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Asian Security Challenges—Planning in the Face of Strategic Uncertainties
Volume 2—Appendices

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13. ABSTRACT *(Maximum 200 words)*

This two-volume report describes an improved approach to DoD strategic planning and net assessments in the post-cold-war security environment in Asia. Drawing in part on business-planning concepts, the approach is built around the concepts of strategic intent, shaping the security environment, adaptive strategies, and military core competencies. This volume contains appendices on business-planning concepts, military core competencies, and detailed net assessment techniques.

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GLOSSARY OF TERMS

William A. Cockell, Jr.

Introduction

The succeeding pages provide a glossary of terms used in the research discussed in this report. The definitions used particularize the terms to the Asian environment, and explain how the concepts are employed in the context of that environment. Emphasis is on terms and concepts which are not commonly understood or which may have a somewhat different meaning in the context of this report. They are working definitions, designed to aid researchers and analysts in understanding the inter-relationships among the terms used and, where appropriate, to explain differences between the business-planning usage of key terms and their employment in national security planning.

Terms printed in the text in bold-face type are defined elsewhere in the glossary.

The glossary is followed by several graphics displaying the interrelationships among key terms.

Key Terms and Concepts

Adaptive Planning. In the context of military planning, an approach which pre-plans a reasonable number of plausible operational options in ways that enable them to be adapted easily for use in specific contingencies.

Adaptive Strategy. A national security strategy which is structured to facilitate change or adaptation in order to respond appropriately to changes in the regional strategic environment. The objective is to stay inside a competitor's timelines in order to react more quickly than he can in reshaping his strategy to gain competitive advantage. This approach assumes that objectives and strategies

will change as the environment changes and formulates strategy in ways that facilitate adaptation. Adaptive strategies, by providing choices to the policy maker, can reduce decision time in contingencies and help illuminate the essential differences among competing alternative strategies. The U.S. government is increasingly turning to adaptive strategies to help deal with uncertainties and surprises in the strategic environment. In this regard adaptive strategies can be particularly helpful in achieving U.S. strategic intent by adapting U.S. objectives, policies and military forces to new conditions as they emerge; influencing the future; and maintaining options to deal with those challenges that actually appear. In this regard, see also the discussion of **adaptive planning, challenge, contingency, military core competency, military-technical revolution, mission capabilities, security strategy, shaping the strategic environment,** and **strategic intent.**

Assessment. In the context of Asian strategy, the process of identifying the most serious potential challenges to U.S. interests in the region; the evaluation of U.S. strategy, forces, organization, operational concepts, basing, and deployment trends in terms of their adequacy to meet these challenges; and the identification of problems, issues, and policy matters requiring attention at the secretary-of-defense/CJCS level. Asian assessments rely on the concepts of **military core competency, strategic intent, mission capabilities, challenges** (in lieu of "threats"), and the notion of **shaping the security environment.** The relationship among planning concepts used in developing an Asian assessment is illustrated in the graphic in Figure A-1.

Balance of power. See **power balance.**

Campaign planning. The planning of military operations at the strategic or operational level, usually joint and often combined in structure, and typically aimed at achieving decisive military results within a commander's functional or geographic area of responsibility. Campaign planning requires the development of a clear **operational concept** to guide it and an appreciation of enemy **centers of gravity** for detailed targeting and the assignment of priorities to component commanders and staff planners.

Centers of gravity. Those of an enemy's facilities, forces, infrastructure, war-supporting industry, military organizations, leadership, command and control, etc., that are key to the enemy's ability to function as an organized society and conduct successful military operations. Centers of gravity are usually classified as either strategic or operational in military effect and are typically prime targets in **campaign planning.**

Challenge. An action or development with the potential to harm or interfere with U.S. **national security interests.** Under ordinary circumstances an aim of U.S. strategy would be to avoid, prevent, or dissuade the posing of challenges; or, if that fails, to mitigate the effects of such challenges or eliminate the challenge. *National security challenge* replaces the traditional concept of "threat" in what is likely to be a more amorphous and loosely structured regional strategic environment in the future. U.S. actions to **shape the strategic environment** are aimed, in part, at preventing the development of serious challenges to the United States while they are still tractable. Challenges may be political (e.g., revanchist actions); military (e.g., proliferation of advances weaponry); or economic (e.g., disputes over access to natural resources). Challenges may give rise to **contingencies** affecting U.S. interests if they are not appropriately controlled in their incipient stages. The concept is a relatively new but potentially promising one in the changed Asian environment with its less clearly defined competitions and alignments. The method used to derive potential challenges to U.S. security is illustrated in Figure A-4.

Concept of Operations. See **Operational Concept**.

Contingency. A not-implausible future situation that could affect U.S. security interests in some significant way. Contingencies are typically derived from **challenges** to U.S. security interests. Such challenges might include peacetime military competitions, shifts in regional power balances, internal instabilities in powerful nations, crises, use of military force, and wars. Examples of contingencies include North Korean acquisition of nuclear weapons; a Chinese attack on Taiwan; or prolonged instability in India, with China or Pakistan seeking to exploit it. The concept is related to the **contingency test bed** discussed below.

Contingency Test Bed. A proposed analytical method for determining the adequacy of U.S. **military core competencies, strategy, mission capabilities, forces, organizations, operational concepts, basing**, etc., for postulated Asian contingencies. Should the analysis indicate that some or all of these factors are not adequate, the test bed is then used to determine whether it is acceptable that the United States not be adequate in these contingencies (based on likelihood, or consequences for U.S. interests). If the answer is negative, the elements indicated above are changed to make them adequate in the given contingency; then the process is iterated as necessary to illuminate outcomes to the contingency that are compatible with U.S. interests. Thus the test bed is used primarily to determine the U.S. ability to deal satisfactory with stipulated contingencies and to facilitate **adaptive planning** by identifying those parameters which must be changed if the United States is to deal acceptably with these contingencies. The output of the contingency test bed can also be useful in highlighting for policy makers possible contingencies with which the United States cannot deal under foreseeable circumstances; or where the cost of dealing with them is grossly disproportionate to any benefits received. The application of the **contingency test bed** is illustrated in Figure A-2.

The following additional terms are used in connection with evaluations made with the contingency test bed: feasibility (a subjective estimate of the possibility of a specific contingency arising); necessary preconditions (those events that must occur for a given contingency to come about); severity of a challenge (a qualitative estimate of the potential importance to U.S interests of the challenge posed by a particular contingency); case (a variant of a contingency); variant (a version of a contingency to which relatively minor changes have been made, for the purpose of a sensitivity check or to serve some other analytical aim); scenario (a more detailed spinning-out of a contingency, describing a hypothetical series of events which might, in the real world, comprise a contingency); and model (a version of a contingency which can serve as a exemplar of a particular class or category of contingency, often national in character).

Core Competencies. See **Military Competencies.**

Forces, Organization, Operational Concept, Basing, and Deployment Trends. These terms are used in their customary sense, related to aspects of the U.S. military structure and operational capabilities. In the context of this report they represent DoD trends which (with the addition of core competencies) collectively provide the basis for assessment of the U.S. strategic posture in the Asian region, helping the military planner highlight problems and issues worthy of the attention of the secretary of defense and the chairman of the JCS. (See Figure A-3 for further detail.)

Hegemony. In the context of this analysis, the possession by a state of dominant power throughout a region or subregion. The dominance may be political, military or economic, though military hegemony is normally seen as a necessary reinforcing adjunct to either political or economic hegemony. In some cases hegemony may be jointly exercised by more than one state. The degree of influence exercised by the hegemon can vary significantly from case to case, depending on its relative power, its objectives and aspirations, and the general political-military-economic environment in the region. Avoidance of hegemony in the region is a critical element of U.S. **strategic intent** for Asia and would likely be the object of U.S. efforts to **shape the security environment** should a realistic prospect of hegemony arise in the region. (See also the discussion of **power balance**.)

Military Competition. A situation in which two or more states compete to gain a degree of military advantage relative to one another. The competition may take the form of an arms race; or it may be aimed at imposing high costs on a competitor who seeks to negate or nullify a particular capability possessed by a competing state. In most cases the aim is to shift the military balance in a way which favors one's own forces. The U.S.-USSR military competition in the post–World War II period is the classic model of a bilateral military competition that manifested itself in a variety of ways, including the quest for quantitative superiority in some areas, capitalization on U.S. qualitative advantages in important military technologies, playing on a competitor's strategic or doctrinal predisposition to cause him to take actions not in his own interest, and exploiting the strategic advantages and disadvantages imposed by geography. In the Asian context, military competitions can cause instability in the regional **power balance**, generate tensions with the risk of conflict, and prompt other regional

states to increase the resources devoted to military ends. Asian military competitions tend to be less focused on specific competitors and more likely aimed at increasing a state's relative power in the region as a whole. A prominent exception is North Korea–South Korea; and, earlier, USSR-China, where the competitions have had clearly delineated focus. (The U.S.-USSR global competition also had its Asian manifestations which not only involved the military forces of both countries, but also the interaction of the two superpowers with China, which had major implications for both the regional and the global **power balances**.)

Military competitions may also be relevant to efforts to **shape the regional security environment**.

Military Core Competencies. The fundamental building blocks of national military power, composed of capabilities which are aggregated to form the major elements of the U.S. ability to achieve its military objectives in war, and to **shape the strategic environment** in peace. The concept of core competencies is also key to exploitation of the **military-technical revolution** by providing a method for combining technologies, operational concepts, doctrine, military organizations, information processing, unit training, and personal skills in ways that allow the integrated employment of military forces and technologies in powerful new ways. In that regard core competencies are particularly adaptable to joint and combined warfare. Their natural constituency is at the same level as the secretary of defense, chairman of the JCS, and theater commander, where a global view is taken of military requirements and the competitive advantage provided by well-structured core competencies can be more readily understood.

Core competencies, by their nature, tend to be cross-cutting organizationally, drawing on strengths and capabilities spread throughout the Department of Defense.

Core competencies are often path dependent, founded on extensive experience, which makes it harder and more costly for competitors to duplicate, counter, outflank, or overtake (U.S. capabilities for carrier warfare are an example). In that sense core competencies can influence force postures, plans,

and actions of potential adversaries, discourage other countries from competing with the United States, impose major financial burdens on scarce resources if they do compete, and generally be useful in **shaping the security environment**. They are key for determining outcomes of military competitions, crises, and wars by enabling the Defense Department to remain unsurpassed in strategically important missions. They are typically things that the United States does well (like logistics), and that make a major difference in combat.

Core competencies apply to many missions, all the military services, and most major operational commands.

The principal value of the concept to military planners is that it provides a means to ensure that the United States has the best and most relevant military capabilities in future wars, and a way to assess the appropriateness of programmatic and budgetary priorities in peace. Since they tend to cross organizational lines, core competencies often require strong support by the Secretary of Defense if they are to survive the competition for scarce funding, sometimes in the face of indifference or even active opposition from the services involved. The concept of core competencies also plays an essential role in providing the **mission capabilities** needed to execute contingency and war plans.

Core competencies that are aggregated into a relatively small number to facilitate top-level management (i.e., to allow focus on those major issues of broad strategic import) are termed *nested core competencies.* While focusing senior officials' attention on these most important competencies, this approach also allows planners and analysts to consider richer and more diverse sets of core competencies at middle levels of the organization. This differentiated, multitiered approach to the management of core competencies is probably more realistic and likely to promote broader use of the concept—at a variety of levels —in the Department of Defense. In short, this approach to core competencies suggests that each level of a large organization may have its own set of core competencies, relevant to its particular sphere of activity and organizational responsibilities, with a relatively small but particularly important set of nested core competencies identified for use at the highest management levels.

Related concepts include **strategic intent** and **mission capabilities.**

Military-Technical Revolution. A concept which deals with changes in the nature of warfare brought on by the innovative application of new technologies which, when combined with major changes in military doctrine, employment concepts, or force structure, can fundamentally alter the character and conduct of military operations. Originally developed by the Soviet General Staff, the concept has received increasing attention in recent times in the Office of the Secretary of Defense, in particular, by the director of net assessment.

In the context of U.S. Asian strategy the concept of the military-technical revolution raises a number of issues. These include the specific considerations which would motivate regional powers to opt for high-technology weapons systems, C^3, sensors, or munitions; the effect which the military-technical revolution might have on ongoing or prospective **military competitions** in the region (which could involve extraregional powers like America as well); economic constraints which the level of the region's economies place on acquisition of high-technology systems (together with the infrastructure needed to employ and sustain such systems effectively, including reconnaissance, surveillance, information processing, systems integration capabilities, and targeting); the ability of national military R&D and industrial production bases to support the acquisition of high-technology systems with indigenous resources and at reasonable costs; the convertibility of the civilian manufacturing base to the production of high-technology weapons systems; and the aggressiveness of the Russian Federation as a seller of high-technology systems at concessionary prices.

Exploitation of the **military-technical revolution** also involves the availability of skilled manpower to operate and maintain high-technology systems reliably; bureaucratic and cultural obstacles impeding the doctrinal and organizational changes necessary to benefit from high-technology weapons; the effect of military style, perceived missions, traditional military roles, **operational concepts**, and civil-military relationships (including the politics of defense budgets) on attitudes toward high-technology weapons; the professional competence and institutional biases of the officer corps in the countries under examination; the utility of scaled-down, more affordable high-technology systems aimed at providing the acquiring country with predominantly defensive

capabilities that can be used to impede or frustrate the high-technology systems of competitors (including America) by exploiting known areas of system weakness; the effect on the regional **power balance** of extensive acquisition of high-technology weapons within the region (including major qualitative changes in **mission capability**, such as the acquisition of a power-projection capability).

Mission. The requirement to carry out specified military tasks like air defense in a designated geographic area, employing **core competencies** which have been particularized to the **mission**.

Mission Capabilities. The capability of forces to execute specific military missions (e.g., air defense of essential sea lines of communication) in specific times and places. The capability may have a specific geographical orientation to it (e.g., the air defense of essential sea lines of communication in the Pacific). **Military core competencies** are generally made operational through mission capabilities.

National Security Interest. A matter of major concern to the United States from the standpoint of the impact which it has on U.S. national security. An interest may be a relationship (e.g., membership in an alliance); a question of access (to markets, resources); or a matter of stability (of power balances, of regional security environments), among other things. U.S. **strategic intent** for a region is typically based on the identification of fundamental U.S. national security interests in the region, and the challenges—actual or potential—to those interests. Vital interests are ordinarily thought of as those which may warrant the active use of military force for their protection.

National Security Policy. A general term applying to policies dealing with national security issues, usually determined at the presidential level; not to be confused with **national security strategy** which is a comprehensive statement of U.S. global strategy for the advancement and protection of U.S. interests, using the several elements of national power (political, military, economic, informational, diplomatic, etc.) in an integrated way.

National Security Strategy. A comprehensive strategy to advance and protect U.S. **national security interests** through the concerted employment of

the various instrumentalities of national power, in cooperation with allied and friendly states, as appropriate.

Net Assessment. A series of analytical techniques designed to assess the relative military capabilities of competing countries, among other things. The decline of the bilateral U.S.-USSR military competition and the emergence of an Asian environment fraught with complexity and uncertainty requires a new, broader definition of net assessment, as discussed in this report. The recommended new definition emphasizes the evaluation of trends in U.S. **strategic intent**, capabilities to **shape the environment**, **adaptive strategies**, and **military core competencies** in terms of their adequacy for avoiding, mitigating, or meeting the full range of plausible **challenges** to U.S. **national security interests** that might arise in the future.

Objective. In traditional national security analysis, a desired condition or result supportive of U.S. **national security interests** which is achieved through the operation of **national strategy**. As the term is used in this report **objectives** consistent with the broader U.S. **strategic intent** are established for specific situations. See also **national security interest**.

Operational Concept. Also referred to as concept of operations. The scheme for employing one's forces to achieve defined military objectives. Military **missions** are executed through the vehicle of operational concepts, which address, in broad terms, how the missions are to be achieved in the context of hypothesized operational situations. Operational concepts also provide an essential foundation for **campaign planning** at the strategic and operational levels, and for integrating the identification of enemy **centers of gravity** into target planning concepts generally. Operational concepts should be consistent with regional strategies, resources, organization, basing, and support. The adequacy of operational concepts is one of several factors that can be tested in the **contingency test bed**.

Power Balance. The distribution of power within a region, a sub-region, or globally. The power balance is relative; it typically measures a nation's power in relation to that of other states in the balance. Power balances tend to be focused on military power, broadly defined to include not only

military forces and weapons but other measures of military potential such as war-supporting industry, access to and ability to employ high-technology systems, and a skilled and literate population from which the armed forces may draw personnel. The balance may also include such less quantifiable factors as the geopolitical relationships of which the country is a part (alliances and alignments, spheres of influence, military cooperation programs, etc.); force readiness; leadership quality; and economic power (including national infrastructure.) See also the discussion of **hegemony** and **sphere of influence**.

In the Asian context the maintenance of stable power balances has been an important part of U.S. **strategic intent** for the past century. From the early 1950s to the early 1990s, the power relationship among the United States, the USSR, and China comprised the main element of the regional power balance, with Japan viewed as an increasingly prominent, though still subordinate, adjunct to the overwhelming U.S. power in the region. With the fundamental alteration of the USSR-China relationship in the late 1980s and early 1990s, the dissolution of the USSR, and the decline in U.S. forces and base structure, the rate of change in the regional power balance has accelerated.

Rules of World Order. Those precepts of national behavior which much of the world community views as morally (and in some cases legally) binding on all states. Examples include unimpeded transit on the seas and in the air for all states; avoidance of aggressive acts; and basic human rights.

Security Environment. Key elements of the global, regional or sub-regional environment that impact on U.S. security interests, aggregated to provide a broad description of the environment in which U.S. **security strategy** and policy must function. The security environment also provides the context for the development of U.S. **strategic intent** for the region.

Security Strategy. Those policies and actions which are calculated, in the aggregate, to protect and advance U.S. **national security interests** globally or in a region consistent with the resources available for this purpose. Development and execution of security strategy take place within the postulated **security environment** and are derived from the U.S. **strategic intent** for the region. Security strategy is a dynamic concept, continually in a state of evolution

in response to the changing **security environment**, and reflecting perceived opportunities for the U.S. to **shape the strategic environment** in ways that are supportive of U.S. strategy and interests. Thus U.S. security strategy is a rolling guide to action, updated frequently to stay ahead of **challenges**, and using candidate strategies in the **contingency test bed** to test the relevance and likely effectiveness of changes in basic strategy and policy lines.

Shaping the Security Environment. See **security environment** and **security strategy.** *Shaping the security environment* typically refers to those steps which the United States takes in a region (or subregion) to cause the **security environment** to evolve in ways favorable to U.S. **national security interests**. U.S. actions under these circumstances may take many forms, including avoiding security problems through cooperative (combined) efforts; and actions to prevent the emergence of potential security problems. If problems nonetheless occur, the United States can attempt to dissuade adversaries or competitors from taking worst-case actions; persuade them to back off from inimical steps already taken; mitigate the regional effects of the action; or—if necessary—use forceful measures to deal with the situation.

The U.S. national security apparatus has relatively little experience in shaping the security environment in the manner described above; and much of that which has occurred has been reactive rather than proactive in nature. Measures to shape the security environment should be considered in detail when developing U.S. **security strategy** for the region, with a view to supporting U.S. **strategic intent** and protecting U.S. interests in a coherent and coordinated way that draws on the several elements of U.S. power. Instrumentalities available for use in shaping the security environment include diplomacy; the force of example; membership in or association with alliances and ad hoc alignments; economic cooperation; arms control measures; the deployment, exercise and basing of U.S. military forces; U.S. declaratory policy and principles; aid in nation-building; support to friendly nations in the areas of military planning, force employment, weapons acquisition, training and intelligence; foreign military sales; actions to curtail the spread or use of nuclear, biological, or chemical weapons; other arms transfer controls; imposing costs on potential or actual military competitors; sanctions against states which are aggressive or

threaten to destabilize key **power balances**; credible threats of U.S. intervention and actual intervention, involving U.S. forces or proxy and coalition forces.

In short, the concept of shaping the security environment implies the need for **adaptive strategies** reflecting a progression of steps aimed at avoiding; preventing; dissuading; mitigating; and, if necessary, eliminating challenges to U.S. interests.

Spheres of Influence. An arrangement—sometimes tacit—under which competing powers agree to limit the scope of their individual competitive efforts relative to a geographic region within which competition is going on. The resulting spheres of influence are regarded as the exclusive competitive domains of the powers to which they are assigned under the terms of the agreement. The concept typically applies to political, and sometimes economic, competition, though it may affect military and diplomatic efforts within the assigned spheres as well.

The practice of assigning spheres of influence reached its height in the late 1800s when the major European powers and Japan had extensive spheres in China, leading America (which lacked a sphere of influence) to press for an "Open Door" policy under which all nations claiming spheres of influence in China would provide equal treatment to all countries seeking to do business there, while respecting Chinese territory and governmental authority. In the twentieth century spheres of influence have existed, at various times, in Iran (Persia), the Arabian Gulf region, East Africa, territories of the former Ottoman Empire, parts of Eastern Europe, and Manchuria (Manchukuo), among other areas. **Sphere of influence** implies substantially less control over territory and governmental authority than the concept of **hegemony**.

Strategic Environment. See **Security Environment.** The two terms are essentially synonymous in the context of this report.

Strategic Intent. A vision of the future which the United States would like to see prevail in the Asian region. Strategic intent is based on U.S. security interests, which America seeks to protect and advance by the development of appropriate strategies. In this sense the concept of strategic intent provides a

broad thrust within which more situation-dependent plans of action can be developed, varying with time. Strategic intent forms the foundation for regional strategies, which spell out in greater detail how the U.S. interests reflected in the strategic intent can best be achieved.

Candidate statements of strategic intent might include sustaining major U.S. influence in Asian affairs; keeping others from using nuclear, biological, or chemical weapons; prevention of **hegemony** in regions important to U.S. interests; promotion of minimal **rules of world order**; maintenance of stable **power balances** in the region; and a regime of equitable trading relationships between America and major regional states.

Threat. In this report the traditional military planning concept of threat is replaced by the concept of **challenge** to U.S. **national security interests,** reflecting the more amorphous and less predictable nature of such challenges in the shifting and uncertain set of power relationships existing in Asia today (and probably over the next several decades). Moreover, **challenges** of diverse types, representing differing intensities of risk to U.S. national interests, may occur simultaneously. Threat, on the other hand, tends to suggest a single, focused challenge, often military in nature.

