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TECHNOLOGY SECURITY POLICY:
FROM THE COLD WAR TO THE NEW WORLD ORDER

by

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Technology Security Policy:
From the Cold War to the New World Order

by

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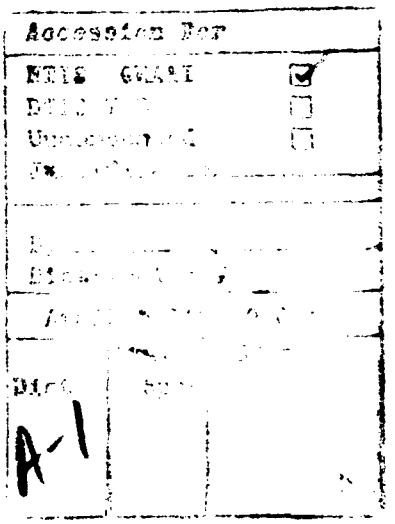

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I. INTRODUCTION

This thesis will examine U.S. technology security policy. The examination will consist of a qualitative analysis of this policy since the onset of the Cold War and a quantitative analysis of the $40 million budget request for counterproliferation in the Administration's FY 1994 defense budget presentation. This $40 million request will be used for such measures as export control, technology security and research. Following and building upon the review of U.S. technology security policy, this thesis will track the Administration's budget request through the congressional budget process, identifying and assessing the adjustments made by the committees with jurisdiction in this area. The development of the FY 1994 appropriation for counterproliferation will reveal the problems and policy issues associated with technology security in the post-Cold War environment. Among these problems and issues are the limitations affecting U.S. policy, the roles to be played by various U.S. governmental entities (e.g., DoD, Commerce, State) and the differences among the congressional committees exercising jurisdiction over technology security policy.

This question is particularly relevant in light of a new administration, shifting priorities in the federal budget, and a rapidly changing global security and economic environment.

A. OVERVIEW

This first chapter will contain an overview of the technology security issue and its significance for U.S. defense policy. It will also describe the scope and research methodology used, and the goals of this thesis.

1. The Role of Technology Security

Technology security has played an important role in U.S. foreign and defense policy since the onset of the Cold War in the late 1940s. The unexpectedly rapid collapse of the Soviet Union and the end of the Cold War has forced the U.S. and the rest of the world into an important transitional period in terms of technology security. We are now faced with the difficult task of reviewing and revising technology security policies in an evolving security environment and an era of economic globalization.

The implications of such a review are profound. Advanced technology is no longer monopolized by military or defense-related items. Instead, high technology has found a place in commercial enterprise as well. In the past, high technology was frequently "spun-off" from military-related ventures to those with commercial applications. Today, the reverse process, "spin-on," is the norm. In the spin-on process, commercial technological developments are used for military applications. The spin-off and spin-on processes have increased the prevalence and significance of "dual-use" technology which has practical applications to both military and commercial ventures. This so-called "dual-use" technology is a major factor in the evolution of technology security policy today, and the stakes of this evolution are high. These policies will potentially impact U.S. national security as well as the ability of the U.S. to compete in an increasingly global economy.

2. Mechanisms for Implementation

For many years, the U.S. was instrumental in the formulation and execution of multilateral technology control regimes such as the Coordinating Committee for Multilateral Export Controls (CoCom) and the Missile Technology Control Regime (MTCR). Historically, the U.S. has used such multilateral control regimes as mechanisms for achieving U.S. policy objectives. Today, dramatic changes in the threat environment and in the degree of economic and technological interdependence among nation states are placing new strains and demands on such organizations as they struggle to find new roles. Consequently, the evolution of these regimes is in many ways linked to the future shape and success of U.S. technology security policy.

a. CoCom

Carved out of wartime export control measures following WWII, for many years CoCom was the primary mechanism for achieving U.S. technology security policy objectives internationally. Understanding CoCom's wartime roots and evolution in the postwar era is significant for two reasons. First, CoCom evolved at a time of peak East-West tensions; consequently, its controls were directed toward a well-defined target, i.e., Soviet bloc nations and the People's Republic of China (PRC). Second, the original lists of controlled items consisted primarily of weapons and military-related items and technologies, and did not anticipate the proliferation of dual-use technologies prevalent today. Thus, while U.S. technology security policy will remain closely linked to CoCom, CoCom must find a new role in the post-Cold War order.

b. MTCR

The Missile Technology Control Regime was established in the late 1980s to fill a perceived gap in technology security policy covering weapons of mass destruction and the ballistic missile technologies capable of delivering them. There appears to be a clear need for this control regime in the new world order, especially considering the prevalence of increasing regional instability. Indeed, the MTCR is an important development within the ongoing evolution in technology control regimes. Although relatively new, the MTCR holds a great deal of potential as a mechanism for influencing international counterproliferation efforts in the future. It is likely that U.S. technology security policy will significantly influence these efforts.

