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# CLOSE HOLD

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Material contained herein is sensitive. Deputy Secretary of Defense guidance restricts the release of data or analysis pertaining to evaluation of military bases for closure or realignment until the Secretary of Defense forwards recommendations to the Base Closure Commission on March 1, 1995. All individuals handling this information should take steps to protect the material herein from disclosure.

## BRAC 95 Joint Cross-Service Group on Test & Evaluation

### VOLUME 3

Office of the Deputy Assistant Secretary of Defense  
(Economic Reinvestment and Base Realignment and Closure)

Base Closure and Utilization  
Room 3D814  
(703) 697-8048/8050

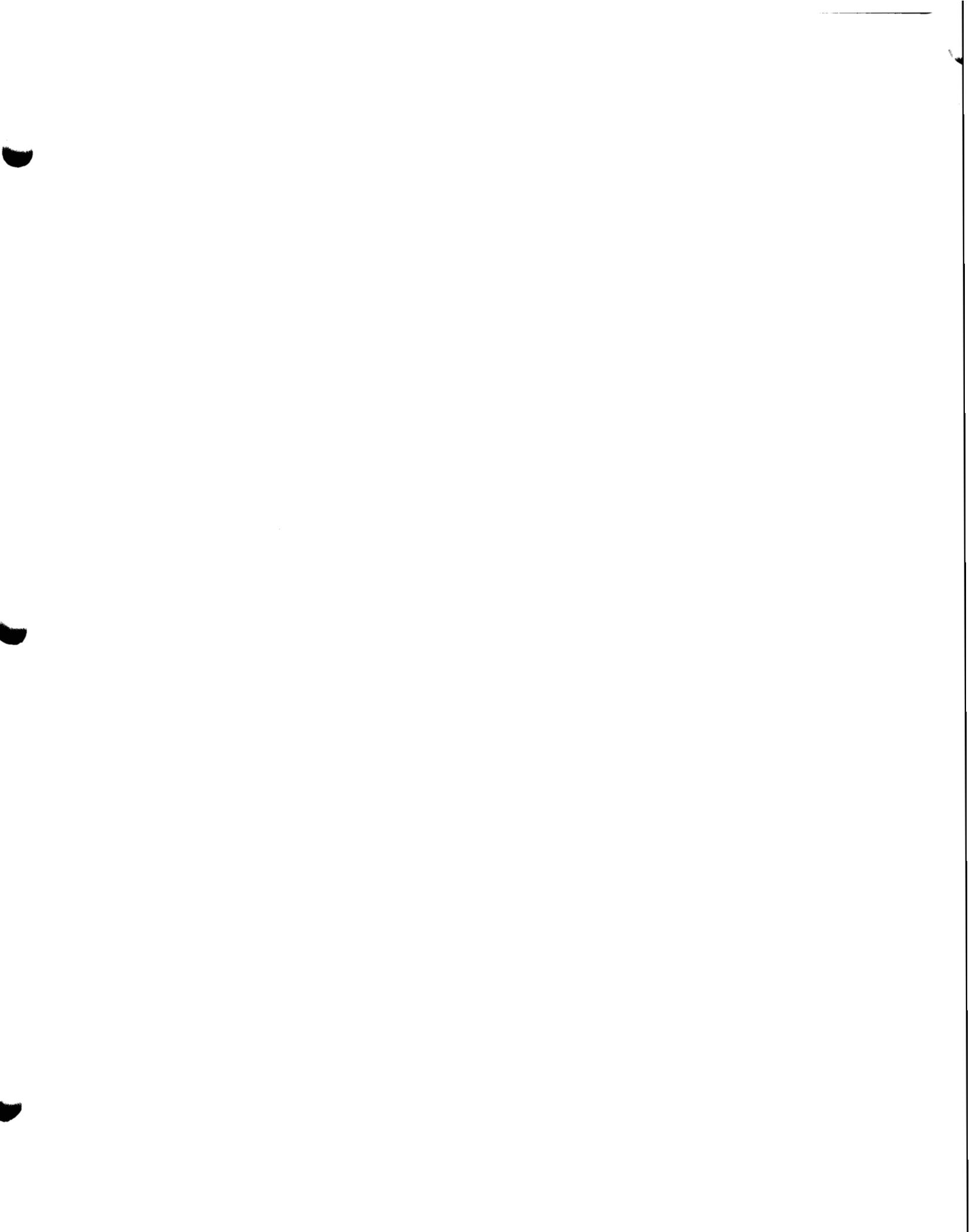
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# CLOSE HOLD

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**BRAC 95**  
**JOINT CROSS-SERVICE GROUP**  
**ON TEST & EVALUATION**  
**VOLUME 3**

- A Meeting Minutes - Aug 2, 1994**
- B Meeting Minutes - Aug 26, 1994**
- C Meeting Minutes - Sep 8, 1994**
- D Meeting Minutes - Sep 15, 1994**
- E Meeting Minutes - Sep 27, 1994**
- F Meeting Minutes - Oct 3, 1994**
- G Meeting Minutes - Oct 11, 1994**
- H Meeting Minutes - Oct 18, 1994**
- I Meeting Minutes - Oct 28, 1994**
- J Meeting Minutes - Nov 1, 1994**
- K Meeting Minutes - Nov 2, 1994**
- L Meeting Minutes - Nov 4, 1994**



## BRAC 95

### Joint Cross-Service Group on Test & Evaluation

Tuesday, August 2, 1994

#### Minutes

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 0900. Mr. John Burt and Mr. Nicholas Toomer chaired the meeting. The agenda, a list of attendees, and handouts are attached.

The meeting began with a back brief on the July 28 Steering Group meeting. Two issues relevant to the T&E JCSG had to do with creating policy imperatives for running the optimization model and the use of programmed facility upgrades in the capacity analysis. Before receiving access to certified data, the co-chairs are to provide Mr. Bayer, DASD(ER&BRAC), with information on these two issues. The final topic of the Steering Group back brief concerned capacity reduction targets. The Labs and UPT JCSGs stated they this was too difficult to accomplish. The co-chairs then asked about the T&E capacity reduction target. The current wording from the draft analysis plan (Attachment 1 of Appendix C) states that the proposed target is to "reduce all excess capacity...." The Group felt this wording to strict in absolute terms therefore the Group agreed to change the wording to "minimize ~~all~~ excess capacity..." JMB p.T.

#### Policy Imperatives

The next discussion turned to the proposed policy imperatives submitted by the subgroup. After a review of all policy imperatives, the Group approved them with the following changes:

- First policy imperative: Replace the word "critical" with "irreplaceable."
- Second policy imperative: Replace "maintain" with "retain" and delete "and to mitigate risk."
- Third policy imperative: Add the word "capabilities, where cost effective," after consolidation and delete "where cost effective" from the end of the sentence..
- Fourth policy imperative: Replace the words "sites that ensure" with "the" and add "to preserve the test process" at the end of the sentence.
- Fifth policy imperative: Delete the word "dedicated", add "agencies" after OT and add the word "dedicated" before the word "training."
- Sixth policy imperative: Replace the words "activities/sites" with "facilities/capabilities".

The Chairs asked the subgroup to draft rationale for each of the policy imperatives by the end of the day so the Group can forward the changes to Mr. Bayer on August 3rd.

## Policy Letter and Management Control Plan Comments

The subgroup then briefed proposed comments back to the Steering Group Chairman on the Joint Cross-Service Function Analysis and Recommendation Process memorandum and Management Control Plan. The Group agreed to these changes and stated they will forward these comments once the Chairs sign the cover letter.

### Optimization Runs

Discussion arose on the status of the notional data optimization runs. There was discussion that centered on throughput problems at CNA with completing optimization runs in a timely manner. There were concerns that with no documentation on who physically makes up the Tri-Department BRAC Group, where the Tri-Department BRAC Group is physically located or what will happen if only one modeler is available when multiple optimization runs are required. Discussion turned to the use of the optimization model purchased by T&E to support the Group. The subgroup's understanding from a previous meeting was that they could not use this model per a Group agreement. The Chairs stated that no decision was ever made that prevented the subgroup from running notional data on the T&E purchased software, however, once the subgroup receives certified data from the Military Departments they can not use the optimization model--the Tri-Department BRAC Group will run the optimization model with "real" data at CNA.

The subgroup then provided results of their notional data runs on the optimization runs. The subgroup stated they had one more run awaiting at CNA and expected it out later in the week.

Discussion ensued on long range theater missile defense and cruise missiles. The focus of this discussion was whether the Group should request additional data now or a later date. The Group agreed that since these two items will be addressed in the operational feasibility stage that we should concentrate on excess capacity and functional value calculations now. However, the subgroup should begin drafting questions they will need to answer operational requirements for these two test areas.

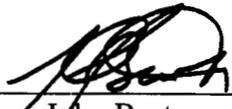
The subgroup stated they completed a master list (not handed out) for the T&E JCSG access to the TEC Facility. It will be signed out by the Chairs to all members later this week.

The subgroup then briefed two issues for the Group's determination. The first was how to treat programmed realignments, reductions, and consolidations? The Group agreed that all will be treated as BRAC in the costing analysis but not in determining excess capacity. The second

issue was what baseline would be used for cost analysis? The Group reiterated that programmed costs (i.e. upgrades, milcon projects) in the FYDP can be included only for cost analysis using COBRA and not in determining capacity calculations.

There being no other items for discussion, the meeting adjourned at 1045.

Approved:   
Nicholas Toomer  
Acting Co-Chairman

  
John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**August 2, 1994**

**List of Attendees**

Mr. John Burt, Co-Chair  
Mr. Nick Toomer, Acting Co-Chair  
Mr. John Bolino, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Mr. Parker Horner, Air Force  
Mr. Dan Stewart, Air Force  
Mr. Joe Dowden, Air Force  
Capt Michael Wallace, Air Force  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
MAJ Essex Fowlks, Army  
MAJ Jack Marriott, Army  
CAPT Dave Rose, Navy  
Mr. Don DeYoung, Navy  
CDR Mark Samuels, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Irv Boyles, OSD DT&E  
Mr. Joe Moore, OSD DOT&E  
Ms. Kathleen Ruemmele, BMDO  
Mr. Mark Flohr, OSD DNA  
Mr. Dave Vincent, DoD IG  
Ms. Jeanne Karstens, OSD Comptroller

**BRAC 95  
T&E JOINT CROSS-SERVICE GROUP MEETING  
1030, TUESDAY, 2 AUGUST 1994  
CONFERENCE ROOM, 1C730, PENTAGON**

**AGENDA**

- **STEERING GROUP BACK BRIEF**
- **WORKING GROUP STATUS**
  - **POLICY IMPERATIVES**
  - **COMMENTS ON**
    - » **POLICY LETTER**
    - » **MANAGEMENT CONTROL PLAN**
  - **ADDITIONAL OPTIMIZATION RUNS**
  - **PROGRAMMED IMPROVEMENTS IMPACT ON FUNCTIONAL VALUE**
  - **THRESHOLD PROCESS**
  - **FOCUSING CROSS SERVICE ANALYSIS**
  - **MASTER ACCESS LIST**
  - **ISSUES**
  - **APPROVAL TO EXECUTE**

# POLICY IMPERATIVES

- RETAIN CRITICAL AIR/LAND/SEA SPACE
  - AT LEAST ONE SEA RANGE AND AT LEAST ONE LAND RANGE
  - TOPOGRAPHY - MOUNTAINOUS, FORESTED OR JUNGLE, CULTIVATED LOWLAND, AND DESERT
  - CLIMATIC - TROPIC, ARCTIC, AND TEMPERATE
- MAINTAIN BACKUP CAPABILITY TO AVOID SINGLE NODE FAILURE
- REALIGN/CONSOLIDATE INTO EXISTING MRTFB's THAT HAVE OARS, WHERE COST EFFECTIVE
- RETAIN SITES THAT ENSURE CAPABILITY TO SATISFY REQUIREMENTS IN EACH TEST FACILITY CATEGORY FOR EACH FUNCTIONAL AREA
- EXCLUDE DEDICATED OT & TRAINING RANGES
- REMOVE FROM CONSIDERATION IN EACH FUNCTIONAL AREA THOSE ACTIVITIES/SITES THAT
  - ARE SERVICE UNIQUE
  - HAVE 5% OR LESS OF THEIR TOTAL WORKLOAD IN AIR VEHICLE, EC, OR ARMAMENT/WEAPONS T&E

MEMORANDUM FOR CHAIRMAN BRAC 95 STEERING GROUP

SUBJECT: BRAC 95 Draft Policy Memorandum and Management Control Plan

Per your request during the 28 July 1994 BRAC Steering Group meeting, the T&E Joint Cross-Service Group (JCSG) has reviewed the subject documents. While these documents represent a good starting point, they contain a number of errors or mis-statements which must be corrected. Our major concerns are as follows:

- a. The JCSGs are computing functional values for common support functions at the activity level vice solely at the activity level.
- b. The responsibilities of the JCSGs and Tri-Department BRAC Group are incorrectly stated. The JCSGs will compute functional values, capacity, workload requirements, and excess capacity vice the Tri-Department BRAC Group.
- c. The Joint Analysis Process chart incorrectly portrays the roles of the JCSGs and Tri-Department BRAC Group.
- d. The milestone dates do not support timely completion of JCSG efforts nor do they allow sufficient time for JCSG and Military Department consideration of cross-service closure/realignment recommendations.

To facilitate the completion of these documents, we have attached hard and soft copies of revised versions addressing our concerns. In these revised versions, proposed deletions are indicated by strikethroughs of the text while proposed additions are indicated by bold, italicized text. We are prepared to meet with you or your staff to address our comments and to work to complete these documents.

John A. Burt  
Co-Chairman  
T&E Joint Cross-Service Group

Co-Chairman  
T&E Joint Cross-Service Group

Attachments:  
a/s

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
ASSISTANT SECRETARIES OF DEFENSE  
COMPTROLLER  
GENERAL COUNSEL  
INSPECTOR GENERAL  
DIRECTOR, OPERATIONAL TEST AND EVALUATION  
ASSISTANTS TO THE SECRETARY OF DEFENSE  
DIRECTOR, ADMINISTRATION AND MANAGEMENT  
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: BRAC 95 - Joint Cross-Service Function Analysis & Recommendation  
Process

This memorandum describes the process ~~for integrating~~ *regarding* the evaluations of the Joint Cross-Service Groups (JCSGs) ~~into the individual Military Department BRAC evaluation process.~~ It also documents the overall process needed for credible and defensible recommendations involving installations where common support functions (labs, depots, test and evaluation, undergraduate pilot training, and medical facilities) are located. Further guidance and documentation *are* is contained in the attached management control plan.

JCSGs will determine a functional value (*at the activity level*) for each of the ~~activities within their jurisdiction~~ *common support functions being examined in their joint analyses.* These functional values should be independent of the military value of any particular installation. The assessments of functional value will then be ~~incorporated into analyses of possible closure or realignment alternatives, using certified data used by the~~ Joint Cross-Service Groups (which include representatives from the Military Departments), *will use in conjunction with* their own functional expertise and judgment, to develop alternatives for consideration in the BRAC process.

~~To assist them as an analytic tool in this process, the JCSGs will use a linear programming optimization model (documentation attached). The model provides a basis for further JCSG analysis and application of judgment in developing alternatives. A linear programming model (documentation attached) has been developed to provide an analytic tool to assist the JCSGs in this process.~~ While the model has value in assessing the relative merit of functional *generating alternatives for realigning/consolidating* common support activities *functions*, it cannot by itself make recommendations regarding closures or realignment of installations. Those can be made only by the Military

Departments ~~of the BRAC 95 Review Group~~, reflecting judgment by the Review Group, the Military Departments, and the JCSGs concerning ~~the operational and functional value of installations and their appropriate military value based on the final criteria~~ *based on the eight BRAC selection criteria.*

Each JCSG will ~~may~~ be supported in their evaluation by a Joint Cross-Service Working Group (JCSWG), variously referred to as sub-groups, study teams or technical and support groups. These groups are currently in existence and providing support to the JCSGs. JCSGs will adapt the linear programming model *and develop closure/realignment scenarios to be run in the COBRA model, provide guidance for the MILDEP collection of scenario data, and review the inputs to the COBRA model (to include functional COBRA model runs)* and provide inputs to the COBRA model to assist each JCSG in its analyses and aid in developing alternatives. All JCSWGs will be supported by a single Tri-Department BRAC Group consisting of representatives from each Military Department which will execute runs of the linear programming (optimization) and *functional* COBRA models according to the objective functions, *constraints*, and policy imperatives provided by the JCSGs. JCSG outputs can be derived from any number of combinations of objective functions, *constraints*, and policy imperatives. ~~An outcome of the JCSG initial analysis must be functional capacity reduction goals and an unconstrained ranking of activities by functional value. A set of recommended unconstrained relocations/consolidations of activities will also be produced. These JCSG products must then be provided to the Military Departments by September 1, 1994, to give the Military Departments time to accomplish their individual BRAC evaluation processes.~~

The Military Departments will conduct their individual BRAC processes in parallel with the JCSG analyses, to determine their BRAC 95 recommendations. The capacity reduction goals, approved by the Steering Group, and ~~rankings by functional values~~, derived by the JCSGs and provided to the Military Departments *by September 1, 1994*, should *may* be used ~~where and~~ as appropriate to assist in determining installation military value in the individual Military Department BRAC processes. ~~The product of each Military Department's analysis will be a banding of installations which will reflect the relative value of installations within the Military Department. Military Departments will provide these judgments their military values to the JCSGs by October 3, 1994~~ *September 15, 1994*. These products will then be used to produce a *second constrained* set of linear programming (optimization) outputs incorporating installation military values.

The JCSGs will then review these outputs. They will ~~apply their functional expert judgment to compare feasible~~ *assess the operational feasibility* of each alternative and work with the Military Departments to facilitate cross-service actions that will maximize the value of retained and consolidated functions. The JCSGs would then analyze these alternatives to determine the cost and return on investment consequences of each alternative using the COBRA model. This combination of operational and financial screening is intended to help eliminate possible recommendations that while apparently attractive, are unexecutable. This cooperative work by the JCSGs and the Military

Departments should be advanced and completed by ~~the end of~~ *mid*-October, to provide time for Military Departments to formulate their proposals and for the Review Group to consider any issues that may be appropriate.

At the completion of their individual processes, the Military Departments would present their recommendations for closure and realignment to the Department of Defense no later than January 1, 1995.

This process will produce the best intersection between JCSG and Military Department analyses. It permits consideration of possible joint functional solutions to be incorporated with the existing BRAC process of the Military Departments. If you have questions concerning the process, please contact Mr. Robert Bayer, Deputy Assistant Secretary of Defense for Economic Reinvestment and BRAC, 703-697-1771.

Attachments

**BRAC 95 JOINT CROSS-SERVICE GROUP  
MANAGEMENT CONTROL PLAN  
JOINT ANALYTICAL PROCESS**

**I. BACKGROUND**

The exclusive procedures by which the Secretary of Defense (SECDEF) may pursue realignment or closure of military installations inside the United States are contained in Part a, Title XXIX of Public Law 101-510, entitled the Defense Base Closure and Realignment Act of 1990 as amended by Public Law 102-190 and 103-160; hereafter referred to as the Base Closure Act. The Base Closure Act includes a provision for the President to appoint an independent Base Closure and Realignment (BRAC) Commission to review the SECDEF recommendations in calendar years 1991, 1993, and 1995.

The Deputy Secretary of Defense (DepSecDef) memorandum of January 7, 1994 set forth guidance, policy, procedures, authorities and responsibilities for selecting bases for realignment or closure and subsequent submission to the BRAC 1995 Commission. The DepSecDef guidance includes a requirement for the establishment of joint Cross-Service Groups (JCSG) in six areas with significant potential for cross-service impacts in BRAC 95.

Five of these groups are functional in nature and the sixth was established to examine economic impacts. The five functional cross-service groups are Laboratories, Test and Evaluation, Maintenance Depots, Undergraduate Pilot Training, and Medical Treatment Facilities including Graduate Medical Examination.

**II. PURPOSE:**

The primary purpose of this Management Control Plan (MCP) is to provide a set of management controls for the process that the five functional BRAC 95 Joint Cross-Service Groups (and sub working teams), will use to meet the requirements established by the DepSecDef. This MCP, with its associated joint analysis process, provides the necessary checks and balances between the JCSG's and the Military Departments to ensure viable alternatives are fully considered and results are auditable.

**III. RESPONSIBILITIES:**

a. Review Group: The BRAC 95 Review Group is the approving and reviewing authority for BRAC procedures, installation excess capacity reduction targets, JCSG closure and realignment alternatives and making recommendations to the SECDEF.

~~each service will identify whether that area is either a core function for that service and must be retained, a candidate for out-sourcing, a candidate for cross-service consolidation, or an area that could be divested completely. This Service determination will consider other Service or non-DoD requirements. QUESTION: AREN'T THESE NON-BRAC POLICY QUESTIONS? IF SO, SHOULDN'T WE DELETE THIS SECTION?~~

23. Functional Value: ~~Each~~The JCSG will develop measures of merit. These measures will examine the capability of the activity, the needs of the Services, *and* the facility infrastructure required to maintain the activity, ~~[the ability of the industrial base to support this business area], and Cost of Base Realignment Actions Model (COBRA) input values for the cost analysis.~~ The joint group must agree on the weights/importance of these attributes to gain a common basis for comparison across the Department of Defense. These weights and attributes will describe the Functional Value of each activity. ~~The Tri-Department BRAC Group will conduct an initial~~ *Each JCSG will compute* functional value analysis, using the measures of merit and the data (step 56), and provide ~~this analysis to the joint cross-service groups and~~ *these values to the Military Departments and to the Tri-Department BRAC Group for optimization model runs and official archiving.*

34. Capacity and Requirements: *Each* The JCSG will develop the method to calculate capacity and requirements for each cross-service function.

45. JCSG Data Call Guidance: *Questions to collect data to address the* ~~The four preceding requirements, stated above,~~ will be transmitted to the Military Departments as a BRAC data call.

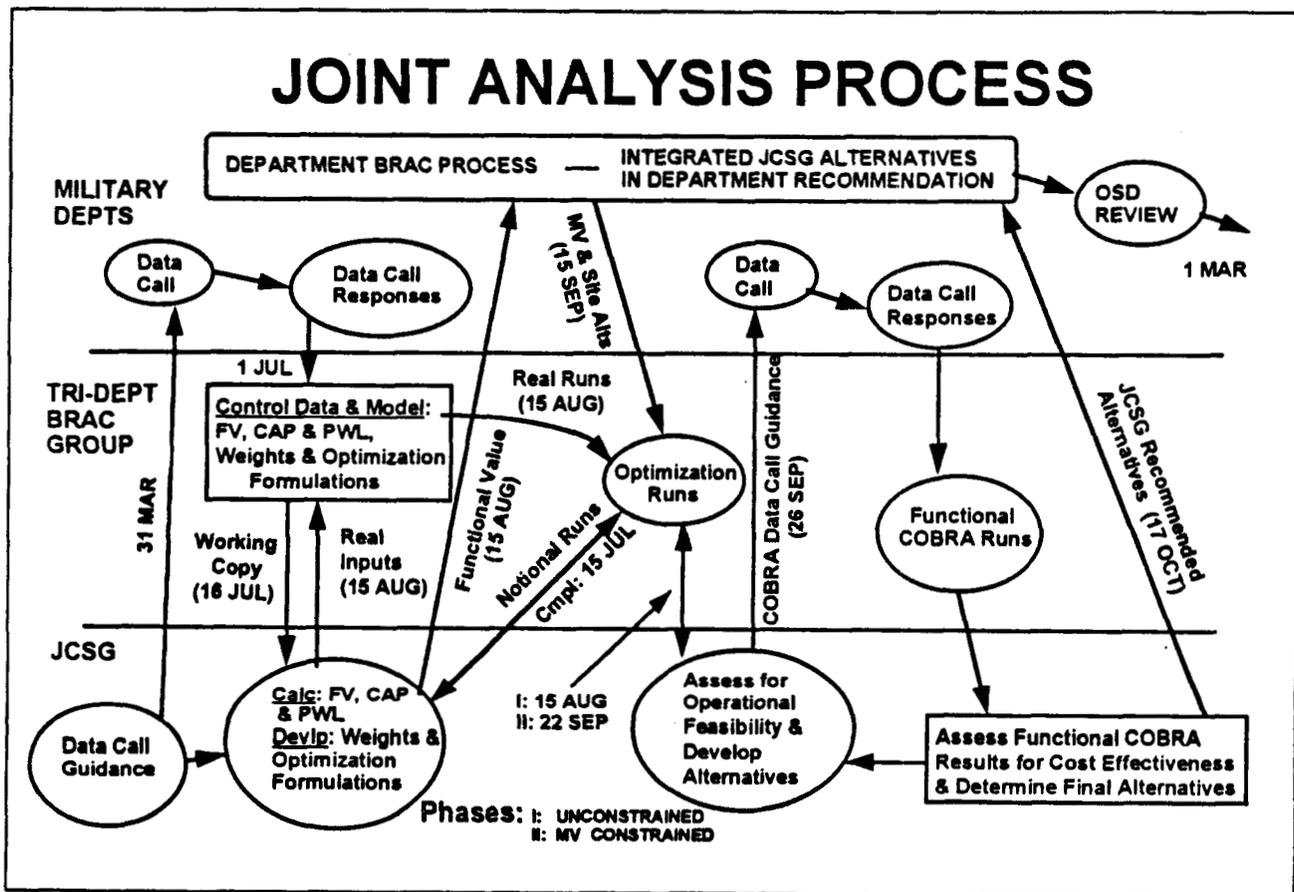
56. Data Call Responses: The Military Departments will collect the data per the JCSG guidance and will forward the data to each group with the appropriate certifications.

67. Excess Capacity Goals: The JCSG will review their data call responses, for each common support functional area, for excess capacity. From this review, the group will develop excess capacity goals for each common support function. In addition, the JCSG will develop the methodology to be used with the linear programming (optimization) model described in step 78. This will include which combination of objective functions, *constraints* and policy imperatives are to be considered initially by the JCSG.

78. Optimization Model: ~~Each JCSG~~ ~~The Tri-Department BRAC Group~~ will produce a family of alternatives by using the jointly approved optimization model (documented separately). ~~The inputs to this model are functional values of activities, military value of sites (installations), excess capacity goals, and requirements that were determined in earlier steps. A family of alternatives and a brief analysis and interpretation of the results, will be turned over to the JCSG for their detailed functional review.~~ This step will be conducted in two phases, unconstrained and constrained. The unconstrained will be conducted to provide the JCSG's with a pure functional view and comparison of *within* their functional area. The second run will be the constrained by site (installation) military value provided by the Military Departments. This family of alternatives

## V. JOINT FUNCTIONAL ANALYSIS PROCESS:

The joint analysis process described *shown* below will be used by the *is provided for each* Joint Cross-Service Group's *adaptation*. The integrity and auditability of the BRAC process will be enhanced by this common analytical framework. The process provides a set of standard tools (spreadsheet, cost analysis, and linear programming) to assist the JCSGs to focus their functional reviews and allows them to achieve their goals as stated in the DepSecDef memorandum. A flow diagram with milestones in the figure below illustrates the interaction and time-sequence of events. *Intermediate milestones can be adjusted by each JCSG as necessary. However, the mid-October milestone for forwarding of recommended alternatives is fixed.*



### Milestones need to be updated

1. Common Support Functions: The JCSG will define the common support functions (i.e., commodities, functional categories, etc.) within their area. In defining these common support functions, the JCSGs will consider Service inputs in order to develop a joint listing.

2. Structure: The JCSG will identify the structure that relates to each of the common support functions described above, to include how these activities fit into their respective command structures (chains of command). [In addition, for each common support function,

b. Steering Group: The BRAC 95 Steering Group is responsible for assisting the Review Group in exercising its authority and reviewing joint cross-service group guidance to the Military Departments. In addition, the Steering Group acts as an integrator across functional areas and will review joint cross-service group functional excess capacity analyses.

c. Military Departments: Military Departments must ~~follow all joint cross-service group guidance approved by the Steering Group and~~ consider all recommendations of the joint cross-service groups that have been approved by the Review Group in the Military Departments BRAC submissions to the SECDEF.

d. Joint Cross-Service Groups: The joint cross-service groups are responsible for establishing guidelines, standards, assumptions, measures of merit, data elements and milestones for their cross-service functional areas. They will ~~provide functional oversight to the Military Departments in support of the~~ *conduct* analyses of common support functions, capacity analyses, alternative and scenario development analyses, and cross-service trade-off analyses. They are responsible for conducting in-depth functional reviews of analyses and for applying judgement to ensure that alternatives and scenarios are operationally feasible *and cost effective*. The group must review and approve all work conducted by any associated working group and used by the JCSG.

e. Working Groups: These groups, variously referred to as sub-groups, are sub-groups to Joint Cross-Service Groups that conduct detailed work prior to review by the Joint Cross-Service Group members. These groups are not official groups within the authorized structure described above (section I), therefore, they are not subject to the same record keeping requirements.

f. Tri-Department BRAC Group: This newly formed group is responsible for ~~calculating capacity, requirements, and activity functional value as prescribed by each JCSG. They will~~ *running* the linear programming (optimization) and COBRA models for each of the JCSGs. The Tri-Department BRAC Group ~~is independent of the JCSG's~~ will be composed of members of the Military Department BRAC planning offices. This group's ~~primary function is to~~ *will maintain official records and data and* ensure auditability of the process.

#### IV. INTERNAL CONTROLS:

The Internal Control Plan (ICP) issued on April 13, 1994, was approved by the BRAC 95 Steering Group and provides the internal controls for the BRAC-95 Joint Cross-Service Groups and the Military Departments. This plan provides the controls for development, acquisition, certification, and verification of data. The ICP also describes the procedures for development, approval and dissemination of measures of merit, processes, policies and guidance as it refers to activities, or facilities.

will suggest alternatives that will be influenced by the Military Department determination of the sites that have low military value to that Department.

**89. Functional/Operational Review:** The JCSG's will conduct a detailed review of ~~these sets of solutions~~ *each alternative* for operational feasibility and apply judgement to each suggested alternative. This is a key step in the process to ensure a workable solution set of alternatives. JCSG's must describe alternatives seriously considered and explain why an alternative was not acceptable. Each JCSG has the authority to establish additional alternative sets for consideration. The result of this review will be a set of operationally feasible alternatives to be analyzed for cost, savings and return on investment using the COBRA model.

**940. Functional COBRA:** The Tri-Department BRAC Group will conduct functional COBRA analysis on the JCSG alternative scenarios to determine which scenarios, if any, *are* cost effective. This step will be repeated until all feasible alternatives have been explored and endorsed by the Joint Cross-Service Group or recommended for elimination from consideration.

**1044. JCSG/Military Department Coordination:** Each feasible JCSG alternative will then be submitted through the Steering Group to the Review Group for approval. Once the Review Group approves the alternative, the Military Department must consider this proposal in their BRAC evaluation process. Implicit in this approach is the concept that DoD and the Military Department must allocate sufficient TOA to support the eventual closure or realignment recommendations and affected customer needs.

**1142. Review of Alternatives:** The final step will be the review of the Military Department's BRAC 95 recommendations to SecDef. This review will include the JCSG's to ensure that their alternatives were considered fairly and their views are available to SecDef for consideration.

## **VI. DOCUMENTATION:**

JCSG's must document their analyses and work products, including documentation of:

- a. The activities across DoD that support the common support function.
- b. The excess capacity analysis for each common support function.
- c. The policies that affected the analysis.
- d. The measures of merit, weights and functional value methodology that were used to evaluate alternatives.
- e. The scenarios associated with each alternative considered.
- f. The rationale for elimination or exclusion of alternatives from further review.

- g. The analysis of each alternative considered to include the cost analysis.**
- h. Recommendations to the Steering Group, and Review Group, regarding alternatives for Military Department consideration.**
- i. Recommendations to SecDef regarding Military Department closure and realignment recommendations.**

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# **T&E Optimization Runs**

**With Notional Data**

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# Optimization Run Parameters

(Run Request of 29 Jul -- continued)

Capacity-to-Requirement Case:	Capacity-to-Requirement Ratio
1	1.25
2	2.0
3	4.0
4	10.0

# Optimization Run Parameters

(Global & Functional Area Runs Requested 29 Jul)

Optimization Function	Weight W1	Weight W2	Limit constraint on max no. of sites
MINSITE	100		
MAXSFV (sum FV only)	100	0	none
		0	MINSITE solution as limit
MAXSFV (sum hours*FV)	0	100	Unconstrained
			MINSITE solution as limit
MAXSFV	50		Unconstrained
MINXCAP	100	50	Unconstrained
		100	MINSITE solution
	50		Unconstrained
MINNMV	100	0	Unconstrained
			MINSITE solution as limit
	50	50	Unconstrained
			Unconstrained

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# Optimization Run Parameters

(global run on 15 Jul; functional area runs on 26 Jul)

<b>Optimization Function</b>	<b>Weight W1</b>	<b>Weight W2</b>	<b>Limit constraint on max no. of sites</b>
<b>MINSITE</b>	100	0	none
	99	1	
	90	10	
	10	90	
<b>MAXSFV</b>	100	0	
	99	1	
	90	10	
	10	90	
<b>MINNMV</b>	100	0	
	99	1	
	90	10	
	10	90	
<b>MINXCAP</b>	100	0	
	99	1	
	90	10	
	10	90	

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# T&E Optimization Runs

## With Notional Data

- Requested optimization runs based on T&E notional data supplied by each Department on 14 Jul 94
  1. Optimized over all function areas (global) at once
  2. Optimized over each functional area separately
- Received global run on 15 Jul 94
- Run procedures agreed on by T&E JCSG
- Requested functional area runs again on 22 Jul 94
- Runs forced to use different weighting factors because of algorithm convergence issues
- Requested new runs with weights  $W^*100$  on 29 Jul 94

TABLE 3.

MINXCAP OPTIMIZATION FORMULATION

$$\text{Minimize}_{\substack{\text{with respect to} \\ o_s, b_{fr}}} \left\{ \frac{w}{u_1} \cdot \sum_f \sum_r \frac{\sum_s o_s \cdot \text{cap}_{sfr}}{\text{req}_{fr}} - \frac{(1-w)}{u_2} \cdot \sum_f \sum_r \frac{\sum_s b_{fr} \cdot \text{fv}_{sf}}{\text{req}_{fr}} \right\}$$

where  $s$  is the site index,  
 $f$  is the functional area index,  
 $r$  is the test facility category index,  
 $w$  and  $1-w$  are weights assigned  
for each optimization run ( $0 \leq w \leq 1$ ),

$$u_1 \text{ is calculated from } \sum_f \sum_r \frac{\sum_s \text{cap}_{sfr}}{\text{req}_{fr}},$$

$$u_2 \text{ is calculated from } \sum_f \sum_r \frac{\sum_s \text{fv}_{max}}{\text{req}_{fr}}$$

$o_s$  is the open-site decision variable  
for each site  $s$ ,

$\text{fv}_{sf}$  is the functional value for site  $s$   
and functional area  $f$ ,

$b_{fr}$  is the workload assigned to site  $s$   
for functional area  $f$  and  
test facility category  $r$ ,

$\text{cap}_{sfr}$  is the capacity of site  $s$  for  
functional area  $f$  and  
test facility category  $r$

# PROGRAMMED VERSUS EXISTING RESOURCES

- PROJECTED WORKLOAD
  - USE PROGRAMMED TOTAL BUDGET AUTHORITY
- CAPACITY
  - BASED ON EXISTING CAPABILITY; DO NOT INCLUDE PROGRAMMED UPGRADES
- FUNCTIONAL VALUE
  - BASED ON EXISTING INFRASTRUCTURE; DO NOT INCLUDE PROGRAMMED INFRASTRUCTURE UPGRADES
  - THRESHOLDS BASED ON "FOOTPRINT" REQUIREMENTS FOR CURRENT AND PROGRAMMED WEAPON SYSTEMS
- OPERATIONAL FEASIBILITY
  - T&E CAPABILITY BASELINE BASED ON CURRENT AND PROGRAMMED CAPABILITY REQUIREMENTS
- COST EFFECTIVENESS
  - FUNCTIONAL COBRA ANALYSIS BASED ON ONE TIME/RECURRING COSTS TO SATISFY WORKLOAD/CAPABILITY REQUIREMENTS

## **Scoring Thresholds**

- **Apply thresholds to:**
  - **Air, Land & Sea Space**
  - **Straight line segments**
- **Treat Long Range TMD and Cruise Missiles in the Operational Feasibility phase**
- **JWG determined that thresholds should be based on certified responses from MILDEPT HQ Staff**
  - **DRAFT letter with supplemental data call request is in process**

## **Focusing Cross-Service Analysis**

- **Not all Navy sites that appeared to meet the T&E criterion did.**
  - **Shipboard systems only (Carderrock, Wallops Is., Pt Hueneme, Louisville)**
  - **OT&E (COMOPTEVFOR)**
  - **Fleet Training (AFWTF, PMRF, Wallops Is., Corona)**
  - **CV systems: Cat/Trap, landing systems (St. Inigoes\*, Lakehurst\*)**
  - **S&T only (NRL\*)**
  - **ASW concentration (Indianapolis\*)**
  - **Cost Driver (Warminster)**
  - **\* = Site may be on the margin as to its applicability to Joint T&E**
- **Remaining sites: Patuxent, Pt Mugu, China Lake, Crane, Dahlgren, White Oak & Indian Head**

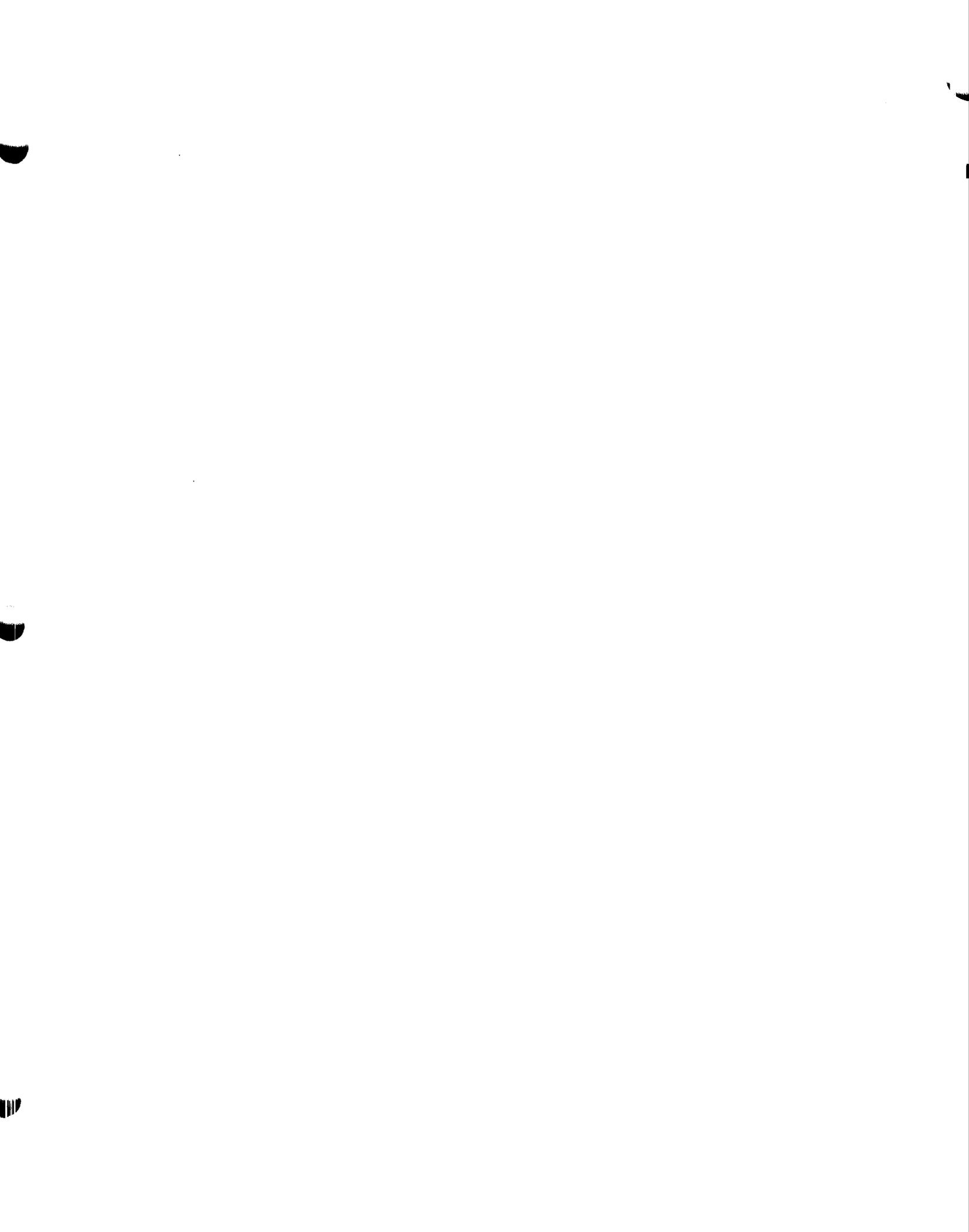
# TEC MASTER ACCESS LIST

## ARMY REPRESENTATIVES

- JCSG
  - Mr. Walter Hollis (Principal)
  - Mr. John Gehrig (Alternate)
  
- TABS
  - COL Michael Jones
  - LTC David Powell
  - MAJ John Marriott (Tri-Dept BRAC Group)
  - MAJ Charles Fletcher (D-PAD)
  
- JCSWG
  - Mr. Gary Holloway (Lead)
  - MAJ Essex Fowlks (HQDA - BRAC Interface)
  - Mr. Thomas Roller (Armaments/Weapons - Workload/Capacity)
  - Mr. David Prichard (Electronic Combat)
  - Mr. Donald Jeanblanc (Air Vehicles)

# ISSUES

- HOW TO TREAT PROGRAMMED REALIGNMENTS, REDUCTIONS, AND CONSOLIDATIONS ?
  - BRAC
  - NON-BRAC
  
- BASELINE FOR COST ANALYSIS?
  - CURRENT
  - PROGRAMMED



## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**Friday, August 26, 1994**

#### **Minutes**

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Lee Frame  
Co-Chairman

  
John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**August 26, 1994**

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Attachments

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**August 26, 1994**

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# ***DRAFT***

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
ASSISTANT SECRETARIES OF DEFENSE  
COMPTROLLER  
GENERAL COUNSEL  
INSPECTOR GENERAL  
DIRECTOR, OPERATIONAL TEST AND EVALUATION  
ASSISTANTS TO THE SECRETARY OF DEFENSE  
DIRECTOR, ADMINISTRATION AND MANAGEMENT  
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: BRAC 95 -- Joint Cross-Service Group Functional Analysis Process

This memorandum summarizes the process for integrating the evaluation processes of the Joint Cross-Service Groups (JCSGs) into the individual Military Department BRAC 95 evaluation processes. It also documents the overall process needed for credible and defensible recommendations involving installations where common support functions (labs, depots, test and evaluation, undergraduate pilot training, and medical facilities) are located.

JCSGs will determine a functional value for each of the common support functions within their jurisdiction. These functional values should be independent of the military value of any particular installation. The assessments of functional value and assessments of functional capacity and requirements, using certified data, will then be incorporated into analyses of possible closure or realignment alternatives. The Joint Cross-Service Groups (which include representatives from the Military Departments) will use their own functional expertise and judgment to develop alternatives for consideration in the Military Department BRAC 95 processes.

To assist them as an analytic tool in this process, the JCSGs will use a linear programming optimization model (documentation attached). The model provides a basis for further JCSG analysis and application of judgement in developing alternatives. While the model has value in assessing alternatives for relocations and consolidations of common support functions, it cannot by itself make recommendations regarding closures or realignments of installations. Those can be made only by the Military Departments or the BRAC 95 Review Group, reflecting judgment by the Review Group, the Military Departments and the JCSG's concerning the functional value of activities and the military value of installations, based on the final criteria.

Each JCSG will be supported in their evaluation by a Joint Cross-Service Working Group (JCSWG), variously referred to as sub-groups, study teams or technical and support groups. These groups are currently in existence and providing support to the JCSGs. JCSWGs will adapt the linear programming (optimization) model to assist each JCSG in its analysis and aid in developing alternatives.

# ***DRAFT***

# ***DRAFT***

All JCSWGs will be supported by a single Tri-Department BRAC Group consisting of representatives from each Military Department which will execute runs of the linear programming (optimization) model according to the objective functions and policy imperatives provided by the JCSGs and the certified data. JCSG alternatives can be derived from any number of combinations of objective functions and policy imperatives.

The Military Departments will conduct their individual BRAC processes in parallel with the JCSG analyses, to determine their BRAC 95 recommendations. JCSG products may be used where and as appropriate to assist in determining installation military value in the individual Military Department BRAC processes. The product of each Military Department's analysis will be a banding of installations which will reflect the relative military value of installations within the Military Department. Military Departments will provide these judgments to the JCSG's by October 3, 1994. These products will then be used to produce a second set of linear programming (optimization) outputs incorporating installation military values.

The JCSGs will then review the above two families of outputs. They will apply their functional expert judgment to compare feasible alternatives and work with the Military Departments to facilitate cross-service actions that will maximize infrastructure (overhead) reductions at minimal functional cost. The JCSGs, with the help of the Military Departments, will then analyze these alternatives to determine the cost and return on investment consequences of each alternative using the COBRA model. This combination of operational and financial screening is intended to help eliminate possible recommendations that while apparently attractive, are unexecutable. This cooperative work by the JCSGs and the Military Departments should be advanced and completed by the end of October, to provide time for the BRAC 95 Review Group to consider any issues that may be appropriate and for Military Departments to formulate their recommendations. The JCSGs and Military Departments must continue to interact during November as the Military Departments integrate JCSG alternatives into their respective BRAC analytical processes.