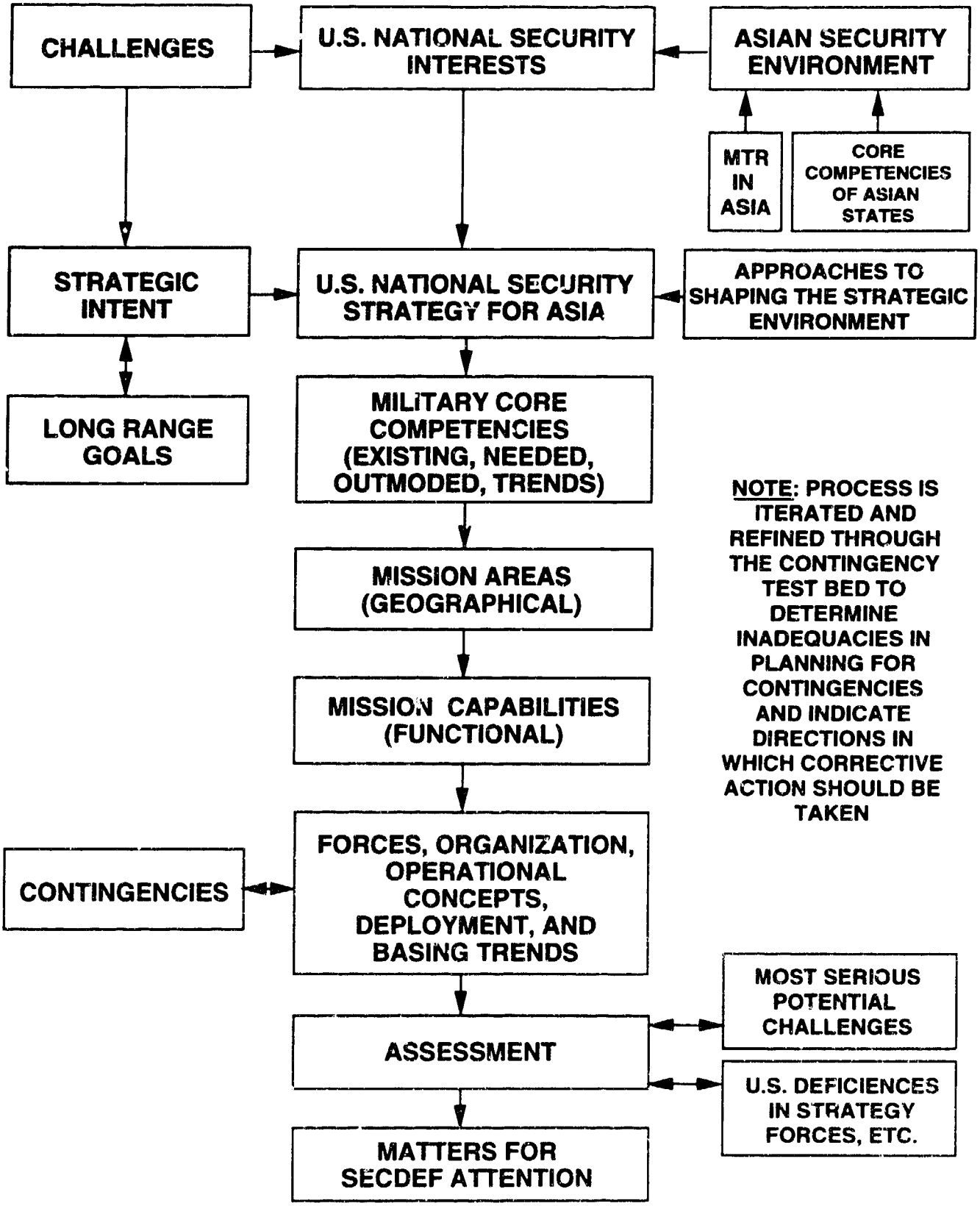


Figure A-1. Relation of planning concepts.

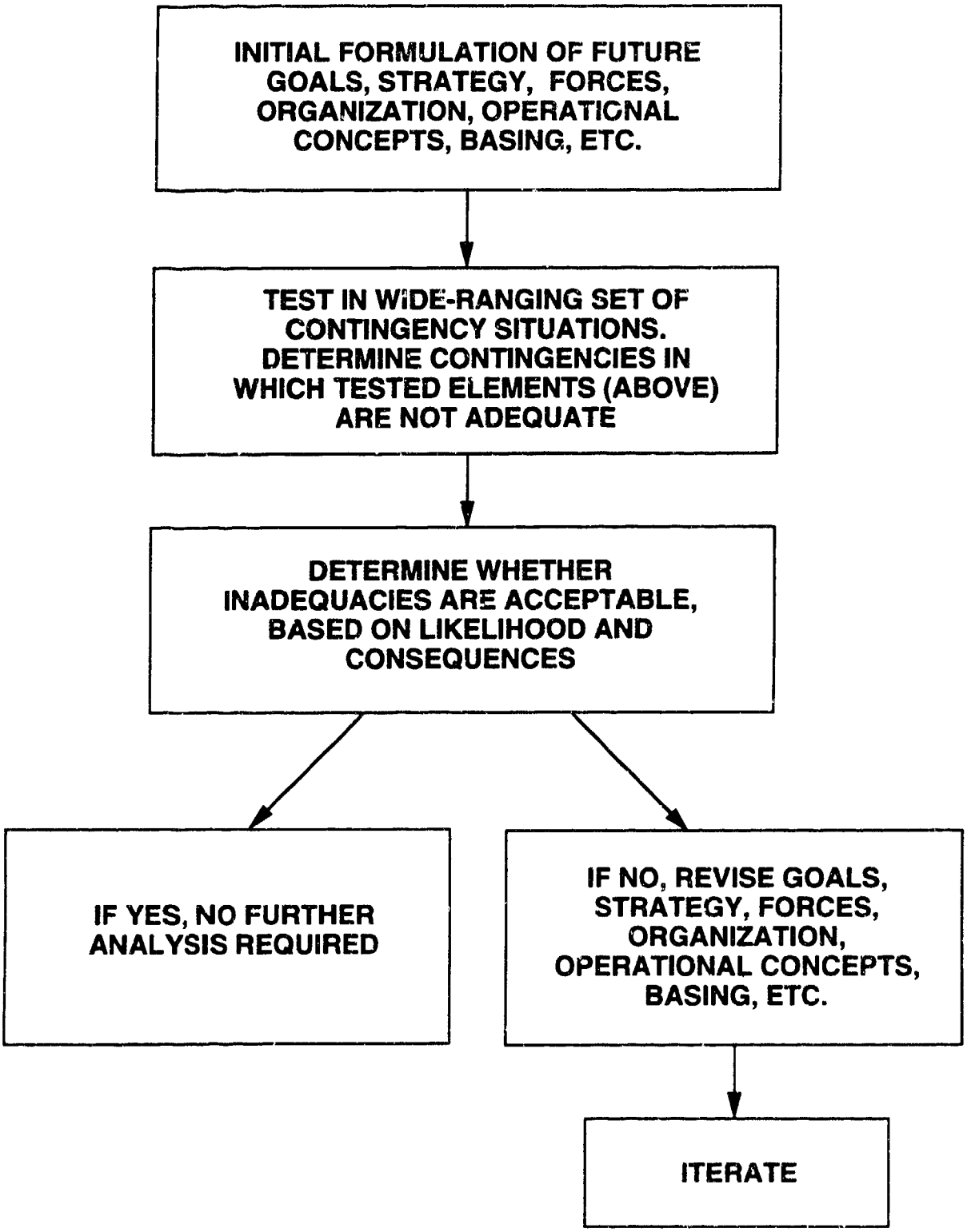
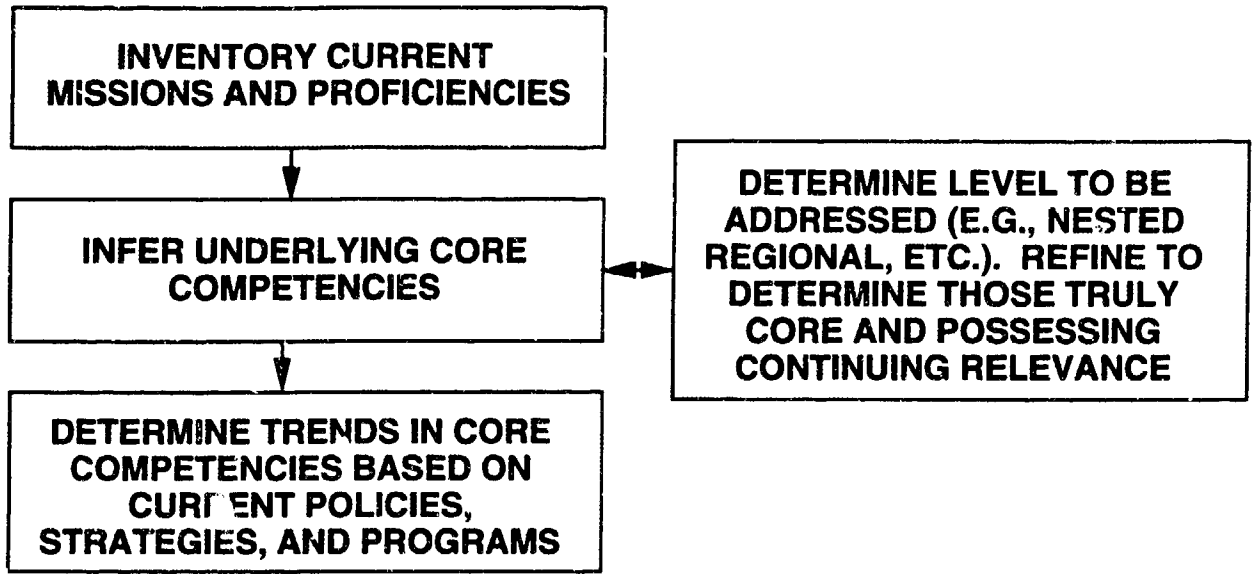


Figure A-2. Contingency test bed: method.

I. EXISTING CORE COMPETENCIES



II. NEEDED CORE COMPETENCIES

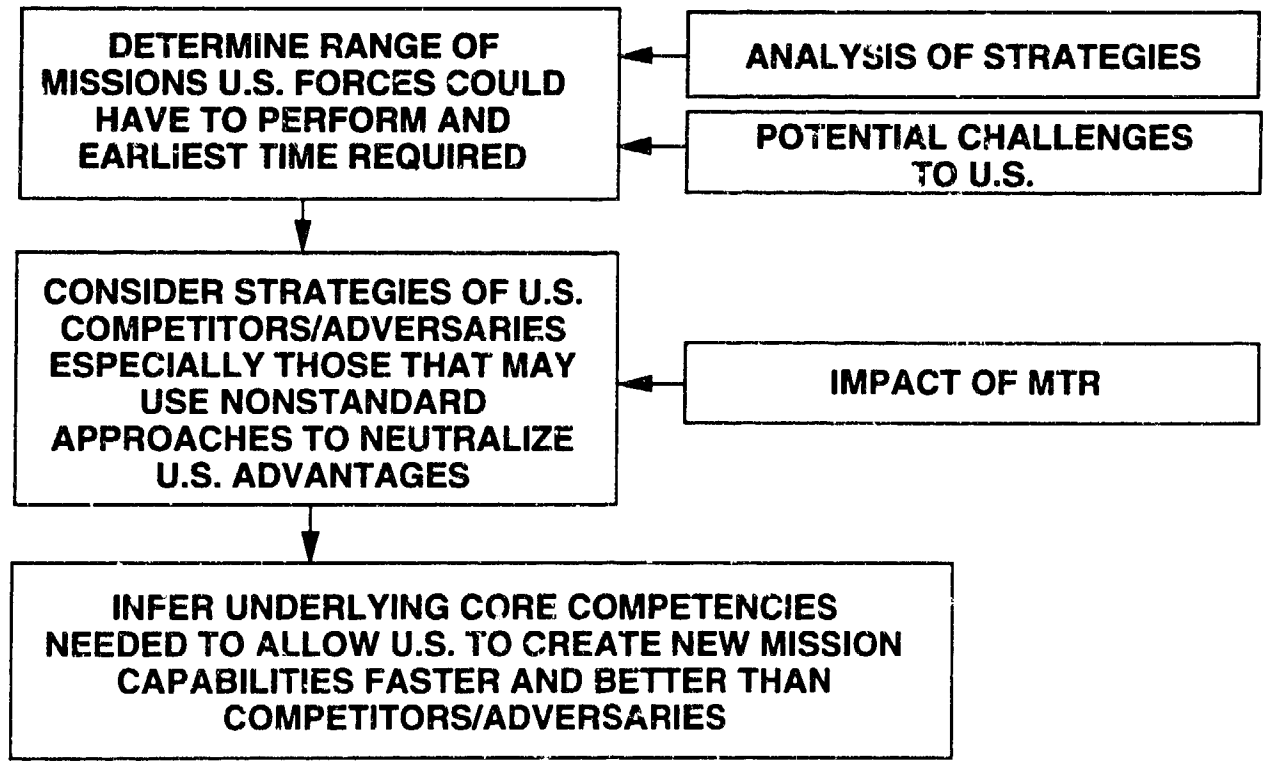


Figure A-3. U.S. military core competencies: method.

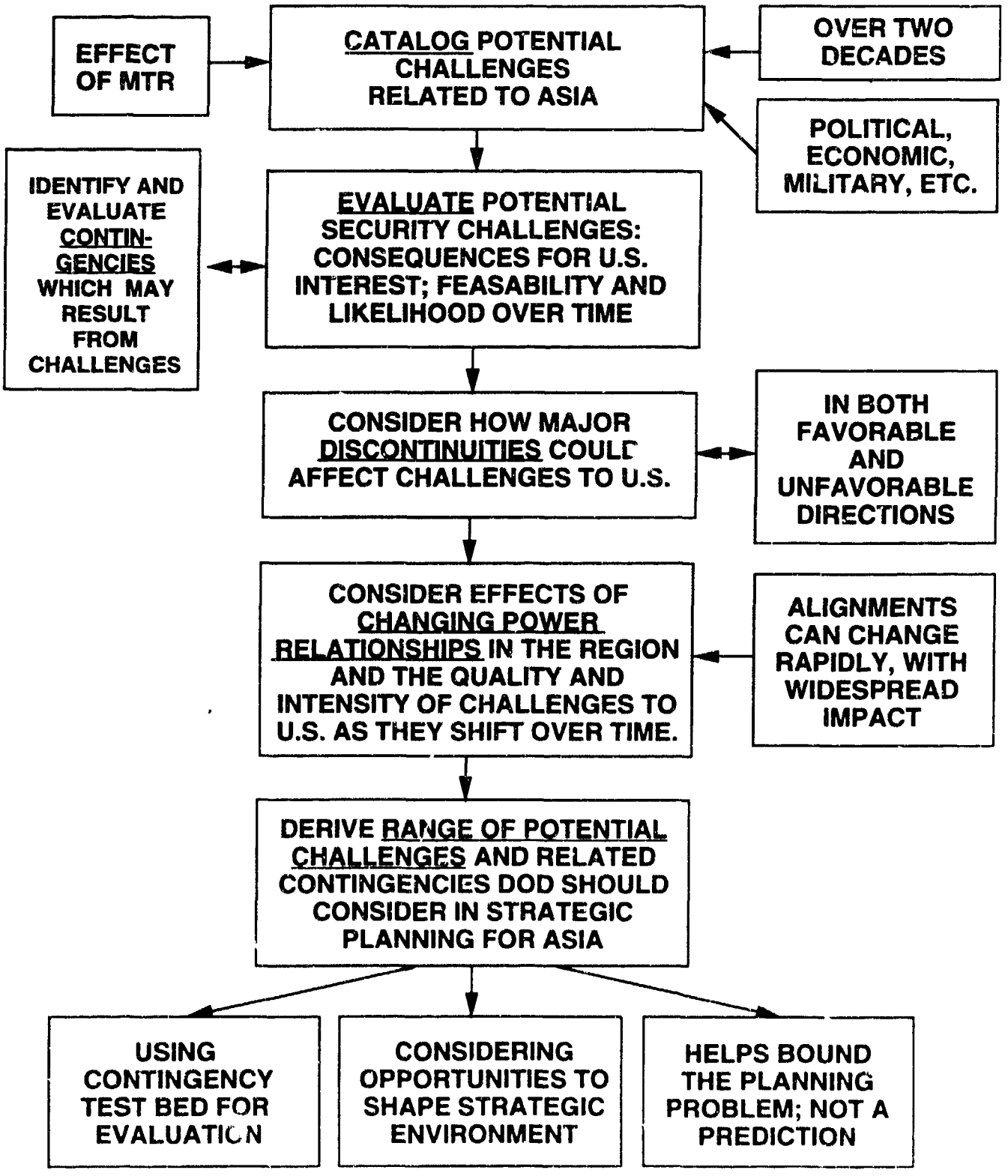


Figure A-4. Potential challenges to U.S. security: method.

APPENDIX B

ASIAN CHALLENGES TO U.S. INTERESTS OVER THE NEXT TWO DECADES: THE CONTINGENCY TEST BED

Gregory J. Weaver

Asian Challenges to U.S. Interests Over the Next Two Decades

The Contingency Test Bed

Purpose

- Identify those potential Asian challenges to U.S. interests over the next two decades that warrant consideration in DoD planning.

- Focus analytic attention on those challenges that U.S. strategy and capabilities ***must*** provide ways and means to:
  - Prevent
  - Avoid
  - Dissuade
  - Mitigate
  - Eliminate

- Provide sufficient understanding of significant Asian challenges to test and evaluate alternative strategic approaches and force structures.

Factors Marking the Asian Security Environment: 1992–2012

- Presence in Asia of five of the world's most powerful states: United States, Japan, China, Russia, and India.
- Dramatic economic and trade growth of many Asian states.
- Reemergence of regional disputes and rivalries subsumed by Cold War.
- Potential for radical realignments of regional powers, making Asian international balance of power both volatile and malleable.
- Potential for sudden and severe international power vacuums due to revolution in, or collapse or withdrawal of, significant regional powers.
- Proliferation of advanced weapons technologies, making some states capable of increasing their political-military power "overnight."

Nature of U.S. Interests in Asia: 1992–2012

- Asia likely to surpass Europe in importance to U.S. interests soon.
- U.S. interests are no longer defined by competition with a single, global political-military adversary.
- Primary *competitive* challenge is now economic,not political-military, and Asia is the center of that competition.
- Thus, primary U.S. interest is to foster Asian environment conducive to furthering U.S. economic competitive advantages.
- However, despite economic focus of U.S. interests, political-military affairs remain relevant because they affect economic environment.
- Cannot rule out future direct political-military challenges from Asian powers.

Methodology

- Identification and assessment of significant challenges performed in a cascading series of classifications and descriptions.
  - Three *Challenge Categories*: Political, Military, & Economic.
  - *Challenge Types* identified in each Category.
  - *Strategic Planning Foci* identified and assessed in each Type.
  - *Discontinuities* worthy of planning consideration are noted.
  - *Contingency Test Bed* drawn from Strategic Planning Foci and Discontinuities.
- This methodology is designed to address the inadequacy of traditional threat-based planning and assessment while still providing for planning consideration of specific challenges and contingencies that may arise.

Definitions

Several terms used throughout this study demand specific definition:

Strategic Planning Focus: A country-specific or issue-specific example of a challenge type, the significance of which merits DoD strategic planning consideration.

Feasibility: A subjective estimate of the possibility that a specific strategic planning focus will come about.

Necessary Preconditions: Those events or conditions that must occur or exist for a given strategic planning focus to come about.

Severity of Challenge: A qualitative estimate of the potential importance to U.S. interests of the challenge posed by a strategic planning focus.

