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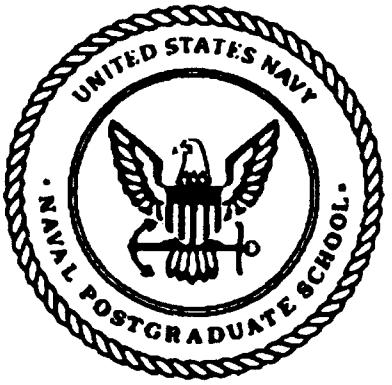

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EDITED BY

JAMES J. TRITTEN

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MONTEREY, CALIFORNIA

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Report considers the new requirements for non-traditional forms of intelligence. Emphasis on new scenarios which require specialists in new forms of intelligence and areas of expertise. Due to the pace of rapid change and wide spectrum of threats, traditional attempts to determine intentions may not work. Authors recommend prioritized review of potential enemy capabilities with emphasis on potential military capability (population, geography, economics, technology for military potential capability), and more emphasis on long-range intelligence using deductive vice inductive approach. Report addresses current intelligence emphasis on technology and proliferation, and recommends identifying countries bent on acquiring new capabilities, what countries have the surplus capital to make such investments, and what levels they can internalize and absorb. Paralleling any effort to identify potential customers must be an economic intelligence program to delineate what is readily available on the open marketplace. Authors also conclude that there are no simple or quick fixes and that reorganization of the intelligence community is not the answer, but may be part of it. They strongly endorse more emphasis on human intelligence as a panacea. Report concludes that the real issue is strategic planning for intelligence, not intelligence in support of strategic planning. The intelligence community has the opportunity to assist the policy world in shaping the future and needs a plan to do this.

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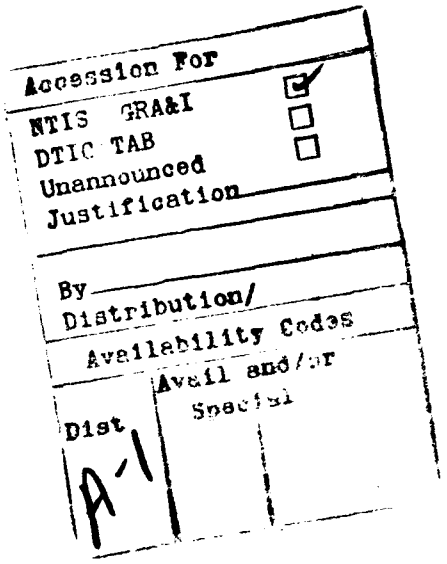

PREFACE

This technical report was prepared to assist the Office of Naval Intelligence (ONI) assess the implications of the shift in national security and national military planning from its previous focus on the Soviet Union and a European-centered global conventional war to a regionally-focused set of scenarios and strategy. The basic starting points for this study were the various authoritative documents outlining America's new national security and national military strategy and the July 1992 *Strategic Planning for the Office of Naval Intelligence: Vision and Direction for the Future* issued by the Director of Naval Intelligence (DNI).

The authors, military officers enrolled at the Naval Postgraduate School (NPS), worked collectively and under the supervision of a faculty member from the National Security Affairs Department during the Spring and Summer quarters of 1993. They had no agenda of favoring one type of intelligence or another, one service, jointness, or intelligence produced by the Department of Defense or non-military agencies. Indeed, the authors attempted to approach the issues addressed herein with an open mind without prejudice or preconceptions. The student contributors were primarily Navy intelligence and unrestricted line officers enrolled in the intelligence program at NPS. Two of the officers were from other services -- Air Force and Marine Corps.

The sole direction given to the authors was to look at the new regionally-focused national military strategy and the initial thoughts of the DNI, as contained in his vision statement, and to then consider some of the ideas that were briefed to the class by one of the ONI senior staff members. This ONI briefing centered around recent shifts in intelligence emphasis, as defined in the Washington arena, and dealing with proliferation as a vendor/client problem.

The product of the efforts by these students is expected to be discussed and debated by the readers to whom this technical report has been sent. The report should be read as commentary on these subjects by individuals "outside of the beltway" who were asked to review certain concepts without knowledge of existing government-wide programs to implement them.

This report is but one of the many first steps taken by NPS to make its Intelligence curriculum more relevant under today's changed international security environment. The report will also be used as the basis for a follow-on course with a new group of students in the Winter quarter 1993. That course will attempt to further develop certain of the concepts contained herein.

Perhaps the basic message contained in this report is that the role of military intelligence, and therefore the education of military intelligence specialists, needs to change. Just as the new national security strategy no longer equates military with security, the role of intelligence has now shifted to similar

non-military concerns. Such a wholesale shift in thinking within any bureaucracy will not come easy and the reader is especially urged to consider the last chapter addressing this issue.

The report opens with a consideration of the changed world with its new requirements for strategic intelligence. This introduction set the stage for obvious follow-on discussions such as the obvious need for new programming and operational war planning scenarios. Military intelligence will need to shift its focus to new areas which in turn requires new specialists with new areas of expertise. New scenarios for future involvement of the armed forces should not be viewed as predictive but should also be used to explore alternative futures and should equally be used to shape the new world with the use of games, etc., that focus on the new scenarios.

For military intelligence, the ultimate problem remains surprise. In today's international security environment, the pace of change is so rapid, the spectrum of threat so wide, and intentions simply too hard to ascertain that it may force the intelligence community to focus on capabilities, military potential capability, and above all since we cannot do it all, we will need to prioritize and concentrate resources where they are most needed.

One such place to provide more emphasis is on long-range strategic-level intelligence. Rather than continuing to use the inductive approach, which focuses on the specific and builds theory, intelligence may need to return to the deductive approach. Building theory first and then looking for specifics may be the only way to handle the multitude of threats facing our country. One such approach would be to concentrate on general knowledge about the population, geography, economics, technology for military potential capability for the other nations of the world. From this broad overview of all the world's nations, we can select those more likely to get involved with the use of armed forces or other instruments of national power that are now of interest to the military intelligence community.

Likewise, the focus on military technology and proliferation must be done in a new way. Essentially, this process involves the identification of countries bent on acquiring technologies or capabilities that are of interest to military intelligence. Part of that process will be to understand how much they can afford by an analysis of their economic forecast and how much surplus capital they are expected to have. Equally important is what technologies they can internalize and absorb. The macro-level analysis of population, etc. described above, therefore, is an integral part of this process. The next step will be to identify what hardware, technologies, etc., are available on the marketplace. The government will need to develop sources for this economic information rather than to deal with fielded hardware or items in transit. Much of this approach is not new and the government already has ongoing programs to provide such information. The authors of this report validate the concept of shift-

ing to such a vendor/client approach rather than the more traditional ways of doing business by the military intelligence community.

There are other more specific implications for operational and tactical-level intelligence, of which the authors only develop one as an example. The specific example considered was that targeting critical nodes vice obvious military target may yield higher payoffs in military operations. There are the obvious difficulties in being able to do this that have been well developed in the nuclear targeting literature and were demonstrated in Operation DESERT STORM. The authors also felt that in the current international security environment, that tactical-level intelligence may have a high level of payoff for resources devoted. Operational and tactical-level intelligence was not the primary focus of this study and these recommendations should be used as an input for further more detailed research.

Any consideration of changing the future direction of a large organization, such as the intelligence community, will logically lead to consideration of bureaucratic changes as well. The authors felt that there were no simple organizational quick fixes to the problems facing the military intelligence community. They agreed that we should build on what we already have and do instead of attempting to "reinvent the wheel." After a detailed analysis, the authors felt that reorganization of the intelligence community was not the answer, but may be part of an answer. They agreed that having multiple [perhaps even redundant] opinions remains a good idea but that the various parts of the community could do a better job in cooperating. A specific example of this is the recommendation for better sharing of foreign material exploitation. Similarly, there seems to be a greater need for the intelligence community to work with policy until such time as the nation's new role in the world has been fully articulated.

As far as the substance of military intelligence, the authors of this report saw great value in human intelligence and recognized the long lead times that are necessary for developing these sources. They also looked at open source intelligence. The authors conclude that open source intelligence can provide good information for our country.

The report ends with a discussion of what the authors felt was the real issue facing the intelligence community: is strategic planning for intelligence, not intelligence in support of strategic planning. Simply put, having a plan to conduct intelligence in the new international security environment is **not** enough. A strategic management plan is also needed by the various headquarters.

First, the intelligence community needs to accept the view that change is necessary. This is not a given; indeed there are many that would argue that military intelligence already knows what is all about and does not need the outside interference from

non-specialists. The DNI's vision statement disputes such a view. Anyone who looks at the missions for ONI as articulated in this visions statement must clearly see that the definition of what is of interest to Washington has been expanded widely and does not closely resemble what was the routine province of naval intelligence before the end of the Cold War.

The development the new idea (what military intelligence is all about) is a separate function from the recognition of the need for change or the "selling" of the new idea. For the purposes of this study, it did not matter what the new idea was, only that there is a separate need for its execution. Previous models for implementing innovation in the armed forces demonstrate that change **can** come about from within, as well as it can be forced upon the military by external forces. Clearly the current reform effort that this group was asked to consider is an example of an attempt to change from within.

An implementation plan will need to be created and the "selling" of the Navy's Maritime Strategy or the Strategic Defense Initiative are two of many possible examples to consider and learn from. In addition to the plan to implement the changes will be the need to monitor the plan to see how well it is doing. The execution planners will therefore need to articulate how they will know that their new ideas have been accepted and what are the appropriate measures of effectiveness that they will monitor.

The authors also considered impediments to change. First and foremost is the residual Cold War mindset. It is more than just still believing in your heart that the Russians are the enemy, it is also the fact that the careers of the leadership of the intelligence community has been primarily drawn from those who cut their teeth on the Soviet threat. How to change civilian merchant ship specialists from someone who worried about the military utility of a ship from its photograph to someone who is concerned with the monitoring of seaborne containers has yet to be settled.

Equally important is the European focus of the intelligence community. In this case, it may be easier for the intelligence community to change than it is for the policy world. Despite years of analysis that shows that America's interests lie to the Orient, particularly in the People's Republic of China, rather than in Europe, our latest articulations of national security remain Eurocentric. The intelligence community can lead the way by developing the products necessary for decision-makers to understand the global shifts that have yet to be internalized by the policy side. Traditionally military intelligence has focused on worst case threat assessments vice the types of "softer" issues discussed in this report. Such a change will be a cultural change for the intelligence community.

Until such time as the present government publishes the results of their "bottom-up" defense review, the lack of agreement by all parties to the nation's new role in world and the

national security strategy to be pursued will use/used by detractors that will continue to point to Russia's theoretical military capability and argue that monitoring this, like we used to, is the proper role for military intelligence. The authors agree that at a time of such change in the world and the community, budget and personnel cuts are the last thing that is needed. Indeed, the retraining costs alone are enormous and should be met with additional resources as our own military capability is reduced.

Finally, the opinions and assertions contained herein represent the views of the authors and should not be construed as the views of the U.S. government, the Navy, Air Force, Marine Corps, or the Naval Postgraduate School. This report is not reflective of any government policies or programs and was simply prepared to assist the sponsor of the NPS Intelligence curriculum in whatever manner they desired by having this group perform this exercise.

James J. Tritten

Introduction

The probable scenarios for future wars, and the manner in which they will be waged have undergone radical change in the last few years. There are two elements to the major changes in the international security system. The first is the collapse of the Soviet Union, and all its incumbent implications. There is no longer a Warsaw Pact which threatens the security of Western Europe. On the other hand, a power vacuum and instability have appeared in Central and Eastern Europe. The second change is a revolution in military-technical affairs. This, in part, was successfully perceived and incorporated by US strategists into the AirLand Battle concept, and was also foreseen by Marshal Nilolai V. Ogarkov, former Chief of the Soviet General Staff. This revolution has changed military theory and military art in fundamental ways. While there is no longer a realistic short-term threat of a European-centered global conventional or large-scale nuclear war, **high-technology has given armed forces the ability to conduct strategic operations with conventional munitions**.

The collapse of the Soviet Union, however, has not made the world a safer place. The territory of the former Soviet Union has itself become a battleground. Serious armed clashes have arisen, due in part, to unresolved territorial disputes and long-standing ethnic hatreds. These have raged in Moldova, South Ossetia, Abkhazia, and Tadjikistan, etc.. The relationship of Russia with the other republics of the former Soviet Union has multiple other potential areas of conflict.

Within the Russian Federation, a number of ethnic and political disputes threaten the Russian Republic, at least within its current borders. The possibility of a civil war in Russia would have dire consequences for the entire world. **A nuclear armed nation has never undergone a civil war**. The military, political, diplomatic, and ecological dynamics of such a situation are unclear.

The Ukraine has made commitments toward nuclear disarmament, but deeds have yet to match rhetoric. The Ukraine may yet conclude that it will be necessary for its own national security to maintain a nuclear deterrent.

Irrespective of any conflict that begins on its former territory, the collapse of the Soviet Union has completely changed the international scene. As a result the bi-polar world, has become uni-polar. However, this **uni-polar world** has every indication of being transitory. The fear of Soviet hegemony as the justification for collective security ties with the US has been lost. The US may also be heading into a period of disengagement from international entanglements. Public opinion is demanding a renewed emphasis on domestic policy and funding, at the expense of

foreign ties and military preparedness. Regional powers, acting independently, can be expected to increasingly assert themselves and their own agendas.[1] Therefore, it is reasonable to expect that a **multi-polar** international system will be unfolding. One aspect of the future security scene may be a renewal of ethnonationalism. Previously, the aspirations of ethnic minorities for independence or autonomy were in many cases suppressed due to imperatives of the Cold War, exemplified by the former Soviet Union itself, as well as the former Yugoslavia.

With the passage of time, it is inevitable that the technology to develop nuclear weapons, other weapons of mass destruction, and high-technology weapon systems will spread. The **spectrum of threats** has therefore **increased**. Not only is there the possibility of the use of nuclear weapons, or other weapons of mass destruction, but **regional powers** may see this as a period of geostrategic opportunity, an opportunity that should be seized. At the low-intensity end of the conflict spectrum, guerrilla wars and the settling of old ethnic scores are certain to continue.

The military intelligence community recognizes these changes, and is adapting collection, analysis and dissemination to reflect the current situation. The challenges for military intelligence in such a world, are however, multiplied. Not only are the potential adversaries dramatically increased in number, so are the types of warfare to be waged, the kinds of weaponry to be faced, and the varieties of coalitions that may be assembled as ad hoc allies.

The world is no longer the neatly packaged, bipolar place where once the divided lines were clear, and communism was the main enemy. The fundamental shift in US national security policy was articulated by the President at the Aspen Institute, Colorado on August 2, 1990. More recently, "Secretary Les Aspin testimony to Congress of President Clinton's National Strategy on April 1, 1993." reiterates that our strategy has shifted from a focus on a global threat to regional crisis. However, the US and its allies will face different intelligence problems in the future when responding to a shift in emphasis to crises and contingencies instead of global conventional or nuclear war.

In the twenty-first century, the US will continue to seek to preserve its leading international role and promote a cooperative effort to contain and defeat various regional threats. The US cannot meet these challenges alone with its planned significantly reduced force structure. Cooperative regional efforts with allies or within an ad hoc coalition, will require **intelligence cooperation** with our

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[1] Edward D. Sheafer, Jr., "*Strategic Planning for the Office of Naval Intelligence: Vision and Direction for the Future*," (Washington: Office of Naval Intelligence, July, 1992), p. 7.

allies, among the national agencies, among the uniformed services, at a new and higher order---and all this without losing sight of the tailored needs of decision makers, or the tactical quality of intelligence provided operators.

This paper is the product of a group effort by American military officers enrolled in a graduate-level program in intelligence at the Naval Postgraduate School. It hopefully makes some headway in outlining the key strategic changes impacting national objectives, and in turn, US intelligence objectives; identify these new intelligence demands; and make some useful policy recommendations, cognizant of the impediments to implementing these changes. This paper does not explore all aspects of the intelligence effort, such as covert operations or counter intelligence, the authors choosing to focus on the broader impact of strategic redirection.

The Introduction was primarily authored by Navy LCDR Ho-Song Dupont and LT David Hanson. LT Russ Lindsay was the main contributor for Chapter One; LCDR Ho-Song Dupont, LT Steve Panchyshyn, LT Tim Gedney and CPT Peter D. Read USAF for Chapter Two; LT Mark Admiral, LT Stephen Clarke, LT David Hanson, LT Allison Rosa and CPT Peter D. Read USAF for Chapter Three; LT Kevin Baker and LCDR Marty Dewing and LCDR Frank Sheehan for Chapter Four; and CPT Shawn Stith USMC for Chapter Five. However, all authors contributed throughout the paper. Overall editing was done by LT Jon A. Skinner and Professor James Tritten with the technical support of LCDR Terry Hopkins.

Chapter One

Current Intelligence Structure: Not Business as Usual

I. National Security Refocused: Intelligence Implications

In a statement before the Senate Armed Services Committee, Secretary of Defense Les Aspin stated that the Clinton administration will "apply a new philosophy to America's defense posture based on a reassessment of the security dangers we face and on sound strategies for meeting them."[1] Secretary Aspin's comments have far reaching implications for policy makers, planners, and the intelligence community. A great political debate has been underway since 1990 revolving around the need to redefine our concept of national security. The revised national security objectives, the resources to be devoted to defense, the types of threats we face, and the intelligence systems and products needed by our policy makers and planners to address those threats, will ultimately determine how best to structure and re-focus US intelligence. The managers of the intelligence community, in cooperation with the executive branch and Congress, must define the nature of the Post-Cold War world, America's role in this new world, our country's interests, and from whence those interests will be threatened. Perhaps more so than at any point in the past forty years, the intelligence community has reached a crossroads presenting significant uncertainties.

For more than a half a century, the US has had the luxury of knowing who its chief adversaries were, having a national consensus on its international security policy, and having a programming strategy that focused on the worst-case threat. In many respects the job of the intelligence community was less problematic than that which we face today. This point is eluded to by Kenneth E. deGraffenreid, who notes: "Gathering intelligence during the Cold War, while taxing, was at least straightforward in mission and purpose."[2] The US focus on the threat of international communism for the past four decades came to approach that of an obsession. Bobby Inman, a former deputy director of the Central Intelligence Agency (CIA), was quoted to say that being good at "conducting operations against the Soviets was the fastest ticket to the top of US intelligence services."[3] Many of the nations top intelligence officials and policy advisors made their reputations as Soviet experts, and still many more spent portions of their careers

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[1] Aspin, Les, Secretary of Defense, "Statement of Secretary of Defense Les Aspin Before the Senate Armed Services Committee in Connection with the Clinton Defense Plan," (April 1993), P. 1.

[2] deGraffenreid, Kenneth E, "Intelligence Threat Changes Require Sharp U. S. Actions," *Signal* 45 (December 1990), p. 67.

[3] Johnson, Loch K., "Smart Intelligence, " *Foreign Policy* (Winter 1992-1993), p. 53.

dealing with Soviet-related issues. But as Loch K. Johnson observes: "Gone are the days when 60 per cent of America's strategic intelligence resources were targeted against the USSR...."[4]

According to Samuel P. Huntington, American strategists have traditionally been concerned with "relatively narrow and highly technical issues: the merits of particular weapons systems, the minutiae of arms-control proposals and methodologies for estimating the European military balance."[5] Paula L. Scalingi, a professional staff member of the US House of Representatives Permanent Select Committee on Intelligence, further notes that "collection and analysis on technologies, weapons development and monitoring, nonproliferation, and economic analysis were...skewed in the Soviet's direction."[6] Because Cold War threats were relatively static and focused, the intelligence effort was reasonably successful in developing a capability to provide **strategic warning**. The indicators previously used by intelligence analysts, however, will not address today's emerging threats. Therefore, the intelligence community must reassess the types and sources of data needed as well as the expertise or specialization required.

The difficult job now faced by the intelligence community is evident from the observation of Samuel P. Huntington: "All in all, the emerging world is likely to lack the clarity and stability of the Cold War and to be a more jungle-like world of multiple dangers, hidden traps, unpleasant surprises and moral ambiguities."[7] The types of threats and challenges to be faced in the new world will place new requirements and demands on intelligence collection, processing, analysis, and dissemination; as well as on intelligence personnel and management.

II. Refocusing Intelligence: Issues and Concerns

In response to the newly emerging challenges brought about by the collapse of communism, intelligence officials have begun to call for the US to adjust its approach to intelligence and security. Pivotal to this process is the need to establish a clear understanding of intelligence **requirements** and **priorities**. Robert Gates captures the critical nature of the relationship between those who produce intelligence and those who consume. Gates believes that "unless intelligence officers are down in the trenches with the policy makers, understand the issues, and know what US objectives are, how the process works, and who the people are,

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[4] Ibid, p. 54.

[5] Huntington, Samual P., "America's Changing Strategic Interests," *Survival* 33 (January/February 1991), p. 3.

[6] Scalingi, Paula L., "US Intelligence in an Age of Uncertainty: Refocusing to meet the Challenge," *The Washington Quarterly* 15 (Winter 1992), p. 148.

[7] Huntington, p. 7.

they cannot possibly provide either relevant or timely intelligence that will contribute to better informed decisions."[8] Intelligence personnel must fully understand the requirements of those whom they support. The very nature of foreign policy, and the inherent high costs of mistakes, has placed a tremendous value on accurate, relevant, and timely intelligence concerning the potential threats to our country's interests. History has demonstrated that the US can not afford to act only when crisis is upon it.

Some intelligence officials have suggested that the scope of potential threats facing the US in the newly fragmented world order will warrant at least the same level of support, i.e., funding, personnel, etc., as did the Cold War. But some legislators have expressed concern over the track record of America's intelligence apparatus during the Cold War, questioning whether support can be justified. The CIA, for example, was sharply criticized for not predicting the demise of the USSR.

Another oft-referenced intelligence shortfall occurred between 1975 and 1978. In the face of substantial evidence of a Soviet strategic weapons building program, the intelligence community repeatedly underestimated the significance of what was taking place.[9] "The nation," writes Daniel O. Graham, "has the right to expect more than that from its intelligence analysts working in concert on an issue of vital importance."[10] Congressional oversight committees may express similar sentiments as they seek to determine the future size, role, and structure of America's intelligence community. A more recent event which has left a significant impression on both Congress and the media was the Iraqi military's invasion of Kuwait.

The overriding lesson is that policy makers will continue to expect timely and unambiguous predictions of events that could threaten US national security interests. More importantly, though, policy makers, planners, and intelligence officials must recognize that the traditional notion of the threat to US national security, and the means by which the intelligence community anticipates or detects those threats, is by many accounts in a revolutionary state of change.

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[8] Robert Gates, "Discussion," in Roy Godson, ed., *Intelligence Requirements for the 1990s: Collection, Analysis, Counterintelligence, and Covert Action* (Washington D. C.: National Strategy Information Center, Inc., 1989), p. 111.

