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RECOMMENDATIONS FOR FUTURE
ARMY ANALYSIS EFFORTS

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Volume III

KEY QUESTIONS
AND
RECOMMENDATIONS FOR FUTURE ANALYSIS EFFORTS
ON
SUSTAINABILITY

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The Contractor, NEW PERSPECTIVES CORPORATION, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. MDA 903-87-C-0756 is complete, accurate, and complies with all requirements of the contract.

14 April 1988
Date

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We wish to express our appreciation to the Department of the Army for sponsoring the research reported in this document and inviting us to perform it. It represents additional progress in developing and implementing a process to engage the Army's senior leadership in spotlighting policy issues warranting current attention and analysis efforts to address those issues. As individuals, we have participated in these activities, known as the Issue Assessment Process (IAP), since its inception in 1983. We are gratified to have been part of an activity that already has helped shape the Army's study and analysis program.

We also wish to express our appreciation to those with whom we worked closely on these activities from the outset, Joann Langston and Eugene Visco, Directors of the Study Program Management Agency (SPMA). We are especially appreciative of the substantive and administrative inputs and support by the COR, LTC Gary Cochard. We found his participation to be extremely knowledgeable, competent and helpful; much more so than most of the CORs with whom we have worked for so many years.

New Perspectives

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This volume is one of four, the subtitles of the other volumes are:

- I Results of Workshops with Senior Army Leadership and Managers
- II Priorities and Key Questions for Critical Policy Issues and Recommendations for Future Analysis Efforts on Conventional Capability and Interoperability
- IV Key Questions and Recommendations for Future Analysis Efforts on Explaining the Army and Supporting the Soldier

I Introduction

A. Background

The material presented here summarizes the activities of a workshop on 3-4 Feb 1988 to develop recommendations for future Army analysis efforts directed at the issue of Sustainability. For the workshop, Sustainability was defined as:

Measuring the ability to sustain combat forces in various theaters and levels of conflict and advising commanders of the implications of alternative operations.

This issue is one of five spotlighted as currently being critical to Army policy. The issues were developed over the last several months with inputs from several sources including the Chief of Staff (General Vuono), the CINCs and the Commander's Conference. The other issues are:

- Conventional Capability,
- Interoperability.
- Explaining the Army
- Supporting the Soldier.

On 6-7 January 1988, at the National Defense University (the same location for the workshop reported here) a session for top management and workshops on the first two of the above issues was held. The report of that meeting is presented in New Perspectives report NP88-1A, "Workshop After Action Report: Priorities and Key Questions for Critical Policy Issues and Recommendations for Future Analysis Efforts on Conventional Capability and Interoperability", 21 Jan 1988. The remaining two issues will be treated at workshops on 24-25 Feb 1988 at NDU. These will be followed by a final session for top management to review the results of the workshops on all five issues and provide its guidance for future analysis efforts directed at understanding and developing actions to address each issue.

Thus, the workshop reported on here is one of a series directed at reviewing the status of analysis related to the above five critical policy issues and developing recommendations for the Army's future analysis efforts. The participants in the workshops developing the recommendations included staff functional/action officers and persons from appropriate analytic agencies.

B. Objectives

The objectives were to:

- Review the status of analysis on topics related to the issue of Sustainability.
- Develop recommendations from the participants for future analysis efforts to answer key questions associated with the issue.

C. Workshop Design

The agenda for the workshop is shown in Appendix A. The workshop consisted of several sections. It began with an introduction and background by the Director, SPMA (E. Visco) on the Issue Assessment Process (IAP) and on the mission of the Study Program Management Agency (SPMA) and its organizational relationships. This included the history, past accomplishments and future steps of the IAP. Mr. Visco then briefly reviewed the elements of and relationships among the Army's various analytic agencies.

The contractor for the workshops (New Perspectives Corp. (NPC), Mr. Becker) then reviewed the agenda for the two days, including the intent of the presentations by the analytic community and of the workshops; i.e., development of recommendations for analysis.

In their invitations to the analytic community, the DUSA-OR (Mr. Hollis) and Mr. Visco requested a review of the status of analysis on topics germane to Sustainability discussing:

- Topics/key questions addressed
- Major findings
- Impact of actions to date or planned, and remaining gaps.

The reviews were preceded by a presentation by DCSLOG (Mr. Feeney) on its Sustainability related activities and by NDU (Mr. Linke) on its related efforts. These were followed by presentations from TRADOC, CAA, AMSAA and ESC. The participants in one or both days of the meeting are shown in Appendix B. Highlights of their comments and discussions during the first day, i.e., during the status presentations, are shown in Appendix C. The day concluded with a brief review of the day's activities and an overview of expected workshop activities for the second day.

Day two began with some brief observations by SPMA and NPC, offered by Mr. Becker, concerning the discussions among the participants during day one. The participants were then assigned by LTC Cochard to individual workshops. Participant assignments are listed in Appendix D. Each workshop was assigned five or six questions to address in developing its recommendations for future analysis efforts. The groups were asked to recommend for each question:

- Elements of analysis/topical areas
- Date results needed
- Performer(s)
- Sponsor(s)

A total of twenty eight (28) questions had been obtained for their consideration. Two of these came from the management session on 6 Jan 1988. The rest came from top management on the Secretariat and Staff in response to requests from Mr. Visco and LTC Cochard prior to the meeting. As a result, LTC Cochard was able to share almost all these questions with the participants prior to the meeting.

In addition to addressing these questions, the various groups were asked to add others they believed to be of equal or greater importance if the Army is to understand and formulate actions to address properly the Sustainability issue. To assist them in this process, NPC prepared a list of potential topical areas for analyzing the issue. This list is presented in Appendix E, in a format known as a "relevance tree".

Finally, some brief material drawn from the previous workshop on Conventional Capability, was given to the participants to show how their recommendations would be summarized in the categories mentioned above. This was done in the hope that it also would assist them, e.g., in substantive content and format. This exemplary material is shown in Appendix F.

The morning of the second day was devoted to the individual group workshops. In the afternoon, a presenter was chosen by each group to summarize the group's recommendations. Their recommendations, and highlights of discussions among the participants, is presented in the next section.

II RECOMMENDATIONS FROM WORKSHOPS

The following material was drawn from the presentations by each workshop group. Each of the questions addressed by the group, including new ones the individual groups offered, is shown. Each question is followed by a listing of the group's recommended elements of analysis, or topics, it believed should be treated in future analysis efforts.

Suggestions about the date when results are needed, the performer(s) and the sponsor(s) also are shown when they were provided by the group.

Comments and observations made by participants during the group's presentation of its recommendations also are included. We kept these items as close as possible to the way in which they were offered (i.e., as we noted them during the discussions). We believe the comments and observations shown here help explain reasons underlying the recommendations. In certain instances the discussion among the participants on a question or set of recommendations includes important differences of opinion. These comments and observations from the participants should help those who ultimately will provide guidance about the validity and relative priority among the items recommended for future analysis.

* * * * *

QUESTION:

(The following two questions were treated jointly by the group since it felt they were the same question stated in different words.)

- Given the proposed personnel cuts, what are the major manpower and personnel shortcomings that will impact on the Army's ability to sustain combat operations?
- How do we maintain/sustain combat forces at the proper level of readiness in all of the theaters where a conflict might arise when we are faced with severe budget and personnel draw-downs?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Trade-offs that can be provided by robotics	ASAP	CAA	DCSPER

- Sustainability at each level to maintain services and contain costs within constraints ASAP CAA DCSPER

COMMENTS FROM WORKSHOP PARTICIPANTS:

- If the combat force is fixed, cuts will have to come from CSS/TDA
- We have been trying to address this problem for quite some time and someone needs to get moving.
- It is difficult to come up with measures and a common language so we can actually accomplish the studies and do the required trade-offs.
- Another problem is associated with stepping on MACOM commanders. They often do not want to accept a model/study output. If a MACOM commander disagrees or is unhappy with results he will go directly to the Chief of Staff.
- Maybe a revision in the fixed force would make sense. The Air Force and Navy use that approach. For example, when the Navy gets a cut they say, o.k. lets mothball some ships.
- When someone gives me another job, maybe I should say I can't do it. I have to give up something because I'm doing the best I can with my current budget.
- Modeling is one of the easiest parts of the problem. One of the most difficult parts is conveying the results properly and to the right people -- getting our message across.

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QUESTION:

- Should the varfighting CINCs compute rates of consumption and attrition based on their campaign plans and on an intelligence analysis of threat forces and campaign plans?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- A system for requirements that includes the CINCs i.e., a common methodology for all players with input from and feedback to CINCs	Review status in 6 mos., final in 2 years	TRADOC/ LOGCEN	DCSOPS (with DCSLOG & DCSPER)

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We currently use an ad-hoc approach. But we don't really know how it is being done now.
- CAA rates are averages. They may look great but, because of the details, we may be losing the war.
- If CINCs do not get more funds from Congress, there may not be anything they can do.
- DCSOPS should not be responsible for addressing these questions because they are really not the ones to take action/get it done.
- Logistics and Personnel are players, but the salient point is that DCSOPS should be the lead player.
- I don't care who is the lead as long as personnel (including military and civilian) attrition is included in addition to materiel.