Asian Challenges: Categories & Types

Political Category

- Creation Of New Geopolitical Powers
- Prolonged Instability In Major Regional Power
- Rise Of Hostile Regime In Regional Power
- Revanchist Action
- Changes In International Alignments

Military Category

- Military Competitions Involving The United States
- Military Competitions That Affect The United States
- Armed Conflict Involving Regional Powers With NBC Weapons
- Fundamental Shifts In Regional Powers' Military Policies/Capabilities
- Advanced Weapons Proliferation
- Threats to Freedom of Passage

Economic Category

- Creation of East Asian Trading Blocs
- Regional Economic Hegemony
- Disputes Over Access To Natural Resources
- Dependence on Asian Sources of Critical Technologies
- Ecological Impacts of Regional Powers' Economic Activities

Creation of New Geopolitical Powers

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Unification of N-S Korea			
By Force:	Low	None	High
By Negotiation:	Moderate/High	DPRK Leadership Change	Moderate
By Collapse:	Moderate	None	High
Federation of PRC-Taiwan	Moderate	PRC Success w/Hong Kong	Moderate
Independent Siberia	Low	Internal Russian Instability	Moderate/High
Independent Tibet	Low	None	Low
Independent Kashmir	Low	Internal Indian Instability	Low/Moderate

Prolonged Instability in Major Regional Power

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Russian Republic			
Economic Crisis	Moderate/High	None	Low/Moderate
Further Separatism	Low/Moderate	None	Low/Moderate
Civil War	Low	Economic Reforms Fail	High
People's Republic of China			
Long Succession Crisis	Low/Moderate	None	Moderate
Islamic Separatism	Low	None	Low/Moderate
Civil War	Low	Loss/Split of Party Control	High
India			
Economic Crisis	Low	None	Low
Ethnic Factionalism	Moderate	None	Low
Kashmir Separatism	Low/Moderate	None	Low/Moderate
Civil War	Low	Economic or Ethnic Crisis	Moderate/High

Rise of Hostile Regime in Regional Power

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
India	Low	None	Moderate/High
Pakistan	Low/Moderate	None	Moderate/High
Indonesia	Low	None	Low/Moderate
Philippines	Low/Moderate	None	Low
Russia	Low	Failure of Political Reforms	High
Japan	Low	Severe Trade Friction	High
Central Asian Republics	Low/Moderate	None	Low/Moderate
Unified Korea	Moderate	Korean Unification	Moderate/High

Revanchist Action

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
People's Republic of China:			
Taiwan	Low/Moderate	None	Moderate/High
Russian Republic	Low	None	High
Senkakus (Japan)	Moderate	None	Moderate
Spratlys (Many)	Moderate/High	None	Low/Moderate
Japan:			
Kuriles (Russia)	Low/Moderate	None	Moderate/High
Senkakus (PRC)	Low/Moderate	None	Moderate
Russian Republic:			
Kazakhstan	Low/Moderate	None	Moderate
Pakistan:			
Kashmir (India)	Moderate	None	Moderate/High

Revanchist Action (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Malaysia:			
Singapore	Low	None	Low/Moderate
Indonesia:			
Malaysia	Low	None	Low
India	Low	None	Low
New Guinea	Low/Moderate	None	Low
Philippines:			
Malaysia	Low	None	Low
North Korea:			
South Korea	Low/Moderate	None	High
South Korea:			
North Korea	Low	None	High

Change in International Alignments

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
End of U.S.-Japanese Security Relationship	Low/Moderate	None	Moderate/High
Japan-PRC Alignment	Low	End of U.S.-Japan Treaty	High
Japan-Taiwan Alignment	Low	None	Low/Moderate
Japan-Russia Alignment	Low/Moderate	End of U.S.-Japan Treaty	Moderate/High
PRC–Unified Korea Alignment	Low/Moderate	Korean Unification	Moderate/High
PRC-Russia Alignment	Low	Major Joint Threat	High
PRC-India Alignment	Low	Major Joint Threat	Moderate

Change in International Alignments (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Russia-India Alignment	Moderate	None	Low/Moderate
Russia-Taiwan Alignment	Low/Moderate	No Taiwan-PRC Union	Low
Russia-Unified Korea Alignment	Moderate	Korean Unification	Moderate
Russia-Pakistan Alignment	Low	Major Joint Threat (e.g. PRC-India)	Low/Moderate
Pakistan–Central Asian Republics Alignment	Low	None	Moderate
Pakistan-Indonesia Alignment	Low	None	Low/Moderate
ASEAN-Vietnam Alignment	Low	Major Joint Threat	Low/Moderate

Military Competitions Involving America

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
PRC-U.S.	Moderate/High	None	High
Russia-U.S.	Low/Moderate	Russian Reforms Fail	High
India-U.S.	Low/Moderate	India Seeks Hegemony	Moderate
Japan-U.S.	Low	End of U.S.-Japan Treaty	High

Military Competitions That Affect America

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
North Korea–South Korea	High	No Korean Unification	High
India-Pakistan	High	None	Moderate/High
India-PRC	Moderate/High	None	High
PRC-Taiwan	High	No Federation	Moderate/High
PRC-Russia	Moderate	None	High
PRC-Japan	Moderate	None	High
PRC-Vietnam	Moderate/High	None	Low/Moderate
Japan–Unified Korea	Moderate	Korean Unification	Moderate/High

Military Competitions That Affect America (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Japan-Russia	Low/Moderate	End of U.S.-Japan Treaty	Moderate/High
ASEAN-Vietnam	Low	None	Low/Moderate
ASEAN-ASEAN	Moderate	None	Low/Moderate
Indonesia-Australia	Low/Moderate	None	Low/Moderate

Armed Conflict Involving Regional Powers with NBC Weapons

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
North Korea–South Korea	Low/Moderate	No Korean Unification	High
India-Pakistan	Moderate	None	Moderate/High
India-PRC	Low/Moderate	None	High
India-Indonesia	Low	None	Low/Moderate
PRC-Russia	Low	None	High
PRC–Taiwan	Low/Moderate	None	Moderate/High
PRC-Japan	Low	None	High
PRC–Unified Korea	Low/Moderate	Korean Unification	Moderate/High

Armed Conflict Involving Regional Powers with NBC Weapons (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
PRC-Vietnam	Moderate	None	Moderate
PRC–Central Asian Republics	Low/Moderate	None	Moderate/High
Unified Korea–Japan	Low/Moderate	Korean Unification	High
Unified Korea–Russia	Low	Korean Unification	High
Russia-Japan	Low	None	High
Russia–Central Asian Republics	Moderate	None	Moderate

Shifts in Military Policies/Capabilities of Regional Powers

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
PRC Shifts To:			
Regional Hegemony & Power Projection Forces	Moderate	Sustained High Rate of Economic Growth	Moderate/High
Autarkic Global Power & Strategic Forces	Low	None	High
Strategic Partnership w/Japan & Strategic Forces	Low	End of U.S.-Japan Treaty	High
Nationalist Expansion & Power Projection Forces	Moderate	None	Moderate
Strategic Partnership w/Russia & Power Projection Forces	Low	Joint Threat	High
Defense of Status Quo & General Purpose Forces	Moderate	None	Low/Moderate

Shifts in Military Policies/Capabilities of Regional Powers (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Russia Shifts To:			
"Defensive Defense" & Advanced General Purpose Forces	Moderate	None	Low
Strategic Partnership w/U.S. & Joint Defenses	Moderate	Successful Political & Economic Reforms	Low
Strategic Partnership w/Japan & Advanced General Purpose Forces	Low/Moderate	End of U.S.-Japan Treaty	High
Military Superpower & Power Projection Forces	Low/Moderate	Successful Economic Reforms	Moderate/High
Military Superpower & Strategic Forces	Low	Collapse of U.S.-Russian Strategic Arms Control Regime	High

Shifts in Military Policies/Capabilities of Regional Powers (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Japan Shifts To:			
Autonomous Homeland Defense & Strategic Defenses	Low	End of U.S.-Japan Treaty	Moderate
Autonomous Regional Power & Power Projection Forces	Low/ Moderate	End of U.S.-Japan Treaty	Low/Moderate
Strategic Partnership w/PRC & Power Projection Forces	Low	End of U.S.-Japan Treaty	High
Strategic Partnership w/Russia and Power Projection Forces	Low	End of U.S.-Japan Treaty	High
Regional Hegemony & Power Projection/Strategic Forces & Defenses	Low	End of U.S.-Japan Treaty	High

Shifts in Military Policies/Capabilities of Regional Powers (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
India Shifts To:			
Territorial Expansion & General Purpose Forces	Low	None	Moderate/High
Indian Ocean Dominance & Maritime Forces	Moderate	None	Moderate/High
Subregional Hegemony & Strategic/Power Projection Forces	Moderate	None	High
Territorial Accommodation & General Purpose Force Cuts	Low	None	Low

Shifts in Military Policies/Capabilities of Regional Powers (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Indonesia Shifts To:			
Integrated ASEAN Defense & Maritime Forces	Moderate	Shared ASEAN Threat	Low
Archipelagic Self Defense & Power Projection Forces	Moderate/High	None	Low
Subregional Hegemony & Power Projection Forces	Low/Moderate	None	Moderate

Shifts in Military Policies/Capabilities of Regional Powers (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Unified Korea Shifts To:			
Autarkic Homeland Defense & General Purpose/NBC Forces	Low	Military Reunification Under North Korea	High
Strategic Partnership w/Russia & General Purpose Forces	Low/Moderate	None	Low/Moderate
Strategic Partnership w/PRC & Maritime Forces	Low	None	Moderate/High
Territorial Defense/U.S. Aligned & General Purpose Forces	Moderate	Unification Not Due To N. Korean Military Victory	Low/Moderate

Advanced Weapons Proliferation

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Nuclear Proliferation:			
North/Unified Korea	High	None	High
Pakistan	Moderate/High	None	Moderate/High
Taiwan	Moderate	None	Moderate/High
Japan	Low	End of U.S.-Japan Treaty	High
Central Asian Republics	Low/Moderate	None	Moderate/High

Advanced Weapons Proliferation (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
CW/BW Proliferation:			
Pakistan	Moderate/High	None	Moderate/High
India	Moderate/High	None	Moderate/High
Taiwan	Moderate/High	None	Moderate
Japan	Low	End of U.S.-Japan Treaty	High
Indonesia	Low/Moderate	None	Low/Moderate
Singapore	Low/Moderate	None	Low/Moderate

Advanced Weapons Proliferation (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Ballsitic Missiles:			
India	High	None	Moderate/High
Pakistan	Moderate/High	None	Moderate/High
Taiwan	High	None	Moderate
North Korea	High	None	Moderate/High
Unified Korea	Moderate/High	None	Moderate/High
Japan	Moderate	Fundamental Shift in Japanese Defense Policy	High

Advanced Weapons Proliferation (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Advanced Antiship Missiles:			
PRC	Moderate/High	None	High
India	High	None	High
North Korea	Low/Moderate	Access to Market	Moderate/High
Unified Korea	High	Access to Market	Moderate
Taiwan	High	Access to Market	Low/Moderate
Indonesia	Moderate/High	Access to Market	Moderate
Vietnam	Low	Access to Market	Moderate/High
Modern Diesel Submarines:			
PRC	Moderate/High	None	High
North Korea	Low/Moderate	Access to Market	High
Unified Korea	High	Access to Market	Moderate/High
Taiwan	High	Access to Market	Low/Moderate
Indonesia	High	Access to Market	Moderate
Malaysia	Moderate	Access to Market	Moderate

Advanced Weapons Proliferation (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Advanced Air Defenses:			
PRC	Moderate	None	High
India	Moderate	None	High
North Korea	Low	Access to Market	High
Unified Korea	Moderate	Access to Market	Moderate/High
Pakistan	Moderate	Access to Market	Moderate
Taiwan	Moderate/High	Access to Market	Low
Indonesia	Low/Moderate	Access to Market	Low/Moderate
MTR-Type Capabilities:			
Japan	High	Fundamental Shift in Policy	High
Russia	High	None	High
PRC	Moderate	None	High
India	Moderate	None	Moderate/High
North Korea	Low	Access to Market	High
Unified Korea	Low/Moderate	Access to Market	Moderate/High
Pakistan	Low	Access to Market	Moderate/High
Taiwan	Low/Moderate	Access to Market	Moderate

Threats to Freedom of Passage

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
PRC:			
Korea Strait	Low/Moderate	Naval Aviation/Long Range Subs	High
Yellow Sea	High	None	Moderate/High
East China Sea	Moderate/High	None	Moderate/High
Formosa Strait	High	None	Moderate/High
Luzon Strait	Moderate	None	Moderate/High
South China Sea	Moderate	Improved Logistics	Moderate/High
Russia:			
Sea of Japan	High	None	High
Korea Strait	High	None	High
Tsugaru Strait	Moderate/High	None	High
La Perouse Strait	High	None	High
Kuriles Straits	High	None	High
Tatar Strait	High	None	Moderate
Sea of Okhotsk	High	None	High
Bering Strait	High	None	High

Threats to Freedom of Passage (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Japan:			
Sea of Japan	High	None	High
Korea Strait	High	None	High
East China Sea	Moderate/High	None	High
Northern Philippine Sea	Moderate/high	None	Moderate/High
Tsugaru Strait	High	None	Moderate/High
La Perouse Strait	High	None	Moderate/High
Kuriles Straits	High	Return of Northern Territories	High
India:			
Gulf of Oman	Low/Moderate	None	High
Arabian Sea	Moderate/High	None	High
Indian Ocean	Moderate/High	None	Moderate/High
Bay of Bengal	High	None	Moderate
Andaman /Nicobar Channels	Moderate/High	Completion of Port Blair Base	High
Andaman Sea	Moderate	Completion of Port Blair Base	High
Strait of Malacca	Low/Moderate	Completion of Port Blair Base	High

Threats to Freedom of Passage (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Unified Korea:			
Sea of Japan	Moderate/High	None	High
Korea Strait	Moderate/High	None	High
Yellow Sea	Moderate/High	None	Moderate/High
East China Sea	Low/Moderate	None	High
North Korea:			
Sea of Japan	Moderate	None	High
Korea Strait	Moderate	None	High
Yellow Sea	Moderate/High	None	Moderate/High
Taiwan:			
Formosa Strait	High	None	Moderate/High
Luzon Strait	High	None	Moderate/High
East China Sea	Low/Moderate	None	Moderate/high
South China Sea	Low	None	High

Threats to Freedom of Passage (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Indonesia:			
Andaman Sea	Low/Moderate	None	Moderate/High
Strait of Malacca	High	None	High
Sunda Strait	High	None	High
Karimata Strait	High	None	Moderate
Makassar Strait	High	None	Moderate
Torres Strait	Moderate	None	Moderate/High
South China Sea	Low/Moderate	None	Moderate
Pakistan:			
Gulf of Oman	Low/Moderate	None	High
Arabian Sea	Moderate	None	Moderate/High

Creation of East Asian Trading Blocs

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
"Little Tigers" Trade Bloc	Low/Moderate	None	Low
"Little Tigers" Plus PRC	Low	More PRC Economic Reform	Low/Moderate
"Little Tigers" Plus Japan	Moderate	Japanese Consumer Economy	Moderate
"Little Tigers" Plus Russia	Low/Moderate	Success of Russian Reforms	Low/Moderate
Japan–Russia–Unified Korea	Low/Moderate	Success of Russian Reforms	Moderate/High
Japan–PRC–Unified Korea	Low/Moderate	More PRC Economic Reform	Moderate/High
Japan-Russia-PRC	Low	PRC & Russian Reforms Succeed	High
Greater East Asian Free Trade Agreement	Low	PRC & Russian Reforms Succeed, Europe & North America "Closed"	High

Regional Economic Hegemony

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Japan	Moderate	None	Moderate/High
PRC	Low/Moderate	More PRC Economic Reform	High
Russia	Low/Moderate	Russian Reforms Succeed	High
India	Low	Economic Boom	Moderate/High

Disputes over Access to Natural Resources

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Offshore Oil Rights:			
PRC, Malaysia, Philippines, Vietnam over Spratlys	High	None	Low/Moderate
PRC, Vietnam over Paracels	Moderate/High	None	Low
Russia, Japan over Kuriles	Moderate/High	None	Moderate/High
Fishing Rights:			
Japan, Russia, Korea over Sea of Japan	Moderate/High	None	Low/Moderate
PRC, Japan, Korea over East China Sea	Moderate	None	Low/Moderate

Ecological Impacts of Regional Powers' Economic Activities

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Nuclear Power Accidents:			
Japan	Low/Moderate	None	Low/Moderate
PRC	Moderate	None	Moderate/High
India	Moderate	None	Low/Moderate
Russia	Moderate	None	Moderate
North Korea	Moderate	None	Moderate/High
Unified Korea	Low/Moderate	None	Moderate/High
Greenhouse Gases & Ozone Depleting Emissions:			
Japan	Low/Moderate	None	Moderate
Russia	Moderate/High	None	Moderate/High
PRC	Moderate/High	None	High
India	Moderate/High	None	Moderate/High

Ecological Impacts of Regional Powers' Economic Activities (Continued)

Strategic Planning Focus	Feasibility	Necessary Preconditions	Severity of Challenge
Forest/Rain Forest Depletion:			
Malaysia	Moderate/High	None	Low/Moderate
Indonesia	Moderate/High	None	Low/Moderate
Philippines	Moderate	None	Low
Thailand	Moderate	None	Low

Asian Discontinuities Worthy of Planning Consideration

- Discovery/Development of Revolutionary Technologies
- Terrorist Attacks/Assassinations
- Founding of New Religion or New Sect of Existing Religion
- Founding of New Political Ideology
- Dramatic Climate Change
- Large Scale Natural Disasters
- Accidents/Inadvertent Launches of Weapons of Mass Destruction

APPENDIX C

SURVEY OF SELECTED BUSINESS PLANNING CONCEPTS FOR POSSIBLE APPLICABILITY TO DEFENSE STRATEGIC PLANNING

William A. Cockell, Jr.

This appendix provides more detailed discussion of business planning concepts of possible relevance to DoD strategic planning which were discussed in an earlier report under this contract.[1] That earlier report focused on three concepts—core competencies, business areas, and strategic intent—as offering the greatest promise for successful translation from the business world into the realm of defense planning. In addition the report summarized discussion at a December 3, 1991, meeting held at SAIC offices in Torrance, California, to consider the application of business strategy concepts to national security planning; and presented working definitions of the three concepts to aid in their application to DoD strategic planning.

The report went on to note that, in preparation for the December 3 meeting, SAIC had reviewed a number of other business planning concepts for their utility in DoD strategic planning. Those concepts were discussed briefly in an appendix to the report with emphasis on their potential relevance to DoD planning. That discussion was, in turn, based on more detailed analysis contained in a series of briefing papers developed to aid in the identification of business planning concepts worthy of further exploration as candidates for DoD application. Those briefing papers are presented in this appendix, including several concepts which were ultimately judged to have relatively little potential for application to DoD purposes. Emphasis in the papers is placed on the business antecedents of the concepts concerned, their current use as business planning tools, and the changes that would be required in order to adapt them to DoD purposes. In addition, efforts were made to identify the specific value which the business concepts might add to DoD planning, and the role which they might play in that planning process.

The format used for discussing the candidate concepts consists of five parts:

- A discussion of the business concept concerned.
- The current status of the concept in business and industry.
- Potential DoD applications of the concept.
- Issues regarding possible DoD use of the concept.
- Areas for additional research.

Literature reviewed in connection with preparation of this material is identified in the bibliography at the end of this appendix.

I. Core Competency

Business Concept

This discussion of the concept of core competency is based predominantly on a 1990 article by C. K. Prahalad and Gary Hamel in the *Harvard Business Review.*[2] In that essay the authors characterize the core competency of the corporation as a tool which, they would argue, has great utility in corporate strategic planning. They define core competencies as "the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies."[3] It is these skills, effectively pursued and maintained over time, that allow the corporation to retain competitive advantage over other firms which are in the same or related business fields and which are less effective in identifying, pursuing, and maintaining relevant core competencies. Core competencies can include such things as advanced technologies, capital, facilities, production know-how, a trained and motivated labor force, skilled management, technological innovation, and an agile organizational structure that can adapt quickly to change; in short, everything required to excel in business competition, achieve the firm's strategic intent,[4] and be prepared to capitalize on emergent opportunities which present important growth prospects.

It is typical of core competencies that they make a major difference in the company's business; tend to cross organizational lines; and provide management with a broad, forward-looking view of the company's capabilities, focusing on the aggregate of corporate resources rather than individual strategic business units. In most cases core competencies are an amalgamation of many individual competencies which combine to provide the firm with the ability to dominate a particular business area. Core competencies can be built by internal investment, acquisitions, careful recruitment of key people and scarce skills, innovation, and strategic alliances. Core competencies should constitute the focus of the firm's strategy, the authors argue, and will determine its competitiveness in the long run. Denying a competitor a needed core competence can be a key element of the corporation's competitive strategy.

As suggested above, two other concepts discussed in this series of papers are particularly relevant to the idea of core competence. They are the concepts of *business area* and *strategic intent*. The correct selection of business areas for the corporation is key to identifying the core competencies required to support the corporation and to ensure its competitiveness in the business areas selected. Loose or unclear definition of business areas can result in confusion among the firm's management and in corporate planning decisions that are inappropriate or counterproductive. Similarly, failure to make clear those business areas which the corporation is not, or should not be, pursuing can lead to misdirected efforts, wasted resources, and loss of competitiveness.

At the same time careful formulation of the corporation's strategic intent is necessary to provide a vision of where the firm is heading, how it intends to get there, and what core competencies it will require to prevail competitively and achieve its strategic intent. In this sense strategic intent may be a derivative reflecting the decisions made in the selection of corporate business areas. Alternatively it may drive the definition of those business areas, using business areas as a way of illustrating the firm's strategic intent. The literature is not clear on this score, and the concept tends to be used in both senses.

In support of the propositions on core competency outlined above, Prahalad and Hamel cite numerous cases, drawn mainly from Japanese experience, but with the experience of some U.S. corporations described as well to provide "bad examples" illustrating how failure to understand and apply the concept of core competency can lead to loss of business competitiveness.

Current Status of the Concept in Business and Industry

While many accept the notion of core competency as at least a partial explanation for the success of a number of (predominantly Japanese) corporations, others argue that the *Harvard Business Review* article simply states the obvious. In either case few would disagree with the proposition that long-term planning (adjusted frequently in the short-run), based on a sense of where the corporation wants to be competitively in five to ten years, is important for success. Many would also agree that such planning should be centered on the

maintenance of capabilities (core competencies) acquired over time to enhance the corporation's competitiveness vis-a-vis others in the market. What is particularly new in the Prahalad-Hamel case is the emphasis on the need for the firm to take a broad view of these competencies, recognize that they may cross many organizational lines in the corporation, and avoid narrow-minded and potentially destructive concentration on individual business units as the focus of strategic planning.

In a related area, some recent articles in the *Administrative Science Quarterly* raise issues relating to technological innovation and the discontinuities it produces in business and industrial process.[5] The discontinuities may be competence-destroying or competence-enhancing for the individual firm, depending on the strength of its own base in the competence concerned, which will tend to define its capability to exploit the innovation to its advantage. This suggests that the prudent planner will build in hedges against the possibility that others will field innovations which could be competence-destroying in the case of the planner's firm.

Potential DoD Applications of the Concept

The notion of core competency has the potential for application in several areas of DoD planning, including:

- Helping to clarify the capabilities—broadly defined—which the department requires to achieve the strategic objectives set for it by national security policy and military strategy, in light of current or potential challenges to U.S. interests.

- Aiding the selection of acquisition priorities by ranking the core competencies discussed above; or, conversely, helping to identify those core competencies which should be protected by DoD during force drawdowns.

- Identifying technological advances and innovations necessary to preserve existing or create new core competencies in the face of plausible competitive challenges to U.S. forces. Related to this: structuring of one's competitive posture in ways which avoid vulnerability to competence-destroying innovations fielded by a

competitor (i.e. those innovations which not only increase a competitor's competence but destroy or significantly reduce the relevance of one's own competence in the process.)

- Illuminating the interrelationship between joint core competencies and those whose utility lies mainly in the single-service context. This can help the services place in broader perspective the importance of those service elements (forces, weapons systems, C^3I, basing, logistics, training, doctrine, etc.) which contribute to the joint competency. This will become increasingly important as U.S. warfighting plans and doctrine place greater emphasis on joint operations.

- Contributing to the development of national security policy by identifying those politico-military elements in which other U. S. government departments are also involved (such as alliances, overseas bases, transit rights, prepositioned material, combined planning, etc.) that provide essential components of particular DoD core competencies.

- Preserving those U.S. core competencies which are unique, or in which the U.S. has a wide advantage over potential competitors (even though the need for them may not appear compelling at this time.) Cf., e.g., Rosen's discussion of core competencies as those things which the corporation (or DoD) does well.[6] If they do nothing else, such competencies may discourage potential competitors from attempting to challenge U.S. superiority in those areas, where such superiority makes the cost of competition too great (cf. the business concept of the *unchallengeable competitor*, while requiring would-be competitors to provide for protection against such capabilities. Examples of such competencies might include amphibious warfare or long-range strategic bombing.

Following this approach one might agree with Rosen that ". . . we may find that the best available strategy is to do what we do best and build on our strengths."[7] In a related vein, some have argued that even with the collapse of the Soviet threat, the United States should maintain a relatively large and well-equipped army because "we know how to do that," and history demonstrates that

we will periodically need that type of capability, even if we cannot now foresee the specific basis for such requirement.

