a significant technology barrier. Examples of problems and importance to DoD are:

- Plans for future weapon systems exceed the current capabilities of present power devices.
- Batteries were the only logistics item that had to be briefed to the President during Operation Iraqi Freedom.

NSWC Crane's Power Systems Division is home to the military's most robust infrastructure supporting RDA and T&E for electrochemical power systems. NSWC Crane currently supports the Navy, Army, Marine Corps, Air Force, DLA/DSCR, Missile Defense Agency and NASA. Relocation of the Army Power Division to Crane will increase synergy, focus on joint needs, and promote efficient use of equipment and facilities by co-locating Tri-Service and Defense electrochemical power system functions. This recommendation creates a Joint Center of Excellence for Electrochemical Power Systems at Crane and promotes jointness, enables technical synergy, positions the Department of Defense to exploit a center-of-mass of scientific, technical, and acquisition engineering expertise with the personnel necessary to transition electrochemical power systems solutions to the systems and programs needed to defeat the war on terrorism, and provides a DoD source dedicated to ensuring the stewardship and maintenance of industry resources.

5.0 Recommendations

The analysis and conclusions warrant two recommendations that will increase military value and give a higher ROI:

1. Create a DoD Electrochemical Power Specialty Site at NSA Crane.
2. Change BRAC recommendations to move electrochemical power functions from Fort Monmouth and Fort Belvoir, which have lower military value to the electrochemical power specialty site Crane with higher military value. The proposed site, Aberdeen has a military value below Crane in every area.

Library

NSA Crane A Model Technical Defense Installation



Matching DoD's BRAC Goals in Electronic Warfare and Special Missions

DOD's Primary BRAC Goals*

- ➔ **Increase military value**
- ➔ **Reduce excess capacity**
- ➔ **Reduce costs**

- ✓ **Joint operations**
- ✓ **Multi-disciplinary/ multi-functional capabilities**
- ✓ **Mitigation of encroachment and environmental issues**



** In consonance with DoD's Transformation Goals*

7/29/2005

BRAC Precepts

- Move functions from low to high military value (for the particular set of functions) installations

- Minimize community impact of closures and realignments

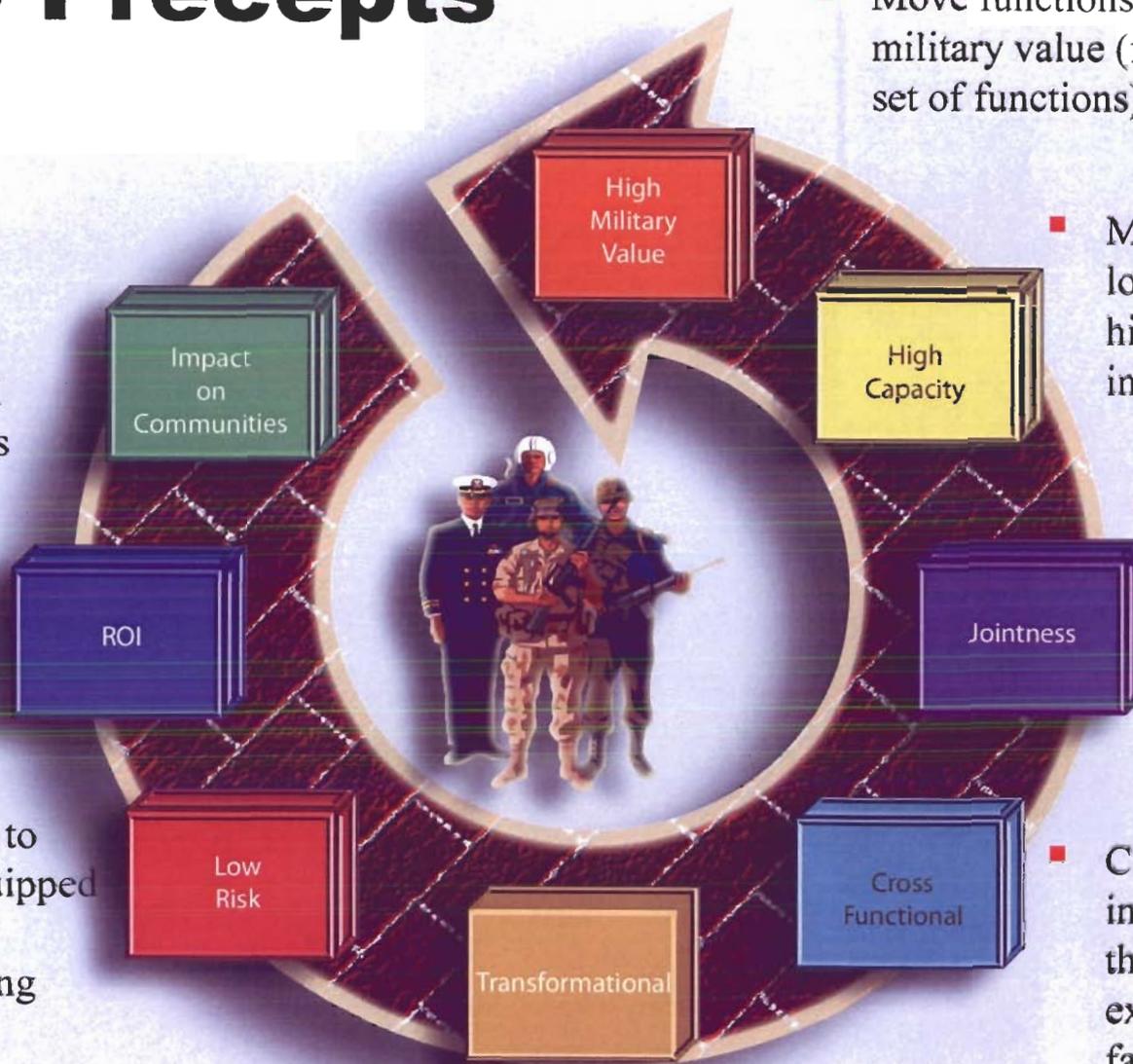
- Move functions from low to high capacity, high capability installations

