THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

DEC 16 2003

MEMORANDUM FOR INFRASTRUCTURE STEERING GROUP MEMBERS

Subject: Coordination of the Medical and Industrial Final Capacity Analysis Reports

The Medical and Industrial JCSG Final Capacity Analysis Reports are attached for your review and coordination. Each JCSG revised their reports in accordance with ISG direction.

The Medical JCSG report reflects the direction to complete its report and ensure that assumptions, attributes, metrics and capacity clearly capture the Medical function capacity.

The Industrial JCSG report reflects the ISG direction to retain direct energy weapons and describe common definitions for maximum capacity and surge requirements. This final report also revised the methodology for determining capacity at intermediate level maintenance facilities and includes updated capacity questions.

Please provide your formal coordination and any comments on both reports by December 29, 2003. Your coordination will constitute the ISG's approval of the methodology and functions for each of the JCSG's capacity analysis.

If you have any questions, please contact Mr. Pete Potochney, Director, BRAC, at (703) 614-5356.

Michael W. Wynne
Acting USD (Acquisition, Technology & Logistics)
Chairman, Infrastructure Steering Group

MEDICAL JOINT CROSS SERVICE GROUP

CAPACITY ANALYSIS FRAMEWORK REPORT

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Chairman

November 17, 2003

SECTION 1. INTRODUCTION

The Medical Joint Cross Service Group's (MJCSG) functions, as approved by the Secretary, includes all functions within the Military Health System (MHS) with no exclusions. The July 16, 2003, memorandum notifying the MJCSG of the approved functions moved two functions originally identified in the MJCSG report of functions under different Joint Cross-Service Groups (JCSGs). These functions were the Human Systems Research function, which was placed under the Technical Joint Cross-Service Group and the Class VIII Supply Management function, which was placed under the Supply & Storage Joint Cross-Service Group. In both cases, the MJCSG will participate with the respective JCSG to provide support and technical/functional expertise for the joint review of these functions.

The MJCSG functions were divided into five broad functions. Each MJCSG member was assigned one of these functions to lead the subsequent analytical effort. The assignments are:

1. Healthcare Education and Training – VADM Michael Cowan, Surgeon General of the Navy
2. Medical and Dental Market Requirements – Mr. Nelson Ford, Deputy Assistant Secretary (Health Budgets and Financial Policy), Office of the Assistant Secretary of Defense (Health Affairs)
3. Deployable Force Sizing – MG Porr, Joint Staff Surgeon
4. Medical and Dental Research, Development and Acquisition – MG Ken Farmer, Deputy Surgeon General of the Army
5. Joint Medical and Dental Infrastructure – RADM R. Hufstader – Medical Officer of the Marine Corps

Medical Joint Cross Service Group Structure.

This division provides the best coverage of the functions within the Military Heath System. This grouping of functions provides an effective framework for evaluating the potential for cross service and joint opportunities for improving the Military Health System's military value while emphasizing its continued transformation to best support warfighting needs and the medical benefit.

The Medical Joint Cross Service Group currently has empanelled 84 military, 21 civilian, and 2 contract personnel. The contract personnel are subject matter experts who are providing their expertise to the Medical Joint Cross Service Group in addition to their other contracted duties. A small number of these personnel are located outside the Washington DC area, including one in California. These personnel support the Medical Joint Cross Service Group as an additional duty and represent the Group's subject matter experts. In some cases, the work of the Medical Joint Cross Service Group now requires, on average, 10-15% of the man-hours available from its members and participants.

The Medical Joint Cross-Service Group has leveraged available technology and established a web-based E-Room to facilitate intra-Group communication. Support for this E-Room has been provided from within the Medical Joint Cross Service Group. The E-Room is finalizing validation of it s security and provides a unique collaborative forum for the Medical Joint Cross Service Group.

The Medical Joint Cross Service Group has evaluated its needs for support of its activities over the next year. We estimate our annual needs at 22 FTEs ($2.7M) and

$560K to support our administrative, analytical, travel and, equipment requirements. Adjusted though May 05, the Medical Joint Cross Service Group support estimate is $5.2M. This unbudgeted requirement is large enough to strain the resources of the members of the Medical Joint Cross Service Group.

Broadly, the general approach to the capacity data call taken by the Medical Joint Cross Service Group emphasizes the need to identify and quantify the pacing items that will define the capacity of the medical system: medical treatment facility, laboratory, or educational facility. The capacity defined by these pacing items can then be compared to civilian norms as well as across Service boundaries to determine relative rates of throughput/per pacing item.

Excess and surge capacity for medical functions can be determined most effectively by determining unused facility spaces that are capable of serving specific medical needs (e.g.: unused exam rooms and operating rooms).

SECTION 2. APPROACH TO CAPACITY ANALYSIS

1. Healthcare Education and Training.

Definition of the Function:

This function covers the infrastructure supporting the development of mission-ready medical forces, including professional healthcare providers and medical support staff. It also includes formal degree training in academic facilities, post-graduate, non-degree specialty training conducted in civilian and military facilities and training specifically developed to prepare medical personnel for leadership roles. This function does not address basic military training and professional military education. This function has been further parsed into four subordinate functions: Health Professions Education, Health Professions Entry-level Training, Health Professions Continuing Education, and Health Professions Management and Leadership Training.