[9] Daniel O. Graham, "Quality of US Intelligence," in Roy Godson, ed., Intelligence Requirements for the 1980's: Elements of Intelligence, Revised Edition (Washington D.C.: National Strategy Information Center, Inc., 1983), p. 22.

[10] Ibid, p. 22.

In the new world order, intelligence services must continue to provide timely predictions of events that could threaten US security, including the identification of impending crisis or conflict. The problem today, though, has become infinitely more complex than the recent past. LTG James R. Clapper, Jr., USAF, the 10th director of the Defense Intelligence Agency (DIA), addressed the new challenge to intelligence, stating that "this is a period of intense and most profound change,...we have taken very healthy reductions in resources that were devoted to the former Soviet Union."[11] LTG Clapper continued, "I only wish that they had been accompanied by a concomitant reduction in the number of questions and requirements that still continue to be levied on us...."[12] The relative stability of a bi-polar standoff between superpowers has given way to a multitude of new concerns; including economic, technological, ethnic, and even environmental issues. For example, traditionally cooperative relationships with some US allies may take a new form as economic competition becomes more intense. Not only must US government secrets be protected, but equally vital strategic information from the private economy. In dealing with such concerns, intelligence agencies and non-government groups working together may exceed the effectiveness of either one working alone. In view of the unique intelligence requirements that are only now beginning to be realized, innovative problem-solving concepts within the intelligence field must be put forward. New forums for discussion and coordination must be established to bring together the intelligence community with its counterparts in industry, academia, and others of the private sector. It is apparent that the demands placed on intelligence have not diminished with the folding of communism.

Today, intelligence personnel must be able to identify emerging sources of power, signs of instability, and a diverse array of regional and functional topics. Accordingly, the community must have clear guidance on US security objectives, capable technical resources, appropriate analytical methodologies, and quite possibly, consider developing a new breed of analyst. Les Aspin, in his statement before Congress, said the following:

> Beginning with [fiscal year] 1994, defense budgets will stress initiatives and strategies to meet four dangers that stand out in the security environment that has emerged since the end of the Cold War and the collapse of the Soviet Union: regional threats to US

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11 No author listed, "Defense Intelligence Rigs for Varied Global Roles," *Signal* 46 (August 1992), p. 35.
12 Ibid.

> interests; proliferation of weapons of mass destruction; the possible failure of democratic reforms, especially in the former Soviet world; and continued poor economic performance at home.[13]

The redefinition of national security will undoubtedly have both direct and indirect effects on intelligence, in terms of focus, budget, and expansion. Nevertheless, the uncertainty of the current global environment will demand a strong intelligence capability. It is just such uncertainty that will plague intelligence officers as they attempt to stay ahead of the world's unfolding developments. Even though the new environment presents many significant challenges, the **ultimate problem for intelligence officers will remain surprise**. The pace of change is so rapid, and the spectrum of potential threats is so great, even sophisticated intelligence means are susceptible to surprise. As a result, **the community must place more emphasis on long-range analysis to better anticipate sources of possible tension or conflict.**

The ability of the US to effectively meet the intelligence needs of the post-Cold War world cannot be resolved by simply shifting analysts to economic or technology issues. Rep. Dave McCurdy (D-OK), expressed concern over this issue in 1992. McCurdy commented, "if your focus has been on the Soviet military capability,...it is going to take a different kind of analyst who understands technology trends in the Asian Rim or Europe or elsewhere."[14] McCurdy concluded by adding: "The intelligence community will need a lot of help."[15]

III. Intelligence Looks Ahead

Intelligence managers have begun to reassess the way they do business in light of the Post-Cold War world. The national intelligence community---CIA, DIA, and NSA---has started to revise their programs and requirements. The military has also taken steps to consolidate and coordinate their collection and analytical operations. The Department of Defense (DOD) has initiated a program that streamlines defense intelligence programs and promotes joint cooperation. While the changes currently being implemented in the intelligence community are designed to address the needs of the emerging new world order, the challenges placed on intelligence collection, processing, analysis, and dissemination, remain formidable.[16]

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[13] Aspin, p. 1.
[14] Williams, Robert H. "Congress Reserves Option," *Signal* 46 (August 1992), p. 33.
[15] Ibid.
[16] Scalingi, p. 150.

America's intelligence effort has shifted away from the Cold War monolithic challenge posed by the Soviet Union, to the potentially greater intelligence tasks associated with numerous and fragmented regional concerns. William H. Webster believes that "intelligence gathered on the Third World now has an impact that extends beyond the borders of a single region, and it calls for knowledge and understanding that transcends a single discipline."[17] "Thus," says Webster, "it is not surprising that we are interested in both the political and the economic stability of countries in all regions of the world."[18]

While most agree that a strong intelligence capability is a necessity, a more fiscally conscious Congress may seek to draw down the intelligence organizations, and curtail the acquisition of new assets, to offset the unprecedented buildup of the 1980s.

The challenges that lay ahead for the community are formidable, but not insurmountable: new threats (and perhaps some overlooked or neglected threats), potential domestic constraints, and traditional turf rivalries among competing intelligence agencies---to name a few. **What is needed today is a clear vision** of America's security interests and the intelligence needs of policy-makers and planners. It is conceivable that intelligence requirements may soon be expanded to include some selected needs of our allies or international organizations, further complicating the challenges and responsibilities of US supporting organizations and analysts. The intelligence community must pursue aggressive and innovative solutions to deal with the multi-faceted and fluid nature of the Post-Cold War world.

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[17] Webster, William H., "The Intelligence Community's Mission in Today's World," *Signal* 44 (September 1989), p. 38.
[18] Ibid.

Chapter Two

Rethinking Intelligence for a New Era

I. Drivers of a New World Order

The recent collapse of the Soviet Union has required the US military to review its strategic objectives, operational and tactical concepts, and supporting intelligence operations. We can no longer afford to concentrate our efforts against one or two countries. Throughout the world, the proliferation and use of highly sophisticated and capable platforms and systems has risen dramatically. In the last twenty years, several nations have not only sold these newly developed weapon systems to Third World countries, but have also provided them the technological capability to create their own indigenous weapons programs.

It is also apparent that the US and the world economy have become interdependent. The export-oriented world economic environment, and competition among the United States and its allies for markets will set the stage for the proliferation of advanced civilian and military technologies to Third World countries. Additionally, Russia's willingness to sell their over-stocked weapons and military technology is certain to contribute to the increasing difficulties military intelligence will face in the twenty-first century.

A. A New Strategic Focus

According to Chairman of the Joint Chiefs of Staff (CJCS) General Colin L. Powell, the two emerging realities that have prompted the new national security strategy are the end of the Cold War and declining defense budgets. General Powell identifies a number of enduring and emerging realities addressed by the new strategy: persistent Soviet military power; vital interests across the Atlantic, in both Europe and the Middle East, the Pacific, and the unknown threat---the crisis that no one expects. Former President George Bush stated in his August 2, 1990 address in Aspen, Colorado, the foundation of our national defense consists of forward presence, deterrence, crisis response, and reconstitution. These four basic pillars of our military strategy are likely to remain in the Twenty-first century.[1]

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[1] Weeks, S., "Crafting a New Maritime Strategy," United States Naval Institute *Proceedings*, pp. 30-37, January 1992, p. 32.

Forward presence will continue to be the key peacetime mission for the US military as will crisis response and operations with coalition and/or United Nations (UN) forces. Both forward presence and crisis response missions have traditionally been a common mode of operation for the Navy and Marine Corps. But some missions may require more subtle action. Additionally, the reduction in the number of overseas bases will pose greater challenges for all aspects of overseas operations in the future.[2]

From a strategic planning perspective, the United States is redirecting much of its emphasis away from the Soviet Union and towards regions in the Third World where countries are acquiring sophisticated war-fighting capabilities. With the diffusion of potential threats; it is becoming more likely that today's friend may be tomorrow's enemy.[3] A capable Third World military force poses an especially significant threat to US forces operating in littoral regions. This threat could be absolute, i.e., sinking a US naval vessel, or it could be more abstract, constraining operations simply by its existence.

Involvement in Third World regions will require more complex operational planning and more demanding execution. If a real or potential Third World military prevents or frustrates US forward presence, crisis response, or other missions, our strategic objectives may be jeopardized. The challenge for the US armed forces in the Twenty-first century, will be to maintain effective and credible military forces to address and counter instability and uncertainty, with a threat intensified by the proliferation of weapons and technology in an era of diminished capabilities.

The cornerstone for regional conflicts in the Third World is sound intelligence. The US and its allies need the ability to collect, analyze, and disseminate intelligence to assist coalition and joint mission planners anticipate future crises. Regional assessments of military capabilities, political, and economic trends, and the development of effective countermeasures, will be the order of the day.[4]

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[2] Bacon, R.F. , "Submarine Warfare: It's A-Changing," United States Naval Institute *Proceedings*, pp. 52-54, June 1992, p. 52.

[3] Withers, J.D., "ASW: Considerations for Future Operations in the Third World Regions," Naval War College, 15 November 1992, p. 2.

[4] "Supporting U.S. Strategy for Third World Conflict," A Report by the Regional Conflict Working Group to the Commission on Integrated Long-Term Strategy, Washington, D.C., June 30 1988, p. 56.

The Office of Naval Intelligence's (ONI), "Strategic Planning for the Office of Naval Intelligence," July 1992, defines strategic intelligence as early warning of impending threats, enabling reappraisals for our national interests. Traditionally, military intelligence has been tailored for individual service's needs. Recent service intelligence reorganization now provides for diversified Joint Intelligence Centers (JIC) manned by personnel from all services. Thus, intelligence support for the theater commanders has changed profoundly in last few years.[5]

Thomas B. Grassey points out that the end of the Cold War increases demands on intelligence, requiring comprehension of each individual nation and sub national organization on its own terms, rather than as a "superpower client."[6] Intelligence products in regional scenarios will likely cost more to produce because so little can be carried over from the Cold War.

Another likely major focus for US intelligence is treaty verification. A host of arms-control treaties, bilaterally and multilaterally, on topics ranging from strategic weapons, chemical warfare, and conventional force levels, i.e., Conventional Forces in Europe (CFE), will heavily task intelligence-related verification assets.[7]

The Vice Chairman of the Joint Chiefs of Staff (VCJCS), has stated that the US will have eight-to-ten years warning of a European centered global conventional war with a resurgent/emergent threat (REGT) on par with the former Soviet Union.[8] Therefore, intelligence assets must also be targeted on the military and industrial mobilization capabilities, munitions and critical resources, such as stockpiling, and other similar long-term preparations for war, throughout any area that would constitute a REGT.[9]

The role of US intelligence agencies involvement in forecasting the world economy will likely be much greater.[10] A continued demand on intelligence is the requirement to understand the internal affairs of Russia and other major republics

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5 "Strategic Planning for the Office of Naval Intelligence: Vision and Direction for the Future," published by Office of Naval Intelligence, July 1992,p. 8-9.

6 Tritten,J.J. and Stockton, P.N., *Reconstituting America's Defense*, Praeger Publishers, Westport, Connecticut, 1992,p. 32.

7 Ibid, p. 33.

8 Tritten, J.J., *Our New National Security Strategy*, Praeger Publishers: Westport, Connecticut, 1992, p. 18.

9 Tritten,J.J. and Stockton, P.N., *Reconstituting America's Defense*, Praeger Publishers, Westport, Connecticut, 1992, p. 33.

10 Ibid, p. 34.

of the former Soviet Union. Given the military capabilities remaining in the region and the political instability and uncertainty that persist, the fate of those nations remains a vital intelligence concern to the United States.[11]

Another major concern to intelligence organization in the future will be the understanding of power of media. Cable television networks, such as Cable News Network (CNN), which have the capability to produce live reporting throughout the world are and will increasingly become a valuable source of military intelligence information. For example, following the June 1993 Tomahawk strike against Baghdad, President Bill Clinton received notification that the attack had taken place from CNN and not government sources.[12] This is particularly true for instant bomb damage assessments and targeting information. At the same time, how the war is reported, or misreported to the general public can have a significant effect on military operations.

The movement of states from rigid alliances, the resurgence of ethnic nationalism, the diminishing of communism as an international political and social force, and the growing awareness of the economic interdependence of all nations, contributes to uncertainty and instability in **identifying friends and potential adversaries**. The enhanced role of the UN, particularly in peacekeeping operations, humanitarian assistance, disaster relief, and other non-traditional tasks, will require closer cooperation and support. The nature of these new demands underscores the importance of the political role of expeditionary forces designed for quick response in joint and coalition operations. The Navy's white paper, *...From the Sea*, has been formulated to support these type of missions. The Navy will now tailor battle forces for future conflicts to support joint strike, littoral warfare, surveillance, space and electronic warfare, strategic deterrence and strategic sealift.[13]

One positive result of the new era in superpower relations is that regional conflicts can now be treated independently of the old East-West context. The United States has found Russia and China willing to cooperate to solve regional conflicts.[14] The emergence of Eastern Europe from communism brings demands on the US and its allies to ensure that the transition to democracy and capitalism is as smooth as possible.[15]

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[11] Ibid, p. 34.

[12] See Ken Auletta "Raiding the Global Village," *New Yorker*, 69, no. 24 (August 2, 1993):25.

[13] "Strategic Planning for the Office of Naval Intelligence: p. 124.

[14] Allison, G., *Rethinking America's Security, The American Assembly*, W.W. Norton & Company, 1992, p. 178.

[15] Abshire, D.M. "Potential Threats to American Security in the Post-Cold War Era,"

Knowing that **today's friend may be tomorrow's enemy**, who can the US trust and cooperate with in the future? The US intelligence communities may have to share intelligence data with past enemies.

The key to **shaping the new security environment** of the is ensuring cooperation and cohesion among the leaders of the world, especially with the European Community (EC), Japan, China and Russia. Maintenance of peaceful relations, both public and private, among these nations will allow for a system designed to allow a future for the common pursuit of multilateral interests. The US will maintain a military presence overseas to be a part of this framework of stability.

B. Implications of Smaller Military Forces

The 1991 and January 1993 *National Security Strategy of the United States* declares that regional crises along with forward presence will be the primary determinant of the size and structure of our future military forces. This assumption is unlikely to change under the Clinton Administration. Another fundamental component of the new national security strategy is that, assuming an eight-to-ten year warning of a European-centered global conventional war with an REGT, we have time to rebuild or reconstitute totally new forces if necessary. Paradoxically, while the US is relaxing its warning time for a European-centered global conventional war, required response in many regional scenarios will be more rapid than before.

The changing security environment makes a US military drawdown possible. But obviously, there must be a limit, beyond which reductions will impair US capability for military action to the point where traditional or preferred security objectives will have to be foregone. This may happen as well. Such a eventuality will require the intelligence community to assist the process of prioritizing which are the key threats to re-defined national objectives.

Future US crisis response forces will operate under the umbrella of **joint** warfare, and frequently as a part of **coalition force**---a mixture of small and tailored forces. Replacing conflict with the Soviet Union with Third World regional contingencies as the central focus of US military strategy has many implications. It **complicates** planning and execution of joint and combined operations, making it **difficult for effective advance planning**. Indeed, the US may return to a family of "Rainbow" plans, typical of the inter-war years. In many

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Hearing before the Defense Policy Panel, U.S. Congress, House of the Committee on Armed Services House of Representatives, December 10, 11, and 13, 1991, p. 5.

possible scenarios, **coalitions will be ad hoc**, and although we have assumed host-nation-support at the operational-level of warfare, **access to overseas facilities may really be unpredictable**. Additionally, prospects for significant relief of US defense burdens by Western nations in these regions will be limited by the corresponding declining military budgets of our allies, as well as their own political and domestic policies.

II. Military Impact of Global Change

As the US enters a new world order, several paramount issues will impact the effect global change has on military intelligence. Objectives must be defined and met in a strategic environment which is shifting from a military bi-polar to an **economic multi-polar** arena. Stronger national economies will be more capable of acquiring world market technology, increasing proliferation and the possibility of greater regional instability. Moreover, nations with weaker industrial bases are becoming increasingly able to purchase small numbers of extremely high technology weapons systems.

In recent years, a greater number of Third World nations are using a large percentage of national assets for military purchases, fueling possibilities for regional conflict. The near monopoly once enjoyed by the US DOD's research, development and acquisition process has fallen behind civilian markets and foreign competition. As both manpower and available budgets decline, the corresponding decreased military capability calls for an increase in intelligence efficiency.

A. Economic Interdependence

Nations are increasingly evolving into distinct players in world markets, and their interaction in these markets, politically, economically, socially, and militarily, must be analyzed. Related concerns about the US reliance on foreign technology, energy or capital are really concerns about dependence.[16] But one-sided dependence examples are rare in international politics. More commonly, states are interdependent, or mutually dependent. For example, although the US is dependent on foreign oil supplies, those same supplier nations, as trading partners, rely on the US for dollars, military equipment, and food stuffs. This interdependence is rarely equal, and demands trading partners be cognizant of the ramifications of one another's unilateral actions.

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16 Kapstein, E.B. *The Political Economy of National Security:A Global Perspective.* New York: McGraw-Hill, Inc., 1992, p. 181.

Interdependence has two distinct attributes: sensitivity and vulnerability.[17] **Sensitivity interdependence** is an immediate cost suffered by one country as a result of another country's unilateral action, i.e., the early 1970s oil embargo. **Vulnerability interdependence** defines a nations ability to affect another by its policies, but face the consequence that the affected nation may find alternate sources of a previously relied upon commodity. In such a cases, it becomes less likely a nation could blackmail the world economy.[18] But becoming dependent on a commodity available solely through foreign sources could severely impact trade issues, and possibly, successful national operational capability.

Although it is commonly accepted that the 1991 actions against Iraq by Coalition Forces were a success, critics contend the likelihood of such a strong coalition led by the US, without the strategic threat to the Middle East oil reserves, is low. It also recognized, however, that intervention was influenced by Saddam's nuclear program, strong ties with Israel and Saudi Arabia, and the illegality of Saddam's actions.

A key national objective, which will require intelligence support, is the strengthening of national and international regulations on technology transfer, without detrimentally affecting our increasingly interdependent global economy. There is a threat of a return to pre-World War I conditions of fierce economic rivalries and destabilizing military alliances if insufficient stress is placed on the cooperation and cohesion of the industrialized nations.[19]

Notwithstanding success in the Gulf War, the US must balance the tension between international needs and economic constraints. These constraints, brought about by the budget deficit, growing foreign debts, debt service costs, decreased levels of investment, fragile productivity growth, decreased technological leadership in cutting-edge industries, and overall general decline in US global competitiveness, seriously impact the functional abilities of our intelligence services.[20] National interests and global obligations could far outrun our available resources to sustain and/or defend them. Nations remain responsible for the provision of defense and social welfare, but cannot provide these to their own people without entering the world economy.[21]

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[17] Ibid, p. 182.
[18] Ibid, p. 182.
[19] Allison, G., *Rethinking America's Security.* The American Assembly, W.W. Norton & Company, 1992, p. 119.
[20] Ibid, p. 126.
[21] Kapstein, p. 199.

B. Demography and Economic Disparity

The relationships between nations are constantly becoming more and more complex. Ideological issues which previously raised insurmountable barriers in interstate relationships, are being surpassed by the greater need for economic survival. Competition for funds within underdeveloped nations is divided between domestic social needs and leadership goals for enhancing military inventories. Governments, particularly authoritarian, often opt for the military priority. However, it is worth noting that such analysis can not be simplistic, i.e., India appears to further its national defense capabilities without ill-affecting its economic status, and may actually aid the development of its industrial sector.[22]

Economic disparity between nations contributes to instability. A basic criticism by Third World nations is the poverty gap that separates the North from the South. Recent optimistic growth rates of the Third World economy of 5 percent annually will do nothing to close this gap, which will likely get worse. The North-South conflict involves the struggle for world resources and the means to utilize them.[23] With this gap widening, **one can see added economic disparity increasing global instability. The removal of the great wall between the East and the West, along with the industrial advances of Asian and other under-developed countries, lead to a new international economic order for which there is no blueprint.**[24]

Small nations or territories deemed inconsequential have often been able to influence powers much greater than their own. Only a decade ago, Iraq possessed no threat or capability that could have resulted in actions requiring a "Desert Storm." Ten years later, and after a massive investment in the military, her actions required the greatest assault from the West since D-Day. In the 1982 Falklands War, Argentina did not possess a capable and sustained base structure adequate to combat the British. But Argentina demonstrated its successful utilization of technology to counter its deficiencies by inflicting damage with the Exocet Air-to-Surface-Cruise-Missile (ASCM). Small numbers of hi-tech weapon systems can impact the dominant nation's ability for sea control and power projection, particularly in littoral regions.

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[22] Chan, Steve and Alex Mintz, Eds. *Defense, welfare, and growth: Perspectives and Evidence*. New York: Routledge, 1992, p. 133.

[23] Gear, B.S. *Sea Denial Capabilities of Third World Countries*, Master's Thesis, Naval Postgraduate School, Dec. 1982, p. 70.

[24] Gibson, David and Raymond W. Smilor, Eds. *Technology Transfer in Consortia and Strategic Alliances*. Lanham, MD: Rowen and Littlefield Publishers, 1992, p. 39.

C. Acceleration of Technological Changes

Technology policy issues range from conceptual advances, research and development (R&D), production, and testing, to its eventual acquisition, field use, transfer, etc.. From theoretical conception to hardware use, the fields of technology are experiencing advancements with exponential acceleration. The intelligence community is being forced to deal with the strong, positive graphical relationship of rapid technological advancement and its subsequent proliferation. Additionally, with the increased call for decreased domestic defense spending, there will be a greater demand for joint civilian and military technological ventures, complicating both the **dual-use** issue as and straining operational security.

Today, systems designed and produced for non-military use are commonly used for military purposes, but in the US, are also frequently outdated before they are introduced on the world market. The latter problem may be improved with a more efficient and timely R&D, and marketing process. The former, requires more than monitoring dual-use technology, but demands the creation of an effective system of regulations and method to properly monitor and hopefully check proliferation. In a statement by Secretary of Defense Les Aspin before the Senate Armed Services Committee on April 1, 1993, Secretary Aspin addressed dual-use technologies and the necessity to emphasize Department of Defense's science and technology accounts with parallel civilian initiatives, with the goal of promoting US economic growth. He specifically focuses on high definition systems, microelectronics, and follow-on defense reinvestment programs.[25]

It has been argued that the DOD technology is lagging far behind in what is presently available on the world market. During the Gulf War, most of the technology used was developed 10-15 years prior. The lessons of the Persian Gulf again showed us how critical technology was to national security.[26] While this initiative addresses both the desire to reduce duplicity and decrease spending, it allows for greater sharing of certain sensitive information with allies, civilian industry, and foreign markets, a side effect that can hurt security issues, particularly hardware and systems information. Although there is some implied security risk with **shared developments**, a strong civilian/dual-use technological base is essential to continued leadership in defense technology and national security.