- Move functions to increase jointness

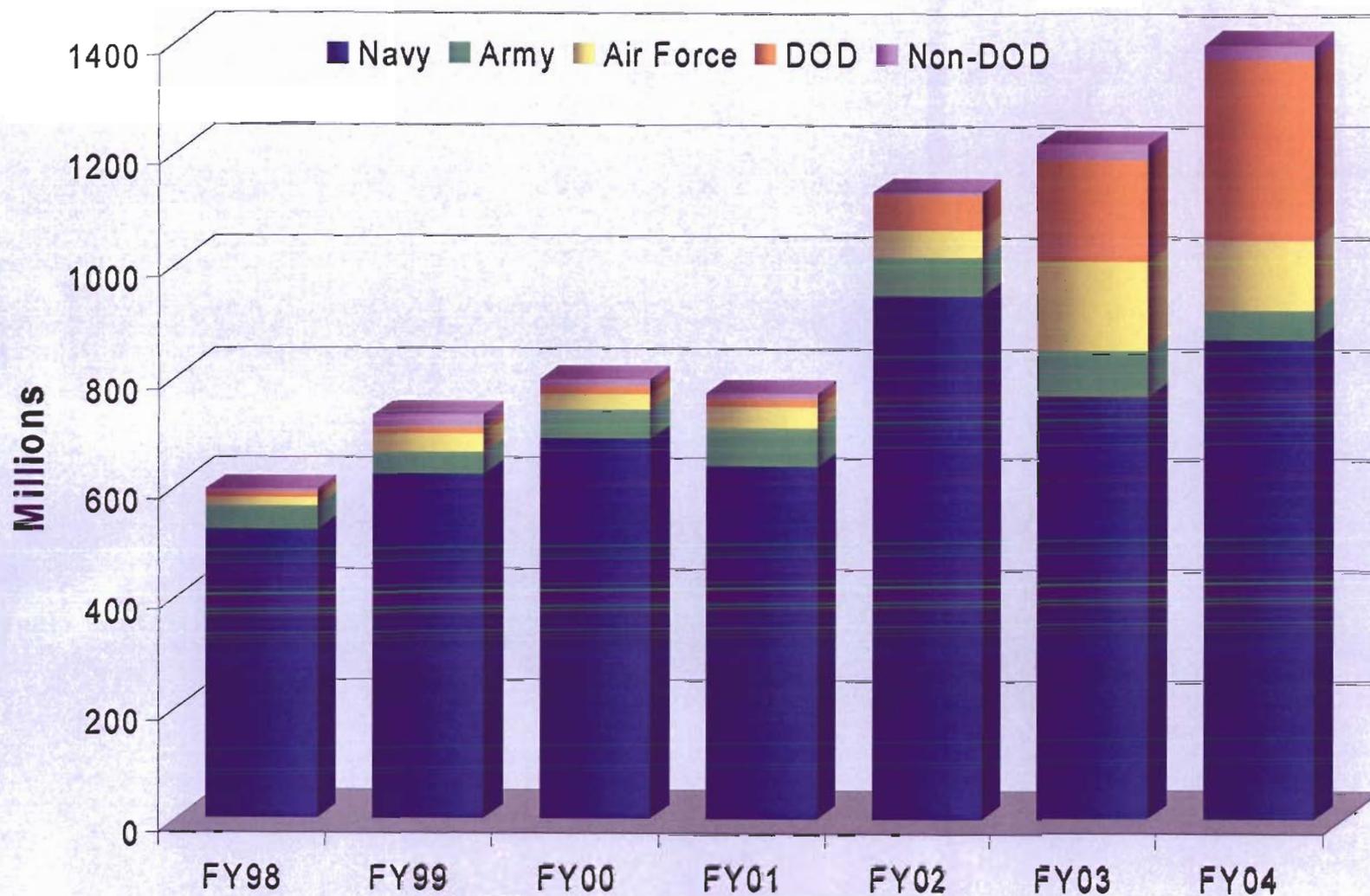
- Maximize ROI and minimize cost

- Move functions to installations equipped to handle them, without impacting Operational Readiness