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QUESTION:

- Can the "current level" of sustainability be measured and reported (similar to how readiness is reported)?
 - must define essential parameters & develop ways to express, quantitatively or subjectively or in combination
 - tie to mission of the force...sustainability is "ability to maintain the necessary level and duration of combat activity to achieve national objectives" (JCS Pub 1)
 - DAMO-ODR working in this issue
- how to evaluate synergy of CSS "system of units"...measure impact of losing one link or node?
- how to ensure HNS units have required capability?
- at what levels are sustainability reports meaningful?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Sustainability measures for levels of intensity, including reporting requirements	FY90	LEA/CAA	DCSLOG, DCSPER, DCSOPS

- Appropriate final authority on Sustainability to provide oversight, coordination, goals, constraints, scenarios/assumptions, balancing and trade-off of resources

COMMENTS FROM WORKSHOP PARTICIPANTS:

- This really relates to the battalion combat-capable days. We (the group) thought this area was already being investigated but don't have details. Maybe the existing work needs to be tied better to Sustainability.
- I'd be willing to play in that area but nobody wanted to assign anything to me. (Input from one participant.)
- There should be many ball players in this area.
- Two weeks ago there was a workshop at Belvoir on readiness that looked at various measures. It would be good to contact the people who participated.
- There needs to be someone to pull all the Sustainability information and ground rules together. The communications people have one set of ground rules, the personnel people and others have another set, etc. I thought General Thurman would have looked into this in his new assignment, but there really is nothing new. No one is really interested. Its not new resources to do studies that are needed. Rather, its the coordination and integration that is needed.
- Czar operation is necessary. We constantly run this game by committee. There has to be a boss--someone who will be able to move ahead and even make mistakes, and that's tough.

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QUESTION:

- What plans do we have to sustain forces in a theater where no host nation support exists?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Degree to which Sustainability is included in OPLANS and how it is done regarding no host nation support	6-12 Mos.	LEA	DCSLOG

- (Also included as part of "Sustainability Measures" above)

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We thought this currently was being done/looked into. But how is it being done and how well? In any case, does it have to be revised in light of the question and recommendations on Sustainability measures?

- LEA is doing this now.

- What do we do regarding host nation support and the differences in equipment between ours and theirs. Even when their equipment is better than ours, we often don't buy it.

* * * * *

QUESTION:

- Have we gone as far as we can go prudently with host nation support in all relevant scenarios?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Political conditions shaping host nation support, including State Department restrictions and influences of levels of actions	6-12 Mos.	Strategic Studies Inst.	DCSOPS, DCSLOG, DCSPER

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We do not have a clue as to how much host nations really do.

- This area is really Interoperability, or is closely related to it.

- We buy special tanks, trucks, etc. and they provide the manpower to do the job.

- Host nations really participate. It starts with a handshake agreement that is then committed to paper.

- We thought the person who asked the question was not really aware of what is being done. It might be appropriate to do a quick study and determine what is being done. Other government groups should be included such as the Department of State.

- State Department restrictions may be limiting host nation support in terms of their being unrealistic and invalid.

* * * * *

QUESTIONS:

- How can we better integrate the mobilization and casualty estimation dimensions into the Force Structuring Process? How reliable and useful are the results of this analysis?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Validity, and appropriate improvements in casualty estimation methods			
- Replacement requirements and resource allocation for critical skills			
- Affect of considering the integrated battlefield on casualty estimates			
- Ability of, and potential development possibility for, an artificial intelligence/expert system to integrate mobilization and casualty estimation and provide more realistic force structuring			
- Structure of reserve components in light of mobilization and casualty estimates			

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We took a systems approach. In other words, we asked how to transition from peace to war, including the production base and considering the entire theater to the forward area.
- Casualty estimates are a leading driver in force structure requirements. We need to improve our ability to estimate casualties. But it is not a new problem. It's been a DA issue for a long time.
- We must look at off shore, civilian, host nation, etc. availability of people.
- Casualty estimates we currently receive do not include chemical, nuclear and biological warfare.

- Artificial intelligence could be highly important/helpful. If an expert system were developed, it could be a way to integrate the various expertise that is needed.
- We cannot determine why ESC is responsible for pulling together the mobilization area.
- DCSPER is the proponent for casualty estimates in the Army. It's listed in 4102. But there appear to be many sources of information.
- Much of our information is based on World War II and Korea data that are probably no longer valid.
- Casualty estimates are used to determine many factors in addition to the people involved. For example, they also determine needs for hospitals and other facilities. That's why these estimates are a big swinger.
- We want to better link mobilization with the losses from warfighting, but Congress will not let you have a unit where you do not have a mission.
- The Army TOE is not structured properly to support mobilization. Mobilization models are run and results input to the force structure model. But there is no reassessment or cycling to realistically include interaction between the two.

* * * * *

QUESTION:

- The Army lacks a viable doctrine for logistics support for intelligence/electronic warfare (IEW) equipment. How can the resultant lack of synchronization in IEW materiel requirements, procurement, training, commodity support and contract support relationships be overcome?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u>	<u>RESULTS</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Degree to which intelligence/electronic warfare equipment should be expendable, and degree to which it currently is				
- The transportability, supportability/expendability design features of IEW equipment				

- The need for a logistic system specially designed for low density, high technology IEW equipment
- Management and training of MOS for low density, high technology IEW equipment, including affects of system expenditures

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We have finally included intelligence - no one has talked about it yet.
- Low density, high technology systems are the basic question. For example, is the materiel/equipment to be supported or used up/expendable.
- We need to think of the supportability of high technology items. They get out there and are not supportable. A lot of low density intelligence systems are now out in the field and we do not know how to support them.
- Since Reserves do not have the same equipment as the Active Army, how will intelligence equipment of Reserves be supported when they get out in the field?
- What do, or should we do, with people when their equipment is gone (and the people are still there)? What happens when we shoot off all our missiles or have lost all our helicopters? How do we utilize the personnel who were assigned/associated with those items?
- We don't know who should perform and who should sponsor such studies.
- To repeat, the basic question should really be low density, high technology equipment.

* * * * *

QUESTION:

- Can the Army get to the fight on time, given strategic, intratheater and host nation support transportation constraints?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>SPONSOR</u>	<u>PERFORMER</u>
- Ability of reserve units to mobilize in time to meet deployment dates, including requirements for resupply			
- Adequacy of means to include host nation and 3rd world country support/capability into the force structure			
- Ability to estimate/state the impact of transportation shortfalls on force closure on a regional and global basis			
- Means to assess the impact of equipment design and force structure on closure times			

COMMENTS FROM WORKSHOP PARTICIPANTS:

- When we think of strategic mobility we think of how to get across the ocean. But it's much more than that. It should and really does start with M-Day, i.e., getting people and materiel together, getting overseas, getting to the fight on time, etc.
- The last time we had to turn a Corps was under Patton at Bastogne in 1945.
- Studying is cheaper than solving a problem. We study more when we don't really know how to solve the problem or are unhappy with the results that we have obtained.
- Resupply starts long before development ends -- or should. There are things that have to take place before we load items on a plane or ship. We have to make sure we also have those other items in place.
- In Germany we say we will load all our equipment and materials on beer trucks. There must be a bunch of beer trucks sitting around/lined up in Germany ready to go. And we have better arrangements with Germany than with other allies and friends.
- This really relates to Explaining The Army (i.e., telling the Army's case).
- As we make decisions, they really are not transportation related decisions.

- TRANSMO contains simple processes regarding how things are really done. For example, it aggregates "ships". But tanks cannot be placed on any kind of ship. Thus, do we have the number and types of ships, aircraft, etc. really needed?

- It takes considerable funds to provide proper transportation/strategic lift -- but the real cost may be that we can't get the First Division there in time. That could be a real big cost.

- What does it do to the time it takes to get items/fire power to the war when we modify them (e.g., when we make the M-1 higher, the Bradley vehicle wider, etc.)?

- TRADOC just produced a study as to how to get people to deployment status. The results stated we needed \$800,000,000, and we don't have that.

- Mobilization studies usually do not include the fact that we have many others competing for funds.

- We are now going into Defense Guidance scenarios to get worldwide plans.

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QUESTION:

- How will the Army sustain operations in multiple, low-intensity conflict scenarios?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATES</u>	<u>RESULTS</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
	<u>NEEDED</u>			
- Means to forecast support requirements for low-intensity conflict				
- Availability of items to support low-intensity conflict				
- The potential for prepositioning to support low-intensity conflict, including the ability to forecast use of in-country assets for reallocation/redistribution				
- Degree to which supporting low-intensity conflict jeopardizes conventional capability readiness				

- Doctrine for supporting small, light organizations over long lines of communication
- Ways political factors affect support of low-intensity conflict and means to accommodate them in doctrine

COMMENTS FROM WORKSHOP PARTICIPANTS:

- The first/major problem is the span covered by low-intensity conflict.
- Some believe that LEA has approaches/techniques to address the issues but others state that these capabilities really do not exist, or if they do, they are used to address other problems. For example, there are many events around the world that can occur (i.e., the multi-event situation) and we don't have operations plans to meet the worldwide need.
- How long can we bite into the ability to engage in low-intensity conflict until we start to erode our conventional capability?
- Are foreign sales equivalent to prepositioning? But we can't stand in the front of the Capital and say that.

* * * * *

QUESTION:

- What reserves are needed in light of considerations of wear out and combat attrition (the D-to-P gap problem)?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u>	<u>RESULTS</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
	<u>NEEDED</u>			
- Validity of current methods for estimating requirements due to wear out and combat attrition				
- Identification and quantification of long lead items that are pacing				
- Ability to subsidize production capability outside of the U.S.				

COMMENTS FROM WORKSHOP PARTICIPANTS:

- Here, as in other areas, the question centers on the validity of our requirements.
- We can subsidize production capability elsewhere (i.e., outside of the US), but that's a political question/decision.
- We need to determine the political implications to determine what is reasonable to request and be able to effectively contribute to/influence political decisions.

