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A METAPHOR FOR THINKING ABOUT CHANGES IN ARMY DOCTRINE

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A METAPHOR FOR THINKING ABOUT CHANGES IN ARMY DOCTRINE¹

I. INTRODUCTION

We were requested by the Training and Doctrine Command (TRADOC) to assist the Army in speculating on the state of the world in thirty years. The primary goal of the effort is to "provide a conceptual vision of how the Army will fight thirty years into the future" and this is part of a larger effort to "develop a plan describing future Army operations and a strategy for the management of change." In thinking about potential changes in the world and potential changes in Army doctrine, it became clear that we needed a better understanding of the relationship between changes in the world and changes in Army doctrine. To do that we decided to run a small Delphi exercise here at RAND whose goal was to identify what changes in the future would be most likely to lead to changes in Army doctrine.

We begin with a description of a metaphor that evolved from our attempts to integrate and synthesize the responses we got from the Delphi. While the metaphor did not guide the construction of the Delphi, we found it useful for describing an important aspect of what we learned from the Delphi.

¹An abbreviated version of this Paper was presented in the *Unconventional Approaches to Forecasting the Far Future II* session of The Eighth International Symposium on Forecasting in Amsterdam, The Netherlands, June 12-15, 1988.

II. THE METAPHOR

Think of Army doctrine as a large molecule that lives in a world of lights. The lights are of various colors and intensities and come from a wide variety of sources and locations. They represent facets of the world in which the molecule (Army doctrine) lives. The lights strike the molecule and affect it based on the nature of the molecule as well as their own nature. Some lights (today's football scores, Harvard's admission policy, rainfall in the New Hebrides, etc.) have little or no effect on the molecule. Others (Soviet tank production, North Korean troop movements, European parliamentary debates, etc.) cause the molecule to wiggle and shudder.

Two aspects of this metaphorical situation relate to our investigations: 1) The lights that shine on the molecule change with time in their color components, intensities and coherence; and 2) lights of certain color, intensity and coherence can cause the molecule to break apart, explosively (think of the intense "Vietnam laser light" and its effect). Army doctrine, then, exists in a larger environmental context, but only certain aspects of that environment are likely to call into question the validity of the doctrine.

Today's molecule is swaying gently in today's light. The goals of those in charge of maintaining the molecule are that it be stable in today's light and "robust" in the face of foreseeable future lights. Some people argue that today's molecule satisfies those goals. Others argue that we have seen lights that shattered past molecules and that lights that could come soon are likely to do the same to this one.

III. THE GOAL, THE METAPHOR, AND THE DELPHI

In terms of the metaphor, the Army would like to know what the light is going to look like in thirty years, how today's molecule would fare in that light, what might cause instability, and if instability occurred, what changes might be warranted in order to increase its stability in the new light(s).

Clearly, an accurate prediction of the (world) situation in thirty years is improbable at this point. What the Army asked RAND to do was to lay out a set of plausible situations thirty years from now. The Army would then be in a position to assess how today's molecule (doctrine) would fare in those situations and what concept(s) might fare better across that range of plausible futures--a typical (and sound) approach to the problem of planning thirty years out.

As we wandered into the morass of potential futures, we were mindful of the necessity to focus on "molecule-relevant" futures.¹ That is, not all possible futures would require a different doctrine. But what futures would or might cause today's molecule to be unstable?

To answer this question we turned to a Delphi experiment. We hoped the Delphi would elicit expert opinion on a very specific issue, which described in terms of our metaphor would go something like this: What kinds of light drive the kind of molecule (i.e., dictate the kind of doctrine) that is most appropriate? What are the major lights that determine what molecules will "survive?" If we could get at those lights, we could then concentrate our attention on the potential changes in those lights thirty years into the future. Call this the "light-centered" approach. It focuses on identifying critical environmental conditions and then monitoring them to identify changes that could undermine the validity of the doctrine.

¹For a more complete discussion of "decision-relevant" forecasting see L. G. Chesler and B. F. Goeller, *The Star Methodology for Short-Haul Transportation: Transportation System Impact Assessment*, The RAND Corporation, R-1359-DOT, December 1973.