3. A Call for Change

One indication of the change in technology control policy is the inclusion of $40 million in the FY 1994 defense budget request for counterproliferation measures such as export control, technology security and research. Treatment of this appropriation by the defense committees of the Congress during the budget process will likely reveal further information concerning post-Cold War American technology security policy. The political and budgetary development of this appropriation illustrates the continued change in this policy area during the transition from the Cold War period. It will also reveal important differences among the decision-making bodies involved in shaping this policy, including the Administration (DoD, Commerce, etc.) and the Congress (chiefly the Armed Services Committees and the Defense Appropriation Subcommittees).

B. SCOPE

This thesis will examine the role of the Legislative and Executive branches of the U.S. government in the evolution of U.S. technology security policy. It will provide the background for this policy, focusing on the purposes and actions of CoCom and the MTCR. The impact of the end of the Cold War and the emergence of a significantly different threat and economic environment will be discussed. This will be followed by a detailed examination of fiscal oversight of a specific policy item reflecting the new technology security policy, that is, its treatment within the Clinton Administration's budget proposal, and subsequent changes during the congressional budget process. Specifically, the author will track through the congressional budget process a $40 million request for counterproliferation measures such as export control, technology security, and research included in the Administration's FY 1994 defense budget request. This thesis will conclude with a discussion of the direction of U.S. technology security policy in the future based on the issues raised during the FY 1994 budget cycle.

C. RESEARCH METHODOLOGY

This thesis will utilize an historical perspective to identify U.S. interests and policy action concerning technology security policy. Data obtained from congressional hearings and legislation related to the budget process during 1993 will be used to examine the scope and nature of congressional changes to the Administration's $40 million FY 1994 budget request for technology security, export controls, and counterproliferation measures, and to identify implications for the role of technology security policy in a rapidly changing security environment.

D. GOALS

The primary goal of this thesis is to answer the following question: How did Congress respond to the FY 1994 defense budget for technology security as a consequence of the changing role of U.S. defense technology policy after the Cold War? In addressing this question, the author will identify issues and actions germane to congressional legislative and fiscal oversight of the Defense Department's role in the technology security issue.

In order to best address the primary research question, however, it will be necessary to first consider a number of subsidiary questions. Among these are: How has the issue of U.S. defense technology security evolved since the onset of the Cold War? What are the scope and magnitude of the defense technology security issue facing the U.S. today? What are the technology security policy priorities represented by the Clinton Administration's FY 1994 request for $40 million for counterproliferation? How did the congressional defense committees address and modify the $40 million budget request? What inferences can be drawn about the future of U.S. defense technology security policy based upon the treatment of this issue in the FY 1994 budget and historical trends?

These questions and more will be addressed in the following chapters. Out of these questions and answers will come observations and conclusions about Congress and technology security policy in the new world order. This knowledge can be beneficial to the Defense Department and the services by providing the congressional perspective on DoD's role in the evolving technology security issue. Additionally, such timely analysis will enable DoD to improve resource allocation to respond to future changes in the technology security environment.

II. U.S. TECHNOLOGY SECURITY POLICY IN THE NEW WORLD ORDER

This thesis begins with a discussion of the major characteristics of the so-called "new world order" that has prompted the ongoing review of U.S. technology security policy. The dramatically changed global security environment that is emerging impacts not only U.S. policy, but also the role of multilateral export control regimes like CoCom and the MTCR through which this policy is implemented on an international scale. This chapter will also identify various governmental entities responsible for the formation and implementation of U.S. technology security policy. The perspective gained in this chapter provides a useful foundation that will be built upon throughout the remaining chapters of this thesis.

A. THE NEW WORLD ORDER

1. Collapse of the Soviet bloc

The recent collapse of the Soviet Union and its bloc nations profoundly impacts U.S. technology security policy. One of the most visible remnants of the effects of the Cold War years on this policy is a plethora of export controls that remains largely intact. The demise of the Communist threat calls into question the need for many export controls and the role of multilateral export control regimes like CoCom. Founded shortly after WWII, CoCom sought to control the spread of military-related and advanced industrial technologies to Soviet bloc nations and the PRC. Through the Cold War years, this mission was facilitated by a clearly

defined, East-West alignment of nations and the attempt by the Communist bloc to isolate itself from the West. Today, the lines between East and West are blurred and the problem of identifying the threat to U.S. national security has been compounded.