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[25] Aspin, Les. "Statement of Secretary Les Aspin Before the Senate Armed Services Committee in Connection with the Clinton Defense Plan." Washington, D.C. April 1, 1993, p. 7.

[26] Allison, p. 126.

In the same address, Secretary Aspin addresses the issue of proliferation. He states that the US must find innovative approaches on present issues such as policy, weapons acquisition, export controls, and international political regimes.[27] Revisions made by the Coordinating Committee for Multilateral Export Controls (COCOM) in 1991 complicated matters by releasing close to one-third of the items on the dual-use industrial list.[28] Some advances in this field were presented by former Under Secretary of State for International Security Affairs Reginald Bartholomew before the Arms Control Subcommittee of House Foreign Affairs Committee on March 24, 1992. Conventional arms sales policies among the US, Russia, China, Britain, and France were addressed with overall good results reported.[29] Most notably, areas on responsibility, transparency, and consultation were discussed and ultimately agreed upon. Concerning responsibility, it was acknowledged that the aforementioned arms suppliers obligate themselves to ensure their arms sales do not undermine stability. Transparency will help identify and avert destabilizing transfers by agreed upon open exchange of information. Finally, consultation opens the arms transfer decisions to a forum subject to debate and criticism. This marks a major step in applying collective reasoning among the five in the realm of arms transfer. Sharing information before the transfer takes place will do better in countering a weapons sale ultimately used by the country for offensive vice defensive purposes.[30]

Many technical issues remain to be solved, most notably basic definitions of what constitutes a missile, tank, etc.. Secretary Bartholomew mentions that these policies on arms transfer are the instrument to the end realization of stability. Arms transfer is a stark reality, what remains to be solved are conditions on common standards and questions concerning responsible trade, especially to Third World nations. The goal to ensure this is an effective check/policy, which these efforts contribute to, in limiting weapon and technology acquisition to legitimate defensive purposes.[31] A basic critical step is to implement a UN-created data base of existing national assets and capabilities with continual updating of internal and import acquisitions. A Register of Conventional Arms, implemented January 1,

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[27] Aspin, Les. "Statement of Secretary Les Aspin Before the Senate Armed Services Committee in Connection with the Clinton Defense Plan." Washington, D.C. April 1, 1993, p. 3.

[28] Tritten, p. 156.

[29] Bartholomew, Reginald. "Conventional Arms Sales Policies of the US, CIS, China, Britain, and France." *The Defense Institue of Security Assistance Management (DISAM) Journal*. Wright-Patterson AFB, OH. Vol.14 no.3, Spring 1992, p. 50.

[30] Ibid, p. 50-54.

[31] Ibid, p. 54.

1992, provides a more formal forum for nonproliferation. Although this measure is completely voluntary for the participating nations, and commits no formal obligation to report, it does act as a positive confidence building measure towards more reliable arms control.[32]

The arms transfer issue involves but a small part in technological transfers that the intelligence community must face. Transfer and proliferation are complicated by requisition for training, cooperative research and development, joint ventures, foreign affiliations, etc.. Additionally, many mediums for such transfer are included on the spectrum from individual-to-individual, to government-to-government. Within the spectrum lies private corporation-to-government, specifically the recent American Telephone and Telegraph (AT&T) decision to modernize China's telephone system.[33] This joint venture, subject to approval by US officials who regulate the transfer of technology abroad, is an example of seemingly innocent capitalism that ultimately involves R&D, manufacturing practices, training, and other aspects of concept design and production exposing only part of the shared technology dilemma.

Prior to the global change to an economic multi-polar world, the US enjoyed an expansive role as the leading developer of critical future technologies, relative to the most other nations. Technology has given the US unparalleled economic and military advantages with a high standard of living. After World War II, the US had the technological advantage over all nations, and most significantly, the Soviet Union. Policy makers knew that to secure this advantage and preserve national security, the US must prevent technology concepts from being transferred unintentionally to other nations. There was a shift, however, in the 1980s from US-centered technology (particularly electronics) dominance to foreign markets.[34] Unfortunately, the US can no longer claim such a monopoly on these technologies. Third World nations, either alone or in alliance, such as Indonesia, South Korea, and Hong Kong, not only have a growing capability to rapidly, cheaply and massively produce advances, such as in microchip technology, but also represent a strong, growing industrial base.

For the intelligence community to determine if technological trends and proliferation constitute a threat, they must identify those countries bent on acquiring new technologies, how much they can afford to buy, and what capability they will have to both employ and maintain the assets once

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32 Stockholm International Peace Research Institute. *World Armaments and Disarmament*. Oxford: Oxford University Press, 1992, p. 299-301.

33 Behr, Peter and Daniel Southerland. "AT&T to Modernize China's Telephones." *Washington Post*, February 24, 1993, p.1.

34 Allison, p. 119.

developed/acquired. Additionally, a nations technological development is dependent on what is presently available on the market, what their particular economic and technological base comprises, and degree of political stability. These issues determine greatly the concern and attention intelligence should afford them.

Economic revival and military export success may produce the greatest threat of all to the West---undermining the **relative value** of its own military infrastructure. Stimulating growth through international joint ventures and international links promotes cooperation and short term stability. A critical issue is the time it takes for newly-acquired technologies to be applied to the military sphere.[35] **Since the intelligence communities do not possess the ability to do everything at once they must develop formal definitions of priorities to monitor technology transfer issues.**

The US intelligence agencies face a complex dilemma as they stand at a crossroads. Strategic concerns in coping with the collapse of the Soviet Union are complicated by the economic concerns of a global economy, as well as exponential advancements in technology both vertically and horizontally; all the while budgets are shrinking. Military intelligence is being challenged to change its **culture**, **make-up**, and **mission**.

In the conventional realm, we may divide nations into categories of **high**, **medium**, and **low** military technology. It must be stressed that a nation does not have be able to produce weapons of a given level of technology itself. It only has to be able to afford to purchase and operate the weaponry. It is expected that technology transfers will increase in the future. The definitions of high-tech, med-tech, and low-tech countries will be dealt with in greater depth below. At this point it is sufficient to note that very different forms of war are possible when nations are equipped with weapons which are qualitatively different.

The changes in military art in our time are largely the result of the latest revolution in military-technical affairs. Emerging technologies are incorporated in the new generation of weapons. These weapons include stealth aircraft (and other low-observable technologies); it includes weapons platforms such as Airborne Warning and Control Systems (AWACS), Joint Services Tactical Airborne Radar System (JSTARS) and Tomahawk Land Attack Missile (TLAM) and other long-range precision-guided munitions.

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35 Haglund, David G., Ed. *The Defence Industrial Base and the West.* New York: Routledge, 1989, p. 74.

It appears the effect of such weapons is to tip the scales of the offense/defense balance in favor of the offense. When the offense is favored so heavily, an inherently unstable military situation develops; the nation which strikes first can achieve a crippling initial blow from which the enemy cannot recover. This encourages potential combatants to have a hair-trigger and to deliver this first strike whenever a crisis occurs.

High-tech forces, generally speaking, do not require massed field armies to achieve their striking force. Therefore, mobilization is a relatively quick process, shortening the warning time for potential adversaries, further complicating the I&W process of intelligence. The spectacular success of the Gulf War demonstrated what occurs when a high-tech nation fights a mid-tech nation without nuclear weapons: its economy can be rapidly crippled, while its army is systematically destroyed on the field.

Another important consideration is that the categories of high, medium, and low-technology will not fully describe the nature of war. not only the **level** of technology, but also the **numbers** of systems fielded will be critical. There are numerous historical examples where a nation mistakenly thought that the offensive was now favored due to technological advances, only to find its offensive stalled when these weapons stocks ran low, and as a result, being forced into a war of attrition. One characteristic of high-technology weapons is that they tend to be fielded in small numbers. This will especially be true of third-world countries which may not be able to purchase these weapons in sufficient quantities. Intelligence organizations will obviously need to, therefore, continue to track raw numbers. When these limited number of weapons are neutralized (if properly targeted) or expended, a military will be forced to wage battles at a lower-level of technology, a level for which it may be ill-prepared.

For intelligence professionals, analysis in support of operational units will become increasingly complicated. Not only will there be an increase of technology transfers in general, but it will be necessary to try to determine how these sophisticated systems will work synergistically with each other. For example, a surface to air battery may be made up of an acquisition radar from one country, and fire-control radar from a second, and the actual missile from a third. The effectiveness of these heterogeneous systems will be much more difficult to assess than those which have been sold as essentially complete systems.

Yet another area for concern, is the possibility of a new technology rendering whole aspects of a nation's forces obsolete. Stealth technology is an example, rendering most radars useless, and has the potential to be repeated again with various technologies in the future.

The US intelligence community will be facing a wide spectrum of military threats in the future. The theaters of war may be new, as may be the types of weapons and how they are employed. In order to support complex analysis in which technology plays a key role, the intelligence community must re-focus its collection efforts. To support higher-order analysis such as targeting, an **accurate database of high-technology equipment must be maintained**. This database will include information on the development of new technologies. It is also essential to track the transfers of high-technology equipment from the producers to the consumers. This may take many forms, such as using intergovernmental cooperation to track the transfers from large producers. Currently, 86% of international sales of large weapons systems are conducted by five nations: the US, UK, France, China, and Russia.[36] Tracking technology transfers and development can also be accomplished by defense attaches. There is a wealth of information available through open sources such as newspapers, trade publications, academic exchanges, as well as commercial shipping information. Without the accurate raw data on technology developments and transfers, the complex analyses which will be required of military intelligence in the future will simply not be possible.

1. The High Technology Threat of the Future

Future military technologies which would be considered to be a high technology threat to the US and her allies or coalition partners would include: advanced submarines capable of delivering cruise missiles, torpedoes, or mines. These would include the German Type 212, the Russian Improved KILO, the WALRUS, and advanced designs featuring Air Independent Propulsion (AIP) systems. Currently shipyards in Argentina, Australia, Brazil, Germany, India, Italy, Japan, the Netherlands, Russia, South Korea, Sweden, Turkey, and the UK are manufacturing conventionally powered submarines which fall into this category.

Aircraft threats which would be considered as high technology would include improved Flanker and Fulcrum models and any front line aircraft which exhibits a limited stealth capability. These aircraft would be able to deliver a wide

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36 Michael O'Hanlon, Victoria Farrell, and Steven Glazerman, "Controlling Arms Transfers to the Middle East: The Case for Supplier Limits," *Arms Control Today*, November 1992, p. 19.

range of ordnance including anti-ship missiles and precision guided (possibly standoff) munitions. In addition to an offensive capability a high technology threat must posses some degree of airborne reconnaissance capability. This could include manned and unmanned vehicles for reconnaissance, targeting, and battle damage assessment.

Seaborne capabilities would include improved versions of the KRIVAK and MEKO Frigates. The Track II MEKO Frigates are very capable muiti-mission platforms with newer models incorporating a combined diesel or gas turbine (CODOG) propulsion plant instead of combined diesel and diesel (CODAD) and a variety of anti-air warfare (AAW), anti-submarine warfare (ASW), and anti-surface warfare (ASUW) offensive and defensive systems. Advanced frigate designs are currently being produced in Australia, Canada, China, France, Germany, Greece, India, Japan, South Korea, Taiwan, Turkey, and the UK.

In addition to multi-mission frigates a high technology threat would likely operate a ramped vertical takeoff and landing (S/VTOL) carrier. Argentina, France, India, Spain, and the UK currently have in their inventory or on order aircraft carriers capable of operating S/VTOL aircraft. Japan is considering production or purchase of a light carrier although political pressures might require them to develop an amphibious ship capable of operating S/VTOL aircraft instead. The flexibility and capabilities provided to a country through the use of relocatable airfields has been proven many times since 1941.

An adversary of high technological capability would posses land forces which are built around the doctrine of maneuver warfare. The Gulf War exhibited to the world how aircraft and highly maneuverable ground forces can decimate a static land force. Main Battle Tanks (MBTs) will likely remain in the inventories of future armies, with Soviet T-80 or Abrams M-1A versions being the greatest threat. Advanced composite armor and gun stabilization systems which allows shooting on the run will be a necessity. Additionally, long ra..ge self propelled guns and missile launchers which are able to keep up with the rapid advance of land campaigns will be highly prized.

Ballistic missiles capable of accurately delivering a variety of payloads will likewise define a country of high military technological capability. These weapons will be able to threaten not only point targets on land but also mobile land targets and ships at sea. Currently the technology exists, on the open market, to allow countries to give Theater/Tactical Ballistic Missiles (T/TBM) a terminal homing capability useful against ships at sea. There are currently about 34 countries with short and intermediate range ballistic missiles in service, with ranges of 70 km to 4750 km. Also in addition to the 34 countries with short and intermediate range

ballistic missiles in service there are 22 countries with the probable capability to manufacture and export new missiles or components to update and improve existing systems. Ballistic missiles of intercontinental range are currently only produced by China, Russia, France and the US. The experience and knowledge of satellite launch vehicles would likely allow countries such as Japan to design and build ballistic missiles if they were so inclined.[37]

Weapons of mass destruction including chemical, biological, and nuclear would be contained in limited numbers at a minimum in the arsenals of future high technology adversaries. The restraints exercised by the superpowers in the Cold War have gone and pressures upon non-nuclear nations to prevent them obtaining nuclear weapons are now much weaker. Iraq has shown what is possible, even in the full glare of modern media attention.[38]

High technology battlefields rely on electro-optical (EO), electromagnetic, acoustic, infra red (IR), radar, and multispectral images and emissions in order to transmit information, locate and attack the enemy. Not only must an adversary of high technology be able to detect electromagnetic emissions but he must be able to employ countermeasures. Countermeasures can include the ability to employ EO and IR camouflage, the capability to jam electromagnetic radio and radar links, and the ability to cause weapons to home in on the emissions of the enemy.

2. The Medium Technology Threat of the Future

Future threats classified as being of medium capability technologically will likely contain weapons which are today considered front line by most of the world. These will include: conventional submarines of advanced diesel electric configuration, including German Type 209 and Russian KILO classes. These vessels will likely contain improved sensors, weapons systems and possibly anechoic tiles but will not have AIP propulsion plants.

Aircraft such as the Russian supplied Flanker and Fulcrum and the French built Mirage 2000 will be considered of medium capability technologically by 2010. These platforms will be capable of delivering air to surface missiles (ASMs) against ships at sea and precision guided munitions (PGMs) against a variety of targets. Future air forces within this category will have no capability to perform reconnaissance.

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[37] Duncan Lennox, "Missile Race Continues", *Janes Defense Weekly*, January 23, 1993, p. 20.

[38] David Miller, "Nuclear Warfare and Regional Nuclear Powers", *International Defense Review*, 9/92, pp. 821-824.

Medium capability naval forces will likely be built around Frigates such as the German MEKO class, or small coastal patrol craft sometimes referred to as corvettes. Their capability to conduct open ocean operations will be severely limited because of weapons and ship limitations. Also they will not posses a S/VTOL capability with which to project power.

Land forces will likely be built around current MBTs such as the Russian T-64/T-72 and towed artillery pieces. Forces will be limited by their inability to support armored columns on the move with artillery. Theater ballistic missiles will likely be in the inventory, as will a limited chemical and biological capability. A nuclear capability will not exist for an adversary of medium technological capability. Countries within this classification will posses the ability to detect and exploit electronic warfare (EW) emissions but will not posses the capability to utilize sophisticated countermeasures.

3. The Low Technology Threat of the Future

Adversaries within this category will be considered to be in the technological stone-age of capabilities. These countries will likely be of Third World standing economically, or convinced that they don't face military attack. The majority of the weapons systems which will be found in this category will have peaked technologically about 1970. No submarine capability will exist, and surface ships will be small patrol boats similar to the Soviet OSA. Additionally, commercial vessels may be converted to increase the size of the fleet although their utility will be extremely limited. Aircraft will be of US F-5 vintage. These planes were produced in large number, exported widely, and are agile and capable in limited engagements. They will be equipped to deliver air to air missiles (AAMs) and gravity bombs only. Ground forces will be limited to using small arms, light tanks, and artillery of limited mobility. No ballistic or cruise missile capability will be in their inventory. The military forces might have the capability to detect certain electromagnetic emissions of an adversary, however, they will have no capability to utilize active or passive countermeasures and no capability to target such emissions.

4. Variants of Threat Levels

Many adversaries in the future are likely to have militarily unbalanced forces. A country may because of its geography, political culture or indigenous military industrial capability choose to invest primarily in one military arm and not in others. Large nations, like Russia, may husband high technology weapons in one area while using lower technology weapons in others; depending on perceived threats. Additionally, countries observing the military lessons of others may make

incorrect assumptions regarding their own military needs. For these reasons countries probably won't fit neatly into one of the previously outlined categories.

Other variations which might change the technological level of a country of particular weapons system include submarine retrofit. The ability to add anechoic tiles to a submarine and therefore make it more difficult to detect is a growing industry. Power plant change outs to replace outdated diesel/electric plants with Sterling AIP power plants is an industry just developing in Sweden with possible export to Japan. In addition, improvements in submarine launched weapons continues. Cruise missiles, mines, and torpedoes of advanced design and extended range are increasing the offensive punch of older platforms.

Variations and improvements in aircraft delivered ordnance is allowing low or middle technology aircraft to delivery high technology weapons. In Western Europe, several countries are making progress on developing autonomous, or near-autonomous guided bombs. France, Germany, the UK, Israel, South Africa, Russia and Japan are developing or fielding smart bombs. The depth and breadth of international efforts in designing autonomous guided bombs is a clear indicator of the importance world military establishments place on such technologies.[39]

5. The Applications of Space

Another area that will play an increasingly important role in future military developments is the use of space for military purposes. The US military relies heavily on space based assets for surveillance, I&W and communications support for strategic as well as tactical users. Currently only the United States, Russia, China, France, Japan, India, and Israel posses an indigenous space-launch capability, but a number of others have had satellites launched by states with such a capability.[40]

The spread of space technology and the overall cost reduction has allowed many more countries access to space. Virtually any state in the developing world can gain access to satellite data with military applications, because satellite imagery and communications channels are commercially available. Space platforms can image almost anywhere on the earth using electro-optical, IR or multi-spectral bands. The American LANDSAT 4 and 5 offers imagery with a resolution down to 30 meters while the French-operated SPOT satellites resolution is 15 meters. Iraq relied extensively upon satellite imagery during its war with Iran, and, soon after the invasion of Kuwait, representatives of the Iraqi

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[39] Clifford Ben, Mark Hewish & Bill Sweetman, "Bolt from the Blue, Part 2, Making Dumb Bombs Smart," *International Defense Review*, 12/92. p. 1180.

[40] Thomas G. Mahnken, "Why Third World Space Systems Matter", *Orbis* fall 91, p. 563.

government tried to purchase current imagery of the Middle East from the EOSAT.[41] A space based synthetic-aperture radar was placed into orbit on 17 July 1991 by the European Space Agency (ESA). This platform has a 30m spatial resolution within a 100 km swath.[42]

A network of commercial satellite-based radars and other sensors could be used by Third World governments to vector maritime patrol aircraft to potential contacts, to observe fleet movements, and for verification of naval confidence building measures agreements limiting the scale of exercises or their geographical extent.[43] Indeed, the CBS television network program 60-Minutes contracted with the former Soviet Union for satellite imagery of Iraq prior to operation Desert Storm.

As satellites become more important as a means of supporting and enhancing military operations, some countries may feel compelled to develop means to neutralize the capabilities of their adversaries. While anti-satellite (ASAT) weapons require some highly sophisticated technology, particularly in terms of acquiring and tracking the target of interest, the development of a rudimentary ASAT by a state such as China, Israel, or India within the next twenty years is not out of the realm of possibility.[44] Communications satellites, deployed in geosynchronous orbit and thus out of range of most direct-ascent ASAT systems, are vulnerable to jamming from the ground. Communications satellites have been subject to radio interference from ground stations operating on the same frequency.

III. Future Scenarios

Trend projection is just that. It does not purport to predict the future with specificity, but merely to point where macro-level processes are likely to head given relatively minor changes in other external variables, notably politics. As pointed out by some of the original pathfinders in modern forecasting:

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41 Ibid, p. 568.

42 David Foxcoell, "Satellite Surveilance, Ocean Observation w/ Snythetic Apeture Radar", *International Defense Review* 8/91, p. 811.

43 Pamela-Pohling-Brown, Brigitte Sauerwein, *International Defense Review*, 5/91, pp. 407-421.

44 Orbis fall 91, p. 574.

> The kinds of forecasting we have examined inspire little confidence...nevertheless, something can be learned from attempts at forecasting in terms of broadening and otherwise educating the perspective of planners...planners should not only employ forecasting techniques, but should also **use the results** with principled skepticism (emphasis original).[45]

Similarly, scenarios derived from forecasting and trend projection are a necessary evil, not of tea-leaf reading, but of determining what is likely, what is possible, and perhaps even what is totally unexpected. Scenarios used for research (in this case, derived from strategic and high operational intelligence analysis to support policy making and planning) allow exploration of alternative feasible futures, both credible and incredible.[46] In this spirit, a review of possible scenarios for the next two decades based on the foregoing trend surveys seems an appropriate close to this section. These scenarios are offered as an example of the types of regional military conflict scenarios that military intelligence will need to have specialists trained to address in depth.

The *Defense Planning Guidance* (DPG) scenarios made public in February 1992 touch on seven possible contingencies during the period 1994-99 which develop linearly from current conditions, including:

1. Coup in Panama.
2. Coup in Philippines.
3. Iraq invades Kuwait (again) and Saudi Arabia.
4. North Korea attacks South Korea.
5. Iraq and North Korea invade at once.
6. Russia invades Lithuania.
7. A hostile superpower (REGT) reemerges.[47]

While these scenarios are (at least somewhat) plausible and useful for programming purposes, they are not overly imaginative and do not presume to project past the end of the century. Further, they do not take into account the types

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[45] Heiss, Klaus P. and Klaus Knorr et al, *Long Term Projections of Power: Political, Military, and Economic Forecasting* (Cambridge MA: Ballinger Publishing, 1973), pp. 185 and 190.

[46] James J. Tritten, *Scenarios, Simulations, and Games*, Technical Report NPS-56-88-029 (Monterey CA: Naval Postgraduate School, October 1988), pp. 11-17.

[47] Barton Gellman, "Pentagon War Scenario Spotlights Russia," *Washington Post*, 20 February 1992, p. 1. See footnote 1 for explanation of "REGT" acronym.

of trends suggested in the new approach; they seem to represent an overlay of concerns from the Cold War era on the Post-Cold War era. In at least the Korean case, the very basis of the scenario seems as likely as not to have disappeared by 2010.