We worried that asking the question directly would produce responses that were focused too much on today's bright and changing lights (technology, the Iran/Iraq war, etc.). We also wanted to understand the slowly changing lights to which we have become accustomed (NATO, bipolar superpowers, etc.) . . . that, in thirty years, could change dramatically and seriously affect today's molecule. To get at all of these lights, we set the Delphi participants up with an artificial situation:

The year was 2018 and they had been asleep for the last thirty years. All they knew of the world was that a major war had not seriously disrupted both the world and Army doctrine. Their task was to guess what Army doctrine looked like, and the only thing they could know about the world situation was what could be gleaned from ten questions whose answers had to be "yes" or "no."

We asked each participant to produce a list of ten questions. By denying them knowledge of the world for thirty years we hoped to focus them on all of the important determinants of Army doctrine.

A word of caution is in order before proceeding. The Delphi we ran was experimental in nature. In attempting to get a quick fix on key issues affecting the evolution (or revolution) of future Army doctrine, we opted to limit the Delphi both in scope and in number of respondents. The results presented here reflect the responses of fewer than twenty people: RAND researchers working on Arroyo projects and Army fellows at RAND. The respondents do not (necessarily) represent a complete cross-section of experts on military issues, let alone on doctrinal considerations. We caution the reader not to draw concrete conclusions about the relevance of the issues identified by our sample but, rather, to use it as we have---as a means of quickly reducing the large number of plausible issues to a more manageable number for further analytic work. Also, for now, we will drop the metaphor in our descriptions and pick it up again after describing the Delphi.

THE DELPHI - ROUND #1

The thirteen respondents to round #1 provided us with 130 questions about the world in 2018. Mildly surprising were the number of questions relating to national will and the paucity of questions focused on technology--the artificial situation we put the respondents in seemed to be working.

Many of the questions were similar and could be roughly grouped together. We did this and the results are attached as Appendix A. In classic Delphi fashion, we then returned to each participant the list of 130 questions that were received in the first round and asked them to submit a revised version of their questions.

THE DELPHI - ROUND #2

The returns from the second round differed in two distinctive ways from those of the first round. In one respect, the questions became longer and more general. Apparently the list of questions was used as a "checklist" by the respondents. Many modified their questions to include issues others had raised. Looking across the responses, we found that the groupings of those questions became more pronounced--some of the smaller groupings essentially disappeared or were absorbed into larger groupings and the larger groupings broadened and received more attention.

As such, we had what we had originally been after--nine broadly defined elements or categories, identified as the most important determinants of the future environment relevant to Army doctrine. We also had a good sense of the important issues within each of those broad categories. Table 1 summarizes the categories and their basic issues.

What we found slipping away from us was a sense of *why* these particular categories were the most important determinants of the future of Army doctrine. We decided to use the third (and final) round of our Delphi to delve further into this question. For this round we asked the participants to do two things with their second round responses: 1) roughly order them in terms of importance, and 2) add to each question a sentence or two describing *why* (as opposed to *how*) a response signaling the change implied in the question would affect Army doctrine.

Table 1

BASIC DOCTRINAL DRIVERS

CATEGORY -----	BASIC ISSUES -----
1. Alliances	Existence Changes
2. Force Deployments (U.S.)	Location Role
3. Other International Factors	Political Relationships Economic Conditions
4. Superpower Relations	Who Changes
5. The Threat	Location Type
6. National Will	Support for technology Support for employment of force
7. Internal Army Issues	Personnel: Pool, Training Institutional: Joint, DoD Capabilities: Intell, Lift
8. Nuclear Reductions/Treaties	Use Proliferation/Reductions Deterrence
9. Technological Advances	Breakthroughs: intelligence, mobility, firepower, lethality Effect: on war/combatants

THE DELPHI - ROUND #3

From the third round we were now able to rank the issues by relative importance. These rankings gave us our first interesting insight from the Delphi. Our analysis was admittedly crude (in recognition of the paucity of data). We arbitrarily divided the rankings for each respondent into two halves and worked with those halves. Table 2 summarizes the rankings. The left-hand column lists

the nine categories. The middle column shows the percentage of respondents identifying the category among their ten questions. The right-hand column presents the percentage of respondents ranking the category in their top five.