Issues Regarding Possible DoD Use of the Concept

The richness of the concept of core competency creates a number of issues when one contemplates its possible use in DoD planning. These include:

Definition. How to define core competencies. Are there common criteria which allow one to recognize a core competency? In this regard it has been suggested that DoD core competencies are complex combinations of technical, production and operational skills; result from path-dependent processes that are hard to duplicate; are key for determining the outcomes of military competitions and crises; apply to many missions; and discourage potential competitors by imposing major costs on them if they do compete.[8]

Composition. Related to the foregoing, at what level of aggregation do core competencies function? Are they broad or narrow? Do they tend to cross organizational lines, as in the commercial sector? Do they make a large difference in the typical case? What are the elements which comprise a core competency? Do they tend to be combinations of people and technologies, as in the business arena? What sits above core competencies in the defense planning hierarchy? Is there any counterpart for core competency in current defense planning? If it is a totally new concept, where does it fit in the military planning methodology? More important, what value does it add to the planning process? How can it aid in understanding how U.S. military power should be structured, i.e., organized, equipped, modernized, trained, supported, deployed and employed? What existing planning problems does the concept of core competency help solve?

Related Concepts. How does one distinguish among core competencies, national security business areas, military missions, and military capabilities? Can their interrelationship be shown graphically?

Areas of Defense Planning Relevance. What can the concept of core competency contribute to the defense strategic planning area? To the defense acquisition area (including the services)? To determining the optimum split between active and reserve forces? To the planning of military competitions with rival states? To the theater commanders' development of war plans and contingency plans? To the shaping of the security environment? To providing a spur for innovation in the absence of a clearly focused military competition such as that provided by U.S.-Soviet rivalry over the cold-war years?

Relevance to the Military-Technological Revolution. What can the concept of core competencies contribute to defense planners' understanding of the military-technological revolution and its exploitation to U.S. advantage?

Finding the True Core. Can the concept be used during a period of retrenchment to identify those minimal competencies which are genuinely essential for the United States to maintain? Are core competencies things we want to protect, or is that too narrow a view? Can one find the true core by shedding capabilities selectively until an obvious core (essential minimum) is reached?

Role of the Industrial Base. Are nonmilitary assets, such as the technology and defense industrial bases, properly speaking, parts of DoD core competencies?

Check on Short-Term Planning. What utility does the concept have for use as a check on other, more traditional, planning efforts?

Enabling Competencies. How does one distinguish between enabling competencies and core competencies? What is the key difference between them? Are enabling competencies the core or are they simply ingredients which comprise or support the core? Does the concept of enabling competencies have any relevance or utility in the defense context? (See also the discussion of core competencies as enabling competencies in the following section.)

Areas for Additional Research

The discussion under the preceding heading identifies a number of issues for additional research, centering on the following:

- Defining the concept of core competency and distinguishing it from other, existing, concepts used to deal with broad-based, cross-cutting defense planning issues. What examples of core competencies illustrate the distinction between core competencies and other elements of the defense planning process? What are the unique characteristics of core competencies which distinguish them from other planning tools? How does one determine what the essential core of the capability is?

- Reviewing existing, divergent, concepts of core competency, which define the concept in quite different ways, to include the idea that core competencies are essentially nothing more than enabling competencies that allow you to do other things that matter (e.g., things that let you have air superiority, not air superiority itself); or that they are simply things we do well; or areas in which we have unique capabilities. Does the Desert Storm experience provide insight into the way core competencies should be defined and used in planning? In addition to core competencies which were successfully employed, does the Gulf experience show that there were significant core competencies missing or inadequate in scope?

- Examining the concept's utility in the context of DoD strategic or long-range planning, to include consideration of the concept's relationship to the concepts of base force and reconstitution.

- Exploring the interrelationship among the concepts of core competency, national security business area, and strategic intent, and refining the concepts so that their use in the defense context is complementary and mutually supportive; and so that the definition of each can stand alone and is not dependent on definitions of the other concepts.

- Identifying those areas of the defense planning process where the concept of core competency could aid in improving the quality, timeliness, or value of planning. Are there currently

neglected areas where the concept could fill a void or bolster a particularly weak segment of the process? Does it have the potential to provide types of insights which the existing process fails to surface?

- Determining whether the concept of core competencies has attributes that could make it particularly useful in the context of Asian strategy.

II. The Business Area Approach to Planning

Business Concept

Business area is a planning term used to describe a major area of business activity in which a firm is (or ought to be) engaged.[9] It helps answer the question "What business are we in, or should we be in?" In so doing, it helps bring into focus thinking concerning the firm's competition, markets, investment priorities, product lines, personnel resources, technology trends, and R&D planning, among other things, in order to provide an intellectual foundation for the firm's strategic planning. The business-area approach aims at ensuring that nothing important is overlooked in the planning process; that the firm's management clearly understands what the company is trying to do; and that relevant goals, strategies, and plans are developed to advance the business areas selected.

The identification of areas in which the firm is not, or should not be, participating can be an equally important output of the business-area approach to planning.

In short, the business-area approach helps promote clear thinking about where the corporation is, where it wants to go, and how it is going to get there, in the anticipated competitive environment. By identifying appropriate business areas for the firm (and ruling out others), the business-area approach provides a basis for the development of objectives, plans, and strategies, among other things. It also helps key personnel understand company goals and attune their own goals and priorities to them.

In the commercial world, a business area may be a particular product or service line, or it may describe the firm's position in a particular market ("we are in the wholesale, not the retail, business"); or the way in which it creates its products ("we are a manufacturing, not an R&D, business"). Increasingly firms in the computer business are having to decide whether they are —or ought to be—in the hardware business, in the software business, or in both,

with the possibility of major consequences for the firm's future competitiveness hanging on the choice.[10]

Current Status of the Concept in Business and Industry

Surprisingly, there has been relatively little literature dealing with the subject of the business-area approach as a basis for strategic planning, hence it lacks a well-developed theoretical underpinning. Where it is discussed in the literature, it is generally subsidiary to another topic and not a central part of the discussion. Nevertheless, as part of their internal planning process corporate executives frequently do ask themselves whether their firms are in the right businesses, or whether some redefinition is in order. In many cases this may be done in a matter-of-fact way, without it occurring to the executives that they are employing some sort of strategic-planning methodology. In some cases the firm may be in the right businesses, but fails to articulate clearly what those businesses are, or what the bounds are which limit them. In short, many large firms—either deliberately or in less structured fashion—try to define the businesses they are (or should be) in as an aid to, but not necessarily a central part of, planning. Business area definitions are often more likely to be viewed as outputs of the strategic planning process rather than a central part of its methodology.

In some cases, however, planners or executives may understand that the definition of business areas has the most fundamental sort of implications for the firm's strategic planning efforts. This is particularly likely to be true when the corporate hierarchy senses that the firm may be on the wrong track from the standpoint of its future growth and competitiveness, and that a fundamental revalidation of the company's business areas is in order.

In other cases, paradigm shifts in major sectors of the global economy may require a firm to conduct a thorough review of its business-area definitions as a prelude to major redefinition of those areas.[11]

Potential DoD Application of the Concept

The concept of business areas is not unfamiliar to DoD planners; it is usually repackaged as *national security business areas*, but the essence of the concept is the same. The term has no formal standing in the DoD planning lexicon, but it is used in a common-sense way to connote a geographic or functional area which is a focal point for U.S. military planning, investment, or operations. A national security business area is typically an area of strategic importance, and may serve as the foundation for developing sets of strategic goals. Clearly formulated, the definition of a national security business area can provide important guidance for responsible officials relative to those goals and activities to be pursued, or not pursued, in managing the country's national security affairs or, in a narrower context, its defense planning.

In the defense-planning context, the concept of business areas can be employed to help determine the core competencies which the Defense Department should seek to maintain. The concepts of business area, strategic intent, and core competency complement each other—the first two defining what the Department of Defense is trying to do, in terms of goals and objectives, and the latter, the tools it needs to do it. For more detailed discussion of this relationship, see the papers in this series on core competence and strategic intent.[12]

Issues Regarding Possible DoD Use of the Concept

There are a number of issues to be addressed relative to possible DoD use of the business area concept as a tool for strategic or long-term planning. Some of the more significant ones include:

- Defining *business area* (or *national security business area*). There are no generally agreed definitions at present; terms are used loosely and without consistency. A subsidiary issue is whether the use of differing definitions might make a difference in the results and, specifically, what kinds of differences might be expected?

- Identifying where in the DoD planning process use of the business area concept would have utility. Would it replace or supplement existing planning concepts or mechanisms? Would it fill any conspicuous or important voids in the planning process? Would it act as an effective check on the output of existing planning tools? What can it tell the planner that he doesn't already know? Would it help integrate what is now a rather diffuse and fragmented planning process? What is the principal added value one could expect from its use?

- Refining the relationship among business areas, core competencies, and strategic intent, from a planning standpoint. How does the definition of business areas impact on the use of core competencies as a planning tool? What is the fundamental difference between a business area and a core competence? Do the two concepts overlap or are they discrete and mutually supporting? Are there adjustments in the definition of either which would make for a better fit?

- Determining the utility of the business-area approach—or a variant of it—to defense planning as it relates to the base force and the concept of reconstitution.

- Understanding the particular utility which the business-area approach might have for Asian planning. Can the Asian context aid our understanding of the value which the business-area approach could contribute to planning? Would an historical review of the national security businesses which the United States has pursued in Asia be helpful in this regard? Does the Desert Storm experience aid our understanding of the contribution which the business-area approach could make? Does it help illuminate how *business area* should be defined in the defense context?

Areas for Additional Research

As the discussion in the preceding section suggests, the most fundamental issue relating to the business-area approach in its application to DoD planning relates to definitions: what is a business area? In this regard research might examine how the definition, in the defense context, varies from the

definitions used in the commercial world. Is there a single definition that is appropriate for purposes of defense planning, or are there several possible definitions, depending on the context and purpose served by the planning?

There are issues of process as well, which could be worthwhile topics for research. For example, how is the quality of defense planning improved by use of the business-area approach? Is the concept genuinely useful in helping subordinate echelons do more effective planning that is consistent with the strategic world view of DoD leadership? What unique sorts of insights does it provide planners during a period of extensive downsizing in defense forces and capabilities? Specifically, does it help planners to focus, in realistic ways, on those business areas that play a central role in national security, and to define clearly their bounds and content?

Finally, what specific weaknesses in the current defense strategic-planning process could be strengthened by use of the business-area concept?

III. Strategic Intent

Business Concept

This concept was developed at length in the *Harvard Business Review* by Prahalad and Hamel, the inventors of the concept of core competency, which was laid out in detail in a *Harvard Business Review* article the following year.[13] A number of the principles discussed in that later article were foreshadowed in the 1989 piece on strategic intent, and the two should be read together to get the full force of the authors' arguments.

Strategic intent, as the term is used by Prahalad and Hamel, is the key to long-term competitiveness. In their view it implies a vision of the situation in which the corporation would like to find itself ten to twenty years hence; thus it is not evolutionary, but it charts a roadmap for management which may require boldness and persistence to achieve results which deviate from purely evolutionary paths and posture the firm to dominate the fields of competition its strategic intent has identified. Emphasizing the importance of thoughtful long-term strategic planning, the authors quote Sun Zi: "All men can see the tactics whereby I conquer, but what none can see is the strategy out of which great victory is evolved."

"Well focused definitions of the firm's strategic intent provide a test against which shorter-term plans can be measured," the authors note. They can energize the workforce, helping generate a competitive spirit and orienting employees' attention toward winning. Clear statements of strategic intent can guide resource allocations, including those needed to build required core competencies Strategic planning in most corporations acts as a short-term "feasibility sieve," the authors argue—a check on strategic fit, rather than the long-term, integrated approach characteristic of strategic intent. "The former asks how next year will be different; the latter, what must we do differently?" Strategic intent is clear about ends and flexible about means.

Strategic intent provides a spur to innovation by identifying those things which must be invented to achieve the strategic intent. For example,

Canon had to reinvent the copier. The concept places heavy emphasis on upgrading workforce competence: "An organization's capacity to improve existing skills and learn new ones is the most defensible competitive advantage of all." It also emphasizes the concept of *competitive innovation*—the invention of more imaginative and effective ways to compete, working on the premise that "a successful competitor is likely to be wedded to 'recipes' for success." Competitive innovation may take many forms. The authors cite a number from recent business history, including staking out underdefended territory; looking at niches as a starting point from which to grow; and building a base of attack just outside the market territory that industry leaders currently occupy. The authors denigrate most traditional business-planning concepts, arguing that U.S. business planners have become expert at drawing industry maps while "their competitors have been moving entire continents." "In short, the strategist's goal should be to create new [competitive] space that is uniquely suited to the company's own strengths."

In addition, the authors argue, U.S. firms should emulate the Japanese and South Koreans by setting up global marketing franchises and sharing core competencies where it makes sense to do so. Finally, they take a swipe at traditional strategic planning, criticizing it for being incremental, cautious, inflexible, sticking to known territories even when the real opportunities are elsewhere, and concentrating on ensuring internal consistency rather than supporting a clearly articulated, long-term strategic intent.

Current Status of the Concept in Business and Industry

The arguments that most business strategic planning organizations produce relatively little of value, that long-range planning needs a vision to guide its efforts (to include the development of core competencies), and that a sense of competition is important to spur innovation and motivate managers find some support in academic writings. Those who find the concept of core competency appealing are more likely to agree with the arguments put forth in "Strategic Intent". Given the relatively short time since the appearance of both Prahalad-Hamel articles, it is difficult to assess their likely long-term impact: though, of the two, the piece on core competency is likely to be of more immediate utility to

corporate planners in the sense that it provides some guides to action, while "Strategic Intent" is more in the nature of a critique of existing corporate-planning processes. In addition, the article's direct attack on incrementalism in strategic planning brings it into conflict with the ideas on strategic change advanced by James Brian Quinn discussed elsewhere in this appendix.

Potential DoD Applications of the Concept

One of the more obvious applications of the notion of strategic intent to DoD planning relates to the concept's role in the identification and definition of core competencies. Clearly, a sense of where the firm (Defense Department) would like to be relative to the maintenance or acquisition of core competencies over the long term is a key part of the firm's (Defense Department's) posturing itself to meet future competitive (deterrent, warfighting, military competitive) requirements.

Other potential applications include: helping to provide a sense of common purpose, shared goals, and a long-range planning vision to all those elements of the Department of Defense involved in program development and execution; to provide a check on the validity and direction of shorter-range planning—in terms of both strategic fit and compatibility with longer-term defense objectives; and to inject greater discipline into DoD-wide planning, including service planning, while helping ensure its conformity with defense strategy. Clearly articulated strategic intent should also aid in the selection of DoD business areas by providing a relevance check for candidate businesses. It might also be useful in DoD planning related to shaping of the future strategic environment by providing a look ten to twenty years downstream at plausible U.S. goals, as they might contribute to creation of the desired environment.

Issues Regarding Possible DoD Use of the Concept

The main issues surrounding possible Defense Department use of the concept of strategic intent focus on whether it is possible, in a meaningful way, to develop a sense of where one wants to be ten to twenty years hence in the

defense-planning context. In that regard the task of articulating long-term strategic intent would appear to be easier in the business domain than in the world of defense strategy (though some would argue with that). In the business world, realistic goals aimed at achieving a dominant position in a particular market or product area can be outlined with reasonable confidence that they are achievable, given adequate resources, sound planning, and clearly articulated (and internally enforced) strategic intent.

In the defense area, by way of contrast, uncertainties abound regarding strategic goals, the global and key regional strategic environments likely one or two decades hence, plausible alignments, available resources, national goals, and technological developments. At the same time, however, it should be noted that the notion of core competency requires some sort of vision of the long term in order to identify those competencies which are indeed core. Similarly, the notions of selecting defense business areas and shaping the strategic environment assume the planner's ability to develop a vision of the future in the ten-to-twenty-year timeframe.

Areas for Additional Research

Drawing on the foregoing discussion, it appears that the most interesting areas for additional research would include study of the interrelationship of the concepts of core competency, business area, and strategic intent, to determine the feasibility of developing a meaningful vision of the strategic environment a decade or two hence, U.S. goals in the postulated environment, and the value which might be added to DoD planning by developing such a vision. The investigation should also examine the degree to which the functions that Prahalad and Hamel attribute to strategic intent are already performed in the DoD planning process by other means.

IV. Scenario Analysis

Business Concept

Royal Dutch Shell pioneered the sophisticated use of scenario analysis in business planning. In the late 1960s the company's planning mechanisms looked forward only six years and, for a number of reasons, senior management concluded that a fifteen-year planning horizon was required for the oil industry. Herman Kahn's scenario approach is often cited as the inspiration for Shell's scenario analysis techniques.[14]

The primary value of scenario analysis in business planning is that the alternative, forecast analysis, is likely to fail business planners when it is needed most: in anticipating major change in the business environment that renders whole strategies obsolete. The strength of scenario analysis is that it accepts the reality of uncertainty as a basic structural feature of the business environment and seeks to make it an integral and well-understood element of business planning.

The Shell scenario analysis technique emphasizes two things. First, that scenarios which simply quantify the outcomes of obvious uncertainties (like the market price of oil) are useless to decision makers and strategists because they are little more than forecast analysis in disguise. Such scenarios threaten to mislead decision makers as to the truly important uncertainties they face. Second, that to be useful scenarios must be based on an understanding of the forces driving uncertainty and must be presented in a way that changes the decision makers' assumptions about the world and their model of reality.

The Shell technique originally involved two main steps. Initally, first-generation scenarios are developed. These focused on obvious uncertainties, and their purpose was to identify predetermined elements of the system and uncover the forces driving them. Second-generation scenarios were derived from the analysis of the predetermined elements, the forces driving events in the system, and the behavioral characteristics of the principal actors in the system.

These second-generation scenarios were focused on developing and communicating an understanding of the forces that compel outcomes, rather than on predicting outcomes. The output was insight into processes, not data projections.

A third step was added to the scenario analysis process following the the global energy crisis in the early 1970s. Having experienced problems with changing decision makers' perceptions of the world and the business environment, the scenario planners developed interview techniques used at the start of the analytical process to ensure that the deepest concerns of the decision makers and their existing view of the world were understood.

Once the scenario analysts identified a set of second-generation scenarios that they were convinced represented all the critical strategic variables, they formulated an alternative set of straight-line-projection scenarios that demonstrated how and why such expected developments were very unlikely or impossible. This was an effective method of jarring decision makers out of their existing world views in an effort to force them to reperceive the world. Similarly, phantom scenarios were developed which explored the regret the firm may experience should the business environments postulated in the second-generation scenarios either come about later than anticipated or not at all.

Finally, the effective use of scenario analysis included shaping the analytical implications communicated so as to be relevant to the various consumers of the analysis.

Potential DoD Applications of the Concept

Scenario analysis has been used in various forms in the Department of Defense for years. However, several aspects of the ways in which the Shell techniques are both conducted and presented could prove uniquely useful in DoD planning. This is especially true in today's rapidly changing international security environment. The element of the conduct of the Shell technique that could contribute most to DoD planning is the focus on producing second-generation scenarios which illuminate the relationships among processes already

underway whose consequences have yet to unfold, interdependencies inherent in the system, and potential breaks in trends. The result of this focus is that second-generation scenarios deny much more than they affirm by ruling out impossible or unlikely developments. Rather than presenting DoD decision makers with a broad array of spanning scenarios, from which they will have difficulty choosing and on which they will have a hard time focusing, this second-generation technique serves to make complexity manageable. This in turn permits more detailed spinning out of the scenarios in question, providing more insight into lower-level implications of the developments described.

The presentation techniques used in Shell's scenario analysis also could add to DoD's current use of scenarios. The explicit use of straight-line-projection scenarios and phantom scenarios to help shock decision makers into formulating new world views—and taking actions in accordance with those views—could prove particularly valuable today. Similarly, the way in which the Shell technique narrows down the scenarios presented for consideration could have DoD applications.

Finally, Shell's focus on shaping both the analysis and its results so as to maximize their impact on the mind-sets of the decision makers has DoD applications beyond simply scenario analysis. In this respect, there may be several important lessons to learn about how to make analysis and its results more meaningful to DoD decision makers that can be drawn from Shell's scenario analysis.

Issues Regarding Possible DoD Use of the Concept

Two issues regarding the potential use of Royal Dutch–style scenario analysis for DoD planning purposes are readily identifiable.

The first relates to the question of whether the international security environment and the forces that drive developments within it are sufficiently understood to permit the identification of enough predetermined elements and impossibilities to proceed from first-generation scenarios to second-generation scenarios.

The second relates to whether DoD decision makers would be willing to accept the kind of analytical advocacy inherent in the Shell scenario techniques to the point that they will reshape their world views.

Areas for Additional Research

As noted above, this paper is based on the review of several articles describing the Shell scenario-analysis technique. Those articles focused heavily on explaining why such analysis is useful and necessary, and on the fundamental importance of properly presenting the analytical results to decision makers. They did not provide a great deal of detail regarding the nuts and bolts of the analytical technique itself.

Thus, additional research is needed into all aspects of the details of the Shell scenario methodology. Of particular importance is a determination of whether or not this methodology is primarily systematic or heuristic in nature.

Research might also usefully be done examining the level of analysis at which such scenario analysis might best be performed for DoD purposes.

Finally, a trial run of the methodology on a sample DoD planning problem (possibly involving the Asian security environment) could be conducted to demonstrate the utility of the techniques.

V. Incrementalism as a Model for DoD Strategic Planning

Business Concept

The ideas discussed in this paper mainly reflect the writings of James Brian Quinn, who has stressed the importance of incrementalism in the making of major business planning decisions and who argues that the incremental model is the way in which large business entities make strategic decisions in any event. An appropriate title for his work, in Quinn's view, would be "how and why real managers act in strategy formation."[15]

An incremental approach is important for a number of reasons, Quinn argues. Probably the most important is the fact that the world unfolds incrementally, and managers frequently operate with far less than perfect information about those weighty planning issues on which they must make major decisions and substantial financial commitments. An incremental approach allows time for the correction of error, reorientation of planning, accounting for new developments, acquiring needed planning data, tapping of expert opinion, maturing of important technologies, the development of needed competencies, and reaction to competitor moves. In other cases consensus must be carefully built among key personnel that proposed moves having long-term implications are the right ones, in order to ensure enthusiastic management support. Sometimes implementation of broad changes must await the retirement of certain senior executives or the accomplishment of major reorganizations.