- Adapt to future requirements in innovative ways



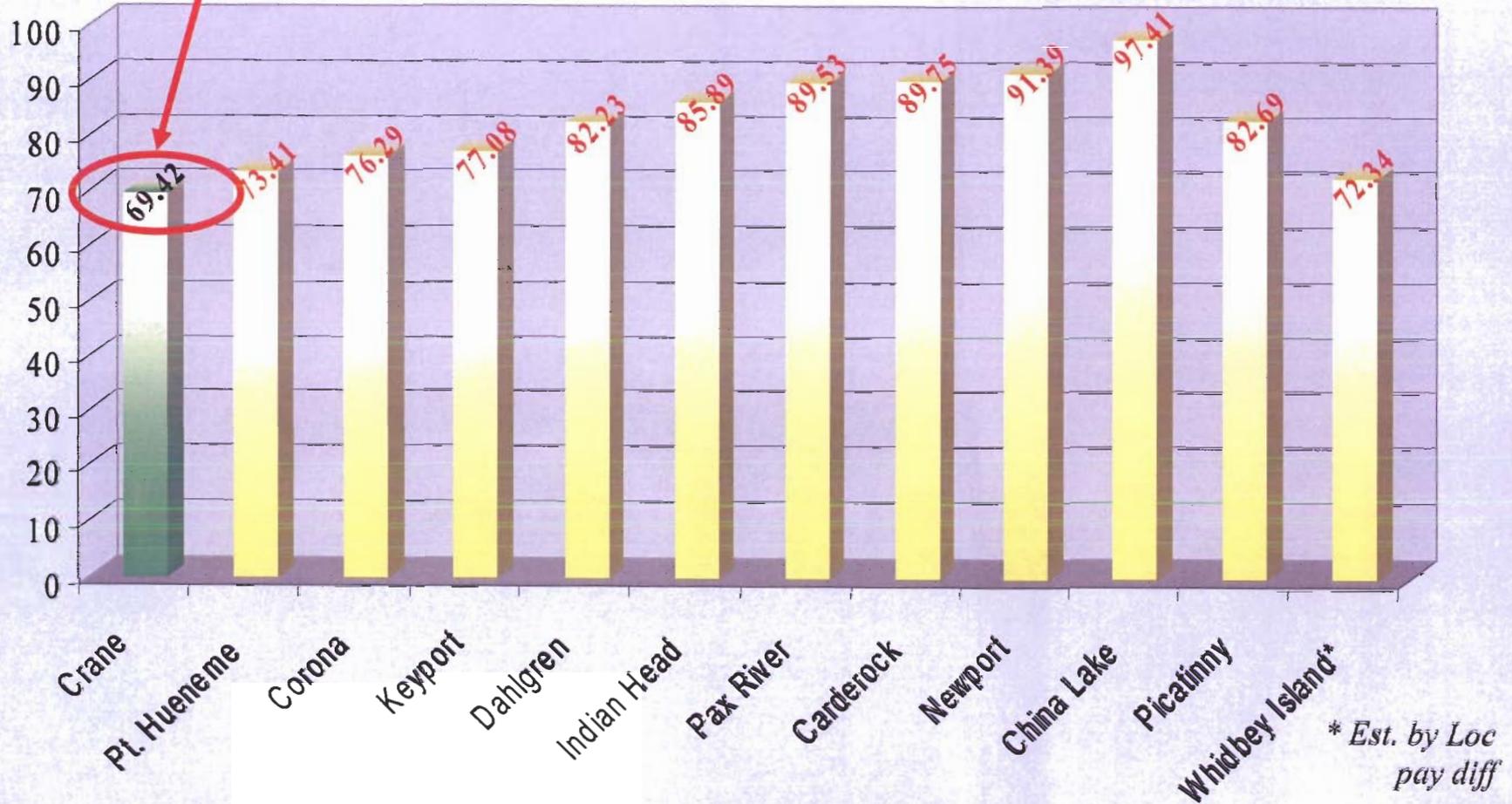
NSWC Crane Model Installation High Military Value, Joint Workload, Low Cost



Net receipts have increased 67% since 9/11. DoD increase reflects Special Missions ~20-fold increase.

Lowest manhour costs

FY05 Manhour Costs



- Installation of the Year Award for its “Business and process re-engineering” program
- Value Engineering Award for its lean manufacturing program