The MJCSG has modified the names of these four subordinate functions, specifically, replacing the term "Medical and Dental" with "Health Professions." This change was necessary because the previous term was viewed as too narrowly scoped. The broader Health Professions term appropriately includes nurses, PAs, and other non-doctor/dentist professionals within the overall analysis. Similarly, the Graduate Medical and Dental Education term previously used dropped the use of "Graduate" to properly reflect non-graduate medical education programs. Because these changes only alter the names of functional groups and do not alter the scope of review, we recommend the Infrastructure Steering Group approve these revisions.

Assumptions:

- Classroom space represents the pacing item for education and training
- Graduate medical education, because it takes place in an operational medical treatment facility, does not have a unique pacing item beyond those of the medical treatment facility.
- Classroom spaces are divided into small (<200SF), Medium (201-1500 SF) and Large (>1500 SF) to allow for ready comparisons among different

facilities. Space A classrooms are those rooms, not originally designed as classroom spaces that are being used as classrooms.

- Classrooms are generic facilities that may be used to provide any type of training.
- Student lodging is not a pacing item; excess students can be lodged in local commercial facilities.
- Technical medical training contains a significant number of common elements
- Service specific training remains a key part of producing a fully trained medic
- Exercises are a part of the education and training process
- Healthcare education and training includes professional and support staff education and training.
- Reserves and National Guard are members of the total force and their influence/impact is considered within the context of capacity measures.

Sub-functions, Attributes, and Metrics:

1.1 Health Professions Entry-Level Education: Includes all professional and direct patient care, including nurse and provider extender training. Includes all technical school training focused on ensuring the trainee obtains a minimal operational skill set.

Attributes	Metrics
• Available Classrooms	• # Dedicated and Space-A classrooms
• Student Throughput	• Usage of Classrooms (day/year)

1.2 Health Professions Advanced Education: Post-graduate and additional training designed to keep professional and support medical staff current in the practice of their specialties.

Attributes	Metrics
• GME Availability	• Accreditation of GME • Utilization of GME capacity
• Available Classrooms	• # of Dedicated and Space-A classrooms
• Student Throughput	• Usage of Classrooms (day/year)

1.3 Health Professions Continuing Education: Follow-on training that keeps providers and support staff abreast of state of the art techniques

Attributes	Metrics
• Available Classrooms	• # of Dedicated and Space-A classrooms
• Student Throughput	• Usage of Classrooms (day/year)

1.4 Health Professions Executive and Readiness Training: Training focused on preparing medical leaders o manage the medical system

Attributes	Metrics
• Available Classrooms	• # of Dedicated and Space-A classrooms
• Student Throughput	• Usage of Classrooms (day/year)

Process to Determine Current Capacity:

Current GME capacity will be determined by the throughput in FY 02 and FY 03.

Process for Defining the Maximum Potential and Surge Capacity: The maximum/surge capacity for GME will be the higher of the throughput in

FY 02 and FY 03. The maximum/surge capacity of non-GME education will be the difference between the current throughput and the maximum available capacity computed from standard values, based on available classroom space.

2. Medical and Dental Market Requirements.

Definition of the Function:

Measurement of the medical support, including all specialties, required by a defined population surrounding a military treatment facility. The population includes active duty, retired, and dependant healthcare requirements, and the services individual policy-driven medical support.

Assumptions:

- The unique aspects of the population base for each medical catchment area will determine the medical and dental skill sets required by installation.
- Demand, as determined by patients enrolled at the military medical facility, is the pacing item for this workgroup.
- Persons enrolled to a military treatment facility will seek their initial care at that facility.

Sub-functions, Attributes, and Metrics:

2.1 Medical and Dental Needs of the Catchment Population: The population-based demand for medical care.

Attribute	Metrics
▪ Enrollment	▪ Beneficiaries by Category
▪ Workload	▪ Outpatient visits
	▪ Outpatient Utilization
	▪ Inpatient Admissions
	▪ Inpatient Utilization
	▪ Weighted procedure complexity
	▪ Dental Utilization

2.2 Service-Specific Medical and Dental Requirements: Individual Service-policy related requirements that either drive a deviation from the population-based requirements or a requirement for military manning.

Attribute	Metric
▪ Staffing	▪ Providers by Specialty

Process for Determining Current Capacity:

Staffing uses standard values as specified by each Service for the productivity of each provider type.

Enrollment uses standard population values to determine the medical demand capacity for the enrolled population. Likewise, the utilization rates will be combined with the visits to determine the overall, complexity-adjusted capacities for the current facility sets. Although some normative data is available in the literature, these rates will be reviewed with the expectation that DoD and Service specific rates will have to be determined.

Process for Defining the Maximum/Surge Potential Capacity:

The maximum/surge capacity for the population will use standard utilization rates to determine the normative rates for the enrolled population. Comparison of these rates to the current rate will generate the potential additional capacity provided by the population.

The maximum/surge capacity for available staffing will be approached taking the difference between the current workload and the projected maximum workload. Comparing this with the assessments from the medical facilities of their projected maximum capacity. Differences will be resolved on a case-by-case basis.

3. Deployable Force Sizing:

Definition of the Function:

This function includes the wartime medical posture, including direct support within the combat zone, casualty evacuation, and air evacuation requirements. Includes Medical Homeland Security Requirements.