At the completion of their individual BRAC processes, the Military Departments will present their recommendations for closure and realignment to the Secretary of Defense no later than January 3, 1995. The Office of the Assistant Secretary of Defense for Economic Security will staff the Military Departments recommendations within the Office of the Secretary of Defense. The JCSGs have no defined role during this review period. However, the BRAC 95 Review Group or OSD principals may solicit the opinion of or task the JCSG's during this period if and as appropriate.

The process described above will produce the best interaction between JCSG and Military Department analyses. It permits consideration of possible joint functional solutions to be incorporated with the existing BRAC process of the Military Departments. If you have questions concerning the process, please contact Mr. Robert Bayer, Deputy Assistant Secretary of Defense for Economic Reinvestment and BRAC. 703-697-1771.

Attachment

# ***DRAFT***

## **BRAC 95 Strawman Schedule**

AUG            Steering Group approval of JCSG methodologies

SEP            JCSG unconstrained analyses

SEP (end)    Review Group meeting re targets and results of JCSG  
                 unconstrained analyses

OCT            JCSG constrained analyses using military value

OCT (end)    Review Group meeting to approve JCSG alternatives for  
                 Military Department consideration

NOV           Military Department BRAC 95 analyses and continued  
                 interaction with JCSGs

NOV (end)    Review Group meeting to resolve problems

DEC           Military Department final decision making

JAN           OSD review of Military Department recommendations

BRAC 95 CROSS-SERVICE GROUP FOR TEST & EVALUATION

Member Listing

Organization	Position	Name	Phone	Fax
<b>Co-Chairmen</b>				
DOT&E	Co-Chairman:	Mr. Lee Frame Room 3E318	(703) 697-3655	(703) 693-5428
	Alternate:	Mr. Nick Toomer Room 3E333	(703) 695-1564	(703) 614-8891
T&E, OUSD(A&T)	Co-Chairman:	Mr. John Burt Room 3E1060	(703) 695-7171	(703) 693-7030
	Alternate:	Mr. John Bolino Room 3D1067	(703) 697-4819	(703) 614-9103
<b>Members:</b>				
Army	Primary:	Mr. Walter Hollis Room 2E660	(703) 695-0083	(703) 693-3897
	Alternate:	Mr. John Gehrig Room 3C567	(703) 695-8995	(703) 693-3897
Navy	Primary:	Mr. Gerald Schiefer Center for Naval Analysis	(703) 681-0480	(703) 756-2174
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Air Force	Primary:	LTG(ret) Howard Leaf Room 4E995	(703) 697-4774	(703) 614-1351
	Alternate:	Mr. Parker Horner Room 4D866	(703) 695-5619	

Organization	Position	Name	Phone	Fax
BMDO	Primary:	COL M. Toole Room 1E180	(703) 695-7060	(703) 693-1703
	Alternate:	Ms. Kathleen Ruenmele Room 1E180	(703) 695-8830	(703) 693-1703
DNA	Primary:	Mr. Tom Kennedy 6801 Telegraph Road Alexandria, VA 22310	(703) 325-1235	(703) 325-2961
	Alternate:	Mr. Mark Flohr 6801 Telegraph Road Alexandria, VA 22310	(703) 325-1234	(703) 325-2961
DISA	Primary:	(Mr. Glenwood Bradley at Fort Huachuca)	(602) 538-5000	
	Alternate:	COL Tom Baker 11440 Isaac Newton Sq. Suite 210K Reston, VA 22090	(703) 487-8291	(703) 487-8074
PA&E, OSD	Primary:	Mr. Frank Lewis Room 2D278	(703) 697-0317	(703) 693-5707
	Alternate:			
ER & BRAC, OSD	Primary:	(Mr. Robert E. Bayer) Room 3D808	(703) 695-7178	
	Alternate:	Mr. Mike McAndrew Room 3D784	(703) 697-8048	(703) 693-7818
DDR&E Lab Mgmt	Primary:	Mr. Mark Paulson Room 3D129	(703) 693-0456	(703) 693-7042
	Alternate:	Major Rob Pope Room 3D129	(703) 697-9215	

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Organization      Position      Name      Phone      Fax
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Observers:

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OSD      Primary:      Ms. Jeanne Karstens      (703) 614-0346      (703) 693-9770
Comptroller      Room 48917
Alternate:      Mr. Don Bortner      (703) 614-9209
Room 20264

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DoDIG      Primary:      Mr. Ray Spencer      (703) 614-3995      (703) 693-7662
Suite 625
400 Army-Navy Drive
Alternate:      Mr. David Vincent      (703) 604-9070      (703) 693-7662
Suite 627
400 Army-Navy Drive
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All rooms are in Pentagon except as indicated.  
Give changes of this list to Joe Moore, DOT&E, at (703) 695-1565.

August 22, 1994



# **T&E JWG Status Agenda (8/26/94)**

- Overall Status
- Preliminary Assessment
- Exclusions
- Issues

# **Overall T&E JWG Status**

- Schedule (see attached)
- Potential for Slips in Schedule
  - Late Supplemental Data Call responses
  - Late Requests for Clarification (RFC) responses
- RFC Process
  - Generation & Release
  - Response Routing
- Data Administrator Functions
  - Monitor access to the restricted area of TEC
  - Monitor Check In/Out of data notebooks
  - Maintain RFC log

FOR OFFICIAL USE - WORKING DRAFT  
**T&E JCSG Master Schedule**

Page 1 of 1

8/25/1994

	1994											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
<b>DEPSECDEF Tasking</b>	▲ 1/7											
<b>Joint Data Calls Issued</b>			Initial ▲ 3/31					Space Reqs ▲ 8/4	Tech Capability Reqs COBRA △ 9/11	△ 9/26		
<b>Joint Analysis Plan Approval</b>							◆ 7/15	▲ 8/4				
<b>T&amp;E FVs to MILDEPs</b>								◆ 8/18		? △ 10/3		
<b>MILDEPs MV to JCSGs</b>									◇ 9/15	? △ 10/3		
<b>JCSG Alternatives to MILDEPs</b>										△ 10/17		
<b>JCSG Meetings</b>								△ 8/26	△ 9/7	△ 9/21	△ 10/5	△ 10/19
<b>Steering Group Briefings</b>									?	△ 9/30	△ 10/31	

Targets & Unconstrained Capacity

Alternatives

- WORKING DRAFT

# Preliminary Assessment

- Functional Area Reports
  - % Completion of Initial Review: AV-100%, EC-90%, AW-2%
  - #RFC's Out/Returned: AV-40/8, EC-0/0, AW-0/0
  - Start final scoring by 6 September
- Global RFC's
  - Spectra, Types T&E Measurement Facilities, TS/SAR Capability
- Consistency of Data (Gen'l Info %'s vs. Historical Workload)
  - JWG is only investigating glaring differences between %'s and Historical data

## **Preliminary Assessment (Cont'd)**

- Interpretation of Questions
  - “Yes/No” Questions (i.e. Irreparable Harm, TS/SAR, and Specialized Facilities):
    - Use Yes/No as stated, OR
    - Score all facilities a “Yes” regardless of their response, due to inconsistencies in responses
  - “N/A” Responses: (i.e. Air/Land/Sea Space, Straight-line segments, etc.)
    - Score as if they were “No”, OR
    - Issue an RFC

# Preliminary Assessment (Cont'd)

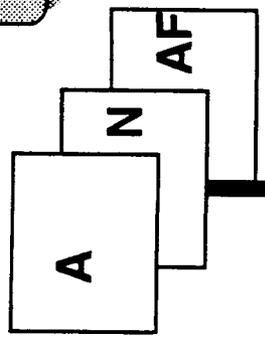
- Interpretation of Questions (Cont'd)
  - Projecting workload for new facilities that are currently operating:
    - Include in Capacity Analysis, but not Projected Workload Analysis
    - Direct facility to estimate workload
  - Must the activity actually own the facility in order to get credit for it? (ex: Edwards AFB - OAR for Electronic Combat, and Pt Mugu Sea Range/Vandenburg AFB/Nellis AFB/UTTR)
    - For a Technical Value item - Yes, No, or Utilize judgment
    - For a Physical Value item - Yes, No, or Utilize judgment

## **Preliminary Assessment (Cont'd)**

- Possible Additional Policy Imperatives:
  - Minimum Absolute Workload Threshold (?)
  - Activities whose primary mission is not T&E (ex: Corporate Laboratories) (?)

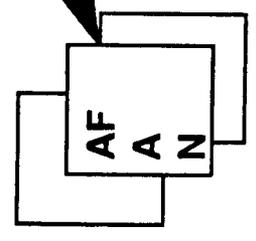
# T&E Activity and Facility Exclusion Process

Data Call

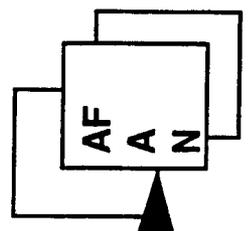


**Initial Policy Imperatives Excludes Activities & Facilities If:**

- 3d. OTA's
- 3d. Dedicated Training Activities
- 3e. Military Department Unique
- 3e. Have 5% or less workload in T&E Functional



**Facilities Scored for FV and Capacity**



**Excluded Activities & Facilities**

**Additional Policy Imperatives**

# Exclusions

- Activity & Facility Level
  - Today: Present Activity Exclusion (based on Policy Imperatives)
  - Next T&E JCSG Mtg: Present Facility Exclusions (i.e. 5% rule, Support, etc.)
- Military Department Exclusions at the Activity Level (attached)

# CANDIDATE ARMY EXCLUSION LIST

- **Combat Systems Test Activity, APG, MD**
  - Two facilities perform EC signature measurements
  - Service unique-totally related to land combat vehicles
- **Intel & EW Test Dir, Ft. Huachuca, AZ**
  - Operational test activity-no infrastructure
- **Air Defense Artillery Test Dir, Ft. Bliss, TX**
  - Operational test activity-no infrastructure
- **TEXCOM Exper Ctr, Ft. Hunter-Liggett, CA**
  - Operational test activity-no infrastructure
- **Army Research Laboratory and subordinates**
  - S&T, not included in data call-no T&E mission

# **REVISED ARMY T&E UNIVERSE**

- **White Sands Missile Range**
  - Includes Electronic Proving Ground
- **Yuma Proving Ground**
- **Redstone Technical Test Center**
- **Aviation Technical Test Center**
  - Includes AQTD at Edwards

# **AF T&E ACTIVITIES FOR JOINT ANALYSIS**

- **AFFTC, EDWARDS AFB, CA**
  - 650TH TEST GROUP ( UTTR), HILL AFB, UT
- **AFDTC, EGLIN AFB, FL**
  - 46TH TEST GROUP, HOLLOMAN AFB, NM
  - OL-AG, AFEWS, FT WORTH, TX
  - OL-AH, REDCAP, BUFFALO, NY
- **ARNOLD ENGINEERING DEVELOPMENT CENTER, TULLAHOMA, TN**
- **OTHER CANDIDATES FROM LIST OF POTENTIAL ALTERNATIVES**

## POTENTIAL AIR FORCE EXCLUSION- ACTIVITY

- **LABS**

- Wright Lab
- Armstrong Lab
- Rome Lab

- **DEPOTS**

- Sacramento
- Warner Robins
- Ogden
- Kelly
- Tinker

Does None or Little T&E (>5%)

-Need a threshold of test hours or man-hours

- **AIR COMBAT COMMAND**

- 475 WEG, Tyndall AFB, FL
  - primarily training
  - support facilities claimed as T&E
  - service unique facilities

## **Candidate Navy Exclusion List (w/o regard to 5% Policy)**

- Activities that concentrate in naval warfare unique areas (Service Unique)
  - NAWC Indianapolis - Airborne ASW systems
  - NAWC Lakehurst - Cat/Trap, Ship Motion Platforms, Elevated Landing Pads
  - NAWC Warminster - Airborne ASW systems, A/V Materials, Aircrew Systems (Dynamic Flight Sim) (?)
  - NCCOSC ISE EAST Det St Inigoes - Shipboard landing aid systems

## Candidate Navy Exclusion List (w/o regard to 5% Policy) (Cont'd)

- Activities that concentrate solely on Shipboard systems (Service Unique)
  - NSWC Carderock - Ship hull & machinery RDT&E
  - NSWC Louisville - Maintenance of naval gun systems, lot acceptance testing
  - NSWC Port Hueneme - Non-AEGIS ship combat systems support, Shipboard self defense systems
  - AEGIS Combat Systems Center, Wallops Island - AEGIS combat system T&E and TAC D&E
- OT&E Activities (OTA)
  - COMOPTEVFOR - Does not own any facilities or equipment assets

## **Candidate Navy Exclusion List (w/o regard to 5% Policy) (Cont'd)**

- **Dedicated Fleet Training Activities (Training)**
  - **PMRF** - AAW, ASUW, ASW, mobile EW threat emitters
  - **AFWTF** - AAW, ASUW, ASW, Shipboard EW (includes anti-ship aviation EW)
  - **AEGIS Combat Systems Center, Wallops Island** - AEGIS combat system training
  - **NWAD Corona** - Fleet training reconstruction (including all telemetered missile shots at AFWTF, ECTACTS & Crete), TACTS Range operation
- **Corporate S&T Laboratories (New Imperative)**
  - **Naval Research Laboratory** - Did report a T&E capability in EC per the data call definition

## Revised Navy T&E Universe

- NAWC's: China Lake, Patuxent River, Point Mugu & *Warminster*
- NSWC's: Crane, Dahlgren, Indian Head & White Oak

## Issues

- Steering Group Guidance on:
  - Roll-up of Functional Value (?)
  - Reduction Targets (?)
  - Functional COBRA Runs (?)
- Certified budget reduction percentage from DoD Comptroller dated 16 August 1994. Reduction factor to be used is 28.0% (?)
- Location of future T&E JCSG meetings that require presentation of data (?)

## **APPENDIX B**

### **LIST OF ACTIVITIES**

#### **AIR FORCE**

1. Armstrong Lab, Brooks AFB
2. Armstrong Lab, Tyndall AFB
3. Armstrong Lab, Wright-Patterson AFB
4. Armstrong Lab, Williams AFB
5. Human Systems Center, Brooks AFB
6. Wright Lab, Wright-Patterson AFB
7. Wright Lab, Eglin AFB
8. Aeronautical Systems Center, Wright-Patterson AFB
9. Aeronautical Systems Center, Eglin AFB
10. Oklahoma City Air Logistics Center, Tinker AFB (In-service engineering)
11. Ogden Air Logistics Center, Hill AFB (In-service engineering)
12. San Antonio Air Logistics Center, Kelly AFB (In-service engineering)
13. Sacramento Air Logistics Center, McClellan AFB (In-service engineering)
14. Warner-Robins Air Logistics Center, Robins AFB (In-service engineering)
15. Phillips Lab, Kirtland AFB
16. Phillips Lab, Hanscom AFB
17. Phillips Lab, Edwards AFB
18. Space & Missile Center, Los Angeles AFB
19. Space & Missile Center, Norton AFB
20. Sacramento Air Logistics Center, Peterson AFB
21. Rome Lab, Griffiss AFB
22. Rome Lab, Hanscom AFB
23. Electronic Systems Center, Hanscom AFB
24. Sacramento Air Logistics Center, Peterson AFB (In-service engineering)

#### **ARMY**

1. Army Research Lab (ARL), Adelphi, MD
2. ARL, Aberdeen Proving Grounds (APG), MD
3. ARL, White Sands Missile Range, NM
4. ARL, NASA Langley, VA
5. ARL, NASA Lewis, OH
6. Natick Research, Development and Engineering Center, Natick, MA
7. Aviation Research, Development and Engineering Center, St Louis, MO
8. Aviation Troop Command, Aeroflight Dynamics Directorate, Moffitt Field, CA

9. Aviation Troop Command, Aviation Applied Technology Directorate, Fort Eustis, VA
10. Edgewood Research, Development and Engineering Center, Aberdeen Proving Ground, MD
11. Communications Electronics Command Research, Development and Engineering Center, Ft Mammoth, NJ
12. Communication Electronics Command Research, Development and Engineering Center - Night Vision EO Directorate, Ft Belvoir, VA
13. Missile Research, Development and Engineering Center, Redstone Arsenal, AL
14. Armaments Research, Development and Engineering Center, Picatinny Arsenal, NJ
15. Armaments Research, Development and Engineering Center, Benet Labs, Watervliet Arsenal, NY
16. Tank-Automotive Command Research, Development and Engineering Center, Warren, MI
17. USA Research Institute of Infectious Diseases, Ft Detrick, MD
18. Walter Reed Army Institute of Research, Washington D.C.
19. USA Institute of Surgical Research, Ft Sam Houston, TX
20. USA Aeromedical Research Lab, Ft Rucker, AL
21. Medical Research Institute of Chemical Defense Aberdeen Proving Grounds, MD
22. USA Research Institute of Environmental Medicine, Natick, MA
23. Construction Engineering Research Laboratory, Champaign, IL
24. Cold Regions Research and Engineering Lab, Hanover, NH
25. Topographic Engineering Center, Alexandria, VA
26. Waterways Experiment Station, Vicksburg, MS
27. USA Research Institute for Behavioral & Social Sciences, Alexandria, VA
28. Simulation, Training and Instrumentation Command (STRICOM), Orlando, FL

### NAVY

1. Naval Air Warfare Center, Weapons Division, China Lake
2. Naval Air Warfare Center, Weapons Division, Point Mugu
3. Naval Air Warfare Center, Aircraft Division, Patuxent River
4. Naval Air Warfare Center, Aircraft Division, Indianapolis
5. Naval Air Warfare Center, Aircraft Division, Lakehurst
6. Naval Research Lab, Washington D.C.
7. Naval Research Lab Detachment, Bay St Louis
8. Naval Surface Warfare Center, Carderock Division, Bethesda
9. Naval Surface Warfare Center, Carderock Detachment, Annapolis
10. Naval Surface Warfare Center, Crane Division
11. Naval Surface Warfare Center, Crane Detachment, Louisville
12. Naval Surface Warfare Center, Dahlgren Division
13. Naval Surface Warfare Center, Dahlgren Detachment, Panama City
14. Naval Surface Warfare Center, Indian Head Division

15. Naval Surface Warfare Center, Port Hueneme Division
16. Naval Command, Control, and Ocean Surveillance Center, RDT&E Division, San Diego
17. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering, West Coast Division, San Diego
18. Naval Command, Control, and Ocean Surveillance Center, In-Service Engineering Division, Charleston
19. Naval Aerospace Medical Research Center, Pensacola
20. Naval Biodynamics Lab, New Orleans
21. Naval Dental Research Lab, Great Lakes
22. Naval Health Research Center, San Diego
23. Naval Medical Research Institute, Bethesda
24. Naval Undersea Warfare Center, Keyport Division, WA
25. Naval Surface Warfare Center, Carderock, Philadelphia Detachment
26. Naval Undersea Warfare Center, Newport, RI
27. Naval Undersea Warfare Center (Newport), New London, CT
28. Naval Personnel Research and Development Center, San Diego, CA

DEPARTMENT OF DEFENSE

1. Armed Forces Radiobiology Research Institute (AFRRI), Bethesda, MD

framework (see Figure 1) is comparable to a work breakdown structure (WBS). At the top level, two broad functional values (Physical and Technical) are required:

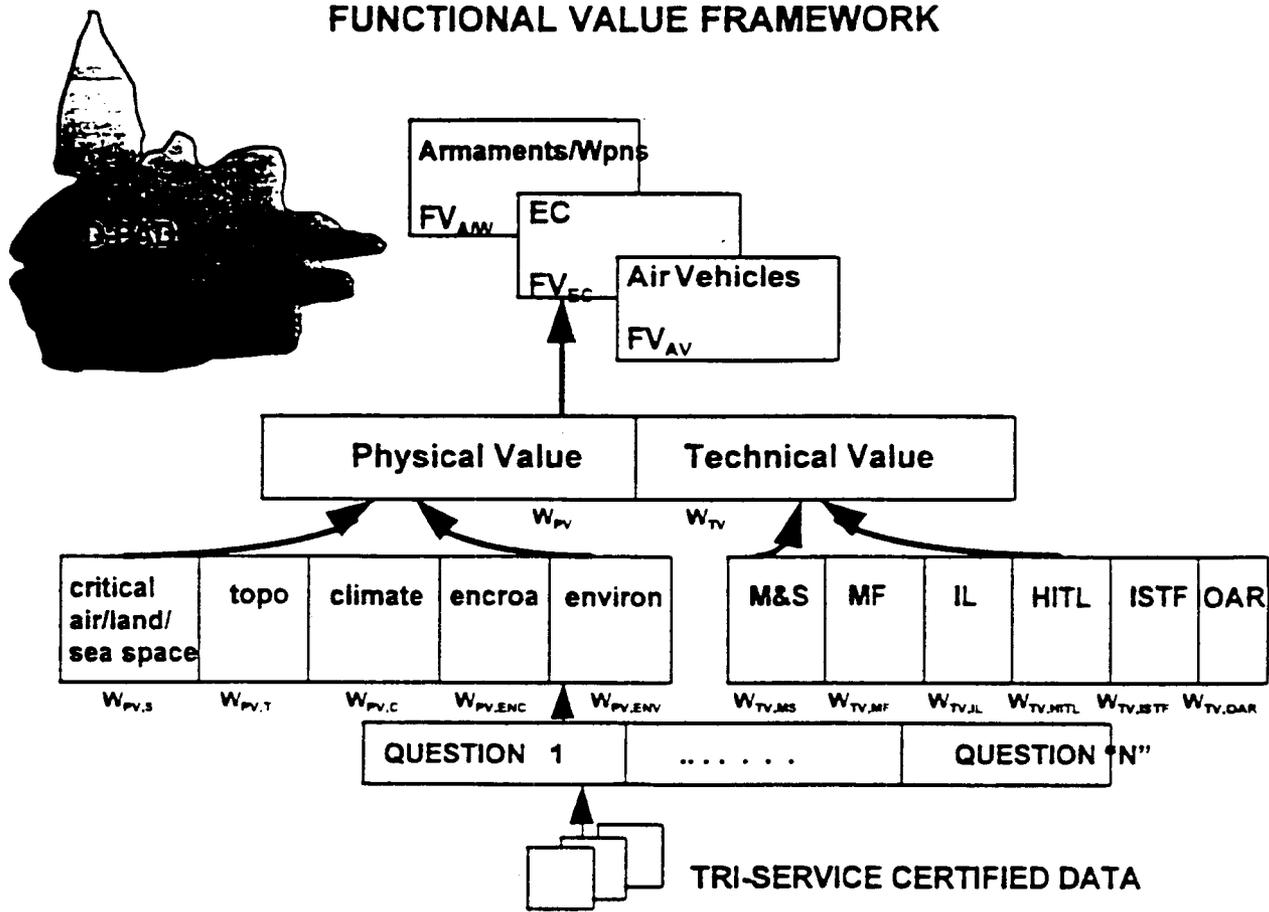


Figure 1

a. **Physical Value.** This category captures the intrinsic value of the air, land, and sea space as well as the varied topography and climates at a site as they relate to those required to support test and evaluation of system performance in real-world environments under realistic conditions. Encroachment and environmental categories attempt to capture to what extent future T&E operations might be affected by these factors.

b. **Technical Value.** This category captures the value of the man-made assets at each site in terms of their capability to support test and evaluation of current and future weapon systems.

These two top level categories (Physical and Technical) are further broken down into sub-categories. Physical value is based on a roll-up of critical air/land/sea space, topography, climate, encroachment, and environmental sub-categories. Technical value is based on a roll-up of six T&E test facility categories as defined in the T&E Data Call: (1) Digital Modeling and Simulation (DM&S), (2) Measurement Facilities (MF), (3) Integration Laboratories (IL),

3 AUG 94

**ELECTRONIC COMBAT  
FUNCTIONAL VALUE QUESTIONS**

<b>No.</b>	<b>Capabilities/Questions</b>	<b>Points</b>	<b>Scoring Method</b>
<b>1.0</b>	<b>Physical Value</b>		
<b>1.1</b>	<b>Critical Air/Land/Sea Space</b>	<b>100 Total</b>	
1.1.1	How many square miles of land space are available to support test operations? (3.1.G.1)	16	0-Threshold
1.1.2	How many square miles of sea space are available to support test operations? (3.1.G.1)	16	0-Threshold
1.1.3	How much of the land under the restricted airspace (including warning areas) does DoD own or control? (3.1.G.2)		
	a. None	0	N/Y
	b. Some	3	N/Y
	c. All	5	N/Y
1.1.4	How many square miles of restricted airspace (including warning areas) are available to support test operations? (3.1.G.3)	15	0-Threshold
1.1.5	What altitude limits are associated with the restricted airspace (including warning areas)? (Upper Limit-Lower Limit) Upper limit is capped at 100k feet. (3.1.G.3)	8	0-Max
1.1.6	What is the minimum altitude allowable in the restricted airspace (including warning areas)? (3.1.G.3)	8	Max-0

26 July 1994

1.1.7	How many square miles of available airspace are over land? (3.1.G.5)	10	0-Threshold
1.1.8	How many square miles of available airspace are over water? (3.1.G.5)	6	0-Threshold
1.1.9	What is the maximum straight line segment in the airspace, in nautical miles? (3.1.G.7)	5	0-Threshold
1.1.10	Do supersonic areas and/or corridors exist? (3.2.A.1)	8	N/Y
<b>1.2</b>	<b>Topographical</b>	<b>100 Total</b>	
1.2.1	Which of the following types of topography and ground cover/vegetation exist within your test airspace? (3.1.H.1)		
	a. Mountainous	14	N/Y
	b. Forested or jungle	14	N/Y
	c. Cultivated lowland (farmland)	14	N/Y
	d. Swamp or riverine	14	N/Y
	e. Desert	14	N/Y
	f. Sea	30	N/Y
<b>1.3</b>	<b>Climatic</b>	<b>100 Total</b>	
1.3.1	What is the average percentage of test missions per year not canceled due to weather? (3.1.H.6, Data Forms) [100% minus (% derived from # of test missions canceled in FY86-93 divided by # of test missions FY86-93)]	100	0-Max

2.4	Hardware-In-The-Loop (HITL)	100 Total	
2.4.1	Which of the following spectra are available to test against (3.3.A.2, 3.3.B.4):		
	a. RF	10	N/Y
	b. EO	10	N/Y
	c. IR	10	N/Y
	d. MMW	10	N/Y
	e. UV	10	N/Y
	f. Laser?	10	N/Y
2.4.2	Does the facility have closed-loop threat simulators? (3.3.A.4)	30	N/Y
2.4.3	Does the facility provide a T&E product or service without which irreparable harm would be imposed on any mission (other than test) deemed critical to the operational effectiveness of the armed forces of the US? (2.3.B.2)	5	N/Y
2.4.4	Is the facility equipped to support TOP SECRET or Special Access Required work? (3.1.E.3)	3	N/Y
2.4.5	Are specialized facilities available to support EC test operations? (3.1.D.1)	2	N/Y

VE

# T&E Data Call Questions

- **Electronic Combat Threat Spectra**
  - 3.3.A.2 - How many simultaneous threats can be simulated? What type (e.g. AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?
  - 3.3.B.4 - What are the available spectra?

2.2	Measurement Facilities (MF)	100 Total	
2.2.1	Site's armament/weapons T&E measurement facilities conduct which of the following? (3.1.D.1, Data Forms)		
	a. Environmental T&E	9	N/Y
	b. Safety T&E	9	N/Y
	c. Warhead performance T&E	9	N/Y
	d. Fuze T&E	9	N/Y
	e. Seeker, sensor and guidance/control performance and target/background signature characterization	9	N/Y
	f. Propulsion performance T&E	9	N/Y
	g. Airframe/aerodynamic/aerothermal performance T&E across subsonic, transonic, and hypersonic regimes	9	N/Y
	h. Gun performance T&E	9	N/Y
	i. Electromagnetic Environmental Effects	9	N/Y
	j. Directed energy	9	N/Y
2.2.2	Does the facility provide a T&E product or service without which irreparable harm would be imposed on any mission (other than test) deemed critical to the operational effectiveness of the armed forces of the US? (2.3.B.2)	5	N/Y
2.2.3	Is the facility equipped to support Top Secret or Special Access Required work? (3.1.E.3)	3	N/Y
2.2.4	Does the facility have specialized facilities to support conduct of test operations? (3.1.D.1)	2	N/Y

## **T&E Data Call Questions (Cont'd)**

- **Armament/Weapons T&E Measurement Facilities Capabilities, and Specialized Facilities**

- 3.1.D.1 - Do you have specialized facilities (*that*) are required to support you in conducting your test operations at your facility (e.g. Aerial delivery loading build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities;...)? Yes/no. If yes, please describe.

## **T&E Data Call Questions (Cont'd)**

- **Impact on operational effectiveness of the Armed Forces of the United States**
  - 2.3.B.2 - Does the facility provide a T&E product or service, without which irreparable harm would be imposed on any other mission (*e.g. non test mission*) deemed critical to the operational effectiveness of the armed forces of the United States?
- **Top Secret or Special Access Required Capability**
  - 3.1.E.3 - Is the facility equipped to support secure operations? Yes/no. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

3 AUG 94

<b>1.5</b>	<b>Environment</b>	<b>100 Total</b>	
1.5.1	Does the facility have limiting environmental characteristics? (3.1.C.1.)	100	Y/N
<b>2.0</b>	<b>Technical Value</b>		
<b>2.1</b>	<b>Digital Models and Simulations (DM&amp;S)</b>	<b>100 Total</b>	
2.1.1	Do you have a DM&S facility that supports test operations? (General Information Form)	90	N/Y
2.1.2	Does the facility provide a T&E product or service without which irreparable harm would be imposed on any mission (other than test) deemed critical to the operational effectiveness of the armed forces of the US? (2.3.B.2)	5	N/Y
2.1.3	Is the facility equipped to support Top Secret or Special Access Required work? (3.1.E.3)	3	N/Y
2.1.4	Does the facility have specialized facilities to support conduct of test operations? (3.1.D.1)	2	N/Y



OFFICE OF THE COMPTROLLER OF THE DEPARTMENT OF DEFENSE

WASHINGTON, DC 20301-1100

AUG 16 1994

(Program/Budget)

MEMORANDUM FOR CO-CHAIRMEN, TEST AND EVALUATION JOINT CROSS-SERVICE GROUP

SUBJECT: Workload Projection

The purpose of this memorandum is to forward the workload projection for the test and evaluation facilities and to certify that the data used is the same as that calculated in support of the FY 1995 President's Budget request. This information was informally provided previously to the Joint Working Group. This memorandum provides the same information formally for documentation purposes.

Attachment A provides the change in outlays from the average of FYs 1992-1993 as compared to the projection for FY 1999. The calculation of the change in outlays is consistent with the process approved in Appendix B, T&E Workload Projection Methodology, of the T&E Joint Cross-Service Group Action Plan and Milestones for Base Realignment and Closure 95 Cross Service Analyses. Attachment A also displays the outlay amounts used for the calculation. The amounts in the FY 1992, 1993 and 1999 columns are the same as those provided by the Plans and Systems (P&S) Directorate, Office of DoD Comptroller. Attachment B is a copy of the Detailed Reports as provided by P&S Directorate and used for the calculations of the workload projections. The reports in Attachment B were prepared by P&S Directorate to support the FY 1995 President's Budget request and are consistent with the actual data and projected estimates included in that request.

Attachment C is a copy of several excursions provided to the T&E Joint Cross-Service Group that assess the impact on the change in projected workload if various assumptions were applied to the workload mix. The first column, which is the same as that printed on Attachment A, assumes no weighting for any of the Research, Development, Test and Evaluation; Procurement or Operation and Maintenance appropriations. The various workload mix columns assume different nominal combinations of workload at the test and evaluation facilities. Since no excursion varied from the unweighted change in the first column by more than four percent, the unweighted calculation is appropriate to use.

  
Ronald G. Garant

Attachments

FY 1995-99 FYDP

	Workload Index	% Change Outlays	Budgeted Outlays			
			FY 92	FY 93	95\$ 92/93 Avg	FY 99
<b>RDT&amp;E</b>						
RDT&EA	0.5391	-46.1%	6,462,144	6,530,950	6,496,547	3,502,219
RDT&EN	0.713	-28.7%	8,468,448	9,402,102	8,935,275	6,370,842
RDT&EAF	0.7026	-29.7%	12,978,600	12,989,161	12,983,881	9,122,674
RDT&EDW	0.8448	-15.5%	9,304,663	9,695,828	9,500,246	8,025,998
DT&E	1.0712	7.1%	215,346	252,969	234,158	250,819
OT&E	0.3986	-60.1%	34,113	24,019	29,066	11,586
RDT&E Total	0.7146	-28.5%	37,463,314	38,895,029	38,179,173	27,284,138
<b>PROCUREMENT</b>						
APA	0.3687	-63.1%	2,726,522	1,764,497	2,245,510	827,884
MPA	0.307	-69.3%	2,597,816	2,304,255	2,451,036	752,346
PWTCVA	0.5516	-44.8%	2,327,867	2,226,168	2,277,018	1,255,935
PAA	0.3387	-66.1%	2,159,508	1,457,584	1,808,546	612,506
OPA	0.5463	-45.4%	4,102,979	4,123,578	4,113,279	2,247,006
APN	0.872	-12.8%	8,556,974	7,634,592	8,095,783	7,059,608
WPN	0.3877	-61.2%	6,348,568	4,996,835	5,672,702	2,199,086
SCN	0.5897	-41.0%	11,941,962	10,679,828	11,310,895	6,670,106
OPN	0.4845	-51.6%	6,562,266	6,744,278	6,653,272	3,223,577
PMC	0.4863	-51.4%	1,175,466	1,536,478	1,355,972	659,432
APAF	0.5241	-47.6%	14,234,533	12,052,615	13,143,574	6,888,318
WPAF	0.8142	-18.6%	6,935,342	5,715,106	6,325,224	5,149,837
OPAF	0.8234	-17.7%	7,803,911	8,485,095	8,144,503	6,705,941
PDA	1.2136	21.4%	1,537,374	1,826,246	1,681,810	2,041,107
DPA	0.4337	-56.6%	17,975	23,043	20,509	8,894
NGRE	0.0637	-93.6%	1,689,113	1,751,454	1,720,284	109,557
CAM	1.5821	58.2%	313,799	369,752	341,776	540,736
Proc Total	0.6069	-39.3%	81,031,975	73,691,404	77,361,693	46,951,876
O&M Total	0.8108	-18.9%	99,182,921	98,380,230	98,781,576	80,096,505
Grand Total	0.7201	-28.0%	217,678,210	210,966,663	214,322,442	154,332,519

OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1992

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)					
	PAY	FUEL	FERS/SSI	OTHER	TOTAL	PAY	FUEL	FERS/SSI	OTHER	TOTAL
OPERATION AND MAINT.										
OPER. AND MAINT., A.	11,668,543	237682		11,437,031	23,343,256	12,579,717	241231		12,376,587	25,197,535
OPER. AND MAINT., N.	10,744,699	1547537		11,562,481	23,854,717	11,583,732	1570646		12,512,343	25,666,721
OPER. AND MAINT., M.C.	748,331	24240		1,562,505	2,335,076	806,767	24602		1,690,865	2,522,234
OPER. AND MAINT., A.F.	7,911,002	1459919		10,481,138	19,852,059	8,528,757	1481720		11,342,167	21,352,644
OPER. AND MAINT., D.A.	4,372,750	30061		10,436,186	14,838,997	4,714,210	30510		11,293,522	16,038,242
O+M., ARMY RESERVE	396,073	23019		551,005	970,097	427,002	23363		596,270	1,046,635
O+M., NAVY RESERVE	96,756	104920		696,141	897,817	104,311	106487		753,329	964,127
O+M., MC RESERVE	8,934	1610		66,375	76,919	9,632	1634		71,828	83,094
O+M., AF RESERVE	555,585	133897		470,685	1,160,167	598,970	135896		509,352	1,244,218
O+M., ARMY NAT'L GUAR	994,073	49938		1,021,831	2,065,842	1,071,698	50684		1,105,775	2,228,157
O+M., AIR NAT'L GUARD	1,033,586	314584		1,101,805	2,449,975	1,114,297	319282		1,192,319	2,625,898
INSPECTOR GENERAL	89,976			21,378	111,354	97,002			23,134	120,136
RIFLE PRACTICE, ARMY	1,231			4,484	5,715	1,327			4,852	6,179
CLAIMS, DEFENSE				212	212				229	229
COURT OF MIL. APPEALS	3,782			985	4,767	4,077			1,066	5,143
TENTH PAN AM GAMES				14	14				15	15
GOODWILL GAMES				-113	-113				-122	-122
CURRENCY FLUCTUATION										
SUMMER OLYMPICS				885	885				958	958
ENVIRON. REST. FUND, DE				-3,970	-3,970				-4,296	-4,296
HUMANITARIAN ASST, DE				29,736	29,736				32,179	32,179
REST ROCKY MTN ARSNL				11,923	11,923				12,902	12,902
DEF COOP ACT										
WORLD UNIV. GAMES				423	423				458	458
REAL PROPERTY MT DEF				3,370	3,370				3,647	3,647
CLAIMS - MT PINATUBO				33,256	33,256				35,988	35,988
ARMY TOTAL	13,059,920	310639		13,026,274	26,396,833	14,079,744	315278		14,096,386	28,491,408
NAVY TOTAL	11,598,720	1678307		13,887,502	27,164,529	12,504,442	1703369		15,028,365	29,236,176
AIR FORCE TOTAL	9,500,173	1908400		12,053,628	23,462,201	10,242,024	1936898		13,043,838	25,222,760
DEF AGENCY TOTAL	4,462,726	30061		10,457,564	14,950,351	4,811,212	30510		11,316,656	16,158,378
DOD WIDE TOTAL	3,782			64,798	68,580	4,077			70,122	74,199
TOTAL--OPER.+MAINT	38,625,321	3927407		49,489,766	92,042,494	41,641,499	3986055		53,555,367	99,182,921

Attachment B

Source: DOD Comptrolle  
Plans & Systems Dir.

OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1992

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)			
	PAY	FUEL FERS/SSI	OTHER	TOTAL	PAY	FUEL FERS/SSI	OTHER	TOTAL
<b>PROCUREMENT</b>								
AIRCRAFT PROC., ARMY		2,519,541		2,519,541		2,726,522		2,726,522
MISSILE PROC. ARMY		2,400,605		2,400,605		2,597,816		2,597,816
PROC. WPNS+TRAC. VEH, A		2,151,149		2,151,149		2,327,867		2,327,867
PROC. AMMUNITION, ARMY		1,995,571		1,995,571		2,159,508		2,159,508
OTHER PROC., ARMY		3,791,505		3,791,505		4,102,979		4,102,979
NATL GUARD EQUIP		-7		-7		-8		-8
AIRCRAFT PROC., NAVY		7,907,380		7,907,380		8,556,974		8,556,974
WEAPONS PROC., NAVY		5,866,623		5,866,623		6,348,568		6,348,568
SHIPS + CONVERSION, N		11,035,400		11,035,400		11,941,962		11,941,962
OTHER PROCUREMENT, N		6,064,098		6,064,098		6,562,266		6,562,266
PROC., MARINE CORPS		1,086,232		1,086,232		1,175,466		1,175,466
AIRCRAFT PROC., A.F.		13,153,933		13,153,933		14,234,533		14,234,533
MISSILE PROC., A.F.		6,408,852		6,408,852		6,935,342		6,935,342
OTHER PROC., A.F.		7,211,485		7,211,485		7,803,911		7,803,911
PROC. DEF. AGENCIES		1,420,666		1,420,666		1,537,374		1,537,374
EQUIP. PROC., NG + RES		1,560,893		1,560,893		1,689,121		1,689,121
DEF. PROD. PURCHASES		16,610		16,610		17,975		17,975
COASTAL DEF AUGMENT		16,192		16,192		17,522		17,522
DOD CHEM DEMIL PROG		273,785		273,785		296,277		296,277
ARMY TOTAL		12,858,364		12,858,364		13,914,684		13,914,684
NAVY TOTAL		31,975,925		31,975,925		34,602,758		34,602,758
AIR FORCE TOTAL		26,774,270		26,774,270		28,973,786		28,973,786
DEF AGENCY TOTAL		1,420,666		1,420,666		1,537,374		1,537,374
DOD WIDE TOTAL		1,851,288		1,851,288		2,003,373		2,003,373
<b>TOTAL--PROCUREMENT</b>		<b>74,880,513</b>		<b>74,880,513</b>		<b>81,031,975</b>		<b>81,031,975</b>

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)			
	PAY	FUEL FERS/SSI	OTHER	TOTAL	PAY	FUEL FERS/SSI	OTHER	TOTAL
RES. DEVELOP. TEST, +EVAL								
RDT+E, ARMY	1,312,723	24116	4,641,164	5,978,003	1,415,231	24476	5,022,437	6,462,144
RDT+E, NAVY	122,486	2652	7,701,060	7,826,198	132,051		8,333,705	8,468,448
RDT+E, AIR FORCE	546,634	46080	11,405,543	11,998,257	589,320	46768	12,342,512	12,978,600
RDT+E, DEF. AGENCIES	162,699		8,436,222	8,598,921	175,404		9,129,259	9,304,663
DIR OF T+E, DEF.			198,998	198,998			215,346	215,346
DIR OF OPER, T+E, DEF			31,523	31,523			34,113	34,113
ARMY TOTAL	1,312,723	24116	4,641,164	5,978,003	1,415,231	24476	5,022,437	6,462,144
NAVY TOTAL	122,486	2652	7,701,060	7,826,198	132,051	2692	8,333,705	8,468,448
AIR FORCE TOTAL	546,634	46080	11,405,543	11,998,257	589,320	46768	12,342,512	12,978,600
DEF AGENCY TOTAL	162,699		8,666,743	8,829,442	175,404		9,378,718	9,554,122
TOTAL--RDT+E	2,144,542	72848	32,414,510	34,631,900	2,312,006	73936	35,077,372	37,463,314
MILITARY CONSTRUCTION								
MIL. CON., ARMY	255,497		290,668	546,165	275,448	314,546	974,981	589,994
MIL. CON., NAVY	140,930		900,966	1,041,896	151,935	974,981	1,126,916	1,126,916
MIL. CON., AIR FORCE			897,673	897,673		971,417	971,417	971,417
MIL. CON., DEF. AGEN.			503,360	503,360		544,711	544,711	544,711
MIL. CON. ARMY NAT'L G.			239,365	239,365		259,029	259,029	259,029
MIL. CON. AIR NAT'L G.			225,171	225,171		243,669	243,669	243,669
MIL. CON. ARMY RESERVE			46,119	46,119		49,908	49,908	49,908
MIL. CON. NAVAL RES.			47,857	47,857		51,788	51,788	51,788
MIL. CON. A.F. RES.			40,131	40,131		43,428	43,428	43,428
FOREIGN CURR FLUCT								
NATO INFRASTRUCTURE			303,263	303,263				
BASE CLOSURE			356,289	356,289				
BASE CLOSURE - 90			14,453	14,453				
ARMY TOTAL	255,497		576,152	831,649	275,448	623,483	898,931	898,931
NAVY TOTAL	140,930		948,823	1,089,753	151,935	1,026,769	1,178,704	1,178,704
AIR FORCE TOTAL			1,162,975	1,162,975		1,258,514	1,258,514	1,258,514
DEF AGENCY TOTAL			503,360	503,360		544,711	544,711	544,711
DOD WIDE TOTAL			674,005	674,005		729,374	729,374	729,374
TOTAL--MIL. CON.	396,427		3,865,315	4,261,742	427,383	4,182,851	4,610,234	4,610,234



OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1993

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)			
	PAY	FUEL FERS/SSI	OTHER	TOTAL	PAY	FUEL FERS/SSI	OTHER	TOTAL
<b>PROCUREMENT</b>								
AIRCRAFT PROC., ARMY			1,674,573	1,674,573			1,764,497	1,764,497
MISSILE PROC. ARMY			2,186,823	2,186,823			2,304,255	2,304,255
PROC. WPNS+TRAC. VEH, A			2,112,716	2,112,716			2,226,168	2,226,168
PROC. AMMUNITION, ARMY			1,383,301	1,383,301			1,457,584	1,457,584
OTHER PROC., ARMY			3,913,428	3,913,428			4,123,578	4,123,578
PROC. AIRCFT+MIS'LE, N			-82	-82			-86	-86
AIRCRAFT PROC., NAVY			7,245,592	7,245,592			7,634,678	7,634,678
WEAPONS PROC., NAVY			4,742,181	4,742,181			4,996,835	4,996,835
SHIPS + CONVERSION, N			10,135,552	10,135,552			10,679,828	10,679,828
OTHER PROCUREMENT, N			6,400,569	6,400,569			6,744,278	6,744,278
PROC., MARINE CORPS			1,458,174	1,458,174			1,536,478	1,536,478
AIRCRAFT PROC., A.F.			11,438,378	11,438,378			12,052,615	12,052,615
MISSILE PROC., A.F.			5,423,847	5,423,847			5,715,106	5,715,106
OTHER PROC., A.F.			8,052,669	8,052,669			8,485,095	8,485,095
PROC. DEF. AGENCIES			1,733,175	1,733,175			1,826,246	1,826,246
EQUIP. PROC., NG + RES			1,662,195	1,662,195			1,751,454	1,751,454
DEF. PROD. PURCHASES			13,344	13,344			14,061	14,061
COASTAL DEF AUGMENT			8,524	8,524			8,982	8,982
DOD CHEM DEMIL PROG			350,908	350,908			369,752	369,752
ARMY TOTAL			11,270,841	11,270,841			11,876,082	11,876,082
NAVY TOTAL			29,990,510	29,990,510			31,600,993	31,600,993
AIR FORCE TOTAL			24,914,894	24,914,894			26,252,816	26,252,816
DEF AGENCY TOTAL			1,733,175	1,733,175			1,826,246	1,826,246
DOD WIDE TOTAL			2,026,447	2,026,447			2,135,267	2,135,267
TOTAL--PROCUREMENT			69,935,867	69,935,867			73,691,404	73,691,404

OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1993

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)			
	PAY	FUEL FERS/SSI	OTHER	TOTAL	PAY	FUEL FERS/SSI	OTHER	TOTAL
<b>RES. DEVELOP. TEST, +EVAL</b>								
RDT+E, ARMY	1,292,028	25129	4,901,035	6,218,192	1,341,579	25152	5,164,219	6,530,950
RDT+E, NAVY	1,457,562	2497	7,484,240	8,944,299	1,513,462	2499	7,886,141	9,402,102
RDT+E, AIR FORCE	615,269	41195	11,681,756	12,338,220	638,865	41233	12,309,063	12,989,161
RDT+E, DEF. AGENCIES	166,550		9,037,575	9,204,125	172,937		9,522,891	9,695,828
DIR OF T+E, DEF.			240,077	240,077			252,969	252,969
DIR OF OPER, T+E, DEF			22,795	22,795			24,019	24,019
ARMY TOTAL	1,292,028	25129	4,901,035	6,218,192	1,341,579	25152	5,164,219	6,530,950
NAVY TOTAL	1,457,562	2497	7,484,240	8,944,299	1,513,462	2499	7,886,141	9,402,102
AIR FORCE TOTAL	615,269	41195	11,681,756	12,338,220	638,865	41233	12,309,063	12,989,161
DEF AGENCY TOTAL	166,550		9,300,447	9,466,997	172,937		9,799,879	9,972,816
TOTAL--RDT+E	3,531,409	68821	33,367,478	36,967,708	3,666,843	68884	35,159,302	38,895,029
<b>MILITARY CONSTRUCTION</b>								
MIL. CON., ARMY	254,646		547,513	802,159	264,412		576,914	841,326
MIL. CON., NAVY	150,989		733,647	884,636	156,780		773,044	929,824
MIL. CON., AIR FORCE			900,574	900,574			948,935	948,935
MIL. CON., DEF. AGEN.			511,930	511,930			539,420	539,420
MIL. CON. ARMY NAT'L.G			223,520	223,520			235,523	235,523
MIL. CON. AIR NAT'L.G.			239,238	239,238			252,085	252,085
MIL. CON. ARMY RESERVE			71,095	71,095			74,913	74,913
MIL. CON. NAVAL RES.			41,618	41,618			43,853	43,853
MIL. CON. A.F. RES.			29,448	29,448			31,029	31,029
FOREIGN CURR FLUCT								
NATO INFRASTRUCTURE			328,957	328,957			346,622	346,622
BASE CLOSURE			520,741	520,741			548,705	548,705
BASE CLOSURE - 90			277,382	277,382			292,277	292,277
ARMY TOTAL	254,646		842,128	1,096,774	264,412		887,350	1,151,762
NAVY TOTAL	150,989		775,265	926,254	156,780		816,897	973,677
AIR FORCE TOTAL			1,169,260	1,169,260			1,232,049	1,232,049
DEF AGENCY TOTAL			511,930	511,930			539,420	539,420
DOD WIDE TOTAL			1,127,080	1,127,080			1,187,604	1,187,604
TOTAL--MIL. CON.	405,635		4,425,663	4,831,298	421,192		4,663,320	5,084,512

OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1999

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)			
	PAY	FUEL FERS/SSI	OTHER	TOTAL	PAY	FUEL FERS/SSI	OTHER	TOTAL
OPERATION AND MAINT.								
OPER. AND MAINT., A.	8,339,615	250458	7,836,688	16,426,761	7,596,876	197639	6,969,563	14,764,078
OPER. AND MAINT., N.	9,744,808	1475672	7,108,861	18,329,341	8,876,920	1164470	6,322,270	16,363,660
OPER. AND MAINT., M.C.	668,889	20649	1,435,635	2,125,173	609,317	16294	1,276,783	1,902,394
OPER. AND MAINT., A.F.	6,308,081	1482172	9,443,612	17,233,865	5,746,274	1169599	8,398,682	15,314,555
OPER. AND MAINT., D.A.	5,996,540	53368	5,775,580	11,825,488	5,462,479	42114	5,136,515	10,641,108
O+M., ARMY RESERVE	538,358	25622	635,594	1,199,574	490,411	20219	565,266	1,075,896
O+M., NAVY RESERVE	231,734	126344	443,613	801,691	211,095	99700	394,527	705,322
O+M., MC RESERVE	6,320	2024	70,325	78,669	5,757	1597	62,544	69,898
O+M., AF RESERVE	823,503	180871	649,597	1,653,971	750,161	142727	577,719	1,470,607
O+M., ARMY NAT'L GUAR	1,029,213	65497	1,359,354	2,454,064	937,550	51684	1,208,942	2,198,176
O+M., AIR NAT'L GUARD	1,263,425	375979	1,474,504	3,113,908	1,150,902	296689	1,311,351	2,758,942
INSPECTOR GENERAL	98,807		29,101	127,908	90,007		25,881	115,888
RIFLE PRACTICE, ARMY	1,281		1,252	2,533	1,167		1,113	2,280
DRUG INTERDICTION			742,168	742,168			660,048	660,048
COURT OF MIL. APPEALS	4,544		1,310	5,854	4,139		1,165	5,304
ENVIRON. REST. FUND, DE			1,940,524	1,940,524			1,725,806	1,725,806
HUMANITARIAN ASST, DE			72,874	72,874			64,811	64,811
FSU THREAT REDUCTION			383,600	383,600			341,155	341,155
OVERSEAS MIL FAC INV			6,863	6,863			6,104	6,104
NSC ARMY			1,600	1,600			1,423	1,423
KAHO IS CONVYN			900	900			800	800
REST ROCKY MTN ARSNL			2,000	2,000			1,779	1,779
GLOBAL INITIATIVE								
INT PEACEKEEPING			149,250	149,250			132,736	132,736
LEASE REAL PROPERTY			3,920	3,920			3,486	3,486
REINV ECON GRWTH								
DEFENSE HEALTH PROG.	1,762,376	30758	9,149,459	10,942,593	1,605,416	24271	8,137,076	9,766,763
DISP REAL PROPERTY			3,920	3,920			3,486	3,486
ARMY TOTAL	9,908,467	341577	9,836,488	20,086,532	9,026,004	269542	8,748,086	18,043,632
NAVY TOTAL	10,651,751	1624689	9,059,334	21,335,774	9,703,089	1282061	8,056,924	19,042,074
AIR FORCE TOTAL	8,395,009	2039022	11,567,713	22,001,744	7,647,337	1609015	10,287,752	19,544,104
DEF AGENCY TOTAL	6,095,347	53368	5,804,681	11,953,396	5,552,486	42114	5,162,396	10,756,996
DOD WIDE TOTAL	1,766,920	30758	12,453,888	14,251,566	1,609,555	24271	11,075,873	12,709,699
TOTAL--OPER.+MAINT	36,817,494	4089414	48,722,104	89,629,012	33,538,471	3227003	43,331,031	80,096,505

JUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1999

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)					
	PAY	FUEL	FERS/SSI	OTHER	TOTAL	PAY	FUEL	FERS/SSI	OTHER	TOTAL
PROCUREMENT										
AIRCRAFT PROC., ARMY			930,886		930,886				827,884	827,884
MISSILE PROC. ARMY			845,950		845,950				752,346	752,346
PROC. WPNS+TRAC. VEH, A			1,412,193		1,412,193				1,255,935	1,255,935
PROC. AMMUNITION, ARMY			688,711		688,711				612,506	612,506
OTHER PROC., ARMY			2,526,570		2,526,570				2,247,006	2,247,006
AIRCRAFT PROC., NAVY			7,937,936		7,937,936				7,059,608	7,059,608
WEAPONS PROC., NAVY			2,472,688		2,472,688				2,199,086	2,199,086
SHIPS + CONVERSION, N			7,499,974		7,499,974				6,670,106	6,670,106
OTHER PROCUREMENT, N			3,624,641		3,624,641				3,223,577	3,223,577
PROC., MARINE CORPS			741,476		741,476				659,432	659,432
AIRCRAFT PROC., A.F.			7,745,335		7,745,335				6,888,318	6,888,318
MISSILE PROC., A.F.			5,790,559		5,790,559				5,149,837	5,149,837
OTHER PROC., A.F.			7,540,267		7,540,267				6,705,941	6,705,941
PROC. DEF. AGENCIES			2,295,053		2,295,053				2,041,107	2,041,107
EQUIP. PROC., NG + RES			123,188		123,188				109,557	109,557
DEF. PROD. PURCHASES			10,000		10,000				8,894	8,894
DOD CHEM DEMIL PROG			608,012		608,012				540,736	540,736
DOD CHEM DEMIL PROG										
ARMY TOTAL			6,404,310		6,404,310				5,695,677	5,695,677
NAVY TOTAL			22,276,715		22,276,715				19,811,809	19,811,809
AIR FORCE TOTAL			21,076,161		21,076,161				18,744,096	18,744,096
DEF AGENCY TOTAL			2,295,053		2,295,053				2,041,107	2,041,107
DOD WIDE TOTAL			741,200		741,200				659,187	659,187
TOTAL--PROCUREMENT			52,793,439		52,793,439				46,951,876	46,951,876

OUTLAYS  
BASE YEAR IS FY 95

DETAILED REPORT  
DEPARTMENT OF DEFENSE  
FY 1999

02/10/94

APPROPRIATION ACCOUNT	CURRENT DOLLARS (THOUSANDS)				CONSTANT DOLLARS (THOUSANDS)					
	PAY	FUEL	FERS/SSI	OTHER	TOTAL	PAY	FUEL	FERS/SSI	OTHER	TOTAL
<b>RES. DEVELOP. TEST, +EVAL</b>										
RDT+E, ARMY	1,371,485	31732		2,505,020	3,908,237	1,249,338	25040		2,227,841	3,502,219
RDT+E, NAVY	1,235,626	4733		5,893,658	7,134,017	1,125,579	3735		5,241,528	6,370,842
RDT+E, AIR FORCE	621,179	46523		9,580,144	10,247,846	565,856	36712		8,520,106	9,122,674
RDT+E, DEF. AGENCIES	188,527			8,831,457	9,019,984	171,736			7,854,262	8,025,998
DIR OF T+E, DEF.				282,025	282,025				250,819	250,819
DIR OF OPER, T+E, DEF				13,027	13,027				11,586	11,586
ARMY TOTAL	1,371,485	31732		2,505,020	3,908,237	1,249,338	25040		2,227,841	3,502,219
NAVY TOTAL	1,235,626	4733		5,893,658	7,134,017	1,125,579	3735		5,241,528	6,370,842
AIR FORCE TOTAL	621,179	46523		9,580,144	10,247,846	565,856	36712		8,520,106	9,122,674
DEF AGENCY TOTAL	188,527			9,126,509	9,315,036	171,736			8,116,667	8,288,403
TOTAL--RDT+E	3,416,817	82988		27,105,331	30,605,136	3,112,509	65487		24,106,142	27,284,138
<b>MILITARY CONSTRUCTION</b>										
MIL. CON., ARMY	292,828			504,269	797,097	266,748			448,472	715,220
MIL. CON., NAVY	174,813			498,230	673,043	159,244			443,101	602,345
MIL. CON., AIR FORCE				624,271	624,271				555,196	555,196
MIL. CON., DEF. AGEN.				636,775	636,775				566,316	566,316
MIL. CON. ARMY NAT'L.G.				40,183	40,183				35,737	35,737
MIL. CON. AIR NAT'L.G.				90,110	90,110				80,139	80,139
MIL. CON. ARMY RESERVE				74,403	74,403				66,170	66,170
MIL. CON. NAVAL RES.				9,956	9,956				8,854	8,854
MIL. CON. A.F. RES.				39,422	39,422				35,060	35,060
NATO INFRASTRUCTURE				227,250	227,250				202,105	202,105
BASE CLOSURE				35,045	35,045				31,167	31,167
BASE CLOSURE - 90				393,967	393,967				350,375	350,375
BASE CLOSURE - III				822,586	822,586				731,567	731,567
BASE CLOSURE - III				252,566	252,566				224,620	224,620
BASE CLOSURE - III				51,899	51,899				46,156	46,156
BASE CLOSURE - III				105,691	105,691				93,996	93,996
BASE CLOSURE - IV				204,610	204,610				181,970	181,970
BASE CLOSURE - IV				138,210	138,210				122,917	122,917
BASE CLOSURE - IV				352,910	352,910				313,861	313,861
ARMY TOTAL	292,828			875,364	1,168,192	266,748			778,505	1,045,253
NAVY TOTAL	174,813			1,683,682	1,858,495	159,244			1,497,383	1,656,627
AIR FORCE TOTAL				1,144,579	1,144,579				1,017,932	1,017,932
DEF AGENCY TOTAL				636,775	636,775				566,316	566,316
DOD WIDE TOTAL				761,953	761,953				677,643	677,643
TOTAL--MIL. CON.	467,641			5,102,353	5,569,994	425,992			4,537,779	4,963,771

FY 1995-99 FYDP

	% Change Outlays	Workload Mix A	Outlays	Workload Mix B	Outlays	Workload Mix C	Outlays	Workload Mix D	Outlays	Workload Mix E	Outlays
RDT&E											
RDT&EA	-46.1%										
RDT&EN	-28.7%										
RDT&EAF	-29.7%										
RDT&EDW	-15.5%										
DT&E	7.1%										
OT&E	-60.1%										
RDT&E Total	-28.5%	70%	-20%	60%	-17%	55%	-16%	60%	-17%	65%	-19%
PROCUREMENT											
APA	-63.1%			5%	-3%						
MPA	-69.3%					8%	-6%				
PWTCVA	-44.8%										
PAA	-66.1%					7%	-5%				
OPA	-45.4%										
APN	-12.8%			10%	-1%						
WPN	-61.2%					6%	-4%				
SCN	-41.0%										
OPN	-51.6%			5%	-3%						
PMC	-51.4%										
APAF	-47.6%			10%	-5%	3%	-1%				
WPAF	-18.6%					11%	-2%				
OPAF	-17.7%			5%	-1%						
PDA	21.4%										
DPA	-56.6%										
NGRE	-93.6%										
CAM	58.2%										
Proc Total	-39.3%	20%	-8%	35%	-14%	35%	-14%	10%	-4%	15%	-6%
O&M Total	-18.9%	5%	-1%	5%	-1%	10%	-2%	15%	-3%	10%	-2%
Grand Total	-28.0%	95%	-29%	100%	-32%	100%	-31%	85%	-24%	90%	-26%



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**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**Thursday, September 8, 1994**

**Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 0800. Mr. John Burt and Mr. Lee Frame chaired the meeting. The agenda, a list of attendees, and handouts are attached.

The meeting began with a review of the August 2 minutes. The Chairs asked for clarification from the Group on the proposed reduction target wording. The Group agreed to remove the word all from the sentence.

The Chairs then informed the Group that the policy letter, optimization tool user guide, schedule inputs were forwarded to OSD. No comments have come back to the JCSG on these.

The next topic discussed was the feedback from the meeting the Chairs had with the ASD(ES) on target reduction goals. Two issues discussed at this meeting pertained to T&E activities at labs and setting a minimum level of work as a policy imperative. The Chairs stated that the ASD(ES) accepted the rationale for excluding T&E activities at labs due to the low level of work hours performed. The ASD(ES) indicated that the existing policy imperative of less than 5% of T&E work performed at an activity can be interpreted to be approximately 100 hours (5% of T&E workyear - 2080 hours/week). This also precludes need for the JCSG to generate a new policy imperative (issue 2) to establish a minimum level of work hour threshold.

The Chairs also stated that the ASD(ES) agreed to allow the JCSG to review capacity analysis before establishing quantitative targets. The Group established the next Steering Group or Review Group, whichever is first, anticipated to be late September as the deadline for readdressing reduction targets. The Group then discussed methods used by the Laboratory JCSG and the use of test hours as a measure. No agreement was reached on an adequate measure at this time.

The Group was provided a draft copy of members participating on the JCSG and subgroup as part of an OSD tasking. The Chairs asked members to review and provide comments to Mr. Boyles by close of business.

## DATA CALL DISTRIBUTION BRIEFINGS

Each Service representative briefed how their Military Department's determined who was sent data calls. Briefing slides for each Service are attached. Each Service indicated that once data calls were sent to activities, all were turned over to the JCSG without any Service's excluding activities.

## SUBGROUP UPDATE

The subgroup then briefed the status of schedule impacts, supplementary data calls, requests for clarifications (RFCs), functional value scoring, capacity analysis, activity-level exclusions, and issues that need resolution.

### Schedule

The subgroup briefed on their progress related to the scheduled timelines. The subgroup also stated that the T&E schedule conflicts with some dates established in the draft policy memorandum that the Steering Group handed out at their last meeting for coordination. Specifically, alternatives to the Military Departments by the T&E schedule are due October 17, 1994, but the policy memorandum states the end of October. The Chairs stated that they would like to track to the October 17 deadline as best as they can.

### Supplementary Data Call

The subgroup then discussed the status of the supplementary data call for Air, Land and Space. They stated that Army's responses are in but the Navy and Air Force are still pending. This data call is important because it will be used to establish thresholds in the DPAD model for determining functional value.

### Request for Clarification

The subgroup then briefed the status of RFCs for the three functional areas. The subgroup stated that they anticipate another 90 RFCs to be issued as the Armament/Weapons scoring proceeds. The Chairs stated that since getting timely responses to the RFCs is a bottleneck, the subgroup should carefully scrutinize the need for an RFC to keep them to a minimum.

### Functional Value Scoring

The subgroup then briefed the status of completeness of functional value scoring. Almost all data calls have been scored by Service representatives in the AV and EC areas. The A/W area got off to a slow start but is making tremendous efforts to catch up. Furthermore, the EC scoring has entered the final scoring stage and awaits some RFC in order to complete scoring.

### Capacity Analysis

The subgroup prepared a briefing to highlight some problems they see in capacity analysis. Data they reviewed indicates that in the unconstrained analysis the number of simultaneous tests reported appears excessive. Some activities reported simultaneous tests in the 50 to 300 range when common sense says this is unrealistic. A further assessment is required to determine if this is a methodology problem or a data reporting problem.

### Activity-Level Exclusions

The subgroup then briefed the proposed activity-level exclusions for each Service. There was agreement on principle on the proposed exclusions but the working group was tasked to provide more definitive rationale to support the proposed exclusions. The JCSG also agreed the Navy and Air Force laboratories and depots should be excluded because of the small amount of T&E workload reported (less than 100 hours) and because the Laboratory and Depot JCSGs will be considering these sites within their analysis. The Chairs agreed to send a memorandum to this effect to the Laboratory and Depot JCSGs to inform them of this outcome. The proposed exclusions pending certified data will be resubmitted when certified data is received from the Services. Formal documentation for these approved exclusions will be submitted to the JCSG at the next meeting.

### Other Issues

The subgroup brought up the two issues. They require another safe at the TEC Facility because of the increased amount of data and they would like more administrative support to help prepare for briefings and other tasks that take analysts away from their primary work. The Chairs stated they will seek assistance from IDA to fill the administrative need and a safe will be obtained.

There being no other items for discussion, the meeting adjourned at 1000.

Approved:

  
Lee Frame  
Co-Chairman

  
John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**September 8, 1994**

**List of Attendees**

Mr. John Burt, Co-Chair  
Mr. Lee Frame, Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
Mr. John Bolino, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Mr. Parker Horner, Air Force  
Mr. Dan Stewart, Air Force  
Mr. Joe Dowden, Air Force  
Mr. Doug Nation, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Lt Col Jack Marriott, Army  
Mr. Gerry Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. Mark Flohr, OSD DNA  
Ms. Kathleen Ruummele, BMDO  
Mr. Dave Vincent, DoD IG  
Ms. Barbara Moody, DoD IG  
Ms. Jeanne Karstens, OSD Comptroller

# AGENDA

## T&E JOINT CROSS-SERVICE GROUP MEETING

THURSDAY, 8 SEPTEMBER 1994

<u>TOPIC</u>	<u>OPR</u>
REVIEW MINUTES OF PREVIOUS MEETING(S)	OSD
FEEDBACK FROM CO-CHAIRS	OSD
. POLICY LETTER	
. OPTIMIZATION MODEL DESCRIPTION	
. SCHEDULE	
. TARGET REDUCTION GOALS/METHODS	
<del>NON-DISCLOSURE STATEMENT</del>	<del>OSD</del> <i>Not available</i>
DATA CALL DISTRIBUTION	SERVICES
STATUS OF JOINT ANALYSIS	JCSWG
. SCHEDULE	
. SUPPLEMENTARY DATA CALL (SPACE)	
. RFC'S	
. FUNCTIONAL VALUE SCORING	
. CAPACITY ANALYSIS	
ACTIVITY-LEVEL EXCLUSIONS	JCSWG
ISSUES	ALL

## **ARMY DATA CALL DISTRIBUTION DETERMINATION**

- **IDENTIFY ACTIVITIES THAT HAVE PERFORMED AND ARE STILL CAPABLE OF PERFORMING T&E**
- **IDENTIFY ACTIVITIES THAT HAVE A T&E MISSION**
- **IDENTIFY ACTIVITIES THAT PERFORM T&E IN THE FUNCTIONAL AREAS AV, EC, AND/OR A/W**
- **ACTIVITIES THAT SATISFIED THE ABOVE CRITERIA RECEIVED THE DATA CALL**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

**AF/TE USED T&E JCSG GUIDANCE DATED 31 MARCH  
1994 AS BASIS FOR AF T&E DATA CALL DISTRIBUTION:**

**...”collect and certify the data requested from all facilities  
at any CONUS DoD installation that meets the criteria and  
definitions as a T&E facility/capability provided in the data  
call. These facilities/capabilities are those that have  
performed and are still capable of performing or support  
test and evaluation of air vehicle, electronic combat and  
armament/weapons....”**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

***AN EXAMPLE WHERE/HOW AF/TE APPLIED JUDGMENT TO  
T&E JCSG GUIDANCE:***

**AIR FORCE OPERATIONAL TEST AND EVALUATION  
COMMAND(AFOTEC) NOT TASKED TO RESPOND TO  
DATA CALL BECAUSE THEY DO NOT OWN T&E FACILITIES  
/CAPABILITIES**

**....they are users of DT&E infrastructure**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

**DT&E ACTIVITIES**

**AIR FORCE MATERIEL COMMAND**

- **AFFTC, EDWARDS AFB, CA**
  - 545TH TEST GROUP ( UTTR), HILL AFB, UT
  
- **AFDTC, EGLIN AFB, FL**
  - 46TH TEST GROUP, HOLLOMAN AFB, NM
  - OL-AG, AFEWS, FT WORTH, TX
  - OL-AH, REDCAP, BUFFALO, NY
  
- **ARNOLD ENGINEERING DEVELOPMENT CENTER,  
TULLAHOMA, TN**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

**OPERATIONAL TEST AND TRAINING**

**AIR COMBAT COMMAND**

- **USAFWTC, Nellis AFB, NV**
- **USAF Air Warfare Center, Eglin AFB, F**
- **Det4/TACCSF, Kirtland AFB, NM**
- **513 ETS, Offutt AFB, NE**
- **475 WEG, Tyndall AFB, FL**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

**LABORATORIES**

**AIR FORCE MATERIEL COMMAND**

- **Wright Lab, WPAFB, OH**
- **Armstrong Lab, Kelly AFB TX**
- **Rome Lab, Rome AFS NY**
- **Phillips Lab, Kirtland AFB NM**

**AF/TE**

**AF ACTIVITIES REQUESTED TO  
RESPOND TO T&E JCSG DATA CALL**

**DEPOTS**

**AIR FORCE MATERIEL COMMAND**

- **Sacramento Air Logistic Center, Sacramento CA**
- **Warner Robins Air Logistic Center, Robins AFB GA**
- **Ogden Air Logistic Center, Hill AFB UT**
- **Kelly Air Logistic Center, Kelly AFB, TX**
- **Tinker Air Logistic Center, Tinker AFB, OK**

# **DoN T&E Universe**

- T&E Data Calls sent to all DoN activities that appeared to meet the definition of T&E capability as stated in T&E JCSCG Data Call
- Determination based on certified general data call responses received from all DoN activities
- Included: Corporate Laboratories (NRL), all Naval Warfare Centers (Air, Surface & Undersea), Fleet Training Ranges, OT&E activity, and naval warfare unique activities
- DoN realizes this process imposed artificialities in that DoN activities that support T&E work are full spectrum RDT&E laboratories/centers

# T&E JCSG DETAILED SCHEDULE

## JOINT DATA CALLS

- Space Requirements
- Technical Requirements
- Functional COBRA Data
- RFC's

## FV COMPUTATIONS

- Individual Scoring
- Exclusions
- Official Scoring (w/ DPAD)

## CAPACITY ANALYSIS

- Workload Projection Index
- Projected Workload
- Current Capacity
- Unconstrained Analysis
- Constrained Analysis

## CAPABILITY ANALYSIS

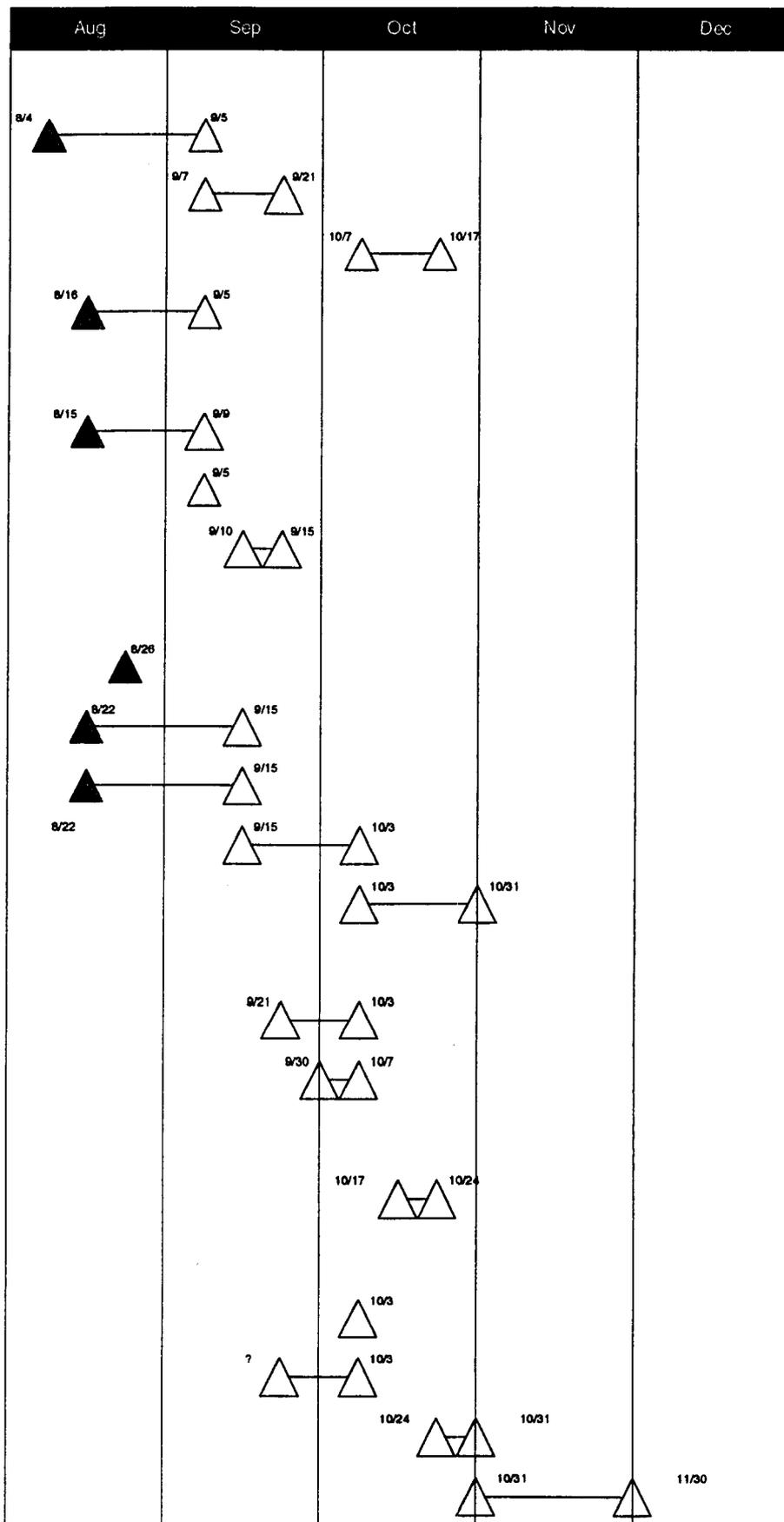
- Operational Feasibility
- Configuration Data for COBRA

## COST ANALYSIS

- Functional COBRA Runs

## DEVELOPMENT OF ALTERNATIVES

- MV's to JCSG
- Initial
- Final
- Iterations w/ MILDEP's



**STATUS OF T&E SUPPLEMENTAL DATA CALL -  
AIR/LAND/SEA SPACE REQUIREMENTS**

**(As of 6 September 1994)**

**ARMY: RECEIVED**

**NAVY: NOT RECEIVED**

**AIR FORCE: NOT RECEIVED**

## REQUEST FOR CLARIFICATION (RCF) STATUS

(As of 7 September 1994)

	<u>SENT</u>	<u>RECEIVED- PRELIMINARY</u>	<u>RECEIVED- CERTIFIED</u>
AV	41	8	0
EC	14	0	0
A/W	36	12	4
<b>TOTAL</b>	<b>91</b>	<b>20</b>	<b>4</b>

## SCORING STATUS

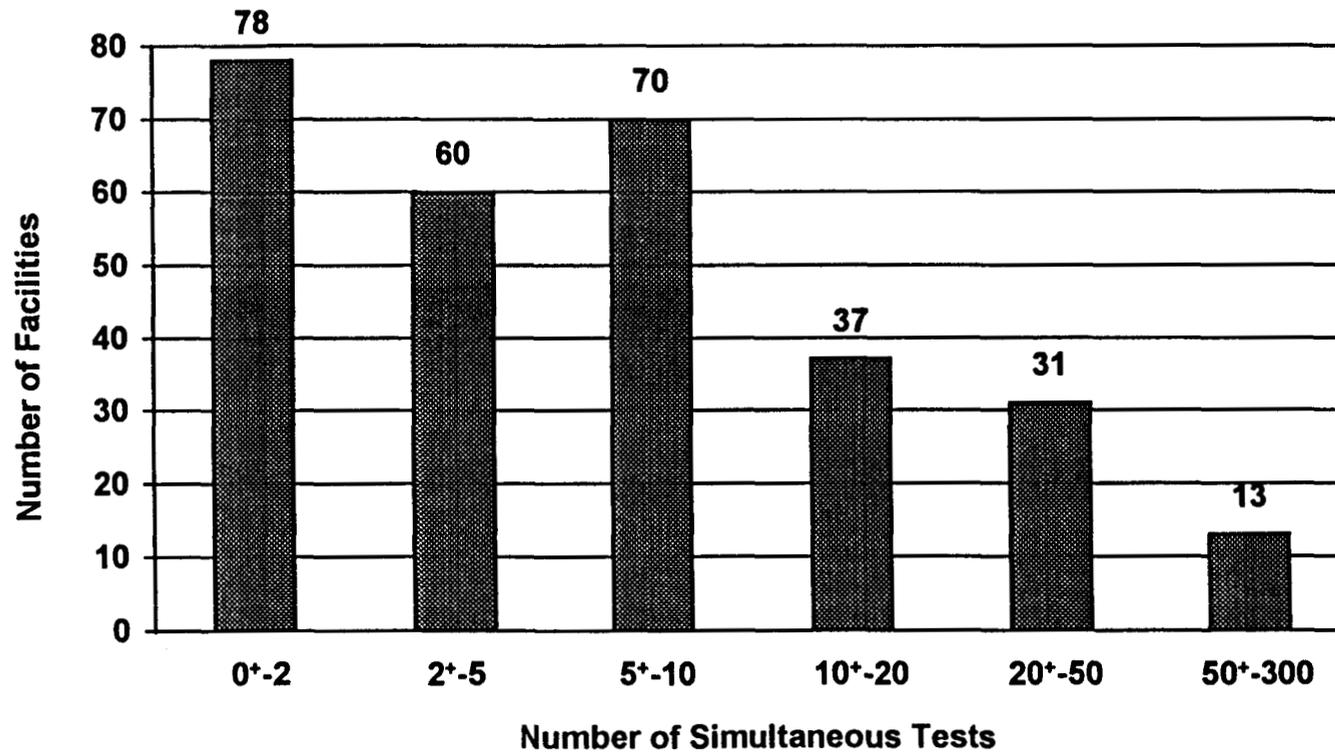
<b>FUNCTIONAL AREA</b>	<b>NUMBER OF FACILITIES</b>	<b>PERCENT OF FACILITIES SCORED BY THREE SERVICES</b>	<b>PERCENT OF FACILITIES OFFICIALLY SCORED</b>
AV	131	100	0
EC	84	97	35
A/W	177	20	0

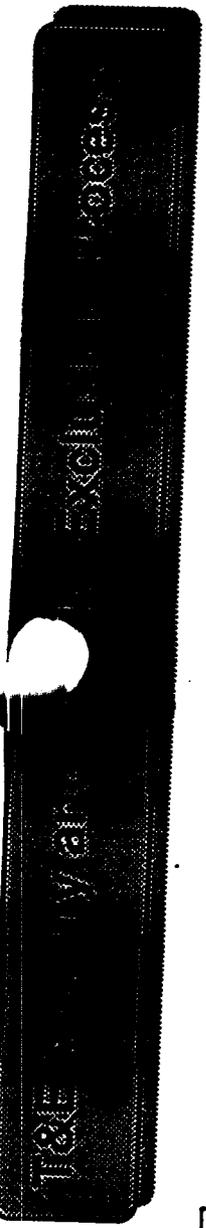
# **UNCONSTRAINED ANALYSIS**

## **CONCERN**

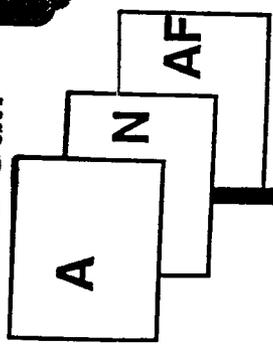
- **Number of Simultaneous Tests Reported for Some Facilities “Appear” Excessive**
  - **Could Lead to Unrealistic Estimates of Unconstrained Capacity, and Thus Excess Capacity**
- **Basis for Challenging Not as Clear as for Other Areas (e.g. , Historical Vs % Workload Data Sheets)**
  - **May Require Exercising Functional Judgment and RFC’s**
  - **However, Must Ensure Consistency Across All Activities**
- **Early Assessment of Extent of Problem Needed**
  - **Determine Whether a Problem and, if so, is it a “Methodology” Problem or “Data” Reporting Problem**

### DISTRIBUTION OF SIMULTANEOUS TESTS



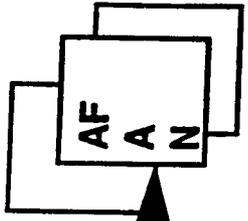


La Call

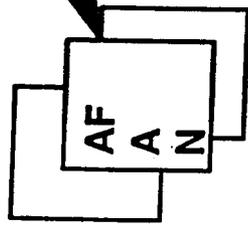


**Initial Policy Imperatives Excludes Activities & Facilities If:**

- 3d. OTA's
- 3d. Dedicated Training Activities
- 3e. Military Department Unique
- 3e. Have 5% or less workload in T&E Functional



**Excluded Activities & Facilities**



**Facilities Scored for FV and Capacity**

**Additional Policy Imperatives**

# **EXCLUSIONS**

## **PROCESS**

- **JCSWG Members Prepare Proposed Exclusions for Facilities**
  - **Service Functional Leads Sign**
  - **Elevate to JCSWG Leads if No Consensus**
- **JCSWG Leads Prepare and Sign Exclusions for Activities Proposed by Services**
- **JCSWG Leads Sign All Exclusions with Supporting Rationale**
  - **Elevate to JCSG if No Consensus**
  - **JCSG Approves All Exclusions**

# **EXCLUSIONS STATUS**

- **Facility Exclusions in Process**
  - **Concurrent with Individual Scoring**
  - **All Facilities Reviewed To Date (Approx. 300)**
  - **Data Being Analyzed to Define “Absolute” Threshold to Extend 5% T&E Workload Threshold Policy Imperative**
- **Some Activity Exclusions Ready for JCSG Approval**
  - **Army**
  - **Navy**
  - **Air Force**

# **EXCLUSIONS**

## **ISSUE**

- **Differences Across Military Depts in Treatment of Joint Data Call Requests**
  - **“Corporate Labs**
    - **AF & Navy Requested Response**
    - **Army Did Not**
  - **Depots**
    - **AF Requested Response**
    - **Army & Navy Did Not**
  
- **Meeting Between Burt, Frame, and Gotbaum (30 Aug 94)**
  - **Receptive to Considering New Policy Imperative for Non-T&E Activities if They’re Being Evaluated by Another JCSG?**
  
- **Recommendation (Based on Above)**
  - **Add New Policy Imperative**
  - **“Exclude Activities for Which Primary Mission is Non-T&E and its Primary Mission Area is Being Addressed by Another JCSG”**

# ARMY ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- **Combat Systems Test Activity, APG MD**
- **TEXCOM Experimentation Centetr, OPTEC  
at Ft. Hunter-Liggett CA**

## Rationale

- **Service Unique, Land Vehicle  
Signature Measurement**
- **Operational Test Activity, No  
Infrastructure**

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- **Intelligence and Electronic Warfare Test Directorate , OPTEC  
at Ft. Huachuca**
- **Air Defense Artillery Test Directorate, OPTEC at Ft. Bliss TX**

# NAVY ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- COMOPTEVFOR
- PMRF
- AFWTF
- NRL
- NCCOSC ISE East Det St Inigoes
- NSWC Carderock
- NSWC Louisville
- AEGIS Combat Systems Center, Wallops Island

## Rationale

- OTA
- Dedicated Training Facility
- Dedicated Training Facility
- S&T Lab
- Shipboard Landing Aid Systems
- Ship Hull & Machinery RDT&E
- Maintenance of Naval Gun Systems
- AEGIS Combat Systems

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- NAWC Warminster
- NAWD Corona
- NAWC Indianapolis
- NAWC Lakehurst
- NSWC Port Hueneme

# AIR FORCE ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

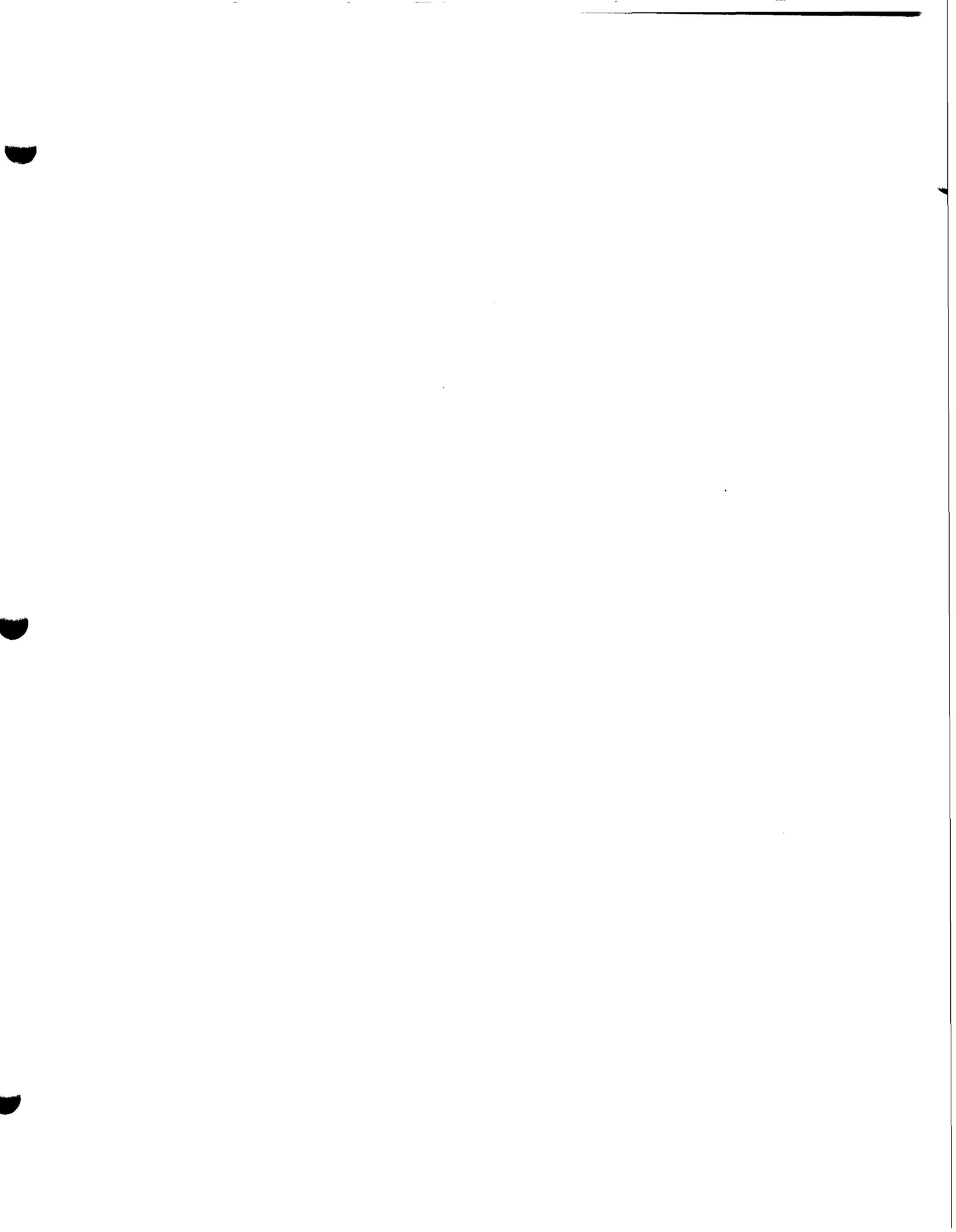
- Wright Labs
- Armstrong Labs
- Rome Labs
- Phillips Labs
- Tinker Air Logistics Center (ALC)
- Sacramento ALC
- Warner Robins ALC
- Kelly ALC
- Ogden ALC
- 513 ETS, Offutt AFB, NE
- USAFWTC, Nellis AFB, NV
- Det4/TACCSF, Kirtland AFB, NM
- AFOTEC, Kirtland AFB, NM

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- USAF AWC, Eglin AFB, FL

## Rationale

- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Depot)
- MILDEP-Unique
- Training + <5%
- <5%
- OTA



## BRAC 95

### Joint Cross-Service Group on Test & Evaluation

Thursday, September 15, 1994

#### Minutes

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 0800. Mr. John Burt and Mr. Lee Frame chaired the meeting. The agenda, a list of attendees, and handouts are attached.

The meeting began with a review of the August 26 minutes. The Group agreed to change the following wording to accurately reflect what was agreed to.

#### Preliminary Assessment

The options presented were to stick with the certified responses or send an RFC to the activities ~~who answered "Yes" to list the rationale for their answer for~~ **clarification when glaring differences in rationale are identified**. The Group agreed to stick with answers as provided.

The JCSG agreed that if a facility becomes fully operational by December 31, 1994, it would be included in excess capacity ~~and workload projection~~; otherwise any new construction supporting T&E will be factored into the **subsequent analysis workload projection methodology**.

The final interpretation issue briefed dealt with whether an activity must actually own the facility in order to get credit for it in scoring. The example cited was Edwards AFB's claiming credit for ~~its~~ **the Navy's China Lake** open air range for electronic combat and also the Point Mugu Sea Range, Vandenburg AFB, Nellis AFB and UTTR. Discussion ensued on whether an overarching policy can be made that will allow or disallow one activity from claiming multiple sites even though that activity uses those cited on a recurring basis. ~~The proposal~~ **To be consistent with previous JCSG policy decisions on "available" versus "ownership" of air, land and space the subgroup proposed from the subgroup is to allow multiple claims in the Physical Value Technical Value analysis but not in the Technical Value Physical Value.** The JCSG agreed with this approach.

#### Other Issues

The subgroup asked about a clarification of workload projection provided by the DoD Comptroller. The copy they received was illegible. The recorder stated **the 28% figure is the correct reduction figure; and** that a copy will be provided to the subgroup and included in the minutes.

## SUBGROUP UPDATE (Sept 15, 1994):

The subgroup then briefed the status of schedule impacts, requests for clarification (RFC's), supplementary data calls, functional value scoring, activity/facility exclusions, capacity analysis, and excess capacity targets..

### Schedule

The subgroup began by briefing slips in the schedule. The proposed date of Sep 15 for transmitting functional value to the Military Departments is now proposed for Sep 26. A letter has been sent to the individual Military Department BRAC offices explaining the delay and establishing the new deadline. The subgroup also stated that the technical data call is not going to be sent separately. They will discuss amongst themselves the possibility of incorporating the requirement questions in the COBRA data call that will be sent out in the future.

### Request for Clarification

The subgroup then briefed the status of the requests for clarification (RFC's). The return of certified answers is proceeding, but slowly. Out of a total of 147 RFC's only 22 have returned as certified data. However, the subgroup is awaiting 69 answers be certified based on preliminary contact with field activities. One bottleneck to the process is one Service not allowing its team members to contact field activities to ascertain if RFC's are accurately being interpreted. This slows down the JCSG process and allows for RFC's to be returned that don't clarify the original question. It is the JCSG's opinion that all Services should permit their team members to contact field activities to clarify the RFC's and ensure the proposed response clarifies the question and then for the field activity to route that answer back through their Military Department's certification process. The Chairs agreed that a line will be added to the RFC chart that will highlight the average time it takes for an RFC for each Service to be returned to the JCSG certified. Another 30 RFC's may need to be sent out in the A/W area.