Other scenario writers have exercised considerably more ingenuity and raised very interesting questions and prospects based on changing conditions. In general, these writers have concluded that "the coming era will see a return of planning for limited wars of 19th century vintage" rather than a cataclysmic World War III.[48] However, they have not neglected the prospect of how such a global conflict might start in the next 20 years.[49]

Possibly the most important lesson that many Third World nations learned from the Gulf War was that a country should not fight against the US or the West, unless it has nuclear weapons. Certainly, if Iraq had possessed these weapons, the US would not have reconsidered its commitment. Entanglements in the Third World in which both sides have nuclear weapons take on a totally new aspect. In the Gulf War, Congressional support for the conflict would certainly have been harder to obtain. The acquisition of nuclear weapons has probably become the *sine qua non* for nations aspiring for regional dominance. The cachet of nuclear weapons has not been diminished in the Third World, in spite of the proclamations of many world leaders that such weapons serve no purpose whatsoever.

In the Americas, proximity rather than large scale or high intensity will likely continue to dictate US intelligence interest during the next two decades. A Panamanian coup or crisis threatening access to the Canal, a Cuban collapse, and Central American instability are all possibilities, as well as a continuing counter-drug situation throughout the region. However, **interstate competitions** and intrastate instabilities, especially involving Mexico, Brazil, Argentina, and Chile are likely to become more significant. In particular, an upsurgent Brazil has the potential to independently develop maritime and aerospace power sufficient for South American and mid-Atlantic regional preeminence. Of course traditional rival Argentina would not allow such a development to go unchallenged. Such preeminence could not only provoke a clash with a Venezuela acting as the primary US partner in the region based on strategic petroleum realities, but also

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48 Richard L. Kugler, *The Future U.S. Military Presence in Europe: Forces and Requirements for the Post-Cold War Era*, RAND Report R-4194-EUCOM/NA (Santa Monica CA: RAND Corporation, 1992), p. 58.

49 James Digby, Marc Dean Millot, et al, *How Nuclear War Might Start: Scenarios from the Early 21st Century*, RAND Note N-2614-NA (Santa Monica CA: RAND Corporation, October 1988), pp. iii-iv.

with the French over their space interests in French Guiana. Even a clash with a resurgent Japan expanding its influence around the Pacific Rim with, say, a Chilean or Peruvian partner cannot be ruled out.[50] However, the magnitude of the more likely scenarios in the Americas will probably be on a smaller order than those surrounding the Eurasian landmass.

This vastness, encompassing the better part of the earth's surface, and by virtually all measures on a relative upswing, will probably be home to some of the most dynamic scenario developments for the next two decades. Particularly for the Pacific and East Asia, scenarios are as likely to involve economic and technological competition as political and military conflicts. This is less true for Central and South Asia, owing to the dramatic intersection of so many spheres of influence. As might be expected, several of the situations, including a reconstituted Russian threat and a threat to Gulf oil fields, overlap with those in Europe and Southwest Asia. Two key occurrences which are likely, but not certain, to take place by 2010 and which will affect scenarios are Korean reunification and consolidation of Greater China, including Hong Kong and Taiwan. Another important "swing vote" will be whether Japan chooses to invest more of its economic potential into its military, and whether it chooses to (or is able to) maintain its current relationship with the US.

Still, the possibility of a renewal of the Korean War or a nuclear confrontation with North Korea cannot be ignored for the coming two decades, unless the unification process proceeds sufficiently far to end those threats. These twin scenarios constitute the **worst case** in current US thinking about East Asia and the Pacific. However, from a regional perspective a civil war within a major Asian state, China-Taiwan tensions, a major armed China-Vietnam conflict over the Spratly Islands, or another Indo-Pakistani or China-India War would all be considered just as dangerous, and none seem any less likely than the Korean contingencies during the next two decades. A civil war, insurgency, or coup in the Philippines remains a constant possibility the US considers, but the same can arguably be said about Thailand, Cambodia, Malaysia, Indonesia, and Burma.[51] Whether historical and previous strategic ties make a Philippines scenario any more important than the others is not an intelligence decision.

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[50] For a remarkable exposition of how such a Japan-Brazil conflict could become limited nuclear conflict on a global basis, see "Scenario 11: *War in Space*," Digby, pp. 82-9.

[51] James A. Winnefeld, Jonathan D. Pollack, et al, *A New Strategy and Fewer Forces: The Pacific Dimension*, RAND Report R-4089/2-USDP (Santa Monica CA: RAND Corporation, 1992), pp. 82-5.

More interesting scenarios result from following current trends toward their logical conclusions. A "Greater China," buoyed by years of constant growth, continues to modernize forces and demonstrate influence both south and east from its coast, and west and north on its borders. A more independent, confident Japan moves out of the shadow of the US security umbrella and modestly increases its defense expenditures, without severing ties with the US. A reunified Korea, working with regional partners to bear unification costs, reorients its security posture outward and moves for equidistance from China, Japan, the US, and Russia. Russia, or perhaps a breakaway Far East Republic, continues to seek economic opportunities from China, Korea, and Japan, and while still a significant regional military power, chooses not to exercise that capability too aggressively. To the south, the Association of Southeast Asian Nations (ASEAN) gradually incorporates Vietnam, Cambodia, Laos, and Burma, assisting their transitions to free market economies and "Asian capitalism." At the same time, ASEAN seeks to balance Chinese and Japanese increases in maritime influence in the South China Sea and the peninsular and archipelagic straits to the Indian Ocean. India expands its sea reach eastward and comes into sporadic contact, if not conflict, with the Japanese, Chinese, and ASEAN on the oceans. To the north, India continues to have simmering disputes with Pakistan and China, but they are determinedly controlled. And Kazakhstan and the other Central Asian republics develop inroads into western China, Pakistan, and Afghanistan, further strengthening the Islamic and Turkic revival. In short, growing Pacific and Asian powers are likely to have even more opportunities for contact, conflict, or cooperation in the next 20 years.

From a US perspective, scenario and contingency outcomes for these areas during the next twenty years very much hinge on four factors: the existence and viability of the North Atlantic Treaty Organization (NATO); the development of the EC; the evolution of Russia and the western Commonwealth of Independent States (CIS) members, particularly Ukraine; and competition for predominance in the Islamic (including Turkic and Arabic) world. A major unexpected development in any of these areas would radically alter conditions and outcomes. Additionally, the danger of 1914-style chain reactions cannot be overlooked.

For example, a renewed peacetime competition between NATO and Russia/CIS states is possible, following mutual reductions in nuclear arsenals and the subsequent potential weakening of credible deterrence. Even more remote is the prospect of a spectrum of NATO-Russia/CIS conflicts, such as a combined aerospace-maritime war, or invasions of Germany or Turkey. Despite the remoteness of these possibilities, they form the "worst cases" which must be considered as feasible, though not credible at this time. More likely, but not greatly so, are prospects of Russia/CIS military operations in Eastern Europe

including the Baltic Republics, or an intra-CIS war, such as Russia-Ukraine.[52] The point is that Russia, despite all recent developments, remains the single largest national military force in Europe, and probably will continue to be so during the next two decades. For this reason, it cannot be discounted totally.

Still, by far more likely in the future (as evidenced by recent events) are local East European/Balkan crises, crises involving Arab/Islamic powers, and "other contingencies."[53] There is no reason to suppose that intractable ethnic, cultural, and religious problems in these areas will subside; in fact, there is every reason to believe they will get worse as participants gain in lethal technologies. The Balkans, particularly the remnants of Yugoslavia, will remain the "powder keg of Europe," with or without UN/NATO intervention. A generalized Balkan War, in fact, could end NATO if Greece and Turkey resumed active hostilities. And permutations too numerous to list, such as Turkey-Bulgaria, Hungary-Romania, and Romania civil war are all possible.

Another Arab-Israeli war (with or without US involvement) and a second (third?) Gulf War involving Iran, Iraq, or both against Gulf littoral states and their allies perennially top scenario-writers' lists for Southwest Asia. However, a spectrum of potential conflicts in Southwest Asia ranges from terrorist/counter-terrorist actions, to attacks on NATO's southern flank, to a "water war" pitting Turkey against Iraq and Syria. Internal instabilities resulting in Islamic fundamentalist successes, including potentially Egypt, could have serious regional ramifications.

Sub-Saharan Africa, largely marginalized by its enduring problems, will probably continue to be a candidate primarily for those "other contingencies," including humanitarian assistance, disaster relief, and international peacekeeping. However, the impact of sub-Saharan scenarios should not be neglected, since they will probably demand progressively more of the resources currently concentrated on Europe and Southwest Asia.[54]

Scenarios such as these need to be used immediately to: (1) reinforce to former enemies and ourselves that we no longer consider each other the enemy; (2) to help shape domestic and allied emphasis on new issues; (3) to educate strategic planners and intelligence officers alike on new requirements; and (4) to support program and operational war planning. Military intelligence must be active participant in the new scenario creation process.

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[52] Kugler, pp. 58-63.
[53] Kugler, p. 59.
[54] Kugler, pp. 62-5.

Chapter Three

Intelligence: A New Approach

> **People do not put new wine into old wineskins. Otherwise the skins burst, the wine spills out, and the skins are ruined. Rather, they pour new wine into fresh wineskins, and both are preserved.**---Matthew 9:17

I. Identifying Regional Intelligence Requirements

As has been previously pointed out, a regional focus has already overtaken US strategic planning. The "re-emergent/emergent global threat" (REGT) remains a concern for the intelligence community.[1] However, the only way to detect and track potential REGTs before they achieve their potential will be to closely observe the present and project the future trends in all global regions, using the analytic lenses outlined previously, the "old wineskin" of the Cold War intelligence apparatus is ill-suited to capture the necessary essences of the regional focus---the "new wine."

Regional powers are far more likely to impinge on US interests in many ways during the coming decades than a putative REGT, requiring a fresh intelligence approach. This approach may be termed, in the Biblical metaphor, a "fresh wineskin" adequate to preserve the "new wine." Due to limited resources, it is plainly impossible to comprehensively cover the globe simultaneously. The question is how to determine priorities? Where do US national interests intersect the strategic environment? What situations can the military instrument of national power significantly affect? Can the public and decision makers be persuaded, if necessary, not to reflexively adopt Euro-Atlantic priorities first? It seems incumbent, from the intelligence perspective, to provide as close to "ground truth" as possible on the global and regional strategic environments. However, as always, it will be the policy makers, assisted by strategic planners who will ultimately determine what constitutes **national interest**, both globally and regionally, and who will provide direction to the intelligence community consonant with that determination. Intelligence professionals will continue to be obligated to provide honest feedback on the appropriateness of tasking and coverage, even if that feedback conflicts with previous assumptions.

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[1] This relatively neutral phrase of choice comes from the supporting scenarios for the 1994-99 Defense Planning Guidance, released in February 1992, to indicate a new superpower which emerges from the former Soviet Union or some combination of powerful nations to threaten US interests.

There are two dominate trends which will impact on the role of US military intelligence in the future. The first is the end of the bipolar world and the global diffusion of economic and military power. With the US the sole remaining superpower, **regional states that view the US as a threat can now no longer rely on the Soviet Union to inhibit US military action. They may now develop, instead, an indigenous deterrent capability.** Predicting the military-technical potential of various regional actors in the world will become more important to the intelligence community in its production of strategic intelligence. The second major trend is the **revolution in military affairs brought on by the integration of the computer** into all facets of military operations as well as the development of precision guided weaponry. This revolution is causing fundamental changes in the nature of warfare which increase the necessity for accurate operational intelligence.

The recent controversy of whether human or technical intelligence is more effective is of secondary importance to the task of defining the role of each in the intelligence process. The vital question is how to use both types of sources synergistically. Most technical means of intelligence can only focus on a narrowly defined target, or as Colonel Alan Campen describes it, they "see the world through a straw."[2] While technical intelligence means may well be the most useful and politically acceptable means of intelligence gathering, we need to know where to look.

The recent development of religious activism and ethno-nationalism are subjects which are not optimized for collection by national-technical means (NTMs). In fact, a portion of the blame for the failure to predict the demise of the former Soviet Union can be placed on the overemphasis on NTMs. This provided a near-sighted view, and failed to pay adequate notice to the increasing economic, political and ethno-nationalist crises. Therefore, increased emphasis should be placed on non-technical means of intelligence collection, such as human intelligence, attaches and open source collection. These sources, can help to provide a guiding framework for the early identification of broad trends.

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[2] Col Alan Campen, "New Technology Alters Support For Intelligence," *Signal*, October 1992, p. 60.

In particular, OSINT collection and analysis stands as an under-utilized but highly cost effective way of more accurately defining specific intelligence objectives. A recent triumph of open source intelligence was the determination that the Russians have a substantial lead in the development of electromagnetic pulse weaponry. The existence of this highly advanced program, which appears on the verge of production, was discovered by US military scientists on a fact-finding mission to the All-Russian Scientific Research Institute near Nizhniy Novgorod .[3] Clearly, OSINT can be a useful adjunct to more traditional means of collection.

As Stansfield Turner, in his article on the future role of intelligence in the Fall 1991 issue of *Foreign Affairs*, summed up the necessity for both human and technical intelligence means:

> Above all, America will have the ability to integrate both the human and the technical efforts that combine for successful collection. Each system has its strengths and weaknesses and we must make them play to each other.[4]

Another consideration is that the new paradigm for intelligence requires new analytical expertise in areas which have previously not been emphasized. The central role of economics as the driving force behind military potential requires an analytical expertise capable of understanding economic issues. This also applies in equal measure to previously neglected areas such as ethno-nationalism and religious activism. Stansfield Turner relates that the greatest intelligence failure during his tenure as CIA director was to fail to grasp the popular upswell of support for the Iranian Revolution. The US intelligence apparatus was narrowly focused on elite opinion and social conditions in a few major cities, and failed to adequately understand how deeply the Ayatollah Khomeini's call for revolution would resonate among the masses.[5] The top-down approach of the new intelligence paradigm places an emphasis on attempting to come to grips with these sweeping trends.

A hesitant first attempt to survey the present and future world using the "fresh wineskin" approach must by its nature be uncertain. Nevertheless, ample precedent exists for this approach. In the pre-Cold War era, in fact, before technology came to dominate the intelligence world, it constituted the dominant

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[3] Nick Cook, "Russia Leads in `Pulse' Weapons," *Jane's Defense Weekly*, 10 Oct 1992, p. 5

[4] Stansfield Turner, "Intelligence for a New World Order," *Foreign Affairs*, Fall 1991, p. 159

[5] Turner, p. 157

paradigm. Even at the height of the Cold War, intelligence professionals never entirely abandoned its practice, but the ratio of effort concentrated on the single predominant target was so lopsided as to overshadow all other areas by a wide margin.

The primary method of Cold War intelligence was inductive---taking specific pieces of intelligence information and using them to generalize about a pre-defined threat. Previously to the Cold War, however, and lacking intrusive technical means to collect a great deal of specific information, analysts employed a **more deductive approach---taking what in general was known about the subject being analyzed, and bounding the possible specific outcomes in areas of interest.** What this "new" approach represents, then, analogous to the "new" world situation it must consider, is actually the **re-emergence of an old approach**, with new imperatives, new opportunities, and new capabilities.

The important thing now is to collectively begin scanning the national security horizon, flexibly applying the combination of this new/old approach and the vastly improved opportunities and capabilities now available to the global regions with an eye to finding the unusual, the unexpected, the counter-conventional. Surveying from the present ahead 15-20 years, to 2010, may yield in broad brush a hint of the kinds of problems and opportunities intelligence should be seeking out. The following brief attempt looks for **long term indicators** in all regions that need to be on the "short list" of intelligence priorities. We adopt this approach rather than reviewing all regions on an exhaustive basis. A full application of this approach would, of course, apply comprehensively within as well as across regions.[6] In brief, the review below suggests that **global centers of gravity are shifting from within the Northern and Western Hemispheres toward the Southern and Eastern Hemispheres.**

We will begin by an analysis of the physical and cultural geography of a nation. What are its resources? What are its limitations? Is its population highly educated? Is there a population explosion, or massive population shifts from one region to another, from the countryside to the city, which are potentially disruptive? Are there ethnic groups who desire autonomy or independence? Do

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[6] For such a near-term comprehensive review, see the annual testimony of the unified and specified commanders-in-chief (U&S CINCs) before the Senate Armed Services Committee 20-22 April 1993. Grant Willis and William Matthews, "Commanders' View of the World: Tensions, Crises Abound Even as US. Draws Down," *Air Force Times*, 3 May 1993, pp. 6-8; and "Special Report: Gen. Hoar Warns Senate Committee Iran Poses Growing Threat to Gulf," *Inside the Navy*, 26 April 1993, pp. S1-S10.

minority groups aspire to unite with some bordering state? Only by having such broad knowledge, largely derived from open sources, and the analysis of country specialists, will the intelligence community be able to point to areas which show the potential for future conflict.

As important as geography will be economic analysis. Here the question will be, "What kinds of material will this nation be able to afford in the next ten years?" This type of analysis will be tempered by knowledge of the culture, since the propensity for self-sacrifice (for example, of consumer goods, in order to be able to purchase military hardware) will be very different from one nation to another.

What will be the composition of militaries of the future, and how will they fight their battles? Nations can be divided into categories based on the types of hardware that they could afford to develop or purchase.

The challenges of military intelligence have multiplied. Not only are the potential adversaries dramatically increased in number, so are the types of warfare to be waged, the kinds of weaponry to be faced, and the varieties of coalitions that may be assembled as *ad hoc* allies. There are two elements to this new intelligence paradigm: first, foreseeing the spectrum of the varieties of future wars, and second, meeting the intelligence requirements of these conflicts.

The former methods of indications and warning (I&W) have been rendered largely obsolete by the collapse of the Soviet Union. In the past it was often possible to assess Soviet intentions through long-term analysis of hardware. One could count the number of hulls being laid down in shipyards, and knowing the time required for construction and fitting out, it was possible to come up with a fairly accurate future order of battle. In the future, regional powers will be able to purchase their hardware on the open market with increased ease. The I&W problem is thereby complicated, to the point that **intelligence will be even more unable to accurately predict the intentions of potential adversaries.**

II. Estimating Military Potential

With the changing US military strategy there evolves a need for a change in the methods and determining criteria used by the military intelligence community. During the Cold War, most of our intelligence collection effort revolved around the Soviet Union. Much effort was placed in attempting to understand the way the Soviet leadership thought and to accurately predict what they would employ their forces.[7] Today, most of US intelligence is collected from countries other than the

[7] James J. Tritten, *Soviet Naval Forces and Nuclear Warfare: Weapons, Employment and*

former Soviet Union. This presents a more challenging analysis mission. Whereas with the Soviet Union, it was reasonable to consider her a "rational player," in dealing with many Third World nations, the assumptions of a "rational actor" often does not hold.[8]

To understand or to predict foreign actions has become more difficult. **Intelligence efforts focused on enemy intentions becomes almost impossible;** reinforcing the need for military intelligence to **focus on the level of potential military capability of a nation.** This can be done by focusing on four major factors: population; geography; its economic strength; and the **technology** available to that country---both through indigenous development and purchase. Capabilities, combined with exercise behavior and employment patterns, are also a means of ascertaining **intentions.**[9] In a world full of irrational players and assimilar values, determining a nation's military potential will prove to be the most efficient means of determining its potential as an enemy.

A. Population

There are several significant variables in factoring the military potential of a population. The first, is the impact of population growth. Particularly in Third World nations, rapid population growth creates social unrest through poverty and commonly leads to lack of popular support for a government. Ethnic and territorial disputes become more frequent, drawing away attention and resources from a nation's adversaries.[10] Rapid population growth also causes competition for limited resources, which might otherwise have gone toward a military effort.

Migration is a second aspect to analyze when looking at a country's population. A large number of people moving from the country side into cities could indicate an increase in industry and a sign of relative strength; while a mass exodus across borders into neighboring nations indicates the opposite. The spread of AIDS and other diseases which tend to undermine political security is another aspect to scrutinize. The availability of natural resources is of vital importance in a capabilities assessment.

Policy, (Boulder, CO: Westview Press, 1986), pp. 105-111.

[8] Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (USA: Harper Collins Publishing, 1971), pp. 10-38.

[9] Tritten, pp.105-111.

[10] James J. Tritten and Paul N. Stockton, eds., *Reconstituting America's Defense: The New US National Security Strategy*, (New York, NY: Praeger Publishers, 1992), pp. 31-49.

The education level is also significant; an illiterate army may, even one of great size, when placed in difficult, thought provoking situations, may prove ineffectual, i.e., Iraq's in the "mother of all battles." The technical expertise of a nation is also critical and reflects on a nation's capability to utilize the true potential of technically sophisticated weaponry. Many nation can purchase state of the art equipment, but not all can operate it effectively. Training standards, obviously, must also be considered in the overall evaluation.

The **strategic culture** of a nation is a factor which is often overlooked. A nation which has prided itself on its ability to remain uninvolved in any type of military conflict, may very well prove to be ineffectual in war, no matter what types of military hardware are at its disposal. The culture of a nation and the environment in which the population is raised breeds the instincts for war fighting. For example, the US, where video games and computers are introduced to very young children, has a population technological advantage. Perhaps most importantly, while our culture dictates peace, it would be dangerous to assume the rest of the world strives for the same goal.

Fundamentally, the strength (or weakness) of every human entity, whether political, economic, social, cultural, or otherwise, rests in the ability of its people to make the most of what they have, to capitalize on their strengths and minimize their weaknesses. Numerous factors fall under the population heading, not least sheer weight of numbers. Indicating a repeated theme throughout this examination, the Soviet Union's breakup has cast Russia from the first population tier to the second or third, somewhere between Indonesia and Brazil on the high side and Japan and Pakistan below.[11]

In the next 15-20 years, China and India together will continue to dominate the world population figures (the US comes in a distant third), leading the belt of population stretching from Latin America through Africa and Asia's entire southern flank. Current net population growth rates show, perhaps unsurprisingly, the fastest growth coming in the center of that belt, comprising Southwest Asia. Crude birth rates, however, are highest in those areas least able to sustain them, notably sub-Saharan Africa. By contrast, the population growth rates of the industrialized regions, including North America, Western Europe, and Japan, are slowing and in some cases stopping, as their populations age. In these regions, a

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11 "Comparison Charts" and "Thematic Maps," *PC Globe Version 5.0* personal computer database software (Tempe AZ: PC Globe Inc., 1992). Unless otherwise cited, further comparisons of current demographic, geographic, and economic figures also come from this source.

very significant impact on population is migration, with the irresistible magnet of economic opportunity drawing increasing numbers from those areas of rapid population growth but stagnating or declining economic promise.