Assumptions:

Medical posture will parallel 20 year force structure plan and wartime operational planning scenarios

Deployable Force Sizing will play a significant part in the development of military value and the scoring of scenarios. This workgroups has no requirement for a capacity data call.

4. Medical and Dental Research, Development and Acquisition

Definition of the Function:

This function includes all aspects of research, from basic research to advanced demonstration, required to provide a continuous stream of transformational capabilities and systems to sustain and optimize the health and performance of war fighters. The Medical and Dental Research, Development and Acquisition Workgroup will review the DoD's ability to sustain those capabilities that are required to effectively discover, develop, acquire and field medical solutions to evolving war fighter needs. Attainment of these capabilities is dependent on coupling the requisite medical, regulatory (FDA licensure) and scientific/technical expertise with a physical infrastructure that facilitates innovation and productivity.

Assumptions:

There will be a continued future military requirement for medical and dental research, development and acquisition that will not be met by the private sector or other government agencies (National Institutes of Health, Department of Veterans Affairs, Centers for Disease Control).

The expeditionary nature of future military operations will require an effective medical/dental RDA infrastructure as a platform from which urgent solutions to exigent military and Homeland Defense problems can be provided.

Sub-functions, Attributes, and Metrics:

The capacity analysis is focused on:

- Identifying the inventory of facilities currently performing medical and dental RDA functions,
- Identifying the throughput capacity (i.e., maximum potential capacity) of these facilities and the percent of this capacity that is currently being utilized, and
- Identifying any excess (i.e., surge) capacity.

Capacity will be assessed in terms of three attributes that have been identified. The first attribute, Mission, identifies those technical aspects of the RDA mission that each activity is currently addressing or is capable of addressing, and defines the inventory of facilities currently performing medical and dental RDA functions. The second attribute, Workload, quantifies the number of personnel and funding available at each activity to perform the mission, as well as the number of personnel who could be accommodated within existing facilities. The third attribute, Physical Plant, quantifies the extent and type of facilities available to perform the work, and defines their present utilization. As will be described below, the metrics associated with Workload and Physical Plant together define both the throughput capacity of an organization, and the excess capacity of the organization.

4.1 Science and Technology:

Attributes	Metrics
▪ Mission	• Capability domains within mission, supported, or potentially supportable
▪ Workload	• FTEs (current, historical peak, and estimated maximum)
▪ Physical Plant	• Major equipment/facilities (size, number, significant technical characteristics, and utilization) • • Building space (available and used)

4.2 Medical Technology Acquisition

Attributes	Metrics
▪ Mission	• Capability domains within mission, supported, or potentially supportable
▪ Workload	• FTEs (current, historical peak, and estimated maximum)
▪ Physical Plant	• Major equipment/facilities (size, number, significant technical characteristics, and utilization) • • Building space (available and used)

Process to Determine Current Capacity:

Current capacity includes both personnel- and facility-associated attributes as described above, and will be assessed in terms of 13 capability domains that have been defined to cover both the spectrum of RDA activities (i.e., from basic research through procurement) and the technical scope of the medical RDA mission (e.g, infectious diseases, combat casualty care, medical biological defense, enterprise IM/IT systems, etc.). In order to identify those activities that require further consideration, all reporting activities will be asked to qualitatively indicate their current ability or potential to conduct work within any or all of the capability domains that have been defined. Those activities that report a current or potential ability to support a medical/dental RDA capability domain will then need to provide more detailed quantitative data on their personnel and facilities. The capability domain-based approach implicitly recognizes that progress in the RDA area is intimately linked to coupling individuals with highly specific skills with the advanced facilities that are conducive to high quality work. Both the necessary personnel and the facilities may be in limited supply, and so care must be taken to appropriately frame questions so as not to obtain meaningless metrics that overestimate true capacity.

Within the capability domain framework, personnel capacity will be measured as the current workload (in FTEs). Facility capacity will be measured by: the extent and characteristics of specialized and unique facilities (e.g., research simulators, special containment laboratories, etc.); the extent of their utilization (i.e., days used per year); and the square footage of different types of space (i.e., technical, administrative, or other) that are currently being used.

Process for Defining Maximum Potential Capacity.

The determination of maximum potential facility capacity is relatively straightforward, and can be measured as the total available workdays per year for each major item of equipment and the total square footage of the various types of space within the overall facility. The determination of maximum potential personnel capacity is more difficult, and will be measured in two ways. First, the historical peak annual workload over the past decade will be determined to provide an estimate of the number of individuals that can be supported within each organization. While this method has the advantage of being both quantitative and readily auditable, its accuracy rests on assumptions that are not necessarily true. In particular, it must be noted that facilities change over time -- organizations move to new buildings, space is reconfigured or turned in, and other changes may occur that must be reckoned with in any comparison of workloads from one year to another. The subpanel recognizes this problem and is seeking to limit data to those years when the configuration of the facilities during both the peak year and the current year are substantially the same. However, to the extent that organizations have undergone major facility changes within the past 5 years, the historical database may not provide a representative sample from which a true peak can be identified. Moreover, a total count of workyears ignores the fact that different types of work require different levels and mixes of personnel, and different quantities and types of space for optimum productivity. Some investigators may require little more than an office, while others may require large labs with several technicians, factors that can't be captured by simply counting workyears.