This is not to say, however, that the world is without political tensions and military aggression. While East-West tensions have diminished, regional instability has increased. Arguably, this poses an even more difficult challenge with regard to export control policies: tomorrow's "enemy" may be just another third world or developing nation today. Industrialized nations must recognize that technology transfers to developing nations, particularly those involving dual-use technologies, may later be used against their own military forces if the importing nation becomes embroiled in regional instabilities. The task of developing and modifying technology security policy in such an environment is extremely difficult.

2. Growing International Technological Parity

Another consideration in the question of technology security policy is the increase in levels of sophistication of military and industrial technology worldwide and the emergence of dual-use high technology. The U.S. no longer holds an absolute advantage in advanced technology that it did in the years immediately following WWII. As one source stated,

> ...the steady rise of Japan and much of Western Europe, particularly Germany, has brought other nations to technological parity with the United States. With highly competent overseas rivals, particularly in high-technology industries, the shortcomings of the U.S. technological system stand out as they did not in earlier years.[1]

The industrial and technological bases of many of the war-ravaged nations have long since been rebuilt and, in many cases, have come to equal or surpass the capabilities of the U.S. This poses a problem in that now there are alternate sources of supply for high technology. Consequently, it is no longer sufficient for the U.S. to control the spread of dual-use technology through its own export control policies. Instead, these technologies must be controlled multilaterally. Given the difficulty in competing in the emerging global economy, such multilateral controls will be even more difficult to achieve in the future.

3. Emergence of a Global Economy

The phenomenon of economic globalization is at once exciting and frightening. It has opened up vast new potential markets and stands to benefit U.S. business if existing economic policies can be adapted to the new playing field. Economic competition in a global environment often requires a firm to look to foreign markets to hold or increase its respective market share. Participation and success in foreign markets necessitates the transfer of technologies, but stringent, unilateral U.S. export control policies can hinder such transfers and force importers to take their business to non-U.S. firms. Conversely, whenever these transfers involve advanced dual-use technologies, the exporting nation potentially increases the risk to its national security.

Additionally, the emergence of a global economy makes it more difficult to impose export controls, largely due to the "transnational" nature of many corporations. Today, for example, many "American" companies are wholly or partially owned by foreign interests. All of these factors hamper the effectiveness of existing export control policies which in turn impacts technology security policy.

B. CONTEMPORARY U.S. TECHNOLOGY SECURITY POLICY

1. National Security -vs- Global Competitiveness

At the core of existing technology security policy lies a spectrum of export controls. Two divergent perspectives, national security interests and global economic competitiveness are at opposite ends of this spectrum, and existing technology security policy largely determines where a particular item or technology will fall within this span of control. National security interests are best achieved through strict export control policies that relegate economic objectives beneath those of political and security concerns. But global economic competitiveness is more likely to be achieved in an environment of fewer, more relaxed export controls.

During much of the Cold War period, U.S. export control policies emphasized the national security end of the spectrum.[2] Yet even with these stringent export controls, the U.S. was able to remain the world's economic superpower due to the sheer size and strength of its domestic economy and U.S. dominance in still-recovering foreign markets.

Today, "...America's superior military technology will not rescue U.S. influence; but commercial weakness may very well undermine military strength."[3] Increasingly, the U.S. is being forced to place more emphasis on the global competitiveness end of the spectrum because of a weaker domestic economy (as measured by its burdensome federal and trade deficits and relative decline in technological and industrial capacities), less stringent technology transfer controls outside of the U.S., and lingering doubts about the ability of U.S. firms to compete in the new global arena.[4] This shift has considerable implications for the future of

CoCom and other multilateral control regimes as well as U.S. technology security policy in general.

President Bush seemed to address this issue in the most recent *National Security Strategy*. In it, he stated, "A top national security priority today must be to strengthen economic performance at home and economic leadership abroad."[5] Secretary of Defense Les Aspin has endorsed that view, noting that "...America's failure until now to shift national spending from defense to economic development" is one of the four emerging threats to American security.[6] This new emphasis on economic competitiveness will likely bring a shift in export control policies and demonstrates an increase in the relative importance of economic objectives vis-a-vis political and national security objectives. This message may also presage a general easing of U.S. export control policies to the levels maintained by its CoCom partners.