The concomitant imbalance in resource consumption has been a staple of the Malthusian and North-South literature for years, depicting the relatively small and aging population of the industrialized regions consuming most of the global resources, while the majority of humankind in the very regions from whence the resources come get the distinct minority of those resources' benefits. Directly related to this imbalance are human health and ecological concerns, including starvation, malnutrition, disease, agricultural and mineral wealth depletion, to name just a few. In fact, the potential for these to be used as strategic weapons likely will become a more serious concern in the next two decades: whether as biological or chemical weapons intended to inflict mass casualties, or perhaps genetically targeted; or as **environmental terrorism** of the kind attempted by Iraq. These dynamics will not abate in the next 15-20 years; indeed, expectations are the contrasts will only sharpen. The difference from the past 20 years and more will be the increasing ability of the slighted populations to successfully contest resource control by the industrialized regions and within their own regions, to their own benefit and possibly, but not necessarily, to the detriment of the current privileged minority.

Potent population-related forces will influence resource control by growing "have-not" populations which want to join the "haves." Education may do more than any other single factor to contribute to increased development and productivity of a given population, and the fact that China, India, and other growing population centers have been and are taking advantage of the educational opportunities presented in the industrialized regions should not be overlooked. Even when mass education seems neglected, as in many parts of Southwest Asia, Africa, and Latin America, education of technocratic elites proceeds apace in recognition of education's multiplier effect on economic and social development. Ideology, religion, and social-cultural values have tremendous potential both positive and negative, especially when fused with educational processes.

Ideological, religious, and social-cultural "fault lines" no longer (and perhaps never did) fall neatly into First, Second, and Third World categories. The previously noted population growth rates of Southwest Asia should be considered carefully in light of the revival of the Islamic crescent stretching from the southern Mediterranean littoral, through North Africa, the whole of central and southern Asia, to the extremes of Indonesia. Islam's clash with its cousins in Abraham, the Judeo-Christian realm to the west and north, and its alien competitors Hinduism, Buddhism, Confucianism and animism to the east and south, is likely to be even

more prominent in the next 15-20 years than the last 20. On a smaller scale within regions, the imploding Yugoslavia suggests the kinds of suppressed tensions which are likely to reemerge in all regions as population pressures on geographical factors increase, perhaps to be repeated in the Russian Federation. On the other hand, German reunification and the increasing prospect of a reunited Korea suggest that certain recent historical anomalies which split along Cold War ideological fault lines may be susceptible to return to more traditional patterns. These issues of population have traditionally been outside of the mainstream of US military intelligence. In order to support our new national military strategy, US intelligence officers are going to have to redirect their attention away from their traditional scientific and technical interests to "softer" issues like population. Many of the issues related to population can be learned through traditional area studies education at graduate schools.

B. Geography

The size of a country and the area it must defend can tell much about its military potential. Russia is a prime example. Its tremendous size mandates a preferential defense, and the physical location of its people makes it more of a potential threat to the nations to its west and south rather than to its east (Alaska). The lack of defendable borders has lead to centuries of invasion which in turn has influenced the population's attitude toward defense and government, and has forged a unique **strategic culture.**

Yugoslavia is proving the importance of the physical characteristics of a country as well. One reason the Serbian rebels do not believe the US will become militarily involved in their conflict is the rugged physical characteristics of the country. Dependability is another key factor, as demonstrated by US strategic considerations for defending Guam and the Philippines prior to World War II.

Regional relations are critical. A country surrounded by adversaries will tend to maintain a viable military force and will be more likely to use it. A lack of cross-cultural understanding or tolerance leads to conflict and military build-up. Studying historical rivalries can tell a great deal about military potential. The Middle East conflicts, for example, can not be understood without a historical study of its rivalries, often originating form aspects of geography, i.e., water supply.

Unlike population, geography is largely a fixed quantity in determining regional developments. Barring cataclysmic volcanic and tectonic events, such existing factors as landmass area, global positioning, terrain, ocean access, and weather patterns must simply be accepted as they are. The more human-scale

dynamic elements of geography of course derive from the impact of population: manmade features, such as population centers, economic facilities, and transportation infrastructure (notably roads, railways, bridges, canals, ports, airports, and space facilities); and manmade socio-cultural, economic, and political boundaries and associations. These dynamic elements form the basis for geopolitical and "geo-economical" interplay between regional entities, and to the extent these change or can be made to change a basis for conflict (or, alternatively, cooperation) exists.

Because of the relatively fixed nature of much geography, the resultant basis for conflict seems to be recurrent, and thus historical reference can provide insight for the future of various regions. To the extent human-driven dynamics are at work, a new basis for conflict can be overlaid on the old, perhaps superseding it altogether. Predominant geographic regional imperatives in the next 15-20 years will still largely incorporate those of the last 20, 200, or 2,000. To be sure the identities and dynamics of the players will vary, but in many cases they will simply be the latest iteration of the ongoing "dramatis personae" and drama.

The basis of national wealth, and hence national power, remains trade, and trade requires friendly control or at least the absence of unfriendly control of key locations and features. In the case of certain strategic resources, like oil or (one might argue) illegal drugs, preserving or stopping the flow is considered so vital to the interests of regional powers that the military instrument is willingly used to preserve certain geographic realities and other regional objectives are subordinated. With scientific and technological advances there is always the possibility that a new critical strategic resource completely unanticipated could significantly alter geographic dynamics. Other, more traditional imperatives, however, will probably continue to exercise major influence.

Control of landmass, like the existence of large populations, dictates its own unique influence. Despite the loss of roughly one-third of the controlled territory of the USSR, Russia remains the largest nation-state in area on the planet, followed by Canada. However, composed largely of Arctic tundra and sub polar wastelands, both these giants suffer from the problem of what to do with all that relatively useless landmass (with the significant exception of strategic mineral wealth). The US and China, having a higher proportion of more usable landmass. Brazil, with its huge biomass of Amazonian rain forest, is followed by Australia, India, Argentina, and, interestingly, Kazakhstan. This "top ten" list shows, however, that while sheer size may contribute to a nation's potential and certainly its regional importance, by itself it doesn't automatically confer great power status.

Without proceeding to a tedious listing, control of or access to certain well-known straits, canals, islands, ports and sea routes will continue to largely define maritime preeminence. Likewise, control of a relatively small number of continental features, elevations, passes, isthmuses, peninsulas, and inland rivers and lakes will substantially contribute to a land based power. Control of the aerospace environment requires some combination of these, some newer critical areas (such as near-equatorial landmass), as well as a threshold level of technology (as described elsewhere in this report). A sizable proportion of items on all three lists historically has resided and will continue to reside on the periphery of the Eurasian landmass, while the geographic fact of the Americas being at both ends of that landmass suggests these areas are where most of the geographically-motivated trends will continue to occur.

C. Economics

The economic factors driving a country are often complex, but can perhaps tell the most about a potential enemy's military potential.[12] When examining an economy, there are essentially two aspects to view. The first is the country's economic make-up and its allocation of economic resources. This aspect is a purely internal view. Secondly, an external focus looks at how a nation relates to the rest of the world. The key questions to answer are: what can a nation afford to buy, what, specifically will they purchase, and how well can they maintain what they buy?

Economics plays an important role in force planning as well as formulating strategy. In creating, equipping and maintaining a military force, a decision must be made as to how large a force is required to defend national interests, and how much, financially will be dedicated to that effort. Knowing that only a fixed amount of resources exist, something else of value must be given up in order to support this military effort. This is determines the **opportunity cost**. Secondly, the performance of a national economy sets limits on strategy and force planning. Obviously, a strong economy is more able to invest in a large military than a weak economy. Lastly, a nation's economic strength determines its position in the world power structure[13].

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[12] Robert E. Looney, *Third-World Military Expenditure and Arms Production*, (London: The MacMillian Press, Ltd, 1988). This book was used throughout the Economics section of this paper as examples of how economics factor into military expenditures.

[13] CAPT Tom Lawler, US. Navy, CAPT William J. Neville, US Navy, and Mackubin T. Owens, Jr., "The Political Economy of National Security," *Economic Strategies for a Changing World*, pp. 101-109.

Rapid technology development and diffusion, both globally and regionally, are inextricably intertwined with trends in military spending and military capital stock development, their influence on outcomes can be difficult to predict. Economic realities bound military spending and capital stock possibilities but do not determine them. A multitude of political-military, strategic, social, cultural and other factors determine the military burden a nation-state is willing to bear within its economic capability. Indeed, it might be proposed that irrational factors at the root of national consciousness are at least as influential as rational factors taken into account by national leadership when it comes to military spending and capital stock formation.

The purpose here is not to suggest why certain nation-states support heavy military investments while others do not, though such would be an important element of a comprehensive analysis. Nor is it to identify every nation-state that supports or is likely to support a heavy military investment (such as Israel, Iraq, Cuba, or Vietnam), though again such identification can be an important analytic element. Rather, the purpose is to **identify large-scale trends in military spending and capital stock development,** and interpret what they suggest about the importance of various regions.

The US and the Soviet Union in the 1980s were at opposite ends of the economic scale, but while the US spent a maximum of 6.7 percent of a large and growing gross national product (GNP) on defense, the Soviets spent 25 to 33 percent of a much smaller one. But the breakup of the Soviet Union has radically altered both reality and perceptions in military spending. Previously, given the rosiest scenarios of US and Soviet constant real-currency military spending, and successful Soviet economic restructuring, by 2010 the former Soviet Union would have been militarily out spending the US by more than $30 billion 1986 dollars annually; however, military capital stocks (meaning the current values of military equipment and construction based on procurement costs and depreciation) would have been roughly equal.[14] Now however, Russian military spending levels are somewhere around 60-70 percent at best of the previous Soviet figures, with considerably more uncertainty about Russian ability to even sustain that. Added to the responsive (but less precipitous) US decline in military spending and capital stock formation, it seems likely that the US will certainly have at least parity with and perhaps superiority over Russia in both military spending and capital stock for the next twenty years.

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[14] Wolf, pp. 15-18 and 21-23.

Since natural resources are limited, goods and services are also limited. But since human desires are virtually unlimited, some compromise must take place. To understand how much a nation is willing to give up in order to maintain a strong military provides needed insight into an intelligence estimate. Understanding how a nation overcomes its lack of resources exposes vulnerabilities which can be exploited. Also important is identifying what resources a potential enemy has in excess. For example, Iraq's and Iran's large share of the world's oil supply makes them nations of significant importance, independent of their military might. Additionally, Iraq's acts of "environmental terrorism" to Kuwait's oil industry at the end of the Gulf War caused great harm.

The US is dependent on a stable world economy for its resources, its markets, investment and technology. That same dependency exists for almost every nation in the world. Demography and economic disparity fuel instability which can effect every nation. **Understanding industry market sectors, trade practices and economic sanctions are key in understanding the economy of a potential enemy and therefore the military potential.** An enemy's trading partners, its suppliers of important resources as well as its trade and supply routes are potential means of "soft-kill" or "chain" targeting which could prove vital in deterring or winning a regional contingency.

Economic measures represent far more volatile variables in regional situations than either population or geography. The relative difficulty of telling what has already occurred in a single national economy should signal the difficulty in trying to assess what could happen in regional and global economies in 15-20 years. Yet, even with the dizzying rates of increasing change in economies, some conclusions can be drawn within a range of possibilities by projecting current trends. By 2010, the US will probably continue to have the world's largest gross national product (GNP), followed by Japan and China respectively.[15](Indeed, by new measures applied by the International Monetary Fund (IMF), China already has the third-largest GNP globally, and the World Bank even suggests China has edged out Japan for second place!)[16] Whereas the Soviet Union, had it survived,

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[15] Charles Wolf, Jr., et al, *Long Term Economic and Military Trends, 1950-2010*, RAND Note N-2757-USDP (Santa Monica CA: RAND Corporation, April 1989), pp. v-ix. Economic forecasts cited in this section rely almost exclusively on this source, which was prepared to support the Future Security Environment Working Group of the Secretary of Defense's Commission on Integrated Long-Term Strategy, which functioned from 1986-88. While events since completion of this study have proved the impossibility of specifically forecasting the future, the methodology and broad conclusions still seem sound when adjusted for current realities.

[16] Steven Greenhouse, "New Tally of World's Economies Catapults China Into Third

likely would have had the fourth largest, following its collapse Russia's GNP is only about two-thirds that of the old USSR, putting Russia on a virtual par with the UK in the second tier of regional and global economic power. Short of a true economic miracle, the Russian situation is not likely to dramatically relatively in the next two decades. When GNP per capita is considered, in 2010 China's will be an order of magnitude below that of the US, and perhaps one-third that of Russia. Japan's per capita GNP will, however, probably continue to be as high or higher than that of the US.[17]

Comparison of certain regional aggregates two decades hence in relation to the same aggregates today is also instructive. By 2010, the combined GNP of Japan, Greater China (including Taiwan), and a unified Korea will very likely exceed that of the US, as it does not at present. Further, this East Asian combined GNP is likely by 2010 to exceed the combined GNP of the UK, France, and Germany by 120 percent---more than double---while in 1980 the excess was less than 20 percent. Several mid-level regional powers will also experience significant growth: the combined GNP of India, Korea, Taiwan, Turkey, Brazil, Argentina and Mexico, which in 1980 was about 70 percent of the Western European GNP cited above, in 2010 is likely to exceed that figure by nearly 20 percent. Throughout this period, the US share of the global GNP will likely remain stable at around 22-23 percent. And demonstrating the link between population and economy, though Mexico and Egypt, as examples of developing countries, will probably experience positive economic growth during the next two decades, population growth is likely to so outstrip it that unemployment in those countries by 2010 could exceed 40 percent, with the attendant risks to social and political stability.

While these conclusions are by no means exhaustive and comprehensive, they do point to several striking and significant changes that impend in the economic environment: **the center of gravity in the global economy shifts to Asia and the Pacific Rim;** non-European economic powers display economic growth and prominence relative to those of Western Europe; the share represented by Russia in the international economy will probably further diminish; and the share represented by the US in the international economy will remain stable over the same 20-year period while the Russian share will probably diminish.[18] Intelligence analysts can use such predictions at the strategic-level to help look for a REGT and **predict regional actors that might have surplus capital for military expenditure.**

Place," *New York Times* National Edition, 20 May 1993, p. A1.

[17] Wolf, p. 11.

[18] Wolf, p. 14.

Given both relative military spending/capital stock developments over the next two decades, other powers will likely attain a commensurably greater military capability with which the US will have to contend. China appears as a key figure, with a relatively large and rising share of a fast-growing GNP devoted to military spending; and is conservatively projected to have a military capital stock roughly 40 percent that of the US by 2010, and likely comparable to that of Russia.[19]

Japan, with its unique constraints on spending, nonetheless by virtue of its sizable and growing GNP and exchange rate peculiarities has the third largest annual military spending in the world. If Japan chose for any reason to increase military spending from 1 to 3 percent of GNP, by 2010 its annual spending might reach 70 percent of that of the UK, France and Germany combined. Likewise, even with constraints, in 20 years Japan's capital stock is likely to be almost half that of Germany; with the above mentioned spending increases it could surpass Germany's capital stock by 25 percent.

The mid-level regional powers, such as Korea, Taiwan, Turkey, India, Brazil, and Egypt, will retain relatively small but formidable capital stocks, relative to the world-class powers. However, they will likely incorporate increasingly advanced systems, and these countries plus China will play an expanding role in international arms production and export. Should Japan decide for any reason to engage in the arms trade, the picture would be even more significantly altered.[20]

The obvious conclusions drawn from these economic and military spending considerations are that Japan and China will be no less important to US security considerations in the coming decades than Russia and Western Europe; and that the mid-level regional powers will increasingly occupy US attention by dint of increasing economic and military capabilities.[21]

D. Technology

Technology is developing at a tremendously fast rate and is becoming a motivating goal for every nation. While in the past, the US held a substantial lead in the development of new technology, that lead has recently diminished. Due to many factors, military research and development (R&D) in the US is also expected to decline. Many countries have recently begun developing "in house," an indigenous technology base with the help of foreign educated scientists, the "brain drain" from Russia and industrial espionage. Dual-use technology, technology

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19 Wolf, p. 23.
20 Wolf, pp. 18-20 and 23-25.
21 Wolf, p. 25.

shared for non-military means, can and is used in the development of military arms. Often, secrecy shields this development and causes difficulty in assessing the military capabilities of a potential enemy. The nuclear capability that Iraq had developed prior to the Gulf War exhibits this trend.

While more countries are developing their own new technology, a rise is also occurring in the purchase of new technology. The republics of the former Soviet Union are selling their aircraft, submarines and other military equipment in order to attain hard currency to stimulate the economy. Other countries, such as France and Germany, sell arms because manufacturing in bulk reduces per-unit cost. World arms trade has become more commercial and **less curtailed by ideological inhibitions**. Whether through legal or illegal channels, any country with the financial means can purchase the most state of the art technology. Iran's purchase of a KILO class submarine created overnight a tactical threat to the US in the Arabian Gulf that intelligence analysts anticipated would take a decade, at best. While just as dangerous as "in house" developments, **open market weapons proliferation is a public operation and can be traced. The key is establishing a data base for technology exchanges between vendor and consumer.**

While hardware is readily available, the supply of spare parts is usually inadequate in Third World states. Without spare parts, maintenance is difficult to impossible, and the potential for use decreases rapidly. Such **limiting factors need to be identified in advance by the military intelligence community.** Additionally, a nation which has the capital to purchase a submarine, but does not have the educational program to train a crew, possess less of a threat.

E. Estimating Military Potential by the Analyst

To evaluate a nation based on its population, its geography, its economy or its technology is a relatively simple task. The difficulty comes when all factors are studied together. A country which maintains an air force equipped with the most technologically advanced aircraft, is of little threat potential if it does not have the economic ability to maintain the aircraft or the pilots with the education required to fly them in combat. A country with the economy and the education and the weaponry to be a world power will never assume such a role if it is their goal as a nation to never see war, at any expense. Just as people, no two countries are exactly the same. Personal, political, and economic interests are different in every nation. To make assumptions based on the beliefs or interests of the US, **mirror imaging**, could prove fatal. Every region must be considered individually and every relevant factor evaluated. This is no simple task.

III. Defining Levels of Military Technological Potential

A. Scope of the Problem

The US expended vast resources over many years in order to have the technologically superior military forces which were displayed to the world during Desert Shield/Storm. These forces were sized, trained, and equipped in order to deter the Soviet Union, the biggest nuclear capable "bully" on the block. All other potential military threats were considered a lesser included case, and assumed to be capable of being handled by the forces already existing. Because of inferior numbers of ground troops and major pieces of equipment with which to engage the Warsaw Pact during a conventional conflict in Europe, the US embarked on a strategy of quality over quantity as well as nuclear weapons as a last resort. Equipment of technological superiority was said to be a **force multiplier** on the battlefield.

The major industrial countries of the world sell or provide billions of dollars worth of military hardware and software to lesser developed countries every year. The largest exporters of military equipment are Russia, the United States, France, the United Kingdom (UK), and China. Countries typically provided military aid to bolster a government with which they themselves have diplomatic or military ties. Sales of military hardware are typically done for more economic and less ideological reasons. Companies which used to have a ready market for military hardware are finding the international arms market increasingly more competitive.

A Government Accounting Office report titled, *US Weapons: The Low-Intensity Threat is Not Necessarily a Low-Technology Threat*, contends that in addition to the broad spectrum of potential LIW (Low Intensity Warfare) regions, there are a wide variety of weapons that the US armed forces must be prepared to confront. Threats are not only expanding in numbers, but becoming highly diversified in which the types of weapons likely to be encountered may differ significantly from country to country. Prominent in this diversity is modern, sophisticated military hardware. **The military-technology gap between the major powers and the Third World is rapidly narrowing.** Some exporters from Western countries reportedly have been transferring ever more sophisticated technology in order to compete in the Third World arms market.

The growing proliferation of advanced conventional weapons and the increasing dual technology potential of new systems greatly increases the requirements on intelligence collectors and analysts. How then should countries be classified? Should it be strictly according to their political and ideological rhetoric? Should they be categorized according to their economic-industrial potential? Or should they instead be based solely on their military hardware? No simple model exists which would allow military planners to predict with 100 percent certainty who will and will not be a future potential adversary. What planners can do, however, is to attempt to keep track of proliferation of military hardware and technology. In this way a potential threat country can be categorized as possessing either high/medium/low military technology potential. Knowing this will allow an appropriate response to be put forth without overextending dwindling resources.

The overall level of military technological capability of a country can be determined by a countries military hardware and software, the level of education and training of its troops, and the level of support available. During the Cold War it was relatively easy to place countries into groupings based on technological capabilities. Primarily countries were either supplied military equipment and training from the West or the Warsaw Pact. A countries training level and therefore its relative effectiveness on the field of battle was an area examined for years by personnel within the operations analysis area of study. Additionally a countries ability to support varying levels of technology could be determined, although not always easily.

Today the international arms market is wide open as suppliers struggle to keep production lines open. Future adversaries of the US will likely be technologically advanced to some degree. **The challenge for intelligence collectors and analysts will be to determine the level of military technological sophistication and therefore the level of capability that an adversary possesses.** This task has become extremely difficult in the post-Cold War world as countries are less likely to posses military equipment from only one side or the other. We can no longer expect that former Soviet client states will posses and deploy equipment exactly as they were taught.

While it is difficult to determine what technological revolutions might be made in the future, we can make assumptions based on the proliferation of systems fielded today and their anticipated evolution. Many countries including Russia, China, France, and the US sell front line military equipment to other countries.

The economics associated with fielding a technologically superior military are also unlikely to change drastically in the future. **Sophisticated equipment in quantity, and the ability to operate and maintain it will be key identifiers of the level of military technology of a country.**

B. Military Hardware/Software Sellers in 2010

One of the effects of the Gulf War is that the US share of weapons production for transfer was increased. Many weapons production lines are only being kept open because of foreign purchases. This is not to say that the US will become the only producer of weapons in the future; the peace dividend effect of the thawing of tensions has resulted in increased competition between major producers of weapons systems. Which countries are likely to be the major non-US producers of weapons hardware and software in the year 2010? Russia, China, Europe and Japan.

In desperate need of hard currency, Russia is actively seeking buyers for their weapons. Russia has shown there to be very few "no-go" zones in terms of what will be sold and to whom. Political pressure is keeping the transfer of nuclear, chemical, or biological weapons or technology a very sensitive area, however. Exports such as advanced fighters, MBTs, surface to air missiles (SAMs), and diesel/electric submarines are up for sale at very reasonable prices.[22]

China has been the fifth largest exporter of conventional weapons, behind the USSR, USA, France and the UK, during the period 1986-1990.[23] This trend is expected to continue in the future as China markets her latest weapons. China's major exports include anti-ship and ballistic missiles, warships, and technology. Chinese missile co-operation with developing states -- in terms of sales of complete systems and subsystems as well as production assistance -- represents perhaps the world's most comprehensive program of transfer of missile technology. The major arms producers within Europe, particularly those in France, Germany, Italy, and the UK will continue to play a major role in the future. The continuing interdependence of national economies will likely require future major weapons projects to be produced as a cooperative effort. The companies within each country which produce the best equipment will likely remain while increased competition will drive many into other arenas.