To overcome some of these limitations, a second, more subjective approach to determining maximum personnel capacity is being pursued, in which the local activity commander/director will be given the opportunity to provide his or her expert assessment of the organization's maximum capacity within the current "as is" facilities. The advantage of this approach is that the local commander or director is best situated to integrate across the numerous people- and physical plant-related considerations. The critical issue in this case is whether such an estimate can be derived from certifiable data sources.

Methodology for Assessing Surge Capacity

Excess (i.e., surge) facility capability will be measured as the difference between the total available and currently used workdays per year for each major item of equipment and as the difference between the total and currently used square footage of the various types of space within the overall facility. Surge personnel capacity will be measured as either (1) the difference between the historical peak workload and the current workload, or (2) the difference between the local commander/director's estimate

of maximum personnel capacity and the current workload. The choice of methods to be used for determination of personnel surge capacity will be made on a case-by-case basis, using supplemental confidence ratings provided by respondents to subjectively assess the credibility and audit-ability of estimated capacity. Major discrepancies between results obtained via different methods will need to be resolved through subsequent scenario data calls.

5. Medical and Dental Infrastructure.

Definition of the Function:

The facilities and infrastructure supporting the military healthcare system: including capital equipment, information technology, and contracting infrastructure

Sub-functions, Attributes, and Metrics:

5.1 Investment Equipment Management Sub-function

Assumptions:

- Capacity assessment will include:
  - DoD MTFs
  - Guard & Reserve clinics and processing stations
- Like equipment considered equal in quality (output) and capability.
- Equipment listed by leased/rented and purchased.
- Sufficient personnel are available to meet mission requirements: Normal, extended and surge.
- >$250K acquisition cost
- Includes fixed equipment that requires facilities collaboration, planning, and modifications.

Attribute	Metrics
▪ Installed base ▪ Utilization	▪ Investment Equipment inventory ▪ Procedure codes

Process to Determine Current Capacity: Current capacity is the current throughput experienced.

Process for Defining Maximum Potential Capacity: Maximum/Surge capacity will be determined as the published throughput for a particular item of equipment.

5.2 Military Construction and Facility Management Sub-function:

Assumptions:

- The critical pacing items for the clinical infrastructure includes:
  - Exam Rooms (primary care and dental)
  - Operating and intensive care rooms
  - Labor rooms
  - Inpatient beds
- For the purposes of capacity, sub-specialty care infrastructure is considered to be not a limiting factor. Rather primary care (medical and dental), surgery, and obstetrics generally push infrastructure capacity limits.
- Surge capacity focused on inpatient beds and operating/delivery rooms including 24/7 operations for surge capacity.
- Guard and Reserve clinics will be surveyed in addition to active-duty medical treatment facilities (MTFs).

- DoD leased facilities will be included in the analysis.
- Assessment will include clinical and non-clinical (educational, research, and admin facilities)

Attributes	Metrics
Physical Plant	Facility description
Scope of Services	Scope Listing
Inpatient Capacity	Inpatient Beds
Outpatient capacity	Exam Rooms
Surgical Capacity	Operating/Delivery Rooms
Dental Capacity	Dental Treatment Rooms
Available Clinical spaces	List of unused spaces by type

Process to Determine Current Capacity: Capacity of the current facility will be determined by the current through put experienced in a DoD facility, compared with established national norms.

Process for Defining Maximum/Surge Potential Capacity: Determined as the nationally established maximum throughput for facility layout (floor space, room counts, equipment types, etc.).

SECTION 3. ISSUES IMPACTING ANALYSIS

The Medical JCSG has been able to resolve all but two issues during the course of its effort to develop the capacity analysis approach. It is the view of the JCSG membership that these issues rise to the level of importance requiring direction from the Infrastructure Steering Group.

1. Interaction with two Joint Cross-Service Groups with jurisdiction over two functions related to medical/dental activities

The July 16, 2003, memorandum from the ISG Chairman provided the Secretary's approval of functions that the Medical JCSG must address within the BRAC process. This memorandum included two modifications to our original report (dated March 31, 2003). The Medical/Dental aspects of the Human Systems Research function were

placed under the Technical Joint Cross-Service Group (TJCSG) and the Class VIII Supply Management function was placed under the Supply & Storage Joint Cross-Service Group (S&SJCSG). The MJCSG was to provide support to these groups as these functions are reviewed

Because the two functions that were transferred out of the MJCSG are integral to the medical community, we are concerned that the review of these functions by the respective JCSGs has not been addressed. The MJCSG Chair has discussed this issue with (the Chairs of both groups, Chair of the S&SJCSG, other?) to determine what help can be provided to ensure these functions are appropriately reviewed in BRAC. If these functions do not receive adequate review within BRAC, the integration of the capacity and military value analysis could constrain review of other medical functions that result from functional relationships.

The MJCSG believes there are three options available to resolve this issue. The functions can remain with the respective JCSGs as outlined in the July 16, 2003, memorandum. This would require the MJCSG to continue dialog with the JCSG Chairs and reduce the pace our ongoing work to match that of the other two JCSGs.