As Quinn describes what happens: "Successful executives link together and bring order to a series of strategic processes and decisions spanning years. At the beginning of the process it is literally impossible to predict all the events and forces that will shape the future of the company. The best executives can do is to forecast the most likely forces . . . and the ranges of their possible impact. They then attempt to build a resource base and a corporate posture so strong in selected ares that the enterprise can survive and prosper despite all but the most devastating events. They consciously select market/technological/

product segments which the concern can 'dominate' given its resource limits and place some 'side bets' . . . to decrease the risk of catastrophic failure . . . .

"They then proceed incrementally to handle urgent matters, start longer-term sequences whose specific future branches and consequences are perhaps murky, respond to unforeseen events as they occur, build on successes, and brace up or cut losses or failures. They constantly reassess the future, find new congruences as events unfurl, and blend the organization's skills and resources into new balances of dominance and risk aversion as various forces intersect to suggest better, but never perfect, alignments."

In this type of planning management may "keep questions broad and decisions vague in early stages to avoid creating undue rigidities and to stimulate others' creativity." Effective strategies, Quinn argues, "tend to emerge from a series of 'strategic subsystems,' each of which attacks a specific class of strategic issues (e.g., acquisitions, divestitures, diversification, R&D emphasis, etc.) in a disciplined way." The results are "blended incrementally and opportunistically into a cohesive pattern that becomes the company's strategy." It may be incorporated into a company "master plan," but, more likely, is reflected in a series of discrete but coordinated actions.

The foregoing is not meant to suggest that the formal planning organization of the corporation plays no role in strategic planning. In Quinn's view it can contribute to the process by integrating the disparate elements of long-term planning, conducting special studies and analyses (both to enlighten management and to persuade doubters), and fine-tuning annual commitments, among other things.

In a variation on this theme, Quinn talks about the concept of "phase program planning" employed by IBM and Xerox among others, when introducing new products. The firms "make concrete decisions only on individual phases (or stages) of new product developments, establish interactive testing procedures with customers, and postpone final configuration commitments until the latest possible moment."

In summary Quinn argues that incrementalism is inevitable, given "the great ambiguities, radically changing environments, and largely unknowable range of competitive countermeasures present . . . ." He goes on to observe that "any serious study of the important national strategies of modern history—including those being played out at the present—would reach a similar conclusion." The right question is not whether strategy formulation should be incremental, but the degree of incrementalism that is appropriate.

Current Status of the Concept in Business and Industry

The most serious accusation levelled against Quinn's writings by some academics and practicing managers is that Quinn is essentially antiplanning; that his laissez-faire approach overlooks the value of a properly structured planning organization within the corporation; and that the diffuse and amorphous planning structure he describes will inevitably result in suboptimal planning. In reply Quinn argues that logical incrementalism is not aimless or muddling, but is "conscious, purposeful, proactive, good management." Moreover, Quinn says, his balanced survey of ten successful large corporations showed that "the carefully designed strategic planning systems of major corporations were simply not performing well, and indeed not producing those companies' strategies." In rebuttal to his critics Quinn adds to his argument for incrementalism by using the example of innovation, where "early commitment to a single option can lead to a completely incorrect choice."

Drawing on an example from the political domain, he notes that had Roosevelt overtly announced his strategy of rearming America and supporting its allies in 1939–40, public backlash might well have killed his initiatives, while the incremental approach (e.g., armed merchant ships) made faster commitments to the war effort than a more openly articulated strategy could have done. "Properly used," Quinn argues, incrementalism "speeds rather than slows decisions and commitments," an important consideration "given today's widely recognized need for greater speed in strategy development . . . ." Thus, he concludes, agility is aided by incrementalism, superficial appearances to the contrary notwithstanding.

Potential DoD Applications of the Concept

In some respects logical incrementalism closely resembles the existing DoD planning process. Rosen's work on defense planning also suggests that selective, conscious delay in decision-making may result in sounder, more realistic, and better informed strategic decisions, citing examples from DoD planning in the 1950s and 1960s, mainly in the area of strategic weapons procurement.[16] If one accepts that the deliberate approach of incrementalism is not only an acceptable but a sometimes superior form of planning, the Department of Defense might benefit from an examination of its planning process aimed at identifying those types of decisions where incrementalism could be desirable and those decisions appropriate for higher-paced development by a dedicated strategic planning organization. A related topic would be how, optimally, to structure and empower such an organization.

Issues Regarding Possible DoD Use of the Concept

The main issues center on the validity of Quinn's perceptions about the prevalence and utility of the incremental approach; validation of its relevance to certain clearly identified DoD decision areas; and the interaction of the incremental approach with the more formal DoD strategic-planning processes to determine whether there is a logical basis for a sharing of labor between the two which would improve the overall quality of DoD strategic planning.

Areas for Additional Research

The starting point for addressing the issues discussed in the preceding paragraph might usefully be research aimed at identifying and describing the strategic planning process as it presently exists in the Defense Department (something roughly analogous to Quinn's survey of planning techniques in ten major corporations). Both the nominal process, as described in DoD directives, and the actual process, as practiced day-by-day should be described. With this foundation laid, follow-on research could address the logic and effectiveness of the process, and identify areas for possible improvements.

VI. Strategy Mapping

Business Concept

In an article in the *Sloan Management Review* three Wharton School professors, Terrence Oliva, Diana Day, and Wayne DeSarbo, presented a strategic planning technique they termed *strategy mapping*.[17]

The purpose of this technique is two-fold. First, it is intended to provide strategic planners or managers with a readily accessible measure of their firm's current standing relative to their competitors. Second, it is supposed to permit strategic planners or managers to simulate strategies and the tactical initiatives needed to implement them, and to analyze their probable impact on their firm's business performance and relative competitive position.

Strategy mapping seeks to illustrate graphically how various business performance measures (e.g., return on investment, market share), potential strategies and tactical initiatives, and actual performance vis-a-vis one's competitors are related in the competitive environment. This is done by creating a multidimensional graph, the axes of which represent general strategic directions firms in the competitive environment might pursue.

In the article's example there are three axes, representing the maximization of profitability, growth, or market position. Points representing the relative position of selected performance measures of interest are plotted on the resulting map. Then, using a computer model developed by DeSarbo (GENFOLD 2), the firms competing in the mapped environment are located, based on actual performance data. Finally, vectors representing potential tactical variables are superimposed on the map, with their directions indicating their relative impact on a firm's position in the competitive environment and their length representing the relative importance of the tactic in creating movement along that vector. The set of vectors is referred to by the authors as the *strategic compass*.

The power of the strategy-mapping technique is derived from its potential to simulate the probable impact of pursuing various strategies and tactics on the relative competitive position of a firm, as measured by business performance. Assuming that the relationships of the strategic-direction axes, the performance measures, and the tactical variables are representative of reality, then the strategy map provides intuitive insight into how to change one's competitive position vis-a-vis one's competitors. It also makes it possible to test various tactics for achieving such changes in competitive position, and their potential impacts on other aspects of the firm's business performance.

Finally, the authors contend that most other research focuses on what the important performance measures and tactical variables are, but not on how they fit together to create a competitive environment.

Potential DoD Applications of the Concept

The DoD planning potential of strategy mapping is derived from the technique's ability to simplify, through graphic representation, the relative positions and strategic and tactical interrelationships of numerous actors in a competitive environment. This could have particular application to the emerging security environment facing the United States, in which many potential competitors will vie for various types of advantage over one another, sometimes creating unintended and unanticipated competitive consequences.

The formulation of a competitive strategy in such an environment is obviously more difficult than it was during the Cold War. Were strategy mapping successfully adapted to address and simulate multipolar international security competition rather than business competition, it might provide insights into subtle implications of pursuing various competitive strategies and into the relative merits of various tactics for implementing those strategies. It might also help demystify the competitive strategies, tactics, and possibly intentions of other nations by illustrating how their relative competitive position is changing as a result of their actions. This could make U.S. cooperative initiatives or counteraction both more timely and more effective, and the strategy mapping technique might be used to help inform such proactive U.S. steps.

The technique might also have some potential for evaluating the relative competitive contributions of the members of a multinational alliance. The technique might also prove useful in identifying where both individual members of the alliance and the alliance as a whole are lacking in competitive capability.

Issues Regarding Possible DoD Use of the Concept

There are two primary issues regarding the use of strategy mapping in DoD applications:

- Can relevant and sufficiently measurable strategic axes, performance indicators, and tactical variables be identified?
- Are the interrelationships among those axes, indicators, and variables sufficiently well understood to permit useful modeling?

If both these questions cannot be answered positively, then the mapping of the competitive international security environment and the positions of national actors within it is not possible, and the technique is inapplicable to DoD planning in its original form.

However, it may be possible to use the technique intuitively without quantifiable performance indicators and mathematically expressed interrelationships. If relevant, but nonquantifiable, performance measures could be identified and strategic axes postulated, the relative competitive positions of national actors could be roughly approximated. Then, various tactical variables and their effects on the competition could be hypothesized, permitting first-order testing of strategic concepts. In this way, the technique might provide a new and insightful way of organizing one's thoughts about future international security competition and U.S. options.

Secondary issues regarding the application of this technique to DoD planning involve the following two questions:

- How would this technique be applied when it is not clear who one's future competitors might be?
- How would it be applied to competitions among others in which the United States is not an active participant, but would like to be able to influence the competition?

Areas for Additional Research

The most important additional research into the potential use of strategy mapping in DoD planning would be an exploration of whether the questions raised above can be answered positively.

Answering the first question would be a two-step process involving first the identification of potential strategic axes, performance measures, and tactical variables, and then a determination of whether sufficient data are available to permit useful quantification.

The second question would involve an evaluation of whether the interrelationships among the factors identified above are sufficiently well understood to attempt to model them. It would then be desirable to explore how the model used in the business planning application of strategy mapping works and whether its function is relevant and applicable to national security planning. If it were not relevant or applicable, then the potential for the development of a new model could be explored.

In conclusion, it should be noted that translation of this technique into the defense-planning domain could be difficult, and the results might provide little insight not available through more conventional net assessment techniques. It would appear that strategy mapping is valuable mainly as a display technique, rather than as a procedure for rigorous analysis of competitive strategies. Given

its limited potential, it is recommended that it not be pursued at this time by the Department of Defense.

VII. Strategic Use of Technology

Business Concept

In a mid-eighties *Sloan Management Review* article John Wyman of AT&T described a phenomenon he dubbed *technological myopia* and outlined a four-step process to overcome its deleterious effects on a firm.[18] The author maintains that the successful implementation of technology in one's business is ultimately dependent on developing and applying a strategic approach to the use of technology by the firm. His examples focus on the use of information technology, but are applicable to technology in general.

Wyman describes two forms of technological myopia, external and internal. External technological myopia is exemplified by a firm that fails to see how technological progress in its own or related industries will affect its future competitiveness. Internal technological myopia occurs when a firm has advanced technology available to it and fails to see how that technology can be applied in a strategic manner to enhance competitiveness.

Both of these forms of technological myopia can be overcome, Wyman argues, by employing a four-phase assessment process that will help decision makers think strategically about technology. The four phases are assessment, involvement, selection, and integration. The first three phases each involve the use of a specific analytical tool. The phases and their respective tools are described below:

- ***Phase I: Assessment.*** This phase focuses on assessing the degree of technological myopia from which one's firm suffers. This is a necessary first step in taking action to reduce or eliminate technological myopia and to make strategic thinking about technology more prevalent in the firm. Wyman suggests that this assessment task can best be performed with the aid of a tool called the strategic value matrix. This matrix seeks to determine the highest level of organization at which distinct decisions regarding technology applications, development, and

investment are made; the highest level of planning at which technological considerations are explicitly incorporated; and the relative value technology applications and developments are accorded by the managers responsible for decisions regarding them. The author maintains that the combination of these three factors will help assess the degree of technological myopia of the firm. However, this presumes that the higher the level in each category, the less technological myopia in the firm. This may not be a valid assumption; it could in fact be inversely proportional.

- ***Phase II: Involvement.*** Once one's position in the strategic value matrix has been assessed it is time to determine how the firm's strategic use of technology can be improved. Wyman argues that a strategic business approach that will provide a competitive advantage over one's competitors must first be selected. Then a strategic question set should be assembled and answered regarding how technology can be used to pursue the strategic approach. The questions in this strategic question set should focus on the opening of new opportunities vis-a-vis one's competitors.

- ***Phase III: Selection.*** *Selection* refers to the choice of a strategy for implementing technology as a competitive tool. Wyman suggests that this is best achieved through the use of a strategic focus matrix. This matrix cross-indexes business strategy approaches (e.g., low-cost producer, product differentiation, niche marketing) with the technology applications foci (e.g., customer focus, operations focus). By thinking about one's firm in these terms one can think more strategically about technology and select a strategy for making the best competitive use of technology for one's business and business strategy. Wyman's description of the use of the strategic focus matrix is limited to providing examples of existing firms whose use of technology and business strategy fall under each category of the matrix. There is no discussion of how actually to select technological application/business strategy pairs. Thus, the tool remains conceptual.

- ***Phase IV: Integration.*** This phase refers to the integration of this type of strategic thinking about technology throughout the firm. Wyman notes that the act of selecting and implementing business/technological application strategies does

not guarantee that technological myopia will no longer exist in the firm. The lower the firm is on the strategic value matrix to begin with, the more difficult truly effective integration will be, and a corporate cultural revolution will be necessary in many instances. Such revolutions must be led by the CEO, who must believe that the firm's fortunes hinge upon the successful strategic application of technology. Several anecdotal suggestions for organizational steps that might improve integration are provided, but there is no systematic analysis of how integration can best be achieved.

Current Status of the Concept in Business and Industry

The concept obviously requires further development and elaboration before it is likely to generate business interest in its application.

Potential DoD Applications of the Concept

Effective DoD applications of Wyman's concept for thinking strategically about technology may be possible, but not without further development of the concept and methodology.

In principle, it might be useful to assess the Defense Department's degree of technological myopia by determining—through the use of a strategic value matrix—at what organizational and planning levels technology is explicitly taken into account and how it is viewed in each case. In doing this it might be found that strategic thought about technology is centered in the military services, leaving open the possibility that technological myopia is affecting decisions regarding technologies with cross-service strategic implications. Were such conclusion to be drawn, then the use of a strategic question set and a strategic focus matrix might help the Department of Defense improve its strategic thinking about technology by focusing higher level attention on the question of how technology can best be applied to improving the U.S. military's competitive position vis-a-vis potential opponents.

Issues Regarding Possible DoD Use of the Concept

Wyman's article presents only a conceptual shell of a technique for thinking strategically about technology, not a well-defined methodology for doing so. Major improvements in the concept and its tools would be needed for any practical use of it in DoD planning. The concept is simply not well enough developed for operational use.

For example, how would judgments be made regarding the level at which technology is explicitly taken into account? Is the competitive value of potential technological applications to DoD strategies as readily discernible as it is in the case of business strategy formulation? What would the DoD-relevant matrix categories be for the tools described?

Areas for Additional Research

Additional research in this case would entail construction of an operational technique for organizing DoD strategic thinking about technology based on the skeletal structure Wyman presents. This might prove useful, particularly since Wyman has outlined several specific conceptual tools for strategic thinking about technology. However, the structure he lays out is so vague as to create real uncertainties about whether wholly different approaches to this problem might not provide dramatically better alternatives for DoD. The concept is clearly not ripe for DoD application at this point.

VIII. Maximizing Value Added as a Model for Strategic Planning

Business Concept

This discussion argues that it is of fundamental importance to think about which activities of the firm will add the most value to its product or services, and how that added value will give the firm competitive advantages. Using the example of the computer industry, proponents of this view make the point that the strategic goal of U.S. computer companies should not be to build computers, which have become low-margin commodities, but to concentrate on operating systems and software generally, which create persistent value in computing and help empower the user to get the greatest added value from his computing resources. "Defining how computers are used," this school argues, "not how they are manufactured, will create real value—and thus market power, employment and wealth in the years ahead."[19]

The ideal, then, is to find "high-value areas that . . . create proprietary concepts and technologies that become candidates for the next wave of standards . . . ." Sun Computer is cited as a leading example of this management approach, concentrating on software and marketing, not manufacturing prowess, to achieve a competitive edge by monopolizing the "true sources of added value . . . creating vigorous competition for enabling components." Microsoft's experience is also cited as exemplary of this approach. The bottom line is that "companies and countries that control markets hold power, profit, and employment advantages over those that merely control technology."

Related themes developed by the authors include the importance of building product differentiation; understanding and appealing to customer measures of product utility, while helping shape those perceptions; and encouraging broad competition in computer hardware to expand the market for the firm's software products.

Underlying this is the fundamental notion that one of the greatest technological strengths of the United States lies in information systems and that U.S. firms should work to capitalize on and reinforce those strengths.

Current Status of the Concept in Business and Industry

Since the *Harvard Business Review* article by Rappaport and Halevi which presented the concept is of quite recent origin, the impact which it is likely to have on managers is difficult to anticipate. The article sparked a number of comments, however.[20] While some writers agreed strongly with the article's authors, many took issue with the proposition that the future of hardware manufacturing corporations is not promising and the related conclusion that the U.S. computer industry should get out of the hardware side and concentrate on the higher-value-added software and operating systems market. The CEO of Cray Research was particularly strong in rebuttal of this point, noting that Cray continues to be a successful high-technology hardware company where "pushing the edge of the envelope on raw hardware performance continues to be an integral part of our success formula".[21] Others argued that it would not be in the U.S. interest to abandon hardware manufacturing, particularly to the Japanese; moreover, some of these writers noted, U.S. dominance of the software market is not assured in perpetuity, but could be captured by the Japanese through the purchase of key U.S. firms, leaving the Japanese in effective control of all major facets of the computer industry and building a path for ultimate Japanese domination of advanced information systems globally.

Other critics have noted that the article is vague about what it means "to dominate the high-value end." The article doesn't flow from any analysis, one observer commented, noting that there is, in fact, profit to to be made at the low end of the line, witness Wallmart.

As the foregoing suggests, most of the published comments dealt with the organization of and future prospects for the U.S. computer industry. Few of the commentators took strong issue with the aspect of the article which is of primary interest here—the notion that achieving high added value should be a major criterion in strategic planning.

Potential DoD Applications of the Concept

Several aspects of the concept have potential relevance to DoD planning. First, in analyzing the future strategic environment, it is important to think about which activities of the firm will add the most to its product or services. In the defense context, using value added as a criterion for selecting military businesses suggests that the JCS, the services, and the operational commands should be in businesses that add the greatest value to U.S. combat forces in terms of advantage over opponents in future military competitions, crises, and war.

Second, in many cases the ability to customize military capabilities in ways which add significantly to their military value (as seen through the eyes of operational commanders) will become increasingly important. When this can be accomplished rapidly, in response to the demands of new conditions as they emerge in crises—or in peacetime competition—the value added may be significantly enhanced. In the military context, the ability to adapt existing capabilities to important emergent operational needs, under heavy time pressures, is likely to be viewed by the user as a particularly desirable and relevant form of adding value. In short, the military organization that can most effectively adapt, on the required time scale, to changes in strategic conditions or to the needs of specific contingencies will have a major advantage in future military confrontations.

Third, Rappaport and Halevi have set forth some rules for what they call computerless competition in the information field. These suggest maxims for DoD long-range planning, including:

- Compete with the military organizations of other countries in terms of adaptability, not in the traditional static measures of combat power
- Monopolize the true source of military added value, which is the ability to adapt forces, operational concepts, plans, C^3, logistics, intelligence, mobility, and training rapidly if necessary. Information technologies in which the United States is strong seem central to this kind of adaptability.

- Finally, maximize the sophistication of the value delivered by military organizations and minimize the sophistication of the technology consumed by them. This suggests creating highly adaptable forces by using commercially available technology to the maximum practical degree.

Issues Regarding Possible DoD Use of the Concept

The discussion above raises the issue of identifying the analog to commercial product value in DoD planning. Instead of determining what added values will cause customers to purchase its wares, DoD planners need to decide, often in the face of large uncertainties, what added military value will be most likely to determine crisis and war outcomes in the future. Such outcomes are driven by several factors: intrinsic combat utility of a system or capability (tactical aircraft must have a certain minimum combat range); relevance to likely contingencies (jungle warfare capability adds little value if the United States does not intend to fight in jungles); competitive advantage of U.S. forces over adversaries (e.g., ability to adapt faster to changing conditions, better deterrent effects than other countries, or the provision of greater assurance to friends and allies).

Additionally, use of value added as an analytical approach can conflict with the ideas of core competency and strategic intent, leading to the question of which concept really should guide actions. In other words, the Defense Department could fall victim to creating too many decision aids which might lead to multiple and conflicting answers to acquisition issues.

Areas for Additional Research

The ability to define and identify value added in the context of decisions on acquisition priorities, military organizations, and combat doctrine, among other things, is essential to the meaningful and effective use of the concept of value added for purposes of defense planning. Research should concentrate on definition of the concept of value added in the defense domain, drawing on the

perspectives of major operational commanders and headquarters planners to identify key elements of the concept for purposes of further investigation. In doing this it should be kept in mind that value added may not always be the predominant consideration in military decision making, and that the value added may vary, depending on perceptions; for example, a capability which appears to have relatively low value added in the eyes of the possessing service may play a critical role in some joint warfighting capability and be seen to have high value added in the eyes of the joint force commander. Any effort to define value added in the defense context would also have to take into account the relationship between that concept and existing—albeit vague—military concepts such as force multiplier, leveraged capability, and information supremacy.

IX. Strategic Alliances

The Business Concept

The concept of strategic alliances in business it actually has its origin in the national security field. Kenichi Ohmae, in his *Harvard Business Review* article, "The Global Logic of Strategic Alliances," notes that "companies are just beginning to learn what nations have always known: in a complex, uncertain world filled with dangerous opponents, it is best not to go it alone."[22] Yet, while the business concept of strategic alliance may be borrowed from the world of interstate relations, its application in the business arena differs in purpose and focus.

The purpose of strategic business alliances is to enhance the competitive position of the alliance partners vis-a-vis both other competitors and each other. Such alliances are made necessary by the globalization of the marketplace.

Marketplace globalization involves both the convergence of customers' needs and tastes around the world and the relentless dispersion of the technology of process and product. These developments mean that the maintenance of a technological edge and the ability to distribute and market products around the world involve tremendous fixed costs that are beyond the capacity of many individual firms to bear. Thus, marketplace globalization makes it difficult, if not impossible, for some businesses to improve, or even sustain, their competitive position without collaboration with one or more of their competitors. Strategic business alliances permit their participants at a minimum to share fixed costs and optimally to reduce future fixed costs such as R&D and marketing or distribution expenditures, if possible.