NSA Crane

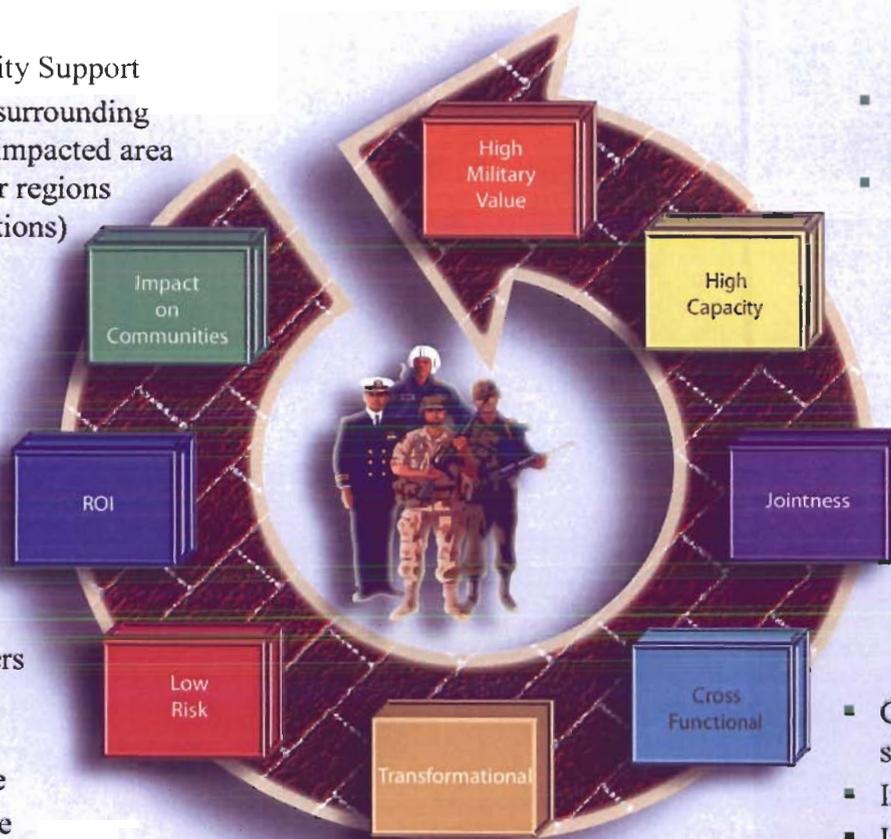
Model Installation

- Highest EW and Special Missions military value
- Relevant to Warfighter's needs
 - Funding increased by 67% since 9/11
- No encroachment problems or environmental issues
- Low costs

- Tremendous State and Community Support
- Critical economic impact on its surrounding communities (has second worst impacted area in the US, compared to 241 other regions affected by BRAC recommendations)

- Modern facilities
- Lowest unit costs
- Highest ROI
- Multi-functional synergies
- Leverage assets across multiple services

- <3% turnover rate for engineers and technical staff
- Depth and breadth of highly specialized technical expertise
- Large technical recruiting base
- Rural, isolated location



- World-class, modern EW and Joint Special Missions facilities
- Extended Special Missions facilities at Lake Glendora, Camp Atterbury and Muscatatuck Urban Training Facility
- Co-located Navy/Army commands
- Multi-functional, multi-disciplinary tasking across ordnance, electronics, and EW products and systems
- Multi-service support solutions
- Co-located, integrated, full life cycle support
- Integrated ordnance and electronics
- Integrated industrial and technical

- Business Process Reengineering Leader
 - \$29.3M savings from 2000-2003
- "Virtual" Warfighter support
- Rapid integrated solution deployment
 - \$200M, 2001-2003 Rapid Response Solutions
- Industry/academia/government partnerships

NSA Crane **Undervalued** in DoD Report

☒ **Crane's Military Value undervalued**

- Defense Technical Area Plans (DTAP) levels obscured Crane's functional Military Value (Special Missions/EW)
- Classified products and services

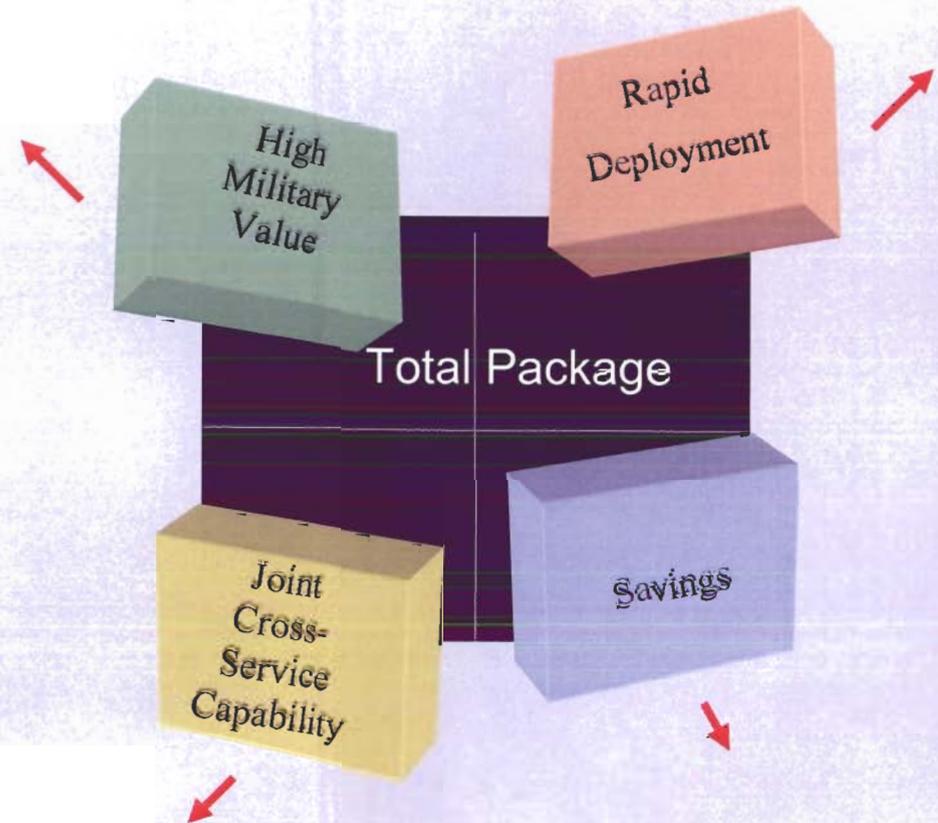
☒ **Analyzed by "stove-pipe" teams**

- Separate analysis by Navy, Army, Industrial Cross-Service, and Technical Cross-Service
- Integrated industrial and technical capabilities not recognized
- Joint work/customer base and Army/Navy co-location not recognized