The second option would is to assign the lead role for the Human Systems Research function to the representative of the MJCSG on the Technical Joint Cross-Service Group's working group dealing with that function and assign the lead role for the Class VIII Supply Management function to the representative of the MJCSG on the Supply & Storage Joint Cross-Service Group's working group dealing with that function. The benefits of this option are that the respective JCSGs remain in control of the functions assigned in the July 16th memorandum and ensure full coordination/collaboration by the MJCSG. A memorandum of understanding can be put in place between the parties involved to document the appropriate scope and process necessary to conduct the review of these functions.

The final options would be to reassign these functions back into the MJCSG as proposed in the March 31, 2003, report to the ISG. This option would reverse the Secretary's subsequent decision and may need to be forwarded to him for approval.

2. Need for Additional Staff to Support BRAC Analyses

Over the last six months, the MJCSG has assessed its use of resources to develop the functions for cross-service review and the development of the capacity analysis approach leading up to this report. Our JCSG has used 84 military, 12 DoD civilians, and 2 contractors, all of which were part-time help, to get us where we are today. Looking out over the next year, the analysis necessary to accomplish all aspects of the BRAC process

will involve dedicated versus part-time support. Our estimate of the resources needed to meet the Secretary's expectations for a comprehensive cross-service analysis indicates the need for a dedicated staff of 22 analysts and administrative staff to cover the five working groups. Assuming these analysts are full-time contractors, the cost associated with bringing these resources on line is about $2.7 million in FY 04. The MJCSG has identified these requirements to the OSD BRAC office. The fact that these cost are unprogrammed makes them difficult to address from within the Service medical programs. Additionally, to provide other support for these individuals, such as administrative, travel, and per diem, an additional $560,000 will be required. If government personnel are assigned on a permanent basis, instead of contractor support, the funding requirement will decrease accordingly. However, this would not reduce the support requirement.

Understandably, if the funding or manpower requested is not are not requested, the MJCSG will continue its effort in the same manner as it has done over the last six months. However, by relying on approximately 100 part-time personnel to accomplish the complex analysis over the next year, there will be an increasing risk of error that could jeopardize BRAC recommendations that a consistent, committed staff can provide through continuity.

APPENDIX. CAPACITY QUESTIONS.

Industrial Joint Cross Service Group

Capacity Analysis Report

Section 1: Introduction

The Industrial Joint Cross Service Group (IJCSG) is tasked with analyzing the industrial functions performed by the Department of Defense in order to conduct a capacity analysis for use in the BRAC 2005 process. The functions and subordinate functions that fall under the IJCSG purview are:

- Maintenance (Depot and Intermediate Levels)
    - Training Aircraft
    - Fighter/Bomber
    - Utility/Airlift
    - Rotary Wing
    - Ground Vehicle
    - Support Equipment
    - Electronics
    - Engines
    - Maintenance Combat Field Support
- Ammunition and Armament (Industrial Base for Manufacturing, Production) Maintenance, Storage and Demilitarization
    - Small/Medium Ammunition
    - Large Ammunition
    - Propellants and Explosives
    - All Metal Parts
    - Nuclear, Biological and Chemical Weapons
    - Directed Energy Weapons
- Shipyards Overhaul and Repair
    - Aircraft Carriers and other Large Deck Ships
    - Submarines,
    - Other Surface Ships and Craft, combatant and noncombatant.

There are four specific IJCSG proposed refinements to the functions cited above:

- Include Government Owned Contractor Operated (GOCO) maintenance activities in the analysis.

Rationale: Some of these GOCOs can provide the full range of maintenance capabilities to include both depot and field support and therefore need to be considered during BRAC 2005 to provide a meaningful analysis.

- Delete Nuclear, Biological, and Chemical weapons from analysis
  Rationale: Under the terms of international treaties, biological weapons do not exist. The Department is in the midst of a well publicized effort to destroy existing chemical weapons. Special weapons requirements follow force structure and are Service specific as well as Department of Energy-managed.
- Change Ammunition to Munitions to address all ordnance.
  Rationale: To ensure thorough review, including, Conventional Ammunition, Missiles, Torpedoes, Naval Surface Mines, etc.
- Change the function name of Shipyards Overhaul and Repair to "Ship Overhaul and Repair."
  Rationale: The scope of this function should include depot-level ship overhaul, repair, and nuclear refueling, and intermediate-level maintenance and repair.

Three sub-groups have been established based upon the three main functions to be analyzed by the IJCSG. Each of the subgroups is headed by a principal member of the IJSCG, who is also a subject matter expert. Each of those subgroups, in turn, are composed of members from each Service and supported, as necessary, by contract personnel.

The Industrial Joint Cross Service Group has the following organizational structure:

The IJCSG funding requirements identified to date should be considered as preliminary and additional resources may be required as the IJCSG develops its analysis procedures and processes. At this time, $2.05M in required support has been identified. The Munitions and Armaments subgroup has issued a request, through the Army chain, for $900K for contractor support. The Ship Overhaul and Repair subgroup estimates their funding requirement through May of 2005 at $1.15M. This figure breaks down as follows:

Civilian (accelerated salaries):	$680K
Contractor support:	300K
Travel:	50K
Office space and misc:	120K
Total:	$1.15M

The Maintenance subgroup has not identified any additional funding requirements to date. They do anticipate that there may be a requirement for contractor support however, during the data collection and analysis phases.