The focus of strategic business alliances is thus two-fold. First, firms should seek to ally with competitors with whom they can arrange the mutual reduction of fixed cost while increasing sales. Second, a firm should seek alliance partners with whom collaboration might lead to learning which bolsters

the competitive position of the firm. This latter focus creates an adversarial tension within the alliance, as one partner seeks to use it to improve its position vis-a-vis the other.

Adversarial tension within strategic business alliances has led business academics to identify a set of conditions under which mutual gain is possible and to state a set of principles that must be understood for successful competitive collaboration.

Preferred conditions for mutually beneficial alliance are:

- The partners' strategic goals converge while their competitive goals diverge.
- The size and market power of both partners are modest compared with industry leaders.
- Each partner believes it can learn from the other, while limiting access to proprietary skills.

Principles governing successful competitive collaboration are:

- *Collaboration is competition in a different form.* Alliances should be entered with clear strategic objectives and an understanding of how the partner's objectives will affect one's own success.
- *Harmony is not the most important measure of success.* Mutually beneficial competitive collaboration is evidenced by occasional conflict as the partners test the limits of one another's willingness to give.
- *Cooperation has limits.* Alliance partners must defend themselves against significant compromise of their competitive position vis-a-vis one another.
- *Learning from partners is paramount.* Successful collaborators use the alliance to build skills in areas outside the formal agreement and systematically diffuse knowledge gained from their partners throughout their organizations.

Potential DoD Applications of the Concept

Obviously, strategic alliances already are an essential part of U.S. international security policy and play a major role in many aspects of DoD planning. However, there may be several aspects of the business concept of strategic alliance that have potential for use in DoD planning and strategic thought.

First and foremost is the use of strategic alliances by businesses as an explicit means of defraying or reducing fixed costs, thus improving their competitive position. While certain elements of current U.S. alliance relationships serve to perform this function in one way or another (e.g. Host Nation Support programs in Japan and Western Europe), it is not at all clear that they are explicitly pursued for that purpose.

The Department of Defense faces a security environment in which the lack of a clear, sustained threat is undermining support for large standing forces and forward deployments overseas. In that environment the Defense Department might well benefit from a reevaluation of existing alliance arrangements and a search for potential new alliances with an eye toward deliberately reducing the fixed costs of maintaining desired U.S. force levels and deployments. In doing so, care should be taken to avoid creating critical dependencies which could severely constrain U.S. freedom of action due to allied objections to U.S. policy.

A second potential contribution to DoD planning might be derived from the business idea of competitive collaboration. U.S. alliance relationships have not traditionally been viewed, at least in Washington, as marriages of convenience between countries that are basically competitors in the international security environment. However, forging some such relationships in the future might prove attractive. For example, some form of mutually beneficial defense cooperation, possibly including basing access in exchange for economic development assistance, might eventually be possible with Vietnam. The principles regarding successful competitive collaboration in business outlined above might serve as a guide to preventing such competitive alliances from damaging U.S. interests.

Issues Regarding Possible DoD Use of the Concept

The primary issue regarding DoD application of the business approach to strategic alliances is that international security alliances are far more complex than business alliances. Myriad nonsecurity issues impinge on defense relationships between countries, making both the forging and termination of international alliances more difficult than in business.

DoD use of the business approach to strategic alliances aimed at the reduction of fixed costs would be less severely impacted by outside issues than use of competitive collaboration would be. Numerous situations exist in which the United States and other countries might mutually benefit from defense cooperation. In the case of competitive collaboration, however, the political obstacles to such activities might well prove insurmountable.

Areas for Additional Research

A research program aimed at identifying both the fixed costs currently borne by the Department of Defense in fielding, deploying, and operating U.S. military forces and options for reducing those costs through new forms of existing strategic alliances, or wholly new alliances, might prove useful to future DoD planning. Such a study should also include an assessment of the fixed-cost reductions and other benefits of such new strategic alliances to the potential alliance partners. The possible net effect of such alliances on U.S. freedom of action across a variety of scenarios could also be evaluated, with recommendations for ways to alleviate unwanted constraints on U.S. flexibility.

Similarly, research could also be performed aimed at identifying and assessing potential alliances in which competitive collaboration is the central focus. Special attention should be paid in such analysis to an assessment of the political barriers likely to be encountered in pursuing such alliances. Evaluation of the net effect of such alliances on the competitive position of the potential ally vis-a-vis the United States and other countries should also be conducted.

X. Japenese Manufacturing Techniques as Aids for DoD Planning

Business Concept

The concept, as presented in this paper, draws mainly on the ground-breaking work of Richard Schonberger reflected in his 1982 book, *Japanese Manufacturing Techniques: Nine Hidden Lessons in Simplicity*, basically a how-to-do-it manual describing approaches for applying Japanese methods at the operating level of U.S. manufacturing plants.[23] While the work is over a decade old, it retains its utility as a catalog of Japanese production line practices which any industrial economy could profitably emulate. These include such now familiar techniques as just-in-time (JIT) inventory control and total quality control (TQC) management, which have been widely adopted by U.S. firms. The portions of the book in which we are primarily interested deal with the subjects of industrial plant configurations, effective production-line management, and the training and cross-qualification of the plant work force necessary to implement some of the management concepts central to Schonberger's discussion.[24]

In the area of plant configuration, Schonberger describes methods for accomplishing physical merger of production line processes—in particular the group technology (GT) approach, which consists of breaking up two or more processes and recombining them into cells, each capable of performing the whole enlarged task. Cross-training of the personnel involved allows their more efficient use over a broader range of tasks, adding flexibility to the production process. Alternatively, the principle which Schonberger calls *adjacency* may be used to preserve dedicated, task-oriented production lines while achieving greater integration of sequential processes in order to allow better matching of production rates in adjacent functional lines.

Key differences in the "Western" and "Japanese" approaches to plant configuration are illustrated by Schonberger in a table which compares the principal elements of each, as follows:

	Western	Japanese
Top Priority	Line Balance	Flexibility
Strategy	Long production runs so that the need to rebalance seldom occurs	Flexibility; expect to re-balance often to match output to changing demand
Labor	Assumed fixed labor assignments	Flexible labor; move to the problems or where the current workload is
Production Line Planning	Planned by staff	Foreman may lead planning effort
Line Configuration	Conveyorized material movement	Put stations together and avoid conveyors

Current Status of the Concept in Business and Industry

As noted above, in the decade since the publication of Schonberger's manual his recommendations for the selective adoption of Japanese production management techniques have come to be widely accepted as the conventional wisdom in the field, and have increasingly been applied by industrialists in the West. TQC, quality circles and JIT management are widely practiced, as is the emphasis on flexibility in the assembly process to increase efficiency in the use of manpower and allow wide variations in production rates in order to track with demand and give the customer broader selection of products on short notice.

Potential DoD Applications of the Concept

Portions of the approach which Schonberger describes have already been endorsed by the Defense Department and directed to be implemented. These center mainly on the concept of total quality management, as a general principle of broad applicability within the department, going beyond the narrower quality

control definition used by Schonberger and including leadership and management principles that actively involve lower levels of the organization in solving problems and developing policy.

The aspects of Schonberger's work of more immediate interest to defense strategic planners relate to other matters, however. The first is whether the use of more imaginative production line planning—along the lines described by Schonberger—could provide greater flexibility in the size of production runs, better tailoring of output to demand, and more timely delivery of finished products. This sort of flexibility could increase the adaptivity and agility of the defense industrial base, allowing it to respond in a more rapid but measured and efficient fashion to sudden increases in the demand for defense products. In this regard, the Japanese style could be directly relevant to the DoD concept of reconstitution, an element of U.S. strategic planning which assumes that U.S. industry can be responsive, within demanding time-frames, to substantial increases in the Defense Department's need for industry products. Whether that assumption is correct remains to be determined, but approaches to defense manufacturing which could increase the responsiveness of the defense industrial base without major increases in product cost would be desirable.

While such capability would be useful in the context of reconstitution, it could also be valuable in helping industry meet DoD requirements for less extensive buildups of U.S. military capability occasioned by shorter-term crises or contingencies. If the merits of Japanese-style production management techniques were fully validated in the context of defense production, their use could be enhanced by ensuring that appropriate production management techniques—and specifically the ability to increase production for DoD requirements rapidly—were explicitly addressed in acquisition planning for all major weapons and key support systems.

More flexible and responsive production capability could be relevant in the manufacture of prototypes or in limited production runs designed to provide operable models of new weapon systems for purposes of testing, gaining operational experience, supporting development of tactics or doctrine, filling a very limited need (as for special operations forces), or providing a capability to be put on the shelf pending a demonstrated need for larger-scale production runs.

A further aspect of Schonberger's work of potential interest to the Department of Defense relates to the Japanese concept of cross-training of assembly line personnel to allow merger of functions, with greater efficiency and flexibility in the use of production personnel. These practices could have some relevance to the cross-training of military personnel—an increasingly prominent goal as the military services shrink in numbers and find that the cross-utilization of personnel can result in significant economies of manpower. The notion that generalists can often replace specialists with only minor reduction in efficiency is acquiring greater acceptance, particularly as the quality of military manpower continues to increase, resulting in a better educated and more trainable pool of enlisted personnel.

Issues Regarding Possible DoD Use of the Concept

The concepts discussed above raise several issues related to their potential for productive use in DoD planning. The first is whether Japanese-style production-line management could, in fact, increase the ability of the defense industrial base to respond more rapidly in times of increased demand for its products. A related question is whether it would pay the Department of Defense to invest—directly or indirectly—in configuring key defense production facilities in peacetime in order to acquire added capabilities for reconstitution, or for the short-term fleshing out of active force capabilities in crises.

With regard to the cross-training of military personnel, the principal issue is whether industrial experience has anything of value to offer which goes beyond the experience of the military services, all of which have practiced cross-training to significant degrees in the past, the navy's submarine force and some of the army's special forces units being prime examples.

Areas for Additional Research

The principal areas for additional research on the topics and concepts discussed above relate to the translatability of Japanese-style production

management to the complex and diverse field of defense production; whether there is, in fact, a reasonable prospect of increasing the responsiveness and adaptability of defense industry through the use of such management concepts; the degree to which the Office of the Secretary of Defense and the services are already exploiting these concepts to help achieve a more responsive defense industrial base (under DoD's Manufacturing Technology (MANTECH) program in particular); and whether the concepts are of such value as to warrant the Defense Department's paying contractors to implement them in selected cases. Research in this area should also cover the related topic of utilization of readily available civilian products to deal with surge demands, as was done in the case of many material requirements during Operations Desert Shield and Desert Storm.

Endnotes

1. W. Cockell, J. J. Martin, and G. Weaver, *Core Competencies and Other Business Concepts for Use in DoD Strategic Planning,* Interim Technical Report (San Diego: Science Applications International Corporation, February 7, 1992) (UNCLASSIFIED).

2. C. K. Prahalad and Gary Hamel, "The Core Competence of the Corporation," *Harvard Business Review* (May–June 1990), pp.79–91 (UNCLASSIFIED).

3. Ibid, p. 82 (UNCLASSIFIED).

4. The authors' concept of strategic intent is discussed below in a separate paper devoted to that concept. The concepts of strategic intent and core competency are closely interrelated, the former providing strategic guidance for the identification and acquisition of core competencies by the corporation. A third concept—strategic architecture—is used by the authors to refer to the totality of competencies which characterize the corporation (ibid, p. 80). A fourth—core products—the authors define as "the components or subassemblies that actually contribute to the value of the end product." Honda's engines and Canon's laser printer components are core products in the authors' view (ibid, p. 85) (UNCLASSIFIED).

5. See Michael L. Tushman and Philip Anderson, "Technological Discontinuities and Organizational Environments," *Administrative Science Quarterly* (September 1986); "Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change," *Administrative Science Quarterly* (December 1990); and Rebecca M. Henderson and Kim B. Clark, "Architectural Innovation: The Reconfiguration of Existing Product, Technologies and the Failure of Established Firms," *Administrative Science Quarterly* (March 1990) (UNCLASSIFIED).

6. See Stephen Peter Rosen, "Tools for Managing Strategic Uncertainty" (Olin Institute for Strategic Studies, Harvard University, n.d., photocopy) (UNCLASSIFIED).

7. Ibid (UNCLASSIFIED).

8. Cockell, Martin, and Weaver, *Core Comptencies*, p. 2 (UNCLASSIFIED).

9. The discussion of the business-area approach draws on several sources, including Michael Porter's three volumes: *Competitive Strategy* (New York: Free Press, 1980); *Competitive Advantage* (New York: Free Press, 1985); and *The Competitive Advantage of Nations* (New York: Free Press, 1991). Porter often uses different terminology from that used in this appendix. In addition, James Roche has contributed, through discussions and papers, to sharpening our understanding of the concepts of business areas and core competency. As noted below, however, there is a relative paucity of writing on the subject of the business-area approach to planning. As a practical matter corporate executives often use business-area planning techniques without explicitly identifying them as such (UNCLASSIFIED).

10. See the discussion in A. S. Rappaport and Shmuel Halevi, "The Computerless Computer Company," *Harvard Business Review* (July–August 1991), pp. 69–80. Rappaport and Halevi emphasize that companies must look at the competitive field strategically and understand where they want to go (essentially, what businesses they want to be in and which they should avoid) (UNCLASSIFIED).

11. See Stan Davis and Bill Davidson, *2020 Vision* (New York: Simon and Schuster, 1991), for a number of examples related to the impact of the information-systems revolution on established firms. As the authors note, when confronted with revolutionary developments, the firm "can't just do the same thing better." To be truly competitive it must do something fundamentally different. In these cases careful defining—or redefining—of the businesses which the firm ought to be in can form a critical part of the strategic-planning process (UNCLASSIFIED).

12. See also Cockell, Martin, and Weaver, *Core Competencies*, for a summary of the interrelationship among these three key concepts. In the authors' view a national security business area is a mission area through which DoD core competencies are manifested in ways which best serve U.S. interests; while strategic intent is a concise but powerful articulation of an organization's dominant long-range competitive goal (UNCLASSIFIED).

13. C. K. Prahalad and Gary Hamel, "Strategic Intent," *Harvard Business Review* (May–June 1989), from which the quotations in this paper are taken (UNCLASSIFIED).

14. The discussion of Shell's scenario analysis in this paper draws on writings by former Shell employees, including: Arie de Geus, "Planning as Learning," *Harvard Business Review* (March–April 1988), pp. 70–74; Pierre A. Wack, "Learning to Design Planning Scenarios: The Experience of Royal Dutch Shell" (working paper, Harvard Graduate School of Business Administration, 1984); and Wack, "Scenarios: Shooting the Rapids," *Harvard Business Review* (November–December 1985), pp. 139–50 (UNCLASSIFIED).

15. The principal points of James Brian Quinn's position were summed up in journal articles published in the 1970s and early 1980s and reprinted, with updating commentary by Quinn, in *Sloan Management Review* (Summer 1989), pp. 45–55. Quinn's *Strategies for Change: Logical Incrementalism* (Homewood, Ill.: Richard D. Irwin, 1980), draws on his earlier journal articles to try to develop a broader theory of "proactive incremental management." A successor volume, *The Strategy Process: Concepts, Contexts and Cases* (Homewood, Ill.: Richard D. Irwin, 1988), responds to some of the criticism earlier directed at Quinn's writings and tries to sharpen the definition of logical incrementalism. Quotations in this paper are from Quinn's *Sloan Management Review* articles of 1989, which represent the most recent and thoroughly developed view of his concept of logical incrementalism (UNCLASSIFIED).

16. Rosen, "Tools for Managing Strategic Uncertainty"(UNCLASSIFIED).

17. Terrence A. Oliva, Diana L. Day, and Wayne S. DeSarbo, "Strategy Mapping," *Sloan Management Review* (Spring 1987), pp. 5–15 (UNCLASSIFIED).

18. John Wyman, "SMR Forum: Technological Myopia—The Need to Think Strategically about Technology," *Sloan Management Review* (Summer 1985), pp. 59–64 (UNCLASSIFIED).

19. The discussion in this paper, including quoted language, draws on Rappaport and Halevi, "The Computerless Computer Company." (UNCLASSIFIED)

20. *Harvard Business Review* (September–October 1991), pp. 140–61 (UNCLASSIFIED).

21. Ibid., p. 149 (UNCLASSIFIED).

22. Kenichi Ohmae, "The Global Logic of Strategic Alliances," *Harvard Business Review* (March–April 1989), pp. 143–54 (UNCLASSIFIED).

23. Richard Schonberger, *Japanese Manufacturing Techniques: Nine Hidden Lessons in Simplicity* (New York: Free Press, 1982) (UNCLASSIFIED).

24. Some would argue that it is wrong to continue to characterize the techniques described in this paper as "Japanese" since, in the decade since Schonberger's book was published, Japanese techniques have been adapted and adopted by U.S. companies when building or modernizing plants and facilities in many parts of industry (UNCLASSIFIED).

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APPENDIX D

THE USE OF CORE COMPETENCIES IN NATIONAL SECURITY PLANNING

William A. Cockell, Jr.

This appendix describes a number of ways in which the concept of core competencies might be used in support of national security planning, with emphasis on its utility at policy-making levels in the Department of Defense. Use of the concept at the senior military planning level (CJCS, Joint Staff, and theater CINCs) is considered as well. The objective is to identify specific situations or types of planning in which the concept of core competencies can add value to the planning output.

In the business world, where the concept of core competencies originated, the concept is seen as a way to improve the firm's competitiveness by increasing its understanding of how key corporate resources—skilled people, advanced technologies, organizational constructs, and unique experience, among other things—can be combined in ways that allow the firm to excel vis-a-vis competitors. This combining of qualities often crosses organizational lines within the firm. This can cause tensions and require top management to be aggressive in the support of those elements comprising the company's core competencies lest they suffer neglect and eventually atrophy, to the company's detriment.

In the world of national security planning, core competencies play a role that is similar to the business concept, in the sense that they aim at assuring U.S. superiority in competitions, confrontations, or conflicts with other nations. In the national security context, however, success is measured not by market dominance, but by a variety of other measures, such as deterrence of conflict, promotion of stability in regions of strategic importance to the United States, shaping of the security environment to U.S. advantage, and discouraging military competitions by demonstrating that the costs are excessive and success too

problematical to warrant challenging U.S. superiority in those most important attributes (core competencies) of U.S. military power.

In terms of their utility in national security planning, core competencies help the military planner understand how defense resources can be optimally combined to carry out military missions by drawing on a complex of capabilities available in the services, defense agencies, and the defense industrial base, among other sources. The resulting core competencies—as in business—cut across organizational lines. But beyond that, they provide a roadmap to guide the structuring of American military power in ways which will ensure that it possesses the capabilities needed to prevail in situations requiring the use of military power.

Succeeding paragraphs discuss the utility of the concept of core competencies in planning at the national and DoD levels (including the secretary of defense, the chairman of the JCS, and the theater CINCs), with emphasis on areas in which the concept might contribute in meaningful ways to the output of existing planning approaches.

Planning to Shape the Security Environment

The concept of core competencies can provide insight into ways to influence the force postures, plans, and actions of potential adversaries by discouraging other countries from military competition with the United States or by imposing major costs on them if they nonetheless elect to compete. Core competencies are, by definition, areas in which the United States has a commanding lead—a demonstrated ability to do important things extremely well—often path dependent, i.e., acquired through lengthy or costly experience. Maintenance of these core competencies can place significant bounds on the ability of potential adversaries to compete effectively with U.S. military power, and this result can be utilized by U.S. planners to help shape the security environment in ways which protect U.S. strategic interests and and contribute to the execution of U.S. global or regional strategies.

Planning for the Protection of U.S. Advantages

The concept of core competencies can facilitate monitoring of those important military capabilities in which the United States has a wide margin of superiority, allowing senior officials and staffs to take actions needed to preserve the related core competencies in a timely way. Due to funding fragmentation of many core competencies, budgetary support may be split among several services, OSD, defense agencies, or non-DoD entities such as the Department of Energy. In this situation components of core competencies that are seen as a low priority by the funding organization may, in fact, be of high priority—indeed, essential—for ensuring that the related core competency is adequately financed. This typically requires a sorting process at relatively senior levels of OSD, with input from CJCS, the services, and the theater commanders to ensure that planned funding is sufficient to support high-priority core competencies.

Acquisition Planning

The concept of core competencies can give visibility to those forces, capabilities, acquisition programs, and R&D thrusts which collectively comprise core competencies, so that decisions on priorities and funding can be informed by an understanding of the role which individual components play in the various core competencies. It is particularly important that service modernization programs take into account the need for adequate funding of the R&D and procurement required to maintain the effectiveness of today's core competencies into the mid- and long-term, assuming that the requirement for the core competency continues. In this regard, the concept of core competencies can aid in identifying technological advances and innovations necessary to preserve existing or create new core competencies in the face of plausible competitive challenges to U.S. forces.

Force Planning

During a period of military downsizing the concept of core competencies can help identify individual components of core competencies so

they may be protected in budget and force reduction actions. In this regard there may be significant disconnects between the views of the services, which tend to be preoccupied with the managing of budget shortfalls and the protection of service programs, and the views of the warfighters (CJCS, theater CINCs), who are concerned with the robustness of those core competencies on which they would rely in conflicts or contingencies. In addition, the concept of core competencies can aid in understanding how U.S. military power should be organized, equipped, modernized, trained, supported, deployed and employed; and how missions and responsibilities should be split between active and reserve components.

The concept of core competencies can also enrich the planning concepts of base force, reconstitution, and industrial mobilization and increase their utility for planning by including in their definition the core competencies which would be components of each of them. Under this approach the definition of base force would include not only the force elements which constitute it, but those core competencies needed to execute the range of potential missions assigned to the base force. The definition of reconstitution would include reference to the core competencies that would be added, or significantly expanded, to support the mobilized force. An understanding of the core competencies required for reconstitution would aid DoD decisions on the desired structure and capacity of the defense industrial base as well.

Military Requirements

The concept of core competencies can aid OSD, the services, CJCS, the Joint Requirements Oversight Committee (JROC) and the theater CINCs in defining military requirements by identifying those proposed requirements which contribute in essential or important ways to core competencies. In this regard core competencies can provide a test against which the importance and utility of proposed military requirements can be measured and realistic priorities determined.

Consistent with the foregoing, the concept of core competencies can also help provide a stimulus for technological innovation and weapons system modernization in a planning structure that, during the cold-war era, relied upon

the existence of a clearly defined, operationally validated threat to accomplish those functions. In a less threat-oriented system, properly validated core competencies can provide a measure of what is adequate in the way of U.S. military power, based on the general nature of the security environment worldwide or in specific regions of strategic importance to the United States. In that case the security environment itself, and the challenges it poses to U.S. strategic interests, become the "threat," defining the quality and quantity of American military power (core competencies) needed to deal with the environment and to help shape it, as necessary. In this regard, shifting from threat-oriented planning to a mode which focuses on the security environment in broader terms can help put U.S. planning on a more supportable basis for the long term.