### Supplementary Data Call

The subgroup briefed the status of the air/land/sea space supplemental data call. All are expected in by Sep 19 or 20. No further discussion.

### Functional Value Scoring

A brief status of functional value scoring was presented. Overall, a lot of progress is being made. Pending RFC's are a main reason that EC has not completed official scoring. AV and A/W are steadily coming up in percentage complete. They share manpower and the goal is to finish AV prior to officially scoring A/W.

### Activity/Facility Exclusions

The subgroup briefed the exclusions to date and provided a memorandum to the JCSG Chairs outlining the rationale for the exclusions. It was noted that AFOTEC at Kirtland AFB, NM, does not need to be addressed for exclusion because they were never sent the T&E data call since they own no T&E infrastructure. The JCSG approved the exclusion list.

### Capacity Analysis

Since the Sep 8 JCSG, meeting further analysis was done by the subgroup into the inconsistencies reported in the unconstrained capacity analysis methodology. The analysis reaffirmed the number of simultaneous tests reported by some activities appear unrealistic. Also, an analysis of similar facilities showed an inconsistency. Potential sources of this problem stem from the way activities identified tests and facilities. Some activities aggregated multiple capabilities into one facility. The data call placed no constraints on the number of simultaneous tests or the number of personnel. However, it did require them to limit physical assets to the current levels. The unconstrained capacity is driven by the number of simultaneous tests reported for facilities. A recommended solution by the subgroup is to revise the excess capacity methodology and use peak historical data for measuring capacity. That information is already in the certified data calls and represents a demonstrated capability. A limitation to this proposed solution is that the infrastructure may have changed and peak workload may have been demand-driven (versus what's possible). The subgroup is confident that these limitations can be addressed during the capability fit phase. The Group then discussed the inevitable perception problem this would cause by changing methodology after certified data has been reviewed. It was noted, however, that the change needed to be made for technical reasons and would take place before any official scoring of functional value or runs of the optimization model are made. All JCSG members see a need for the methodology change but are unsure if changing is the right answer. The Group also agreed there is no technical reason to use the RUMS process we adopted as our capacity analysis. The Chairs agreed the change is needed and will take the JCSG option to the ASD(ES) for approval.

### Excess Capacity Targets

The subgroup then briefed the JCSG on excess capacity targets. The analytical process for determining excess capacity was presented as well as perceived purposes numerical reduction targets provide. The subgroup's conclusions are that numerical reduction target do provide a benchmark for assessment of Military Department recommendations, but that these targets should be an end product of the T&E JCSG analysis process. Furthermore, any numerical reduction targets should be based on specific JCSG recommendations provided to the Military Departments and the recommendations Military Departments actually accept as their own. After thorough discussion, the Group did not come to a decision on how to approach numerical reduction targets.

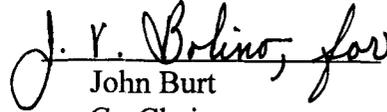
Other Issues

No new issues presented. However, the subgroup was asked by the Chairs to prepare the a proposed page change to the August 4 JCSG analysis plan dealing with excess capacity analysis in the event the JCSG can change the methodology.

There being no other items for discussion, the meeting adjourned at 0930.

Approved:

  
Lee Frame  
Co-Chairman

  
John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**September 15, 1994**

**List of Attendees**

Mr. John Burt, Co-Chair  
Mr. Lee Frame, Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
Mr. John Bolino, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Mr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
Lt Col George London, Air Force  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerry Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. Mark Flohr, OSD DNA  
Mr. Dave Vincent, DoD IG  
Mr. Richard Collier, DoD IG

# AGENDA

## T&E JOINT CROSS-SERVICE GROUP MEETING

*Thursday, 15 September 1994*

### TOPIC

### OPR

Review Minutes of Previous Meeting(s)

OSD

Status of Joint Analysis

JCSWG

- Schedule
- Request for Clarification Status
- Supplemental Data Call
- Functional Value Scoring Status
- Activity / Facility Exclusions
- Capacity Analysis
- Excess Capacity Targets

Issues

All

## T&E JCSG MASTER SCHEDULE

	July	August	September	October
<b>Joint Data Calls</b>		Space 8/4 ▲	Technical 9/11 ◆	△ 9/26 COBRA
<b>Joint Analysis Plan Approval</b>	◆ 7/15	▲ 8/4		
<b>T&amp;E FV's to MILDEP's</b>		◆ 8/16	◆ 9/15    △ 9/26	
<b>MILDEP's MV to JCSG's</b>				△ 10/3
<b>JCSG Alternatives to MILDEP's</b>				△ 10/17

# REQUEST FOR CLARIFICATION (RFC) STATUS

(As of 14 September 1994)

	<u>SENT</u>	RECEIVED- PRELIMINARY	RECEIVED- CERTIFIED
AV	41	10	17
EC	33	16	0
A/W	73	43	5
TOTAL	147	69	22

**STATUS OF T&E SUPPLEMENTAL DATA CALL -  
AIR/LAND/SEA SPACE REQUIREMENTS**

**(As of 14 September 1994)**

**ARMY:            EXPECTED 15 SEPT**

**NAVY:            NOT RECEIVED**

**AIR FORCE:      EXPECTED 19 SEPT**

## FUNCTIONAL VALUE SCORING STATUS

FUNCTIONAL AREA	FACILITIES REPORTED	FACILITIES REMAINING	PERCENT OF FACILITIES SCORED BY THREE SERVICES	PERCENT OF FACILITIES OFFICIALLY SCORED
AV	132	53	100	45
EC	84	25	100	65
A/W	174	105	100	0

# ARMY ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- **Combat Systems Test Activity, APG, MD**

- **TEXCOM Experimentation Center, OPTEC  
at Ft. Hunter-Liggett, CA**

## Rationale

- **Service Unique, Land Vehicle  
Signature Measurement**
- **Operational Test Activity, No  
Infrastructure**

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- **Intelligence and Electronic Warfare Test Directorate , OPTEC  
at Ft. Huachuca, AZ**
- **Air Defense Artillery Test Directorate, OPTEC at Ft. Bliss, TX**

# NAVY ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- COMOPTEVFOR
- PMRF
- AFWTF
- NRL
- NCCOSC ISE East Det St Inigoes
- NSWC Carderock
- NSWC Louisville
- AEGIS Combat Systems Center, Wallops Island
- NAWD Corona
- NAWC Lakehurst
- NSWC Port Hueneme

## Rationale

- OTA
- Dedicated Training Facility
- Dedicated Training Facility
- S&T Lab
- Shipboard Landing Aid Systems
- Ship Hull & Machinery RDT&E
- Maintenance of Naval Gun Systems
- AEGIS Combat Systems
- Fleet Training Support
- Service Unique (Shipboard Avn Supt)
- Service Unique (Non-AEGIS Cmbt Sys)

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- NAWC Warminster
- NAWC Indianapolis

- Will be scored
- Will be scored

# AIR FORCE ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- Wright Labs
- Armstrong Labs
- Rome Labs
- Phillips Labs
- Tinker Air Logistics Center (ALC)
- Sacramento ALC
- Warner Robins ALC
- Kelly ALC
- Ogden ALC
- 513 ETS, Offutt AFB, NE
- USAFWTC, Nellis AFB, NV
- Det4/TACCSF, Kirtland AFB, NM
- ~~AFOTEC, Kirtland AFB, NM~~

## Rationale

- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Depot)
- MILDEP-Unique
- Training + <5%
- <5%
- ~~OTA~~ \*

## Service-Recommended Exclusions (Being Reviewed by JCSWG)

- USAF AWC, Eglin AFB, FL

\* Excluded 8 Sept 94 JCSG Meeting; no data call requested

## EXCESS CAPACITY ISSUE

- Unconstrained capacity (UC) methodology leading to unrealistic capacity estimates

### RATIO OF TOTAL CAPACITY TO TOTAL WORKLOAD

<u>TEST FACILITY CATEGORY</u>	<u>AIR VEHICLES</u>	<u>ELECTRONIC COMBAT</u>	<u>ARMAMENT/ WEAPONS</u>
DM & S	-	16	6
MF	3	5	1.5
IL	4	1	3
HITL	2	12	4
ISTF	3	9	16
OAR	8	11	2.3

# **EXCESS CAPACITY SOURCES OF PROBLEM**

- **Lack of clear definition**
  - **What Constitutes a “Test” and a “Facility” (e.g., Aggregation of Multiple Capabilities in One Facility)**

## **Propulsion System Evaluation Facility**

### **Type of Tests Supported:**

- 1. Helicopter engine and Transmission Gearbox Test Facility**
- 2. Small Air-breathing Engine Altitude Chamber**
- 3. Engine Accessory Test Area**
- 4. Fuels and Lubricants Chem Facility**
- 5. Rotor Spin Facility**
- 6. Fuels and Lubricants Area**
- 7. Infrared Laboratory**
- 8. Ground Firing and Aerial Refueling**

**Number of Simultaneous Tests: 15  
(10 Tests in Item 4 Above)**

## **Air Breathing Engine Test Facility**

### **Type of Tests Supported:**

- 1. Performance**
  - 2. Operability**
  - 3. Endurance**
- (Computers, Instrumentation Systems, and Other Support Facilities Mentioned But Not Counted as a Separate Test Capability)**

**Number of Simultaneous Tests: 2**

## EXCESS CAPACITY ASSESSMENT

- Unconstrained capacity driven by number of simultaneous tests reported for facilities
  - Capacity / requirement ratios bounded by using the number of simultaneous tests reported and restricting to one test per facility
- Data call placed <sup>no</sup> constraints on number of simultaneous tests
  - e.g., facility may have assumed it could operate independently of all other facilities without sharing any support resources
- Peak historical data appears to be a viable alternative for measuring capacity
  - Data available from existing Data Call
  - Represents a demonstrated capability versus opinion of what might be possible
  - e.g., Number of simultaneous tests, shared use of support resources, etc..
  - On the other hand, the infrastructure may have changed and peak workload may have been demand-driven (versus what's possible)
  - Can be addressed in the “capability fit” phase

## Ratio of Capacity to Workload Requirements

	Air Vehicle		Electronic Combat		Armaments/Wpns	
	Reported	One Test	Reported	One Test	Reported	One Test
DM&S	500:0	130:0	16	0.2	6	0.8
MF	3	0.3	5	0.2	1.5	0.2
SIL	4	0.5	1	0.3	3	0.2
HITL	2	0.1	12	1.5	4	0.2
ISTF	3	0.1	9	0.5	16	1.0
OAR	8	1	11	1.0	2.3	0.4

## WORKLOAD RATIOS

RATIO	AV OAR	EC ISTF
Peak historical workload (test hours) / FY93 test hours <sup>a</sup>	1.6	1.6
Unconstrained capacity <sup>b</sup> (test hours) / FY01 projected workload	7.4	9.3
Peak historical workload (test hours) / FY01 projected workload <sup>c</sup>	2.3	2.1

a - Represents historical surge relative to FY93 workload.

b - Based on 2008 times number of tests simultaneously.

c - Based on 0.72 times average of test hours in FY92 and FY93.

## **EXCESS CAPACITY RECOMMENDATIONS**

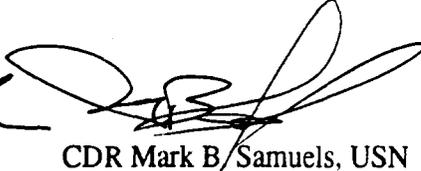
- Revise excess capacity methodology
  - use “historical peak” workload to estimate facility capacity

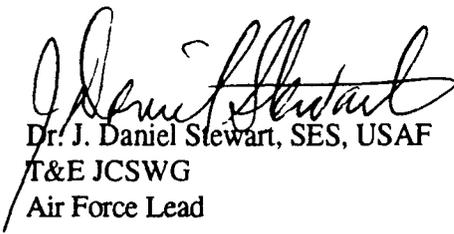
SEP 14 1994

SUBJECT: Activity Exclusions

1. In accordance with (IAW) your guidance at the 8 Sep 94 T&E Joint Cross-Service Group (JCSG) meeting, the Working Group has reviewed the Military Department responses to the T&E JCSG Data Call to determine which activities in those responses should be removed from further analysis. Results of that review are attached
2. Enclosure 1 provides our recommendations and supporting rationale. Principal reasons for excluding activities were:
  - a. Policy Imperative D, "Exclude operational test agencies (OTA's) and dedicated training activities."
  - b. Policy Imperative E, "Remove from closure or realignment consideration in each functional area those facilities/capabilities that are Military Department unique or have 5% or less of their total workload in that T&E functional area."
  - c. We also recommend exclusion of activities where the preponderance of the activity's workload falls into another JCSG area (i.e., Labs, Depots). Activities proposed here are also under review by the appropriate JCSG. Recommend you forward a list of these activities to the appropriate JCSG's advising that we relinquish consideration to them.
  - d. Those activities that we expect to recommend for exclusion on receipt of certified data are listed separately at the end of the enclosure.

  
Gary L. Holloway, SES, USA  
T&E JCSWG  
Army Lead

  
CDR Mark B. Samuels, USN  
T&E JCSWG  
Navy Lead

  
Dr. J. Daniel Stewart, SES, USAF  
T&E JCSWG  
Air Force Lead

## RECOMMENDED ACTIVITY EXCLUSIONS

### 1. Exclude the following activities in accordance with Policy Imperative D

<u>SERVICE</u>	<u>ACTIVITY</u>
Army	TEXCOM Experimental Center. OPTEC-Ft Hunter-Liggett
Navy	COMOPTEVFOR Pacific Missile Range Facility Atlantic Fleet Weapons Training Facility
Air Force	USAFWTC, Nellis

### 2. Exclude the following activities in accordance with Policy Imperative E

<u>Service</u>	<u>ACTIVITY</u>
Army	Combat Systems Test Activity, APG
Navy	NSWC Port Hueneme NAWC Lakehurst NAWD Corona NCCOSC ISE East, St Inigoes NSWC Carderock NSWC Louisville Aegis Combat Systems Center, Wallops Island
Air Force	513 ETS, Offutt AFB Det 4/TACCSF, Kirtland AFB

3. Exclude the following activities because the preponderance of their workload is in another JCSG area:

<u>SERVICE</u>	<u>ACTIVITY</u>
Army	None
Navy	Naval Research Laboratory
Air Force	Wright Laboratories
	Armstrong Laboratories
	Rome Laboratories
	Phillips Laboratories
	Oklahoma City Air Logistics Center
	Sacramento Air Logistics Center
	Warner-Robins Air Logistics Center
	San Antonio Air Logistics Center
	Ogden Air Logistics Center

4. The following activities are under consideration for exclusion pending receipt of certified data.

<u>SERVICE</u>	<u>ACTIVITY</u>
Army	Intelligence and Electronic Warfare Test Directorate. OPTEC-Ft Huachuca
	Air Defense Artillery Test Directorate. OPTEC-Ft Bliss
Navy	None
Air Force	USAF Air Warfare Center, Eglin AFB

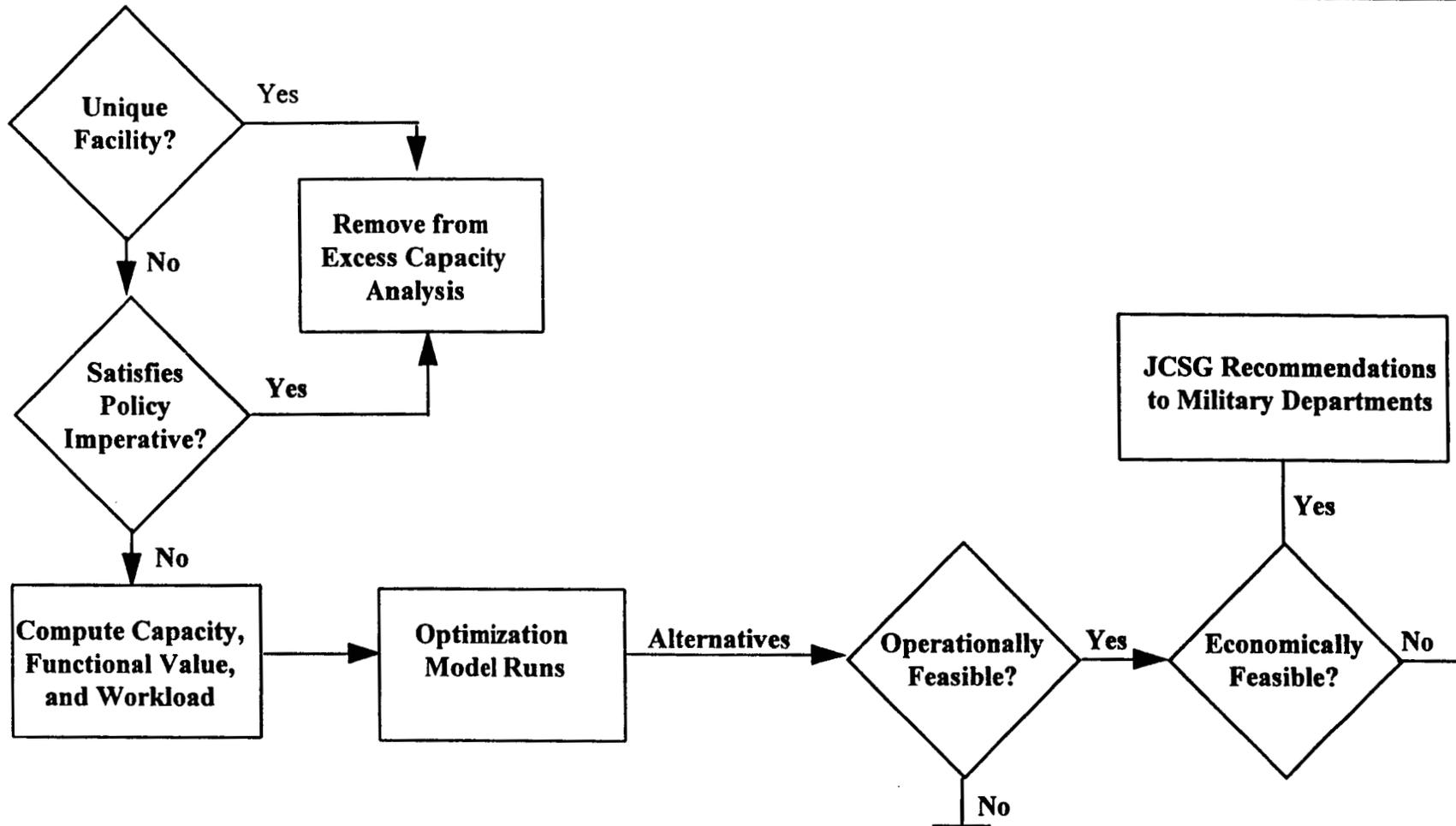
T&E JOINT CROSS SERVICE WORKING GROUP

PRESENTATION ON

EXCESS CAPACITY REDUCTION TARGETS

15 SEPTEMBER 1994

# T&E JCSG ANALYSIS PROCESS



**ANALYSIS PROCESS ENSURES ELIMINATION OF EXCESS CAPACITY WHERE OPERATIONALLY AND ECONOMICALLY FEASIBLE**

# **NUMERICAL REDUCTION TARGETS**

- **WHAT IS THEIR PURPOSE?**

- **ENSURE JCSG RECOMMENDATIONS PROVIDE SPECIFIED REDUCTIONS IN EXCESS CAPACITY**

**NOT REQUIRED FOR THIS PURPOSE; METHODOLOGY WILL IDENTIFY ALTERNATIVES THAT ELIMINATE EXCESS CAPACITY WHERE OPERATIONALLY AND ECONOMICALLY FEASIBLE**

- **BENCHMARK FOR STEERING GROUP TO ASSESS DEGREE TO WHICH SUBMISSIONS OF MILITARY DEPARTMENTS ACHIEVE REDUCTIONS IDENTIFIED BY THE JCSGs**

**APPROPRIATE USE OF NUMERICAL TARGET GIVEN T&E JCSG ANALYSIS PROCESS**

## CONCLUSIONS

- **MOST APPROPRIATE USE OF NUMERICAL REDUCTION TARGET IS USE AS BENCHMARK FOR ASSESSMENT OF MILITARY DEPARTMENT SUBMISSIONS**
- **NUMERICAL REDUCTION TARGETS SHOULD BE END PRODUCTS OF THE T&E JCSG ANALYSIS PROCESS BASED ON THE SPECIFIC T&E JCSG RECOMMENDATIONS AND PROVIDED TO THE MILITARY DEPARTMENTS WITH THE T&E JCSG RECOMMENDATIONS**



OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301



MEMORANDUM FOR CHAIRMAN, LABORATORY JOINT CROSS-SERVICE GROUP

SUBJECT: Base Realignment and Closure 1995 (BRAC 95): Test and Evaluation (T&E) and Lab Facilities

From review of responses from the data call for the T&E Joint Cross-Service Group (JCSG), several are recommended to be more appropriately analyzed in context of the Lab JCSG. These facilities have responded that they perform functions in both T&E and labs, but their workload is predominately in lab work. With your agreement, the T&E JCSG will no longer evaluate the identified facilities in favor of your JCSG evaluating these facilities.

Lab facilities to be no longer evaluated by the T&E JCSG are those that belong to the Naval Research Lab, Wright Labs, Armstrong Labs, Rome Labs, and Phillips Labs. Responses from the T&E JCSG data call are available for transfer to the Lab JCSG if desired. Please contact Mr. Irvin Boyles, ext. 77933 for further arrangements.

 SEP 15 1994  
John A. Burt  
Co-Chair  
T&E JCSG

 4 SEP 1994  
Lee H. Frame  
Co-Chair  
T&E JCSG

cc. Director, Defense Research and Development (Deputy  
For Lab Management)



OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

MEMORANDUM FOR MILITARY DEPARTMENT BRAC OFFICES

SUBJECT: Functional Values for Test and Evaluation (T&E) Activities

As part of the ongoing BRAC 95 joint cross-service analyses, the T&E Joint Cross-Service Group (JCSG) was scheduled to provide the functional values for T&E activities to the Military Departments by 15 September 1994.

Due to late responses by many of the T&E activities, as well as ambiguity and omissions in a large number of the responses, it has not been possible to complete scoring of functional value for all T&E activities. Requests for Clarification (RFCs) have been issued, and continue to be issued, through appropriate BRAC channels to resolve these ambiguities and omissions. Unfortunately, the additional time required to obtain certified responses to these RFCs will prevent the T&E JCSG from meeting the 15 September target date for delivery of functional values.

The T&E JCSG is taking all possible steps to provide, as early as possible, functional values to the Military Departments. Our best estimate is that we will be able to provide functional values by 26 September 1994.

Meeting the 26 September delivery date is contingent upon timely responses by T&E activities to the RFCs and supplemental data calls sent out by the T&E JCSG. Your active assistance in expediting responses to our RFCs is absolutely essential if the T&E JCSG is to receive the responses and complete its analysis in a timely manner while ensuring that all activities are evaluated in an equitable manner.

We appreciate your assistance in this important matter.

  
Lee Frame, Co-Chair  
T&E JCSG 14 SEP 1994

  
John Burt, Co-Chair  
T&E JCSG SEP 15 1994

CC:  
T&E JCSG Service Principals



**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**Tuesday, September 27, 1994**

**Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 1300. Mr. Lee Frame and Mr. John Bolino chaired the meeting. The agenda, a list of attendees, and handouts are attached.

The meeting began with a discussion on the change to the capacity analysis from previously approved RUMS methodology to peak historical data for measuring capacity. The Chair stated that he had not gotten with the ASD(Economic Security) yet to discuss this change but would do so shortly. The Chair also reaffirmed that the subgroup should continue drafting the change to the analysis plan for JCSG approval at a later date. The subgroup stated the draft plan is completed but lacks a cover memorandum which is in the works. The Chair also stated that the memoranda to the Laboratory and Depot Maintenance JCSGs has been signed out notifying them that T&E facilities at installations that are primarily laboratories or depots will no longer be considered by the T&E JCSG. Verbal feedback from the Lab JCSG indicate they concur with the memo.

Other old business discussed was that additional administrative support and safes were procured for the TEC Facility.

**SUBGROUP UPDATE**

The subgroup began their update with a status on schedule impacts, requests for clarification (RFC's), supplemental data calls, functional value scoring, activity/facility exclusions, and capacity analysis.

**Schedule**

The subgroup briefed the overall schedule. They anticipate having all RFC's in by Friday of this week. They also stated that not all official scoring is done--they are still pending certified RFC's. The subgroup anticipates to begin loading data in DPADs by October 3 with functional value compilation and unconstrained optimization runs complete by October 17.

### Requests for Clarification

The subgroup then briefed the overall status of the requests for clarification (RFC's) and a Service breakout of RFC responses. They highlighted that 118 of 162 RFC's have been returned certified with 39 pending certification and 5 still pending preliminary answers. Since A/W is still completing their final scoring a few more RFC's may need to be sent out.

### Supplementary Data Call

The subgroup briefed the status of the air/land/sea space supplemental data call. The Air Force data has been received and the other two Service's data is expected within a day or two. No further discussion.

### Functional Value Scoring

A brief status of functional value scoring was presented. Initial scoring has been completed by all three functional teams. Official scoring is proceeding smoothly. Remaining percentages is primarily due to RFC's that are still pending certification from the Military Departments.

### DPAD Validation

The subgroup then briefed the Group on validating the DPAD model. They stated that all modifications are completed and validation is being jointly done with notional data. Once validation is complete loading of completed score sheets can begin.

### Activity/Facility Exclusions

The subgroup briefed the exclusions to date by Service. The Chairs requested the subgroup to prepare a consolidated list of all exclusions be prepared which incorporates such facilities as the T&E exclusions at laboratories and depots. Discussion ensued on the five facilities at China Lake where the Navy disagreed with the subgroup proposals for action. After discussion of each bullet, the Group agreed to exclude the Chemical Analysis Research Facility and Materials Engineering/Failure Analysis Facility, keep the Strategic Propulsion Test Complex for consideration, and the Junction Ranch RCS Range and EW Integration Lab will be categorized as Electronic Combat.

### Capacity Analysis

The subgroup reiterated that the proposed change to the Analysis Plan for capacity analysis has been completed and pending approval by the ASD(ES). The subgroup will commence implementation assuming approval at this time. The Group agreed with this plan.

Other Issues

Three issues were presented. The first issue dealing with certified RFC responses was discussed earlier. The issue dealing with completion plans relates to the subgroup's belief that they will not be able to complete all analysis (including constrained runs and cost analysis) by October 17. The subgroup proposes to have the functional values and unconstrained analysis complete as well as the operational feasibility assessment completed by October 17. This will provide the Military Department's with a useful product to begin their analysis. The Group agreed to this proposal and stated that there may be other qualitative assessment options available later to identify inefficient cost alternatives. The final issue of comparability of data was a heads up discussion where the subgroup feels the JCSG will have to exercise judgment because of the sources of variability in the capacity analysis and functional value analysis. The Group recognized the importance of judgment in these areas.

At this time the formal portion of the meeting adjourned and a second meeting began to discuss classified sites with individuals with appropriate security clearances. A set of minutes for this meeting will be filed with Mr. Irv Boyles, DT&E.

Approved:

  
Lee Framé  
Co-Chairman

  
John Bolino  
Acting Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**September 27, 1994**

**List of Attendees**

Mr. Lee Frame, Co-Chair  
Mr. John Bolino, Acting Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
Lt Col George London, Air Force  
Mr. Wes Heidenreich, Air Force  
Mr. Joe Dowden, Air Force  
Mr. Walt Hollis, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Ms. Kathleen Ruummele, BMDO  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. Mark Flohr, OSD DNA  
Mr. Dave Vincent, DoD IG  
Mr. James Friel, DoD IG  
Mr. Robert West, DoD IG  
Ms. Janet Blair-Fleetwood, DoD Comptroller  
Ms. Jeanne Karstens, DoD Comptroller  
Mr. David Pritchard

AGENDA

T&E Joint Cross-Service Group  
Meeting Tuesday, 27 September 1994

Review of Minutes of Previous Meetings	OSD
Status of Actions	OSD
T&E Joint Working Group Status	JCSWG
• Schedule	
• RFC Status	
• Supplemental Data Call	
• Status	
• FV Scoring Status	
• DPAD Validation	
• Activity/Facility Exclusions	
• Capacity Analysis	
Issues/Concerns	All
Classified Sites	Limited

## **T&E JWG STATUS**

- **Schedule**
- **RFC Status**
- **Supplemental Data Call Status**
- **FV Scoring Status**
- **DPAD Validation**
- **Activity/Facility Exclusions**
- **Capacity Analysis**
- **Issues/Concerns**

# T&E JCSG MASTER SCHEDULE

	July	August	September	October
<b>Joint Data Calls</b>		Space 8/4 ▲	Technical 9/11 ◆	△ 9/26 COBRA
<b>Joint Analysis Plan Approval</b>	▲ 7/15	▲ 8/4		
<b>Supplemental Data Call</b>				△ 9/30
<b>RFC Responses</b>				△ 9/30
<b>Offical Scoring (w/ DPAD)</b>				△ 10/3
<b>T&amp;E FV's to MILDEP's</b>		◆ 8/16	◆ 9/15	△ 10/3
<b>MILDEP's MV to JCSG's</b>				△ 10/3
<b>JCSG Alternatives to MILDEP's</b>				△ 10/17

# REQUEST FOR CLARIFICATION (RFC) STATUS

(As of 26 September 1994)

	SENT	RECEIVED- PRELIMINARY	RECEIVED- CERTIFIED
AV	51	8	43(0)
EC	36	6	27(3)
A/W	75	25	48(2)
TOTAL	162	39	118(5)

( ) = quantity of outstanding RFC's with no response to date

# RFC STATUS BY MILDEPS

	SENT	PRELIM	CERT
<u>AV</u>			
<u>51</u>			
ARMY	13	0	13
AIR FORCE	16	0	16
NAVY	22	8	14
<u>EC</u>			
<u>36</u>			
ARMY	14	0	14
AIR FORCE	14	0	14
NAVY	8	6	0
<u>A/W</u>			
<u>75</u>			
ARMY	22	1	20
AIR FORCE	15	0	15
NAVY	38	25	12

**STATUS OF T&E SUPPLEMENTAL DATA CALL -  
AIR/LAND/SEA SPACE REQUIREMENTS**

**(As of 26 September 1994)**

**ARMY:                    EXPECTED 27 SEPT**

**NAVY:                    EXPECTED 27 SEPT**

**AIR FORCE:            RECEIVED 23 SEPT**

## SCORING STATUS

(As of 26 September 1994)

<b>Functional Area</b>	<b>Facilities Excluded</b>	<b>Facilities Remaining</b>	<b>Percent of Facilities Scored By Three Services</b>	<b>Percent of Facilities Officially Scored</b>
AV	241	54	100	80
EC	237	30	100	65
A/W	177	105	100	40

## DPAD VALIDATION

- Completed Modifications to DPAD for FV Calculation
- Jointly validating model at this time
- FV calculation can begin when:
  - DPAD validation is completed
  - Completed scoring sheets are provided for data entry

# **EXCLUSIONS STATUS**

- **Final Activity Exclusions Ready for JCSG Approval**

- **Army**

- **Navy**

- **Air Force**

- **Facility Exclusions Completed**

- **AV-241, EC-237, AW-177**

- **“Absolute” Threshold Criterion produced 9 additional facility exclusions**

- **Navy non-concurrences**

## ARMY ACTIVITY EXCLUSIONS

### JCSWG Recommended Exclusion

- **Combat Systems Test Activity, APG, MD**
- **TEXCOM Experimentation Center, OPTEC at Ft. Hunter-Liggett, CA**
- **Intelligence and Electronic Warfare Test Directorate , OPTEC at Ft. Huachuca, AZ**
- **Air Defense Artillery Test Directorate, OPTEC at Ft. Bliss, TX**

### Rationale

- **Service Unique, Land Vehicle Signature Measurement**
- **Operational Test Activity, No Infrastructure**
- **Operational Test Activity, No Infrastructure**
- **Operational Test Activity, No Infrastructure**

# NAVY ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- COMOPTEVFOR
- PMRF
- AFWTF
- NRL
- NCCOSC ISE East Det St Inigoes
- NSWC Carderock
- NSWC Louisville
- AEGIS Combat Systems Center, Wallops Is
- NAWD Corona
- NAWC Lakehurst
- NSWC Port Hueneme

## Rationale

- OTA
- Dedicated Training Facility
- Dedicated Training Facility
- S&T Lab
- Shipboard Landing Aid Systems
- Ship Hull & Machinery RDT&E
- Maintenance of Naval Gun Systems
- AEGIS Combat Systems
- Fleet Training Support
- Service Unique (Shipboard Avn Supt)
- Service Unique (Non-AEGIS Cmbt Sys)

# AIR FORCE ACTIVITY EXCLUSIONS

## JCSWG Recommended Exclusion

- Wright Labs
- Armstrong Labs
- Rome Labs
- Phillips Labs
- Tinker Air Logistics Center (ALC)
- Sacramento ALC
- Warner Robins ALC
- Kelly ALC
- Ogden ALC
- 513 ETS, Offutt AFB, NE
- USAFWTC, Nellis AFB, NV
- Det4/TACCSF, Kirtland AFB, NM
- AFOTEC, Kirtland AFB, NM
- USAF AWC, Eglin AFB, NM

## Rationale

- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Depot)
- MILDEP-Unique
- Training + <5%
- <5%
- OTA
- OTA, No T&E Facilities

## REMAINING T&E JCSG UNIVERSE

- Army:
  - White Sands Missile Range (including EPG)
  - Yuma Proving Ground
  - Redstone Technical Test Center
  - Aviation Technical Test Center @ Ft Rucker, Edwards
- Navy:
  - NAWC's @ China Lake, Indianapolis, Patuxent River, Point Mugu, Warminster.
  - NSWC's @ Crane, Dahlgren, Indian Head, White Oak
- Air Force:
  - AFFTC @ Edwards, UTTR
  - AFDTC's @ Eglin, Ft Worth, Buffalo, Holloman
  - AEDC Tullahoma
  - AWC @ Tyndall

# **Navy Non-concurrences to Proposed Facility Exemptions & Categorizations at NAWC China Lake**

- **Chemical Analysis Research Facility [proposed exemption]**
  - 18% T&E (17-AW) T&E for SSPO Trident Programs
- **Mat's Engineering/Failure Analysis Facility [proposed exemption]**
  - 60% T&E (55-AW, 5-AV) Failure analysis at the component level, all Navy airborne weapons programs, flight tests of developmental and in-service weapons systems.
- **Strategic Propulsion Test Complex [proposed exemption]**
  - 100% T&E (AW) Can support rocket motor test of tactical weapons
- **Junction Ranch RCS Range [proposed categorize as EC]**
  - First 100% AW, then 60% AV or 100% EC (?), “All JR customers are local China Lake programs” (ie: weapons programs)
- **EW Integration Lab [proposed categorize as EC]**
  - 10% T&E (9-AV, 1-AW) No workload reported in EC.

## CAPACITY ANALYSIS

- Updated Appendix C provided 23 September 1994
- Steering group Approval anticipated by ??
- Implementation in Progress

## CLASSIFIED SITES

- **Data Call Responses reviewed**
- **RFC's issued and certified responses received**
- **Official scoring not conducted**
- **JWG Proposal:**
  - Exclude sites from FV & Capacity analysis
  - Rationale:
    - Security restricts data access/dissemination.
    - Classified work/resources not subject to relocation
  - Policy: Identify as Tri-Service resources available for limited non-classified EC work.

## **ISSUES/CONCERNS**

- **Certified RFC's Responses**
- **Completion Plans**
- **Comparability of Data**

## ISSUE: Completion Plans

- JWG can not complete joint analysis plan by 17 Oct '94
- JWG agreement: Must complete through "Operational Feasibility" assessment by 17 Oct '94, at a minimum, to provide MILDEPS a useful product
  - Ensure "Workload Type" fit and "Technical Capability" fit.
- Options for Cost Analysis:
  - I. Leave MILDEPS to accomplish after 17 Oct '94
  - II. Conduct "Qualitative" Assessment by ?????
  - III. Complete Functional COBRA analysis, as planned, by ?????

## CONCERN: Comparability of Data

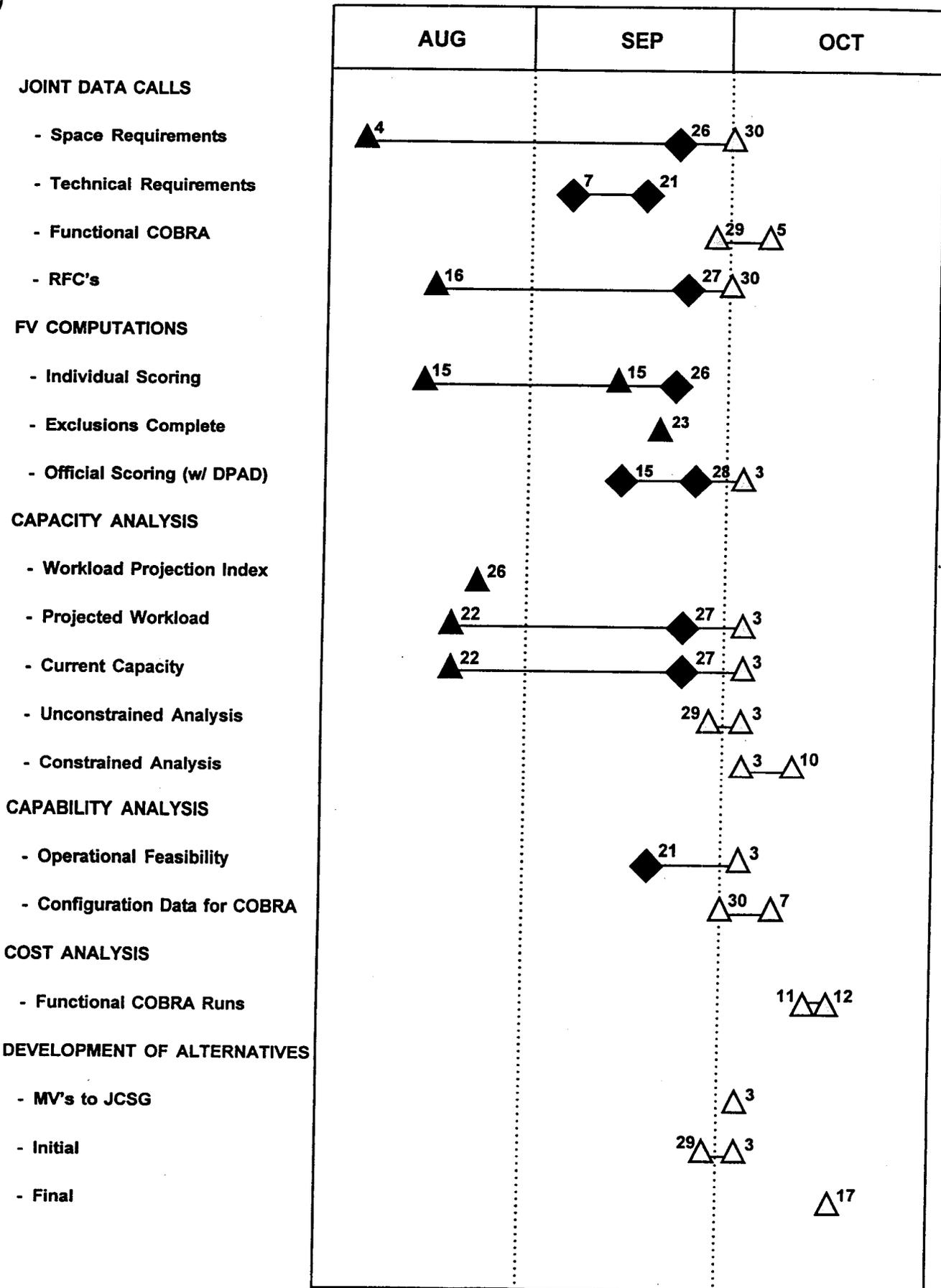
- **Capacity - Sources of Variability**
  - Definition of what constitutes a:
    - T&E Facility versus Non-T&E Facility
    - Test
    - Test Facility/Capability (aggregation)
    - Test Hour
    - Conversion of Direct Labor Hours to Test Hours
  - Estimate of % T&E Workload
- **Functional Value**
  - Identification of Functional Area: based on system tested or how data is used?

Not "show stoppers" but require judgment by JCSC in development of potential alternatives

• BACKUPS

# T&E JCSG DETAILED SCHEDULE (TO 17 OCT)

As of: 27 Sep 94



**TECHNICAL INFORMATION**

Facility/Capability Title: Chemical Analysis Research Facility

<p><b>Facility Description, Including Mission Statement:</b></p> <p>To provide analytical services, including materials characterization to a large number of in-house and out-house activities including, SSPO(Trident and Chemistry Division research programs in the areas of energetic materials, electronic materials, polymer precursors, foreign materials characterization, failure analyses and general "unknown" determinations. Analytical environmental and hazardous waste samples are critical to the operations of the Environmental Projects Office. Support is also provided to programs engaged in seeking substitutes for ozone depleting substances. This includes Mass Spectrometry and Chromatography Lab, Nmr Lab, Infrared Spectroscopy Lab, Polymer Characterization Lab, and X-Ray Diffraction Lab.</p>
<p><b>Interconnectivity/Multi-Use of T&amp;E Facility:</b></p> <p>The facility is active in diverse areas ranging from in-house support of research programs to support for the Environmental Projects Office to T&amp;E work for SSPO on Trident Programs. Collaborations and joint programs exist for Port Hueneme, NCCOSC, NSWC/WO, Crane, etc. Close ties and joint programs also exist with Lockheed, Hercules, Thiokol, Aerojet, United Technologies, DOE labs, and many universities.</p>
<p><b>Type of Test Supported:</b></p> <p>Mass spectrometry, gas chromatography, liquid chromatography, graphite furnace atomic absorbance spectroscopy, inductively coupled plasma emission spectroscopy, sampling and analysis of chemical unknowns, specific ion electrodes.</p>
<p><b>Summary of Technical Capabilities:</b></p> <p>Chemical analyses for determining identity and/or quantity of chemical constituents. Techniques available at this facility include: high performance liquid chromatography, gas chromatography, mass spectrometry, ion chromatography, atomic absorption, fluorometry, UV/visible/IR/Raman spectroscopy, and inductively coupled plasma emission spectroscopy.</p>
<p><b>Keywords:</b></p> <p>Gas Chromatography, Mass Spectrometry, High Performance Liquid Chromatography, Ion Chromatography</p>

TECHNICAL INFORMATION

Facility/Capability Title: Materials Engineering/Failure Analysis Facility

Facility Description, Including Mission Statement:

The primary mission is to provide materials engineering technical support and consultation; conduct applied research to develop materials and processes for systems applications; provide materials engineering support and failure analysis in the fields of corrosion control, ceramics, composite structures, metallurgy, polymers, nondestructive and destructive testing, and plastics applications. Laboratory equipment and facilities include capabilities for analysis and characterization of materials, specifically metal and metal alloys, polymer-based composites, and semiconductor materials. Facilities are tailored to accommodate component scale units for initial failure analysis assessment and extend into molecular and subgrain regions to determine root causes. Facilities determine bulk properties, molecular structure, and interfacial boundary layer composition. Resources characterize mechanical, electrical, electro-optical and thermal properties or materials used in the fabrication of avionic and missile components

Interconnectivity/Multi-Use of T&E Facility:

The facility supports all airborne weapons programs of the Naval Air and Sea Systems Commands. Joint programs with other military branches are supported as required. Development programs utilize resources as needed. All aspects of RDT&E are supported. Approximately 10 - 15% of the facilities and equipment are utilized by non-weapon-specific programs.

Type of Test Supported:

Flight tests of developmental and in-service weapon systems. Materials and process evaluations of developmental and in-service weapon systems.