Although we would not place a lot of value on the absolute percentages at this stage, they are revealing in a gross sense. For example, of the nine categories one might argue that the Army has the most relative influence over two: internal Army issues and technology. Each of these two categories was included in the list of ten questions by a majority of the respondents (62 percent and 77 percent, respectively). But neither category received high priority rankings. Only 38 percent of those identifying internal Army issues rated them in the top five. And the percentage for technology is even smaller--27 percent.

Table 2

RANKING THE BASIC DOCTRINAL DRIVERS

CATEGORY -----	% OF RESPONDENTS -----	% RANKING IN TOP 5 -----
1. Alliances	77	45
2. Force Deployments (U.S.)	62	64
3. Other International Factors	77	55
4. Superpower Relations	46	83
5. The Threat	77	69
6. National Will	85	37
7. Internal Army Issues	62	38
8. Nuclear Reductions/Treaties	77	37
9. Technological Advances	77	27

The other categories are things over which the Army generally has little or no institutional control. Of these, the three with the highest ranking (force deployments, superpower relations, and the threat) might be said to identify the threat facing the United States for which the military must be prepared.

The respondents, then, seemed to feel that the Army would not have much control over the events that might require it to change its doctrine. This is neither surprising nor does it indicate that there are no steps the Army can take in preparation for changes that could come. On the other hand, it must be a sobering thought to a military establishment generally trying to be aggressive and high-technology oriented in its quest to fulfill its national roles and missions.

The second interesting insight from the third round of the Delphi came from the connections the respondents identified between their ten questions and changes in Army doctrine. In general, respondents connected their questions with doctrinal changes by first describing something about their understanding of the doctrine itself. One respondent gave it to us directly by describing what he thought were the basic assumptions on which AirLand Battle doctrine rested and how his questions related to potential changes in those assumptions. This notion led us to invert our focus.

In terms of the metaphor, what we were led to is what any good chemist would have been led to almost immediately: While one could experiment with lights and the current molecule to determine which lights had what effect on the molecule, it would be more efficient to start with what was known about the "atomic structure" of the molecule itself. If one knew the atomic structure of the molecule one would have direct information about the kinds of forces that would be likely to alter it. Call this the "molecule-centered" approach.

IV. INVERTING OUR FOCUS

Why is this "molecule-centered" approach better than a "light-centered" approach? It appears to get directly at why the molecule should (or must) change. To illustrate this we need to have some notion of an atomic structure of the AirLand Battle "molecule." Appendix B gives a rough compilation of the kinds of assumptions about AirLand Battle that the respondents provided in their reasoning for the third round. A more tractable example of an "atomic decomposition" of AirLand Battle doctrine comes from one of the participants.¹ In his thinking, AirLand Battle:

1. Is focused on large military operations (beyond skirmishes),
2. Is more applicable to European terrain and climate than those for open desert, dense jungle, arctic, high mountains or islands,
3. Assumes an organized, modern, comparably equipped enemy rather than an irregular or insurgent force,
4. Assumes a rough balance of force or capabilities instead of facing a vastly superior or inferior force,
5. Presumes that the Army will be politically, socially, economically, and logistically supported in such campaigns, and
6. Presumes that the dominant means for war will remain much as they have been over the past fifty years: armor, infantry, artillery (perhaps missile-augmented), and tactical aviation (with a heavier rotary-wing component).

With this decomposition, it is now possible to discuss two different ambient light conditions thirty years from now--one that is

¹This example unfairly assumes that the author intended it as an atomic decomposition (which he did not). Nonetheless, it is this example that stimulated our thinking about atomic decompositions and serves here as a useful example of such.

dramatically different than the conditions of today, but that has little effect on the molecule of AirLand Battle doctrine; and the other that is different in only one major particular from today's conditions, but that would seriously effect the molecule.

In the first case, without explaining how the world changed, consider the following world in 2018: Our major alliance is with countries on the Pacific rim (China, Japan, South Korea, the Philippines, etc.). NATO and Southwest Asia are significantly reduced in terms of our concern. Our major troop and materiel deployments are on the China-Soviet and North Korea-South Korea borders. The Soviet Union is still the primary threat to peace in the free world and there is still general agreement that we must be wary of the Soviet bear. The world's arsenals and force structures are similar to those in 1988--there are plenty of anti-tank missiles, but also plenty of tanks with reactive armor and anti-tank missile defenses. Weapons are generally smarter, but so are the defenses. Nuclear weapons are a reduced threat, but not absent in the theater. And so forth. In other words, there have been dramatic changes in the world of lights. They have changed color, intensity, source, coherence, etc., but the overall effect on the molecule is very little, because these particular changes in light have not affected the atoms of our molecule.