Military-Technical Revolution

The concept of core competencies can add to the Defense Department's understanding of the impact of the military-technical revolution by examining the effect which it has on U.S. core competencies. Specifically, the identification and definition of core competencies can provide a conceptual construct within which to understand the importance, from a warfighting standpoint, of individual elements of the military-technical revolution, as new systems and capabilities evolve. In other words, the concept of core competencies offers a framework within which to appreciate the impact that new systems and methods of warfare may have on military operations. In doing this, important insights may be gained into other potential applications of emerging technologies which can enhance their utility and the breadth of their battlefield employment.

At the same time, analyzing new technologies in the context of their contribution to existing core competencies can also shed light on how the technology might be used against the United States by an adversary familiar with the American notion of core competencies. Finally, analysis of the impact of the military-technical revolution on the Department of Defense may reveal areas in which new core competencies are required or old ones need significant reworking. In short, the impact of the military-technical revolution on the Defense Department rests on the degree to which the revolution will determine

and bolster U.S. military core competencies. It is through this means that the military-technical revolution will influence DoD mission areas, since the enhancement or reduction of DoD core competencies will have long-term effects on mission capabilities.

Joint Planning

The concept of core competencies can foster joint planning, in the broadest sense of that term, by showing how capabilities of the individual services can be integrated into core competencies that have broad warfighting capabilities. The synergism of the elements contributed by the services typically results in core competencies that can deliver more combatant power than the sum of the component capabilities. Additionally, illuminating the interrelationships between joint core competencies and those whose utility lies mainly in the single-service context can help the services place in broader perspective the importance of those force elements and capabilities which it contributes to joint core competencies. This will become increasingly important as U.S. warfighting plans and doctrine place greater emphasis on joint operations.

Strategic Planning

The concept of core competencies can provide a common conceptual foundation for strategic planning at the top level of the Defense Department. While the concept of core competencies will not provide the answer to every strategic planning problem, it offers a useful way of thinking about how to structure U.S. military power and to measure the results of those strategic planning decisions. As noted earlier, it can also provide a balanced and objective way to aid in the determination of acquisition priorities, force sizing, military deployments, and readiness levels, among other things. It can also provide a common basis for communication among the many offices and activities involved in defense planning, helping them focus on meaningful measures of U.S. military power. In short, the concept of core competencies can help to clarify the capabilities—broadly defined—which the Defense Department requires to achieve

the strategic objectives set for it by national security policy and military strategy, in light of current or potential challenges to U.S. interests.

The concept of core competencies can help defense strategic planning move away from threat-oriented planning and toward adaptive-planning regimes. In the future, military challenges to the United States are likely to be more diverse, less focused, and more ambiguous in character than was the case during the U.S.-Soviet military competition that marked the Cold War. The concept of core competencies gives visibility to the flexibility, strengths, and multimission capability of U.S. military power. It helps demonstrate how that power may be used in ways that are both traditional and innovative to respond, in adaptive fashion, to an increasingly variegated range of demands for force employment, both to shape the security environment in peace and to employ U.S. military strengths to achieve quick and decisive results in war. By highlighting force employment options and alternative concepts of operations supportable by existing core competencies, those competencies can aid adaptive planning at the global, theater, and campaign levels.

The concept of core competencies can contribute to the development of national strategy, the national military strategy, and joint military doctrine by making clear those areas in which the United States has and should maintain strong military advantages so they can be taken into account in the ways America deploys and operates its military forces in crises and wars. In this regard, an effective feedback loop should be maintained to ensure that NCA-level considerations arguing for the addition, deletion, or modification of core competencies are taken account of in DoD planning.

The associated concept of strategic intent (also borrowed from the business planning world) can provide the broad strategic guidance needed to define core competencies and place them in the context of a coherent set of strategic goals. In this regard, statements of strategic intent can aid the entire defense planning effort, giving it focus by providing concise summaries of the type of future strategic environment that would best comport with fundamental U.S. security interests. In so doing, strategic intent can provide a unifying vision of the future to guide the efforts of executives and planners at all levels.

Theater Planning

The concept of core competencies has potential utility in theater (or campaign) planning at the level of the unified commander or joint-force commander. Core competencies typically achieve operational application at the theater or campaign level, where the mission capabilities which comprise the core competency are used by the commander to attain desired military effects in support of national strategic objectives. For this reason it is important that the theater commander play a major role in the definition and updating of core competencies required to deal with crises or wars in his area of responsibility. In identifying required core competencies, the theater commander should take into account the fact that the commander's concept—the intellectual core of the campaign plan—must present a broad vision of both the required aim or end state (the commander's intent) and how military operations can be sequenced to achieve conflict termination objectives using the mission capabilities subsumed in the core competencies relevant to his theater.[1]

Defense Policy Planning

The concept of core competencies can aid the Department of Defense in the policy planning process. As distinguished from strategic planning and military planning, in their classic senses, policy planning typically has a shorter time horizon, is more directly issue-oriented, and often guides day-to-day decisions of the DoD bureaucracies. DoD policy planning may deal with such issues as force deployments, acquisition matters, a variety of politico-military affairs including alliances, basing, transit rights, prepositioned material, and combined planning. The issues are generally important enough to engage the attention of the secretary or the deputy secretary of defense as they proceed toward resolution. Those issues which impact significantly on the responsibilities of other agencies and departments may be handled through NSC channels as well, becoming national policy issues in the process. Core competencies interact with the policy planning process by helping to illuminate the military-capabilities aspects of the policy issues under discussion (i.e., to show how the policy issues are relevant to U.S. core competencies and vice versa). A number of defense

policy planning issues also fall into the international planning category discussed below.

Arms control, strategic forces, and nuclear weapons policy are special, interrelated subsets of the defense policy planning area. The concept of core competencies has relevance in those areas as well, to the extent that it facilitates decision making in the specialized area of nuclear core competencies. Current issues in that area relate to which of those competencies should be preserved or enhanced over the next few decades in order to facilitate the effectiveness of U.S. nuclear weapons and long-range or mobile delivery systems in accomplishing a variety of tasks. These include, among other things, shaping the security environment, discouraging military competition with the United States, preserving a nuclear force reconstitution capability, carrying out nuclear missions (nuclear retaliation, strikes on emerging NBC capabilities, support to regional intervention forces), and adapting quickly to new mission demands. The last is of special importance. In today's rapidly changing and uncertain security environment, having the right core competencies will facilitate adapting U.S. goals and mission capabilities to new conditions.

International Planning

By identifying potential core competencies of U.S. allies which can complement or supplement those of America, U.S. planners can help guide the force building of U.S. allies or potential coalition members in directions favorable to U.S. interests. In this regard U.S. strategic planning will continue to have an important combined aspect to it, though it may be more ad hoc than in the past. Nonetheless, by identifying needed U.S. core competencies, the United States can gain insights into the type of allied core competencies that could most effectively interact with U.S. forces in crises or wars. In some cases the resulting core competencies may be appropriately characterized as combined, allied, or coalition competencies, composed of both U.S. and foreign components. The NATO air defense system is an example.

Military Balances

The concept of core competencies can aid in understanding and describing the military balance of power, globally or in particular regions. While actual or potential competitors of the United States may not recognize that their armed forces have core competencies, unless their force building is essentially irrational it will be designed, explicitly or implicitly, with the requirement to acquire and maintain certain core competencies in mind. Identifying and analyzing those core competencies will ordinarily tell us at least as much about the military power possessed by the country concerned as will force tables, weapons inventories, or the manpower applied to military purposes.

Core competencies provide a context for the study of a country's military power and can lead to key insights into the types of operational capabilities it may possess, how those capabilities interact with one another, and how the country would employ its military power in war. The classic net-assessment technique, while of continuing value, can be significantly enhanced by the addition of methodology which takes into account the military core competencies of the states concerned. In this regard a strength of the core-competencies approach is that it addresses both the quantitative aspects of military power (how many of what) and the qualitative (how the force elements work together to provide military superiority in key areas; how the military-technical revolution impacts the nations under study; what the strengths are which clearly distinguish one side's military power from another's; and what clues core competencies provide us about how the sides would employ their military power in peacetime, crises, and wars).

Endnotes

1. *Join: Warfare of the U.S. Armed Forces,* JCS Publication 1 (Washington: U.S. Department of Defense, 1991), p. 47, elaborates these themes (UNCLASSIFIED).

APPENDIX E

MILITARY BALANCE MINI-ASSESSMENTS

Gregory J. Weaver

The purpose of this appendix is to describe a methodology for conducting "mini-assessments" of military balances among small and medium powers and aspiring hegemons in Asia. The appendix addresses the analytical need for mini-assessments, describes what constitutes a mini-assessment, and discusses what such mini-assessments can (and cannot) do for analysts and policymakers.

The Need for Military Balance Mini-Assessments

In order to help inform security policy and force planning in Asia for the post-cold-war period, U.S. policymakers need to develop an understanding of the future Asian security environment. That security environment is in transition from a predominantly bipolar competition between the Soviet Union and the United States to some new, undetermined environment.

Two plausible and important possibilities for the future security environment in Asia are the following cases:

1. Predominant competition is among small and medium powers (e.g., the ASEAN states, Vietnam, the Koreas, etc.).

2. Predominant competition is derived from actions of aspiring regional hegemons (e.g., India, China, Japan).

The mini-assessment methodology was created specifically to help deal with these analytical problems in evaluating the implications of alternative future Asian security environments.

An Asian security environment dominated by competition among small and medium powers or aspiring hegemonic powers would present U.S. policymakers with many possible international alignments and military balances of potential importance to U.S. security. The lifting of the shadow cast by the U.S.-Soviet military competition over the region's security affairs might permit latent ethnic, religious, subregional, economic, territorial, and political disputes or rivalries to manifest themselves. The resulting conflicts are likely to involve states that were aligned throughout the Cold War and create alliances among states that were adversaries during that period. Second, there would not only be many more plausible political alignments and relevant military balances in such a future security environment, but the sources of conflict between these many potential opponents might well be unfamiliar to or unanticipated by U.S. policymakers.

To make matters worse, the impact of these many potential alignments and sources of conflict on U.S. security interests would be less clear, and possibly less direct, than in the past. In the cold-war period Americans assessed the security implications of developments in and between the region's small and medium powers, first and foremost, in the context of the U.S.-Soviet competition. Thus, the Vietnamese invasion of Cambodia was viewed by the United States as a threatening expansion of Soviet influence in Southeast Asia. In the future, however, the implications of such an event for U.S. interests might be seen quite differently in Washington (but probably not differently in Bangkok, Manila, Singapore, Kuala Lumpur, and Jakarta ,where it would still be perceived as a subregional threat).

These two possibilities for the Asian security environment also require that we look further forward (e.g., fifteen years) than we have traditionally sought to do. This is because the full development of such security environments would take considerable time, and if we are to attempt to promote, avoid, or prepare for certain developments we need to begin now.

Our traditional military balance assessment techniques cannot properly deal with these analytical problems. They are too time-consuming to permit

the assessment of a sufficient number of balances to inform planning across the region. They are too dependent on the development of specific conflict scenarios for the conduct of a balance assessment to manage efficiently the multiple sources of conflict in each of the many relevant balances. Because they were designed to assess military balances in which the United States is an active participant, they do not specifically address the impact of the balances and potential conflicts on U.S. interests, nor do they attempt to identify means of U.S. influence short of direct involvement in military operations.

Finally, traditional military balance assessment techniques are not well suited to looking forward far enough into the future to serve the purposes of policymakers in the current period of transition in U.S. security policy and force structure. They require too much detail regarding the forces of the two sides in a conflict, making adequate data collection for the assessment of a conflict fifteen years in the future a practical impossibility. While they do attempt to determine dominant trends and asymmetries in a balance, these tend to focus on the recent past and the near future. They are not well suited to taking into account the plausible acquisition of wholly new capabilities or the plausible adoption of new military doctrines.

What Is a Military Balance Mini-Assessment?

The methodology we have dubbed *mini-assessment* is a first-order, two-sided military balance assessment that is focused on important, answerable questions about potential future conflict in the medium term (out to fifteen years).

The mini-assessment has been designed specifically to deal with the analytical problems discussed in the previous section: multiple potential alignments and relevant force balances, unfamiliar or unanticipated sources of conflict, indirect or unclear impacts on U.S. security interests, and a medium-term future orientation that precludes force structure specificity, but is necessary to provide useful planning inputs.

Thus, the mini-assessment methodology has certain fundamental characteristics that distinguish it from current techniques. It can be relatively rapidly employed, making possible the completion of multiple assessments covering a large number of potentially important military balances. It focuses specifically on the sources of potential conflicts so as to illuminate latent causes of wars or crises and possible indirect impacts of such conflicts on U.S. interests. It operates at a level of specificity and analysis appropriate to medium-term future assessment.

It is important to note here that the mini-assessment is not meant to be a replacement for traditional military balance assessments. The two methodologies serve fundamentally different purposes. The traditional methodology's focus on past and present trends in specific military mission areas and operational components of a larger military campaign permits fairly accurate and detailed near-future projections of the state of a military balance that is of central importance to the United States. This is not true of the mini-assessment methodology. Its intent is not to produce intelligence-estimate-quality projections of near-term trends, but rather to illuminate the potential implications for U.S. interests of longer-term changes in military balances on which our policy and force planning process has not traditionally focused. Mini-assessments are designed to enable medium-term future assessments to be conducted, but are also useful for present or near-term assessments that do not merit the time and effort required for a traditional balance assessment.

The mini-assessment methodology is most useful when performed across a large number (10–20) of regional balances so as to develop an in-depth understanding of the range of potentially important crises or conflicts, the likely nature of the military operations in such disputes, their relative importance to the United States, and the military core competencies needed by the United States to influence both relevant peacetime balances and wartime outcomes.

Thus, when used to assess a significant number of regional military balances, the mini-assessment methodology is well suited to help answer the following questions:

- What is the range of plausible international competitions, crises, and wars involving Asian states over the next fifteen years?
- What is the likely nature of future warfare among Asian states during that period?
- How might conflicts among Asian states pose threats to and present opportunities for the United States over the next fifteen years?
- What avenues exist for exercising U.S. influence over the security affairs of Asia over the next fifteen years?

These questions must be answered if the implications of an uncertain future Asian security environment are to be understood analytically. Thus, the military balance mini-assessment is potentially an important analytic tool in future Asian net assessment work for U.S. military planners and policymakers.

Structure of the Mini-Assessment

The conduct of a military balance mini-assessment involves the sequential completion of four analytical tasks. The goal of these tasks is to provide an understanding of the potential for conflict between the subjects, the likely nature of war between the subjects, the effects of several major variables on the outcome of such conflicts, and the implications of those conflicts for U.S. security interests.

Task 1: Characterize the Potential for Conflict Between the Subjects. The purpose of this task is to gain an understanding of the reasons for potential military conflicts involving the assessment subjects. This is important to the mini-assessment because the sources of a conflict in part dictate what is at stake, how the two sides will conduct their military operations, and the level of interest of other potential conflict participants.

The first step in this task is to identify and describe the range of plausible sources of conflict between particular countries. This survey of

potential sources of conflict should include such considerations as territorial disputes, historical animosities, religious conflicts, ethnic tensions, ideological differences, economic competition or dependence, changes in alignments, expansionist or hegemonic aspirations, and domestic political developments. The result of this survey is a list of plausible sources of conflict that is specific enough to permit concrete estimates of the likely political goals and military objectives of the two sides to be made.

In performing this survey of plausible sources of conflict, care must be taken to envision the development of current trends throughout the entire fifteen year period under consideration. Thus, changes in governments and medium-term economic development should be taken into account in making judgments about the plausibility of potential sources of conflict.

The second step in this task is to identify and describe the national objectives the two sides would pursue in such conflicts. This is necessary because the likely military objectives, strategies, and operations in conflicts between the subjects are derived from their respective national objectives in the conflict as a whole. The national objectives of the assessment subjects will vary, depending in part on the source of conflict, and these variations should be identified. The potential for intrawar changes in national objectives should also be considered, with the developments that might trigger such changes.

The third and final step in this task is to identify potential Nth-party participants in conflicts between the assessment subjects and describe the nature of their interests in intervening. This should include not only Nth-party intervention on one side or the other in the conflict, but also the potential for Nth-party involvement in the conflict as a third side (e.g., the U.S. escort of Kuwaiti tankers during the Iran-Iraq war). This is important because the likely level and nature of Nth-party involvement in a given conflict is directly related to what it perceives as being at stake.

Task 2: Characterize the Likely Nature of War Between the Subjects. The purpose of this task is to gain an understanding of what plausible wars between the assessment subjects would look like in terms of types

and scales of military operations, critical weapons technologies, geographic scope, duration and intensity, etc. This is accomplished in five steps, leading to a summary characterization of the likely nature of war between the subjects.

The first step is to describe the general character of future forces to be deployed by the two sides in the balance. The goal of this step is not a detailed intelligence estimate of their forces, but rather a notional projection of probable force sizes, types, technologies, and capabilities based on an examination of current forces, available military infrastructure (bases, defense industry, manpower pools, etc.), and trends in force development and weapons acquisition. This is intended to include the acquisition of wholly new force capabilities and estimates of likely force proficiency, if possible.

The second step involves reviewing the two sides' military doctrines, with special emphasis on detecting trends in doctrinal development and the potential for radical doctrinal change. It is critical to understand the interaction of potential opponents' military doctrines if one is to understand the likely nature of war between them, as doctrines indicate how the opponents intend to use their military forces in war. It should be noted that there may be more than two doctrines involved in a balance, as more than two countries may be involved in a two-sided mini-assessment (e.g., ASEAN vs. Vietnam and Cambodia). Thus, this step would include an assessment of the impact of the interaction of national doctrines within an alliance, as well as between them, should this be the case.

This review of doctrinal implications for the nature of war between the assessment subjects should include both a broad assessment of how the national doctrines of the participants are likely to interact in peace and war, and a more specific assessment of how they might affect the course of specific types of wars between the two sides. Special attention should be paid to those aspects of doctrinal interaction that might influence which military engagements are likely to be critical to conflict outcomes and where and when those engagements are likely to occur.

The third step in this task is describing the plausible military war aims of the two sides across the spectrum of potential conflicts between them.

The purpose of this step is to narrow the range of military operations that need to be examined in the assessment. These plausible military objectives are derived from the national objectives identified in Task 1, the general character of the two sides' forces, their military doctrines, relevant geography, and other factors that may come into play in specific balances, such as the potential for Nth-party intervention.

Based on these plausible military war aims, and the general force characteristics and military doctrines previously described, it is then possible to identify the critical military engagements or campaigns that are likely to determine the outcomes of conflicts between the subjects. This fourth step should place special emphasis on identifying important factors such as operational sequencing, probable engagement locations, and warning and intelligence requirements for the two sides. This is not, however, an attempt to predict the sequence in which operations will always take place or where engagements will always occur. That is likely to vary, depending on the circumstances of particular scenarios. The goal here is to identify those engagements or campaigns that are likely to be critical to the outcome of most or all potential conflicts between the two sides, independently of scenario particulars.

The fifth step is to identify those military mission areas (e.g., SLOC interdiction, convoy escort, combined-arms ground offensive) that are essential for the success of either side in the critical engagements or campaigns identified above. This step is critical to determining the most important force relationships in the balance. It should include not only the identification of the military mission areas essential for each side in each critical engagement, but also any operational prerequisites for either side's use of that capability (e.g., air superiority or strategic surprise for airborne-landing operations in enemy-occupied territory).

The final step in Task 2 is to present a summary characterization of the likely nature of wars between the subjects of the assessment. This summary should draw on all five previous steps and include such factors as key weapons technologies and operational capabilities, intensity and duration of the fighting, geographic focus and scope, and likely war initiation methods. The goal is to

provide insight into what kind of wars the assessment subjects are likely to engage in, how such wars might directly or indirectly affect U.S. security interests, and what military core competencies the United States will require to influence the outcome of such wars through intervention or to mitigate their negative effects on U.S. interests without intervention.

Task 3: Carry Out Sensitivity Analyses of Relevant Variables. This task's purpose is to ensure that the impacts of variations in key factors in a military balance receive proper analytical attention. The mini-assessment methodology identifies two categories of such variables as always requiring sensitivity analysis and leaves open the possibility of considering additional variables that are identified as relevant in the course of work on Tasks 1 and 2.

Temporal variables comprise the first category that should be analyzed in every mini-assessment. Included in this category are such factors as warning time, force mobilization initiation and timelines, and war initiation timing. Failure to consider these variables can obscure important insights into crisis stability and crisis behavior, alternative means of war initiation, when and where Nth-party intervention might likely take place, and how preemptive attack by either side might alter the course and nature of a war between the subjects of the assessment.

Consideration of the impact of temporal variables on small, medium, and hegemonic power military balances is important for several reasons. First, unlike most cold-war scenarios, it is not clear who is likely to initiate wars among such states, nor is it readily apparent how much warning of an attack the defender is likely to receive. Second, the military forces of many of these powers are, and will remain, relatively small, increasing the potential for early combat operations to be decisive. Finally, these balances are more susceptible to being altered fundamentally by the intervention of an outside power, making the speed with which military objectives need to be achieved a powerful factor in regional military balance calculations.

The second category of major variables that should always be subjected to sensitivity analysis in a mini-assessment is the impact of the actions of Nth parties on the military balance in question. Information regarding the relative levels of interest of Nth parties in conflicts between the subjects derived in Task 1 is used to identify the Nth parties to be included in this assessment. The potential impacts on the balance of both peacetime and wartime actions of these Nth parties are assessed separately.

Other major variables suitable for sensitivity analysis may be identified in the course of individual mini-assessments, and their analysis would be included in Task 3 of the mini-assessment. For example, seasonal weather factors are relatively unimportant to some regional military balances and absolutely critical to others.

Task 4: Develop Implications for U.S. Interests. This task draws on the research which precedes it to provide the information necessary to conduct three analytical steps: assess how U.S. interests may be affected by conflicts between the subjects, show how the United States might favorably influence the military balance between the subjects in peace and war, and determine what military core competencies the United States should possess to enable it to exercise such influence.

The importance to U.S. planners and policymakers of assessing the potential impact on U.S. security interests of conflicts between the subjects is obvious. Less readily apparent, however, is the value of learning how such conflicts might not have significant implications for the United States, contrary to first impressions. The identification of direct and secondary impacts on U.S. interests includes both threats and opportunities for the United States.