2. Major Policy Players

Modern U.S. technology security policy has its roots in export controls developed during and immediately following WWII. Initially, the Department of Commerce was given "...the lead responsibility for the administration of controls," and the Department of State was made responsible for "...multilateral coordination."[7] These Departments were expected to consult with appropriate governmental entities as necessary, but no explicit guidelines for interaction were established. Interdepartmental rivalries and conflicts occurred frequently in this arrangement and have hampered the effectiveness of U.S. technology security policy.[8]

In the years since WWII, the list of governmental entities involved with the formulation and administration of this policy has grown considerably. Today,

the Departments of Commerce and State are still major players in technology security policy, as is the Department of Defense. The U.S. Customs Service within the Department of Treasury and the Department of Commerce are responsible for enforcing export controls. Other entities with lesser roles in technology security policy include the Departments of Energy and Justice, NASA, the Nuclear Regulatory Commission, the National Security Council (NSC) and the intelligence agencies.[9] From a commercial perspective, it is frequently asserted that the proliferation of governmental entities involved with export controls has decreased the effectiveness of technology security policy as well as U.S. competitiveness in the global economy.[10]

Because each of the departments involved in U.S. export control policy represents a different perspective, conflicts of interest frequently occur. Since the end of WWII, these conflicts were generally decided in favor of the military or national security concerns, often at the expense of U.S. industry. "The lack of an effective overarching mechanism has allowed a legitimate but limited view of military security to dominate without giving sufficient weight to the health of the economy as a crucial element of national security."[11]

Another trend of the technology security policy process and its participants became evident in the late 1980s and is perhaps more significant today in the evolving global economic environment. During this period, the export control decision-making and review power base "...shifted toward security, intelligence, and law enforcement agencies and away from those entities responsible for technology development, trade, and international economic relations."[12] Within DoD, this shift materialized in the move of technology transfer policy away from the Office of the Under Secretary for Research and

Engineering in favor of a new office, the Defense Technology Security Agency (DTSA).[13] At Commerce, export control issues, once under the purview of the International Trade Administration, were placed under the control of the Export Administration, a separate office just below the Office of the Secretary. Finally, the State Department's Bureau of Economic Affairs turned these policy issues over to security assistance officials. Although these moves in themselves do not necessarily weaken export control policy, they do present a risk "...that controls will become increasingly unrealistic and burdensome on U.S. competitiveness and innovation...."[14]

a. Department of Commerce

The Department of Commerce is responsible for the control of commercial equipment and technology and generally represents U.S. trade and business interests. Commerce also regulates the export of dual-use technologies. Through the 1970s and 1980s, however, DoD's role in the policy making and licensing processes grew relative to that of the Commerce Department. Some have suggested that part of the inefficiency often attributed to the licensing process is due to a lack of resources and priority given to Commerce for that function. The result, according to one source, "...is a lack of balance in the interagency policy formulation process and an inefficient and unnecessarily slow licensing process."[15]

b. Department of State

The State Department regulates the export of military equipment and technology. Its decisions are generally centered around U.S. national security and foreign policy interests. In the early 1980s, the NSC created the Senior Interagency Group on Foreign Policy (SIG-FP), chaired by the State Department, to coordinate "...the implementation of policy decisions on unilateral and

multilateral control of dual use high-technology exports."[16] SIG-FP was ineffective however, and by 1982, NSC had created the Senior Interagency Group on International Economic Policy in an effort to better address issues with overlapping military, economic and diplomatic concerns. Eventually, SIG-IEP evolved into the Senior Interagency Group on Transfer of Strategic Technology (SIG-TST) and finally ended as the Senior Interagency Group on Technology Transfer (SIG-TT). SIG-TT has high-level representation from State, Defense and Commerce as well as numerous other governmental entities, but it is chaired by the Under Secretary of State for Security Assistance, Science, and Technology.

c. Department of Defense

DoD's controls reach into both commercial and military arenas of technology security policy. For many years, DoD "...had a statutory obligation...to review license applications for selling controlled items to proscribed destinations."[17] Once conducted by the Office of the Under Secretary for Research and Engineering within DoD, this review is now done by the Defense Technology Security Administration (DTSA). As the breadth of its regulatory powers increased through the 1970s and 1980s, it can be argued that DoD applied the adage "better safe than sorry" to many licensing decisions, favoring national security interests over economic considerations and overruling the Departments of State and Commerce in many cases.

3. Future of Export Controls

In light of the arguments presented above, some suggest that many U.S. export control policies, especially those applicable to dual-use technology, have been overtaken by events. After all, these policies have their roots in the Cold War environment and seem best designed for use against a well-defined enemy.

As such, they seem ill-suited for use in the new world order. Instead of trying to update existing policies, it may be time to step back and carefully analyze the foundation on which these policies were built and the goals of such policies in the future.

Existing stringent, unilateral controls and enforcement measures are unlikely to be effective in a global marketplace. The availability of alternate supply sources, the growth of dual-use technology, and the characteristics of the new world order diminish the effectiveness of unilateral controls. Future export controls must be executed through multilateral regimes. Further, these regimes must clearly identify the threat and focus a narrower breadth of controls on those threats. Chapters III and IV will focus on two such regimes, CoCom and the MTCR, and use them as vehicles for tracing the evolution of U.S. export control policy since the end of WWII.