The second case is a world much like that of today with one important exception: the U.S. domestic political consensus no longer sanctions the commitment of U.S. forces for overseas conflicts. That is, there is a serious change in one of the light sources. This will cause a change in the ambient light situation apart from the original (rather isolated) change, but however the ambient light conditions change, the molecule of AirLand Battle doctrine will no longer be stable, because one of the atoms of which it is built has been destroyed. This somewhat isolated change in the ambient light would strike right at the heart of the atomic structure of the molecule and change it instantly from a stable to an unstable one.

In this way, the "molecule-centered" approach to the problem helps distinguish between those changes in the world that are most likely to affect the molecule and those that are not. They do not necessarily

indicate how the molecule should or will change, but rather they indicate the changes that make it unstable (and thus, inappropriate) in the altered world.

In another way, the "molecule-centered" approach gives greater focus to changes in the world that cumulatively have an important impact on the molecule. For example, it may be that several subtle changes in the world could lead to the Soviet Union having a significantly inferior force in comparison with NATO by the year 2018. By knowing that this (altered) force ratio is an important element in the AirLand Battle molecule, it is clear *why* that particular world--caused by small changes in a variety of lights--is important to highlight.

In all of these musing there is the implicit assumption that the "atomic decomposition" of AirLand Battle doctrine is known or knowable.

V. ATOMIC DECOMPOSITION OF AIRLAND BATTLE DOCTRINE

For now, we are proceeding on the assumption that the atomic decomposition of AirLand Battle is both knowable and useful. To be knowable, it must be possible to come to a consensus on the assumptions on which the doctrine rests. We are confident from the remarks in Appendix B (which is an extraction of the connections between issues and changes in doctrine, including assumptions about ALB, identified by the respondents in round three) that we could come to a consensus on a set of assumptions that underlie AirLand Battle doctrine.

To be useful, it would be nice to find an historical instance that could be described in terms of a change in one of the atoms of an atomic decomposition of a previous doctrine. To test that assumption we looked at a TRADOC history of developments in Army doctrine between 1973 and 1982.¹ It became clear from that exercise that there are two types of doctrinal changes one could pay attention to: those necessary to "correct" the doctrine and those necessitated by changes in the doctrine's underlying assumptions. One sees evidence of both in the TRADOC history, particularly with respect to the so-called doctrine of Active Defense published as FM 100-5 in 1976. In the ensuing debate several questioned the aptness of the doctrine *per se*. Some said that insufficient attention was paid to the offensive, others questioned the efficacy of concentrating on the "first battle," and still others criticized the lack of a tactical reserve. All of these can be said to be complaints about the aptness of the doctrine in meeting its assumed threat.

On the other hand, "[I]f the...doctrine of 1976 was to prove vulnerable on any point, it was one based on a scenario that may already have ceased to be realistic by 1976: the classic massed armor

¹Romjue, John L., *From Active Defense to AirLand Battle: The Development of Army Doctrine 1973-1982*, TRADOC Historical Monograph Series, Historical Office, United States Army Training and Doctrine Command, Fort Monroe, VA, June 1984.

breakthrough as the assumed Soviet operational maneuver."² Here was the change we were looking for. The Active Defense had as one of its major tenets (atoms) that the primary operational tactic would be an attack on very narrow fronts in great depth with massed firepower in the breakthrough sector. This was supposedly "deeply ingrained in the Soviet Army." But between 1974 and 1976, Soviet literature and operational exercises pointed to a major shift in Soviet operational concepts. The new concept appeared to concentrate on multi-pronged attacks by regiment-sized units reinforced with armor across the entire battlefield seeking holes and weakspots. This much more maneuver-oriented tactic was disastrous for active defense concepts and it was clear that Army doctrine needed to change. *How* it should change was a matter of much subsequent debate. Our interest here is how it became clear *that* the doctrine should change. In terms of the metaphor, one of the "atoms" of active defense was that the main threat was a massed armored assault. Apparently Soviet concern about anti-tank-guided missiles as used in the 1973 Mideast War caused them to change their military literature and operational exercises to a more maneuver-oriented assault tactic, destroying one of the atoms of active defense molecule and the molecule along with it. A new molecule was needed.