The second step is identifying ways in which the United States can influence favorably the military balance so as to mitigate threats to U.S. interests or seize any opportunities presented. This includes not only consideration of the possible effects of various forms of U.S. military action on conflict outcomes, but also identification of ways in which the United States might act to alter or maintain the balance in peacetime so as to advance U.S. interests. The potential

reactions of both the subject states and interested Nth parties to U.S. peacetime or wartime attempts to influence the balance are also considered.

The final step of Task 4 is to identify those military core competencies the United States should maintain or acquire if it is to be able to influence the balance in question. The potential consequences of not maintaining or acquiring such core competencies are discussed, both in terms of U.S. influence and the military balance being assessed.

Conclusions

Useful analysis of the future Asian security environment requires the relatively quick and concise assessment of a large number of relevant military balances projected over the next fifteen years and of their implications for U.S. security interests. The mini-assessment methodology outlined here is designed to redress the shortcomings of traditional military balance assessment techniques in meeting that requirement.

Military balance mini-assessments provide a method by which future Asian security environment information useful to U.S. planners and policymakers can be produced in weeks or months rather than years. The usefulness of the methodology is two-tiered. First, it can provide rapid, first-order analyses of specific military balances of interest. Second, assessing a large number of balances can yield an in-depth understanding of the range of potential military crises, conflicts, and competitions the United States is likely to face in Asia over the next fifteen years and their potential impacts on U.S. interests.

APPENDIX F

RUSSIAN MILITARY CORE COMPETENCIES IN ASIA: A VICTIM OF POLITICAL AND ECONOMIC CHANGE?

George F. Kraus, Jr.

A number of factors have been at work during the past several years that ultimately will affect the shape of the Russian military. The breakup of the old Soviet empire has resulted in a wrenching away of bases and facilities, as well as substantial parts of the old Soviet military infrastructure. The independence of the Baltic states and Ukraine has substantially reduced the Russian access to the coast in the Baltic and the Black Seas. Claimants on elements of the former Soviet military and ships of the Soviet Fleet include at least Ukraine, Belarus, Georgia, Azerbaijan, and Kazakhstan, as well as Russia. The supporting infrastructure of industrial and supply enterprises, already disrupted by the breakup, has found itself deposited in the world of self-finance, and the rapid inflation that has accompanied partial price reform has made the military a very poor second-class customer.

The independence of the states of the former Soviet Union has reduced the manpower available to the military, as conscription for both the Russian and the Commonwealth forces from the states other than Russia has been almost nonexistent. This impact has been particularly acute in the North and Far East, where a substantial fraction of the officer corps in the navy, for example, are from the Ukraine. Meanwhile, the hierarchy of the navy has been undergoing substantial change, with the replacement of all of the senior officers on the Main Navy Staff. Report after report has highlighted the fleet's lack of personnel, the lack of spare parts, the lack of fuel, the lack of repair support—the general lack of everything. In July 1992, U.S. naval officers visiting Severomorsk, the headquarters of the Russian Northern Fleet, noted the low level of activity and were told by their counterparts that the two host ships were made ready for sea only by cannibalizing parts from other ships. In fact, Russian navy ships in all fleet areas are being laid up at a

substantial rate. Admiral Pauk, in an article in July 1992, indicated that the Russian navy would be reduced within ten to twelve years by a further 60–70 percent at present replacement rates. The other military services face similar turmoil.

In a time of such rapid change, of such large-scale reductions in forces (much of it occurring in a disorderly and unplanned fashion), and of such a squeeze on resources, it is important to think about the implications for the continued maintenance of military core competencies. As many of us who witnessed the decade of the 1970s from inside the U.S. military know, the maintenance of core competencies is a complex function that depends on many factors. The simple loss of resources may precipitate such a loss, but it may not. A small professional cadre can serve as a corporate memory if the lack of resources is not prolonged. Loss of personnel is a more central factor, and it has a number of aspects that may exacerbate the situation. Being able to maintain and operate at least a central core of military equipment is essential, as is holding together the infrastructure that has been built to train and support the operating forces. Finally, being able to plan (in key respects) the drawdown that occurs is also essential. This permits the knowledgable military leadership to preserve the core pieces that allow retention of competences, and that will foster rebuilding the force later. The current Russian turmoil appears to have left few of these essentials untouched.

The Far East Russian military always was removed from the immediate attention of Moscow and thus was designed from the outset (and of necessity) as somewhat autonomous, so the focus on Far East versus all-Russian competencies is a valid question. Moreover, the infrastructure in the east was never as robust as in the western part of the country, although it was designed to be at least minimally capable and (hopefully) self-sufficient in time of war. The current circumstances have not made the links with Moscow more secure. In fact, just the reverse has occurred. Even the attention garnered from Gorbachev's Asian initiatives and the continuing tug-of-war with Japan over the southern Kurils have had little impact on the Russian military in the region. With Chinese relations improved and the economy in rapid decline, forces have been reduced and resources have disappeared. Meanwhile, attention has focused on the "alligators" of economic and political change

rather than on the slowly flooding swamp of military obsolescence. A good illustration of this loss of military competencies can be found in the navy's Pacific Ocean Fleet.

Although the demise of the Soviet Union has not had quite the territorial impact in the Far East that it has had in the western part of the country, where there has been substantial losses of ports, basing, and shipbuilding and repair facilities, it has had a negative impact on the industrial infrastructure that supported ship and naval weapon development which affects the whole navy, including the Pacific Ocean Fleet. About two-thirds of the shipbuilding potential of the former USSR was concentrated in Russia, but turbine construction was centered in the Ukraine, the production of ASW weapons in Kazakhstan and Kyrgyzstan, and the manufacture of navigation equipment in Azerbaijan—examples of some of the subspecialization within navy shipbuilding. As a consequence of this artifact of the old Soviet system, even a temporary breakdown of this cooperation will lead to the collapse of both civilian and military shipbuilding. Press reports that the Ukraine will no longer build nuclear-support barges for the Russian navy indicate that at least some of the former cooperation has gone by the boards.

Meanwhile, in the Northern and Pacific Fleets, the effect of the independence of the former republics of the Soviet Union has reduced manning levels substantially. Numerous reports cite the lack of sufficient conscripts to fill out crews, and the officer corps is likely to be similarly affected. In the Northern Fleet, for example, 40 percent of the officers are Ukrainian. A similar percentage has traditionally manned the Pacific Ocean Fleet. It is not clear what they will choose to do, but the uncertainty may be as disruptive as the resignation of many of these officers. Material conditions of ships in these fleets are substantially affected by the lack of spare parts, lack of funds for support and repair, and the impact of scrapping activities on the repair infrastructure. Furthermore, material casualties have had an impact, casualties that can go for months or years before repair may take place. In the Pacific, for example, both Kiev-class aircraft carriers are laid up due to engineering casualties and, in one case, the results of a fire. The older of the two ships has recently appeared in the mothballing facility in Sovetskaya Gavan—it is apparently being laid up after a short lifetime of only fourteen

years or so. A relatively new Udaloy DDG suffered a more severe fire last year and has been written off. As noted above, in the Northern Fleet parts had to be cannibalized to get the two host ships ready for the visit of the USS Yorktown and USS O'Bannon to Severomorsk in July 1992 (the two ships were the Kirov CGN and a relatively new Sovremennyy DDG, neither ship being much over ten years old). It seems clear from the reporting that the Pacific ships are in similar material condition.

The current navy also is substantially reduced from its former size. In a special edition of the General Staff's *Military Thought* published in July 1992, Rear Admiral A. A. Pauk gave the following figures for the current naval order of battle: 56 strategic missile submarines, 483 surface combatants (of which 72 are "for the ocean zone"—i.e., blue-water combatants), 166 multipurpose submarines (of which 89 are nuclear-powered), 310 various small combatants, 950 auxiliaries, 1580 aircraft, and 556 helicopters. The numbers are down and continuing on the way down. Admiral Pauk notes that by 1995 "the Russian Navy will be substantially reduced, given the planned removal of ships as well as the reduction in naval strategic nuclear forces . . . and of the aircraft inventory of the fleets according to international obligations." This has been described as an advantage in some reports, as the rear service support for the fleets was never able to support the larger force of combatants. Rear Admiral Pauk, for example, suggests that "a shortcoming of the [navy] structure—*lack of balance in combat and support forces* [emphasis in original]—will be smoothed out as attack forces are reduced." Thus, reductions will allow the navy to be sized to fit its logistics support base, rather than the logistics structure being sized to support the navy. Pauk also notes that current resources are less than 50 percent of what is required to operate the current (reduced) fleet, even at the relatively low operational tempo common to the Russian—and Soviet—navy.

The impact of these changes affects a number of the aspects of the navy's core competencies. Although the drawdown in ships reduces the number of obsolescent vessels, the lack of resources has been so substantial that the remaining combatants have found themselves almost welded to the pier. Personnel shortages across the board and the lack of the replacement stream of conscripts that was characteristic in the past mean that few, if any,

ships have even close to a full complement. The insufficient manning and supply also means that the personnel who are available are busy with housekeeping functions rather than combat-training tasks. Numerous reports support this assertion. The attention of the officers and men has been diverted to getting enough to eat—getting the ship underway, much less operating it in a combat environment, are clearly luxuries which few crews can muster. As ship availability is reduced, the ability to provide crew training has declined precipitously. Recent reports detail problems in providing sufficient trained watchstanders to merely navigate and conn ships from one place to another. On ships that do get underway, officers may be standing "port and starboard" watches to fulfill these essential seamanship tasks. Needless to say, combat training has been hard to support.

As has been implied by the above, safety also suffers as the operational tempo is reduced and the repair and supply situation worsens. Fires and accidents are actually up relative to the number of ships available, and the consequences of such mishaps merely add to the problems of the already overburdened repair yards or, as with the Minsk, lead to the early laying up of a potentially valuable ship. The declining economy has added to the problem by making it more profitable for shipyards to work on commercial jobs. Moreover, the skilled work force necessary to the shipbuilding infrastructure has withered as government funding has declined. The most skilled are usually the most readily employed elsewhere, and many have departed to the private sector. Keeping together the appropriate mix of skills to repair and build military ships has been highlighted as a problem by the admiral in charge of the Severodvinsk shipyard in the Northern Fleet. Since President Yeltsin has indicated that the submarine construction will come to a halt in the Far East in the next two to three years (speech in the Republic of Korea in November 1992), loss of the skilled submarine construction work force at Komsomolsk will be an even bigger problem. The materials and skills needed to build civilian ships are quite different from those supporting submarine construction. Although there are other yards that do repair work in the Far East, both in the Vladivostok and Petropavlovsk complexes, Komsomolsk is the lone new construction facility. It will be devoted to civilian activities.

As should be apparent, the whole complex of activities that support and maintain the level of competence of the fleet is under stress. Competence depends upon experienced cadres, orderly accession of new, qualified personnel, training that brings the new personnel up to some minimum standard, maintenance of a core of ships and their combat equipment, operational tempos that allow training in the sea environment, and the coherent management of all these elements in the purposeful pursuit of combat readiness. The current environment in the Far East presages a declining ability to do any of these essential tasks. The declining size of the navy has caused the loss of many of the most qualified, mid-grade officers. The pressures of a fragmented state, changed conscription tour lengths, and declining military requirements have led to a reduction of available manning for the fleet that is acute—in the Far East shortages in manning of 40 percent have been reported. As the budget has declined, the navy has found itself unable to provide even the necessities of food and housing, much less spare parts, supplies, and training. Even the scrapping of older ships, which could free resources for other purposes, has actually increased the strain on the fleet. The obsolescent ships cost money to scrap, require at least skeleton crews while laid up awaiting shipyard space (a wait which may take years), and take up space in shipyards that could otherwise provide maintenance and repair for ships in the active force.

The lack of resources is exemplified by the treatment of the Minsk, a Kiev-class "aircraft-carrying cruiser." As noted, the ship suffered an engineering casualty early in 1991, and has been tied up since. The casualty may have occurred in any case, but the lack of sufficient skilled manning and support probably were factors. Its sister ship, the Novorossisyk, has also been laid up since suffering an onboard fire in July 1992. Thus, neither of the relatively new ships in the Pacific Ocean Fleet that can operate tactical aircraft at sea is operational. Furthermore, Minsk has now been towed to the inactive facility at Sovetskaya Gavan and thus is effectively mothballed. Although there are floating drydocks in both the Northern and Pacific Fleets that can take these ships out of the water, resources will not support major repair or large-scale overhauls. Clearly that is what is needed now for these ships, and soon will also be required for the other carriers. The mothballing seems likely to have resulted from Russia's loss of the shipyard at Nikolayev in the

Black Sea. Now belonging to Ukraine, this facility has been unilaterally taken out of the military shipbuilding and repair business—or the cost of repair (in hard currency, no doubt) was just too much. If the Minsk's sisters cannot be repaired and overhauled, it seems clear that tactical aircraft operations at sea in the Russian navy will decline precipitously.

As anyone who has flown aircraft off ships knows, such skills deteriorate rapidly without continued practice. At least in the area of at-sea tactical air, the Russian ability to operate is essentially zero in the Far East. Even were the aviators' skills capable of being maintained by flying ashore or perhaps in the Northern Fleet (although here too, activity by the carriers is almost nil), the ancillary skills that make such a ship work, everything from aircraft handling and maintenance to more mundane shipboard evolutions, will atrophy quickly. In fact, shipboard flight qualifications decline rapidly and cannot be duplicated ashore. In just a year or two, relearning such skills will require starting from scratch. Other combat capabilities in the Far East are suffering almost as badly.

With the civilian requirements of the economy taking precedence, military needs are going unmet on an unprecedented scale. The Russian Mediterranean squadron has permanently vacated that sea due to lack of fuel. In the Far East, operations are at an all-time low, and lack of fuel is at least one aspect of the shortages there as well. Vladivostok airport was closed late last year for over two weeks due to lack of fuel, and the fleet, the air force, and air-defense forces all suffer varying fuel shortages. Without supply support and fuel, even the reduced crews that are available receive little or no training. Most important, they are unable to go to *sea* and train—essential for the development, much less maintenance, of key competencies. The Russians talk about more training in simulators ashore, but they have always had few assets to support this training, too few computers and simulators. This was true in the era of relatively unlimited military resources, and not much has changed in the current budget crunch.

Furthermore, when it comes to naval warfighting skills, it is necessary to pursue a solid *sequence* of training over time to achieve advanced levels of competence. Training ashore proceeds through several levels and feeds into

at-sea training at basic and then more advanced levels. If personnel get inadequate shore training and go to sea infrequently, they never achieve adequate readiness at basic skills and thus are unable to pursue advanced training. In addition, the basic training of each ship's crew is only the first step. Operations in multiple ship formations or task groups require additional practice, both ashore and at sea. Generally this means that individual shipboard practice cannot provide the training necessary for multiple ship, formation, or task-group operations. The Russian navy never exercised as extensively as the American or British navies, and the Russian ability to operate groups of ships far from the homeland was never as good. In the Far East today, even that limited capability has disappeared.

The bottom line is that an across-the-board decline in naval competencies is occurring in the Russian Pacific Ocean Fleet. If the current conditions persist for just a few years, the fleet will face the prospect of having to rebuild from scratch. It seems likely that isolated, individual ships will remain capable of operating effectively for some time, as officer retention and tour lengths on individual ships will enable these basic skill levels to be retained. As these officers are rotated, however, their replacements will have had essentially no real experience in key aspects of shipboard operations. In several areas (tactical air, multiple-ship task force operations, and the like), competencies are already threatened. Ship evolutions that emphasize individual platform employment, such as submarine and particularly SSBN operations will be maintained longer. However, as the drawdown of SSBNs written into START occurs, the number of Russian SSBNs will decline to no more than 26 by the year 2000 (Admiral Pauk, July 1992 *Military Thought* article). With such small numbers and a much reduced infrastructure to support such ships in the Far East, there may be few if any SSBNs in the Pacific Ocean Fleet's future. This reduction, coupled with the drain on resources represented by the dismantlement of Pacific Fleet submarines being scrapped and the pending suspension of submarine construction at Komsomolsk will make it difficult to maintain submarine operational competences in the Pacific. While submarine skills can be maintained in one fleet area (e.g., Northern Fleet), the vagaries of hydrographic conditions mean that essential experience in local waters will go by the boards.

Although different in detail from the navy's woes, the Far East Air and Air-Defense Forces have many problems which similarly affect the retention of operational competencies. Traditionally, Soviet air force pilots flew much less than their NATO and U.S. counterparts. From exercise observations, it was clear that initial aircraft availability was high, but that it quickly degraded due to logistics limitations as operations commenced. This was especially true in the Far East, as the logistics support was thin, the base infrastructure was austere, and the distances between facilities made everything more difficult. The current resource crunch has exacerbated all of the above problems. Fuel shortages, in particular, have made training almost impossible. The lack of flight time for the simplest evolutions means that simple flight proficiency is at a premium. Advanced skill training and training such as that performed in America at Red Flag is simply out of the question.

The air-defense forces have additional difficulties. The loss of the Krasnoyarsk radar has left a substantial hole in the peripheral early warning network (there are other gaps in the western periphery, as the LPARs in Lithuania and Ukraine are no longer part of the net). Since the loss of these missile-defense radars has opened holes in the early warning network, it is also likely that aircraft early warning systems in these newly independent countries have also dropped from the previously maintained network. The Russians, through the mechanism of the CIS, have tried to reorganize the air-defense grid, but have yet to find complete agreement. As the resource constraints tighten, the air force and air-defense forces also have been engaged in a fight over control of the fighter assets in the air-defense forces (see the discussion in the special edition of *Military Thought*, July 1992). Neither of these services is being reduced as drastically as the navy, but the lack of fuel and support is having a similar effect on core operating competencies. Flight qualifications atrophy rather quickly and require constant training to maintain; this training is simply not happening. Furthermore, the large-scale integration of air defenses or of air assets in an offensive is not being practiced. Although simple flight skills may be maintained, it is unlikely that the overall integration of multiple platforms and their varied skills will be achieved. As has been demonstrated on several occasions (e.g., KAL 007), such capability was never really achieved by the Soviets. However, as demonstrated in the

Gulf War and as noted by Russian commentary since, this is the perceived requirement for air and air-defense forces.

Aerospace defense has also suffered. The space and early warning network is hamstrung by the lack of complete radar coverage in the area, with the loss of the Krasnoyarsk LPAR especially critical. The ability of air defenses to provide defense in depth is questionable in light of the lack of complete early warning, the loss of carrier air and any realistic seaward air defense layers (admittedly marginal to begin with), the reduced operational tempo and training of air-defense forces, and the limited ability to provide gap fillers with mobile assets in the extremely harsh terrain of the Russian Far East (presuming they were available and working). Furthermore, air-defense forces also face reduced manning, inadequate logistics support, and have a more complex problem than before. More civilian flights, new civil air routes, and less clear-cut separation of what is legal and what is not (in the past, any violation of airspace was illegal and subject to attack), make for a more complex environment with fewer assets available to handle the problem.

Several other trends seem likely to reduce air and air-defense force operational competencies even further. The current "fire sale" of aircraft and equipment may gut operational squadrons. It is apparent that all systems are for sale for hard currency; this may make it impossible to fill out Russian units and may interfere with flight training for pilots in the pipeline. Furthermore, spare parts are a continuing problem, and the sale of aircraft outside Russia may make it worse, as these sales involve a continuing commitment to support. The internal problem is a result of the Soviet penchant for creating monopoly suppliers of parts. Rather than a number of smaller plants being able to manufacture components for the defense industry, the planned economy the Russians inherited is comprised of a few or, in some cases, a single facility with the charter to produce components (see the related discussion above regarding shipbuilding and naval weapons). As these plants were spread throughout the former Soviet Union, many are now outside Russia and even those inside Russia may have changed priorities. Article after article in the press over the last three years has lamented the inability of

contractors to get key parts from former suppliers and the inability of the military to get vital spare parts. As there was no alternative supplier network, this has had a devastating impact on the military.

Although this disruption of subtier suppliers is unlikely to last, the priority given to military orders is clearly a thing of the past. As a result of these shifting priorities and the lack of government funding, even where supplies are available they often are sold to nonmilitary users for hard currency or are too expensive for military budgets. Examples of these problems abound. The Northern Fleet chief of the rear lamented last year that he had needed to "borrow" 18 million rubles (over his budgeted funding) to provide basic supplies for the winter (piping, food stuffs, heating fuel, etc.). Prices were ten times what they had been the previous year. The chief of the Submarine Technical Service in Vladivostok noted in an article in September 1992 that, although he had a long queue of nuclear submarines being scrapped that required defueling, the shipyard in the Ukraine (Nikolayev) that had formerly provided nuclear-support barges had unilaterally decided not to build any more. The mothballing of Minsk due to the lack of a suitable replacement for the Nikolayev shipyard may also have been related to cost. The capital costs of constructing a new carrier building way and the associated infrastructure somewhere else in Russia is out of reach for the present.

Ground forces also require substantial air support in the Far East. The Russians seem to be working both sides of this problem in negative fashion. While they are augmenting the Chinese air force with modern aircraft which the Chinese could not build themselves, they are drawing down their own modern forces in the area, while also reducing flying time. There are limited prospects of upgrades anytime soon. Far East ground-force operations are also vitally dependent on logistics over extremely long and nonredundant supply lines. The large area and the terrain of this theater are quite demanding, but the ability of the ground forces to deal with these key features is radically reduced. Training and operational tempo again are working in the wrong direction.

However, although the local impact is relatively severe on ground-force capabilities, it is clear that the Russian long view is to move to centrally-

controlled mobile ground force assets that can be transported from one threatened area to another. The transition to such forces has been clearly thought through, and the new force is being designed as an alternative to forward-deployed, massed forces in the theater. Therefore, it seems as though the Russians have a plan to overcome perceived problems in the ground forces, albeit one that will take some time to accomplish.

The upshot of these problems is that skills and support necessary to the maintenance of core competencies across a wide range of military mission areas will atrophy in the Far East and, to an extent, elsewhere. Many shortfalls of the pre–1989 Soviet military will be exacerbated by the problems, and the resulting force will need to be rebuilt almost from the ground up when the current turmoil is over. Key will be flight and maintenance qualifications, integrated capability of all operational support means (much of which is inadequate if the Russian literature on the Gulf War is accurate). In the navy, at-sea tactical air seems to be particularly vulnerable, but such widespread shortfalls exist that many of the basic skills of simply going to sea will falter. Large-scale integration of disparate forces, both within the navy and across the other services, will disappear. The ground forces seem to be in the best position to retain warfighting competencies, but are facing a long road to the integrated, mobile force that the Russian General Staff believes necessary for future defense.

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