Section 2: Approach to Capacity Analysis

The disparate nature of the functions being analyzed by the IJCSG does not lend itself to a "one size fits all" analytic approach. The throughput of a manufacturing entity is viewed and measured very differently than that of a maintenance facility, and ship repair offers yet another set of unique functions. There are some overlaps, of course, but in order to conduct meaningful industrial capacity analyses, ammunition and armaments, maintenance and ship repair are best initially analyzed as discrete functions.

The three subgroups have been working to develop definitions in order to avoid seams and overlap during the analysis process. For the most part, the BRAC 95 definition of terms developed by the Maintenance Joint Cross Service Group was used as a baseline. Those definitions were adapted to meet the requirements of the individual subgroups and the IJCSG (Attachment 1).

With one exception, the following common definition for maximum capacity was adopted for use by the IJCSG:

The maximum workload that could be performed assuming:

(a) No additional major Military Construction to that already funded through the FY 04 Appropriations Act

(b) Capacity measured on a 40 hour workweek baseline

(c) Skilled workforce is available

(d) Support equipment/workstations comes with transferred workload

(e) Existing work continues to be preformed

(f) Under utilized facilities/space can only be counted once for an optimal work mix

The processes differences between manufacturing and maintenance functions required a slight variation on the maximum capacity definition for munitions manufacturing. For those functions, the following definition will apply:

> Maximum Capacity: Using current capacity as a baseline, maximum capacity is the total monthly output attainable running a 1-8-5 shift basis, with full utilization of ALL LINES or workstations, active and inactive. Maximum capacity INCLUDES hiring skilled labor and reactivation of inactive lines, but EXCLUDES facility expansion. The capacity considers current product mix of items being produced and CANNOT EXCEED the maximum capacity of a 40 hour workweek.

Munitions and Armaments

The following are the assumptions being utilized to develop the attributes and metrics:

- Everything is on the table
- The subgroup will look at ammunition and armaments in totality
- Large ammunition and armaments includes missiles
- The analysis will look at reduction, relocation, and rationalization

The attributes that best depict the physical and operational characteristics of the armament and ammunition function and the metrics that that will be used to measure the capacity of those attributes can be arrayed as follows:

Metrics	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Universal Munitions & Armaments Attributes															
Production Capacity	x	x		x		x	x	x	x		x	x	x		
Demilitarization Capacity	x	x		x		x	x	x	x		x	x			
Renovation/Rework/Surveillance	x	x		x		x	x	x	x		x	x	x		
Explosive and Inert Storage	x	x	x	x			x		x		x				x
Enterprise Architecture				x									x		
Infrastructure Condition/Readiness			x	x		x									
Environmental														x	x
Safety (Expl., Env., Occup.)		x												x	x
Specialized Capabilities					x					x	x	x			
Deployment Network	x		x	x			x	x	x		x				
Manufacturing flexibility	x				x	x									

Propellants & Explosives Unique Availability of Natural Resources					x										

Munitions and Armaments Metrics	**Unit of Measure**
1. Square footage and acreage	Self-explanatory
2. Number of safety waivers	Self-explanatory
3. Outloading capability	Tons/Day
4. Age of facility	Self-explanatory
5. Number and types of commodities produced/renovated/reworked	Self-explanatory
6. Equipment uptime	Percentage of available time
7. Available vs utilized space	Raw space and/or percentages
8. Maximum vs current throughput capability	Units(each/pounds for P&E)/Timeframe(day, week, mo
9. Explosive vs inert storage capability	Sq. footage
10. Percentage of workforce with specialized skills	Raw #s / percentage
11. Joint customer mission supported	Self-explanatory
12. Military unique processes	# of processes for which there is no other capability
13. Industrial manufacturing certification levels	Self-explanatory
14. Buildable acreage	Amount of buildable acreage within installation bounda
15. Encroachment	Amount of buildable acreage outside installation boundaries (account for QD arcs)

The subgroup will use the following standards to determine current and maximum capacity:

- Deployment network and distribution analysis
- DoD 4151.18H Depot Maintenance Capacity and Utilization Measurement Handbook
- NAVSEA Infrastructure Analysis model
- DoD 5000.60 Defense Industrial Capabilities Assessments
- DoD 5000.60-H Assessing Defense Industrial Capabilities

There are no over-arching DoD wide surge requirements for munitions and armaments. This is a function of the individual Services. Using current capacity as the baseline and maximum capacity as the most that a facility can produce, surge becomes a factor of the two and is driven by requirements. Known surge requirements are as follows:

- Marine Corps: Ammunitions requirements are based on a Total Munitions Requirements (TMR). When there is a contingency, an OPLAN from the war fighters augment or update the plan to what is needed to support a war.
- Navy: Does not have written, doctrinal guidance on which to base surge requirement.

- Air Force: Does not have a source for surge requirements
- Army: Ammunitions requirement are based on a budget document called a P-20. Includes requirements to maintain and replenish ammunition. During a contingency, an OPLAN from the war fighters augment or updates the plan to what is needed. Scenarios are run to determine what to buy to support a war.