Along with our feeling that an atomic decomposition of AirLand Battle is achievable, this historical evidence that such a decomposition can point to the need for changes in such a doctrine is enough to convince us that such a decomposition of AirLand Battle doctrine is the appropriate next step.

²*Ibid.*, p. 16.

Appendix A

DELPHI QUESTIONS FROM ROUND #1

SUPERPOWER RELATIONS

- Are the U.S. and the USSR still the only superpowers?
- Have any of the world superpowers militarily confronted each other within the last 15 years?
- Does superpower conflict exist?
- Is the United States a superpower with economical or ideological interests which are in conflict with another superpower?
- Have there been fundamental changes in East-West Competition?
- Do the United States and the USSR still have a highly antagonistic relationship?

OTHER INTERNATIONAL FACTORS

Political

- Has the United Nations or a similar world governing body developed sufficient stature and support to significantly influence the military activities and national policies of the superpowers?
- Do there exist new, strong, and active political movements in the world (such as the rise of the Islamic reformation thirty years earlier) and do we understand them?
- Have there been fundamental changes in tension between north/south or developed/underdeveloped?
- Has the proportion of states hostile to the West increased?
- Are there other economic/political relationships that we or our allies (1988) have entered into that changed our national interests?

- Has the Arab/Israeli conflict been essentially settled (i.e., no more hostility than between the United States and the Soviet Union in 1984)?
- Are China and the USSR still engaged in an antagonistic relationship?
- Has stability at last come to the Persian Gulf area?
- Has any significant new power center emerged (e.g., superpower Brazil)?
- Is the Army actively involved in securing the Mexican or Canadian borders against illegal immigrants, drugs, or equal threat?

Alliances

- Do we and our adversaries respectively still comprise basically the same set of alliances as we did in 1988?
- Have there been fundamental changes in alliance/coalition arrangements?
- Are we allied with a greater proportion of nations than in 1988?
- Is there still a NATO with about the same military contribution from each country as in 1988?
- Does NATO exist?
- Does NATO or some new form of friendly alliance still exist as an entity that functions at least as well as it did thirty years ago?
- Is NATO a more effective force (military and political) than in 1988?

Force Deployment

- Are United States forces deployed in the territories of any allied nation to help ensure their security?

- Are United States forces occupying the territories of any potential adversary to protect national security or other interest?
- Do we have large military presence commitments anywhere around the world (large meaning more than a division-sized presence)?
- Are there more than 50,000 U.S. Army troops in what is (in 1988) NATO Europe?
- Are there more than 5,000 U.S. Army troops in Korea?
- Are there more than 10,000 U.S. Army troops in any country outside of current (1988) NATO countries, where there were fewer than 100 in 1988?
- Are major U.S. forces still forward-deployed in Europe?
- Are major U.S. forces still forward-deployed in the Pacific?
- Does the U.S. Army have a military force in excess of 150,000 men stationed overseas?

Other

- Will China become a major military force?
- Does China have the ability to militarily project and influence major events 1000 miles beyond its borders?
- Has another nation emerged (earth or beyond) that is militarily equal to or stronger than the United States or the USSR?
- Will the Soviet Union withdraw from Afghanistan?
- Will Iraq win the war against Iran?
- Is the percentage of nations involved in armed hostilities greater than 20 percent?
- Is the Arab/Israeli dispute still at the boil?
- Is the United States's percentage of World Gross Product less than 25 percent?
- Is our importation of raw materials greater than 70 percent?
- Has there been a major depression (i.e., not as great as 1930s, but greater than anything else since 1930s) in the world?

- Is the United States economy stable (as compared to 1988)?
- Has the growth in the world's population been contained?
- Is the world population greater than 8 billion?
- Has petroleum (including synthetic fuel sources) become a precious commodity?
- Does the U.S. and the rest of the world still depend on fossil fuels to meet our energy requirements?
- Is our importation of raw materials greater than 70 percent?
- Has there been a major famine (e.g., Ethiopia for most of the African continent) anywhere in the world?
- Has the relative economic position of the United States with respect to the rest of the world significantly degraded?