* * * * *

QUESTION:

- What are the skills/training needs for the civilian support force for a wide range of sustainment challenges for low-intensity conflict to threats involving moderate conventional arms and nuclear forces? What is the impact of technology, demographic and sociological changes on this job market?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Required skills for civilian support as a function of level of conflict (i.e., high to low intensity)		Inhouse (ARI?)	ODCSPER
- Critical skills likely to be unavailable in the military and civilian workforce		Contract (SRI?)	ODCSPER
- Critical skills currently available to the Army that will grow, remain stable, decline or be eliminated through the year 2000 and 2010			ODCSPER
- New skills that will arise in the U.S. economy/workforce through the year 2000 and 2010 that will be relevant to military operations			ODCSPER

COMMENTS FROM WORKSHOP PARTICIPANTS:

(NONE NOTED)

* * * * *

QUESTION:

- Can computer modeling of various scenarios provide an effective analysis of alternatives for recommendations to commanders?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- The availability of, or ability to develop, models to evaluate combat outcomes of logistics constraints at the Battalion, Brigade, Division, Corps and CINC level		Inhouse (CAA, CAC, TRAC, LDCC LEA, AMSAA, Arroyo)	DA, TRADOC
- Model outputs/data appropriate for commanders at each level			CINCs, TRADOC, DA
- Support elements (IEW, AVN, etc.) that should be included and ways to integrate them		Contract (BDM, PRC, BOOZ ALLEN)	
- Staff element that should use the models			
- Scenarios that should be included in the models, the input data needed for each and their relative priorities			
- Ability of models to develop balanced increments of Sustainability, including equipment, supplies, personnel and/or units			
- Use of host nation support, logistics civil augmentation programs and direct contracting to most effectively enhance sustainability by theater			

COMMENTS FROM WORKSHOP PARTICIPANTS:

- The question really is whether computers can be used to do everything.

- The inclusion of Engineer forces tends to slow down movement of the forces. Therefore, how much engineering capability should be built into the model?

- The Army has established ORSA cells that can support the CINCs. Someone from the DA, TRADOC, etc. should be giving them directions. We should not forget the CINCs, i.e., this capability should be used/redirected to support them.

- Many things are going on in this area and the basic question is how to pull together and share information among appropriate personnel/groups. We have heard this observation many times before in these discussions.

- We should include characteristics of terrain and weather in our warfighting simulations for more accurate determination of the capabilities we have and will need. Some argue this is done, e.g., VIC can tell differences between snow and rain and between night and day, but it does not slow down things at night. So the real answer (i.e., whether we include the above item) is yes and no.

* * * * *

QUESTION:

- How should we feed the Army in the field?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Soldiers' nutritional and eating requirements under various environmental and combat conditions		Inhouse (QMS, Natick)	DCSLOG/ Surgeon General, TSA
- Food technologies, including packaging & distribution available to meet soldiers' needs		Contract	
- Force structure requirements under alternative feeding concepts			

COMMENTS FROM WORKSHOP PARTICIPANTS:

- A soldiers nutritional requirements can be met with a lot of things that can be put in his pouch, but it is not clear he will eat what he is given. For example, he prefers white bread over pita bread.

- The Surgeon General, DCSLOG, etc., all have opinions about what is best/appropriate (e.g., when the Army tries to reduce the number of cooks). There also is talk around the Army that the Quartermaster and Natick could use help in this area.

- The question centers on nutrition versus eating requirements during peacetime and combat. Research should include sifting through the trash.

* * * * *

QUESTION:

- Will there be sufficient repair parts and spares available to ensure interoperability between early deployers and the later deploying units?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- The shortfall in spare parts (i.e., repair part requirements to sustain equipment from combat usage and combat damage and the on-hand status of repair parts)		IRO, AMSAA, LOGCEN, Arroyo	ODCSLOG
- Desirability of pushing spare parts to units, pulling them for unit requests or using a mixed strategy		IRO, AMSAA, LOGCEN, Arroyo	ODCSLOG
- Ways to improve justification of budget requests for spare parts		IRO, AMSAA, LOGCEN, Arroyo	ODCSLOG
- Availability of repair parts support in a theater for arriving units		IRO, AMSAA, LOGCEN, Arroyo	ODCSLOG
- Impact of product improvement programs on decisions for spare parts stockage		IRO, AMSAA, LOGCEN, Arroyo	ODCSLOG

COMMENTS FROM WORKSHOP PARTICIPANTS:

- The most critical aspect here centers on how sure we are that any of this really makes sense. People in the field need to be asked this question.

- When the National Guard arrives with other equipment then the Active force has, is there anyone out there to support them? The answer seems to be no.

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QUESTIONS:

Why don't we do a near-term Sustainability study? What would it take to do one?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Ability of current force sustainment capabilities to meet Defense Guidance		CAA	DCSOPS, CINC _s
- Current sustainment requirements		CAA	DCSOPS, CINC _s
- Reallocation strategies to improve Sustainability		CAA	DCSOPS, CINC _s
- Ability to develop an index of Sustainability that is simple and understandable to decision makers and that incorporates an evaluation of risk due to uncertainty about the threat		CAA	DCSOPS, CINC _s

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We gingerly side stepped the issue of how do/should we define Sustainability.

- Does the corps commander need such information or does the CINC need the information/tool? Some say it's the CINC who really needs the tool.

- If we continue to focus on threat driven requirements rather than resource capabilities, Congress will continue to give us trouble. We could save all the detail and minutiae.

- When Gorbachev says, for example, he wants to reduce the Soviets military spending and save 5% of GNP (e.g. to take out 5 divisions), what does that do to the threat and what is the NATO portion of the appropriate adjustment?

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NEW QUESTION FROM GROUP:

- Are CSS assumptions in the force structuring process correct?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- The targeting priority on CSS modes by the enemy (the Soviets)		DCSINT	DCSOPS, DCSLOG
- Threat organizations and weapons capable of attacking CSS modes		DCSINT	DCSOPS, DCSLOG
- Vulnerability of CSS modes		DCSINT	DCSOPS, DCSLOG

COMMENTS FROM WORKSHOP PARTICIPANTS:

(NONE NOTED)

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NEW QUESTION FROM GROUP:

- How should we provide water to the Army in the field?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Soldiers' needs for water under various environmental and operational conditions		QMS, AHS	DCSLOG, Surgeon General
- Water requirements for other than drinking needs (e.g., equipment, cooking, decontamination)		QMS, AHS	DCSLOG, Surgeon General
- Ways to distribute water in each theater		QMS, AHS	DCSLOG, Surgeon General
- Ways to convince the soldier to drink sufficient water to meet physiological requirements in arid environments		QMS, AHS	DCSLOG, Surgeon General

COMMENTS FROM WORKSHOP PARTICIPANTS:

- It is very important that we determine how to get a soldier to drink enough water, especially in arid areas. They simply do not.

- Soldiers will drink Kool-Aid but not tomato juice (i.e., in terms of liquid intake, it is important to insure that we provide items that the soldier will consume in addition to those items providing the proper amount of water).

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NEW QUESTION FROM GROUP:

- What effects do assumptions about operational tempo (Ammo rates, fuel rates, miles traveled) have on Sustainability estimates?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Variations in operational tempo with different threat conditions and levels (Battalion, Brigade, Division, Corps)		CAA, TRAC	DCSOPS, CAC
- Resource requirements versus operational tempo		CAA, TRAC	DCSOPS, CAC
- Affects on Sustainability of operational tempo		CAA TRAC	DCSOPS, CAC

COMMENTS FROM WORKSHOP PARTICIPANTS:

(NONE NOTED)

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QUESTION:

- Do our current models allow adequate sensitivity analysis to allow us to determine levels of need and implications of alternatives? Should our models be improved? Would Army leadership take different action if they had the results of such analysis?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Inventory and capabilities of current models, e.g., outputs, ability to do sensitivity studies, functional areas treated such as combat, CS, CSS, etc.)	1-2 years	Outside agency (Army Science Board, contracts, AAA)	DUSA-OR
- Functions/factors needed to adequately represent modern combat (e.g., combat operations, CS, CSS, terrain, WX)	1-2 years	Outside agency (Army Science Board, contracts, AAA)	DUSA-OR
- Authority/accountability for fixing/improving models	1-2 years	Outside agency (Army Science Board, contracts, AAA)	DUSA-OR
- Availability of technological changes to improve the responsiveness of analysis	1-2 years	Outside agency (Army Science Board, contracts, AAA)	DUSA-OR

COMMENTS FROM WORKSHOP PARTICIPANTS:

- The answers are no, yes and no, respectively, to the three parts of the question.
- This is really not an analyst's question. The decision maker needs to know what is in the model and what its useful applications are. Some models treat certain aspects/functions better than others.
- I never hear anyone from the audit agencies included as part of the feedback to the analytic community. Perhaps we should invite the GAO into the process.

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QUESTION:

- How can we better ensure that new warfighting systems are sustainable by the soldiers and structure expected at the time those systems are fielded?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Adequacy with which the requirements process addresses the expected ability of soldiers to sustain a system when it is fielded	1989	RAC	DCSOPS, ASA(RDA)
- Adequacy with which contractual documents address abilities of soldiers and the structure/ organization to sustain the system(s)	1989	RAC	DCSOPS, ASA(RDA)
- Adequacy with which the source selection process gives weight/ accounts for abilities of soldiers to sustain the system(s)	ASAP	RAC	DCSOPS, ASA(RDA)
- Adequacy with which operational testing (including destructive testing) addresses abilities of soldiers and the structure/ organization to sustain the system(s)	1989	RAC	DCSOPS, ASA(RDA)
- Implications to deterrence and warfighting capabilities of above situations	1989	RAC or Arroyo	DCSOPS, ASA(RDA)

COMMENTS FROM WORKSHOP PARTICIPANTS:

- Contractors' performance often does meet the contract requirements. But the contract requirements often do not relate to the needs of the soldier and structure, especially for Sustainability. General Shoffner is currently addressing that mismatch.