Maintenance

The Maintenance subgroup will address the maintenance function from both depot maintenance and combat field support (intermediate-level maintenance). The attributes of these functions will be further categorized into commodity groups. The commodity groups are based on the DoD work breakdown structure already used to report the Services' depot maintenance capabilities in various forums. These commodity groups depict the physical and operational characteristics of both depot maintenance and combat field support maintenance activities and are listed below:

Aircraft	Airframes	
		Rotary
		VSTOL
		Cargo/Tanker
		Fighter/Attack
		Bomber
		Aircraft - Other
Aircraft	Components	
		Dynamic Components
		Hydraulic
		Pneumatic
		Instruments
		Landing Gear
		Aviation Ordnance
		Avionics/Electronics
		Structures
Aircraft	Engines	
	Engine Exchangeable/Components	
	APU/GTE/ATS/SPS/GTC	
Ground Vehicles	Combat Vehicles	
	Amphibious Vehicles	
	Tactical (wheeled) Vehicles	
	Construction Equipment	

Material Handling
Engines/Transmissions
Powertrain Components
Starters/Alternators/Generators
Armament and Structures
Fire Control Systems and Components

Communications/Electronic Equipment

Radar
Radio
Wire
Electronic Warfare
Navigational Aids
Electro-Optics/Night Vision
Crypto
Computers

Support Equipment

GSE
Generators
TMDE
Calibration

Ordnance, Weapons, & Missiles (Non-explosive components)

Conventional Weapons
Small Arms/Personal Weapons
Strategic Missiles
Tactical Missiles

Software

Weapon System
Support Equipment

Fabrication/Manufacturing

Industrial Plant Equipment

Depot Fleet/Field Support

There are several major metrics that will be applied initially against the attributes to develop the depot capacity analysis: Total Capacity, Required Capacity, Maximum Capacity, and Workload. These initial metrics will be further refined, as necessary, to describe how the capacity analysis methodology will be accomplished at each maintenance activity.

Capacity Metrics - Direct Labor Hours

- Total Capacity Index
- Required Capacity Index
- Maximum Capacity

Workload Metrics – Direct Labor Hours

- Total
- Core
- Directed
- Last source
- Etc.

The physical capacity metric is derived from DoD Depot Maintenance Capacity and Utilization Measurement Handbook, DoDD 4151.18H. This handbook measures capacity in terms such as the total capacity index, and the required capacity index. The maximum capacity construct adopted by the working group is the extent to which operations, by commodity group, could be expanded for a maintenance activity based on the current and future planned workload mixes assuming:

(a) No additional major Military Construction to that already funded through the FY04 Appropriations Act

(b) Capacity measured on a 40 hour workweek baseline

(c) Skilled workforce is available

(d) Support equipment/workstations comes with transferred workload

(e) Existing work continues to be performed

(f) Under utilized facilities/space can only be counted once for an optimal work mix

For each maintenance activity, the workload metric will consider the total workload being accomplished, the amount of workload needed to preserve a surge capability (i.e., the ability to preserve wartime capability requirements), and workload directed by Foreign Military Sales and State Department agreements.

The JCS scenarios for wartime/contingency will be the basis for the wartime requirement. The surge requirement is based on the ability to go from peacetime to wartime operations. The peacetime operations are based on a 40-hour workweek while the wartime operations are based on a 60-hour workweek (no additional augmentation: facilities, equipment, and personnel). The surge requirement is the delta between peacetime and wartime capability requirements.

Combat Field Support (Intermediate-Level Maintenance)

To ensure critical deployable combat field and Intermediate level maintenance capabilities are maintained, the only combat field support/intermediate maintenance activities that will be considered contain: non-deployable maintenance personnel and non-deployable equipment that reside in fixed infrastructure. Combat field support has several major metrics that will be applied initially against the attributes to develop the capacity analysis: physical capacity, workload, manpower, and the relations to support combat deployable organizations. These initial metrics will be further refined, as necessary, to describe how the capacity analysis methodology will be accomplished at each maintenance activity.

The Physical capacity is based on the actual facilities available to perform maintenance work for each of the various commodity groups. Workload is the amount of maintenance and repair work being accomplished by these non-deployable organizations. This includes the all work being provided for other activities not assigned to these organizations. Since these organizations have manpower consisting of military, civilian, and contractors therefore, total manpower will be considered. To ensure timely support to the deployable forces the locations of critical maintenance and repair support capacity will be ascertained.

Ship Overhaul and Repair

For the capacity analysis, the Ship Overhaul and Repair function is divided by ship type attributes and principal characteristics. The ship types chosen are based on the standard DoD work breakdown structure: Aircraft Carriers and other Large Deck Ships, Submarines, and Other Surface Ships and Craft, combatant and noncombatant. Since the Navy also employs Moored Training Ships and land-based sites in support of nuclear propulsion testing and training,

and since the nuclear-capable shipyards support these sites, they are also included within this scope.

The principal installation characteristics to be measured are skilled workforce, facilities and support equipment. These three characteristics will be further broken down by ship maintenance skilled manpower elements such as structural, mechanical, electrical, nuclear refueling, combat systems and launchers. Facilities will include dry docks, rail access, piers, large fixed and portal cranes, forges, foundries, etc. Support equipment will include large machines in shops, special tools, etc. This capacity methodology does not address shipboard equipment, which is sent to remote public or private installations for maintenance and repair, such as special electronic equipment.