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[22] Dr. Mark Galeotti, "The Russian Arms Bazaar", *Jane Intelligence Review* 4/92, p. 491.
[23] Brigitte Sauerwein, "Post-Soviet Economy: the military legacy", *International Defense Review* 4/92, p. 324.

In 1976, a formal policy statement to the Japanese Diet strengthened a previously established ban to prohibit virtually all arms exports. This policy could change in the future depending on the economic outlook of various world economies, and the feelings of the Japanese people. The Japanese have the industrial base and technological sophistication necessary to produce and market successfully a wide variety of weapons systems, including ships, planes, and ballistic and cruise missiles.

C. Defining Levels of Technology by Analysts

The technology gap has and in all likely probabilities will continue to narrow between the major industrial countries and the lesser developed nations of the world. **One of the major focuses for intelligence collectors and analysts should be in the determination of a regions or individual countries desire for military-technical equipment.** Technologically sophisticated military hardware and software will continue to be sought by those who feel threatened and we should attempt to predict this.

Policy makers should be advised of a nations relative military-technical status and attempts being made to upgrade. **The intelligence community can develop the expertise necessary for such prediction, but they will require a major revision to their cultural self-identity.**

A key factor in determining military power in the post Cold War era will be in the tracking of **vendor-consumer exchanges** of hardware and technology. Of greatest concern is the spread of nuclear and chemical weapons and ballistic missile related-technology, including the hiring of foreign scientists and weaponry experts by consumer nations. The task of tracking such exchanges is becoming increasingly complex as the number of nations participating in both nuclear research and arms production grows at a rapid rate.

Until the 1980s, the US and the Soviet Union were the world's primary arms suppliers. Recently, however, there has been a distinct trend towards regional arms suppliers, such as Israel, Brazil, China and North Korea. Additionally, whereas arms sales in the past were driven by strategic and political considerations, the new change in the world geopolitical structure has led to sales being driven primarily by profit motive. In the past, a nation's political alignment

would dictate, out of necessity, the type of military hardware one could procure. Recently, this model has been turned on its head with nations such as Abu Dhabi, a traditional consumer of Western arms, purchasing a large quantity of Russian armored infantry fighting vehicles.[24]

In some cases, these sales can have profound implications. Recently, Israeli Aircraft Industries sold the People's Republic of China the electronic countermeasures package originally developed for the abortive US-Israeli **Lavi** fighter program. This state of the art package is being fitted on the majority of the Chinese tactical fighter-bomber force and will likely greatly improve its survivability in the face of modern air defenses.[25]

Another distinctive trend has been the increasing cost of high technology weaponry which has led to an increase in cooperative production. This includes both cooperation among Third World nations and **cooperation between first tier states and the Third World.** Attracted by cheap labor, expanding industrial bases and increasingly technologically competent work forces, many developed nations have begun cooperative production with Third World nations. To cite one example, Russia's Yakovlev Design Bureau recently approached both India and China with an offer for co-development and production of the YAK-141 vertical take off fighter.[26]

In similar vein, over 72 percent of the funding for the Israeli Arrow anti-tactical ballistic missile program came from the US Strategic Defense Initiative. [27] These cooperative programs accelerate the global diffusion of technology and provide a technological base for further development of indigenous weaponry. For these reasons, collection of intelligence information on these **cooperative relationships** will provide a useful vehicle for tracking technological expertise.

IV. Implications for Operational and Tactical Intelligence

In the 1980s, Marshal Nikolai V. Ogarkov, then-Chief of the Soviet General Staff, first predicted a revolution in military affairs brought on by the development of long-range, precision-guided strike capability and supporting intelligence and command and control capabilities. In 1984, Marshal Ogarkov made the following commentary on the emerging military/technical revolution:

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[24] Christopher Foss, "Cut Rate Prices Challenge Western Sales," *Jane's Defense Weekly*, 3 Apr 1993, 12

[25] Edmond Dantes, "The PLA Air Force Build-Up: An Appraisal," *Asian Defense Journal*, Nov 1992, pp. 44-46

[26] Amit Gupta, "Third World Militaries: New Suppliers, Deadlier Weapons," *Orbis*, Winter 1993, 57

[27] Ibid, p. 64

> ...rapid changes in the development of conventional means of destruction and the emergence in the developed countries of automated reconnaissance and strike complexes, long-range highly accurate terminally guided combat systems, unmanned flying machines, and qualitatively new electronic control systems make many types of systems global and make it possible to sharply increase (by at least an order of magnitude) the destructive potential of conventional weapons, bringing them closer...to weapons of mass destruction in terms of effectiveness. [28]

The effectiveness of precision-guided weapons in the Gulf War has caused many to acknowledge that such a revolution has indeed occurred. The effectiveness of modern weaponry is now limited more by the necessity for adequate intelligence than by any other factor. Barry Watts, an author of the Gulf War Air power Study, noted that the means of destruction have out paced the both the means of command and control and detection capabilities, "If we know where to aim, we can hit. But knowing where to aim remains difficult."[29] The ability to provide timely targeting data for military targets and identify critical components of economic target sets now comprise the limiting factor in the overall effectiveness of strike warfare.

The implications for intelligence of this "partial revolution" in which weapon range and capability outstrip the means of detection is profound. Col A. N. Zakharov, writing on the subject of the nature of future war in the Russian journal *Military Thought*, eloquently describes this concept:

> The... trend is dictated by the ever growing significance of information collected in a timely manner on the target of effect to ensure requisite weapon effectiveness. It signifies that achieving success in operations will largely depend on the effectiveness of combating reconnaissance and information systems...in planning the enemy's defeat commanding generals and staffs must initially must give priority to personnel and equipment employed for

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[28] Interview with Marshal of the Soviet Union N.V Ogarkov, : " The Defense of Socialism : The experience of History and the Present Day", *Krasnaya Zvezda*, 9 May 1984, 2-3 (FBIS Soviet Union V.3 No. 91, R 19)

[29] Barry D. Watts, "17 February 1993 SAIS Seminar on "The Revolution in Military Affairs" p. 11

> collection, transmission, processing and storage of information, then to personnel and equipment employed for redistributing it and combat equipment of command and control facilities; and only then to weapons.

The necessity to provide intelligence information in support of operations on both a regional and global scale is becoming vital to the conduct of high technology warfare. Intelligence architecture and connectivity must be established to allow the seamless fusion of both organic and non-organic information for the operator.

An fundamental concern is the trade-off between timely and accurate information. The changing nature of the threat from having a predominately Russian-designed kit to heterogeneous mix of Western and Russian hardware makes it imperative that intelligence collection systems be able to accurately detect and identify any potential threat, regardless of national manufacture. This is especially vital in the realm of ELINT correlation. Otherwise, the danger of receiving "garbage at the speed of light" becomes acute and undermines the whole concept of intelligence support.

With the advent of weapons whose single shot kill (SSK) probability approaches unity, increasing emphasis is being placed on deception of intelligence systems as the most effective way of preventing destruction by strike means. In this regard, Iraq during the Gulf War seemed to have a degree of success in confounding Coalition targeting. Russian sources credit Iraq with waging an effective campaign of camouflage, concealment and deception, using hundreds of fiberglass mock-ups of combat aircraft and missile launchers. They go so far as to say that up to fifty percent of initial coalition airstrikes fell on false targets.[30]

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30 Col V. P. Chigak, "The First Lessons of the War," *Voennaya Mysl*, No 5, May 1991, 60-71, as translated in JPRS-UMT-92-002-L, 16 Jan 1992, p. 37

While the Russians may be overstating the case, elements of the Iraqi deception campaign were also noted by Western analysts. Barry Watts also points to elements of this extensive Iraqi effort. For example, the nuclear fuel of the Al-Tuwaitha Nuclear Power Plant was taken from the reactor and placed in a field and covered with dirt, rendering this vital element invisible to coalition means of detection.[31] Future intelligence systems must have the ability to distinguish more effectively between real and false targets.

Information war in the future, with the global diffusion of military technology to regional actors, threatens to take on a less one-sided nature than in the Gulf War. A critical vulnerability of US intelligence means is reliance on a vulnerable system of command, control, communication and intelligence (C3I). With regards to the Gulf War, a senior navy official stated that interference with one ultra-high frequency satellite would have disrupted the flow of intelligence information and changed the course of the war.[32] Moreover, the insatiable intelligence requirements during the Gulf War made the use of commercial satellite systems essential for the transmission of data-intensive imagery.[33]

The diffusion of advanced technology weaponry to regional actors constitutes another danger. It is becoming increasingly possible to target intelligence and communication centers with precision weaponry. For example, Russia has developed and is placing into service a new version of the SCUD missile system which both a terminal guidance capability allowing pinpoint accuracy and an advanced conventional munitions warhead.[34] While this system has yet to be offered for export, the need for hard currency may see such systems appear in the Third World before the end of the decade. Clearly, the need for robust and redundant intelligence nodes and connectivity to ensure survivability will become an increasingly vital concern.

However, operational intelligence support, must be able not only to prevail in the demanding high technology warfare environment, but also in conflicts of lesser intensity. If history can be a guide, conflict with low and mid-level technology forces is more likely than conflict with high-technology regional powers.

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[31] Barry Watts, p. 10
[32] Campen, p. 61
[33] Ibid., 60-61
[34] Christopher Foss, "Latest `Scud' Has Pinpoint Guidance," *Jane's Defense Weekly*, 1 May 1993, p. 7

This represents a fundamental difficulty for the intelligence community as low technology conflict requires a different set of collection capabilities than does high technology conflict. Assets such as HUMINT operatives and linguists play a vital role in low intensity conflict. SIGINT and ELINT, may have little utility. In the Gulf War, Iraqi SCUD missile launchers proved highly elusive because of a the inability of such means as imagery, SIGINT or ELINT to track them successfully. Much of the most useful information on these systems came from HUMINT sources.[35] In low intensity and insurgency conflict, HUMINT may be the only effective means of intelligence gathering. Therefore, a healthy balance of intelligence capabilities which can operate across the spectrum of conflict is required to face an uncertain and constantly shifting threat.

The requirement will remain not only for I&W, but for very detailed and sophisticated intelligence analysis in support of operational and tactical forces. **One of the critical intelligence functions in the era of high-technology is support in targeting.** High-technology weapons tend to trade a lower warhead size for increased accuracy and range. These weapons, therefore, depend on extremely accurate locational data for the launch platform, and especially for the aimpoint, in order to deliver the weapon to a critical point. Identification of the latitude and longitude of target elements in a data base, however, is **not** sufficient. What is even more important is knowledge of how the economy and the armed forces of a potential adversary function.

Clausewitz, influenced by the scientific theories of Isaac Newton, derived the idea of a "center of gravity." Clausewitz identified the "center of gravity" of the enemy as the critical element upon which to concentrate force in order to ensure victory. One problem with this concept is that the "center of gravity" has tended to be difficult to define, so difficult in fact, that it has often only been identified after the conclusion of hostilities. A more modern scientific paradigm can be taken from the field of cybernetics.

Cybernetics uses a complex chain of events, with each step precisely defined, in order to accomplish a specific task. **Modern economies and armed forces also require a complex chains of events to function. With the loss of specific links, the system will be degraded, or cease to function at all. Each link in such a chain can be concretely expressed by the node which is provides the function. Striking the proper nodes can break the critical links in a complex chain of events.**

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35 Col Alan D. Campen, "*New Technology Alters Support to Intelligence*," Signal, Oct 1992, p. 60

Too often, the targeting focus has been on installations, rather than on a systems approach. As a specific illustration, in an aircraft carrier's mission planning center, one might hear the following comment used as the rationale for a particular strike, "We are striking this airfield because it poses a threat to naval forces operating in the area." Of course, this is only an informal statement, but such a rationale will obscure important concepts, such as the system of which the airfield is only a component part. Therefore, the wrong aimpoints will be chosen, and the wrong weapons used. We must analyze how exactly an airfield constitutes a threat to US forces. It is not some giant out of a children's fantasy book which has the ability to roll up its runways, and wade out into the littoral to directly threaten ships at sea.

It would have been better for the intelligence analyst to have said something like, "Aircraft based at this airfield, when manned by pilots who are quartered in a nearby building, and maintained by the troops who live in the barracks, and when loaded with bombs or missiles from the ammunition dump down the road, and when in receipt of orders coming through the communications net, and given locational data from their intelligence center, and using the base's runways and navigational aids, have the ability to attack our forces." It should be noted that any of the elements identified in the preceding sentence could further be sub-divided many times. If **any** of these elements are destroyed, the others need not be struck at all. To do so would be redundant. What had been a search for an elusive "center of gravity" is replaced by a chain in which only a single link must be broken.

In the past, this "chain" targeting principal has often been ignored. There is a very strong temptation to strike a portion of all the elements. For hypothetical example, in a large raid on an airfield, thirty percent of the aircraft are destroyed on the ground, twenty percent of the pilots are killed, thirty percent of the maintenance capacity damaged, and twenty-five percent of weapons stockpile destroyed. Because no element has suffered greater than thirty percent attrition, the enemy still should be able to generate seventy percent of the sorties that were possible prior to the strike.

If targeting concentrates on a **single critical element**, such as ordnance, or aircraft, or pilots, a greater percentage of that single element will be destroyed, and the war could be waged much more efficiently. This same sort of targeting of critical elements can be accomplished at the operational and strategic levels of warfare. Specific industries or elements of the opposing army can be selected and targeted.

As a nation increases its own technical sophistication, its vulnerability to this type of "chain" targeting similarly increases. In a sophisticated system, the number of links between elements increases, and the amount of redundancy decreases. The United States, as a nation reliant on high-technology, is probably more vulnerable to this type of disruption than it realizes. During the Gulf War, Iraq could make no viable attempt to strike the vulnerable points of the coalition forces. Intelligence analysts should explore the vulnerability of potential enemy nations to this new type of targeting and assist US planners in countering our own similar vulnerabilities.

An important caveat for intelligence is that it is absolutely essential to be able to accurately model the opposing nation's economy or armed force. Miscalculations of how the enemy operates, and therefore, which elements are critical will only lead to situations such as bombing the enemy's ball-bearing plants, without realizing that he has stockpiled a year's production. It was difficulty in modeling the economy of the USSR that defeated many attempts to design nuclear economic-retardation and war-supporting industry targeting packages.

It is tempting to be simplistic, and say that high-tech nations will always easily defeat mid-tech nations, and mid-tech nations will defeat low-tech, etc., but this is not always the case. A low-tech nation may be able to thwart a nation which is overly reliant on high-technology systems. By dispersing forces, hiding among the urban population, relying on cottage industries, and small arms, a low-tech nation may be able to render long-range strike platforms useless, by creating no critical nodes. Indeed, there are models of this in our own recent past.

Chapter Four

Intelligence Organization and Policy Recommendations

I. Reorganization of the Intelligence Community

Refocusing the intelligence community in the wake of the realities of the new world order will require significant reorganization. In addition to changing the focus of the community, consolidation, more cross-component cooperation and overall better management are needed to correct the inefficiencies that resulted from the often uncoordinated growth of the intelligence community in the 1980s.[1] Efforts aimed at consolidation and the creation of leaner, more efficient, more capable intelligence agencies should be vigorously pursued in this era of declining budgets.

Many such efforts at reorganization are underway or have already occurred. One example is the creation of the Centralized Imagery Office (CIO) to pull together imaging assets under a single roof, provide central direction, eliminate duplication, and increase efficiency.[2] In the HUMINT realm, reorganization/consolidation efforts include the Defense Intelligence Agency's (DIA) plan to centrally direct all military HUMINT efforts.[3] This plan calls for DIA to become the DOD HUMINT Manager to eliminate unnecessary duplication of effort and increase information sharing. Reorganization efforts designed to allow the intelligence community to make better use of open source information are also a good idea. In 1992 Robert M. Gates, then-director of Central Intelligence, appointed a open source coordinator to provide a focal point for developing a solid open source intelligence program.[4] This was a good first step towards making the intelligence community smarter by making better use of an additional source of valuable information at relatively low cost.

It is important to be at least a little suspicious about being able to "fix" everything wrong with intelligence by bureaucratic reshuffling alone. "Reorganization" is an oft used bureaucratic trick, a sort of Washington mantra, chanted by the faithful when things don't seem to be working well. According to

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1 Paula L. Scalingi "U.S. Intelligence in an Age of Uncertainty: Refocusing to Meet the Challenge," *The Washington Quarterly* 15, no. 1 winter 1992): p. 149.

2 "Defense Intelligence Rigs For Varied Global Roles," *Signal* 46, no. 12 (August 1992): 35; Loch K. Johnson, "Smart Intelligence," *Foreign Policy* (Winter 1992-93): p. 64.

3 LT Tom Wingfield, "ONI-65--Navy HUMINT Element," *Intelligencer* (Office of Naval Intelligence Newsletter), (April 1993): p. 9.

4 Robert D. Steele, "Open Source Intelligence Clarifies Global Threats," *Signal* 47, no. 1 (September 1992): p. 65.

Dr. Roy Goodson, an Associate Professor of Government at Georgetown University, the pending reorganization of the intelligence community is both attractive and deceptive.[5] It offers allure because a substantial overhaul is tangible. Reorganization "gives the sense of progress and a fresh start." He adds that the "deceptive" part is that proposed changes may in fact have little impact on the inner operations of the affected intelligence agencies.

According to Goodson, who all but dismisses organizational issues, the critical imperative is to "attract fresh, insightful analysis." Nothing about reorganizing will necessarily meet the imperative. **Streamlined organizational charts are not the same thing as streamlined organizational realities.** It is critical that any proposed organizational changes to the intelligence community have something to do with what is really wrong. Rotating the tires on an automobile may be a good idea, but will do nothing to fix a broken transmission.

Requisite structural changes to the intelligence community should be carried out, however, a rapidly changing world and budgetary realities demand that the intelligence community not waste time, effort and money on unnecessary reshuffling where it is possible to meet the imperatives of the new world order by having existing organizations to do a better job of what they are supposed to be doing. It is critical to take advantage of existing expertise and data already existing in the intelligence community.

An efficient reorganization of the intelligence community requires a complete understanding of the full scope of what is already available from existing agencies. There is no reason to create new levels of bureaucracies if a current organization already has a handle on a problem. There is much discussion about the need for intelligence organizations to shift their focus.[6] There is little doubt a major broadening of focus away from the Soviet Union is warranted.

The new era changes the information needs of the US Government and serving these needs means the intelligence community must generate information and analysis about new subjects for new consumers.[7] However, much of what is offered up as the "new focus" for intelligence, has actually been done all along.

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5 "Critical Issue in Rehab Is Utility of the Product," *Signal* 46, no. 10 (June 1992): p. 103.
6 Robert H. Williams, "Intelligence Restructuring Sparks CIA, Hill Shoot-out," *Signal* 46, no. 10 (June 1992): 101; Scalingi, p. 147.
7 Ernest R. May, "Intelligence: Backing Into The Future," *Foreign Affairs* 71, no. 3 (Summer 1992): p. 64.

Tracking the proliferation of nuclear weapons technology has been a long standing intelligence priority. It did not just recently occur to the intelligence community that it might be a good idea to try to keep track of who might be working on getting the bomb.

The intelligence community justifiably had a "Cold War preoccupation" with the Soviet threat. The intelligence community was not, however, oblivious to the rest of the world and non-Soviet threats. Third World threats understandably received less focus during the Cold War than did the Soviet Union, but they weren't ignored. The most threatening countries (North Korea, Libya, etc.) received appropriate attention. The intelligence community's knowledge of these countries was not perfect (nor will it ever be), but, it was adequate considering the threat posed by the countries in question. **The intelligence community needs to build on what it knows, it is not starting from scratch.**

Part of the reform package being considered is to bring in analysts from many agencies (CIA, NSA and elsewhere) into a new autonomous Directorate for Estimates and Analysis.[8] This would in essence consolidate the intelligence analysis function into a single organization. According to Senator David Boren, Chairman of the Senate Intelligence Committee:

> Spending billions of dollars on intelligence collection is useless if the analysis of information is not both clear and objective. It must also be the product of the best minds in the country in the relevant fields, both inside and outside the government.[9]

The creation of a single analytic organization is probably considered a good move by those decision makers who insist on being presented with a consensus opinion from the intelligence community. However, products expressing the consensus view are usually marginal at best. Consensus within the intelligence community works about as well as it does in Congress.

Overlapping analytic efforts and agencies is not necessarily a bad thing. Commenting on this subject, Ernest R. May noted that, "For any example of wasteful duplication, a counter example shows the value of competition."[10] Having the various intelligence agencies act as a sanity check on each other can be very beneficial. It some cases it is vital. Competition can prevent intelligence agencies being forced to produce skewed analysis in support of policy or

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[8] May, 68; David L. Boren, "The Intelligence Community: How Critical," *Foreign Affairs* 71, no. 3 (Summer 1992): p. 61.
[9] Boren, p. 56.
[10] May, p. 69.

procurement. The independence of organizations such as the Office of Net Assessment in the Office of the Secretary of Defense is possible only if it has competitive points of view available.

Being presented with differing reports from several agencies makes many leaders uncomfortable because this forces them to act like leaders. Conflicting reports mean they must pay more attention to the world situation and to intelligence. It means they must be well enough informed to draw some of their own conclusions. They must know which agency has a better track record. A single analytic agency will also confer upon leaders the luxury of only having one agency to blame when they don't have perfect information.

One advantage of a single analytical agency might be that there would be fewer reports to read. A single product put out by a single agency is less of a burden for busy people. One stop shopping for information saves time. It might also save money. The duplication of multiple analytic agencies is more expensive, but, according to May, "While competition does cost money, it does not cost much."[11] **There is no reason to think that products composed using the consensus approach of a single analytic agency would be any better than several products from several agencies.** On important issues, decision makers will find the time to read multiple documents written by smart analysts. Very often, the analyst who turns out to be right had an outlying opinion which was quashed. There is almost always a person or group of people in any intelligence organization that knows exactly what is going on with a given situation. Often, however, they are ignored or silenced in the interest of more senior opinions. **Consensus has a frightening tendency to breed mediocrity and should probably be avoided.** This doesn't mean than various intelligence agencies should work in a vacuum. None of the good ones do. Most analysts routinely confer with analysts from other agencies and share information. They don't do it perfectly but they do communicate, share ideas and cross-pollinate.

II. SYNERGISM

The intelligence community is large and overlapping. Streamlining the intelligence community, although perceived as necessary, could be detrimental. There are certain reasons for the overlap. Each service requires specific types of support, and each intelligence agency serves its purpose. **Now that the threat has become less predictable and the possible threat areas more numerous, the intelligence community can benefit from comparing notes.**

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[11] May, p. 69.