☒ **No scenarios**

- Early Navy target for closure, therefore, not looked at as receiving site
- Evaluating Crane's High Military value
- Assessing Crane's Model Installation attributes
- Realigning functions from other sites to Crane

☒ **Limited Special Operations input**



NSA Crane joint capabilities will be fragmented and the existing synergy will be negatively impacted.

DoD BRAC Electronic Warfare Recommendation

- (1) Realign NSA Crane, IN, by relocating the Depot maintenance workload and capacity for ALQ-99 EW to Fleet Readiness Center Northwest, Naval Air Station Whidbey Island, WA.

Precept	Violation/Disadvantage
High Military Value	Moves EW work from the highest EW military value activity, NSA Crane, to much lower EW military value activities. Depot operations will lose connectivity to highly specialized EW resources. (.6220→.0.0)
High Capacity	Moves the ALQ-99 Depot from a high EW capacity to a low EW capacity activity. Relocating the ALQ-99 Depot requires Military Construction at receiving site, thereby increasing the footprint.
Jointness	Fractures a joint EW Specialty Site that supports all services. It moves one system's Depot operation to a single Service, in fact, a single platform, within one Service. ALQ-99 Depot operations will lose connectivity to EW technical expertise and resources.
Cross Functional	Moves the ALQ-99 Depot from a multi-functional, including engineering, acquisition, logistics, maintenance, and supply support, EW activity. This separates the maintenance from the highly skilled EW personnel and resources.
Transformational	Discards new and transformational virtual maintenance processes in deference to doing the same old maintenance processes at a new location.
Low Risk	Moving highly complex EW systems requiring millions of dollars of test equipment and losing available EW expertise is a high risk effort with a high probability of reduction in readiness. Developing microwave intellectual capital requires 3-5 years, resulting in a gap of support.
ROI	Moving the ALQ-99 Depot will cost \$195M with no positive ROI. This represents 95% of the investment dollars required for FRC Whidbey and over 50% of the entire FRC recommendation. The GAO has also questioned the magnitude of DoD's projected savings from the FRC concept in its BRAC analysis.
Impact on Community	The ALQ-99 BRAC impact on Martin County, Indiana, is 2.6% of the total 13.8%. Crane personnel also cannot afford to move to Whidbey Island because of a significant increase in cost of living.

Electronic Warfare Analysis based on BRAC Precepts

	Military Value ¹	Capacity ²	Jointness ³	Cross Functional ⁴	Risk ⁵	Community Impact ⁶	Overall Ranking ⁷
NSWC Crane	High	High	High	High	High	High	18
Wright Patterson AFB	High	High	Medium	Medium	High	Low	14
NAS China Lake	High	High	Low	High	High	Low	14
Aberdeen Proving Ground	Medium	High	Low	High	Medium	Medium	13
NSWC Dahlgren	Medium	Medium	Low	High	Low	High	12
NAS Pax River	High	High	Low	Medium	Medium	Low	12
Edwards AFB	Medium	High	Medium	Medium	Medium	Low	12
Fort Monmouth	Medium	Medium	Low	High	High	Low	12
Eglin AFB	Low	High	Medium	Low	Low	High	11
NUWC Newport	High	Low	Low	High	Medium	Low	11
SSC San Diego	Medium	High	Low	High	Low	Low	11
SSC Charleston	Medium	Medium	Low	High	Low	Medium	11
NAS Point Mugu	Medium	Low	Low	High	Medium	Low	10
Fort Belvoir	Medium	Medium	Low	Medium	Medium	Low	10
Lackland AFB	Medium	Low	High	Low	Low	Low	9
Tobyhanna Army Depot	Low	High	Low	Low	Medium	Low	9
NAS Whidbey Island	Low	Low	Low	Low	Low	High	8
Hanscom AFB	Low	High	Low	Low	Low	Low	8
NUWC Keyport	Low	Medium	Low	Low	Medium	Low	8
NSWC Corona	Low	Low	Low	Low	Low	Low	6
	¹ Data from DOD Military Value Reports	² Data from DOD Capacity Analysis Report	³ Data from various public sources	⁴ Data from DOD Military Value Reports	⁵ Data from DOD Analysis Reports and Public Sources	⁶ Population Data from DOD JPAT Community Infrastructure Reports	⁷ Sum of all Scores
	High: Total Military Value score > 1.0 in JCSG measured EW functional areas	High: > 500K sq-ft excess	High: Current EW Support for 3 or more services	High: Military Value in 3 or 4 JCSG measured EW functional areas	High: > 500 personnel in EW functions that would require movement or replacement	High: < 200K in either Metropolitan Statistical Area (MSA) or Military Housing Area (MHA)	High=3
	Medium: Total Military Value score > 0.5 and < 1.0 in JCSG measured EW functional areas	Medium: > 0 and < 500K sq-ft excess	Medium: Current EW Support for 2 services	Medium: Military Value in 2 of 4 JCSG measured EW functional areas	Medium: > 150 and < 500 personnel in EW functions that would require movement or replacement	Medium: > 200K and < 600K in either MSA or MHA	Medium=2
	Low: Total Military Value score < 0.5 in JCSG measured EW functional areas	Low: < 0 sq-ft excess	Low: Current EW Support for only 1 or no service	Low: Military Value in 0 or 1 of 4 JCSG measured EW functional areas	Low: < 150 personnel in EW functions that would require movement or replacement	Low: > 600K in either MSA or MHA	Low=1