NOTES

[1] John A. Alic, Lewis M. Branscomb, Harvey Brooks, Ashton B. Carter, and Gerald L. Epstein, *Beyond Spinoff: Military and Commercial Technologies in a Changing World* (Boston, MA: Harvard Business School Press, 1992), p. 12.

[2] Michael Mastanduno, "The United States Defiant," *Daedalus*, Fall 1991, pp. 92-93.

[3] Michael Borrus and John Zysman, "Industrial Competitiveness and National Security," *Rethinking America's Security: Beyond Cold War to New World Order*, (New York, NY: W.W. Norton & Company, 1992), p. 139.

[4] *Ibid.*, p. 137.

[5] *National Security Strategy of the United States* (Washington, D.C.: Government Printing Office, 1993), p. 9.

[6] Barton Gellman, "Aspin Sees No Need to Alter Defense Cuts Set for 1994," *The Washington Post*, March 26, 1993, p. A17.

[7] Mastanduno, *op. cit.*, p. 95.

[8] Eduardo Lachica, "U.S. Struggles In Controlling Export Licenses," *The Wall Street Journal*, September 24, 1990, p. A1.

[9] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition* (Washington, D.C.: National Academy Press, 1987), p. 93.

[10] *Ibid.*, pp. 130-31.

[11] *Ibid.*

[12] *Ibid.*, p. 132.

[13] *Ibid.*
[14] *Ibid.*, p. 133.
[15] *Ibid.*, p. 161.
[16] *Ibid.*, p. 96.
[17] *Ibid.*

III. TECHNOLOGY SECURITY -- THE COLD WAR AND COCOM

Historically, U.S. technology security policy has been closely linked to multilateral technology control regimes like the Coordinating Committee for Multilateral Export Controls (CoCom). Since the onset of the Cold War in the late 1940s, the U.S. has been instrumental in the formation and operation of these regimes. Recently however, dramatic changes in the threat environment and in the degree of economic and technological interdependence among nation states are placing new strains and demands on such organizations as they struggle to find new roles. Like CoCom, U.S. technology security policy must also evolve in order to function effectively in the new global environment. This chapter will present an historical overview of U.S. technology security policy during the Cold War years, focusing on the development of CoCom as the primary mechanism for achieving U.S. policy objectives and controlling the proliferation of militarily significant and dual-use technology.

A. ORIGIN AND EVOLUTION OF COCOM

CoCom's roots rest in the post-WWII reconstruction efforts and in East-West political, military and economic tensions in the postwar years. In many ways, CoCom emerged from the existing system of U.S. export controls that had developed during WWII.[1] This is particularly significant today given the new world order in which the enemy is not so clearly defined. It also has tremendous implications for the future of multilateral export control regimes like CoCom. What follows is a brief discussion of the history of U.S. export control policy out

of which CoCom emerged and highlights of CoCom's evolution in the postwar decades.

1. U.S. Export Control Policy

In some regards, U.S. export control policy is projected on an international scale through multilateral control regimes like CoCom. Because the two are tied together in many ways, it is important to understand the origins of U.S. export control policy. U.S. policy provides a means of systematically interfering with or regulating trade and is generally enacted to protect national security, promote foreign policy, or prevent domestic economic shortages of critical commodities.[2] The origins of U.S. export control policy can be traced back to the 1917 Trading with the Enemies Act which predates the establishment of CoCom. This Act "authorized the President to prohibit any kind of economic activity with designated 'enemy' countries or nationals of those countries 'during the *time of war* or during any other period of national emergency declared by the President.'"[3]

2. National Defense Act of 1940

It was not until 1940, however, that the U.S. had any means of controlling the transfer of militarily significant items or technology in times of peace. With WWII underway in Europe, Congress passed the National Defense Act of 1940 which gave the President the authority to control the export of military equipment and munitions. With this Act, the Executive branch was given the power to impose export controls in times of war or peace. Congress renewed the Act several times during WWII and the years immediately thereafter with no major changes, but by 1949 the Cold War was in full swing and Congress decided to closely review the National Defense Act and revise it as required.

3. Export Control Act of 1949

The Export Control Act of 1949 was born out of this review and set its sights squarely on the growing threat posed by the Soviet Union and other Communist bloc nations. Following the devastation of WWII and the international turmoil that ensued, Congress recognized that the free trade of advanced technology and military items could subsequently be used against U.S. forces in later conflicts if not properly controlled. This was particularly relevant given the vast quantity of industrial and military technology and equipment being transferred under the auspices of the Marshall Plan and other post-WWII reconstruction programs.