- If we feel the new system is not sustainable, then it is not likely to be acceptable regarding its warfighting capability. But it could be a highly effective deterrence item.

- Don't stack the deck in favor of the equipment when it is tested. Subject it to hostile fire.
- MANPRINT is now including soldier training, equipment requirements, etc. in the analyses.
- There are now requirements to accomplish this type of analysis i.e., the topic is being addressed. It also is being addressed within the SARTA community.
- Even though the topic is being addressed by several areas/agencies, it may not be well done, or the efforts addressed to it may be set aside because of priority bumping.
- We always say we are doing it/looking into the problem, but other, higher priority items may preclude our really looking into it. As a result, when items get into the field we may then find we really do not have the support we thought we had been taking care of.

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QUESTION:

- What is the impact of the D-Day to P-Day gap on our ability to successfully wage war in an Illustrative Planning Scenario context?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Items critical to warfighting	1989	CAA	DCSLOG
- D- to P-Day Gap for critical items	1989	CAA	DCSLOG
- Models that can measure the impact of the D- to P-Day Gap	1989	CAA	DCSLOG
- Implications of measuring the D- to P-Day Gap on deterrence and warfighting capabilities in various scenarios	1989	CAA	DCSLOG
- The industrial capability of the U.S. to mobilize (existing plans, planning activities/processes, shortfall, etc.)	1989	NRC, ICAF	DCSLOG

COMMENTS FROM WORKSHOP PARTICIPANTS:

- This question caused some problems (i.e., why is it in an IAP context?)
- This question really relates to other questions, it is a part of them.
- For some items there is no gap, for others the gap is two to three years and they may be warstoppers.
- Maybe we should not introduce into the field items with a long D- to P-Day gap until we are up to speed with production. Plug this into FORCEM and look at the implications for combat capability.
- The duration of war is highly important. If it's a thirty-day war, we simply may not have a D- to P-Day gap.
- We (the group) are really ignorant about who is looking into and how much is known about the country's industrial capability. There are groups who work in this area (e.g., FEMA). Indeed, there are many groups working on this topic. But when one tries to get information you really cannot obtain it. The Secretary of Defense chairs a monthly meeting on this subject and he gets down to detailed items (at least in the case of Secretary Weinberger). Also, General Thurman used to have sessions on this topic. Maybe we need to have someone pull together a bibliography on the subject.
- Perhaps the real question is who is in charge. This may not really be the Army's problem/authority. It seems to be a Cabinet/Whitehouse level problem.
- Are we going to repair in the forward or in the rear areas. AMC and DCSLOG are currently looking into this problem. Also, we need to decide if we are to address the problem by piece repair or modular repair and replacement.
- How do we decide what is a killer item: a fan belt, a starter bolt? Then we need to determine when and where it should be addressed/taken care of. There are studies on "maintenance philosophy" currently underway.

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QUESTION:

- What is the best way to measure sustainment capability?
 - No current methodology to determine sustainment capability.

- What things are essential to sustainment
 - force structure (including HNS)
 - materiel (war reserves & resupply flow)
 - equipment (end items, tools, MHE)
 - training (support unit skills vs supported items)
- What are measures of Sustainability?
 - days of supply not adequate
 - war reserve stockage requirements do not consider attrition of force to be resupplied (a corps at 65% strength needs less than at full strength)
 - peacetime workload factors vs combat essential repairs only

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Current sustainment capability in each theater/contingency area	Cont.	CINCs staff's with TRADOC assistance	CINCs
- Ways to garnish the potential in-country capability			
- Meaningful/realistic measures of Sustainability		LOG Community	DCSLOG

COMMENTS FROM WORKSHOP PARTICIPANTS:

- The way this question is proposed/phrased, it actually consists of many items or questions. For example, the subject of people/personnel should really be added.
- We really need to find out what sustainment capability exists in the area considered. For example, we got to Granada and only had tourists maps. In a particular area, can we get to the nearest ESSO station and, therefore, get an element of Sustainability.
- It was a tough question as phrased, and we do not know if we did a lot of justice to it.

QUESTION:

- What impact would the budget reductions have on sustaining the total force readiness when 51% of the force is in the RC?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Impact of budget cuts on active and reserve force training			DCSOPS
- Impact of budget cuts on Capstone training			DCSOPS
- Impact of budget cuts on force modernization, including compatibility and Sustainability			DCSOPS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- This information is really needed on the 15th of every month when readiness reports are due. The Army must tie OMA funding to readiness.
- The answer to this question is very subjective. No one wants to stand up and say he is not doing what he is paid to do, i.e., provide the required readiness.
- Maybe we need to look at the relative mix/shifting of the training between the Active force and the Reserves. But, is the Reserve structure able to do what we want it to do? Some of them are M+10 day units. For example, since we have only 35 days available for Reserve, how much can we really do with the RC?
- About 70 percent of PSS, 70 percent of CSS and 80 percent of medical units are in the RC because of budget cuts. Beware of antiquated equipment in the RC's CSS units.

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QUESTION:

- What are the trade-offs between survivability and prepositioning and the appropriate deployment philosophy?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Survivability/vulnerability of POMCUS war reserves	1968	J-8	JCS

- Survivability/vulnerability of strategic lift, including ports 1968 J-8 JCS
- Affect on deployment of not prepositioning 1968 J-8 JCS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- We really needed an answer to this by 1968.
- If we really don't have the answer to this question, then a lot of items that are deployed, and the funds we spend, are wrong or ineffective.
- If the decision is not to preposition (i.e., to take items with us to Europe) and all the ports are destroyed, how do we do it?
- This area has been studied before, and is often highly classified. Hence, results are often not discussed or not wanted to be talked about openly.
- Maybe we do not want to preposition because prepositioned items could be highly vulnerable.
- There was a recent consensus among high level officers that we should not bring back items that have become obsolete. For example, obsolete items from Europe could be stored in England. It may be better to have some old/obsolete items there rather than nothing there that could be used, even if it is "obsolete".

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NEW QUESTION FROM GROUP:

- Is the manpower-to-function allocation in the AOE structure appropriate to sustain the force?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Manpower shortfalls by SRC	1989-1990	TRADOC	DCSOPS
- Impact on combat effectiveness of shortfalls in manpower	1989-1990	TRADOC	DCSOPS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- In the Army of Excellence there was a conscious decision to take the risk of reducing CS/CSS in favor of combat forces, but the dimensions and depth of the risk were never assessed. We may have robbed Peter to pay Paul.

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QUESTION:

- Do current provisions for mobilizing and deploying Army CS/CSS individual manpower and units provide adequate sustainment capability for deployed and deploying combat forces under a prolonged conventional (single or multi-theater) conflict?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Adequacy of CSS/CS forces to sustain current combat force levels	6-12 Mos.	CAA	DCSOPS
- Degree to which TPFDL provides adequate and continuous support	12-18 Mos.	Contract	DCSOPS
- The way, timing and place to show the magnitude of shortfalls in CSS/CS and war reserves to the decisionmaker(s)	12 Mos.	LEA	DCSLOG
- Desirability of having dual (primary and secondary) MOS for Active and Reserve forces (e.g., support MOS for combat soldiers and combat MOS for support soldiers)	18 Mos.	CAC	TRADOC

COMMENTS FROM WORKSHOP PARTICIPANTS:

- If you look at the CS/CSS capabilities in some of the Guard and Reserve units you find it's a horror story.

- People coming out of medical units to combat units may not be able to perform in combat. Maybe we need to cross train/establish dual MOSSs. However, one would probably suffer. But at least the soldier would possibly be up to speed and we could bring him fully up with little training. The basic problem is what to do under the budgets we have.

- When you look at the soldiers manual, you find he doesn't have enough time to do everything he is supposed to do.

- Do we really know where warfighting and deterrence capability diverge? The force that best deters may not be the best for warfighting.

- Traditional thought does not necessarily match up to solve the existing/real problem.

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QUESTION:

- What are the positive implications to the issue of Sustainability if greater burden sharing is assumed by NATO and Japan?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Ways to quantify expectations/ forecasts of reduced lift and expanded industrial base	24 Mos.	RAND/ Arroyo, Academia	DAMO- SS, SARD
- Purpose/use that should be made of information about expectations of reduced lift and expanded industrial base	12 Mos.	RAND/ Arroyo, Academia	DCSOPS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- I thought the question was, if they want to spend funds we should tell them what to spend those funds on. No, we thought it would be a matter of negotiation.

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QUESTIONS:

- Should the warfighting CINCs compute rates of consumption and attrition based on their campaign plans and on an intelligence analysis of threat forces and campaign plans?

- If it is feasible for each CINC to compute rates of consumption and attrition, how do we articulate the Army's global requirements to the Congress (DG Scenario vs OPLAN)?

(The group believed these two questions were highly similar and treated them jointly).