The general public does not understand the reasons for the overlap of intelligence organizations. They see this overlap as "redundancy". For example, the *New York Times* states, "The redundancy is especially pronounced in the Pentagon, where each armed service and each unified command has its own intelligence branch."[12] It would well serve the military intelligence community to correct this inaccurate perception, or continue to suffer budget cuts along with the overall defense budget unless this type of perception is corrected.

Greater cooperation, both internationally and domestically, could assist in decreasing the US intelligence budget. Indeed, with the new ad hoc coalitions and other international missions, the US intelligence community ought to have policies for the sharing of information with new friends and former enemies. Cooperation would also allow the intelligence community to compare analysis, support joint efforts, and to reduce the probability of overlooking potential problems. However, cooperative arrangements with international intelligence organizations lead to external threats to the domestic intelligence organizations.

Assistant Professor James Wirtz of the Naval Postgraduate School lists four types of external threats posed by other nation's intelligence organizations: cooperation can breed to complacency; it can open the intelligence organization to penetration by an adversary's agents; allies can exploit the relationship to conduct espionage against their partners; and cooperation can be used for the purpose of deception.[13]

Domestically, better liaison between the intelligence agencies could assist in areas where budgetary cutbacks have taken their toll. Better inter-agency coordination of various intelligence programs could also ensure that duplicity is not a problem. DIA has been charged with coordinating the intelligence agencies within the DOD. It is important that DIA makes every effort to first ensure that redundancy is not a problem in the DOD intelligence agencies, and secondly to educate the public on the necessity of the existing DOD intelligence structure and the increased need for budgetary support.

III. SPECIFIC PROGRAMS

Since no one intelligence discipline is capable of providing the entire scope of newly focused intelligence requirements, the intelligence community needs to take full advantage of the strong points of each collection method. The variety of threats continues to grow, yet the defense intelligence community can expect **fewer resources**. Regional conflicts, nuclear and conventional arms proliferation,

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[12] *New York Times*, p. A-10.
[13] Wirtz, pp. 250-251.

international terrorism, drug trafficking and economic espionage all seem to be on the rise at the same time the intelligence budget is decreasing. The intelligence community will be expected to do more with less.

First, the fat needs to be cut. William Webster points to the days when over 85% of our resources were focused on the Soviet Union. Many of these resources currently are being shifted from areas where they are no longer needed. This is one of the most important areas which the intelligence community needs to continue to work on. While it takes time to develop experts for new areas, most of the **basic analytical skills are transferable**. The move to consolidate agencies in order to avoid duplication will be the major way of accomplishing more with less. However, the importance of providing decision makers with analysis from different organizations should not be overlooked. Yet, in these days of fiscal constraint this may be a luxury which the US can no longer afford. The intelligence community would be better off relying on fewer exceptional analysts then having numerous mediocre analysts. As was shown in the Gulf War, **more intelligence estimates, particularly when watered down, is not always better.**

A. Capabilities Against Low-technology Adversaries

The US intelligence community uses extremely sophisticated collection systems optimized for use against the Soviet Union and its allies. But a wider spectrum of threats, many of which are low-technology, raises the question of how useful will high-technology intelligence collection systems be against low-technology targets. Does a sophisticated SIGINT capability have any utility or applicability to the conduct of intelligence operations in a situation such as Somalia? The exploitation of an enemy's electronic signals always requires his cooperation. He must possess and utilize electronic systems in order for them to be vulnerable to collection and exploitation. In a situation such as Somalia, the enemy may not even have electronic communications systems. Even when the enemy has such systems, he may not use them. In the Gulf War, a medium-technology scenario, a lack of cooperation by the Iraqi military resulted in "limited electronic warfare products."[14]

Since classic, high-technology systems are of limited use in a low-technology environment, other intelligence assets must fill the bulk of intelligence collection requirements.[15] Tactical intelligence/SIGINT assets will be heavily relied upon in a conflict with a low-technology threat. However, high-technology

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[14] Daniel F. Baker, "Deep Attack: A Military Intelligence Task Force in Desert Storm," *Military Intelligence* (October-December 1991): p. 39.

[15] David B. Collins, "Military Intelligence in Low Intensity Conflict," *Military Intelligence* (July-September 1991): p. 12.

assets should be applied where they have some utility. **Tactical assets** such as those used by Marine Corps and Army **are likely to produce the highest payoffs.** An Army combat electronic warfare intelligence (CEWI) battalion may be able to outproduce the entire national system of collection. A single linguist with a man-pack voice-intercept capability may provide all the SIGINT collection possible against a low-technology adversary. A robust HUMINT collection capability will also be essential against a low-technology adversary. The interrogation of enemy prisoners of war (EPW) will be more than a vital source of intelligence information; it may very well be the only source.

ELINT and SIGINT collection platforms need to be optimized for non-Russian signals, especially tactical ELINT to support the real time needs of operators in harm's way. Also required will be long duration maneuver capability for IMINT collection systems for the added flexibility to meet regional contingency tasking.

The almost total reliance on tactical assets for collection against a low-technology adversary means that it will be **vital to maintain strong tactical intelligence capabilities.** Tactical units in all services must be equipped with light-weight, reliable, and rugged gear suitable for operation by small units and even by a single individual.

Linguistics skills in an increasingly diverse array of languages are vital. The services spend millions to train linguists but this money is largely thrown away by an abysmal effort to maintaining highly perishable language proficiency. The lack of effort in this regard hurt the United States in the Gulf War and will hurt us again if it is not corrected.[16] It is a difficult problem and solvable only if it is made it a high priority and money spent accordingly. For many languages, the only solution is to conduct follow-up, in-residence training in the target country immediately following graduation from language school. This is an expensive, time-consuming process but one of the few ways to solve the problem.

An additional solution for creating a pool of accessible and qualified linguists and area specialists for areas of the world not normally in the national security focus is the development of a DOD-wide program similar to the Army's Civic Affairs Program. This program uses reserve personnel with appropriate skills who are trained and organized to move in and administer areas of occupation. A similar, well-developed armed forces intelligence program could provide a pool of area specialists and linguists available for use in areas which there is a shortage of trained regular force personnel to handle an unforseen contingency.

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16 Garry L. Smith, "The Army Foreign Language Problem: Strategies For Solution," *Military Intelligence*, (July-September 1992): p. 23.

B. HUMINT

During the late 1970s, the CIA underwent a significant cutback in HUMINT collection assets. The director of the CIA at that time placed a significant emphasis on using more technical means of collection. By using technical means to collect against the Soviet Union's capabilities, the US could make plans to counter the Soviets based on a worst case scenario. This type of planning is no longer possible due to budget constraints. Additionally, many of the newer threats, i.e. international terrorism, do not lend themselves to exploitation by technical means.

Crucial information concerning regional conflicts needed by decision makers frequently can only be derived via HUMINT. Therefore, the intelligence community needs to conduct an overall examination of its capabilities and shortcomings within each region and country of the world. By identifying those countries where HUMINT is critical in providing intelligence, a concentrated effort can be made to **develop country specialist**, linguist and networks. Cooperation with allies is one means of doing more with less.

Many areas of the world such as the Middle East contain groups which are inherently more difficult for the US to infiltrate. Yet, cooperation with allies may still provide us with important intelligence information. Co-operative arrangements might represent the most efficient method of rapidly gathering information about issues, nations or regions of new interest to policy makers. Nevertheless, intelligence collaboration has several drawbacks which must be considered.

Over reliance on information provided by partners can led to the vulnerability of putting too much faith in the other parties information as well as the susceptibility to having the intelligence cut off at a time when it is needed most. By exchanging intelligence with other nations the possibility of penetration by an adversary's agents is increased. Protection of sources also becomes more difficult. The partner may try to take advantage of the collaboration to obtain information about the country with which it is cooperating. Even when espionage does not occur, information exchange often exceeds the bounds of formal and informal agreements reached by intelligence organizations. And finally, the partner may use the arrangement to pass deceptive information in order to obtain some benefit. HUMINT has various limitations some of which are common to other intelligence disciplines and some of which are unique. **HUMINT requires long lead times before any results are obtained.** The recruiting, training and development of area experts (including linguistic skills) who can successfully establish networks within a country takes years. An expert who is able to

determine worthwhile information and validity of sources is crucial. Yet, this is the key to obtaining valuable HUMINT. The political sensitivities of conducting HUMINT often limit the amount and quality of HUMINT. Additionally, the success of HUMINT collection often remains unknown to Congress and the general public, making it difficult to justify the large expenditures required.

While HUMINT has the potential to provide vital intelligence to decision makers facing a new threat, it should not be viewed as a panacea. Decision makers often expect too much from HUMINT. There are certain things that HUMINT just can't answer. Understanding the intentions of an institutionalized decision making system can be difficult, but, to know a persons intentions, particularly those of a person considered irrational, i.e. Saddam Hussein, is often just not possible no matter how close HUMINT sources may be to the person. Panamanian General Noriega's mistress could have been a psychoanalyst working for the CIA and still not have been able to know what his intentions were.

HUMINT assets should not be tasked when other intelligence sources can be used (such as technical and open source). However, it will be important to identify the areas where HUMINT is needed and then to develop the needed expertise. For areas in which it is not practical to develop HUMINT assets, other contingencies need to be established. **Briefing and debriefing of scientific sources and emigrants needs to be done by people familiar with the subject or area.**

There is also the need to educate the consumers to ask the right questions. Commanders and decision makers need to be better informed on the capabilities and limitations of HUMINT. Requirements must be current, specific and prioritized. This will require articulating requirements well in advance due to the long lead times required for HUMINT. It will also be necessary to establish better procedures for analysis and dissemination of intelligence in order to fully take advantage of the HUMINT collected. Closer cooperation between collectors and analysts as well as closer cooperation between the various intelligence disciplines, particularly in the area of cueing of assets, can also improve the quality of HUMINT. The current coordination of the HUMINT efforts of the CIA and DOD by DOD's HUMINT Operational Tasking Authority (HOTA) is a move in the right direction.

C. Multi-National Exercises/Exchanges

Presently, multi-national exercises are becoming commonplace with the West, as well as with their former adversaries. Military exercises between NATO and the Baltic States, Russia, or other East European countries provides an opportunity to gain first-hand experience of how these former adversaries operate. Ship visits between Russia and the US, and China and the US can provide **opportunities to gain information.**

This type of intelligence collection requires different procedures than intelligence efforts during the Cold War. Concerted efforts must be made to ensure duplicity does not become a problem. This means of intelligence collection also requires personnel specially trained to know what to collect and what is **relevant** to the intelligence community.

Another aspect of intelligence cooperation is the **sharing** of intelligence gathered by allies on joint exercises. This information can assist our efforts to fill gaps we may have in our intelligence collection efforts. **Joint exercises** not only provide the allies with information on former adversaries, but they **also provide our former adversaries with insight** on our operations and our capabilities. **We may want to shape their perceptions.**

The openness of these formerly "closed" societies changes the methods for intelligence collection. Perhaps less emphasis can be placed on highly expensive systems such as satellites. As a result of this openness, more data will be available on an unclassified level. However, the quantity of data will be overwhelming and require a means by which to rapidly evaluate and extract relevant information.

D. Foreign Material Exploitation

Foreign material exploitation is an area where the intelligence community can earn its greatest savings. In understanding how a particular weapon system works, it is important to know the actual performance capabilities of that system and the tactics employed with it. **Rather than developing intelligence estimates and computer simulations of a system's capability, the intelligence community can take advantage of the accessible equipment and test our systems against it.** The amount of money that could be saved by ridding DOD of intelligence estimates, modeling and computer simulation contracts would be significant. The reliability of the information from the Foreign Material Program would be far greater.

This is not to say that DOD's Foreign Material Program does not have its own problems. Once again, the two most notable are inter-service cooperation and overlap. These two factors lead to lost foreign material opportunities by one service or another. Under a DIA directive, the Navy is responsible for undersea and surface material; the Air Force focuses on airborne platforms and weapon systems; and the Army is responsible for land-based platforms, anti-aircraft artillery, surface-to-air missile systems, and land-based support equipment. Each of the services further divides the responsibilities. This compartmentalizing of exploitation efforts makes coordination even more complicated.

Another problem is that each service has overlapping requirements. The Navy and Marine Corps have requirements for all three areas (surface and undersea, airborne, and land-based). However, unless the other two services are aware of these requirements, they may be overlooked. The compartmentalizing, previously mentioned, only compounds the problem of disseminating service requirements.

DIA is responsible for coordinating the Foreign Material Program for DOD. However, in some cases, a particular service is contacted for exploitation opportunities. This circumvents the usual change for tasking and requirements. **If formal lines of communications** existed between the services' foreign material exploitation divisions and if these communication links were utilized on a regular basis, the possibility of missing an exploitation opportunity would be greatly reduced.

Funding limitations also affect the development of new tactics against newly acquired foreign weapons systems. In other words, it is not enough to exploit by learning the capabilities of developed foreign hardware, it is also necessary to reverse the downward trend in tactical development and evaluation resources so that forces in the fleet or in the field will have the proper response to the recently acquired hardware.

Finally, funding is probably the greatest limiting factor. Until recently, acquisition of foreign material was highly expensive. This is now changing. Cooperation between foreign countries has increased, and the expenses of testing this type of equipment has been reduced. However, more funding should be directed to testing against actual equipment rather than costly simulators or hybrids. This thinking needs to change, and with that change in thinking, we need to increase the funding for the foreign material.

E. Open Source Intelligence (OSINT)

The advent of the computer and the information age, coupled with the countries which were previously closed to Western scrutiny represent new realities which require a shift in the way the intelligence community does business. **The information explosion has resulted in the availability of a multitude of unclassified, open sources of information which can be used to great advantage by the intelligence community.** According to Nina J. Stewart, Deputy Assistant Secretary of Defense for Counterintelligence and Security Countermeasures:

> The rapid-fire globalization of economies and information, combined with the internationalization of private business has created a level of exchange, the fluidity of which left the intelligence community capabilities in the dust....The multimedia explosion in many instances has either taken the place of our intelligence network or simply outclassed it.[17]

In actuality, the intelligence community has long made use of open source data, albeit perhaps not full use. A great deal of open source information is incorporated (fused with classified source material) into classified analysis. Sources routinely used include the various Jane's Information Group publications, Foreign Broadcast Information Service (FBIS) reporting, trade journals, and others.

The utility of such previously explored open-source materials, such as literature evidence, however, must be evaluated now that more data is available. For example, after years of analysis of Soviet open-source literature evidence, we are told that none of this was useful in predicting Soviet behavior![18] On the other hand, projects to look at open-source information during the Law of the Sea negotiations were much more useful.

However, **to fully exploit and take advantage of the opportunities afforded by open source information will require the intelligence community to make mind set and organizational changes which will allow full exploitation of open sources.** Robert D. Steele has suggested that open OSINT has generally received short shrift in the past by the intelligence community. Steele notes, however, that OSINT:

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[17] "The Changing Intelligence and Security Environment," *Defense Issues* 7, no. 2, p. 1.

[18] FN. Alexi Arbatov, "The Soviet Union, Naval Arms Control in the Norwegian Sea," *Europe and Naval Arms Control in the Gorbachev Era*, ed. by Andreas Furst, Volker Heise, and Steven E. Miller, New York, NY: Oxford University Press for the Stockholm International Peace Research Institute (SIPRI), 1992, pp. 46-50.

> ...offers the potential of illuminating most of the threats that will confront the United States through the balance of the 1990s. Once known as scholarship, journalism or investigation, OSINT is finally coming into its own. It provides a remedy for those needing analysis of threats for which the existing collection and production capabilities are unsuited"[19]

Senator David Boren has called for the intelligence community to improve the quality of analysis performed by intelligence agencies by making better use of open source information and by being more interdisciplinary, with more use made of reports from commercial and political officers overseas.[20] **OSINT provides a wide variety of information that previously would have been difficult if not impossible for even highly place HUMINT sources to collect.** Reporters and their cameras are in interesting places at interesting times. They have incredible access to leaders, high government officials and "the man in the street" and quite often scoop the intelligence system.

Kenneth E. deGraffenreid has commented that the intelligence community's new emphasis presents a much more difficult collection and analytic task. At the same time, requirements are continuing to expand and now include whole new target areas.[21] The demands placed upon the intelligence community are greater than ever at a time when its budget is declining. OSINT can be of tremendous help in meeting the challenge of having to do more with less.[22] Tapping into open source data bases, publications and analysis offers large payoffs for relatively low costs. The cost to purchase open source data is a fraction of the cost to produce original source classified material which may be only incrementally better.

For many of the new issues which the intelligence community is focused upon, much information is available in open sources. According to Ernest R. May:

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[19] Steele, p. 65.

[20] Boren, p. 56.

[21] "Intelligence Threat Changes Require Sharp U.S. Actions," *Signal* 45, no. 4 (December, 1990): p. 67.

[22] Johnson, p. 54.

> For new issues much information is in open sources. Much analysis is done outside the government. Future intelligence officers will more often have to specify the increment in understanding that secret intelligence provides. Decision makers will want to be told tersely and exactly what is **not** in the New York Times or Cable News Network.[23]

Robert D. Steele has noted that because of the intelligence community's prior scrutiny of the Soviet Union, it is lacking in its capability to follow lesser threats such as drug cartels, terrorists and nations involved in unscrupulous economic and technology competition. Steele suggests that OSINT is a **fast, inexpensive and effective** way for the intelligence community to get up to speed in these areas.[24]

An example of open source analysis performed outside the government into an area of immediate concern to US policy makers are two projects underway at the Monterey Institute of International Studies (MIIS). The Monterey Institute is currently running two large database-oriented non-proliferation projects, the Emerging Nuclear Suppliers Project (ENSP) and the International Missile Proliferation Project (IMP). These projects produce valuable analysis by tracking vendor-consumer transactions of target materials.

Such projects, whether conducted by academic institutions, business service organizations or the media, can be of tremendous help to the analytic efforts of the intelligence community. All can at least provide supplemental sources of information to analysts and there may be some products which are good enough to replace more expensive efforts within the intelligence community.

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[23] May, p. 70.
[24] Steele, p. 65.

Ernest May's article also discusses issues of classification, clearance and dissemination and notes that:

> In the past secrecy has limited the usefulness of intelligence....If the ultimate actors are local law enforcement officials or bankers or businessmen or doctors or scientists not even in government employ (perhaps hot even US nationals), effective dissemination is going to require new rules. That may mean new statutes.[25]

May's concerns show another way in which open source information can be valuable. Data bases and analysis performed using open sources of information can be readily disseminated and released without all the classification and handling constraints and expense associated with classified information. The requirement for unclassified sources of intelligence materials will be especially critical during the increasing number of coalition campaigns such as peacekeeping missions. Many of these will involve US and Russian or other former "enemy" forces where full disclosure of information derived from classified sources may be inappropriate.

It is important to note that OSINT, while an important addition to intelligence collection and a vital source of information that may not be available from classified means of collection, **is not perfect**. To use OSINT effectively, particularly at the operational level, will require considerable processing and screening by larger intelligence organizations. Simple dissemination of raw data will not suffice. Too much information that can't be scrutinized is the same as no information. Robert D. Steele defines OSINT as "coherent analysis reflecting access to multimedia open sources."[26]

Reporters and media analysts have no better track record than their counterparts in the intelligence community, and media reporting can be the source of a lot of nonsense. OSINT, like any other intelligence source, is not always accurate. It takes sharp analysts to tell the nonsense from good information, especially on the margin. Intentional injection of disinformation in open source material is an old ploy and must always be considered when using OSINT derived information. Another consideration when using OSINT from media sources is that intelligence analysts will have to be aware of the media's agenda. Truth is not always the product being sold and much of what is news is also part entertainment. Intelligence analysts will always need to be aware of this and avoid being taken in by exploding pick-up trucks and the like.

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[25] May, p. 72.
[26] Steele, p. 65.

Legal issues are very problematic and some new legislation will be required concerning the intelligence oversight laws which prohibit spying on US citizens. Legitimate open source information processed into OSINT may no longer be legal if it concerns US citizens. Multinational corporations are especially problematic. How do you handle a US citizen corporate officer or scientist working for a foreign corporation? This is a problem for the lawyers but it has yet to be resolved and until it is it represents a serious **limitation upon the intelligence communities use of open source information for intelligence purposes.**

Although the collapse of the Soviet Union has opened up this formerly closed area, it still is far from being as transparent as the West. Commenting on the greater access to the former Soviet Union, Loch Johnson has noted that:

> ...openness is a relative matter, and the upper echelons of the new governments continue to be quite secretive by Western standards. The task of deciphering the intentions of rival newly independent states' political figures poses a major intelligence challenge.[27]

OSINT can never replace collection via national technical means and no knowledgeable person would suggest that it can. Fusion of multi-source intelligence data is the only way to reliably operate. No competent analyst would completely trust any single source of data if he can help it. OSINT should become another, no less vital source in the intelligence data fusion process.

Robert D. Steele has made several policy recommendations concerning what it will take to "cultivate and manage" OSINT in an era of declining budgets.[28] According to Steele a systematic approach to OSINT as a separate discipline is required. He suggests that this effort "is best undertaken by a national organization or consortium independent of the intelligence community." Steele feels that having a central focal point for OSINT will ensure the government works in partnership with the private sector. **Treatment of OSINT as a separate intelligence discipline is the key to allowing the intelligence community to take full advantage of OSINT.**

A separate agency to centrally manage OSINT is warranted. At a minimum a separate directorate within an existing organization (CIA or DIA) seems necessary. But the validity of Steele's recommendation for this body to exist outside of the intelligence community is nonsensical. The intelligence community

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[27] Johnson, p. 55.
[28] Steele, p. 65.

will be extremely reluctant to spend a great deal of money or to cooperate fully in an area which it doesn't control. Additionally, the best analysis is that derived by the fusion of multiple sources, including OSINT. A centralized OSINT clearing house or agency which is not a part of the intelligence community is less likely to facilitate the inclusion of OSINT data into analysis performed by the intelligence community.

IV. INTELLIGENCE CONSUMERS

In general, a multi-polar world is theorized to be politically more stable than a bi-polar world.[29] However, the move from the highly intense environment of the Cold War to the present relaxed situation has given the general public the impression there is no longer a threat to the US. Therefore, the opinion is that there is no longer a need for a large defense budget or a large intelligence budget. Perhaps there is no longer as great of a need for the highly expensive systems to conduct a global conventional or nuclear war, but we are still deeply involved in international politics. The **rest of the world sees the US as the leader**. We will still conduct military operations, and they will require intelligence efforts, though in very different from the cold war scenarios. We must better predict possible scenarios where US and allied forces will be involved. Once a situation arises requiring US intervention, the intelligence community must be able to provide accurate intelligence to aid military commanders in the successful accomplishment of their assigned missions and to minimize the number of causalities and losses. Intelligence cooperation is probably our best effort to increase capabilities while the budget decreases. But we must be aware of the possible drawbacks of intelligence cooperation. We must **take the necessary safeguards** to protect our systems and sources. We must also improve the ability to provide sanitized information to potential allies.