The primary tenets of the Export Control Act are these:

> Sec.2. The Congress hereby declares that it is the policy of the United States to use export controls to the extent necessary (a) to protect the domestic economy from the excessive drain of scarce materials and to reduce the inflationary impact of abnormal demand; (b) to further the foreign policy of the United States and to aid in fulfilling its international responsibilities; and (c) to exercise the necessary vigilance over exports from the standpoint of their significance to the national security.[4]

4. 1949 CoCom Agreement

In addition to implementing the Export Control Act, two organizations were formed in 1949 to address the growing threat posed by the Soviet bloc. First, the regional treaty organization, NATO, helped to achieve the policy of containment politically and militarily. Second, the formation of CoCom served as a mechanism for economic containment of sorts. As many of the war ravaged nations struggled to rebuild, the U.S. provided extensive aid, including advanced industrial and military technologies, in order to counter the threat posed by the Soviet bloc. Recognizing the potential dangers of diversion or further transfer of

these advanced technologies to the USSR, the U.S., remaining NATO members (except Iceland), Australia and Japan formed CoCom.

5. 1950 - 1989

The years following WWII and the decade of the 1950s were characterized by a strong resolve of the allies (largely with the leadership of the U.S.) to contain the spread of Communism and the rise of the Soviet bloc. The Western European allies and Japan were further convinced of the need for export controls, especially on military equipment and high technologies, by the Berlin blockade and the onset of the Korean War. In the U.S., business interests deferred to the security concerns of strict, government imposed control policies with little protest. Mastanduno points out that in the U.S.:

> The process obviously left considerable discretion in the hands of executive officials...The case-by-case approach also provided incentives to executive officials to place items of questionable strategic utility under control. "Better safe than sorry" was the ruling principle.[5]

Meanwhile, the CoCom partners made great strides in recovering from the ravages of WWII and reestablished their industrial bases. By the end of the decade, CoCom's stringent policies remained in place, but the coming decade would bring increased pressure from recovered Western European nations and Japan to ease technology security controls.

In his 1961 State of the Union address, President Kennedy asked for "...more legal latitude in using economic relations as a means to build bridges of friendship between the U.S. and Eastern Europe."[6] Shortly after Kennedy created the Export Control Review Board, the Cuban missile crisis negated any moves to ease trade restrictions with the East. Subsequently, the U.S. expanded its control

lists via the 1962 Export Control Act, and CoCom took similar action, expanding to 161 different commodities by 1965.[7]

Interestingly, U.S. business interests as well as some of the CoCom nations, continued to seek more liberalized export controls through the late 1960s. In a recent report, one author adds that there was a perception that "When the threat to Europe no longer appeared imminent in the mid-1960s, the Europeans no longer took an interest in directly confronting the Soviet Union through a broad-based system of export controls."[8]

In 1969, the Export Control Act was up for renewal and pressure from the U.S. business community, a weaker U.S. economy and some divisions within targeted nations resulted in some effort by Congress to change the Act. First the name was changed to the "Export Administration Act" of 1969. Although largely a cosmetic change, the shift from "control" to "administration" reflected an easing of tensions between East and West. More importantly, there was an effort to bring the lengthy U.S. Control List more in line with CoCom's International List. This effort was unsuccessful, however, and the U.S. retained a more stringent export control policy than that of CoCom.

In the mid-1970s, the U.S. resisted another opportunity to liberalize export controls. Faced with mounting pressure from U.S. business interests to ease controls in a period of continued détente, the Department of Defense directed the Defense Science Board to conduct a comprehensive investigation of U.S. technology control policies. The resulting report, the "Bucy Report" (named after the chairman) was issued in 1976 and recommended fundamental changes in the way the U.S. controlled technology. The primary recommendation of the Bucy Report was that the U.S. should shift the focus of its controls from end products to

the technological design and manufacturing expertise associated with "critical technologies" and "keystone equipment."[9] Interestingly, the report also recommended that when dealing with the most critical technologies, "...the U.S. should not release know-how beyond its borders, and then depend on CoCom for absolute control."[10] As occurred with the Export Administration Act of 1969, however, U.S. technology controls changed little as a result of the Bucy Report.

In the absence of any real improvement in the red tape often ascribed to the U.S. export control system, foreign firms began to seek alternate suppliers. Additionally, commercial technological advances began approaching the sophistication of military efforts, and the concept of dual-use technology became more prevalent. U.S. firms were becoming unreliable due to excessive time required to obtain export licenses. Further complicating matters was the apparent inefficiency within the Department of Commerce as well as interagency tensions, primarily between the Departments of Commerce, State, and Defense. When U.S. firms tried to get initial indications of whether their export requests would be approved, they often received conflicting or slow results.

In contrast to the U.S. system in which a license request could take months to process, the Japanese, through their Ministry of International Trade and Industry (MITI), often responded within a few days.[11] Foreign firms often found other, less costly suppliers outside of the U.S. Many U.S. industries quickly learned that the political and economic price of national security through export controls was high. However, because the U.S. economy was still strong enough to overshadow this cost, U.S. technology security policy remained largely unchanged and continued to reflect the political and economic environment of the late 1940s.