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Ways to obtain validated rates of consumption	18 Mos.	Contract	JCS, DCSOPS
- Ways to achieve consistency in generating consumption rates	12 Mos.	JAD	JCS
- Ways to deal with multiple-mission units in the same theater	18 Mos.	CAA	DCSOPS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- If the CINCs are allowed to compute these items we could end up with a potpourri of solutions and really have a difficult situation with which to deal. The CINCs need to address this problem jointly because answers are theater specific.
- There really must be consistency in the process including the Army, Air Force and Navy.
- If the CINCs do it, it will really be a major JCS undertaking, and that would require rethinking what the JCS does and what the CINCs do.
- Who is really insuring consistency among various agencies? The CAA does certain things and TRADOC looks at low levels/high degrees of detail.
- Reserves are computed based on the primary mission of the unit, but they also have secondary and tertiary missions.
- I don't think the new organization of the DA will cause things to be better.
- Yesterday someone said the Air Force brings in MACOM commanders to do integrated planning. We could learn how to improve our integrated planning by finding out what others do.
- Forward deployment is a relatively new concept. The concept of CINCs with warfighting capability also is new.
- We have too many fiefdoms, and people move between them and can't really shed their earlier loyalties.
- We need a central source for data. For example, we need someone we can go to who can provide information down to a given level, and then can tell us who to go to for more detailed

information, and so on. In other words, we need a Czar. We know who is in charge but not who is the action person/agency.

- The problem is important and really is an organizational one. It is implied in all the other items we have here (e.g., regarding the CINC's rates). Maybe it should be made explicit as a primary analysis area/issue.

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QUESTION:

- Will the strategic lift be available to sustain the deployed force in a major conflict? Of particular interest to the ARNG is the availability of surface capability.

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Need to reassess the policy for and computation of war reserves	18 Mos.	AMSAA	DA
- Ability to effectively model strategic lift capabilities and to convince the other services of the need	18 Mos.	Contract (?)	J-8
- Degree to which attrition rates of strategic lift/load are realistic	18 Mos.	Contract	J-8

COMMENTS FROM WORKSHOP PARTICIPANTS:

- About 95 percent is going to go by surface. Thus, the second half of this question is relevant.

- Why not let the CINCs fight with Congress for these funds. They really are more impressive and Congress listens to them.

- Maybe we should tell the CINC what the requirement is and let him go about getting the capability.

- Maybe the M+10 day should be called the M+30 day force. But lets be careful about what we call M+30.

- Models often provide overly optimistic outputs/results.

- We don't really include realistic attrition rates in lift capability. Thus, before we trade forces in disarmament with the Soviets, we should include the lift/support required to do the job.

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QUESTION:

- How do we convince the other services of the need for early sustainability and deployment solution as it pertains to sea and airlift requirements?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- (Treated while addressing the above)	24 Mos.		

(This question itself really is a recommended area of analysis and, as such, is addressed in the items recommended for the previous question.)

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QUESTION:

- How can we realistically test host nation support and foreign deployment and mobilization?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE</u> <u>RESULTS</u> <u>NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Nature/content of current testing (e.g., Reforger)	18 Mos.	CAA	DCSOPS
- Ways to formalize the exercising of host nation support as part of a theater exercise (e.g., Reforger)	18 Mos.	CAA	DCSOPS
- Ways to provide U.S. support (e.g., resources, life support) to host nations	18 Mos.	CAA	DCSOPS
- Risks involved in our dependency on host nation support	18 Mos.	CAA	DCSOPS

COMMENTS FROM WORKSHOP PARTICIPANTS:

- There may be many longshoremen in Zeebrugge, but if the port is damaged and we move out and want to take the workers with us, we

will have to be concerned about providing for the family, housing, etc. support. The worker will be more interested in his family than in his job.

- The Germans say "pick what you want to use". They also say this to other nations. After we choose, they then tell us it's not available because someone else already has chosen and they have committed themselves to the others. This insight about commitments already made is not available until a long time has transpired.

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NEW QUESTION FROM GROUP:

- Should we take items from war reserves to fill the MTOE shortages?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

<u>ITEM</u>	<u>DATE RESULTS NEEDED</u>	<u>PERFORMER</u>	<u>SPONSOR</u>
- Affect of taking items from war reserves to fill MTOE shortages	12 Mos.	AMSAA	AMC
- Ways best to fix/satisfy MTOE shortages	12 Mos.	LOGCEN,	DA
- Ways to reconstitute limited war reserves in an environment of restrictive resources	12 Mos.	AMSAA	DA

COMMENTS FROM WORKSHOP PARTICIPANTS:

- In the long run, we may suffer a double loss if we adopt such a policy.

APPENDICES

- A -

AGENDA

WORKSHOP ON
ANALYSIS OF CRITICAL
POLICY ISSUE - SUSTAINABILITY
3-4 FEB 1988
Hill Conference Center
National War College
Fort McNair, Washington, DC

DAY 1: 3 FEB 1988

OPENING SESSION

(0900-1015)

1. Introduction & Background (Mr. Visco)
2. Workshop Objectives & Agenda (LTC Cochard/Mr. Becker)
3. Priority Areas for Analysis:
Important Subtopics/Questions (LTC Cochard/Mr. Becker)

PRESENTATIONS

4. DCSLOG Presentation (Mr. Feeney/1015-1030)

BREAK

(1030-1045)

5. NDU's Look at "Days of Supply" (Mr. Linke/1045-1100)
6. Status of Current Analysis (30 min each)
 - TRADOC
 - LOGCEN
 - SSC
 - TRAC-LEE
 - CAA
 - AMSAA
 - ESC

LUNCH

(1200-1315)

7. Status of Current Analysis:
Continued (1315-1500)
8. Wrap-Up (1500-1600: LTC Cochard/Mr. Becker)
 - Summary
 - Activities for Day 2

ADJOURN

(1600)

DAY 2: 4 FEB 1988

CONVENE 0900

9. Kickoff (0900-0930: LTC Cochard/Mr. Becker)
- Review of Previous Day
- Workshop Assignments (Topics/Teams)
10. Development of Recommended Analysis Efforts (0930-1200)
(Group Workshops)
- LUNCH (1200-1300)
11. Recommendations by each Group (1300-1500)
- BREAK (1500-1515)
12. Integration (Prioritization) (1515-1545)
13. Wrap-Up (1545-1600: Mr. Visco/Mr. Becker)
- Summary of Workshop
- Next Steps/Follow-Up Coordination
- ADJOURN (1600)

- B -

ATTENDEES

SUSTAINABILITY WORKSHOP ATTENDEES

<u>AGENCY</u>	<u>NAME</u>	<u>PHONE</u>
SFUS-SPM	Mr. Gene Visco	697-0026
	LTC Gary Cochard	607-0027
	Mr. Hal Becker	(New Perspectives Corp.)
	Mr. Don Goodrich	(New Perspectives Corp.)
DUSA(OR)	Mr. Clark Fox	697-0367
ASA(M&RA)	LTC Holsey Moorman	697-7068
DISC4	LTC Paul Schuessler	695-8005
NDU	Mr. Steve Linke	475-1992
DCSLOG	Mr. Don Feeney	694-6509
	MAJ Shelly Hatch	697-3158
	LTC Dave Haas	694-6611
DCSOPS	LTC Jim Kurtz	695-2715
	LTC Norm Nuzzi	694-2598
DCSPER	Mr. Bob Klemmer	695-0516
	Ms. Susan Funes	695-4121
	MAJ Jerry Warner	694-2777
	Dr. H.R. Ludden	325-3884
DCSINT	Ms. Betsy Checchia	697-1426
OTSG	LTC John T. Read	756-8162
NGB	LTC Dennis McKnight	694-3399
AMC	Mr. John Lazaruk	274-8037
	Mr. Darrell Fletcher	274-9792
	Mr. Tony D'Ambrosio	av 284-3218
LOGCEN	Mr. Tom Edwards	av 687-2712
	Mr. Tom Miller	av 687-3555
	Mr. Robert Neely	av 687-4150
CAA	Ms. Zelma Harms	295-1615
AMSAA	Mr. Jim Streilein	av 298-4976
TRAC	COL W.A. Brinkley	
	Ms. Leslie Lampella	av 680-2200

TRAC-Lee	Mr. Robert Cameron LTC Bob Walton	av 687-1050 av 687-1050
SSC	MAJ Ken Hughes	av 699-3820
ESC	Mr. Steve Reynolds	355-2126
RAND	Mr. Mort Berman	(213) 393-0411
SSI	LTC Dave Shaver	av 242-4912
CEWES	Mr. Jim Robinson Dr. Victor LaGarde Mr. Richard Grau Dr. Lee Weishar	(601) 634-2683 (601) 634-2494 (601) 634-2073
CRREL	MAJ Dale Hill	av 684-4470

- C -

INTRODUCTORY/BACKGROUND PRESENTATIONS:
STATUS OF ANALYSIS

IAP Workshop on Sustainability
3 Feb. 1988-Analysis Status Reports

DCSLOG: Don Feeney

- In addition to aspects related to Sustainability, DCSLOG also is responsible for various aspects of Supporting the Soldier (e.g., with clothing, equipment). Others worry about his health, finances, and other personal/family factors, but DCSLOG worries about everything else.

- DCSLOG requests topics for analysis from various agencies (e.g., RAND/ Arroyo, those involved in the Army study program and from students/student research). The topics range from those with near-to mid-to long-range time horizons. In the case of the Army Study Program, the efforts typically involve more than one-half a man-year. In the case of analysis conducted by students (e.g., from the Army War College), analyses typically require three to four months of the student's time.