No amount of intelligence community reorganization and policy changes will eliminate the problem of a policy maker who either will not avail himself of existing information or becomes involved in the intelligence process only when he engages in after-the-fact criticism of how intelligence failed to live up to his expectations. **Dysfunctional consumer behavior is one of the most critical problems in the intelligence community.**[30] It is easier for leaders to cite intelligence failures rather than their own inabilities or failures within their own organizations.

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[29] Glenn H. Snyder, "The Security Dilemma in Alliance Politics", *World Politics*, Vol 36, No 4, July 1984, p. 462.

[30] See Mark M. Lowenthal, "Tribal Tongues: Intelligence Consumers, Intelligence Producers," *The Washington Quarterly* 15, no. 1 (Winter 1992): 157-168; Johnson, p. 61.

Unrealistic expectations on the part of the consumer are very problematic. Intelligence, even when working well, can never provide perfect information about enemy capabilities and intentions. If it could, high school students would suffice as policy makers and war fighting commanders. Having an efficient, well-functioning intelligence system will never eliminate the requirement for US policy makers, decision makers, and war fighting commanders to be personally smarter, craftier and more cunning than the opposition.

Chapter Five

Impediments to Change

I. Introduction

"The ultimate object of Intelligence is to enable action to be optimized."[1] Although the proposed recommendations in the previous chapters seek to optimize the ability of military intelligence to support national security objectives, various obstacles will, of course, have to be surmounted to implement this fundamental change in the focus of US military intelligence. While some of these impediments may be overcome through the implementation of concrete, prescriptive measures, others will require transformations in traditional beliefs and intellectual concepts. Residual cultural elements of the Cold War mentality in military intelligence, wide-ranging political considerations and pitfalls, future budgetary and personnel cuts, and general bureaucratic inertia are some of the potential problems that must be mastered for any deep seeded change to occur in US intelligence priorities.

II. Cultural Impediments

A. Cold War Mentality

Among the most significant impediments to change within the US military intelligence community are those obstacles associated with the residual effects of long term focus on the capabilities of the Soviet Union during the Cold War. This mindset, caused by over 45 years of focus on a monolithic threat, has resulted in a continuing emphasis on analysis of former Soviet and East Bloc countries, a continuing analytical and academic focus towards Europe, a preoccupation with purely military capabilities rather than broader relative military potential, and the desire to identify easily-definable, military threats to American national security.

Because most "...intelligence managers still believe that foreign military force still offers the greatest potential danger to the United States...",[2] Russia, and other former Soviet states which possess large conventional military assets, continue to be viewed by many as the major threat to American national security. Additionally, because Russia is the only nation possessing a direct, large-scale nuclear delivery capability against the US, the continued tracking of Russian nuclear assets and developments remains a strategic priority of many American policy makers.

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[1] R.V. Jones, "Intelligence and Command", in Handel, *Leaders and Intelligence*, p. 288.
[2] Loch K. Johnson, "Smart Intelligence." in *Foreign Policy*, No. 89, Winter, 1992-1993, p. 61.

Unit tracking and equipment analysis of these Cold War adversaries continues to occupy large portions of the US intelligence effort despite the growing importance of military deployments within the Third World and the increasing number of countries which export significant military hardware. While a majority of intelligence managers may tacitly acknowledge the general demise of the Soviet bloc as a coherent and unified threat, over half of all US intelligence collection and production assets continue to focus on the analysis of Russian, and other former Soviet component nations', military capabilities.

B. European "focus"

Associated with this focus on former East Bloc nations is a general focus of analytical effort toward Europe. Long standing historical, cultural, and economic links with Europe have resulted in a traditional academic and political focus towards Europe by the US. While the continued tracking of European developments remains vital to the protection of America's global interests, the general political instability of many Third World regions, the booming economic growth of the Pacific Rim, and the surge of technology transfers in recent years all suggest the need to increase analytical education about these areas and to track ongoing developments in other parts of the world besides Europe.

The American emphasis on the academic study of developments in Europe is the obvious result of long-term ties to the nations and people of that continent: Cultural and historical ties from colonial times and the massive European emigration in the 1800s; long standing economic links throughout the periods of mercantilism, industrialism and the nuclear age; and the continuing political bonds between Western countries has resulted in intellectual and academic focus on Europe that has predominated university structures, scholarly pursuits, and databases throughout American history. In the wake of World War II and concurrent with the ensuing Cold War, this European focus was intensified to underscore the potential threat offered by a powerful Soviet adversary.

Although 45 years of extensive intelligence focus towards Europe has resulted in numerous "European experts" and an extensive database regarding military capabilities in this area, data and expertise for many nations in other parts of the world are often sketchy or non-existent. The education and database building stage required to overcome this dearth of information about areas outside of Europe will be a costly and time-consuming prospect for the US Various collection resources, including open source assets, will have to be repositioned to

examine these other regions. Academic and scholarly study of the Third World by military strategists, will have to be stimulated and the education of new "experts" will have to be undertaken to ensure that the intelligence community has competent people providing key assessments of foreign actions.

C. Worst-Case Scenarios vs Broad View of Capabilities

Another lingering element of the Cold War way of thinking can be seen in the continuing emphasis placed on military capabilities rather than on national capabilities or relative military potential. Although American analysts had successfully assessed the pure military capabilities of the large conventional and nuclear military forces which the Soviet Union possessed, the US was much less successful in determining the Soviet ability to support that large military structure; or in determining the intent of the Soviet leadership to use the conventional and nuclear military might that nation possessed. While assessing a nation's ability to support its military structure and assessing a potential enemy's intentions are much more difficult than telling what hardware that country possesses, these assessments are obviously of much more importance to a national decision maker since they determine the use of this hardware. While a country may possess sophisticated weapons systems and a large conventional military, the lack of proper technological training and education, an absence of natural resources, a poorly developed economic infrastructure, and an ineffective organization of leadership would all limit that nation's ability to use any of these military assets in either a defensive or aggressively offensive capacity..

The reasons for this continuing "worst-case" analysis are two-fold. First, worst-case scenario analysis of a potential enemy's military capabilities often forms the basis of defense programming and equipment purchases in the US[3] To justify large force structures and costly weapons developments, which might legitimately be needed to respond to any number of world crises, to government funding bodies such as Congress, the US military has traditionally been compelled to use capabilities assessments as an illustration of the strength of potential foes. Second, while leaders may be "...more inclined to listen to intelligence experts on subjects such as scientific intelligence and economic intelligence and other more specialized areas in which they have no expertise,"[4] many military leaders prefer to base their decisions on the "hard" intelligence offered by capabilities studies rather than the generally more ambiguous and less defined "soft" intelligence of economic assessments or political intentions analysis.

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[3] Ibid, pp. 54 and 62.

[4] Laquer, *A World of Secrets: The Uses and Limits of Intelligence 1941-1945* (New York: Harcourt Brace Javanovitch, 1982), p. 92 footnoted in Handel, Leaders and Intelligence, p. 8.

Although capabilities studies still offer a baseline understanding of foreign military potential, these studies must be balanced with the context offered by broader "soft" intelligence. The shift in analysis from military capabilities to military potential or national power projection will not be an instantaneous intellectual transition for the intelligence community. In the summer of 1992, Rep. Dave McCurdy (D-OK), chairman of the House Intelligence Panel, commented that "The point is, if your focus has been on the Soviet military capability or the Iraqi military capability, it is going to take a different kind of analyst who understands technology trends in the Asia rim or Europe or elsewhere. I am amazed how little the American people know about economics, whether they be policy makers in Congress, in the media and, I think, within government itself. The intelligence community will need a lot of help."[5]

Finally, the general political and military desire for an easily identifiable threat, like that present during the days of the Cold War, also inhibits the adoption of a more comprehensive approach to intelligence. While the presence of a heavily armed, ideologically hostile adversary during the Cold War provided military and political planners with a recognizable threat to national security, the inherent ambiguous nature of economic and technologically based threats will make it much more difficult for the intelligence community to convince national decision makers of the validity and importance of key assessments. Additionally, the indications and warnings provided by these "soft" intelligence assessments will be much more difficult for US leaders to translate into defense programs or security strategies.

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[5] Rogert H. Williams, "Congress Reserves Option to Reorganize Intelligence", in *Signal*, August, 1982, p. 33.

III. Political Impediments

Although "ideal intelligence work would be objective, autonomous and free of political pressures,"[6] a wide range of political considerations hinder progressive innovations in US intelligence. Perhaps the most central political impediment to effective change by the US intelligence community is the lack of a clearly defined national security policy.[7] By defining those issues which the government considers to be of national interest, this stated policy forms the foundation for all intelligence analysis by the US

Because of a lack of long term political consistency between various administrations and an ensuing inconsistency in the interpretation of national interests, the concise declaration of national security policy by each successive administration becomes a fundamental requirement in the intelligence community's ability to watch important issues. While Republicans under the Bush administration may have promoted the ideology that government had no place in the international economic and commercial arena, foreign countries have long supported economic intelligence efforts and many Democrats in the US believe "that we must have a trade and technology policy."[8]

Until a well defined national security policy, reflective of the present national leadership's intent, is issued, American intelligence will be forced to simply function in a reactive mode to the latest political pronouncements of the country's decision makers and will waste substantial effort in tracking issues which are of little consequences to our influence of policy decisions.

The intense political focus on domestic issues may offer another impediment to fundamental changes in intelligence. The emphasis by policy makers on internal concerns within the US may suggest a new political and intellectual isolationism that will limit support for the broadening of intelligence concerns and analysis. While the emphasis of domestic issues may, in fact, be a necessary requirement for the present, it must be remembered that much of this internal attention will come at the expense of analysis of the international arena.

One overtly restrictive political impediment to change in American intelligence is the push for the imposition of clearly defined legal charters which would govern the context of analysis by national intelligence agencies. Promoted

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6 Handel, *War, Strategy, and Intelligence*, (Tatowa, New Jersey: Frank Cass and Co. Ltd., 1989), p. 189.

7 James H. Babcock and Peter C. Oleson, "Intelligence Concerns for the 1990's," in *Signal*, Vol. 43. No. 10, June, 1989, p. 35.

8 Williams, p.33.

by such political leaders as Rep. McCurdy, these charters would concisely delineate the areas of analysis and responsibilities for member organizations of the national intelligence community.[9] These legalistic limitations on what intelligence organizations could and could not analyze would serve to narrow, rather than broaden, the scope of intelligence, would restrict the ability of agencies to share information, and would generally decrease capability to fuse intelligence assessments from various agencies. Although the overall intent of this guidance may be the movement of intelligence agencies towards change, the imposition of prescriptive and restrictive regulations by transitory civilian leaders rarely produces long term effects in military organizations.[10] Instead, restrictive charters generally inhibit innovation and limit the abilities of military leaders to exercise individual management, guidance, or decision making within their commands.

As previously noted, the relatively short tenure of most political office holders will have a detrimental effect on efforts to develop a fundamental change in the outlook of the intelligence community. While the support and guidance of key political appointees and leaders is vital to the success of military innovations, these changes invariably require much more time for their complete implementation than is allowed for by the period of any national political administration. Policy differences between successive military, legislative and executive leaderships will overtly hamper the ability of any organization to execute long-term changes.

The inherent bureaucratic hierarchy associated with the US government will provide yet another political obstacle to changes in the approach to American intelligence efforts. The lack of centralized control over the intelligence community and political infighting between various agencies will impede the progress of any transformation in intelligence. While the Director of Central Intelligence may be the nominal head of the US intelligence community, the control of budgetary and personnel assets, as well as the Constitutional seniority, of the Secretary of Defense, makes that cabinet office much more important to the overall direction of the nation's intelligence effort. This ambiguous relationship often leads to a lack of clear direction and focus in national intelligence analysis. Additionally, bureaucratic power struggles between various intelligence agencies contribute to the political obstacles that will have to be overcome to implement the "good idea". Competition for political influence, intellectual acceptance, and a greater percentage of diminishing pool of fiscal and personnel assets all contribute to this sense of rivalry.

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[9] Ibid, p. 32.

[10] Picket, "*Airland Battle*", Helicopters and Tanks: Factors Influencing the Rate of Innovation", p. 4. Also Stephen Peter Rosen, "*New Ways of War*", in *International Security*, Vol. 13, No 1, Summer, 1988, p. 135.

IV. Budget and Personnel Cuts

Some of the most obvious difficulties that will have to be overcome are the cuts in operating budgets and personnel assigned to various billets throughout the national military intelligence structure. Most US legislators have shown a determined skepticism for continued high intelligence budgets.[11] As long ago as 1989, then-DCI William Webster noted that, "There has been a dramatic increase in the number and diversity of subjects the intelligence community now is required to address, the number of consumers who use our product and the resources we need to provide what is needed for."[12]

Despite the fact that the demise of the Soviet Union merely expanded the field of view and the number of consumers for intelligence since Webster's tenure, intelligence budgets have consistently fallen. The national intelligence budget for fiscal year 1993 was cut by $1.5 billion, about 5% of the yearly cost.[13] Added to this general cut in the intelligence budget are the broad effects of the various cuts in military budgets. Because the Department of Defense, individual services, and theater commands all exercise some control over their separate budgets, the intelligence assets which they possess will obviously be effected by fiscal cuts to those separate commands.

Reductions in the number of billets within the national intelligence community and personnel assigned to those billets will be another area of diminishing resources. Billet cuts within the intelligence community of 12% from the present number of positions are targets by 1997.[14] While this slash in the structural aspects of intelligence manpower will have an overt effect on personnel resources, hiring freezes general cuts in the civil service, and decreased intelligence training for civilian analysts will exacerbate the effects of these billet reductions. Additionally, downsizing by the military services will further limit the number of intelligence personnel available for assignment to these billets. Individual service beliefs in the usefulness of dedicated intelligence professionals and the applicability of assigning these personnel to external intelligence agencies will have a profound effect on service commitment to the evolving intelligence structure.

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[11] Johnson, p. 53

[12] William H. Webster, "The Intelligence Community's Mission in Today's World," in *Signal*, Vol 44, No. 1, September, 1989, p. 38.

[13] Williams, p. 32.

[14] Johnson, p. 62.

Faced with these declining assets, some defense analysts have noted that, "Given the consistency of intelligence requirements, valid requirements for the 1990s may well exceed the capabilities of the intelligence community." This point was emphasized to Pacific theater senior intelligence officers in March 1992 when the theater intelligence production center briefed that, "Theater intelligence assets are tasked to the saturation level at a time when the overt military threat to US security is at the lowest level since the end of the Second World War."[15] Given these apparent inadequacies in the intelligence community's ability to meet all intelligence requests, "The management challenge for senior intelligence officials will be to decide what will not be accomplished and weigh the consequent risk accurately to minimize its potential impact."[16]

V. BUREAUCRATIC INERTIA

Within the intelligence community and the individual military services, various factors of bureaucratic inertia will contribute to the widespread resistance to implementation of fundamental; changes in intelligence. Reliance on traditional missions and methodologies, failure to recognize the value of innovation, service rivalries, and the inherent resistance to change within bureaucracies may act to intensify opposition to the "good idea"

The reliance on traditional missions, doctrine, and tasks may be one of the most fundamental; bureaucratic obstacles to innovation.[17] Because these traditional roles have often been the very basis of an organization's existence, any change to these roles may be perceived as an attack against that whole organization or the personnel livelihood of all members of that organization. In the case of military intelligence, this opposition to change would therefore be present in both intelligence organizations and the individual military services While the rigid adherence to accepted procedures and doctrines may allow for the competent completion of the traditional missions, this approach fails to recognize changes in the operating environment and denies the possibility of innovation to meet those changes.[18]

The failure, within a bureaucratic organization, to recognize the overall value of any fundamental change will also serve as an impediment to change. Although most bureaucratic organizations welcome changes that serve to fix

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15 JICPAC briefing, Pacific Intelligence Board, March 1992.

16 Babcock and Oleson, p. 37.

17 Vincent Davis, The Politics of Innovation Patterns in Navy Cases, (Denver: University of Denver Press, 1967) p. 38.

18 Peter M. Blau, The Dynamics of Bureaucracy, (Chicago: University of Chicago Press, 1963), P. 246.

irritating problems, expand influence, or provide some other benefit to its members, the innate advantages of any innovation will have to be clearly understood before it can be accepted by that organization. The positive results of an increased emphasis on the element of the "good idea" will have to overwhelmingly outweigh the effects of continued reliance on the old way of doing business.

Service and agency rivalries, and rivalries between various functional branches of the same service or intelligence organization, will still present another hurdle to this fundamental transformation in intelligence. Competition for program funding and personnel assets may lead any of these bureaucracies to ignore the broad based benefits of the "good idea" in favor of the promotion of their individual agencies. While the recommended reorganization and refocusing of US intelligence would require a change to the entire intelligence community, attempts to increase organizational influence over this innovation or to promote alternate ideas will limit the inclusive qualities inherent with these recommendations.

Finally, the very nature of bureaucracies, especially those in a federal democratic republic, connotes a resistance to change. The existence of prescribes organizational rules and policies means that any attempts at innovation will naturally involve the rewriting of these regulations. Further, because these rules are often established by a relatively slow moving and incremental political process, any changes to standard operating procedures will have to initiated by people who break the rules or by innovators in powerful positions.[19]

VI. PRINCIPLES OF SUCCESSFUL INNOVATION

Despite the apparent difficulties of overcoming the aforementioned impediments, numerous successful innovations have occurred in the US military and bureaucracies in the past century. Traditional ways of thinking have been changed to meet new requirements, political roadblocks have been sidestepped, and financial constraints have been overcome to affect fundamental transformations in the character, mission, and doctrine of various aspects of the military and government. "The particular problem facing men and women involved in the study of modern politics is how to get bureaucracies to innovate."[20] Although the identification of specific criteria for implementing the proposed recommendations is outside the scope of this work, certain broad principles of successful innovation may be discussed.

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[19] Pickett, p. 4.

[20] Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, (Ithaca, New York: Cornell University Press, 1991), p. 1.

First, the need for change has to be realized. This does not mean, however, that defeat in war or the failure of an existing capability has to occur.[21] Typically, "...perceptions of change in the structure of the international security environment have been the source of such innovation."[22] The obvious demise of the Soviet Union, the growing US involvement in regional crises of the Third World, problems of nuclear proliferation, and the realities of a global economy all provide concrete examples of recognized changes in the strategic environment. While military intelligence budget and personnel cuts have already evolved as reactive measures to these changes, the methods and focus of intelligence has thus far failed to similarly evolve.

After recognition of this change in the strategic setting has occurred, the next logical step in this process of innovation is the development of the innovative concept itself. New requirements, missions, and capabilities must all be succinctly identified to meet the inherent deficiencies between the old methodologies and the new situation. This may involve missions "...in areas that... units have not traditionally been required to fight or engage the enemy"[23] or requirements of analysis that were outside the conventional purview of particular organizations. Initially, the development of an innovation may be seen as a more effective way of meeting an established task or mission.[24] In other cases, this innovation may be presented as a new capability. While the broad concepts of a good idea may be sufficient to start some changes, the redefinition of critical military tasks through the formal development of new doctrine will eventually be necessary.[25]

Within the military, the presence of a dedicated innovation advocate has been a key factor in the implementation of change. While this advocate is often not the originator of the "good idea", he is a dedicated and zealous proponent of the concepts offered in the innovation who seeks to bring about change for the overall good of the organization.[26] This military innovator is usually a mid-grade officer (O-4 to O-6) who has been successful in his career thus far, is little concerned with the potential impact of his advocacy on his future career pattern, and expects to be successful in implementing the change. Additionally, this innovator is a person who is respected by traditional military standards for their success in operating "the old way" and who may now be viewed as someone attempting to correct deficiencies.

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21 Rosen, *New Ways of War*, p. 135.
22 Rosen, *Winning the Next War*, p. 57.
23 Pickett, p. 1.
24 Davis, p. 37.
25 Thomas C. Hone and Mark D. Mandeles, "*Interwar Innovation in Three Navies*", *Naval War College Review*, 40, No. 2, (Spring 1987), p. 71.
26 Davis, pp. 33-35.

These advocates must gain substantial support for their idea to implement any fundamental change, however. This first step in this search for support is the promotion of an intellectual change within the effected community. This ideological struggle helps to redefine traditional values and establishes a "new theory of victory."[27] Support is most often gained among the advocate's peers first and then sought among senior military leaders in key positions of influence.[28] While support from top civilian leadership may be helpful in the early stages of an innovation,[29] the lack of long term, consistent support from a transient political office holder may hamper the program.[30] Consistent top level military support, however, offers the opportunity to begin the implementation of concrete measures to support the innovation.

The establishment of new organizations, the selection and training of personnel, and the establishment and protection of appropriate career patterns in support of this innovation must all be explored to ensure the realization of change.[31] While military leaders may support a particular innovation, other leaders within the same service or organization will, out of their own convictions, invariably try to cling to established procedures and missions by undermining the efforts to enact change. Only by the formal protection of concrete changes can the innovation come to fruition.

A final step in the implementation of any innovation is the need for experience, experimentation, and measures of that innovation's effectiveness. The practices and operating methods of any new innovation must be exercised as soon as is practical to allow for the identification of problems and the refinement of tasks and organization.[32] Similarly, experimentation with a diverse set of approaches will allow for the identification of the most efficient operating procedures and methodologies.[33] The establishment of selected measures of effectiveness or pre/post audit analysis will allow for a general evaluation of the use of the innovation as well as the most effective way of approaching that change.[34]

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27 Rosen, *"New Ways of War"*, p. 141.
28 Davis, pp. 36-37.
29 Rosen, p. 136.
30 Davis, p.77.
31 Pickett, pp. 13 and 17.
32 Ibid, p.3.
33 Hone and Mandeles, p. 77.
34 Ibid, p. 79. Also Pickett, p. 11.

VII. CONCLUSIONS

The successful implementation of this fundamental change in the approach and focus of US intelligence will involve a long term commitment to overcome the various obstacles that presently stand in its way. While political, educational, and budgetary constraints may hamper efforts to change the intelligence community, the realization of the fundamental change in the strategic environment must serve as an impetus for innovation. "Bringing innovations to fruition will often be expensive...but initiating an innovation and bringing it to a point where it provides a strategically useful option has been accomplished when money was tight."[35] Although the reeducation and refocusing of the American intelligence effort will undoubtedly be a costly and time consuming commitment, the US must dedicate itself to the implementation of this plan if it is to manage the inherent uncertainty of international relations and continue its role as the world's sole remaining superpower.

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35 Rosen, *Winning the Next War*, p. 252.

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