Not surprisingly, the 1980s featured more tension between the U.S. and its CoCom partners. Western European partners continued to seek more liberal export controls against the Soviet Union and Eastern Europe. This was partly attributable to the proximity to and perceived trade opportunities with these proscribed nations. Tensions peaked in 1982 over the Siberian Gas Pipeline project. At the time, the U.S. was the world leader in drilling and oil extraction technologies. When it was announced that this project included a pipeline from Siberia to Western Europe, the U.S. tried to assert its authority to regulate exports of U.S.-owned subsidiaries in foreign countries, including its allies in Western Europe and Japan. These U.S. allies, and CoCom partners, protested and after lengthy discussions, the U.S. eventually backed down. This was just another example of the U.S. trying to conduct "economic warfare" against the USSR when the other CoCom partners generally preferred the concept of "strategic embargo."[12]

Although differences in the level of controls applied by CoCom members continued in the 1980s, the decade was marked by one significant change. In 1985, CoCom eased restrictions against the PRC and accorded the country special status. The "China Notes," an addendum to the CoCom agreement, allowed the PRC greater access to Western technology. However, exports exceeding a specified technological level were still controlled through CoCom.

6. 1989 - Present

During the late 1980s and early 1990s, a period that saw the collapse of the Soviet Union and the Warsaw Pact, CoCom controls still resembled their original form and the U.S. export control system remained burdensome. By 1991, however, dramatic changes in the global threat environment precipitated a high level CoCom meeting to address the future of the control regime. During this

meeting, the U.S. agreed to fundamental changes in CoCom, including an agreement to discard the old CoCom Lists and draft a new, narrower Core List of controlled items and technologies. The adoption of this Core List acknowledged the increased availability of dual-use technology and the realities of a global marketplace. It also marked a shift in emphasis from denial of technology to the former Soviet Union and Eastern European nations to the prevention of the spread of nuclear, biological, chemical and ballistic missile technology, especially among developing nations.

While the 1991 high level meeting focused on control lists, another high level meeting in June 1992 addressed the list of nations targeted by CoCom controls. The members agreed to "...increase access to previously controlled technology by the newly independent republics of the former Soviet Union and the countries of Eastern Europe by way of a new COCOM Cooperation Forum."[13] The creation of this Forum marked a major shift in CoCom's mission. Previously proscribed nations were given a means of becoming "deproscribed," and like the PRC in 1985, Poland, Hungary and Czechoslovakia received special status within CoCom.[14] Hungary was subsequently removed from the list of controlled destinations. This shift also indirectly recognized the opening of new and vast potential markets with enormous demands for Western technology. With these changes, CoCom took a large step toward formalizing the end of Cold War export control policies.

Today, as more emphasis is being placed on the threat posed by the proliferation of technology and equipment associated with ballistic missiles and weapons of mass destruction, CoCom continues its struggle to find a niche in the

new world order. President Bush highlighted this point in the most recent *National Security Strategy*:

> In the post-Cold War era, one of our most threatening national security challenges is the spread of weapons of mass destruction and the means to deliver them...While the disintegration of the Soviet bloc has led to relaxation of the forty-year-old East-West controls of the allied Coordinating Committee for Multilateral Export Controls (COCOM), dual-use technologies with military applications are becoming increasingly available throughout world markets.[15]

This transition is also being driven by renewed emphasis in the U.S., if not worldwide, on the significance of economic strength and competitiveness. While CoCom's mission continues to evolve, the need for multilateral control regimes remains vital to U.S. interests.

B. COCOM'S STRUCTURE AND OPERATION

1. Membership and Objectives

Established in 1949, the Coordinating Committee for Multilateral Export Controls, or "CoCom," is an export control regime held together by an informal agreement that operates on the basis of consensus. Its membership includes the U.S. and other NATO countries (except Iceland), Japan and Australia. Even in the absence of treaty status, CoCom has been quite influential in its 44 year history as a vehicle for coordinating and controlling international exports of sensitive technology to proscribed nations. It is organized around a framework of control lists, allowances for exceptions and national enforcement mechanisms.[16]

Born out of the settling dust of WWII, a large part of CoCom's initial appeal was drawn from the strength and security offered by a multilateral organization. CoCom provided international coordination and cooperation

unavailable or ineffective through earlier unilateral control efforts. Initially, CoCom's controls were aimed at a well-defined target, i.e., the Soviet Union and other Warsaw Treaty countries and the PRC. As the perceived threat of the Soviet bloc has evolved and subsequently diminished, especially in the eyes of CoCom's Western European partners, the list of proscribed nations has evolved as well. This evolution has been marked not so much by its expansion, but rather for the development of a process by which a nation can now be removed from the list. During CoCom's existence, the list of proscribed nations has included the Soviet Union, Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Vietnam, North Korea, Mongolia and the PRC.