- DCSLOG has the familiar problem of counting/drawing on people who are spread around the country. As a result, it set up the Logistics Studies Steering Committee to prevent duplication and insure that analyses are worthwhile (i.e., to prevent doing silly things). After review there, the process moves to the action level of the Study Program Coordinating Committee (SPCC), where decisions are made on distributing funds to accomplish the analyses. From there the process moves to the senior level of the SPCC. This last step insures that the analyses also address items that the leadership sees as important. It was noted that the process essentially starts and ends with the senior level of those involved in the IAP process. In other words, DCSLOG sees itself as part of the IAP process.

- The studies/analyses often include many people, agencies, boards, etc. (as shown on the presenter's list of the FY88 studies). Hence, the process is complex. For example, in a case of food contamination, many people were involved, and the action/solution ultimately came to DCSLOG. But, it does not seem appropriate that DCSLOG should have been involved in the action/solutions because it is a policy group. Rather, the actions/solutions should have been accomplished by operations/action people.

- A further example of organization/coordination complexity is associated with the "single fuel" study, (i.e., the possibility of using the same fuel in all combustion engines.) Such considerations involve AMC and TRADOC and would have a major impact on support contractors. For example, if such a decision were made, Briggs and Stratton would be informed that their equipment would not be used -- and their Congressmen would then become involved.

- Another example of complexity in analysis efforts is the retrograde transportation study which looked at ports and harbors. The study tried to make observations about and recommendations regarding interfacing, in this case with host nations, the Teamsters Union in the U.S. and others.

- The MAXFLY Air-Land battle is another complex area. It is being studied by the CAA.

- Many analyses/studies are sponsored by others in which DCSLOG has an interest. These included the Total Army Analysis, OMNIBUS-TLR/S (which treats total logistics readiness/sustainability), Support Force Requirements Analysis and Combat Support Ratio Study. In the case of the last study, it included considerations as to how well AMC and its subcontractors can support the need.

- All of the above investigations typically have a combat model that does an excellent job regarding the "war fight". But these models do not include (or properly treat) logistics support. DCSLOG has been working on including logistics aspects in the models.

- "Family gatherings" are held where all those involved are at the same table to work out the details. These gatherings (e.g., including DSCOPS, DCSPER, DCSLOG) are held before the activities/analyses move to CAA. OMNIBUS is an example. Thus, all the details are worked out before the activity gets to the CAA.

- DCSLOG submitted several questions in response to the request by the SPMA in preparation for the workshops. These included questions about the possibility of the CINCs computing rates of consumption and attrition, ways to sell to Congress, the impact of the D-Day to P-Day gap and aspects related to the strategic lift shortfall.

(The following observations pertain to the question about CINCs computing consumption and attrition rates and how to articulate needs to Congress.)

- The CINC doesn't tell DCSLOG how he will fight the war. Therefore, DCSLOG cannot tell him how many days of supply/capability he has left. To do its analysis, DCSLOG makes a best guess about items that relate to the CINCs moves.

- DCSPER has not given the CINCs the necessary inputs to make assessments they need. Analyses have to include how the enemy will fight, and we have real trouble doing that.

- There is significant variability of rates for different types of commodities. RAND is trying to include these variabilities in its analyses.

- Since variability in consumption and attrition rates significantly affects the Army's requirements, including it in analyses will affect the ability to convince Congress of the Army's needs.

- We also have trouble with the Defense Guidance obtained from the DA staff. It's a dream; it's an attempt to put together a story that is believable to us and to Congress.

- We have been having "Campaigners Conferences" at CAA to find ways to improve the simulation models. These conferences include the Staff and the CINCs.

(The following observations pertain to the D-Day to P-Day gap.)

- Remnants of the McNamara era include errors for calculating the D- to P-Day gap, which became codified into 180 days. But there are many things that may require two to three years. In any event, we never have really obtained budget approvals to go beyond 45 days.

- The problem of manning the system is not included in D to P-Day gap considerations. We obtain inputs regarding how much equipment is needed or out there, but not how many people.

NDU: Steve Linke

(The following relate to questions about CINCs computing rates and measuring sustainment capability.)

- NDU has been doing studies on "Days of Supply" and various analytic problems exist. For example in the case of mission requirements, fluctuations in possible future war fights causes fluctuations in requirements which change the readiness posture overnight. And assumptions about the far-or long-term do not equate to near-term capabilities. Also, there is an inverse relationship between the number of weapon system platforms and the Days of Supply. One way to increase Days of Supply and improve Sustainability would be to melt down some of the gun tubes.

- For newly fielded systems, problems are created because the density could change.

- When we go back to Congress, they are disappointed when they don't see, or we don't demonstrate, the progress they anticipated. But when one considers a force and density three to four years in the future, it results in requirements for several hundred items.

- Averages are often used in calculations to include the broad range of variability/fluctuations. This obscures important

details. In other words the aggregation of commodities that is often included in Army analyses can mask important details directly shaping Days of Supply.

- There is no real link between weapon systems and munitions, spare parts, etc. For example, we consider munitions, but what if we are out of TOW carriers.

- We do not have common measures for Days - of - Supply/Sustainability with our allies, SHAPE.

- We have to look at the ways various people analyze requirements. For example, the Air Force uses sorties. Every time an aircraft takes off it can be assumed to fly so many hours, use up so many spare parts, etc. It's a good approach and maybe we can benefit by seeing how others make such analyses. For example, such approaches might apply to requirements for Army helicopters.

- Another approach is the "fixed set" analysis applied to Days of Supply. Here, a fixed set per weapon is used, which would vary by unit structure and by mission. Problems probably would still exist in terms of building around a weapons system and addressing spares requirements.

- The Air Force has been doing near- and long-term studies where the staff of the CINCs come in and work with the requirements people. As a result, the CINCs accept/buy into the study outputs.

- One very hard part of the effort to improve estimates of/requirements for Days of Supply and Sustainability relates to developing an approach that will allow us to get away from aggregating by commodity.

TRADOC/LOGCEN: Tom Miller

- Some logistic planning factors are very good and some are not (they are shocking).

- The logistics data base is not really a data base. Is a loosely related group of computer programs that apply selective logistics data and consumption rates to TOE units in the TRADOC TOE files. The Center does not invent or develop the factors. It collects inputs on rates from others (i.e., the specialists).

- When items are not listed in the TRADOC files, surrogates are found for use in the analysis.

- Reports developed by the Center are sent back to the "study activity" or to the field, depending on who asked the question.

- Planning factors may seem simple, but they are really quite involved and complex. Its really involved when one considers the various operating modes (e.g., hours of operation, Km/Day, mission profile), the range of items/equipment involved, etc.

- We really have to watch for the way the question is asked, i.e., it is easy to get a nonsensical answer to questions if we were to indiscriminately use the Air Force Sortie approach.

- There are often many inputs on important characteristics. For example, in the case of AMMO we have Headquarter Rates, Operational Rates and Force Design Rates -- and they often are quite different.

- There is a study that has been in process for a long time to address the above concerns but it is a very difficult problem. There is a wide divergence of opinion regarding assumptions, who does the study, and other factors that contribute to difficulties in this area.

TRADOC/LOGCEN: Tom Edwards

- We seem able to get only one very good study per year because important interests focus on the topic and we are able to complete it while their interest and attention is still there. For example, last year there was the Cost and Operational Effectiveness Analysis (COEA) of tactical wheeled vehicles.

- The context of decision is very important and powerful in shaping our budgets and other activities. For example, discussions last year in Congress included considerations of where we repair and maintain our vehicles. High level people are often skeptical of requirements we carry forward. The Under Secretary was skeptical about the need we specified for certain test equipment in the field since it was believed it would not work. It was argued that we should simply buy more helicopters for the field rather than trying to maintain them with test equipment that would not work in that environment.

- One aspect of the analysis environment is that "logisticians are often raining on the combat developers' parade".

- Funding for logistics analyses remains small compared with the total. For example, last year a total of approximately 780 professional staff-years was applied with only 40 directed at logistics activities. The respective dollar amounts were 16 million and about 7 hundred thousand dollars.

- "Goodness" of an analysis/study is measured in terms of whether managements attention is applied/obtained and whether Congress has an interest, i.e., in whether important decision makers are interested in and receive results.

- The analyst should not analysis or study simply what the Proponent or Integration center wants to hear.

TRADOC/TRAC-LEE: Bob Cameron

- TRAC-LEE's role is in modeling and analysis (e.g., currently for General Robinson). But the Center looks across or goes beyond TRAC-LEE to view/assess the relevancy and the quality of models.

- To obtain results from our analysis techniques and models we must discretely specify the various operational activities per day. The "templates" we use often include attrition rates.

- An addition should be made to the comments at the last workshops on Conventional Capability and Interoperability. CSS representation in the VIC (Vector-In-Commander) model is undergoing verification and validation.

- A series of "peel backs" is being conducted around the country to look at the application and validity of various models. The major gap is in looking at the logistics functional model, e.g., in terms of consistency.

- VIC looks at Sustainability at the Corps/Divison level and the Logistics Functional Model considers items at greater levels of detail.

- Several standard models have been developed over the years (e.g., MACATAK). They often are fed by external scenarios in an off-line mode so that no interaction with outside forces occurs. In other words, results are typically deterministic rather than probabilistic; i.e., a single value is provided as the output for a given run without a range of uncertainty associated with that output.

- Attempts to use the sortie aspect of maneuver operations with the models have been abandoned.

- In a given theater, a large portion of the system is in CS/CSS. Those activities ultimately require considerable dollars, personnel, etc. But planning and requirements generation are all dominated by attention to combat forces.