Summary of Technical Capabilities:

Materials characterization, failure analysis, materials development, reverse engineering, process development, process analysis

Keywords:

Materials Engineering, Failure Analysis, Materials Characterization, Materials Development

**TECHNICAL INFORMATION**

Facility/Capability Title: Strategic Propulsion Test Complex

<p><b>Facility Description, Including Mission Statement:</b></p> <p>This test complex consists of a series of rocket motor test bays with supporting buildings, work pads, flame chutes with quenching capability, each having a unique capability for test of solid rocket motors. Bay I, constructed in 1959, is a horizontal test facility that can test motors up to 1,000,000 lbs of thrust. Bay II, built in 1961, tests rocket motors nozzle down, and with an integral Ormond stand, measures six-component thrusts. Bay IIA is a horizontal multistage pad with temperature conditioning capability. Bay VI is a strategic motor vertical test bay with tiltable firing platform, handling motors up to 1mlb of thrust, and has a movable service building and gantry crane for motor handling. A water deluge system and real-time radiography are capabilities. Bay VII is a horizontal strategic motor test bay, capable of 1.5mlbs of thrust, and provides a movable temperature conditioning building, and uniquely provides the ability to test missile stage electronics and transition ordnance. Ordnance siting ranges to 300,000 lbs, class 1.3</p>
<p><b>Interconnectivity/Multi-Use of T&amp;E Facility:</b></p> <p>Facilities are linked to the Main Control Room for control and data acquisition purposes. Nearby support facilities include LN2, X-Ray, Computer Tomography, temperature controlled storage, transducer calibration laboratory, buildup and prep facilities, and general shop capabilities. Facility can support any classification of programs.</p>
<p><b>Type of Test Supported:</b></p> <p>Rocket motor static firing, performance testing, aging and surveillance, and qualification testing.</p>
<p><b>Summary of Technical Capabilities:</b></p> <p>Data acquisition channels are available in this bay for recording pressure, force, strain, temperature, position, shock, and vibration data. Instrumentation/Control Channels: Analog (60), Digital (524), signal conditioning amps (200), Thermocouples (214), video data lines (48), controls (36), real time displays - analog (20), real time displays - digital (40), film camera controls (8), piezo electric conditioning (36).</p>
<p><b>Keywords:</b></p> <p>Propulsion, Rocket, Static Test, RTR, Horizontal, Vertical, Solid Motors, Tactical, Strategic</p>

0479

BRAC95 DATA CALL #13

T&E

ACTIVITY UIC. 330

### GENERAL INFORMATION

NOT CERTIFIED

Facility/Capability Title: Junction Ranch Radar Cross Section Range

Origin Date: 04/25/94

Service: <u>N</u>	Organization/Activity: <u>NAWC China Lake</u> Location: <u>Code C3206</u>					
T&E Functional Area: <u>Armaments/ Weapons Systems</u>	UIC = <u>60530</u>					
T&E Test Facility Category <u>Measurement Facility</u>						
	<u>T&amp;E</u>	<u>S&amp;T</u>	<u>D&amp;E</u>	<u>IE</u>	<u>T&amp;D</u>	<u>OTHER</u>
PERCENTAGE USE:	<u>100</u>					
BREAKOUT BY T&E FUNCTIONAL AREA (%)	<i>NOTE: THE FOLLOWING BREAKOUT BY T&amp;E FUNCTIONAL AREA REPRESENTS THE "TYPES OF ITEMS TESTED" FOR RADAR CROSS SECTION. IF IT IS DESIRED TO BREAKOUT "HOW THE DATA IS USED", THE BREAKOUT WOULD BE 100% EC, SINCE THE RADAR CROSS SECTION DATA IS USED IN THE RADAR RANGE EQUATION TO COMPUTE PARAMETERS SUCH AS SURVIVABILITY OF AN AIR VEHICLE IN AN ELECTRONIC COMBAT ENVIRONMENT.</i>					
Air Vehicles	<u>60</u>					
Armament/Weapons	<u>0.8</u>					
EC						
Other **	<u>39.2</u>					
Total in breakout must equal "Percentage Use" on first line.						

\*\* INCLUDES GROUND VEHICLES, SHIP MODELS, AND VARIOUS AIRBOURNE OBJECTS.

NOT CERTIFIED

177 R

(7 Sept 1994)

30 August 1994

**TECHNICAL INFORMATION**

Facility/Capability Title: Junction Ranch Radar Cross Section Range

Facility Description, Including Mission Statement:

The Junction Ranch (JR) RCS measurement range is located in a remote valley of the China Lake North Range Complex and was built in the late 1970s. The facility occupies approximately 44,000 acres. The 4,000 ft Horizontal Bounce Range generates wideband, coherent monostatic and wideband, coherent bistatic, full scatter matrix RCS data of missiles, aircraft, tanks and trucks, models and components. Frequency coverage is 40-55 MHz, 0.15-18 GHz and 34-36.5 GHz. The 17,000 ft Look Down Range supports wideband monostatic, full scatter matrix testing of ship models and other test items in a simulated ocean or look down environment. Both the 78x110-ft salt water pond and a 78x132-ft tilt deck have 30-ft diameter, 10,000-lb turntables. Almost all JR customers are local China Lake programs. Security is excellent (TS) because of restricted land and air space (R-2508). Visual access is restricted because of the surrounding mountains.

Interconnectivity/Multi-Use of T&E Facility:

JR is currently implementing the RCS Common Data Format which will allow direct data interchange between JR and other DOD RCS ranges.

Type of Test Supported:

Radar cross section testing.

Summary of Technical Capabilities:

JR operates two state-of-the-art Elan RCS radar data acquisition systems. Data reduction is performed using a Silicon Graphics workstation and several 386/486 personal computers.

Keywords:

Radar Cross Section (RCS).

## TECHNICAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

## Facility Description, Including Mission Statement:

The EW Integration Lab with its Multiple Agile Radar Threat Simulator (MARTS) work station is actually several electronic warfare (EW) laboratories integrated together in one building with an equipment replacement value of \$2 Million. These laboratories are:

- Multi-target radio frequency (RF) environment (up to 112 simultaneous emitters, 14 pulse dopplers, 600 MHz to 18 GHz, capable of dynamic control as in a scenario). Emitters are available in an anechoic chamber at RF.
- EW suite integration laboratory: Powered spread-benches for radar warning receivers (RWRs), e.g. AN/ALR-67 (V)2 (V)3&4, AN/ALR-45F, etc.), self-protect jammers (ALQ-126B, ALQ-165 (ASPJ), ALQ-162, ALQ-164, etc.), anti-radiation missile (ARM) seekers and associated command-launch computer, and emulated aircraft mission computers on MIL-Std 1553 data buses.
- Anti-radiation seeker development laboratory, utilizing the multi-target RF environment and ARM system development environment.
- Radar warning receiver development laboratory, utilizing the multi-target RF environment and RWR system development environment.

## Interconnectivity/Multi-Use of T&amp;E Facility:

Multi-target radio frequency environment  
Electronic Warfare suite Integration/Anti-radiation seeker development  
Radar warning receiver development laboratory

## Type of Test Supported:

The EWIL is used to integrate the AN/ALR-67 (V)2 and (V)3 with Navy tactical aircraft avionics, weapons and other EW systems. This has to be done each time the OFP and/or UDF in the RWR changes.

## Summary of Technical Capabilities:

This lab has the capability of generating multiple threat emitter radio frequency (RF) simulations, introducing these simulated RF emitters into a small anechoic chamber and radiating a HARM seeker section. A HARM CLC emulation and all of the control panels exist in the lab. The lab is designed to integrate the AN/ALR-67 (V)2 and (V)3 OFPs and UDFs with HARM, ALQ-126B, ASPJ, mission computers, IBUs, MLVs, ALE-47s, etc.. It has all of the bus/hookup harnesses, control panels, patch panels, etc to do a complete RWR/avionics/weapons integration.

## Keywords:

EW Integration, Radar Warning Receivers

BRAC 95 DATA CALL #13

FOR OFFICIAL USE ONLY

ACTIVITY UIC: 60530

GENERAL INFORMATION

Facility/Capability Title: Electronic Warfare Integration Laboratory

Origin Date: 4/21/94

Service: N

Organization/Activity: NAWCWPNS Location: China Lake, CA

T&E Functional Area: Air Vehicles

UIC = 60530

T&E Test Facility Category Integration Laboratory

PERCENTAGE USE:	T&E	S&T	D&E	IE	T&D	OTHER
10	0	0	90	0	0	0

BREAKOUT BY T&E FUNCTIONAL AREA (%)

Air Vehicles	2	0	81	0	0	0
Armament/Weapons	1	0	2	0	0	0
EC						
Other						

Total in breakout must equal "Percentage Use" on first line.

0560

## Definitions

- **T&E Facility/Capability:**

“a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.”
- **Test & Evaluation:**

“support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity or production processes, and compliance with system specifications and quality standards.”
- **Science & Technology:**

“support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.”



OFFICE OF THE SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

27 SEP 1994

MEMORANDUM FOR BRAC 95 T&E JOINT CROSS-SERVICE GROUP

SUBJECT: BRAC 95 T&E Data Access Master List

- REFERENCE:
- (a) Our memorandum, subject as above, dated 2 August 1994 (copy attached)
  - (b) Our memorandum, subject "BRAC 95 Test and Evaluation (T&E) Joint Cross-Service Group, Joint Working Group Members, and Support Staff" (copy attached)

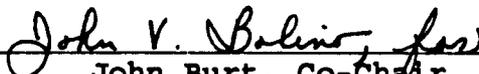
The Master List of individuals participating as members of the BRAC 95 Test and Evaluation (T&E) Joint Cross-Service Group (JCSG) and/or the JCSG Working Group and thereby having access to BRAC 95 T&E data is hereby amended to add the following individuals:

DoD Comptroller/Investments Directorate  
Ms. Janet Fleetwood

DoDIG  
Mr. Tom Byers

Institute for Defense Analyses (IDA)  
Ms. Wanda Albin  
Ms. Rhonda Cooke

  
\_\_\_\_\_  
Lee Frame, Co-Chair  
T&E Joint Cross-Service Group

  
\_\_\_\_\_  
John Burt, Co-Chair  
T&E Joint Cross-Service Group

Attachments:  
As stated



OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

02 SEP 1994

MEMORANDUM FOR EXECUTIVE SECRETARY, BRAC 95 STEERING GROUP

SUBJECT: BRAC 95 Test and Evaluation (T&E) Joint Cross-Service Group,  
Joint Working Group Members, and Support Staff

The Master List of individuals participating as members of the Test and Evaluation (T&E) Joint Cross-Service Group and Joint Working Group is provided per your request of 1 September 1994. Also included are individuals in the Services' BRAC staff offices and others who provide support. Rating field organizations are identified when individuals are not assigned to Pentagon or Washington headquarters organizations.

T&E Joint Cross-Service Group Members

DT&E, OUSD(A&T)

Mr. John Burt  
Mr. John Bolino  
Mr. Irvin Boyles

DOT&E, OSD

Mr. Lee Frame  
Mr. Nicholas Toomer  
Mr. Joseph Moore  
Mr. William Rustia

ARMY, DUSA(OR)

Mr. Walter Hollis  
Mr. John Gehrig           TEMA

NAVY, BSAT

Mr. Gerald Schiefer  
CAPT Dave Rose

AIR FORCE, AF/T&E

LtGen(Ret) Howard Leaf  
Mr. Parker Horner

DNA

Dr. Don Linger  
Mr. Thomas Kennedy  
Mr. Mark Flohr

BMDO

Col Michael Toole  
Ms. Kathleen Ruummele

DoD Comptroller/Investments Directorate

Ms. Jeanne Karstens

PA&E, OSD

Mr. Frank Lewis

Joint Working Group (Test and Evaluation) Members

**ARMY**

Mr. Gary Holloway	HQ TECOM (Aberdeen PG)
Mr. Tom Roller	Hq TECOM (Aberdeen PG)
MAJ Essex Fowlks	TEMA (Pentagon)
Mr. David Prichard	Hq TECOM (Aberdeen PG)
Mr. Donald Jeanblanc	Hq TECOM (Aberdeen PG)

The following Army personnel support T&E analysis but do not participate on the Working Group:

COL Michael Jones	The Army Basing Study (TABS) Office, Pentagon
LTC David Powell	The Army Basing Study (TABS) Office, Pentagon
LTC John Marriott	The Army Basing Study (TABS) Office, Pentagon
MAJ Charles Fletcher	The Army Basing Study (TABS) Office, Pentagon

**NAVY**

CDR Mark Samuels	Base Structure Analysis Team (BSAT)
Mr. Don DeYoung	Base Structure Analysis Team (BSAT)

The following Navy Personnel support T&E analysis but do not participate on the Working Group:

Mr. Dave Wennergren - COBRA functional assistance (BSAT)  
DR. Ron Nickel - Optimization analysis tool assistance (BSAT)

**AIR FORCE**

Dr. Dan Stewart	AFDTC (Eglin AFB)
Col Wes Heidenreich	AFDTC (Eglin AFB)
LtCol George London	Hq AF/TE, Pentagon
Mr. Doug Nation	AFDTC (Eglin AFB)
Mr. Robert Lee	AFFTC (Edwards AFB)
Mr. Joe Dowden	AFFTC (Edwards AFB)
Ms. Sharon Brooks	AFDTC (Eglin AFB)
Mr. Carlos Tirres	AEDC (Arnold AFB)
Mr. John Lindegren	AFDTC (Eglin AFB)

The following AF individual supports T&E analysis but does not participate on the Working Group:

LtCol Roy Rice                      Kirtland AFB

Additional Personnel Supporting T&E Joint Cross-Service Group and Joint Working Group

**DoDIG**

Mr. David Vincent  
Mr. James Friel  
Ms. Barbara Moody

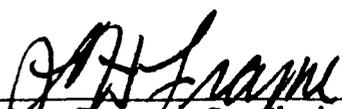
**OSD Base Closure & Utilization**

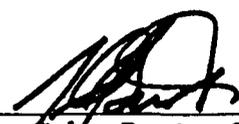
Mr. Michael McAndrew

**Administrative Support from the Institute for Defense Analyses (IDA)--  
an OSD-only support FFRDC:**

Mr. Charles Ackerman  
Mr. Dennis Madl  
Mr. Thomas Musson  
Mr. George Tolis  
Ms. Jan Moyer  
Ms. Crystal Moore-Nelson  
Ms. Georgia Medina

All above personnel have access to BRAC 95 T&E data and are required to sign the attached "Certification of Nondisclosure". This list supersedes any and all previous lists.

  
\_\_\_\_\_  
Lee Frame, Co-Chair  
T&E Joint Cross-Service Group

  
\_\_\_\_\_  
John Burt, Co-Chair  
T&E Joint Cross-Service Group

Attachment:  
Certification of Nondisclosure

# **CERTIFICATION OF NONDISCLOSURE**

## **(JOINT CROSS-SERVICE GROUP FOR TEST AND EVALUATION)**

### **REFERENCES:**

- a. DEPSECDEF Memorandum, *1995 Base Realignment and Closures (BRAC95)*, 7 January 1994.
- b. USD(A&T) Memorandum, *1995 Base Realignment and Closures (BRAC95)*, 3 January 1994.
- c. Action Plan and Milestones, Test and Evaluation Joint Cross-Service Group, January 1994.
- d. Test and Evaluation Joint Cross-Service Group Action Plan and Milestones for BRAC95, and Analysis Plan for BRAC95 Cross Service Analysis, both dated 3 August 1994.

I hereby agree that I will not divulge any information about BRAC 95 activities, data calls, analysis criteria and results, or any related discussions and outcomes that become available to me as a result of my official activities in support of the references, to anyone outside of the Test and Evaluation Joint Cross-Service Group, or the supporting Joint Working Group, including superiors and other members of the organization and Service or Defense Agency to which I am assigned without specific authorization from one of the co-chairpersons of the Test and Evaluation Joint Cross-Service Group. Individuals authorized to receive information about BRAC 95 activities are limited to those DoD employees and military personnel who have been designated by an access list issued by the co-chairpersons of the T&E Joint Cross-Service Group and have also executed a Certification of Nondisclosure.

This restriction applies to information from BRAC 95 documents, published or unpublished, and the data base and other information developed by the T&E Joint Cross-Service Group. It also applies to BRAC 95 information developed at my work location(s), information submitted by the DoD Components to specifically support BRAC 95, information developed by other Joint Cross-Service Groups, and background material produced by DT&E or DOT&E to support the BRAC 95 activities.

This agreement will remain in effect until 1 March 1995.

**SIGNATURE:**

\_\_\_\_\_

**PRINTED NAME/SSN:**

\_\_\_\_\_

**DATE:**

\_\_\_\_\_

**WITNESS:**

\_\_\_\_\_



OFFICE OF THE SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

02 AUG 1994

Memorandum for Members, BRAC 95 T&E Joint Cross-Service Group

Subject: BRAC 95 T&E Data Access Master List

Following is the Master List of individuals authorized access to BRAC 95 Test and Evaluation (T&E) data:

Army.....Mr. Walter Hollis  
Mr. John Gehrig  
Mr. Gary Holloway  
COL Michael Jones  
LTC David Powell  
Mr. Tom Roller  
MAJ John Marriott  
MAJ Charles Fletcher  
MAJ Essex Fowlks  
Mr. David Prichard  
Mr. Donald Jeanblanc

Navy.....Mr. Gerald Schiefer  
CAPT Dave Rose  
CDR Mark Samuels  
Mr. Don DeYoung  
Mr. Dave Wennergren  
Dr. Ron Nickel

Air Force.....LtGen(Ret) Leaf  
Dr. Dan Stewart  
Mr. Parker Horner  
Col Wes Heidenreich  
LtCol George London  
LtCol Roy Rice  
Mr. Doug Nation  
Mr. Robert Lee  
Mr. Joe Dowden  
Ms. Sharon Brooks  
Mr. Carlos Tirres  
Mr. John Lindegren

DOT&E, OSD.....Mr. Lee Frame  
Mr. Nicholas Toomer  
Mr. Joseph Moore  
Mr. William Rustia

DT&E, OUSD(A&T)...Mr. John Burt  
Mr. John Bolino  
Mr. Irvin Boyles

DNA.....Dr. Don Linger  
Mr. Thomas Kennedy  
Mr. Mark Flohr

BMDO.....Col Michael Toole  
Ms. Kathleen Ruemmele

DoD Compt.....Ms. Jeanne Karstens

OSD PA&E.....Mr. Frank Lewis

DoDIG.....Mr. David Vincent

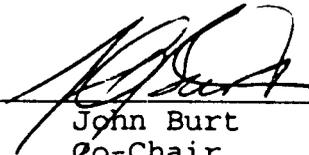
OSD Base Closure  
& Util.....Mr. Michael McAndrew

For purposes of access to BRAC 95 T&E data, this list supersedes any and all other lists. No individuals other than those above are to be allowed access to BRAC 95 T&E data unless their names have been added to this list by the undersigned.



Lee Frame  
Co-Chair

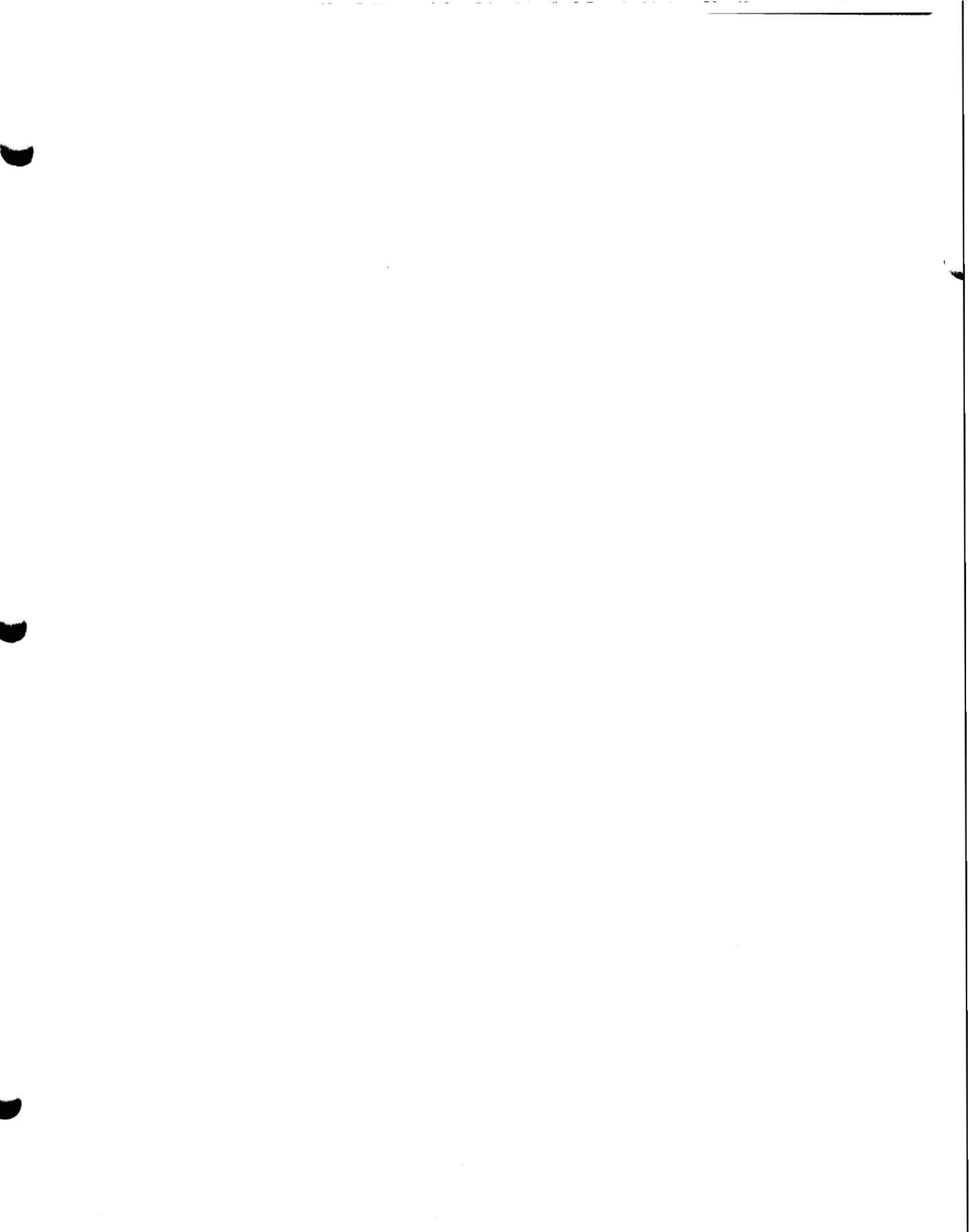
T&E Joint Cross-Service Group



John Burt  
Co-Chair

T&E Joint Cross-Service Group

cc:  
Director, Base Closure and Utilization



BRAC 95  
Joint Cross-Service Group on Test & Evaluation

Monday, 3 October 1994

Minutes

The BRAC 95 Test and Evaluation Joint Cross-Service Group (JCSG) convened at 1300 hours. Mr. Lee Frame and Mr. John Burt chaired the meeting. The agenda, list of attendees, and handouts are attached.

Minutes. Comments were solicited on the minutes of the meeting of 15 September 1994. A comment was received that, with regard to one of the paragraphs, the clarity needed to be improved. It was decided that any recommendations for wording improvements on those minutes could still be submitted to the OSD BRAC Office representative who prepared the minutes.

The concern was expressed that the minutes of these T&E JCSG meetings tend to show decisions and do not reflect where there was a lack of unanimity on the part of JCSG members. Thus, non-concurrences often have not been reflected in the minutes. General Leaf provided another copy of his airspace concerns memo to be included in the minutes.

Review Group Meeting. A report was given on the BRAC Review Group meeting held last Thursday, 29 September 1994. It was stated that, despite any earlier suggestions to the contrary, the Military Departments will be providing Military Value (MVs) to the JCSGs, which MVs can then be used by the JCSGs in providing products back to the Departments. It was also reported that, at the Review Group Meeting, the Deputy Secretary expressed some concern that there be sufficient time between when the Services get the JCSG recommended alternatives and when they make their recommendations to the Secretary of Defense. The Deputy Secretary urged that the JCSGs work cooperatively with the Services to produce recommendations that are agreeable to all parties concerned.

It was reported that, for the foreseeable future, the Review Group will meet monthly. The next planned Review Group meeting is 1 November and the next planned Steering Group meeting is 12 October.

Schedule. The Working Group confirmed that, as previously indicated, it would not be able to meet the original 3 October date for providing FV to the Military Departments. It was agreed that, after review and approval by the JCSG, FV can be given to the Tri-Department BRAC Group to support optimization runs. The FV data will be approved by the Steering Group before release to the Military Departments.

RFC Status. The Working Group reported that nearly all responses to Requests for Clarification (RFCs) have been received. Where only a preliminary response has been received, that preliminary response is used as the basis for preliminary scoring. When the certified response is subsequently received, the official scoring is determined. The JCSG indicated concurrence in this procedure.

Supplementals. The Working Group reported on the status of supplemental data calls. Remaining certified responses from one Military Department are expected to be available by the end of the day.

Facility-Level Exclusions. The Working Group reported on facility level exclusions. It was reported that the exclusion list is very nearly completed, pending receipt of all RFC responses.

The T&E JCSG Universe. The Working Group reiterated that, for the sake of BRAC 95, the "T&E JCSG Universe" is now down to 22 activities. That is, there are 22 activities remaining to be subject to cross-service analysis. It was further pointed out that the recommendations of the JCSG Groups to the Military Departments will not state what site or installation to close but what activities can be closed or realigned and where workload can be shifted.

Physical Value of a Tenant Organization. With regard to scoring, the issue was discussed as to what credit should be given to a tenant organization on an installation for available airspace, seospace or landspace. Some tenant organizations have claimed all the airspace available to them. Others, only what they use. Still others, no space at all because they don't own it. The question was whether to score the space reported in the certified response or give credit for all of the host's space used to support the tenant's test mission. It was decided to use the data provided on the certified response to the data call. The Working Group will investigate whether constraints can be used in the optimization model to ensure that tenant facilities will be fully utilized if they are at a site which is to remain open.

Eglin Water Test Area (EWTA). The issue was discussed as to whether Eglin Water Test Areas (EWTA) should be treated as "warning airspace" for the sake of functional value scoring. After considerable discussion, the decision was made to use the data on Eglin Water Test Area. The Air Force stated its objection to this course of action for scoring "available" and "straight line segment" questions, but not for "restricted or warning area" questions.

Including Parts of Excluded Facilities. The issue was discussed of including some of the capabilities of facilities that have been excluded. This mainly concerned support facilities. After discussion, the decision was made not to include in further analysis any part of any facility that has been excluded under the 5% or 100 hours rule. Excluded support facilities will be included for technical value and configuration fit analysis.

DoDIG Briefing on Changing Excess Capacity Methodology. The DoDIG representative on the JCSG presented a short briefing on the advisability of changing the method used to determine excess capacity. The T&E JCSG Analysis Plan provides for utilization of the Range Utilization Measurement System (RUMS) method of measuring excess capacity. However, when used for BRAC 95 T&E joint cross-service analysis, RUMS has resulted in unrealistic capacity estimates. The Working Group has recommended changing from the RUMS method to using historical workload as the measure of excess capacity. The DoDIG rep said that there are a lot of limitations to the RUMS methods that have become apparent during this BRAC 95 analysis process. He said he has talked to senior service reps in the Working Group and all agreed that it makes sense to use the historical workload measure instead of RUMS. He said he saw no disadvantage to any facility from the conversion by the T&E JCSG to the historical workload method. The DoDIG said, "We concur with the change". A copy of his briefing slides is attached with these minutes.

"Vision Statement". There was discussion of the fact that the Chair of the Labs Group had provided the Military Departments with a policy statement on where she envisions that labs, as a functional area, should be heading in the years to come. It was reported that Mr. Gotbaum thought highly of this "vision statement" and encouraged the T&E Group to provide a similar statement to the Military Departments. After further discussion, however, it was concluded that the T&E JCSG had already provided the Military Department Vice-Chiefs and SAEs with a statement of policy imperatives covering much of the same ground and the JCSG is currently awaiting a response from each Department. It was decided that no further action is needed at this time.

Conclusion. It was decided that the next meeting of the T&E JCSG would be held on Tuesday, 11 October 1994, at a time to be announced within the next couple of days. With all business completed, this T&E JCSG meeting concluded at 1500 hours.

Approved:

  
Lee Frame  
Co-Chairman

  
John Burt  
Co-Chairman

Attachments

BRAC 95

Joint Cross-Service Group on Test and Evaluation

October 3, 1994

List of Attendees

Mr. Lee Frame, Co-Chair  
Mr. John Burt, Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
Mr. John Bolino, Co-Study Team leader  
LTG(Ret) Howard Leaf, Air Force  
Mr. Parker Horner, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
LtCol George London, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Thomas Roller, Army  
LTC Jack Marriott, Army  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Dave Vincent, DoDIG  
Ms. Barbara Moody, DoDIG  
Ms. Kathleen Ruemmele, BMDO  
Mr. Mark Flohr, DNA  
Mr. Irv Boyles, DT&E, OUSD(A&T)  
Mr. Joe Moore, DOT&E

BRAC 95

Joint Cross-Service Group on Test and Evaluation

October 3, 1994

List of Attendees

Mr. Lee Frame, Co-Chair  
Mr. John Burt, Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
Mr. John Bolino, Co-Study Team leader  
LTG(Ret) Howard Leaf, Air Force  
Mr. Parker Horner, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
LtCol George London, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Thomas Roller, Army  
LTC Jack Marriott, Army  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Dave Vincent, DoDIG  
Ms. Barbara Moody, DoDIG  
Ms. Kathleen Ruummele, BMDO  
Mr. Mark Flohr, DNA  
Mr. Irv Boyles, DT&E, OUSD(A&T)  
Mr. Joe Moore, DOT&E

BK/AL 75 170 0000 0000 0000  
Meeting, 3 October 1994

Attendees

Phone No. if New  
or Changed

<u>Name</u>	<u>Organization</u>	
Joe Moore	DOT+E	-
Tom Rullen	TEMA/ARMY	
LTCol George Lendon	AF/TER	
Mark D. Flohr	DNA/DFTD	
BARBARA Moody	DoDIG	
DAVID VINCENT	DoD IG	
LTC JACK MARRIOTT	TABSS	
CAR MARK SAMUELS	NAVY/BSAT	
Don DeYoung	Navy/BSAT	
IRV Boyles	DT+E	
CAPT Dave Rose	Navy BSAT	
JOHN V. BOLINO	OSD/DT+E	
Nick Tooner	OSD/DT+E	
LEE FRANK	OSD/DT+E	
John Burt	OSD/DT+E	
Gary Holloway	Army /TECOM	
JOHN GHRIG	US ARMY TEMA	
Leaf	AF/TE	
John Steward	AF/TE	
Parker C. Hower	AF/TE	
Kathleen Krummel	BMDS	
Doug Nation	AF/TE	-

AGENDA

T&E Joint Cross-Service Group  
Meeting Monday, 3 October 1994  
1300 hours / Room 1C730, Pentagon

Review of Minutes of Previous Meetings	OSD
Report on Review Group Meeting, 29 September	OSD
T&E Joint Working Group Status	JCSWG
<ul style="list-style-type: none"><li>• Schedule</li><li>• RFC Status</li><li>• Supplemental Data Call</li><li>• FV Scoring Status</li><li>• DPAD Validation</li><li>• Facility Exclusions</li><li>• Inputs from Supplemental Data Call</li><li>• Counting Tenant Organizations</li></ul>	
Change in Excess Capacity Methodology	DoDIG
Issues/Concerns	All



DEPARTMENT OF DEFENSE  
WASHINGTON HEADQUARTERS SERVICES



FOI

WASHINGTON DC 20304-1177

03 OCT 1994

MEMORANDUM FOR CHAIRMAN, BRAC 95 STEERING GROUP

SUBJECT: Change to "Test and Evaluation (T&E) Joint Cross-Service Group (JCSG) Analysis Plan for Base Realignment and Closure (BRAC 95) Cross Service Analysis, 3 Aug 94"

Attached is a replacement to Appendix C: T&E Excess Capacity and Target Reduction Methodology of the subject analysis plan. Request BRAC 95 Steering Group approval for this change in light of the following rationale.

Change 1 (Attachment) deals with our methodology for computing capacity. Our plan was to compute capacity of individual test facilities at installations or activities based on a "single shift standard": the number of simultaneous tests that a facility can conduct times the number of hours in a single shift workyear (i.e., 2008 hours). Responses to our data call have revealed that installations and activities have wide differences in what they counted as "tests" and capabilities for simultaneous tests, and our requests for clarification have failed to achieve consistency and realistic information for analysis. Our determination is that continuing use of this methodology will not result in a meaningful analysis of capacity, and will not be defensible.

Therefore, we propose to revert to an alternate approach that we had originally considered, and for which we had also collected the certified data during our data call: this approach uses peak historical workload to determine facility capacity (which is consistent with the approach being employed by the Laboratory JSCG). While there is concern that a perception will be generated that we changed the methodology after we saw the data, the only alternatives are to continue the current approach with results that will not be credible, or to abandon determination of capacity entirely: neither alternative is considered acceptable. It is further noted that this change in methodology precedes any optimization model runs using certified data, and is judged to favor no one activity over another by this change.

FOR SECTION C

This change also corrects our target to read "reduce excess capacity as defined above, where cost effective." This change makes our Analysis Plan consistent with our briefing to the Steering Group on 28 July 1994.

  
John A. Burt  
Co-Chair  
T&E JCSG

  
Lee H. Frame  
Co-Chair  
T&E JCSG

Attachment:  
Replacement for Section C

## **Appendix C: T&E Excess Capacity and Target Reduction Methodology**

**1. Introduction:** Excess capacity is the arithmetic difference between Capacity and Projected Workload. Appendix B outlines the method for determining Projected Workload. This appendix describes the methodology for establishing Excess Capacity (based on peak historical workload) and Excess Capacity Reduction Targets within the three T&E functional areas identified for cross-service analysis.

### **2. Assumptions:**

a. Peak historical workload is still achievable by the existing facility/capability and supporting infrastructure.

**3. Scope:** This methodology estimates the capacity of each facility/capability within each T&E functional area based on the peak historical workload within that T&E functional area.

### **4. Methodology:**

a. **CAPACITY:** Determine the maximum test hours reported on the Historical Workload Form for each T&E functional area during the period FY86 - FY93 and assign this peak value as the capacity for that facility/capability for that T&E functional area.

b. **EXCESS CAPACITY:** Subtract the projected workload within each T&E functional area for each facility/capability from the T&E capacity for that same T&E facility/capability within the same T&E functional area. The excess capacity for an individual test facility category within a given T&E functional area is simply the arithmetic sum of the excess capacities of the individual facilities/capabilities across all sites/activities that fall within that test facility category and T&E functional area.

### **5. Excess Capacity Reduction Target Methodology:**

#### **a. Target**

- Reduce excess capacity as defined above, where cost effective

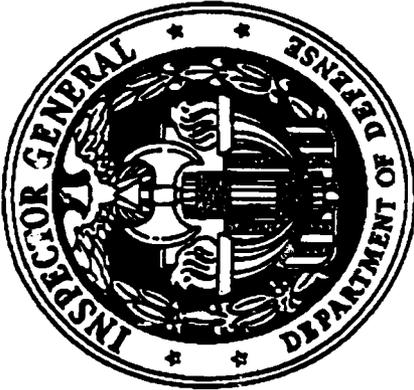
#### **b. Reduction Target Constraints**

- Separate for each T&E functional area
- Separate for each test facility category within each T&E functional area
- Exclude excess capacity associated with unique, one-of-a-kind facilities or other capabilities that must be retained IAW the policy imperatives (see Appendix D)

#### **c. Cost Effectiveness**

- Based on total costs, to include non-T&E and customer costs

FOR OFFICIAL USE ONLY



# CONCURRENCE WITH RECOMMENDATION TO CHANGE METHODOLOGY USED TO DETERMINE EXCESS CAPACITY

PRESENTED TO THE TEST & EVALUATION  
JOINT CROSS-SERVICE GROUP

OCTOBER 3, 1994

## **BACKGROUND**

**TWO METHODOLOGIES WERE CONSIDERED WHEN THE ANALYSIS PLAN FOR DETERMINING EXCESS CAPACITY WAS BEING DEVELOPED:**

- HISTORICAL PEAK WORKLOAD METHOD
- TOTAL FACILITY CAPABILITY CAPACITY (THE RUMS METHOD)

**RUMS METHOD WAS EVENTUALLY APPROVED AS THE METHODOLOGY TO BE USED FOR DETERMINING EXCESS CAPACITY.**

## **BACKGROUND (Cont'd)**

**THE JOINT CROSS-SERVICE WORKING GROUP RECOMMENDED CHANGING THE EXCESS CAPACITY METHODOLOGY TO THE HISTORICAL PEAK WORKLOAD METHOD.**

- EXISTING DATA CALL PROVIDED NECESSARY DATA.
- METHODOLOGY REPRESENTS A DEMONSTRATED CAPABILITY OF EXISTING CAPACITY.

**PRESENTED TO THE JOINT CROSS-SERVICE GROUP ON SEPTEMBER 15, 1994.**

## **BACKGROUND (Cont'd)**

**WHEN THE JCSWG APPLIED THE RUMS METHODOLOGY TO THE DETERMINATION OF EXCESS CAPACITY, THEY DISCOVERED THAT:**

- **THERE WAS A LACK OF CLEAR DEFINITION AS TO WHAT CONSTITUTED A "TEST" AND A "FACILITY";**
- **DATA CALL PLACED CONSTRAINTS ON THE NUMBER OF SIMULTANEOUS TESTS; AND**
- **UNCONSTRAINED CAPACITY WAS DRIVEN BY THE NUMBER OF SIMULTANEOUS TESTS REPORTED FOR FACILITIES.**

**RESULTED IN UNREALISTIC CAPACITY ESTIMATES.**

## INTERVIEWS

THE INSPECTOR GENERAL, DoD ALSO INTERVIEWED LEAD PERSONNEL FROM EACH MILITARY DEPARTMENT AT THE JCSWG. THERE WAS GENERAL CONSENSUS AMONG THEM THAT:

- THERE ARE DEFINITIONAL PROBLEMS USING THE RUMS DATA.
- RUMS METHOD CALCULATIONS ARE UNREALISTIC.
- WITH EXISTING TIME CONSTRAINTS IT IS TOO LATE TO REMEDY RUMS METHODOLOGY.
- THE HISTORICAL PEAK WORKLOAD METHOD IS DEFENSIBLE AND WILL PROVIDE A MORE REALISTIC COMPARISON.

THERE WAS ALSO A GENERAL CONCERN WITH PERCEPTION REGARDING A CHANGE IN THE METHODOLOGY AFTER THE DATA WAS RECEIVED. HOWEVER, THIS CONCERN IS MITIGATED BECAUSE:

- FUNCTIONAL VALUES HAVE NOT YET BEEN DETERMINED; AND
- EXCESS CAPACITY HAS NOT YET BEEN CALCULATED.

## PRELIMINARY RECOMMENDATIONS

PRELIMINARY DRAFT AUDIT REPORT RECOMMENDATIONS ARE:

- IDENTIFY APPROPRIATE RESOURCES TO BE USED FOR UTILIZATION REPORTING.
- DETERMINE THE BASIS FOR REPORTING EACH RESOURCE'S CAPACITY.
- DEVELOP INTERNAL CONTROL PROCEDURES TO BE USED IN IMPLEMENTING RUMS.

## CONCLUSIONS

THE INSPECTOR GENERAL, DoD, HAS AN ONGOING AUDIT REGARDING THE RANGE UTILIZATION MEASUREMENT SYSTEM (RUMS), PROJECT 4AB-5019.02. THE PRELIMINARY FINDINGS AND CONCLUSIONS ARE:

- APPLICATION OF RUMS DATA COLLECTION METHODOLOGIES WAS INCONSISTENT;
- OUTDATED RUMS DEFINITIONS, RESOURCE CATEGORIES, AND MEASUREMENT PARAMETERS WERE USED; AND
- INTERNAL CONTROLS WERE INADEQUATE ON THE ADEQUACY OF INFORMATION PROVIDED BY TEST RANGES INCLUDED IN THE FIELD TRIAL.

## **JOINT CROSS-SERVICE GROUP**

**JOINT CROSS-SERVICE GROUP CO-CHAIR PRESENTED THE PROPOSED CHANGE IN METHODOLOGY FOR DETERMINING EXCESS CAPACITY TO THE JOINT CROSS-SERVICE REVIEW GROUP. THE REVIEW GROUP APPROVED THE CHANGE IN METHODOLOGY SUBJECT TO A CONCURRENCE BY THE INSPECTOR GENERAL, DoD: THE INSPECTOR GENERAL DoD WAS TO DETERMINE THAT:**

- THE PROPOSED CHANGE IN METHODOLOGY WOULD BE EQUITABLE TO ALL CONCERNED PARTIES; AND**
- THE INSPECTOR GENERAL, DoD CONCURRED WITH THE PROPOSED CHANGE IN METHODOLOGY.**

## **CONCLUSION**

**BASED ON THE FOREGOING, WE CONCUR WITH THE JOINT  
CROSS-SERVICE GROUP RECOMMENDATION TO CHANGE  
THE METHODOLOGY FOR DETERMINING EXCESS CAPACITY  
TO THE "HISTORICAL PEAK WORKLOAD METHOD."**

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
WASHINGTON DC



21 JUL 1994

MEMORANDUM FOR OSD/DT&E  
OSD/DOT&E

FROM: HQ USAF/TE  
1650 Air Force Pentagon  
Washington, DC 20330-1650

SUBJECT: Air Force Position on the Airspace Issue

The Service representatives were tasked at the Tuesday, 19 Jul 94 JCSG meeting, to provide to the Co-Chairs their Service's position on airspace issues that were discussed at this and previous meetings.

Our primary concern is that we must evaluate a site as fairly as we can and give proper credit to ensure a site's value is accurately reflected in its functional value. Credit would be assigned for airspace a site controls and additional credit for other available airspace. Available airspace, if not further defined, can be interpreted a number of ways, many would lead to unfair airspace credit. The attached position paper presents a way we can fairly define and score the additional airspace.

RECOMMENDATION: The JCSG Co-Chairs adopt our position as a way to properly credit all airspace in our scoring process.

  
HOWARD W. LEAF  
Lt Gen, USAF (Retired)  
Director, Test and Evaluation

Attachment:  
Air Force Airspace Position Paper

cc:  
Army Senior JWG Representative  
Navy Senior JWG Representative

## SCORING OF CRITICAL AIRSPACE

Issue: Definitions of "available" and "restricted" used for critical airspace in data call and in the determination of Functional Value.

a. As part of the Physical Resources, critical airspace is a major contribution to a site's Functional Value. The ambiguous terminology used in the Data Call could lead to major inconsistencies across service sites during the scoring process, thus subjecting the BRAC process to high risk of not treating sites equally.

b. Because "restricted" airspace typically applies to overland "Restricted Areas", it can be interpreted to exclude "Warning Areas" over water even though they are also controlled and scheduled by a site and are equally important to accomplishing hazardous testing.

c. As it currently stands, "available" airspace can be interpreted by the respondents to the Data Call as any airspace available for their use, regardless of which site "controls/schedules" the airspace or where it is located. As such, "all" airspace is "available" to any site.

d. There are two other issues related to the above that may have to be dealt with later on: (1) How to handle the capacity of the airspace when it is jointly used so as to preclude multiple counting of the airspace capacity; and (2) Recognition that weapons can only be tested to impact on DoD land and must be released within restricted/warning areas.

### Background

a. At its 12 Jul 94 meeting, the T&E JCSG directed the JWG to divide the airspace into two parts as follows: (1) Give credit to a site for the airspace they "own/control"; and (2) Give additional credit for other airspace "available" to the site. In addition, they agreed that clarifications to the Data Call responses would be acceptable if required to implement this approach.

b. In its follow-up meeting, the JWG agreed that "restricted" will include "Warning Areas", as well as "Restricted Areas", since both are controlled areas. However, the JWG could not agree on a definition for "available" for the purpose of providing additional credit, which is the focus of this paper.

c. In its previous direction to the JWG, the T&E JCSG stated that credit should be given to the site that "owns/controls" the airspace. Since all airspace "belongs" to FAA and is only transferred to a site's control if there is a formal letter of agreement, for the purpose of this paper it is assumed that "owns/controls" is synonymous with "controls/schedules".

## Discussion

a. The Functional Value (FV) of a T&E activity at a site is intended to reflect the value of a site's T&E capabilities, regardless of whether it is a physical resource (such as airspace) or a technical resource (such as a facility). In order to be consistent, the same ground rules should apply to each type resource. For example, a site is given credit for a facility it owns (i.e., controls/schedules), not for facilities at other sites that it uses. That credit is given to the site that owns the facility. Although more difficult to apply to airspace, as just another resource, every attempt should be made to be consistent with this principle.

b. In accordance with FAA Order 7210.2, a letter of agreement must be executed between the FAA and a site that controls "Restricted" and "Warning" airspace designating the site as the controlling agent for that airspace. Such areas are so designated because the activities in those areas could be hazardous to non-participating aircraft and, as such, must be strictly controlled.

c. To be consistent with previous T&E JCSG direction, only "Restricted" and "Warning" airspace should be considered since it is the only airspace that is truly controlled. In order for a site to receive credit for the airspace it "owns/controls" it should be designated as the controlling agency IAW a letter of agreement with FAA. In the case of the R2508 airspace, both the Edwards and China Lake sites would get credit since both are designated in the FAA agreement as controlling sites and the responsibility is periodically rotated between the two sites. IAW JCSG direction, all other airspace would fall in the "available" category and receive additional credit for having access to it.

d. The lingering issue is how to define "available" for the purpose of giving additional credit. By assigning a FV to a site that "owns/controls" the airspace, the airspace is being treated the same way a technical resource such as a facility is treated. One could stop at this point and assign no value for the use of another site's airspace, just as a site does not get value for a facility they use at another site. However, because of the nature of airspace and previous JCSG direction to give additional credit, the following recommendation is made.

## Recommendation

a. Define "owns/controls" as that "Restricted" and "Warning" airspace that is controlled by the site IAW a formal letter of agreement with the FAA designating that site as the controlling agency.

- Assign the most credit to this airspace since it is "owned/controlled" by the site, similar to the way facilities are handled.

b. Define "available" airspace as the remaining airspace that is "contiguous to the site's airspace" or in "close enough proximity that it is used on a routine basis by that site to accomplish its normal test mission.

- Assign less credit (e.g., less than one-fourth as much) to this airspace since it is "owned/controlled" by another site. If a site reports airspace that exceeds the airspace it "owns/controls", it would receive this additional credit.

c. It is believed that the Data Call responses are adequate to accomplish the above since "Restricted" and "Controlled" airspace are well documented, and "available" airspace will be everything else the site reports.

- If necessary, clarifications for the above purpose can easily be asked for.