U.S. VALUES/NATIONAL WILL

- Are today's value standards still in effect?
- Does the United States consider itself the world's policeman?
- Do the American people still feel the need for and accept the use of military force for defense and to meet other national objectives?
- Has there been significant progress toward bipartisan consensus for U.S. foreign policy?
- Will the United States use military intervention in the middle east?
- Will the United States use military intervention in the western hemisphere or any third world country?
- Would American society support a ground conflict?
- Has the attitude against the loss of any U.S. lives changed over the last thirty years?
- Does the military currently have U.S. national support in the general population, Congress and the administration?
- Is there internal strife in the United States that brings the validity or the ability of the government under question?

- Will right wing politics become prevalent in the United States?
- Has space exploration/colonization happened?
- Has the United States significantly reduced the scope of its vital interests and security guarantees around the world?
- Has there been any significantly adverse shift in U.S. domestic attitudes toward the use or value of military power?
- Has the U.S. security focus on Central Europe significantly declined?

THE THREAT

- Has an answer been found to counter terrorism?
- Given that we have coexisted peacefully with the Soviets and there has been no war fought in Europe for over seventy years, do our military planners now feel that any potential conflict in which we are likely to become involved would be as a result of economic or population pressures elsewhere in the world?
- Is state or institutional (i.e., Islamic Revolution) terrorism frequently used against the United States? By "frequently," I mean often enough that the American people feel a need for military protection from terrorism.
- Is the Soviet Union still the major threat to our security?
- Is there a reasonable chance of a major war in Europe?
- Has terrorism continued to be the weapon of choice against the United States?
- Is the Soviet Union still considered a major threat to U.S. interests?
- Is Mexico considered a threat to U.S. interests by 25 percent or more of the U.S. population?
- Is it more probable that if the United States is involved in land combat that this combat will be on its own rather than another nation's soil?

- Has the USSR or any other country developed a "Blue Water" seapower capability to support overseas operations equal to or greater than that of the U.S.?
- Has international terrorism significantly increased?

NUCLEAR/CBR ISSUES

Use in Conflict

- Have nuclear weapons been exploded on the battlefield?
- Have nuclear weapons been employed in any conflict?
- Have chemical weapons been used by the superpowers in combat?
- Are chemical and/or biological weapons likely to be employed by our adversaries?
- Has there been any use of a nuclear device in conflict?

Reductions/Treaties

- Has significant nuclear disarmament happened?
- Has the nuclear arsenal of the east and west been significantly reduced?
- Is total nuclear disarmament probable?
- Have the U.S. and the Soviet Union agreed upon nuclear weapons disarmament?
- Have specific weapons advances or treaties made nuclear, chemical, or biological weapons obsolete?
- Has there been an arms control agreement leading to a reduction in nuclear warheads of 50 percent or more on each side?
- Has a major strategic arms reduction agreement been signed and implemented?
- Are there theatre nuclear weapons?
- Are there tactical nuclear weapons?
- Are there more than 1,000 strategic nuclear launchers in the world?

Proliferation

- Has nuclear weapon proliferation elsewhere become a significant threat to world or regional stability?
- Are there more than five nations with active nuclear strike capability (more than 50 launchers)?
- Do more countries besides the United States, USSR, China, the United Kingdom, France, and Israel now possess nuclear arsenals?
- Has there been any significant degree of nuclear proliferation?

Other

- Is deterrence still underwritten by Strategic Nuclear Forces?
- Is there a reliance upon Intermediate range Nuclear Forces?
- Has the role of nuclear weapons in the U.S. security posture changed significantly away from military uses?

MILITARY ISSUES

Interservice

- Are there still four services?
- Have there been significant changes in Office of Secretary of Defense, Joint Chiefs of Staff or service roles in policy formulation, operational matters, and support responsibilities?
- Has the "U.S. Space Force" developed into a separate service equal in stature to the U.S. Air Force of 2018?
- Have the separate branches of the services been consolidated into a joint service?
- Is the Air Force capable of adequately supporting a major deployment of Army troops overseas in terms of airlift capability and air superiority?