The metrics will be selected from the eight notional metrics approved by the Principal Deputy Under Secretary of Defense (Acquisition, Technology and Logistics) in the March 31, 2003 Industrial JCSG Report. These are:

- Asset Utilization
- Availability (Operational and Geographic)
- Responsiveness and Flexibility
- Number of Joint Industrial Enterprises established
- Capacity, Workload and Capabilities
- Facilities and Equipment
- Costs (to include environmental aspects)
- Mission Expertise and Workforce Expertise

The following matrices depict how this analysis will be conducted. The cells will be populated with the appropriate data based upon the selected metrics; not all matrix cells will be populated with data.

Platform	O/H, Maintenance, Repair & Fleet Support Element														
	Structural	Mechanical (Examples Below)								Electrical	Combat Control	Guns & Launchers	Radar, EW & Elex	…	Other Systems
		Valves		Pumps		Piping		Other							
		Nuc	Non-Nuc	Nuc	Non-Nuc	Nuc	Non-Nuc	Nuc	Non-Nuc						
Large Deck															
CVN/CV															
LHA/LHD															
⋮															
Submarine															
SSN															
688/688I															
⋮															
SSBN															
SSGN															
MTS															
Other Surface															
CG/DDG															
⋮															
Amphibs															
Non-Combatant															
Land-Based Facilities															
⋮															

Equipment Capabilities	O/H, Maintenance, Repair & Fleet Support Facilities														
	Dry Docks	Shops								Nuclear Support Facilities	Piers / Moorage Space	Engineerng Spaces	Lay-down Space	…	Other
		Electrical	Ship Fitting	Machine	Pipe Fitting	Foundry	. . . . .	Periscopes	Calibration						
Lilfting Capability															
Portal Cranes															
Fixed Cranes															
Mobile Cranes															
Rail Access															
Environmental Permits															
Non-Nuclear															
Nuclear															
Heavy Industrial Capability															
Light Industrial Capabnility															
Product Testing															
⋮															
Other															

The Ship Overhaul and Repair subgroup data calls will address the installations which perform this function. However, as part of seeking joint solutions (such as back-shop cross service

utilization) later in the BRAC process, the capacity analysis will need to include the data received from other DoD installations.

Contrary to the BRAC 95 definition, shipyards are effectively limited in maximum potential capacity by skilled manpower. In today's world there is no readily available pool of manpower with the sophisticated skills required to perform controlling-path work on nuclear-powered warships. It requires up to eight years training, and qualifying some of these craftsmen, which is similar to the time required to build a nuclear-powered aircraft carrier-capable dry dock. Therefore, this subgroup strongly considers that a realistic and defendable capacity analysis must treat skilled manpower similarly to MILCON-funded facilities, recognizing the restraints that depots now face accommodating changing work-load demands. A related restriction in workstation optimization is submarine space restriction, which limits the amount of coincident work that can be performed.

The process for determining capacity will be based on DoD 4151.18-H, Depot Maintenance Capacity and Utilization Measurement Handbook, dated January 24, 1997, as subsequently modified on September 30, 1999 and October 4, 2001.

The definition of the Navy's ship maintenance surge requirement is contained in the Fleet Readiness Plan. Surge is related to reserve capacity; however, in the case of shipyards, because they are normally loaded to their maximum single-shift capacity (to ensure efficiency), surge capability is normally limited to the use of overtime and delaying previously planned work. Data questions will be developed to address this current situation, such as, "For controlling path skilled work, how long does it take to substantially increase skilled manpower to provide surge?" Some of the above data will addressed during the Military Value development phase.

Section 3: Data Questions

Each of the subgroups developed data call questions in order to develop sufficient data to perform a capacity analysis. The questions are designed to capture information on where functions are being performed, how much workload is being accomplished and its relationship to existing and maximum capacity. The data call questions are attached and are identified by subgroup.

Section 4: Issues Impacting Analysis

Each of the subgroups has identified two specific sections of title 10 United States Code as potentially having significant impact on BRAC analysis; title 10 USC §2464 (commonly referred to as the "Core Law") and 10 USC §2466 (commonly referred to as the "50/50 Law"). Each of these sections impact the demand, or requirement side of capacity and potentially impacts our determination of potential available capacity.

Title 10 USC §2464 requires that DoD maintain a core logistics capability that is Government-owned and Government-operated (including Government personnel and Government-owned and Government-operated, equipment, and facilities) to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements.

10 USC §2466 requires that not more than 50 percent of the funds made available in a fiscal year to a military department or a Defense Agency for depot-level maintenance and repair workload may be used to contract for the performance by non-Federal Government personnel of such workload for the Military Department or the Defense Agency. Any such funds that are not used for such a contract shall be used for the performance of depot-level maintenance and repair workload by employees of the Department of Defense. The Secretary of Defense may waive the limitation for a fiscal year for reasons of national security. In this case the Secretary must submit a notification to Congress with the reasons for a waiver. Also, the Secretary may not delegate the authority for a waiver.

It is recognized that there are other statutes that may impact this process in later phases and they will be addressed at the appropriate time.

Attachments:

1. Working Definitions
2. Standard Data Call for Industrial Joint Cross Service Group, Munitions and Armaments Subgroup Capacity Questions
3. Standard Data Call for Industrial Joint Cross Service Group, Maintenance Subgroup Capacity Questions
4. Standard Data Call for Industrial Joint Cross Service Group, Ship Overhaul and Repair Subgroup Capacity Questions