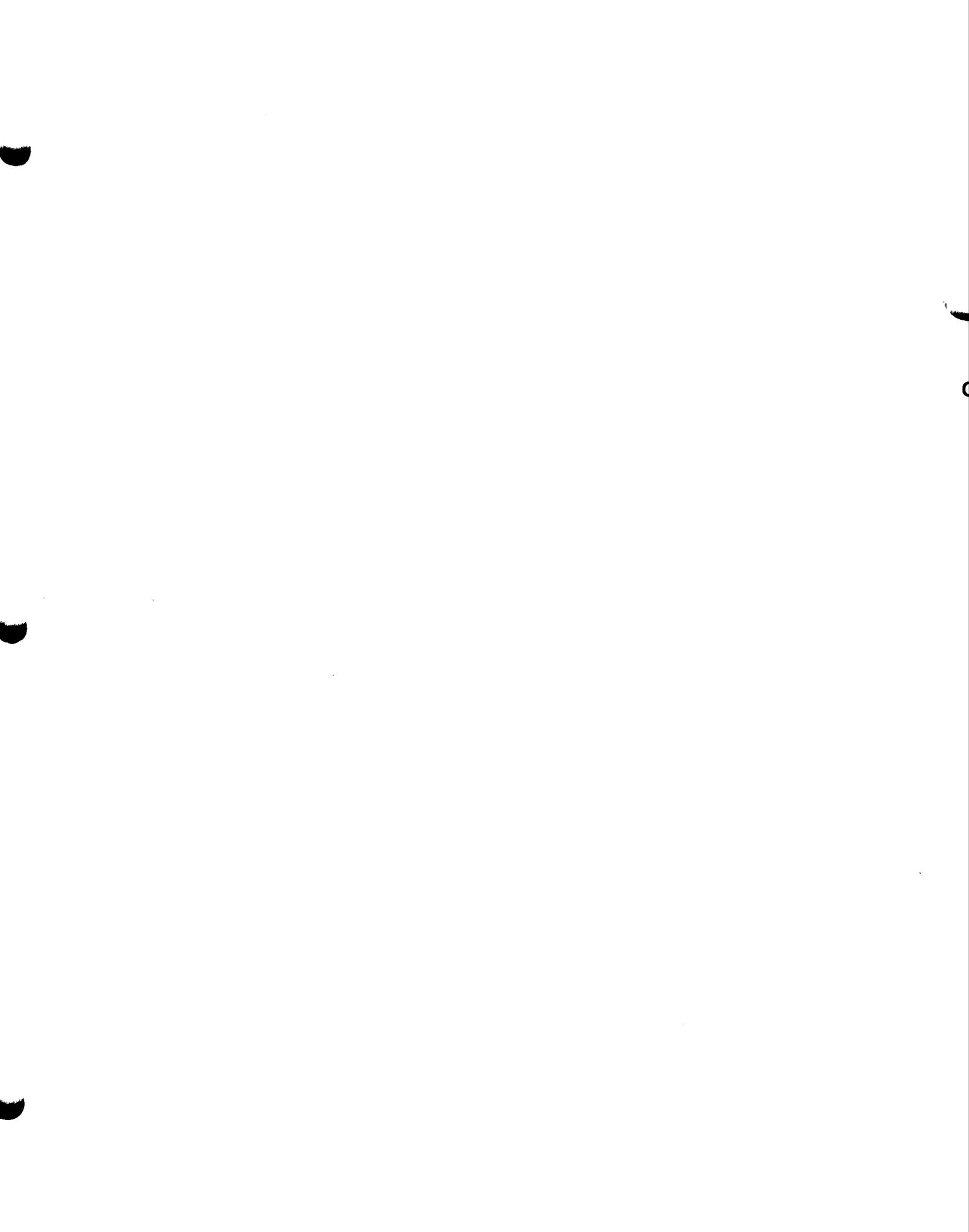
d. This approach has several good features.

- It is generally consistent with the way technical facilities are being handled in that the major credit is being given to the site that "owns/controls" the airspace, not claiming credit for airspace another site "owns/controls".

- It can use the data from the Data Call with clarifications, at worst, being required.

- It is defensible in BRAC and ensures that all sites have been treated equally, and thus does not rely on ambiguous and creative responses from sites.

- It is a compromise across all Services' concerns in that a "threshold" is established based on the airspace a site "owns/controls", while at the same time giving some credit to sites that have access to other "available" airspace they do not "own/control".



**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**October 11, 1994**

**List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. Lee Frame, DOT&E  
Mr. John Bolino, Acting Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Parker Horner, Air Force  
Mr. Doug Nation, Air Force  
Lt Col George London, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
LTC Jack Marriott, Army  
MAJ Essex Fowlks, Army  
Mr. Gerald Schiefer, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Ms. Kathleen Ruummele, BMDO  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. Mark Flohr, OSD DNA  
Mr. James Friel, DoD IG  
Ms. Janet Blair-Fleetwood, DoD Comptroller

**T&E Joint Cross-Service Group  
Meeting Tuesday, 11 October 1994, 1300 Hours  
Room 1C730, Pentagon**

**AGENDA**

**Review of Minutes of Previous Meetings                      OSD**

**T&E Joint Working Group Status                      JCSWG**

- **Schedule**
- **RFC Status**
- **Facility Exclusions**
- **Functional Values**
  - Thresholds**
  - Scoring Criteria Changes**
  - Approval of FVs**
- **Workload / Capacity Status**
- **Documentation Requirements**

**Issues / Concerns                      OSD**

**TEST AND EVALUATION**

**JOINT CROSS SERVICE GROUP**

**MEETING**

**11 Oct 1994**

## T&E JCSWG STATUS

- Schedule
- RFC Status
- Facility Exclusions
- Functional Values
  - Thresholds
  - Scoring Criteria Changes
  - D-PAD
  - Approval of Functional Values
- Workload / Capacity Status
- Optimization Model Runs
- Documentation Requirements

## T&E JCSG SCHEDULE

	October	November
<ul style="list-style-type: none"> <li>• Inputs to Tri-Dept BRAC Grp                             <ul style="list-style-type: none"> <li>- FV, Capacity, Workload</li> </ul> </li> </ul>	11 △	
<ul style="list-style-type: none"> <li>• FV's to MILDEPS</li> </ul>	14 △	
<ul style="list-style-type: none"> <li>• MV's to JCSG</li> </ul>	14 △	
<ul style="list-style-type: none"> <li>• Alternatives to MILDEPS                             <ul style="list-style-type: none"> <li>- w/o Cost Analysis</li> <li>- with Cost Analysis</li> </ul> </li> </ul>	28 △	24 △

# REQUEST FOR CLARIFICATION (RFC) STATUS

(As of 7 October 1994)

	<u>SENT</u>	<u>SENT SINCE 3 OCT</u>	<u>RECEIVED- PRELIMINARY</u>	<u>RECEIVED- CERTIFIED</u>
AV	55	2	-	53(2)
EC	36	0	-	36
A/W	82	2	-	80(2)
<b>TOTAL</b>	<u>173</u>	<u>4</u>	<u>-</u>	<u>169(4)</u>

( ) = quantity of outstanding RFC's with no response to date;  
outstanding RFC's address capacity/workload data.

**FOR OFFICIAL USE ONLY**

## **EXCLUSIONS**

### **STATUS**

- **Final Facility Exclusions Ready for JCSG Approval**
  - **Army**
  - **Navy**
  - **Air Force**

## T&E JCSG UNIVERSE

- Army:

- White Sands Missile Range (including EPG)
- Yuma Proving Ground
- Redstone Technical Test Center
- Aviation Technical Test Center @ Ft Rucker, Edwards

- Navy:

- NAWC's @ China Lake, China Lake @ WSMR, Indianapolis, Patuxent River, Point Mugu, Warminster.
- NSWC's @ Crane, Dahlgren, Indian Head

- Air Force:

- AFFTC @ Edwards, UTTR
- AFDTC's @ Eglin, Ft Worth, Buffalo, Holloman
- AEDC Tullahoma
- AWC @ Tyndall

## AIR VEHICLES THRESHOLDS (w/ Driver)

- Land Space Available (1.1.1) 40,000 square miles USN: AEW, AF: B-2
- Sea Space Available (1.1.2) 40,000 square miles USN: AEW, AF: B-2
- Restricted/Warning Airspace (1.1.4) 40,000 square miles AF: B-2
- Available Airspace over Land (1.1.6) 40,000 square miles USN: AEW, AF: B-  
2
- Available Airspace over Water (1.1.7) 40,000 square miles USN: AEW, AF: B-2
- Max Straight line segment in airspace (1.1.8) 1,200 miles AF: Tier II + UAV
- Max Straight line segment in supersonic (1.1.11) 400 miles USN: AEW

## **ELECTRONIC COMBAT THRESHOLDS (w/ Driver)**

- Land Space Available (1.1.1) 160,000 square miles AF: B-1B
- Sea Space Available (1.1.2) 122,500 square miles AF: B-1B
- Restricted/Warning Airspace (1.1.4) 100,000 square miles AF: Bomber Penetrations
- Available Airspace over Land (1.1.7) 160,000 square miles AF: B-1B
- Available Airspace over Water (1.1.8) 122,500 square miles AF: B-1B
- Max Straight line segment in airspace (1.1.9) 660 miles USN: RWR, Jammers ELINT

## **ARMAMENT/WEAPONS THRESHOLDS**

### **(w/ Driver)**

- Restricted/Warning Airspace (1.1.1)      50,000 square miles      USN: AEGIS/SMII
- Available DoD Land Space (1.1.2)      21,000 square miles      AF: AIM-120C
- Available Sea Warning Area Space (1.1.3)      50,000 square miles      USN: AEGIS/SMII
- Max Straight line segment, Air-to-Air (1.1.4.a)      660 miles      AF: F-15
- Max Straight line Segment, Air-to-Surface (1.1.4.b)      350 miles      AF: B-2
- Max Straight line segment, Surface-to-Air (1.1.4.c)      240 miles      USA: UDS 81398A

## SCORING CRITERIA CHANGES

- Question 2.6.7 on EC Open Air Ranges
  - “What is the geographic dispersion (width x depth, in NM) of available threat simulators?”
  - Data call responses provided inadequate detail to quantitatively assess relative size using 0 - Max scoring criterion
  - Request JCSG approval to use N/Y scoring criterion; any site claiming any type of geographic dispersion is given full credit
- Question 1.1.6 on A/W Critical Air/Land/Sea Space
  - “What is the largest supersonic area ? [length x width in NM]”
  - Supplemental Data Call requested straight line requirement for supersonic corridor; unable to establish threshold area from existing requirements data
  - Request JCSG approval to use 0 - Max scoring criterion

## D-PAD

- Import of numbers into top level model sometimes resulted in incorrect last digit. **NO IMPACT ON FUNCTIONAL VALUE.**
- D-PAD Functional Values (two significant digits) verified by hand calculations; minor differences between D-PAD and hand calculations at sub-factor level due to internal D-PAD rounding/truncation.

## FUNCTIONAL VALUES AIR FORCE ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
AFDTC	REDCAP	-	15	-
	Eglin	56	65	82
	Holloman	33	29	30
	AFEWES	-	17	-
AFFTC	Edwards	85	52	-
	UTTR	46	-	-
AEDC	Tullahoma	18	-	16
476 WEG	Tyndall	49	-	-

## FUNCTIONAL VALUES ARMY ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
ATTC	Edwards	46	-	-
	Fort Rucker	34	-	-
RTTC	Redstone Arsenal	-	-	21
WSMR	WSMR	-	-	50
	EPG	44	47	-
YPG	YPG	35	-	29

## FUNCTIONAL VALUES NAVY ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
NAWC	China Lake	43	47	57
	Indianapolis	19	-	-
	Patuxent River	81	55	57
	Point Mugu	69	58	77
	Warminster	14	-	-
	WSMR	-	-	25
NSWC	Crane	-	15	12
	Dahlgren	25	-	17
	Indian Head	-	-	14

## **WORKLOAD / CAPACITY STATUS**

- Completed for Electronic Combat
- Completed for Air Vehicles and Armament/Weapons except for three activities; awaiting certified responses to RFC's for these activities
- Working Group will draft memo to forward Functional Values, Workload, and Capacity data to Tri-Department BRAC Group; memo to be coordinated with JCSG principals and signed by Co-Chairs

## OPTIMIZATION MODEL RUNS

- Policy Imperatives
  - As documented in the Analysis Plan
- Host/Tenant Relationships
  - If host is kept open, then all available tenant excess capacity will be fully utilized prior to assigning workload to another site
- Facility Sub-Categorization
  - Group facilities of like capabilities (e.g., sled tracks, anechoic chambers, environmental chambers) within each Test Facility Category
  - Produces more feasible alternatives and simplifies subsequent operational feasibility assessment
- Model Runs
  - JCSWG to request via memo to Tri-Dept BRAC Group
  - Tri-Dept BRAC Group requires two days to input data and have DoD IG & GAO audit inputs prior to runs
  - Tri-Dept BRAC Group stated they must have a complete set of inputs from all three functional areas prior to executing any model runs

## **LEVEL OF DOCUMENTATION REQUIRED FOR**

- Audit of Functional Values?
- Official BRAC 95 files; who retains these files ?

• **BACKUPS**

## RFC STATUS BY MILDEPS

	SENT	PRELIM	CERT
<u>AV</u> <span style="float: right;"><u>55</u></span>			
ARMY	14	-	14
NAVY	21	-	21
AIR FORCE	20	-	18
<u>EC</u> <span style="float: right;"><u>36</u></span>			
ARMY	14	-	14
NAVY	8	-	8
AIR FORCE	14	-	14
<u>A/W</u> <span style="float: right;"><u>82</u></span>			
ARMY	24	-	22
NAVY	43	-	43
AIR FORCE	15	-	15

1

2

3

4

5

## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**Tuesday, October 18, 1994**

#### **Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 1000. Mr. Philip Coyle and Mr. John Burt chaired the meeting. The agenda, a list of attendees, and handouts are attached.

The meeting opened with comments from the Air Force representative who stated his objection to rescoring any portion of the data calls because the Navy did not like the functional value results. He believes that once capacity, costing, and military judgment factors are incorporated into the entire analysis as the T&E analysis plan calls for the results may be different. The Army agreed with this position and further argued the consistency in approach must be maintained.

The Navy was then asked to present their objections to the functional values. The Navy began by stating that the functional values do not pass the common sense or "reasonableness" test. They went on to state that the available airspace questions overrode all others in the analysis leading up to functional value determination to include weighting. The Navy contends that a change to one (scoring decision) can change functional value by 40 to 60 percent. They further argue that the overwater airspace overrode all of the facilities/capabilities in the Technical Area without regard to instrumentation or technical requirements. The Navy then reviewed past decisions of the T&E JCSG regarding available versus controlled space, owned assets versus available assets (Edwards AFB in particular), the artificial split of full spectrum activities and the requirements threshold. The Navy concludes that the requirements threshold issue, which required a supplemental data call to mitigate the potential for overstatement of available airspace, has not worked as intended. The other Service representatives stated it did work. The Navy went on to discuss the changes the JCSG made to the capacity analysis after concluding that in both cases (unconstrained capacity using workload/facility hour x average hours available per day and unconstrained capacity using number of tests at one time) the results did not make sense. The recommended solution by the Navy is to use the data that is provided in the current data responses and to give an activity credit for land/air/sea space that they indicated they have access to but did not report as part of their answer to "available" (from question 3.1.G.1. in the data call) even if it is elsewhere in the data call.

To further develop their position the Navy presented analysis they did independently using their proposed fix which showed that China Lake would significantly change in the Electronic Combat and Armament/Weapons areas, and other Navy installations would have minor corrections in the three functional areas.

The Air Force presented an analysis comparing functional values using the current Available airspace definition versus a Controlled airspace definition. The controlled airspace definition is that space for which an activity exercises "ownership" responsibility, and thus has invested in the necessary resources to accomplish control. Criteria used to measure "control" are the sum of the restricted and warning space for which the activity is documented in the FAA Order 7400.8A as the using agency, land owned by DoD and controlled by the activity, and sea space under controlled airspace. The advantages and disadvantages of the Available versus Controlled space usage <sup>were</sup> was presented (see chart entitled "CONTROLLED" vs "AVAILABLE" SPACE). Of concern to the Air Force is that if controlled space definition is adopted there would be a need to send supplemental data calls out to capture those sites that did not respond. The results of this comparison showed that the current top tier (#1-5) installations remained in the top tier using the controlled space criteria. China Lake, however, goes from a #5 slot to #2 in the EC area.

The Air Force then presented its position regarding the Navy's views. The Air Force argues that functional value is only one part of the answer. Throughput or workload/capacity still needs to be factored in--as well as military judgement. The Air Force stated that there is sufficient opportunity to ensure the best possible outcome as the following factors are incorporated into the analysis: capability fit, capacity fit, policy imperatives, cost analysis, and judgment. The Air Force went on to say that they do not support changing scores after the results are seen. In fact, the Air Force raised the concerns the Navy raised prior to the functional value scoring when they argued for throughput to be added to the analysis, but when the JCSG decided not to add it the Air Force accepted this decision and pressed on. The Air Force stated that if directed to rescore, they should use controlled versus available. It is more consistent with the way technical resources/assets are scored and treats all sites equitably. They went on to remind the JCSG that, in the Air Force opinion, if rescoring is directed, use of either "available" or "controlled" will require an RFC or supplemental data call so that all sites have the same opportunity to answer the same question.

The Army representatives agreed with the Air Force presentation/position.

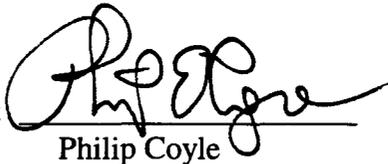
Mr. Burt opened a general discussion by reminding the Group that early on in the process when weights were being assigned, he asked if the Group could support the fact that space (air/land/sea) would dominate the functional value analysis. Mr. Burt recalled that everyone agreed then that physical resources were most important and should carry higher weights. The Navy then disagreed stating that they argued against the weighting of air/land/sea space at 70 percent (2 slides attached) of the physical value, but they were "out voted." Mr. Burt then asked what options are available to consider today. Discussion highlighted three: 1) proceed as the analysis plan states; 2) rescore considering all data provided in the data response; 3) rescore using controlled space definition. Mr. Coyle asked how a supplemental data call will impact the BRAC process today. All Services stated the time needed to do a data call at this date would be a minimum of a month..being too late for any real use in the Military Departments' BRAC processes. The Air Force reiterated that their analysis showed that even if they went to a

controlled air space definition the top tier players remain the same. The Army then argued the consistency of the process and that a thorough sensitivity analysis of the options be done and if the results are the same then we (the JCSG) should proceed. The Chairs asked for a reiteration of the issue -- the answer was how can Edwards claim airspace that they don't control 550 miles away when China Lake cannot claim airspace they control 150 miles away. The Chairs asked the Group again, whether they agree that sea ranges and air space dominate the functional value calculation even though other sites (like WSMR) have valuable resources. All Services agreed it does and should. The Chairs asked that, if we were to proceed as now scheduled, do we have everything done to go to the optimization run. The subgroup representatives stated that minor modifications to the capacity analysis need to be made, but it can be done in short order. The DoDIG representative stated that not all RFCs were in. The subgroup stated all RFCs to their knowledge were in. The Chairs asked both the DoDIG and subgroup representatives to go back and agree to the status of the RFCs.

The Chairs agreed to proceed with the current schedule with a parallel action of completing the sensitivity analysis the Air Force and Navy started on their own to ensure that weighting of space is consistent with its importance to T&E. At this point the Navy stated they could not agree to the functional values and would not sign the transmittal to the JCSG.

There being no other items for discussion, the meeting adjourned at 1107.

Approved:



Philip Coyle  
Co-Chairman



John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**October 18, 1994**

**List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. John Burt, Co-Chair  
Mr. Lee Frame, DOT&E  
Mr. John Bolino, Co-Study Team Leader  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
Mr. Joe Dowden, Air Force  
Lt Col George London, Air Force  
Mr. Walt Hollis, Army  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerald Schiefer, Navy  
CAPT Dave Rose, Navy  
Mr. Don DeYoung, Navy  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Joe Moore, OSD DOT&E  
Mr. David Vincent, DoD IG  
Ms. Barbara Moody, DoDIG

**TEST AND EVALUATION  
JOINT CROSS SERVICE GROUP  
MEETING**

**18 Oct 1994**

## T&E JCSWG STATUS

- Functional Values Issues
- Optimization Model Runs
  - Policy Imperative Implementation
  - Run Matrix
- Facility Exclusions
- Workload/Capacity
  - Sub-categorization

## Issue

- Functional Value first look did not pass the “common sense” test
- Discussions show:
  - “Available” airspace overrides all else
  - Change in one scoring decision can affect FV by 40-60%
  - Overwater airspace overrode all Technical facilities/capabilities without regard to instrumentation or technical requirements

## Current Functional Value Results

### Air Vehicles

85 - Edwards  
81 - Patuxent River  
69 - Pt Mugu  
56 - Eglin  
49 - Tyndall  
46 - Edwards  
46 - UTTR  
44 - EPG  
43 - China Lake  
35 - Yuma  
34 - Rucker  
33 - Holloman  
25 - Dahlgren  
19 - Indianapolis  
18 - Arnold  
14 - Warminster

### Electronic Combat

65 - Eglin  
58 - Pt Mugu  
55 - Patuxent River  
52 - Edwards  
47 - China Lake  
47 - EPG  
29 - Holloman  
17 - Ft Worth  
15 - Crane  
15 - Buffalo

### Armament/Weaps

82 - Eglin  
77 - Pt Mugu  
57 - Patuxent River  
57 - China Lake  
50 - WSMR  
30 - Holloman  
29 - Yuma  
25 - NAWC WSMR  
21 - Rucker  
17 - Dahlgren  
16 - Arnold  
14 - Indian Head  
12 - Crane

## **Review Issues Previously Presented**

- Available space vs. Controlled space
- Owned Assets vs. Available Assets (Edwards AFB)
- Requirement Thresholds were established to mitigate the potential for overstatement of available space - It hasn't worked as intended
- Artificial Split of Full Spectrum Activities

## **Review of Previous Changes**

- **Capacity**
  - Unconstrained Capacity using Workload/Facility hour x Average Hours Available/Day (before Analysis Plan finalized)
  - Unconstrained Capacity using Number of Test at one Time (just prior to Analysis Plan approval)
  - Historical Peak (After Analysis Plan approved)
- **Rational:**
  - “The results did not make sense” (both times)

## Recommended Correction

- Only use what is currently in certified data responses
- Give an activity credit for air/land/sea space that they indicated they have access to but did not report as part of their answer to question 3.1.G.1 “Available” (this includes responses that follow from available space - ie: straight-line segments, topography, etc.)

# Navy FV Results Utilizing Corrected Scores

	Air Vehicles		Electronic Combat		Armament/Weaps	
	Current	Corrected	Current	Corrected	Current	Corrected
<b>China Lake</b>			<b>41</b>	<b>65</b>	<b>57</b>	<b>84</b>
<b>Pt Mugu</b>			<b>58</b>	<b>60</b>	<b>77</b>	<b>79</b>
<b>Patuxent River</b>	<b>81</b>	<b>86</b>	<b>55</b>	<b>56</b>		

## DEFINITIONS

**“AVAILABLE SPACE”** - An activity’s “available” space is the sum of all airspace claimed to have ever been used by the activity, regardless of controlling agency or location of the space.

**“CONTROLLED SPACE”** - An activity’s “controlled” space is that over which it exercises “ownership” responsibility, and thus has invested in the necessary resources to accomplish control

- Airspace is the sum of restricted and warning airspace documented in FAA Order 7400.8A which lists the activity as the using agency
- Land is that owned by DoD and controlled by the activity
- Sea is that which is under controlled airspace

**COMPARISON OF "CURRENT" vs "CONTROLLED  
SPACE" T&E FUNCTIONAL VALUES  
for  
AIR VEHICLES**

ACTIVITY	CURRENT RANK	CURRENT FV	NEW FV	NEW RANK
AFDTC	1	85	67	1
PAX RIVER	2	81	58	3
PT MUGU	3	69	63	2
AFDTC	4	56	53	4
TYNDALL	5	49	27	10
ATTC-EDWARDS	6	46	--	--
UTTR	6	46	46	5
WSMR	7	44	37	8
CHINA LAKE	8	43	43	7
YPG	9	35	35	9
ATTC-RUCKER	10	34	24	12
HOLLOMAN	11	33	21	13
DAHLGREN	12	25	25	11
INDY	13	19	19	14
AEDC	14	18	18	15
WARMINSTER	15	14	14	16

**COMPARISON OF "CURRENT" vs "CONTROLLED  
SPACE" T&E FUNCTIONAL VALUES  
for  
ELECTRONIC COMBAT**

ACTIVITY	CURRENT RANK	CURRENT FV	NEW FV	NEW RANK
AFDTC	1	65	57	1
PT MUGU	2	58	46	2
PAX RIVER	3	55	46	2
AFFTC	4	52	43	6
CHINA LAKE	5	47	46	2
EPG	5	47	45	5
HOLLOMAN	7	29	29	7
AFEWES	8	17	17	8
REDCAP	9	15	15	9
CRANE	9	15	15	9

**2COMPARISON OF "CURRENT" vs  
"CONTROLLED SPACE" T&E FUNCTIONAL  
VALUES  
for  
ARMAMENTS / WEAPONS**

ACTIVITY	CURRENT RANK	CURRENT FV	NEW FV	NEW RANK
AFDTC	1	82	82	1
PT MUGU	2	77	67	2
CHINA LAKE	3	57	57	3
PAX RIVER	3	57	36	5
WSMR	5	50	49	4
HOLLOMAN	6	30	23	8
YPG	7	29	30	6
NAWC-WSMR	8	25	--	--
REDSTONE	9	21	21	9
DAHLGREN	10	17	17	10
AEDC	11	16	16	11
INDIAN HEAD	12	14	14	12
CRANE	13	12	12	13

## “CONTROLLED” vs “AVAILABLE” SPACE

	<i>ADU</i>	<i>DRS ADU</i>
“Available”	<ul style="list-style-type: none"> <li>- Asked in the Data Call</li> </ul>	<ul style="list-style-type: none"> <li>- Double counts physical resources                             <ul style="list-style-type: none"> <li>- But not “technical” resources</li> <li>- Inconsistency in FV</li> </ul> </li> <li>- Equity across sites is put at risk (i.e., BRAC process)                             <ul style="list-style-type: none"> <li>- Leads to combining sites’ resources for comparison against a single site</li> </ul> </li> <li>- Requires Supplemental Data Call if revised</li> </ul>
“Controlled”	<ul style="list-style-type: none"> <li>- No double counting                             <ul style="list-style-type: none"> <li>- Site only gets what they control</li> <li>- Consistent with way technical resources counted</li> </ul> </li> <li>- Preserves BRAC process                             <ul style="list-style-type: none"> <li>- Equity across site/comparisons</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Requires Supplemental Data Call                             <ul style="list-style-type: none"> <li>- Some sites did not call out “controlled” space adequately</li> </ul> </li> </ul>

## AF Position

- **Continue with Process**

- **FV is only half the answer --- throughput (workload/capacity is the rest (Per previous JCSG Agreements)**

- **Should take care of sites with comparable FV but little throughput capability to perform work**

- **Plenty of opportunity to ensure the best possible outcome**

- **Capability Fit**

- **Capacity Fit**

- **Policy Imperatives**

- **Cost Analysis**

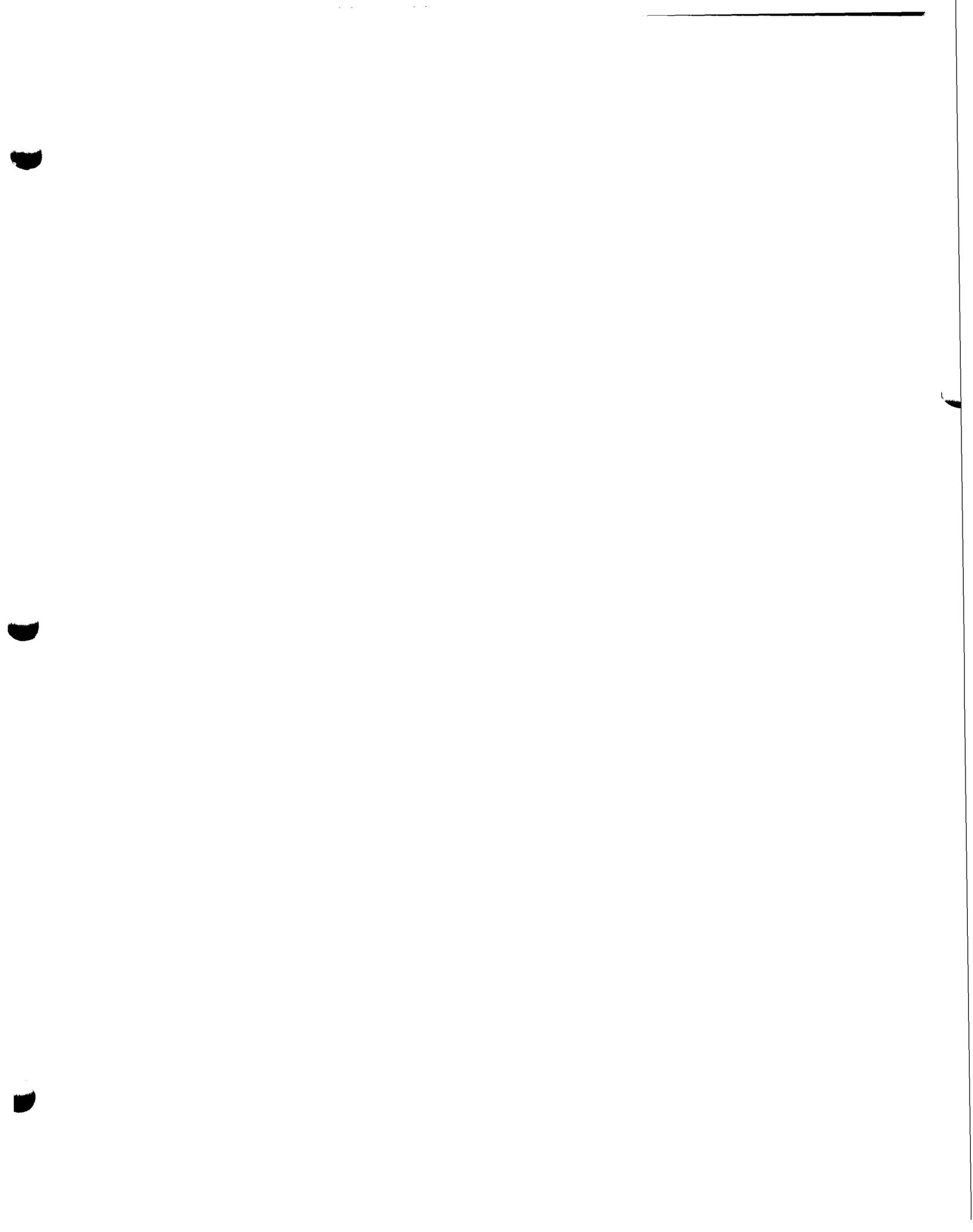
- **Judgement**

- **Do not support changing scoring after results**

- **AF raised concern before FV scoring and accepted JCSG decisions even when AF objected**

## AF Position (Cont)

- If directed to Rescore FV should only use “Controlled” versus “Available” space
  - Consistant with the way Technical Resources/Assets scored (i.e., no double counting)
  - Treats all sites equitably (i.e., not adding the resources of 2 or more sites together and comparing against a single site, which violates BRAC process)
- Whether “Revised Available” or “Controlled” space, both would require RFC to preserve BRAC process
  - All sites should have opportunity to identify what’s “available” to them, if we go beyond the specific data call questions
  - Data to define “controlled” space not clean for all sites



**TEST AND EVALUATION  
JOINT CROSS SERVICE GROUP**

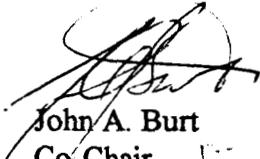
**MEETING MINUTES  
28 OCTOBER 1994**

Meeting convened at 0805hrs with Mr. Coyle and Mr. Burt presiding. Attendees are at Attachment 1.

Each of the Services presented their positions on whether joint analysis should proceed in light of the OSD BRAC Office putting the effort "on hold" to address concerns by the Navy: their positions are at Attachments 2, 3, and 4. Consensus was to proceed as identified in the Analysis Plan, and action taken by the co-Chairs to request release by the OSD BRAC Office of the data to run in the optimization model.

The Navy's "concerns about process integrity" were summarized as how airspace was scored, membership of the Joint Working Group, data comparability, and that the JCSG should review and approve the scoring decisions made by the JWG as a deliberative process. These concerns are being addressed between the OSD BRAC Office and the Navy.

Meeting adjourned at 0825hrs.



John A. Burt  
Co-Chair  
T&E Joint Cross-Service Group



Philip E. Coyle  
Co-Chair  
T&E Joint Cross-Service Group

03 NOV 1994

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**October 28, 1994**

**List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. John Burt, Co-Chair  
Mr. Lee Frame, DOT&E  
Mr. John Bolino, Co-Study Team Leader  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Parker Horner, Air Force  
Mr. Doug Nation, Air Force  
Lt Col George London, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerald Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Irv Boyles, OSD DT&E  
Mr. Joe Moore, OSD DOT&E  
Mr. David Vincent, DoD IG  
Ms. Barbara Moody, DoDIG  
Mr. Dave Hennessey, OUSD(C)  
Ms. Janet Blair-Fleetwood, OUSD(C)

**AF POSITION**  
**RECOMMENDATION**

- CONTINUE JOINT ANALYSIS IAW CURRENTLY APPROVED PLAN
  - TREAT FV'S AS INPUT TO OPTIMIZATION MODEL, AS PREVIOUSLY AGREED, BUT DO NOT PROVIDE TO MIL DEPTS WITH ALTERNATIVES
  - DEEMPHASIZE FV'S FOR COMPARING ACTIVITIES

FOR

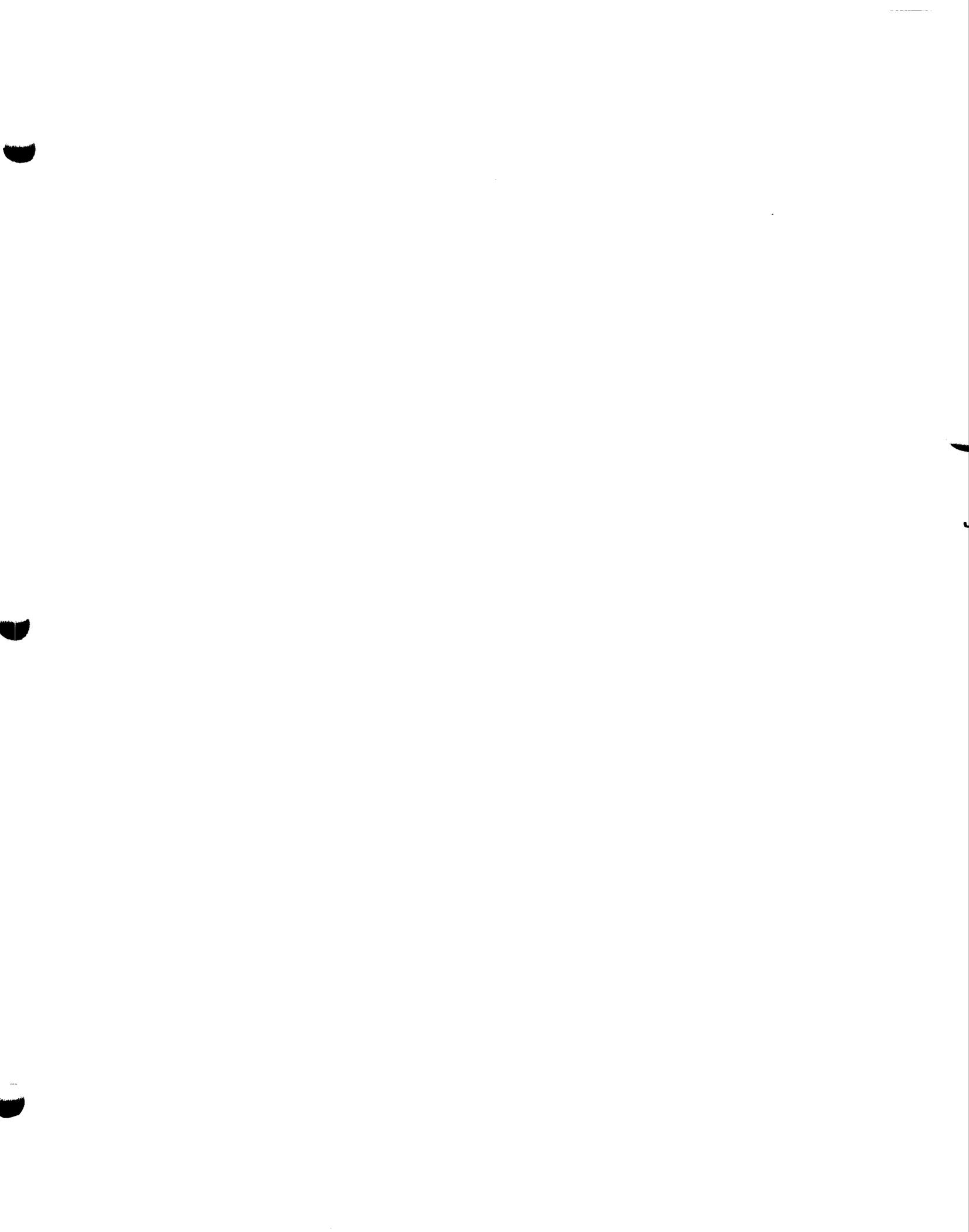
*1.1et2*

## ARMY POSITION

- **PROCEED WITH ANALYSIS PROCESS AS CURRENTLY APPROVED**
  
- **ADDRESS CONCERNS ON AIR/LAND/SEA SPACE DURING DELIBERATIVE SESSIONS**

# Navy Position

- **Process should continue**
- **Navy concerns about process integrity must be addressed**
- **Per the Analysis Plan: Functional Values, Capacity, and Military Values must be included in the optimization model runs**



## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**Tuesday, November 1, 1994**

#### **Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 1600. Mr. Philip Coyle and Mr. John Bolino chaired the meeting. The list of attendees and handouts are attached.

The meeting opened with comments from Mr. Coyle regarding how important land/air/sea space is to the Services. He highlighted the current disagreement over scoring of space as one example of its importance. He explained that he and Mr. Burt decided to apply a "reasonable" person test for the airspace issue to help ensure the JCSG's efforts produce usable results. This test will work by sitting down with the certified data the Group already has and finding a "reasonable person" basis to credit activities for airspace. The Chairs determined that Mr. Toomer and Mr. Bolino would act as the "reasonable" person. Today's meeting will discuss the approach, to date, of how they are applying this test.

Mr. Boyles began the briefing on how the group approached the air space issue. He began by stating the beginning baseline was to apply the available airspace answers provided in the data responses and incorporated controlled airspace which includes the restricted and warning areas as defined in the FAA Order 7400.8B. The goal was to ensure credit is given to installations for airspace that is accessible within a range based on the requirements documents the Services provided from the supplemental data call regardless of whether a response was in the data responses or not. The underlying assumption in using controlled airspace is that airspace management is transferrable. This group's rationale for using this document is that it is noncontestable and has reproducible measurements. Areas not counted are fly-through areas and shared airspace with civilian traffic--the group's focus was to look only at DoD "managed" special use airspace.

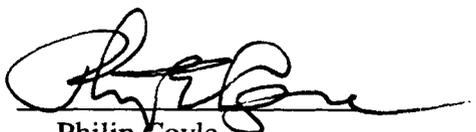
Initial OSD analysis based on experienced judgment concluded that in Air Vehicles and Armament/Weapons the majority of test missions are conducted within a 150 nautical mile (nm) radius of the main runway. For Electronic Combat, the analysis showed that 200 nm includes the majority of testing. In all three situations, it was also found that most infrastructure to support tests are also located within the proposed radii. Only in the Electronic Combat area was a question of how overland space usage from data responses exceeded the requirements from the supplemental data call. This will be reexamined before the next meeting. The group then took the FAA data and a 30 by 30 nm square grid and applied the measurements to each installation in each functional area. The preliminary results were then shown (see attachments), and it was noted that some data may be erroneous.

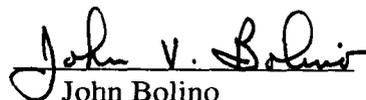
Comments from the Service representative's were then solicited. The Army and Air Force reiterated their position that the functional values that were originally presented to the JCSG using the analysis plan were not unreasonable. They also stated apprehension for changing a process when no one has convinced them there is a real problem, only a perception from the Navy. The Navy representative stated the basis for their problem with the functional value is that data within other areas of the data responses were not taken into consideration in scoring airspace. The Army further argued that once we change analysis for airspace where do we stop? (i.e. this opens Pandora's box). The Army also recommended that if this approach is approved for use, then scoring may need to be redone using 0 to MAX vice 0-Threshold criterion, which the current analysis plan directs. The Air Force stated that this new approach doesn't pass a reasonable test because it doesn't take into account that fighters and bombers do refuel and use ranges that are outside these thresholds (examples of tests at Nellis AFB and UTTR from Edwards were discussed). Other comments from the Navy were that this approach did not use certified data or take topography and straight-line tests into account.

The Chairs acknowledged that the FAA documents would need to be certified and that this approach is to address airspace only...no other areas. The goal is to ensure a level playing field exists. The Chairs also said this approach can be done in parallel with the existing analysis by the subgroup to validate their functional value. Basically, what this approach does is perform a sensitivity analysis to determine if functional value for sites will change, and if so, by what order of magnitude. The Chairs went on to state that more work needs to be done on this approach. The OSD team will go back and incorporate Service comments, complete the analysis, and bring results to the next meeting.

There being no other items for discussion, the meeting adjourned at 1705.