Alternate Recommendations and Advantages (Electronic Warfare)

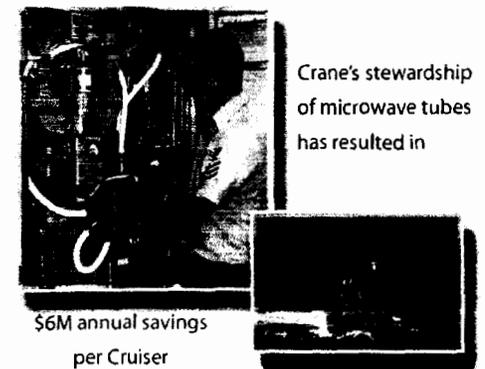
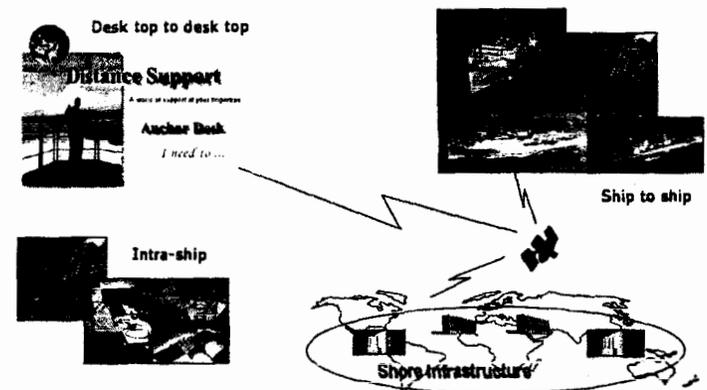
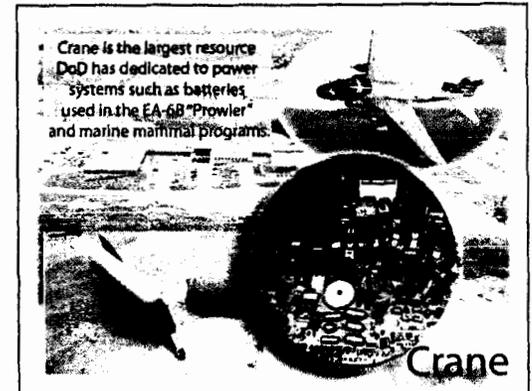
- (1) Create a DoD EW Specialty Site at NSA Crane
- (2) Delete the BRAC recommendation for relocating the ALQ-99 Depot workload and capacity from NSA Crane, IN, to FRC Northwest Whidbey Island, WA
- (3) Change BRAC recommendations and move EW functions from Fort Monmouth, Fort Belvoir, NWS Charleston, Naval Submarine Base Point Loma, and NAWC Division Point Mugu to NSA Crane

Precept	Compliance/Advantage
Military Value	Recognizes the integrated capability located in the highest military value activity.
High Capacity	Capitalizes on current capabilities and capacities and negates a MILCON requirement.
Jointness	Capitalizes on existing Joint Service capabilities.
Cross Functional	Capitalizes on extensive existing Joint multi-functional capabilities.
Transformational	Institutes transformational virtual maintenance processes.
Low Risk	Innovative processes are already tested with no additional risk. No emission encroachment (guaranteed by State law).
ROI	Capabilities are retained at a low cost, high military activity and \$195M in relocation costs are negated. Leverage multi-service assets and intellectual capital.
Impact on Community	Eliminates the specific impact on the local Community, and significantly reducing the cumulative negative impact on Martin County.

Electronic Warfare Conclusions

The recommendation to move the ALQ-99 to Whidbey Island violates all Precepts and cannot be justified.

- Capitalize on Crane’s critical mass of Joint EW Specialty Site with over 1,000 EW employees
- Validate a DoD joint EW Specialty Site at Crane
 - Best value in all major BRAC precepts
 - Unlimited space for growth
 - No encroachment that would curtail high power microwave emissions
- Retain the ALQ-99 Depot at Crane
 - Increases return-on-investment
 - Reduces significant cost and risk
 - Reduces economic impact on community
- Evaluate opportunities to enhance jointness by realigning additional EW support to NSA Crane from closing or other EW realignment



DoD BRAC Weapons & Armaments Recommendations

- (1) Create a Naval Integrated Weapons & Armaments Research, Development & Acquisition, Test & Evaluation Center. Relocate all Weapons and Armaments Research, Development & Acquisition, and Test & Evaluation, except gun/ammo, combat system security, energetic materials, to Naval Weapons Station China Lake, CA.
- (2) Create an Integrated Weapons & Armaments Specialty Site for Guns and Ammunition. Relocate gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ.