U.S. Army

- Has the U.S. Army been involved in any significant military actions?
- Will we continue to have an all-volunteer Army?
- Does the U.S. Army have a force numerically equivalent to (+ or - 10 percent) or greater than the U.S. Army force of 1988?
- Is the Army designed to fight a large war and a small war (one-and-a-half wars)?
- Is the Army equipped and manned to support its mission and doctrine?
- Have the functional and operational structures of the Army been substantially altered?
- Are the doctrine's tenets linked to the principles of war?
- Is the Army's mission and doctrine in balance with national military strategy (e.g., does adequate strategic lift exist)?
- Have the rules of land warfare (e.g., The Geneva Convention) changed substantially in the last thirty years?
- Are we in a position to exploit our ideologies when combating soldiers of an oppressed nation?
- Have we been training our people to be representatives of our ideology around the world for the last thirty years?
- Has the number of qualified military age males significantly decreased?
- Has the Army consistently obtained and retained quality personnel in requisite numbers?
- Is the demographic make-up of the Army significantly different from 30 years ago?
- Has U.S. Army manpower been reduced by 25 percent or more, compared to 1988?
- Has timely transportation of manpower and materiel to any area of potential conflict ceased to be a constraining factor?

- Does our national intelligence-gathering capability allow us to obtain complete and pertinent intelligence about our adversaries weapons and intentions?
- Can a division deploy from Conus to Europe in less than three days using surface ships?

TECHNOLOGY

SDI

- Has the U.S. deployed a working space-based Strategic Defense System?
- Have we fielded an effective (greater than 85 percent) Strategic Defense Initiatives program?
- Will the Star Wars project be successful?

Other

- Have robotic systems been fielded that generally replace soldiers for many dangerous battlefield applications?
- Have there been substantial technology breakthroughs in firepower, mobility, and C³I?
- Have there been any technological advances that changed the nature of warfare such as:
 - Tanks that produce their own "munitions" (therefore sustainability not an issue),
 - Hand-held effective antiarmor weapons,
 - Autonomous robotic people killers, etc.?
- Is it true that technology has reached the stage that if you are seen on the battlefield you are dead, and it is highly likely that you will be seen?
- Has technology significantly changed the nature of conventional warfare (e.g., reliance on unmanned ground combat equipment or SDI)?

- Has the role of land combatants been obsolesced by technological advances in weapons?
- Have there been any significant technical breakthroughs in ground warfare?

Appendix B

ASSUMPTIONS RELATING ISSUES TO DOCTRINAL CHANGES

1. SUPERPOWER RELATIONS

- ALB is Eurocentered; if United States and USSR aren't major contenders Europe may not be appropriate focus
- if not in conflict with another superpower could rely on lighter armies
- affects mid- to high-intensity

2. ALLIANCES

- relates to available resources and forward deployment
- relates to prioritization of resources
- change in threat or change in force structure
- coalition strategy

3. THE THREAT

- location: if not Europe, ALB not relevant
- type: effect on role, mission, intensity, Low Intensity Conflict, capability (perhaps enhancing the importance of unconventional forces and intelligence gathering)

4. NUCLEAR REDUCTIONS/TREATIES

- use: ALB doesn't address countering use
- proliferation: if yes, SDI; if no, conventional force, force structure, and funding should take priority
- treaties: affects concept of extended deterrence and utility of conventional ground forces

5. INTERNAL ARMY ISSUES

- doctrine depends on manpower and basing and size and citizen versus professional soldier
- institutional status of various tasks
- DoD: joint service could imply changes in force

employment strategies

- changes in lift and intelligence capabilities:
effect on length of warfare, kind of military forward
deployed (ALB assumes enough force to hold while high
technology does the rest)

6. TECHNOLOGICAL ADVANCES

- single service land combat element; ground combat obsolete
- improvements in C³I
- affects combat, employment flexibility, resource
implications for personnel
- devote resources to combat support
- may not need deep fires
- new concept of warfare

7. NATIONAL WILL

- affects coalition warfare, funding, employment of
force, force structure, capabilities, and defensive
doctrine
- affects mid-high intensity
- narrowing definition of national interest

8. OTHER INTERNATIONAL FACTORS

- economic: coalition warfare
- political: low-mid level requirements

9. FORCE DEPLOYMENTS

- mobility
- light forces
- sheds light on U.S. commitments and priorities