Approved:

  
Philip Coyle  
Co-Chairman

  
John Bolino  
Acting Co-Chairman

Attachments

## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**November 1, 1994**

#### **List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. John Bolino, Acting Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerald Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Bob Meyer, ODASD(ER&BRAC) BCU  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. David Vincent, DoD IG  
Ms. Barbara Moody, DoDIG

# **“AVAILABLE AIRSPACE”**

**1 NOVEMBER 1994**

# OVERVIEW

- **DoD “CONTROLLED” AIRSPACE**
  - RESTRICTED AREAS
  - WARNING AREAS
- **AIR VEHICLES**
  - COUNT ALL WITHIN 150NM OF MAIN RUNWAY
- **ARMAMENT/WEAPONS**
  - COUNT ALL WITHIN 150NM OF MAIN RUNWAY
- **ELECTRONIC COMBAT**
  - COUNT ALL WITHIN 200NM OF MAIN RUNWAY

# **BASIS FOR APPROACH**

- **NON-CONTESTABLE INTERPRETATION**
  - DOT FAA ORDER 7400.8B, DTD 3-9-94, “SPECIAL USE AIRSPACE”
  - REPRODUCIBLE MEASUREMENTS
- **FAA CONTROLS ALL AIRSPACE**
  - DoD AGENTS MANAGE SPECIAL USE AIRSPACE
    - » RESTRICTED AREAS
    - » WARNING AREAS
  - MILITARY OPERATING AREAS NOT “CONTROLLED”
    - » FLY-THROUGH ONLY
    - » SHARED AIRSPACE WITH CIVILIAN TRAFFIC
- **AIRSPACE MANAGEMENT TRANSFERABLE**

# **APPROACH GOAL**

- **ENSURE CREDIT TO INSTALLATION FOR AIRSPACE ACCESSIBLE FOR REGARDLESS OF WHICH DoD AGENT MANAGES IT**
- **BASE AIRSPACE ON EXPERIENCED JUDGMENT THAT:**
  - **APPROXIMATELY 90% OR MORE OF INSTALLATION'S TEST OPERATIONS ARE WITHIN A SPECIFIED RADIUS**
  - **APPROXIMATELY 90% OR MORE OF INSTALLATION'S INFRASTRUCTURE (INSTRUMENTATION, BUILDINGS, ETC) INVESTMENT COSTS ARE WITHIN THE SPECIFIED RADIUS**
- **THRESHOLD WITHIN MAXIMUM POSSIBLE**

**NAVAL AIR WARFARE  
CENTER WEAPONS DIV.,  
CHINA LAKE**

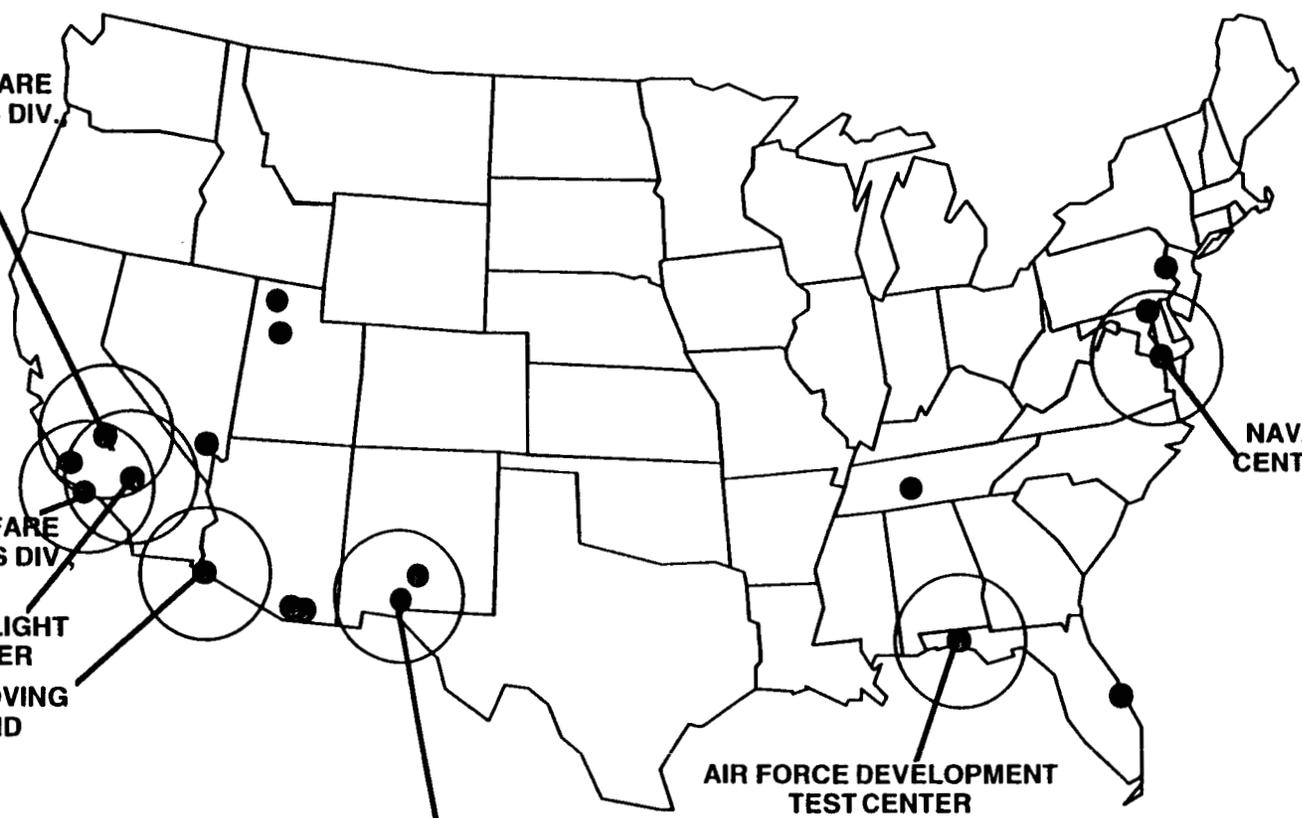
**NAVAL AIR WARFARE  
CENTER WEAPONS DIV.,  
PT. MUGU**

**AIR FORCE FLIGHT  
TEST CENTER  
YUMA PROVING  
GROUND**

**WHITE SANDS  
MISSILE RANGE**

**AIR FORCE DEVELOPMENT  
TEST CENTER**

**NAVAL AIR WARFARE  
CENTER AIRCRAFT DIV.,  
PAX RIVER**



## AIR VEHICLES THRESHOLDS (w/ Driver)

- Land Space Available (1.1.1) 40,000 square miles USN: AEW, AF: B-2
- Sea Space Available (1.1.2) 40,000 square miles USN: AEW, AF: B-2
- Restricted/Warning Airspace (1.1.4) 40,000 square miles AF: B-2
- 2 Available Airspace over Land (1.1.6) 40,000 square miles USN: AEW, AF: B-2
- Available Airspace over Water (1.1.7) 40,000 square miles USN: AEW, AF: B-2
- Max Straight line segment in airspace (1.1.8) 1,200 miles AF: Tier II + UAV
- Max Straight line segment in supersonic (1.1.11) 400 miles USN: AEW

# AIR VEHICLES

- **AVAILABLE AIRSPACE**
  - OVER LAND (1.1.6)- 40K SQ NM / 70.7K POSSIBLE
  - TOTAL (1.4) - 40K / 70.7K
- **COUNT AIRSPACE WITHIN 150NM RADIUS**
- **RATIONALE**
  - EXPERIENCE IS THAT MOST AIR VEHICLE TEST MISSIONS ARE CONDUCTED WITHIN 150 NM OF THE MAIN RUNWAY
  - MOST INFRASTRUCTURE IS WELL WITHIN THIS RADIUS OF THE STAGING INSTALLATION
  - CONSISTENT WITH NORMAL OUT AND BACK RANGE OF FIGHTER AIRCRAFT

# ELECTRONIC COMBAT THRESHOLDS

(w/ Driver)

- Land Space Available (1.1.1) 160,000 square miles AF: B-1B
- Sea Space Available (1.1.2) 122,500 square miles AF: B-1B
- Restricted/Warning Airspace (1.1.4) 100,000 square miles AF: Bomber Penetrations
- Available Airspace over Land (1.1.7) 160,000 square miles AF: B-1B
- Available Airspace over Water (1.1.8) 122,500 square miles AF: B-1B
- Max Straight line segment in airspace (1.1.9) 660 miles USN: RWR, Jammers ELINT

# **ELECTRONIC COMBAT**

- **AVAILABLE AIRSPACE**
  - OVER SEA (1.1.2) - 122.5K SQ NM / 125.6K
  - OVER LAND (1.1.8) - 160K / 125.6K
  - OVER LAND + OVER SEA (1.1.4) - 100K / 125.6K
- **COUNT AIRSPACE WITHIN 200NM RADIUS**
- **RATIONALE**
  - EXPERIENCE IS THAT MOST AIR VEHICLE TEST MISSIONS ARE CONDUCTED WITHIN 200NM OF THE MAIN RUNWAY
  - MOST INFRASTRUCTURE IS WELL WITHIN THIS RADIUS OF THE STAGING INSTALLATION
  - CONSISTENT WITH NORMAL OUT AND BACK RANGE OF FIGHTER AIRCRAFT

## ARMAMENT/WEAPONS THRESHOLDS

(w/ Driver)

- Restricted/Warning Airspace (1.1.1) 50,000 square miles USN: AEGIS/SMII
- Available DoD Land Space (1.1.2) 21,000 square miles AF: AIM-120C
- Available Sea Warning Area Space (1.1.3) 50,000 square miles USN: AEGIS/SMII
- Max Straight line segment, Air-to-Air (1.1.4.a) 660 miles AF: F-15
- Max Straight line Segment, Air-to-Surface (1.1.4.b) 350 miles AF: B-2
- Max Straight line segment, Surface-to-Air (1.1.4.c) 240 miles USA: UDS 81398A

# **ARMAMENT/WEAPONS**

- **AVAILABLE AIRSPACE**
  - OVER SEA (1.1.3) - 50K SQ NM / 70.6K
  - OVER LAND + OVER SEA (1.1.1) - 50K / 70.6
- **COUNT AIRSPACE WITHIN 150NM RADIUS**
- **RATIONALE**
  - EXPERIENCE IS THAT MOST AIR VEHICLE TEST MISSIONS ARE CONDUCTED WITHIN 150 NM OF THE MAIN RUNWAY
  - MOST INFRASTRUCTURE IS WELL WITHIN THIS RADIUS OF THE STAGING INSTALLATION
  - CONSISTENT WITH NORMAL OUT AND BACK RANGE OF FIGHTER AIRCRAFT

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq.nmi.)	200nmi (sq. nmi.)	
<b>Flight Test Center, Edwards AFB</b>				
R2508	So. Cal	11,025	11,025	20,000 - unlt'd
(R2505)	China Lake	[675]	[675]	unlt'd
(R2502,2515,2524)	Edwards	[2250]	[2250]	unlt'd
R2501	Twenty Nine Palms	675	675	surface -30,000
R4806W,4807,4808N	Indian Springs	675	4275	unlt'd
R2306 A/B	Yuma	0	450	
Miscellaneous		0	450	various
<b>Edwards Overland Total</b>		<b>12,375</b>	<b>15,975</b>	
Warning Areas		8,775	25425	various
<b>Edwards Over-water Total</b>		<b>8,775</b>	<b>25,425</b>	
<b>Naval Air Warfare Center, China Lake</b>				
R2508	So. Cal	11,700	11,700	20,000 - unlt'd
(R2525)	China Lake	[675]	[675]	unlt'd
(R2502,2515,2524)	Edwards	[2250]	[2250]	unlt'd
R2501	Twenty Nine Palms	675	675	unlt'd
R4806,4807,4808	Indian Springs	4,275	4,400	unlt'd
Miscellaneous		0	450	various
<b>Total Over-land</b>		<b>16,650</b>	<b>17,225</b>	
Warning Areas		2,475	17,325	various
<b>Total Over-water</b>		<b>2,475</b>	<b>17,325</b>	

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq.nmi.)	200nmi (sq. nmi.)	
<b>Naval Air Warfare Center, Point Mugu</b>				
R2508	So. Cal.	6,750	11,700	20,000 - unltd
R2525	China Lake	675	675	unltd
R2502,2515,2524	Edwards	2,025	2,025	unltd
R2501	Twenty Nine Palms	450	675	unltd
R4806,4807,4808	Indian Springs	0	10	unltd
Miscellaneous		100	450	various
	<b>Total Overland</b>	<b>10,000</b>	<b>15,535</b>	
Warning Areas		27,000	45,450	various
	<b>Total Over - water</b>	<b>27,000</b>	<b>45,450</b>	
<b>Yuma Proving Grounds, Yuma</b>				
R2306,2307,2308	MCAS	1,575	1,575	1,500 agl - 80,000
R2301	MCAS	3,150	3,150	surface - 8,000
R2507	So. Cal.	225	225	surface - 4,000
R2501	Twenty Nine Palms	675	675	unltd
R2303	Ft. Huaachuca	0	225	surface - 15,000
R2508	So. Cal.	0	1,575	20,000 - unltd
R2502,2515,2524	Edwards	0	2,250	unltd
	<b>Total Over-land</b>	<b>5,625</b>	<b>9,675</b>	
Warning Areas		abuts	7,650	unltd
	<b>Total Over-water</b>	<b>0</b>	<b>7,650</b>	

# MRTFB Activities

## *Available Airspace*

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq.nmi.)	200nmi (sq. nmi.)	
<b>White Sands Missile Range, White Sands</b>				
R5107A-E,5109 A/B,5111A-C	White Sands	8,325	8,325	various
R5104	Cannon AFB	0	200	surface - 23,000
R2303B	Ft. Huachuca	0	225	surface - 15,000
<b>Total Over-land</b>		<b>8,325</b>	<b>8,750</b>	
<b>Naval Air Warfare Center, Patuxent River</b>				
R4002,4005,4006,4008,6609	Chesapeake	1,350	1,350	various
R4001	unk	100	100	various
<b>Total Over-land</b>		<b>1,450</b>	<b>1,450</b>	
Warning Areas		13,500	22,275	various
<b>Total Over-water</b>		<b>13,500</b>	<b>22,275</b>	
<b>AFDTC, Eglin AFB</b>				
R2914 A/B,2915A-C,2918,2919A/B	Eglin	225	675	unltd/8,500-unltd
R3002A	Ft Benning	100	100	14,000-25,000
R3008D	Moody AFB	0	100	100agl-10,000
R4401	Hagler AAF	100	100	surface-29,000
<b>Total Over-land</b>		<b>425</b>	<b>975</b>	
Warning Areas		18,900	21,150	various
<b>Total Over-water</b>		<b>18,900</b>	<b>21,150</b>	



## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**Wednesday, November 2, 1994**

#### **Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 1600. Mr. Philip Coyle and Mr. John Bolino chaired the meeting. The list of attendees and handouts are attached.

The meeting opened with Mr. Boyles discussing changes to the Nov 1 briefing. Specifically, adjustments were made to the paragraph cites in the Air Vehicles and Electronic Combat charts (see attachments). A further adjustment to the analysis methodology briefed on Nov 1 was the adoption of a 7.5 by 7.5 nautical mile (nm) grid overlay vice the 30 by 30 nm grid proposed in the original briefing to better measure areas that lie inside the 150 and 200 nm radii.

The next item briefed were the rules for scoring functional value. The process briefed on Nov 1 was still applicable with the following clarifications made: all restricted/warning airspace falling within the radii were included even if it was not provided as a response in the certified data responses; the only contributors to functional value that were recalculated were for airspace, all other previous contributors to functional value remained the same; the threshold requirements remained the same; and, as briefed earlier, the paragraph cites were adjusted. As part of the sensitivity analysis, the subgroup also looked at the DPAD algorithm to determine if any adjustments were required based on the new data elements. The subgroup members assisting in this sensitivity analysis determined no modifications were necessary. Mr. Nation briefed the resulting functional values as compared to the original set manually calculated. In the area of Air Vehicles there was a -4 to +6 range of difference between the original set of functional values and this calculation. In EC the range was -2 to +3 and in Armament/Weapons the range was -5 to +2. The JCSG determined that none of these differences were significant thereby validating that the original set of functional values can be used without alteration.

Discussion then ensued on where the Group goes from this point. Significant points aired were on whether the Group is supposed to work on a consensus basis or majority rule. The decision was that the Chairs are the decision makers and make judgments on positions of the Service principals. They must ensure that the integrity of the BRAC process is followed and can direct the next appropriate actions to take.

The Group then decided to continue with the optimization runs using the original set of functional values briefed to the Group. The Navy contends that the sensitivity analysis did not go far enough in looking at topography and straight line range usage, it did show that one change in the scoring decisions did move the functional values toward a reasonable result, but the Navy

would continue the process as directed by the Chairs. The Chairs also stipulated that the data used in the sensitivity analysis would continue to be certified with the assistance of the DoDIG. The Chairs determined that the optimization runs would be completed by Friday, Nov 4. The JCSG would then meet to look at the preliminary output and discuss further actions and milestones to include a dialogue with the Laboratory JCSG.

Final issues the subgroup needed to address before running the optimization model had to do with submitting the final facility/activity exclusion listing and workload/capacity analysis to the JCSG for formal approval and inclusion in the record. The Group agreed to attach the exclusion list (dated Oct 18, 1994) and the capacity analysis. Additionally, the Group also approved the subcategorization of measurement facilities used in the capacity analysis. The subgroup also briefed minor changes to some elements entered into the DPADs model based on the IG validation process. The changes primarily resulted from the spectra global RFCs and only impacted functional values for 3 Navy facilities. The JCSG approved the changes as briefed.

The final discussion was the ongoing audit the DoDIG was asked to do by OSD on RFC submissions by the Air Force and Navy to the TEC Facility. The DoDIG stated that five audit teams were sent to NAWC China Lake, NAWC Pt Mugu, NAWC Patuxent River, Edwards AFB and Eglin AFB to review responses to RFCs. The Navy and Air Force Audit Agencies are aware of and will assist the IG auditors in this audit. The results should be available by the end of next week. These sites were selected because they are considered to be the most controversial in terms of potential BRAC actions. A principal concern is whether these RFC's were reviewed by the respective Service audit agencies.

There being no other items for discussion, the meeting adjourned at 1700.

Approved:



Philip Coyle  
Co-Chairman



John Bolino  
Acting Co-Chairman

Attachments

## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**November 2, 1994**

#### **List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. John Bolino, Acting Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Parker Horner, Air Force  
Mr. Doug Nation, Air Force  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerald Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Robert Bayer, DASD(I)  
Mr. Bob Meyer, ODASD(ER&BRAC) BCU  
Mr. Mike McAndrew, ODASD(ER&BRAC) BCU  
Mr. Joe Moore, OSD DOT&E  
Mr. Irv Boyles, OSD DT&E  
Mr. David Vincent, DoD IG  
Ms. Barbara Moody, DoDIG  
Mr. Dave Hennessey, OUSD(C)

# **ELECTRONIC COMBAT**

- **AVAILABLE AIRSPACE**
  - OVER SEA (1.1.8) - 122.5K SQ NM / 125.6K
  - OVER LAND (1.1.7) - 160K / 125.6K
  - OVER LAND + OVER SEA (1.1.4) - 100K / 125.6K
- **COUNT AIRSPACE WITHIN 200NM RADIUS**
- **RATIONALE**
  - EXPERIENCE IS THAT MOST AIR VEHICLE TEST MISSIONS ARE CONDUCTED WITHIN 200NM OF THE MAIN RUNWAY
  - MOST INFRASTRUCTURE IS WELL WITHIN THIS RADIUS OF THE STAGING INSTALLATION
  - CONSISTENT WITH NORMAL OUT AND BACK RANGE OF FIGHTER AIRCRAFT

# AIR VEHICLES

- **AVAILABLE AIRSPACE**
  - OVER LAND (1.1.6)- 40K SQ NM / 70.7K POSSIBLE
  - OVER SEA (1.1.7) - 40K / 70.7K
  - TOTAL (1.1.4) - 40K / 70.7K
- **COUNT AIRSPACE WITHIN 150NM RADIUS**
- **RATIONALE**
  - EXPERIENCE IS THAT MOST AIR VEHICLE TEST MISSIONS ARE CONDUCTED WITHIN 150 NM OF THE MAIN RUNWAY
  - MOST INFRASTRUCTURE IS WELL WITHIN THIS RADIUS OF THE STAGING INSTALLATION
  - CONSISTENT WITH NORMAL OUT AND BACK RANGE OF FIGHTER AIRCRAFT

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq.nmi.)	200nmi (sq. nmi.)	
<b>Flight Test Center, Edwards AFB</b>				
R2508	So. Cal	11,475	11,475	20,000 - unlt'd
(R2505) - See Note	China Lake	[728]	[728]	unlt'd
(R2502,2515,2524)-See Note	Edwards	[2,700]	[2,700]	unlt'd
R2501	Twenty Nine Palms	675	675	surface -30,000
R4806W,4807,4808N,4809	Indian Springs	675	4275	unlt'd
R2306 A/B	Yuma	0	450	various
R2510A/B	El Centro	56	112	varios
R2507A/B	North Cocolate Mtn.	112	450	surface - FL400
	<b>Total Over-land</b>	<b>12,993</b>	<b>17,437</b>	
Warning Areas		8,775	25,425	various
	<b>Total Over-water</b>	<b>8,775</b>	<b>25,425</b>	
<b>Note:These range included within area of R2508; not re-included in Totals</b>				
<b>ATTC, Edwards AFB</b>				
See Flight Test Center, Edwards AFB				
<b>Naval Air Warfare Center, China Lake</b>				
R2508	So. Cal	11,475	11,475	20,000 - unlt'd
(R2505) - See Note	China Lake	[728]	[728]	unlt'd
(R2502,2515,2524)-SeeNote	Edwards	[2,700]	[2,700]	unlt'd
R2501	Twenty Nine Palms	675	675	unlt'd
R2510A/B	El Centro	0	112	various
R4806,4807,4808N,4809	Indian Springs	4,500	4,500	unlt'd
R2507A/B	North Cocolate Mtn.	0	450	surface - FL400
	<b>Total Over-land</b>	<b>16,650</b>	<b>17,212</b>	
<b>Note:These range included within area of R2508; not re-included in Totals</b>				

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq. nmi.)	200nmi (sq. nmi.)	
<b>Naval Air Warfare Center, China Lake (Cont)</b>				
Warning Areas		2,475	17,325	various
	Total Over-water	2,475	17,325	
<b>Naval Air Warfare Center, Point Mugu</b>				
R2508	So. Cal.	7,425	11,475	20,000 - untd
(R2505)	China Lake	[728]	[728]	untd
(R2502,2515,2524)	Edwards	[2,475]	[2,700]	untd
R2501	Twenty Nine Palms	450	675	untd
R2510A/B	El Centro	0	112	various
R25067		0	336	various
	Total Overland	7,875	12,598	
Warning Areas		27,000	45,450	various
	Total Over - water	27,000	45,450	
<b>Yuma Proving Grounds, Yuma</b>				
R2306,2307,2308	MCAS	1,350	1,350	1,500 agl - 80,000
R2301,2304,2305	MCAS	3,150	3,150	surface - 8,000
R2507	So. Cal.	450	450	surface - 4,000
R2510	El Centro	112	112	untd
R2501	Twenty Nine Palms	675	675	untd
R2303	Ft. Huachuca	0	112	surface - 15,000
R2508	So. Cal.	0	1,125	20,000 - untd
(R2502,2515,2524) See Note	Edwards	0	[1,125]	untd
	Total Over-land	5,737	6,974	

Note: These range included within area of R2508; not re-included in Totals

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq. nmi.)	200nmi (sq. nmi.)	
<b>Yuma Proving Grounds, Yuma (Cont)</b>				
Warning Areas		abuts	7,650	unltd
	<i>Total Over-water</i>	0	7,650	
<b>White Sands Missile Range, White Sands</b>				
R5107A-E,5109 A/B,5111A-C	White Sands	8,550	8,550	various
R5104	Cannon AFB	0	200	surface - 23,000
R2303B	Ft. Huachuca	0	225	surface - 15,000
	<i>Total Over-land</i>	8,550	8,975	
<b>Naval Air Warfare Center, Patuxent River</b>				
R4002,4005,4006,4008,6609	Chesapeake	1,575	1,575	various
R6611A/B,6613A/B	Dahlgren	56	56	surface - 60,000
R4001	Aberdeen	100	100	various
	<i>Total Over-land</i>	1,731	1,731	
Warning Areas		14,400	26,325	various
	<i>Total Over-water</i>	14,400	26,325	
<b>AFDTC, Eglin AFB</b>				
R2914 A/B,2915A-C,2918,2919A/B	Eglin	675	675	unltd/8,500-unltd
R3002A	Ft Benning	100	100	14,000-25,000
R3008D	Moody AFB	0	100	100 agl-10,000
R4401	Hagler AAF	100	100	surface-29,000
	<i>Total Over-land</i>	875	975	
Warning Areas	Gulf	18,450	20,700	various
	<i>Total Over-water</i>	18,450	20,700	

# MRTFB Activities

## Available Airspace

Radius

Restricted / Warning Area	Range Location	150 nmi (sq. nmi.)	200nmi (sq. nmi.)	Altitude (ft)
R2303	Ft. Huachuca	730	730	surface - 45,000
R2307, 2308	YPG	0	225	1,500 agl - 80,000
R5107A-E, 5109 A/B, 5111A-C	White Sands	0	900	various
R2304	Gila Bend	336	336	surface - 24,000
R2301	Luke AFB	450	2,475	surface - 11,000
<b>Total Over-land</b>				
		1,516	4,666	
<b>476 WEG, Tyn dall AFB</b>				
R2914 A/B, 2915A-C, 2918, 2919A/B	Eglin	675	675	various
R3002A	Ft Benning	100	100	surface - 25,000
R3008D	Moody AFB	100	100	100 agl - 10,000
R4401	Hagler AAF	0	100	surface - 29,000
R2903	Cecil Field		abuts	
<b>Total Over-land</b>				
		875	975	
<b>Warning Areas</b>				
		20,250	20,700	various
<b>Total Over-water</b>				
		20,250	20,700	
<b>Utah Test &amp; Training Range, Utah</b>				
R6402, 6405, 6406, 6407	DPG/Wendover/Hill	4,275	4,275	surface - 58,000
R6404	Hill AFB	1,575	1,575	various
R3202	Saylor Creek	0	200	various
R6413	Green River	abuts	168	unltd
R4806, 4807, 4808	Indian Springs	0	abuts	unltd
<b>Total Over-land</b>				
		5,850	6,218	

# MRTFB Activities

## Available Airspace

Radius

Restricted / Warning Area	Range Location	150 nmi (sq.nmi.)	200nmi (sq.nmi.)	Altitude (ft)
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### 46th Test Group, Holloman AFB

R5107A-E,5109 AB,5111A-C	White Sands	8,550	8,550	various
R5104	Cannon AFB	200	200	surface - 23,000
<b>Total Over-land</b>				
		8,750	8,750	

### ATTG, Fort Rucker, AL

R2103	Ft Rucker	38	38	surface - 15,000
R3008	Moody AFB	100	100	100 agl - 10,000
R5107A-E,5109 A/B,5111A-C	Eglin Land Ranges	675	675	various
R2104	Huntsville	0	0	surface - 2,400
R3005	Ft Stewart	0	100	surface - 29,000
R2101	Ft McClellan	29	29	surface - 24,000
<b>Total Over-land</b>				
		842	952	

### Naval Surface Warfare Center, Dahlgren, VA

R6611A/B,6613A/B	Dahlgren	56	56	
R4002,4005,4006,4008,6609	Chesapeake	1,575	1,575	various
R4001	Aberdeen	100	100	various
<b>Total Over-land</b>				
		1,731	1,731	
Warning Areas	various	9,225	22,050	various
<b>Total Over-water</b>				
		9,225	22,050	

### RTTC, Redstone Arsenal

R2104	Huntsville	10	10	surface - 2,400
R3702	Ft Campbell, KY	118	118	surface - 27,000
R3704	Ft Knox, KY	0	84	surface - 20,000
R2102	Ft. McClellan	29	29	surface - 24,000

# MRTFB Activities

## Available Airspace

Restricted / Warning Area	Range Location	Radius		Altitude (ft)
		150 nmi (sq.nmi.)	200nmi (sq. nmi.)	
<b>RTTC, Redstone Arsenal (Cont)</b>				
R3002	Ft. Benning	abuts	100	surface - 25,000
	<b>Total Over-land</b>	<b>157</b>	<b>341</b>	

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**TEST AND EVALUATION  
JOINT CROSS SERVICE GROUP  
MEETING**

2 November 1994

## T&E JCSWG STATUS

- Facility Exclusions
- Functional Values
- Workload / Capacity
  - Sub-Categorization
- Optimization Model Runs
  - Run Matrix
- Issue
  - FV Scoring

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# **FACILITY AND ACTIVITY EXCLUSIONS**

JCSWG RECOMMENDATIONS  
TRANSMITTED TO JCSG

VIA

19 OCTOBER 1994 MEMO

(Memo Provided for the Record)

## **WORKLOAD / CAPACITY STATUS**

- Completed for all three functional areas
- Measurement Facilities sub-categorized in each functional area; no sub-categorization in remaining Test Facility Categories
- Values approved by co-chairs (19 Oct 94 Memo) and transmitted to Tri-Department BRAC Group
- Memo withdrawn based on Navy's non-concurrence with Functional Value
- Memo transmitting T&E Capacity and Workload Requirements provided for the record
- Separate memo to transmit Functional Value

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## FUNCTIONAL VALUES\* NAVY ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
NAWC	China Lake	43	47	57
	Indianapolis	19	-	-
	Patuxent River	81	53 <sup>a</sup>	57
	Point Mugu	69	58	77
	Warminster	14	-	-
	WSMR	-	-	25
NSWC	Crane	-	17 <sup>b</sup>	13 <sup>c</sup>
	Dahlgren	25	-	17
	Indian Head	-	-	14

a - Pax River was 55    b - Crane was 15    c - Crane was 12

\* Revised per IG validation process

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## AIR VEHICLE SUB-CATEGORIES

- Measurement facilities:
  - A = Avionics & Aircraft Subsystems
  - C = Comm/Navigation/Antenna
  - E = Environmental/Vibration/Structures
  - EM = E3
  - G = Guidance/Sensor/Signature
  - P = Propulsion
  - ST = Sled Tracks

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## ELECTRONIC COMBAT SUB-CATEGORIES

- Measurement facilities:
  - C = Comm/Antenna
  - E = Environment
  - EM = E3
  - G = Guidance
  - R = RCS
  - S = Signature

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## ARMAMENT/WEAPONS SUB-CATEGORIES

- Measurement facilities:
  - E = Environmental, Vibration & Indoor Decoy Flares
  - EM = E3
  - G = Seeker/Sensor, Guidance & Control, Signature Measurements, & Fuzes
  - P = Propulsion
  - ST = Sled Tracks
  - GO = Guns, Ordnance, Warheads, & Outdoor Decoy Flares

## INITIAL RUN MATRIX - OPTIMIZATION MODEL

- Run following objective functions for one functional area at a time and for all three functional areas together
  - MINSITES (with  $w = 100$ )
  - MAXSFV (with  $w = 100$ )
  - MAXSFV (with  $w = 0$ )
  - MAXSFV with number of sites = NSITE (with  $w = 100$ )
  - MAXSFV with number of sites = NSITE (with  $w = 0$ )
  - MINXCAP (with  $w = 100$ )

Note: NSITE = minimum number of sites computed in MINSITES  
(with  $w = 100$ )

Arch (A)

MAN  
108

## ISSUE: FUNCTIONAL VALUE SCORING

- Per JCSG direction (1 Nov 94), FV sensitivity analysis conducted using OSD's proposed method for scoring "Available Airspace"
- Ground Rules same as presented by OSD at last JCSG meeting, with following clarifications:
  - All Restricted / Warning airspace falling within "Radii" included, even if not identified in Certified Joint data responses
  - Delta FV for those activities previously scored for "Airspace" was calculated (Other activities' FV remain unchanged)
  - "Threshold" scoring criteria retained
  - Specific questions revised by OSD (See following charts)
- OSD provided inputs (Uncertified)
  - JCSWG calculated changes in FV

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## FUNCTIONAL VALUES AIR FORCE ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
AFDTC	REDCAP	-	15	-
	Eglin	56	65	82
	Holloman	33	29	30
	AFEWES	-	17	-
AFFTC	Edwards	85	52	-
	UTTR	46	-	-
AEDC	Tullahoma	18	-	16
476	Tyndall	49	-	-
WEG				

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## FUNCTIONAL VALUES ARMY ACTIVITIES

		Air Vehicles	Electronic Combat	Armament/ Weapons
ATTC	Edwards	46	-	-
	Fort Rucker	34	-	-
RTTC	Redstone Arsenal	-	-	21
WSMR	WSMR	-	-	50
	EPG	44	47	-
YPG	YPG	35	-	29

# AIR VEHICLES

ACTIVITY	CURRENT FV	DELTA FV	RESULTS
AFFTC	85	-4	81
Pax River	81	-3	78
Pt Mugu	69	+1	70
AFDTC	56	-3	53
Tyndall	49	+1	50
ATTC-Edwards	46	+3	48
UTTR	46	-1	45
EPG	44	+1	45
China Lake	43	+3	45
YPG	35	+2	37
ATTC-Ft Rucker	34	-3	31
Holloman	33	+3	36
Dahlgren	25	+6	31
Indianapolis	19	-	19
AEDC	18	-	18
Warminster	14	-	14

# ELECTRONIC COMBAT

ACTIVITY	CURRENT EV	DELTA EV	RESULTS
AFDTC	65	- 2	63
Pt Mugu	58	+ 1	59
Pax River	53	+ 1	54
AFFTC	52	- 2	50
EPG	47	0	47
China Lake	47	+ 3	50
Holloman	29	+ 1	30
Crane	17	0	17
AFWES	17	0	17
REDCAP	15	0	15

# ARMAMENTS / WEAPONS

ACTIVITY	CURRENT FV	DELTA FV	RESULTS
AFDTC	82	-1	81
Pt Mugu	77	-2	75
China Lake	57	+1	58
Pax River	57	-5	52
WSMR	50	-1	49
Holloman	30	+2	32
YPG	29	+2	31
NAWC-WSMR	25	+2	27
Redstone	21		
Dahlgren	17	+2	19
AEDC	16	0	16
Indian Head	14	+	
Crane	13	0	13

18 Oct 94

MEMORANDUM FOR CO-CHAIRS, T&E JOINT CROSS-SERVICE GROUP

SUBJECT: Activity and Facility Exclusions

1. The Working Group has reviewed the Military Department responses to the T&E JCSG Data Call to determine which activities and facilities in those responses should be excluded, in accordance with our analysis plan dated 3 Aug 94. Our 14 Sep 94 memo recommended activity-level exclusions (Atch 1) which were subsequently approved in the 27 Sep 94 JCSG meeting.

2. We have applied the policy imperatives to the facilities at the remaining activities (Attachments 2, 3 and 4) and determined which of those to include or exclude from further analysis in each T&E functional area (Air Vehicles, Electronic Combat, and Armaments / Weapons). Facilities were excluded based on the following factors: a) Service unique, b) 5% rule, c) 100 hour rule, or d) support capability. Per JCSG direction, those judged to be support facilities will be excluded only from functional value, capacity, and workload analysis.

3. A total of 23 activities remain in the T&E "Universe" (Atch 5) being examined by the T&E JCSG.



Gary L. Holloway, SES, USA  
T&E JCSWG  
Army Lead



CDR Mark B. Samuels, USN  
T&E JCSWG  
Navy Lead



Dr. J. Daniel Stewart, SES, USAF  
T&E JCSWG  
Air Force Lead

- Attachments:
1. Activity-level exclusions
  2. Army Facility-level Inclusions and Exclusions
  3. Navy Facility-level Inclusions and Exclusions
  4. Air Force Facility-level Inclusions and Exclusions
  5. Activities to be analyzed by the T&E JCSG (T&E "Universe")

## ARMY ACTIVITY EXCLUSIONS

### JCSWG Recommended Exclusion

- |  | <u>Rationale</u>                                     |
|--|--|
| ● Combat Systems Test Activity, APG, MD  | ● Service Unique, Land Vehicle Signature Measurement |
| ● TEXCOM Experimentation Center, OPTEC at Ft. Hunter-Liggett, CA                   | ● Operational Test Activity, No Infrastructure       |
| ● Intelligence and Electronic Warfare Test Directorate , OPTEC at Ft. Huachuca, AZ | ● Operational Test Activity, No Infrastructure       |
| ● Air Defense Artillery Test Directorate, OPTEC at Ft. Bliss, TX                   | ● Operational Test Activity, No Infrastructure       |

## NAVY ACTIVITY EXCLUSIONS

### JCSWG Recommended Exclusion

- COMOPTEVFOR
- PMRF
- AFWTF
- NRL
- NCCOSC ISE East Det St Inigoes
- NSWC Carderock
- NSWC Louisville
- AEGIS Combat Systems Center, Wallops Is
- NAWD Corona
- NAWC Lakehurst
- NSWC Port Hueneme

### Rationale

- OTA
- Dedicated Training Facility
- Dedicated Training Facility
- S&T Lab
- Shipboard Landing Aid Systems
- Ship Hull & Machinery RDT&E
- Maintenance of Naval Gun Systems
- AEGIS Combat Systems
- Fleet Training Support
- Service Unique (Shipboard Avn Supt)
- Service Unique (Non-AEGIS Cmbt Sys)

## AIR FORCE ACTIVITY EXCLUSIONS

### JCSWG Recommended Exclusion

- Wright Labs
- Armstrong Labs
- Rome Labs
- Phillips Labs
- Tinker Air Logistics Center (ALC)
- Sacramento ALC
- Warner Robins ALC
- Kelly ALC
- Ogden ALC
- 513 ETS, Offutt AFB, NE
- USAFWTC, Nellis AFB, NV
- Det4/TACCSF, Kirtland AFB, NM
- AFOTEC, Kirtland AFB, NM
- USAF AWC, Eglin AFB, NM

### Rationale

- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Lab)
- Non-T&E (Depot)
- MILDEP-Unique
- Training + <5%
- <5%
- OTA
- OTA, No T&E Facilities

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 U.S. ARMY TEST AND EVALUATION ACTIVITIES/FACILITIES

U.S. Army Aviation Technical Test Center  
 Fort Rucker, AL

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Open Air Range	Aviation Technical Test Center	100	0	0	Include in analysis for Air Vehicles.

U.S. Army Aviation Technical Test Center  
 Edwards Air Force Base, CA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Open Air Range	Airworthiness Qualification Test Directorate	100	0	0	Include in analysis for Air Vehicles.

At 2

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U.S. Army Redstone Technical Test Center  
 Redstone Arsenal, AL

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Component Test	0	0	29.4	Include in analysis for Armament/ Weapons.
	Non-Destructive and Natural Environments	0	0	11.5	Include in analysis for Armament/ Weapons.
	Induced Environmental	0	0	23.6	Include in analysis for Armament/ Weapons.
Open Air Range	Small Missile Range	0	0	8.8	Include in analysis for Armament/ Weapons.

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U.S. Army Yuma Proving Ground, Yuma Proving Ground, AZ

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Environmental Simulation	15	0	7.6	Include in Air Vehicles and Armament/Weapons analysis.
	Physical Measurements	0	0	2	Do not include; workload less than 5%.
Open Air Range	Aircraft Weapons Integration Range	78	0	22	Include in analysis for Air Vehicles and Armament/Weapons.
	Aircraft Munitions Range	0	0	100	Include in analysis for Armament/ Weapons.
	Air Vehicle/General Support	34	0	17	Include in analysis for Air Vehicles and Armament/Weapons.
	Direct Fire Ranges	0	0	0	Do not include; surface-to-surface capability only.
	Artillery/Mortar Ranges	0	0	0	Do not include; surface-to-surface capability only.
	Mine Test Facility	0	0	0	Do not include; surface-to-surface capability only.
	Munitions Handling, Processing & Storage	11	0	5	Do not include; support facility.
	Aviation Support	37	0	13	Do not include; support facility.
	Range Instrumentation	13	0	14	Do not include: support facility.
	Data Analysis & Computation	60	0	10	Do not include: support facility.

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U.S. ARMY TEST AND EVALUATION ACTIVITIES/FACILITIES

U.S. Army White Sands Missile Range  
White Sands Missile Range, NM

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Electromagnetic Environmental Effects	0	0	100	Include in analysis for Armament/ Weapons.
	Applied Environments	1	1	95	Include in analysis for Armament/ Weapons.
	Nuclear Effects	0	0	100	<b>Do not include;</b> outside the scope of the T&E JCSG analysis.
	Directed Energy	0	0	100	<b>Do not include;</b> service unique.
	Electronic Warfare	0	100	0	<b>Do not include;</b> support capability.
Open Air Range	National Range	0	0	35	Include in analysis for Armament/ Weapons.
	Materiel Test	0.9	0.7	95	Include in analysis for Armament/ Weapons.
	Warheads Test	0	0	100	Include in analysis for Armament/ Weapons.
	Data Reduction	0	2.8	97.2	<b>Do not include;</b> support capability.

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U.S. ARMY TEST AND EVALUATION ACTIVITIES/FACILITIES

U.S. Army White Sands Missile Range  
(Electronic Proving Ground)  
Fort Huachuca, AZ

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Environmental Test Facility	12	11	0	Include in Air Vehicles and Electronic Combat.
	EMI/TEMPEST	5	10	0	Include in analysis for Electronic Combat.
	Avionics/GPS Test Facility	10	0	0	Include in analysis for Air Vehicles.
	Range Operations Capability	21	27	0	Include in analysis for Air Vehicles and Electronic Combat
Digital Modeling and Simulation	Electromagnetic Environmental Test Facility	1	11	0	Include in analysis for Electronic Combat
Open Air Range	Instrumented Test Range	24	32	0	Include in analysis for Air Vehicles and Electronic Combat
NOT CATEGORIZED	Intelligence & Electronic Warfare Division	0	89.8	0	Do not include; support capability.
	General Electronic Test Capability	1	5	1	Do not include; workload 5% or less

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US Navy T&E Installations

NAVAL T&E INSTALLATIONS

Naval Air Warfare Center  
China Lake, CA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation	
DM&S	Air Weapon DM&S	0	0	20	Include in A/W analysis	
	Explosive & Ordnance Modeling	0	0	10	Do not include, <100 test hours/year in A/W	
	Strike Simulation & Modeling	1.5	0.13	31.4	Include in A/W analysis	
	Strike Software/Simulation Facility	0	0	16.5	Include in A/W analysis	
	Sys Modeling & Sign. Proce Facility	0	0	25	Include in A/W analysis	
	Weapons & Tactics Analysis Center	1	1	19	Include in A/W analysis	
	Measurement Facility	Aeroheat Test Facility	0	0	100	Include in A/W analysis
		Air Breathing Prop. Lab	0	0	20	Include in A/W analysis
		ARM Missile Seeker Test Complex	0	0	40	Include in A/W analysis
Cactus Flats Ordnance Test Area		0	0	90	Include in A/W analysis	
Chemical Analysis Res. Fac		0	0	17	Do not include, Support facility (per T&E JCSG decision @ 9/27/94 meeting)	
Detonation Physics Lab		0	0	60	Include in A/W analysis	
Dynamic Prop. Measure Complex		13	0	12	Do not include, Support facility	
Energetic Materials Prop. Analysis		0	0	10	Do not include, Support facility	
Environmental Test complex		6	2	47	Include in A/V & A/W analysis	
Foreign Material Exploit. & Balloon Test	4	0	19	Include in A/W analysis		

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US Navy T&E Installations

Naval Air Warfare Center  
China Lake, CA (Cont'd)

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Guidance Comp. T&A	2	0	41	Include in A/W analysis
	High Hazard Propulsion Test Fac.	0	0	100	Include in A/W analysis
	IR Seeker, GCS	10	0	19	Include in AV and A/W analysis
	DDT&E Complex				
	Junction Ranch RCS Range	0	100	0	Include all reported workload as EC (per T&E JCSG decision @ 9/27/94 meeting)
	Materials Eng/Failure Analysis Fac	5	0	55	Do not include, Support facility (per T&E JCSG decision @ 9/27/94 meeting)
	Med. Cal Gun & Ammo Ballistics	0	0	45	Include in A/W
	Missile Engage Sim Arena	0	0	20	Do not include, not operational until FEB '95
	Non-Destructive Ord. Test Facility	0	0	100	Do not include, Support facility
	Optics & Laser Research Fac	1	0	2	Do not include, 5% criteria
	Ord. & Prop. Foreign Mat. Exploit Lab	0	0	5	Do not include, 5% criteria
	Ordnance Test Complex	0	0	100	Include in A/W analysis
	RF Seeker, Guidance, Control DDT&E	2.5	0	14	Include in A/W analysis
	Sensor & Targeting Technology Fac	1	0	11	Include in A/W analysis
	Sled Tracks	12	0	88	Include in A/W analysis, <100 test hours/year in A/W
	Strategic Propulsion Test Complex	0	0	100	Include in A/W (per T&E JCSG decision @ 9/27/94 meeting)
	Tactical Propulsion Test Fac.	0	0	100	Include in A/W analysis

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US Navy T&E Installations

Naval Air Warfare Center  
China Lake, CA (Cont'd)

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
<b>Measurement Facility</b>	VHF Anechoic Chamber	0	2	11	Include in A/W analysis
	Weapons Signal Proc. Design	0	0	5	Do not include, 5% criteria
<b>Integration Laboratory</b>	Weapons Survivability Lab	20	0	0	Do not include , <100 test hours/year in A/V
	Actuator & Power Sys	0	0	5	Do not include, 5% criteria
	Antiradiation Missile Integ Complex	0	30	30	Include in EC & A/W analysis
	Armament/Wep Design Proto & Integ	2	0	5	Do Not Include, 5% criteria
	Composites Dev. Lab	0	0	10	Do not include, <100 test hours/year in A/W
	Data Link Development	8	0	12	Do not include, <100 test hours/year in A/V & A/W
	EW Integration Laboratory	0	10	0	Include all reported workload in EC (per T&E JCSG decision @ 9/27/94 meeting)
	Fuze Development Lab	0	0	8	Include in A/W analysis
	Laser Seeker Int. & Test	0	0	100	Do not include, <100 test hours/year in A/W
	Missile/Rocket Motor Assembly Fac	0	0	45	Include in A/W analysis
	Ordnance Assembly Fac	0	0	55	Do not include, Support facility
	Telemetry Development	0	0	20	Do not include, Support facility
	TSSAM Mission Planning Fac	0	0	25	Do not include, Support facility
	Warhead/Bomb Assembly/Int. Fac	0	0	45	Do not include, Support facility
	Wpn Guidance/Control/ Seeker IL	2	0	40	Include in A/W analysis

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US Navy T&E Installations

Naval Air Warfare Center  
China Lake, CA (Cont'd)

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Integration Laboratory	WSSF (A-6)	3.4	0	30.6	Do not include, Service Unique (A-6)
	WSSF (AH-1)	4.7	0	42.8	Do not include, Service Unique (AH-1)
Hardware in the loop (HITL)	WSSF (AV-8)	3.5	0	31.5	Do not include, Service Unique (AV-8)
	WSSF (F/A-18)	3.8	0	34.2	Do not include, Service Unique (F/A-18)
	MK-45 TDD Eng. Dev.	0	0	40	Include in A/W analysis
	Simulation Lab- Missile TSSAM	0	0	20	Include in A/W analysis
Open Air Range (OAR)	Air/Ground Range	5	0	45	Include in A/W analysis
		3	1	85	Include in A/W analysis
	Electronic Combat Range	1	55	27	Include in EC and A/W analysis
	Flight Test Capability	0	2.7	97.3	Do not include, Support facility of OAR

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US Navy T&E Installations

**Naval Air Warfare Center, Weapons Division - China Lake  
White Sands Missile Range Detachment**

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
<b>Open Air Range (OAR)</b>	NAWCWPNS, White Sands	0	0	85	Include in A/W analysis

**Naval Surface Warfare Center  
Crane, ID**

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
<b>Measurement Facility</b>	EW Facility	0	70	0	Include in EC analysis
	Ordnance Test Area	0	0	80	Include in A/W analysis
	Automated IR Test Fac	0	0	80	Include in A/W analysis
	Transient Velocity Windstream Apparatus	0	0	50	Include in A/W analysis
<b>Hardware in the Loop (HITL)</b>	Conventional Ammo Facility	0	0	100	Do not include, < 100 test hours/year in A/W
	Missile Fuze Test Facility	0	0	100	Do not include, <100 test hours/year in A/W
	Ordnance Radiographic Facility	0	0	100	Do not include, <100 test hours/year in A/W
	Ordnance & Component Eval	0	0	100	Do not include, <100 test hours/year in A/W
	Fleet Ballistic Missile Ord Test	0	0	100	Do not include, Service Unique (Trident Missile)
	Ordnance Environmental Test	0	0	100	Do not include, < 100 test hours/year in A/W

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US Navy T&E Installations

Naval Surface Warfare Center  
Dahlgren, Va

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Warheads Research TestFac	0	0	0	Do not include, 5% criteria
	Electro Magnetic Vulnerability Assessment	35	0	24	Include in A/V and A/W analysis
Open Air Range (OAR)	Electro Magnetic Pulse Test Facility	0	0	10	Do not include, < 100 test hours/year in A/W
	Explosive Experimental Area	0	0	15	Include in A/W analysis
	Potomac River Test Range	0	0	40	Do not include, Service unique surface-to-surface range
	Search & Track Sensor Test	0	0	5	Do not include, 5% criteria

Naval Surface Warfare Center  
Indian Head, MD

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	Non Destructive Test	0	0	60	Do not include, Support facility
	Propulsion Component Test	0	0	50	Include in A/W analysis
	Environmental Test Fac	0	0	10	Include in A/W analysis
	Cartridge Actuated Devices	0	0	60	Do not include, DoD unique facility. NSWC IH has Tri-Service responsibilities for CAD & Aircrew Escape System components
	Chemical/Physical Test	0	0	5	Do not include, 5% criteria

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US Navy T&E Installations

NAWC  
Indianapolis, ID

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
DMS	Central Computing Facility	0	0	0	Do not include, Support facility
	ALQ-170	0	25	0	Do not include, Service Unique (AN/ALQ-170)
	EW Facility	0	16	0	Do not include, Service Unique (AN/ALQ-170 support facility)
Measurement Fac (MF)	Product QA & Evaluation Facility	20	5.1	4	Include AV analysis, 5% criteria on EC when rounded to nearest whole percentage
Integration Lab (IL)	Industrial Facilities	0.98	0.8	0.02	Do not include, 5% criteria
	TACAIR Pod	10	0	0	Include in AV analysis
	Secure Compartmented Integrated Facility	0	0	0	Do not include, 5% criteria
	Avionics/Electronics Dev. Lab	4.6	0.3	0.2	Do not include, 5% criteria
	EP-3/ES-3 Convert in Lieu of Procurement	19	0	0	Do not include, Service Unique (EP-3 & ES-3 aircraft support)
Hardware in the Loop (HITL)	Integration Avionics Lab	18	0	0	Include in AV analysis
	Digital Scene Matching	1	0	0	Do not include, 5% criteria
	Area Correlator				

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US Navy T&E Installations

Naval Air Warfare Center  
Patuxent River, MD

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	C7/MK7Cat/Trap & Take-Off Assist. Fac	100	0	0	Do not include, Service Unique (Aircraft Carrier unique systems)
	Landing System Test	100	0	0	Do not include, Service Unique (Support for aviation capable ships)
	Propulsion System Eval.	80	0	0	Include in A/V analysis
	Ship Ground Station	60	0	0	Do not include, Service Unique (Support for aviation capable ships)
	A/C Arm. Sys. Sim Eng Test Station	100	0	0	Include in A/V analysis
	EW/Avionics Flt Test F	60	20	0	Include in A/V. <100 hours/yr EC
	ATLAS In-Flt Meas. Ca	75	10	5	Include in A/V. <100 hours/year EC
	Aircraft T&E Facility	100	0	0	Include in A/V analysis
	EO & Recon Sys Test	100	0	0	Include in A/V analysis
	Combat ID System	50	5	0	Include in A/V analysis
	Grnd. Range Ant Test F	50	20	0	Include in A/V and EC analysis
	Acoustic Test Facility	80	0	0	Do not include, Service Unique (ASW sensor testing)
	Comm. T&E Lab	80	5	0	Include in A/V analysis
	Surv & Topo Analysis Radar Sys Lab	80	0	0	Include in A/V analysis

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US Navy T&E Installations

Naval Air Warfare Center  
Patuxent River, MD (Cont'd)

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
<b>Integration Lab</b>	Airborne Strategic Comm Engr & Test	30	0	0	Do not include, Service Unique (EA-6 TACAMO support)
	E-2C Systems T&E Lab	100	0	0	Do not include, Service Unique (E-2C support)
	Helicopter Mission Sys. Support Center	80	0	0	Include in A/V analysis
	Fixed Wing ASUW & ASW Lab	70	0	0	Do not include, Service Unique (P-3C & S-3 support)
	Project Beartrap	30	0	0	Do not include, Service Unique (Specialized ASW aircraft support)
<b>Hardware in the Loop (HITL)</b>	Aircraft Elect. Eval.	90	0	0	Include in A/V analysis
	Aircrew Sys Test	60	0	0	Include in A/V analysis
	Aircraft Stores	100	0	0	Include in A/V analysis
	Certification Test				
	Flight Control	100	0	0	Include in A/V analysis
	Computer Test				
	Integrated Aircraft Test Lab	90	0	0	Include in A/V analysis
	Aircraft Support Systems Test Facility	90	0	0	Include in A/V analysis
<b>Installed Systems Test Facility (ISTF)</b>	Air Combat	41	26	8	Include in A/V, EC and A/W analysis
	Environment T&E Fac				
	Open Air Range (OAR)	85	5	5	Include in A/V analysis
	Telemetry Data System	85	10	5	Do not include, Support Facility for OAR
	Airborne Instr. Support	90	5	5	Do not include, Support Facility for OAR
	Target Support Fac	70	0	10	Do not include, Support Facility for OAR
	T&E Data Processing	85	5	5	Do not include, Support Facility

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US Navy T&E Installations

Naval Surface Warfare Center  
White Oak, MD

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
MF	Hypervelocity Wind Tunnel	0	0	0	Do not include, 5% criteria
	Nuclear Weapons Radiation Effect	0	0	5	Do not include, 5% criteria,. Not within the scope of T&E JCSG Functional Area review

Naval Air Warfare Center, Weapons Division  
Pt. Mugu, CA.