TRADOC/SSC: Major Ken Hughes

- We felt good because the definition of Sustainability distributed to the participants in the read-ahead was essentially the same as we are using.

- Manning activities include leadership, health services, administrative support, chaplain activities, moral support, and

and replacement operations. Administrative support, as currently defined, may no longer be valid since the activity is really spread around various agencies/groups. Hence, discussion should center mostly on replacement operations.

- One aspect or consideration is sustaining the force, another is sustaining the soldier.

- We continue to find the same results in all the studies we do. The real question is what was done about the findings i.e., about any actions that were taken. It is o.k. to come up with findings. But how do we go about insuring that we implement actions that should be taken? We need a way to designate what the next steps are or should be regarding study results. For example, we need to develop a process to insure that we implement, evaluate, and develop programs. This could help reduce the time from results becoming available to actions being taken.

- The Individual Ready Reserve (IRR) should really be used as replacements, perhaps by reclassifying them for critical maintenance skills.

- There are times when interim results show certain things should be done and a spin off activity is established. An example was associated with the CONUS replacement study. Before the analysis was completed it was obvious that actions should be taken to improve the system so that when personnel are called together for deployment things move effectively.

- We need to realize that we have a D- to P-Day problem with personnel and not just equipment. The current ground rule is 113 days for personnel. We have three days to notify people, 10 days for them to report to the training center, 12 weeks for training after an initial 2 to 3 weeks of start up, with the remaining time for transportation, etc., to the units to which the personnel are assigned as replacements.

- The biggest problem regarding personnel replacement is related to facilities/equipment on which to train the soldier.

- We need to look at many things including what are real manning levels for various weapon systems (e.g., four versus three men in a vehicle), the need to redo the recognized qualifications for IRR personnel and other factors.

- A major source of replacements during wartime is from those returning to duty after injury. A continuing problem exists between Personnel and the Surgeon General regarding who can and should be returned to duty.

- The CAA determines gross levels of casualties and then we break these down by MOS, etc.

- We should list substantive recommendations effecting personnel requirements, qualifications, etc., including the need to establish standards, for example, on sleep requirements. Leaders who try to present a macho image by being able to operate without sleep can create major problems. We should continue to look at reducing the soldier's load, etc. Restructuring requirements and standards should be ongoing.

- We, the personnel community, need to be able to do more things off-line.

- Clerks were taken out of the company and we now have shadow clerks in each company.

- We need to be able to do analyses (e.g., casualty estimates for Personnel Services Support, Planning Factors Systems), put results on floppy discs and get that information out to the field.

- Senior analysts often accomplish analysis without considering the soldier (as indicated in a chart prepared/used by senior analysts last spring). Personnel must be considered in addressing Sustainability.

- The skill flexibility of personnel is critical. We need to identify critical MOS needs for the battlefield.

(Major Hughes prepared and presented a paper, entitled "Personnel Service Support and Soldier Performance Factors in Army Models, Simulations and Wargames: An Interim Study Report", to the session moderator after the workshop discussions. It addressed the question about the ability of models to do adequate sensitivity analyses and assess implications of alternatives. The paper is brief but quite comprehensive. It includes an introduction/background statement, objectives of appropriate analysis, a section on methodology and a summary section. The details in the paper do not seem to be considered in the various workshop discussions. They should be revisited in their entirety during the next workshop on Supporting the Soldier).

CAA: Zelma Harms

- Although CAA does not really do Sustainability studies (as defined here), it is doing studies on related items. Past, present, and future efforts include a broad range of activities. These have included and are likely to continue to include such areas as the OMNIBUS Study Series, Support Force Requirements Analysis, Combat Support Ratio Study, NATO 4102 Analysis, Wartime Requirements Analysis, Wartime Order Ship Time Study, and War Reserve Balance Study. The first four of the above relate to the question about whether current mobilization and deployment provisions for CS/CSS provide adequate sustainment under prolonged conflict.

- Everything said earlier regarding rates can be endorsed. They typically are only long-term rates for programming purposes and do not really help in determining short-term requirements.

AMSAA: Jim Streilein

- Vast differences can be obtained from studies depending upon where one obtains input data, including data that breaks down or disaggregates "average" information.

- We really cannot meet the peace time requirements to support our systems (e.g., helicopters), let alone in war time.

- If we can not determine what the little units in the field are going to do, how can we define what we need to do back here in the D- to P-Day?

- We have to redo the PLL lists because much of the reliability data upon which they are based is not good.

- Examples of assumptions include seven days for repair time. But, in many of those situations, we don't have parts where they would be needed.

- If we don't care about combat damage reports, who will really care about reliability repair?

- Someone has to decide what to use; i.e., what is reasonable regarding loss/damage rates. (All data shown regarding days of combat for various personnel, parts availability, etc., were from combat scenarios focused on the Soviet threat in Europe.)

- We should not forget that it is expensive to do these studies and our budgets for both in house and contract funds are being cut. No one is pulling all these studies together and integrating them. For example, the Single Fuel study (discussed earlier) was not even on our list because our management did not think it was important. We don't talk the same words. What people say they want to repair doesn't match up with what reliability says needs to be repaired. Cannibalization may help a little but combat damage hurts a lot.

ESC: Steve Reynolds

(The Center looks only at Engineer and Engineer related study/topics. The Center prepared and presented a list of items/questions to be answered as part of its participation in this IAP Sustainability workshop).

- Key questions regarding ECS's interests include Engineer Support by Theater, TOPO Support by Theater, Class IV Support by Theater (for CINCs worldwide), NATO Host Nation Support and Rear Area War Damage Estimates.

- The Center accomplished many studies in 1987 covering Korea, SWA, underdeveloped countries and the Pacific. These treated ports, staging areas etc.. There also were smaller studies covering engineering analysis of the Light Division, and Light Motorized Support Division. These studies focused on Engineering support.

- The 1988 list of studies is quite extensive, including establishment of an Army Mobilization and Integration Cell activity under the aegis of the IAP, and that goes beyond the Center's traditional areas of interest/activity.

- There is a direct relationship among ECS' studies and the activity/programs of the MACOMs and other areas.

- In summary, sets of studies treating various classes of activities have been conducted over the years. Studies were done in 1980 covering Europe, in October 1987 covering Korea and in November 1987 covering Southwest Asia. The earlier ones covering Europe in 1980 will be updated. These various efforts will be integrated and are being fed into a worldwide view. But these studies/analysis activities do not include Latin America. The Center does only small things for SOUTHCOM.

- The Engineering Force Structure does not have units or equipment to perform rear area construction and maintenance tasks needed to sustain U.S. forces under existing operations plans.

- In developed countries/areas, the Engineer shortfall can largely be offset with host nation support.

- In underdeveloped countries/areas, the lack of Combat Engineer units could well be a war stopper.

- The need for contractors in Sustainability efforts has been treated in the context of host nation support.

(Studies and questions shown by ESC appeared to be the only ones that included considerations of how the Army's organization and structure might impact Sustainability and the nature of analyses/studies that should be conducted. Some of these organizational and structural considerations related to command and control, deployment organization and sequence for Engineers, rehabilitation of facilities, integration, etc..)

- D -

PARTICIPANTS IN INDIVIDUAL WORKSHOPS

Sustainability workshop group assignments:

Group A:

LTC Kurtz - Presenter
LTC Moorman
LTC Read
Mr. Miller
Ms. Harms
Mr. Reynolds
Mr. Robinson

Group B:

Mr. Streilein - Presenter
LTC Schuessler
Mr. Funes
LTC McKnight
Mr. Neely
Mr. Klemmer

Group C:

Mr. Feeney - Presenter
MAJ Warner
Mr. Fletcher
Ms. Lampella
MAJ Hill
Mr. Grau
LTC Walton

Group D:

Mr. Edwards - Presenter
MAJ Hatch
Dr. Ludden
LTC Shaver
Dr. LaGarde

Group E:

LTC Hass - Presenter
Ms. Checchia - Presenter
MAJ Hughes - Presenter
Mr. D'Ambrosia
Mr. Berman
Dr. Weishar
Mr. Cameron

- E -

RELEVANCE TREE OF TOPICS RELATED TO SUSTAINABILITY

SUSTAINABILITY

1.0 PERSONNEL

2.0 EQUIPMENT

3.0 SUPPORT
INFRASTRUCTURE

4.0 MILITARY
FACILITIES

5.0 ORGANIZATION
& STRUCTURE OF
MILITARY FORCES

6.0 INFORMATION
MANAGEMENT

7.0 POLITICAL
RELATIONS

8.0 ANALYTICAL
TOOLS/METHODS

1.0 PERSONNEL

- 1.1 MANNING
 - 1.2 TRAINING
 - 1.3 REPLACING
 - 1.4 FUNDING/
BUDGETING
- 1.1.1 RECRUITING
 - 1.2.1 LEADERSHIP
 - 1.3.1 RECOVERY
 - 1.4.1 PAY SCALES
- 1.1.2 RETAINING
 - 1.2.2 READINESS
 - 1.3.2 MEDICAL
TREATMENT
 - 1.4.2 SUPPORT
SYSTEMS
- 1.1.3 SUPPORTING
(FAMILY PROGRAMS,
LEGAL, MEDICAL, ETC.)
 - 1.3.3 REHABILITATION
 - 1.3.4 REST &
RECREATION
 - 1.3.5 REASSIGNMENT