Precept	Violation/Disadvantage
High Military Value	The assigned separate Military Value scores did not reflect the aggregate Military Value required by Joint Special Missions
High Capacity	Doesn't recognize the integrated Joint Service capacity associated with Crane in support of Special Missions
Jointness	Fragments existing Joint Service capabilities
Cross Functional	Fragments existing Joint multi-functional capabilities
Transformational	Dismantles the transformational style of adapting COTS/NDI products into tailored acquisition approval processes to achieve quick response solutions required to counter asymmetric threats
Low Risk	Fractures the existing integrated capability and capacity, requiring the use of several specialty sites to obtain the same capability which negatively impacts response time and, subsequently, Operational Readiness
ROI	Creates return on investment for these recommendations of 7 and 13 years respectively, which is out of synch with the 4-year objective
Impact on Community 7/29/2005	The BRAC impact on Martin County, Indiana, is 11.1% of the total 13.8%. Second worst of the impacted 241 communities nationwide

Integrated Military Value for Special Missions

Military Value Category	Joint Base Crane, IN	China Lake, CA	Picatinny, NJ
TJCSG Weapons Technology D&A	0.2292	0.4982	0.5251
TJCSG Weapons Technology Research	0.1754	0.5062	0.5272
TJCSG Weapons Technology T&E	0.0930	0.6391	0.0564
IJCSG Maintenance - Small Arms/Personal Weapons*	0.5203	0	0
IJCSG Maintenance - Conventional Weapons*	0.3220	0	0
IJCSG Munitions - Production	0.4836	0	0
IJCSG Maintenance - Electro-Optics/Night Vision/FLIR*	0.5645	0	0
IJCSG Munitions - Munitions Maintenance*	0.1951	0	0
IJCSG Maintenance - Electronic Comps. (non-airborne)*	0.4314	0	0
IJCSG Maintenance - IMA Ordnance/Weapons/Missiles*	0.1706	0.0592	0.0512
Total Integrated Military Value for Special Missions	3.1851	1.7027	1.1599

** Maintenance capability includes maintenance, prototyping, and limited production.*

Alternate Recommendation and Advantages (Joint Special Missions)

(1) Create a DoD Integrated Weapons & Armaments Specialty Site for Joint Special Missions at NSA Crane, IN.

Precept	Compliance/Advantage
High Military Value	Recognizes the integrated capability that would be assigned the highest Joint Special Missions Military Value nationally
High Capacity	Capitalizes on recently constructed, unencumbered facilities that are equipped with modern technology, and environmentally permitted, in support of Special Missions
Jointness	Capitalizes on existing Joint Service capabilities
Cross Functional	Capitalizes on existing Joint multi-functional capabilities
Transformational	Capitalizes on a unique, world-class solution to DoD Joint Special Missions RD&A, T&E, and Training requirements
Low Risk	Provides a low risk option through competition of ideas, geographic separation, and sustainment of existing human capital
ROI	Provides a reduced implementation cost by maintaining capability at a low cost, high quality facility. Leverage multi-functional synergy and Joint Service assets
Impact on Community	Eliminates the specific impact on the local community, significantly reducing the cumulative negative impact on Martin County

Special Missions Conclusions

- **Validate DoD Joint Special Missions Specialty Site at NSA Crane**
- Capitalize on Crane's critical mass of Joint Special Missions
- Retain a multi-functional, multi-disciplinary, transformational capability
- Capitalize on synergy of existing critical mass of Ordnance and Electronics Engineering
 - NSWC weapons/energetic materials expertise
 - NSWC electro-optics/electronics expertise
 - CAAA ordnance depot/industrial capability
 - Unique training/testing capability
 - Lake Glendora test facility
 - Indiana National Guard's Camp Atterbury and Muscatatuck Urban Training Center
- Delete relocation of Weapons & Armaments and Guns & Ammunition from NSA Crane to China Lake and Picatinny
 - Enhance military value of DoD Centers of Excellence concept
 - Reduce one-time implementation costs
 - Reduce economic impact on community
 - Recognize existing joint Service capability and capacity that meets BRAC goals and objectives
 - Maintain lowest cost over entire life cycle
 - Support geographic separation and continuity of operations