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
DMS	Simulation and Effectiveness Center	0	0	80	Include in A/W analysis
	Target System Modeling & Simulation	0	0	35	Do not include, Support facility for targets
MF	Airborne IR Measurement	0	36	0	Include in EC analysis
	Bistatic Radar	2	0	58	Include in A/W analysis
	Reflectivity Lab	20	0	40	Include in A/W analysis, <100 test hours/year in A/V
	Environmental Effects Environmental Test	10	0	80	Include in A/W analysis, <100 test hours/year in A/V
	Monostatic Radar Reflectivity	2	0	58	Include in A/W analysis
	Ready Missile Test	0	0	90	Include in A/W analysis
	Reliability Test	0	0	90	Include in A/W analysis
	Sea Level Climatic Chamber	40	0	40	Include in A/V and A/W analysis
	Support Equip Engr & Test	0	0	50	Do not include, Support Facility
	Telemetry/Test Article Instrumentation	0	0	100	Do not include, < 100 test hours/year in A/W

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US Navy T&E Installations

Naval Air Warfare Center, Weapons Division  
Pt. Mugu, CA. (Cont'd)

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
IL	EW Countermeasure	0	5	0	Do not include, 5% criteria
	EW/Radar Supp Equip	0	5	0	Do not include, 5% criteria
	Info Warfare Sys Lab	0	0	0	Do not include, 5% criteria
	Intercept Weapons Eval	0	0	100	Include in A/W analysis
	Laser & Stabilized Optics	0	0	0	Do not include, 5% criteria
	Warning & Surveillance	0	10	0	Include in EC analysis
	WSSA (F-14)	0	0	15	Do not include, Service Unique (F-14)
	WSSL (EA-6B)	0	5	0	Do not include, Service Unique (EA-6B)
	HITL	EC Simulations & Evaluation	0	10	0
Missile HITL		0	0	90	Include in A/W analysis
Strike Weapons Eval		15	0	85	Include in A/W analysis, < 100 test hours/year in A/V
OAR	Aerial Targets	0	2	41	Do not include, Support Facility
	Aircraft O&M	0	0	16	Do not include, Support Facility
	Sea Test Range	16.4	0.8	33	Include in A/V and A/W analysis
	Surface Targets	0	5	60	Do not include, Support Facility
	Target Augmentation System	0	0	50	Do not include, Support Facility
	Target Control System	0	0	60	Do not include, Support Facility
	Threat EC Simulations	0	0	100	Do not include, Support Facility
	Threat Radar Signal Simulation	0	0	100	Do not include, Support Facility

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Naval Air Warfare Center, Aircraft Division  
Warminster, PA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Digital Modeling & Simulation (DM&S)	Human Centrifuge/Dynamic Flt Simulator	40	0	0	Include in A/V analysis

## AIR FORCE FACILITY INCLUSIONS LIST FOR T&E JCSG ANALYSIS

### AIR FORCE MATERIEL COMMAND

Air Force Flight Test Center  
Edwards AFB, CA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Digital Modeling & Simulation Facility	Test & Evaluation Mission Simulator (TEMS)	19.8	0.2	0	Include in AV analysis
Measurement Facilities	Ground Vibration / Structure Lab	80.75	0	4.25	Include in AV analysis
	Human Factors Lab	90	0	0	Include in AV analysis
Integration Labs	Integration Facility for Avionics Systems Test (IFAST)	80.1	9	0	Include in AV and EC analysis.
	Instrumented Propulsion Complex	40	0	0	Include in AV analysis
	SAR Test Fac. North Base	0	80	0	Include in EC analysis
Installed System Test Facility (ISTF)	Benefield Anechoic Facility	56.7	22.5	0.9	Include in AV analysis
Open Air Range	AFFTC Open Air Range	84.4	8.4	0.9	Include in AV and EC analysis

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AIR FORCE MATERIEL COMMAND (Continued)

Air Force Flight Test Center  
Edwards AFB, CA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EG T&E	% Workload in A/W T&E	Recommendation
Test Support Facilities	Aerospace Ground Equipment Complex	100	0	0	Do not include in analysis
	Aircraft Corrosion Control	93.8	0	0	Do not include in analysis
	Air Traffic Control	34	15	7	Do not include in analysis
	Audio Visual Center	30.7	1	0.2	Do not include in analysis
	Fuel System Dock Complex	98	0	0	Do not include in analysis
	Runways/Dry Lake Beds, Rogers/Rosamond/Main base/South & North Base	84.4	8.4	1	Do not include in analysis
	Test Support Maintenance & Mod. Facility	100	0	0	Do not include in analysis
	Air Data Calibration Facility	95	0	0	Do not include in analysis
	Weight & Balance Facility	95	0	0	Do not include in analysis
	Icing/Refueling Lab	95	0	0	Do not include in analysis
	NDI	93.8	0	0	Do not include in analysis
	Parachute Test Complex	72	0	8	Do not include in analysis
	Stores Wt. & Inertia Facility	97	0.98	0	Do not include in analysis
	Test Measurement & Diagnostic - Precision Measurement Lab	50.6	2.75	1.65	Do not include in analysis
	Thrust Stand	95	0	0	Do not include in analysis
	ARIA Maintenance Facility	100	0	0	Do not include in analysis
	Missile/Munitions Integration Facility	99	0	1	Do not include in analysis
	SAR Test Fac.- South Base	100	0	0	Do not include in analysis

## AIR FORCE MATERIEL COMMAND (Continued)

Air Force Flight Test Center  
Edwards AFB, CA

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Test Support Facilities (Continued)	Air Gun	100	0	0	Do not include in analysis
	Harmonization Fac				
	Barrier Test Facility	100	0	0	Do not include in analysis
	Communications	0	0	0	Do not include in analysis
	Ridley Mission	86.4	8.64	0.96	Do not include in analysis
	Control Center				
	Instrumented	100	0	0	Do not include in analysis
	Refueling Test				
Other	Austere Field	95	0	0	Do not include in analysis, less than 100 test hours.
	Operations				
	Artificial Icing/Rain	100	0	0	Do not include in analysis, less than 100 test hours.
	Terrain Following	76.5	4.5	9	Do not include in analysis, less than 100 test hours.
	Routes				
	Test Pilot School	0	0	0	No T&E

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 AIR FORCE MATERIEL COMMAND (Continued)

Utah Test and Training Range (UTTR)  
 Hill AFB, UT

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Open Air Range	UTTR Open Air Range	53.7	0	3.8	Include in AV analysis

Arnold Engineering Development Center  
 Tullahoma, Tennessee

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facilities	Propulsion Wind Tunnel	36	0	10	Include in AV and A/W analysis
	Rocket Propulsion Altitude TC	0	0	90	Include in A/W analysis
	Air Breathing Engine TF	51	0	0	Include in AV analysis
	Von Karman Facility	2	0	6	Do not include in analysis, less than 100 test hours
	Space Facility Test Complex	0	0	0	Exclude from analysis. No AV, EC, or A/W T&E workload

# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Redstone Technical Test Center**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	14,370
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	30,719
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	1,188

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*M.H. SLP*  
*ATC(4/2)*

## INITIAL RUN MATRIX - OPTIMIZATION MODEL

- Run following objective functions for one functional area at a time and for all three functional areas together
  - MINSITES (with  $w = 100$ )
  - MAXSFV (with  $w = 100$ )
  - MAXSFV (with  $w = 0$ )
  - MAXSFV with number of sites = NSITE (with  $w = 100$ )
  - MAXSFV with number of sites = NSITE (with  $w = 0$ )
  - MINXCAP (with  $w = 100$ )

Note: NSITE = minimum number of sites computed in MINSITES  
(with  $w = 100$ )

Arch (A)

MSH  
RSC

# T&E Capacity (test hours)

## Air Vehicles

Activity: AFDTC/Eglin AFB

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	6,816
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	245
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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AIR FORCE MATERIEL COMMAND (Continued)

**Air Force Development Test Center  
Eglin AFB, FL**

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Digital Modeling and Simulation Facility	Digital Modeling and Sim Facility	0	3.5	96.5	Include in A/W analysis
Measurement Facilities	McKinley Climatic Chamber	58	9	0	Include in AV and EC analysis
	Multispectral Sig. Measurement	8	7	50	Include in AV, EC, and A/W analysis
	Eglin Sled Track	0	2	92	Include in A/W analysis
	Warhead Arena	1	0	99	Include in A/W analysis
	Fuze Test Facility	0	0	99	Include in A/W analysis
	Gun Test Facility	0	0	93	Include in A/W analysis
Hardware in the Loop	GWEF	0.49	1.81	80.06	Include in A/W analysis
Installed Systems Test Facility (ISTF)	PRIMES	0	53	31	Include in EC and A/W analysis
Open Air Range	ASTE	3	5	40	Include in A/W analysis
	EMTE	1	57	9	Include in EC analysis. Do not include in A/W analysis, less than 100 test hours
	Gulf Test Facility	1	3	7	Include in A/W analysis
	Hellfire Test Facility	0	0	100	Include in A/W analysis
	BISS	1.3	0.5	3.1	Do Not Include, less than 5%

**AFDTC, AFEWES, Ft Worth, Texas**

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Hardware in the Loop	AFEWES	0	100	0	Include in EC analysis.

**AFDTC, REDCAP, Calspan, Buffalo, NY**

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Hardware in the Loop	REDCAP	0	100	0	Include in EC analysis

## AIR FORCE MATERIEL COMMAND (Continued)

## AFDTC, Holloman AFB, NM

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Measurement Facility	CIGTF	78.6	5.6	11.2	Include in AV, EC, and A/W analysis
	RATSCAT/RAMS	0	100	0	Include in EC analysis
	Hollowman High Speed Sled	16.8	4.5	61.1	Include in AV and A/W analysis

## AIR COMBAT COMMAND

Air Warfare Center  
Tyndall AFB, FL

Test Facility Category	Facility Name	% Workload in AV T&E	% Workload in EC T&E	% Workload in A/W T&E	Recommendation
Hardware in the Loop	Radar Test Facility	86	0	0	Include in AV analysis
Test Support Facilities	Wetstone Control	0	0	5.27	Do not include in analysis
	Range Fac. & Analysis	10	10	70	Do not include in analysis
	E-9 Airborne TM	5	5	80	Do not include in analysis
	Gulf Range Drone	0	0	100	Do not include in analysis
	Control Upgrade				
	Subscale Aerial Targets	0	0	100	Do not include in analysis
	Full Scale Aerial Targets	0	0	100	Do not include in analysis, less than 100 hours, and support facility

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## T&E JCSG UNIVERSE

- Army:

- White Sands Missile Range (including EPG)
- Yuma Proving Ground
- Redstone Technical Test Center
- Aviation Technical Test Center @ Ft Rucker, Edwards

- Navy:

- NAWC's @ China Lake, China Lake @ WSMR, Indianapolis, Patuxent River, Point Mugu, Warminster.
- NSWC's @ Crane, Dahlgren, Indian Head

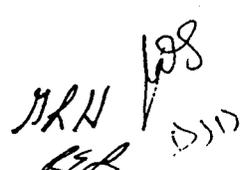
- Air Force:

- AFFTC @ Edwards, UTTR
- AFDTC's @ Eglin, Ft Worth, Buffalo, Holloman
- AEDC Tullahoma
- AWC @ Tyndall

# FY01 T&E Workload Requirements (test hours)

## Air Vehicles

Test Facility Category	Sub-Category	Projected Workload
Digital Models & Simulations	None	1,273
Measurement Facilities	Avionics & Aircraft Subsystems	2,631
	Communication/Navigation/Antenna	1,136
	Environmental/Vibration/Structures	23,158
	Electro-Magnetic Environmental Effects	943
	Guidance/Sensor/Signature	30,719
	Propulsion	25,854
	Sled Tracks	170
Integration Laboratories	None	81,806
Hardware-in-the-Loop	None	114,171
Installed System Test Facility	None	9,674
Open Air Ranges	None	27,578

  
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# FY01 T&E Workload Requirements (test hours)

## Electronic Combat

Test Facility Category	Sub-Category	Projected Workload
Digital Models & Simulations	None	246
Measurement Facilities	Communication/Antenna	298
	Environmental	2,174
	Electro-Magnetic Environmental Effects	4,929
	Guidance	1,728
	Radar Cross Section	6,674
	Signature	826
Integration Laboratories	None	5,317
Hardware-in-the-Loop	None	2,833
Installed System Test Facility	None	3,604
Open Air Ranges	None	2,771

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# FY01 T&E Workload Requirements (test hours)

## Armament/Weapons

Test Facility Category	Sub-Category	Projected Workload
Digital Models & Simulations	None	55,305
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	56,129
	Electro-Magnetic Environmental Effects	2,096
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	44,228
60	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	14,296
	Propulsion	6,801
	Sled Tracks	2,608
Integration Laboratories	None	13,368
Hardware-in-the-Loop	None	52,667
Installed System Test Facility	None	792
Open Air Ranges	None	31,742

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ATON (21)

*MKN* *PSB* *SAB*

# T&E Capacity (test hours)

## Electronic Combat

**Activity: Electronic Proving Ground**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	1,010
Measurement Facilities	Commucation/Antenna	1,008
	Environmental	775
	Electro-Magnetic Environmental Effects	1,626
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	861

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# T&E Capacity (test hours)

## Electronic Combat

Activity: China Lake

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	3,843
	Signature	0
Integration Laboratories	None	2,458
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	1,821

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# T&E Capacity (test hours)

## Electronic Combat

Activity: Crane

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	6,301
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Electronic Combat

Activity: Patuxent River

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	218
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	4,550
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Electronic Combat

Activity: Point Mugu

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	788
Integration Laboratories	None	850
Hardware-in-the-Loop	None	420
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Electronic Combat

Activity: AFFTC/Edwards AFB

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Communication/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	5,126
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	1,200

# T&E Capacity (test hours)

## Electronic Combat

Activity: AFDTC/Eglin AFB

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	0
	Environmental	4,656
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	728
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	2,202
Open Air Ranges	None	1,978

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# T&E Capacity (test hours)

## Electronic Combat

Activity: Holloman Det @ WSMR

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Communication/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	2,400
	Radar Cross Section	9,920
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Electronic Combat

Activity: AFDTC/AFEWES

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commuication/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	9,130
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Electronic Combat

Activity: AFDTC/REDCAP

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Commucation/Antenna	0
	Environmental	0
	Electro-Magnetic Environmental Effects	0
	Guidance	0
	Radar Cross Section	0
	Signature	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	1,040
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: AEDC

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	4,815
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: Yuma Proving Ground

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Commucation/Navigation/Antenna	0
	Environmental/Vibration/Structures	297
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	6,028

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*RED*  
*710*  
*A. L. (3)*

# T&E Capacity (test hours)

## Air Vehicles

Activity: AFFTC/Edwards AFB

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	1,987
Measurement Facilities	Avionics & Aircraft Subsystems	1,822
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	1,570
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	118,999
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	1,968
Open Air Ranges	None	11,998

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# T&E Capacity (test hours)

## Air Vehicles

Activity: Utah Test and Training Range

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	3,380

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*Red 112*  
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# T&E Capacity (test hours)

## Air Vehicles

**Activity: Holloman**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	42,200
	Propulsion	0
	Sled Tracks	614
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: 476 WEG

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Commuication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	2,683
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: ATTC/Fort Rucker

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Commucation/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	12,050

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RED  
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# T&E Capacity (test hours)

## Air Vehicles

**Activity: ATTC/Edwards AFB**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	2,626

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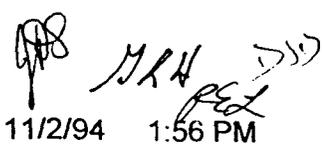
*Red*  
*THC*  
*7/1*

# T&E Capacity (test hours)

## Air Vehicles

Activity: Electronic Proving Ground

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	1,177
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	1,681
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	646


  
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# T&E Capacity (test hours)

## Air Vehicles

Activity: Point Mugu

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	575
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	4,787

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*REG 782*  
*Arch (3)*

# T&E Capacity (test hours)

## Air Vehicles

**Activity: Dahlgren**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Commucation/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	3,347
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: China Lake

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Commucation/Navigation/Antenna	0
	Environmental/Vibration/Structures	1,157
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	2,138
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

Activity: Warminster

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	1,393
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Air Vehicles

**Activity: Indianapolis**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	0
	Communication/Navigation/Antenna	0
	Environmental/Vibration/Structures	23,218
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	14,288
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

*REF 792*

# T&E Capacity (test hours)

## Air Vehicles

Activity: Patuxent River

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Avionics & Aircraft Subsystems	3,156
	Commucation/Navigation/Antenna	2,091
	Environmental/Vibration/Structures	0
	Electro-Magnetic Environmental Effects	0
	Guidance/Sensor/Signature	2,904
	Propulsion	32,340
	Sled Tracks	0
Integration Laboratories	None	4,880
Hardware-in-the-Loop	None	163,371
Installed System Test Facility	None	14,119
Open Air Ranges	None	12,246

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# T&E Capacity (test hours)

## Armament/Weapons

Activity: WSMR

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	18,300
	Electro-Magnetic Environmental Effects	915
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	28,116

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# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Holloman**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	23,000
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	787
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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# T&E Capacity (test hours)

## Armament/Weapons

Activity: AEDC

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	9,266
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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A-11(7)

# T&E Capacity (test hours)

## Armament/Weapons

Activity: AFDTC/Eglin AFB

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	57,820
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	14,045
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	12,870
	Propulsion	0
	Sled Tracks	3,764
Integration Laboratories	None	0
Hardware-in-the-Loop	None	18,611
Installed System Test Facility	None	443
Open Air Ranges	None	16,036

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# T&E Capacity (test hours)

## Armament/Weapons

Activity: NAWC @ WSMR

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	3,925

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# T&E Capacity (test hours)

## Armament/Weapons

Activity: Point Mugu

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	8,082
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	72,053
	Electro-Magnetic Environmental Effects	1,700
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	1,652
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	11,916
Hardware-in-the-Loop	None	54,902
Installed System Test Facility	None	0
Open Air Ranges	None	11,609

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*Arch (2)*

# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Patuxent River**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	931
Open Air Ranges	None	0

10/13/94 9:50 AM

*MAN*      *SP*  
*[Signature]*  
*Actual*

# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Indian Head**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	1,600
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	2,000
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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*MAH* *SUP*  
*Accel*

# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Dahlgren**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	0
	Electro-Magnetic Environmental Effects	1,011
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	540
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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9:50 AM

*MH sfb*  
*2/1*  
*Amc/21*

# T&E Capacity (test hours)

## Armament/Weapons

Activity: Crane

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	360
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	1,680
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	0

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*ARR* *543*  
*AW*  
A-1000

# T&E Capacity (test hours)

## Armament/Weapons

**Activity: Yuma Proving Ground**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	0
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	201
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	0
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	0
	Propulsion	0
	Sled Tracks	0
Integration Laboratories	None	0
Hardware-in-the-Loop	None	0
Installed System Test Facility	None	0
Open Air Ranges	None	3,997

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*MH* *SHB*  
*CA*

*Account*

# T&E Capacity (test hours)

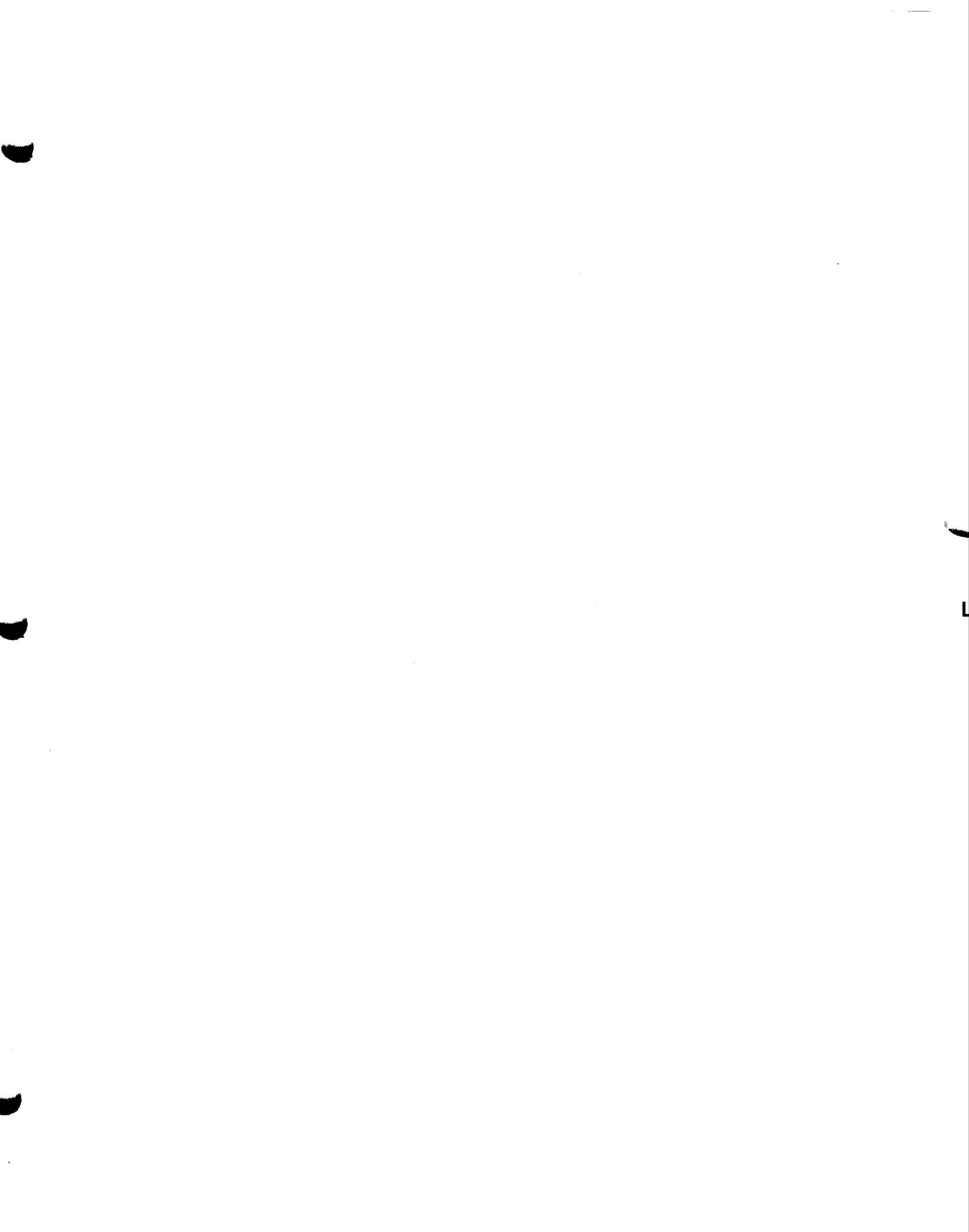
## Armament/Weapons

**Activity: China Lake**

Test Facility Category	Sub-Category	Capacity
Digital Models & Simulations	None	27,672
Measurement Facilities	Environmental, Vibration, and Indoor Decoy Flares	35,419
	Electro-Magnetic Environmental Effects	0
	Guidance and Control, Seeker/Sensor, Signatures and Fuzes	17,310
	Guns, Ordnance, Warheads, and Outdoor Decoy Flares	12,254
	Propulsion	6,046
	Sled Tracks	1,393
Integration Laboratories	None	14,938
Hardware-in-the-Loop	None	3,167
Installed System Test Facility	None	0
Open Air Ranges	None	3,986

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## **BRAC 95**

### **Joint Cross-Service Group on Test & Evaluation**

**Friday, November 4, 1994**

#### **Minutes**

The BRAC 95 Joint Cross-Service Group on Test and Evaluation convened at 1000. Mr. Philip Coyle and Mr. John Burt chaired the meeting. The list of attendees and handouts are attached.

The subgroup began the meeting by discussing the plan for completing the JCSG process, schedule and products, the results of the optimization runs, and status of military value. The subgroup stated that the optimization run has been completed for all objective functions except MINNMV. The only policy imperatives incorporated to date are 3d and 3e which deal with facility/activity exclusions. The optimization model runs presented here do not factor in the remaining policy imperatives. The others will be done in conjunction with the capacity/capability fit, which is the next step. The subgroup also added that if military value becomes available they could develop constrained alternatives within 3-7 days.

The subgroup then briefed the optimization model process diagram which establishes key milestone dates. They then briefed what needs to be accomplished in the capability/capacity fit phase of the process. To date, they have been able to preserve the Test Facility Category as reported in the certified responses. However, as the subgroup knew, there are some mismatches of TFC capabilities which will need to be corrected in the subgroup discussions/analyses. The subgroup is prepared to ask the JCSG for additional optimization runs if necessary as they begin resolving this issue. As mentioned earlier, the remaining policy imperatives will also be incorporated during the capability/capacity fit phase.

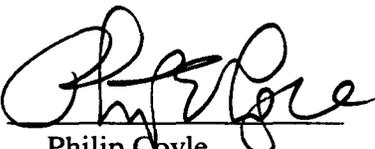
The next discussion focused on the strawman format for submitting alternatives to the Military Departments. The Group approved the format as presented with minor word changes.

The subgroup then presented the results of the optimization runs. They stated that the model was run for each functional area and then again combining all functional areas. The subgroup briefed on how they will approach developing alternatives. They will begin by lumping activities in three areas. The first being the "core" or where the optimization run indicates an activity is assigned workload in the majority of the runs, the second being where activities are not assigned workload in any runs and, finally, where work is assigned to activities in some of the runs. The subgroup feels the majority of discussion will take place in the latter category. The subgroup also stated that when military value is received from the Military Departments, the other two categories may be impacted which will require additional analysis.

The JCSG was briefed on the definitions of weighted functional value and excess capacity (see slides attached) and their meaning in relation to each of the objective function outputs. Concern arose over whether average functional value declines depending on how workload is moved by using weighted functional value. The subgroup will look into this to see if this is a significant issue.

The JCSG asked the subgroup to complete the capability/capacity fit and begin developing alternatives. A meeting was scheduled for Nov 8 at 1500 to discuss progress.

There being no other items for discussion, the meeting adjourned at 1125.

Approved:   
Philip Coyle  
Co-Chairman

  
John Burt  
Co-Chairman

Attachments

**BRAC 95**

**Joint Cross-Service Group on Test & Evaluation**

**November 4, 1994**

**List of Attendees**

Mr. Philip Coyle, Co-Chair  
Mr. John Burt, Co-Chair  
Mr. Nick Toomer, Co-Study Team Leader  
LTG (Ret) Howard Leaf, Air Force  
Dr. Dan Stewart, Air Force  
Mr. Doug Nation, Air Force  
Mr. John Gehrig, Army  
Mr. Gary Holloway, Army  
Mr. Tom Roller, Army  
Mr. Gerald Schiefer, Navy  
CAPT Dave Rose, Navy  
CDR Mark Samuels, Navy  
Mr. Don DeYoung, Navy  
Mr. Mike McAndrew, ODASD(I) BCU  
Mr. Irv Boyles, OSD DT&E  
Mr. David Vincent, DoD IG  
Ms. Barbara Moody, DoDIG  
Mr. Dave Hennessey, OUSD(C)  
Lt Col Roy Rice, Tri-Dept BRAC Group

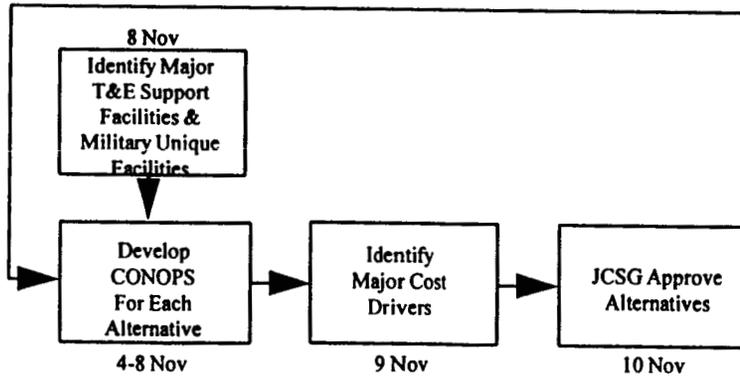
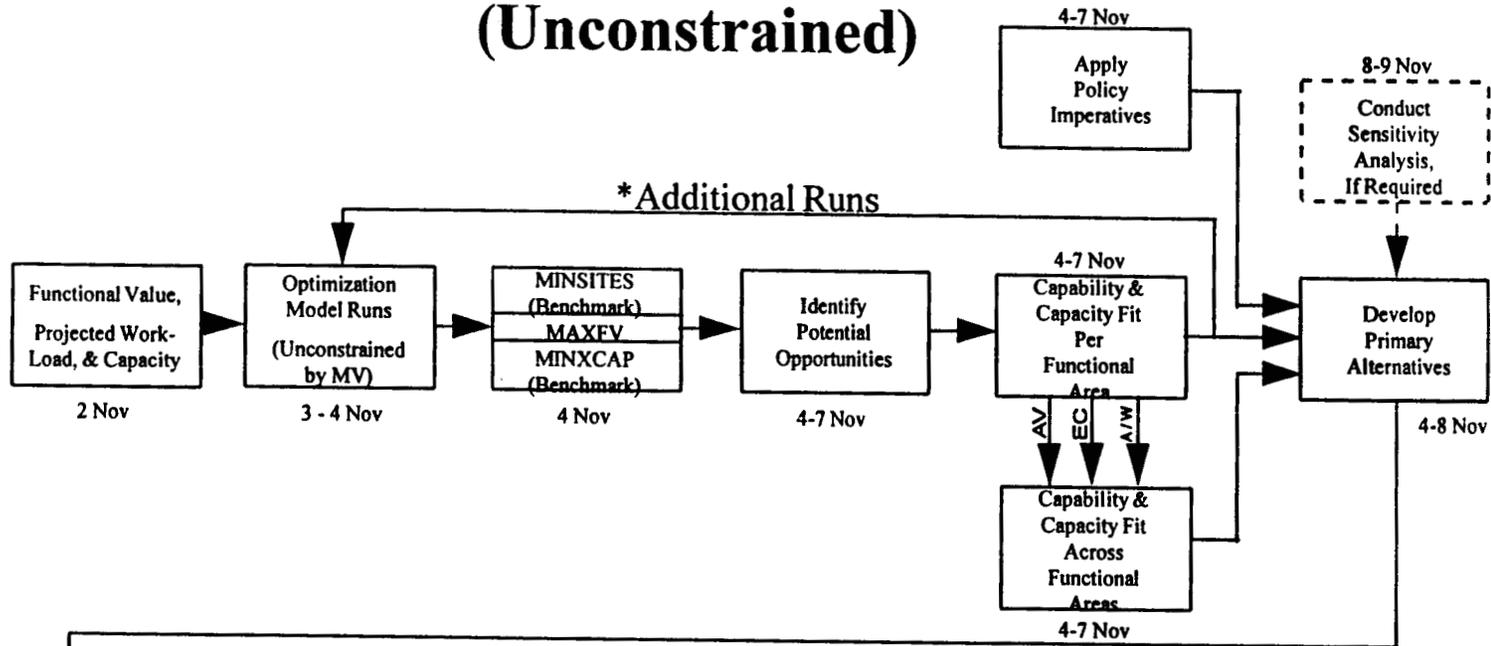
**TEST AND EVALUATION**  
**JOINT CROSS SERVICE GROUP**  
**MEETING**

**4 November 1994**

## T&E JCSWG STATUS

- Plan for Completion
  - Process
  - Schedule
  - Product
- Optimization Model Results
- Military Value Status
- Issues

# POST OPTIMIZATION MODEL PROCESS (Unconstrained)



\* Includes MV when available from MilDeps

## CAPABILITY & CAPACITY FITS

- Test Facility Category (TFC), as reported in certified responses, has been preserved to date
  - Basis for initial Optimization Model runs
- Due to aggregation of Facilities / Capabilities, this has led to some inconsistencies; i.e.,
  - Misalignment of some TFC capabilities aggregated under a different TFC
  - Test hours associated with above misalignment
- Inconsistencies will be handled in subsequent phases of analysis to ensure consistency across activities
  - Additional Optimization Model runs, if required
  - Capability and Capacity fits

## POLICY IMPERATIVES

- Policy Imperatives 3d & 3e implemented in Facility/Activity exclusions
  - Exclude OTAs and dedicated training activities
  - Exclude MILDEP unique and those with < 5% T&E workload
- None implemented in initial Optimization Model runs
- Remaining Policy Imperatives to be implemented during Capability & Capacity Fit / Development of Alternatives
  - Retain irreplaceable Air, Land, and Sea Space
  - Retain capabilities to preserve the test process and to provide backup Capability
  - Realign / Consolidate into MRTFBs with open Air ranges
  - If host kept open, then use tenant capacity prior to assigning workload to another activity

## T&E ALTERNATIVE DOCUMENTATION (PER OSD / BRAC FORMAT)

Item Nos.	Description
a - d	<ul style="list-style-type: none"><li>• Alternative Designation and Date<ul style="list-style-type: none"><li>– Resulting DoD T&amp;E Infrastructure</li></ul></li></ul>
e	<ul style="list-style-type: none"><li>• Scenario Description / Summary<ul style="list-style-type: none"><li>– Concept of Operations</li></ul></li></ul>
f	<ul style="list-style-type: none"><li>• Installations in Scenario</li></ul>
g	<ul style="list-style-type: none"><li>• Rationale for Realignment</li></ul>
h	<ul style="list-style-type: none"><li>• Remarks<ul style="list-style-type: none"><li>– Major Cost Drivers</li><li>– Associated Impacts</li></ul></li></ul>

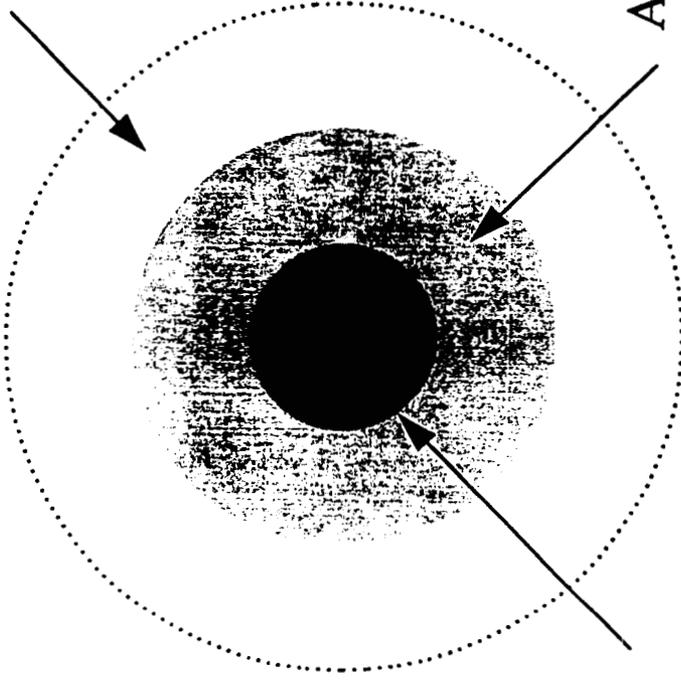
## INITIAL RUN MATRIX - OPTIMIZATION MODEL

- Ran following objective functions for one functional area at a time and for all three functional areas together
  - MINSITES (with  $w = 100$ )
  - MAXSFV (with  $w = 0$ )
  - MINSITES (with  $w = 95$ )
  - MAXSFV with number of sites = NSITE (with  $w = 0$ )
  - MINXCAP (with  $w = 100$ )
  - MAXSFV with number of sites = NSITE (with  $w = 100$ )

Notes: MAXSFV (with  $w = 0$ ) ran as MINSITES (with  $w = 0$ )  
NSITE = number of sites computed in MINSITES (with  $w = 100$ )  
MAXSFV (with  $w = 100$ ) not run by Tri-Department BRAC Group

# ANALYSIS APPROACH

Activities with no  
workload assigned  
in any model run



Activities with  
workload assigned  
in all model runs

Activities with  
workload assigned  
in some model runs

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**DEFINITIONS - T&E OPTIMIZATION MODEL RUNS**

<b>MEASURE OF MERIT</b>	<b>DEFINITION</b>
<b>Weighted FV</b>	$\sum_{i,j} f_{vi} \cdot l_{ij} / r_j$ <p>where</p> <ul style="list-style-type: none"> <li>• <math>f_{vi}</math> is functional value for activity <math>i</math>,</li> <li>• <math>l_{ij}</math> is the workload assigned to activity <math>i</math> for test facility category <math>j</math></li> <li>• <math>r_j</math> is the workload requirement for test facility category <math>j</math></li> </ul>
<b>Excess Capacity</b>	$\sum_{i,j} o_i \cdot c_{ij} / r_j$ <p>where</p> <ul style="list-style-type: none"> <li>• <math>O_i = 1</math> if activity <math>i</math> is assigned workload; 0 otherwise</li> <li>• <math>C_{ij}</math> is the workload assigned to activity <math>i</math> for test facility category <math>j</math></li> <li>• <math>r_j</math> is the workload requirement for test facility category <math>j</math></li> </ul>

# OPTIMIZATION MODEL RESULTS - AIR VEHICLES

MINSITES = 6

ACTIVITY	MAXSFV (w=0)	MINSITES (w=95)	MAXSFV (w=0; NSITE)	MINXCAP (w=100)	MAXSFV (w=100; NSITE)
Arnold (18)		-	-	-	-
Edwards (85)	X	X	X	X	X
Eglin (56)	X	-	-	-	-
Holloman (33)	X	X	X	X	X
UTTR (46)	-	-	-	X	-
Tyndall (49)	-	-	-	-	-
China Lake (43)	X	-	-	-	-
Dahlgren (25)	X	X	X	X	X
Indianapolis (19)	X	X	X	X	X
Patuxent (81)	X	X	X	X	X
Point Mugu (69)	X	X	X	-	X
Warminster (14)	-	-	-	-	-
ATTC- Fort Rucker (34)	-	-	-	-	-
ATTC - Edwards AFB (46)	-	-	-	-	-
EPG (44)	X	-	-	-	-
YPG (35)	X	-	-	-	-
Number of activities	10	6	6	6	6
Weighted FV	795	780	780	763	766
Excess Capacity	43%	39%	39%	37%	37%

# OPTIMIZATION DEL RESULTS - EC

**MINSITES = 8**

ACTIVITY	MAXSFV (w=0)	MINSITES (w=95)	MAXSFV (w=0; NSITE)	MINXCAP (w=100)	MAXSFV (w=100; NSITE)
AFEWES (17)	X	X	X	X	X
Edwards (52)	X	X	X	X	X
Eglin (65)	X	X	X	X	X
Holloman (29)	X	X	X	X	X
REDCAP (15)					
China Lake (47)	X				
Crane (17)	X	X	X	X	X
Patuxent (53)	X	X	X	X	X
Point Mugu (58)	X	X	X	X	X
EPG (47)	X	X	X	X	X
Number of activities	9	8	8	8	8
Weighted FV	520	510	510	478	485
Excess Capacity	85%	72%	72%	62%	68%

# OPTIMIZATION MODEL RESULTS - AAW

**MINSITES = 7**

ACTIVITY	MAXSFV (w=0)	MINSITES (w=95)	MAXSFV (w=0; NSITE)	MINXCAP (w=100)	MAXSFV (w=100; NSITE)
Arnold (16)	X	X	X	-	X
Eglin (82)	X	X	X	X	X
Holloman (30)	X	X	X	X	X
China Lake (57)	X	X	X	X	X
Dahlgren (17)	-	-	-	X	-
Indian Head (14)	-	-	-	X	-
Crane (13)	-	-	-	X	-
NAWC - WSMR (25)	-	-	-	X	-
Patuxent (57)	X	X	X	X	X
Point Mugu (77)	X	X	X	X	X
RTTC (21)	-	-	-	-	-
YPG (29)	-	-	-	-	-
WSMR (50)	X	X	X	-	X
<b>Number of activities</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>7</b>
<b>Weighted FV</b>	<b>805</b>	<b>805</b>	<b>805</b>	<b>682</b>	<b>716</b>
<b>Excess Capacity</b>	<b>41%</b>	<b>41%</b>	<b>41%</b>	<b>43%</b>	<b>37%</b>

# OPTIMIZATION MODEL RESULTS - AV, EC, and A/W

MINSITES = 13

ACTIVITY	MAXSFV (w=0)	MINSITES (w=95)	MAXSFV (w=0; NSITE)	MINXCAP (w=100)	MAXSFV (w=100; NSITE)
Arnold	X	X	X	-	X
Edwards	X	X	X	X	X
AFEWES	X	X	X	X	X
Eglin	X	X	X	X	X
Holloman	X	X	X	X	X
REDCAP	-	-	-	-	-
UTTR	-	-	-	-	-
Tyndall	-	-	-	-	-
China Lake	X	X	X	X	X
Dahlgren	X	X	X	X	X
Indian Head	-	-	-	X	-
Indianapolis	X	X	X	X	X
Crane	X	X	X	X	X
NAWC - WSMR	-	-	-	X	-
Patuxent	X	X	X	X	X
Point Mugu	X	X	X	X	X
Warminster	-	-	-	-	-
ATTC- Fort Rucker	-	-	-	-	-
ATTC - Edwards AFB	-	-	-	-	-
EPG	X	X	X	X	X
RTTC	-	-	-	-	-
YPG	X	-	-	-	X
WSMR	X	X	X	-	-
Number of activities	14	13	13	13	13
Weighted FV	2120	2120	2120	2002	1950
Excess Capacity	45%	45%	44%	32%	38%

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## MILITARY VALUES

ARMY - Ready for Delivery

NAVY - Ready for Delivery

AIR FORCE - Available ?

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ISSUES

NONE