2.0 EQUIPMENT

- 2.1 ABILITY TO GENERATE NEW CONCEPTS/INJECT NEW CAPABILITIES
 - 2.1.1 PERSONNEL
 - 2.1.1.1 PERFORMANCE/EFFECTIVENESS
 - 2.1.2 LAB/TEST EQUIPMENT
 - 2.1.2.1 AVAILABILITY (NOS.)
 - 2.1.2.2 RELIABILITY, MAINTAINABILITY
 - 2.1.3 PLANT
 - 2.1.3.1 VULNERABILITY
- 2.2 WEAPONS REQUIREMENTS/NEEDS
 - 2.2.1 PERFORMANCE/EFFECTIVENESS
 - 2.2.2 AVAILABILITY (NOS.)
 - 2.2.3 RELIABILITY, MAINTAINABILITY
 - 2.2.4 VULNERABILITY
- 2.3 PRODUCTION CAPACITY
 - 2.3.1 PLANT & EQUIPMENT
 - 2.3.2 ORGANIZATION & PERSONNEL
 - 2.3.3 STRATEGIC MATERIALS
 - 2.3.4 ENERGY
- 2.4 SUPPORT ITEMS
 - 2.4.1 TEST EQUIPMENT/TOOLS
 - 2.4.2 PARTS/EQUIPMENT INVENTORY
- 2.5 CONSUMABLES
 - 2.5.1 MUNITIONS
 - 2.5.2 FOOD STUFFS
 - 2.5.3 GEAR
 - 2.5.4 CLOTHING
- 2.6 COSTS
 - 2.6.1 R & D
 - 2.6.2 PRODUCTION
 - 2.6.3 O & M

3.0 SUPPORT INFRASTRUCTURE

- 3.1 GOVERNMENT PERSONNEL (MILITARY & CIVILIAN)
 - 3.1.1 ACTIVE
 - 3.1.1.1 PLANT & EQUIPMENT
 - 3.1.1.1.1 GROUND
 - 3.1.1.1.2 AIR
 - 3.1.1.1.3 SEA
 - 3.1.1.2 PRIVATE SECTOR PERSONNEL
 - 3.1.1.2.1 GROUND
 - 3.1.1.2.2 AIR
 - 3.1.1.2.3 SEA
 - 3.1.1.3 RESERVE
 - 3.1.2 RESERVE
 - 3.1.3 GUARD
- 3.2 PRODUCTION
- 3.3 TRANSPORTATION
- 3.4 COMMUNICATION
 - 3.4.1 SECURE
 - 3.4.2 UNSECURE

4.0 MILITARY FACILITIES

- 4.1 PERSONNEL & FAMILY SUPPORT
 - 4.2 TRAINING
 - 4.2.1 FIRING RANGES
 - 4.2.1.1 MOTOR POOL
 - 4.2.2 PROVING GROUNDS
 - 4.2.2.1 HANGARS
 - 4.3 MAINTENANCE & REPAIR
 - 4.3.1 MOTOR POOL
 - 4.4 STORAGE/ WAREHOUSING
 - 4.4.1 WEAPONS
 - 4.4.1.1 WEAPONS
 - 4.4.2 MUNITIONS
 - 4.4.2.1 HANGARS
 - 4.4.3 POL
 - 4.4.3.1 ARMS ROOMS
 - 4.4.4 PARTS
 - 4.4.4.1 DEPOT FACILITIES
 - 4.4.5 GEAR/ CLOTHING
 - 4.4.5.1 COMBAT/ SURVIVAL
 - 4.4.6 FOOD

5.0 ORGANIZATION & STRUCTURE
OF MILITARY FORCES

5.1 INTRA SERVICE
(ARMY)

5.1.1 COMBAT ARMS

5.1.2 COMBAT SUPPORT

5.1.3 COMBAT SERVICE
SUPPORT

5.2 INTER SERVICE
(JOINT)

5.2.1 ARMY

5.2.2 NAVY

5.2.3 AIRFORCE

5.2.4 JCS

5.3 INTERNATIONAL
(COMBINED)

5.3.1 ALLIES

5.3.2 FRIENDS

5.3.3 MERCENARIES

6.0 INFORMATION MANAGEMENT

- 6.1 INTELLIGENCE
 - 6.1.1 GATHERING
 - 6.1.1.1 INTERPRETING
 - 6.1.2 INTERPRETING
 - 6.1.2.1 INTERPRETING
 - 6.1.2.2 DECISION MAKING
 - 6.1.3 COMMUNICATING
 - 6.1.3.1 COMMUNICATING/
COORDINATING
 - 6.1.4 COUNTER INTELLIGENCE
 - 6.1.4.1 EVALUATING
- 6.2 BATTLE MANAGEMENT
 - 6.2.1 INTERPRETING
- 6.3 PROGRAM MANAGEMENT
 - 6.3.1 R & D
 - 6.3.1.1 PRODUCTION/
PROCUREMENT
 - 6.3.2 OPERATIONS

7.0 POLITICAL RELATIONS
(DOMESTIC & FOREIGN)

7.1 RULES & MISSIONS

7.2 BUDGETS/FUNDINGS
REQUESTS

7.3 SOURCING

7.1.1 AMONG NATIONS

7.2.1 OTHER NATIONS

7.3.1 ORIGINAL EQUIPMENT

7.1.2 AMONG SERVICES

7.2.2 THE CONGRESS

7.3.2 RESUPPLY

7.2.3 THE PUBLIC

7.3.3 MAINTENANCE

7.2.4 THE MEDIA

8.0 ANALYTICAL TOOLS/
METHODS

8.1 PERSONNEL
CAPABILITIES

8.1.1 GOVERNMENT

8.1.2 PRIVATE SECTOR

8.1.3 ALLIES &
FRIENDS

8.2 DATA PROCESSING
CAPABILITIES

8.2.1 GOVERNMENT

8.2.2 PRIVATE
SECTOR

8.2.3 ALLIES &
FRIENDS

8.3 DATA BASES

8.3.1 MILITARY/
ARMY RELATED

8.3.2 PRIVATE SECTOR
CAPABILITIES

8.3.3 ALLIES &
FRIENDS

- F -

EXAMPLES OF MATERIAL DRAWN FROM
WORKSHOP ON CONVENTIONAL CAPABILITY

ISSUE: CONVENTIONAL CAPABILITY
(SAMPLE MATERIAL)

QUESTION RELATED TO ORGANIZATION & STRUCTURE

- WHAT ARE THE SHORTCOMINGS IN THE ARMY'S ABILITY TO PERFORM ITS ROLE IN THE AIR/LAND BATTLE AND WHAT STEPS SHOULD BE TAKEN TO REMOVE THEM?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

A. ORGANIZATIONS AND SYSTEMS NECESSARY TO CONDUCT THE AIR/LAND BATTLE (I.E., AN INTEGRATED ANALYSES UNDER REALISTIC AND CONSISTENT ASSUMPTIONS).

B. NECESSARY FORCE STRUCTURE (INADEQUACIES AND APPROPRIATE REMEDIES).

COMMENTS FROM WORKSHOP PARTICIPANTS:

1. MUCH WORK HAS ALREADY BEEN DONE, FOR EXAMPLE, BY THE CAA. SOMEONE NEEDS TO PULL TOGETHER ALL THE WORK THAT HAS BEEN DONE.

2. IN ADDITION TO PULLING THE INFORMATION TOGETHER, THE STORY NEEDS TO BE SOLD BETTER.

3. THE ASSUMPTION USED IN THE STUDIES TO DATE WERE VERY OPTIMISTIC, E.G. REGARDING AVAILABLE RESOURCES.

4. MANUAL WARGAMING IS HIGHLY EFFECTIVE. IT GETS MANY PEOPLE AND THEIR LIEUTENANTS INVOLVED. IT CAN BE ACCOMPLISHED MORE QUICKLY THAN COMPUTER BASED GAMING.

5. THERE IS INABILITY TO INCLUDE THE ACTIVE THREAT IN COMPUTER MODELS.

6. THE EUROPEAN ENVIRONMENT WILL CHANGE. THE GERMANS AND FRENCH HAVE UNDERGONE MAJOR CHANGES IN FORCE STRUCTURE. ALTHOUGH THERE IS A LACK OF NON-US NATO DATA, WE MUST INCLUDE THE GERMANS AND FRENCH IN SIMULATION GAMING.

ISSUE: CONVENTIONAL CAPABILITY
(SAMPLE MATERIAL)

QUESTION RELATED TO POLITICAL RELATIONS:

- HOW CAN THE ARMY'S NONCOMBAT RESOURCES (e.g., MEDICAL SERVICES, ENGINEERING) BE USED TO DETER LOW INTENSITY CONFLICT?

RECOMMENDED ELEMENTS OF ANALYSIS/TOPICAL AREAS:

- A. MEANS TO BUILD ALLIANCES USING NONCOMBAT FORCES.
- B. WAYS TO COORDINATE ARMY AND STATE DEPARTMENT INITIATIVES.

COMMENTS FROM WORKSHOP PARTICIPANTS:

1. IT'S NOT JUST DETERRENCE, IT'S ALSO ALLIANCES.
2. THE DEPARTMENT OF STATE NEEDS TO BE A PLAYER.
3. WE SHOULD NOT TURN THE PROBLEM OVER TO SPECIAL FORCES.
4. WHEN WE PROVIDE MEDICAL AID TO A NATION, IT'S BECAUSE THAT AID HAS BEEN ASKED FOR BY THE NATION.
5. OUR EFFORTS MUST BE ONGOING. WE MUST NOT STOP AND START REGARDING STATE DEPARTMENT POLICY
6. WE SHOULD GET THERE BEFORE INSURGENCY/COUNTER-INSURGENCY BEGINS.