Optimum BRAC Solutions

✓ **Validate a DoD Electronic Warfare Specialty Site at NSA Crane.**

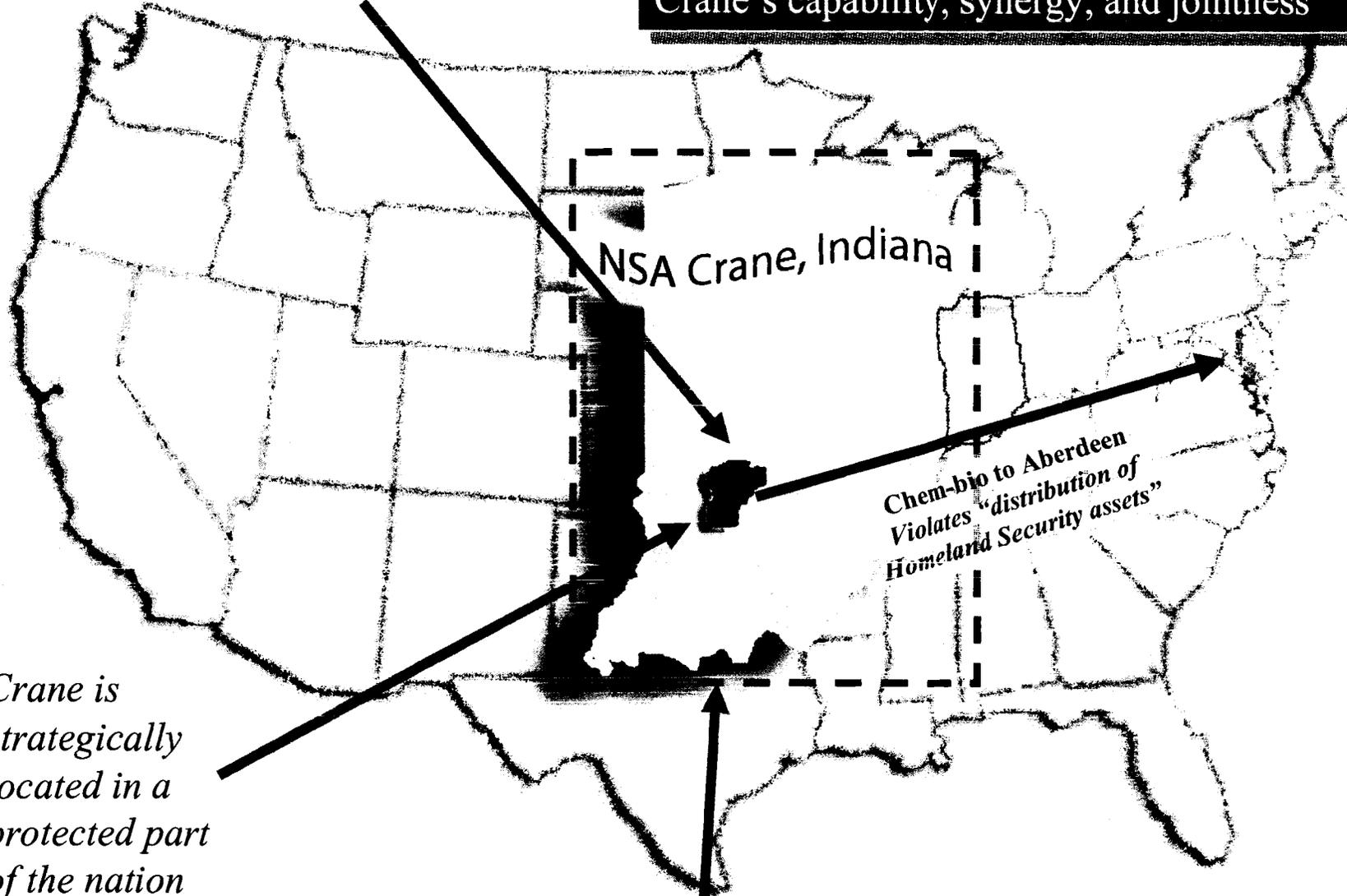
- ☒ Delete the BRAC recommendation that relocates the ALQ-99 Depot workload and capacity from NSA Crane, IN to FRC Northwest, NAS Whidbey Island, WA. *(BRAC Report, Vol. 1, Part 2 of 2, Section 6, page 22)*
- ☒ Change BRAC recommendations and move EW functions from Fort Monmouth, Fort Belvoir, Naval Weapons Station Charleston, Naval Submarine Base Point Loma, and Naval Air Warfare Center Weapons Division Point Mugu to the EW Specialty Site Crane, which has a higher military value. *(BRAC Report, Vol. 1, Part 2 of 2, Department of Army Section, pages 11-12; and Section 10, pages 9 and 28)*

✓ **Validate a DoD Integrated Weapons & Armaments Specialty Site for Joint Special Missions at NSA Crane.**

- ☒ Delete the BRAC recommendation that realigns Crane by relocating all weapons and armaments research, development & acquisition, and test & evaluation, except gun/ammo, combat security, and energetic materials to NAWS China Lake, CA. *(BRAC Report Vol. 1, Part 2 of 2, Section 10, page 15)*
- ☒ Delete the BRAC recommendation that realigns Crane by relocating gun and ammunition Research and Development & Acquisition to Picatinny Arsenal, NJ. *(BRAC Report Vol. 1, Part 2 of 2, Section 10, page 20)*

*Crane should be recognized as DoD
critical product Center of Excellence
(Specialty Site) in several areas*

**BRAC should *enhance*, rather than *fragment*,
Crane's capability, synergy, and jointness**



NSA Crane, Indiana

*Chem-bio to Aberdeen
Violates "distribution of
Homeland Security assets"*

*Crane is
strategically
located in a
protected part
of the nation*

DoD ← *Crane and Indiana can be a supplier* → **SOCOM**
of industrial-based support