2. Organizational Framework

One crucial element in the success of any organization is a clear definition of the organization's objectives. CoCom is organized around three central elements. First, CoCom's three control lists provide a means of coordinating export control policies of members. Second, CoCom provides for exceptions to these controls via a span of controls. Finally, CoCom provides a forum for dealing with differences between members' policies and enforcing controls. Representatives from member nations meet regularly to address such issues.

a. Control Lists

From the outset, it was clear that the majority of CoCom members favored a more liberal set of controls than those recommended by the U.S. In general, Western Europe and Japan sought to focus controls on military items and technology tied directly to those items. Eventually, a consensus was reached on three lists of items to be controlled by CoCom: the International Atomic Energy List, International Munitions List and International Industrial List (also known as

the "International List"). The first two lists are linked directly to nuclear and military technologies over which there is little disagreement on the need for control. Most differences and tensions among CoCom members arise over items on the International List, primarily because of the wide range of most products and technologies controlled there, including dual-use technologies. The International List is the focus of the discussion which follows in this chapter.

The International List covers three types of goods:

1. items designed specially or used principally for development, production, or utilization of arms, ammunition, or military systems;

2. items incorporating unique technological know-how, the acquisition of which might give significant direct assistance to the development and production of arms, ammunition, or military systems; and

3. items in which proscribed nations have a deficiency that hinders development and production of arms, ammunition, or military systems, a deficiency they are not likely to overcome within a reasonable period.[17]

Once an item was placed on the International List, removing it was no easy matter. Throughout CoCom's 44 year history, the list has expanded and contracted, generally reflecting relations between East and West at any given point in time. However, it was not until 1985 that a system of regular review of these lists was instituted. The net effect on the International List governing dual-use technologies was an overall increase in categories to 116 in 1990.[18] In 1991, the International List was pared down to a "Core List" of only ten categories in an effort to narrow the focus of CoCom controls. Today, the items on the Core List are reviewed continuously, with one quarter of the list under review at any given time.

3. Allowances for Exceptions

In order for an item or technology to be placed on the International List, there must be unanimous approval of CoCom members. Once on the list, however, not all items fall under the same set of restrictions. Instead, each item is placed along a span of control based on its technological sophistication and potential impact on the military capabilities of a proscribed nation. This span of control has five levels. At the high end of this scale are technologies deemed to be the most threatening or potentially damaging if spread beyond the control of CoCom members. These items or technologies are subject to a general embargo which requires unanimous support of CoCom members in order for an export request to be approved. At the lower end of the scale, control is achieved through administrative exception notes. Items controlled at this level are perceived to be less critical and may be exported to a non-CoCom nation as long as its level of sophistication falls below a set of defined technological capabilities. In this case, the export may be carried out at the "national discretion" of the member and requires neither CoCom approval nor advance notification.[19]

4. Enforcement Mechanisms

While the development and implementation of controls within CoCom seem well organized, provisions for enforcing these controls are lacking. Weekly meetings are now held at CoCom's headquarters in Paris to make licensing decisions, but there is no formal mechanism for enforcing CoCom's controls internationally. There is considerable truth to the idea that much of CoCom's strength and success comes from its ability to discourage or preempt the proliferation of sensitive technologies. One view holds that,

> Export control groups function as regimes *internally*, where they stress voluntary restraint based on self-interest and promotion of shared values. They act more like alliances *externally*, relying on pressure and duress.[20]

Once CoCom's controls are violated, ensuing enforcement measures seem inconsequential, if imposed at all. Frequently, violations result in no action by CoCom because of the difficulty in reaching consensus on multilateral enforcement. This occasionally leads to unilateral enforcement of controls, most often by the U.S., which is decidedly less effective.

a. National Legislation

Enforcement mechanisms are arguably the most sensitive and contentious issue surrounding CoCom, and generally fall into one of four types. The first of these is national legislation. Because there is no formal CoCom treaty, enforcement is often left to separate legislation enacted by each partner. In theory, this arrangement might work if each CoCom member adopted legislation with similar, if not identical, language and principles. In practice, however, the diverse cultures and legislative processes of each partner have instead resulted in an inconsistent range of national enforcement mechanisms.

b. Multilateral Cooperation

Multilateral cooperation efforts like the international import certification/delivery verification (IC/DV) system may also facilitate enforcement of CoCom controls. The IC/DV system is used by five CoCom members: Canada, France, Japan, the United Kingdom and Germany. Under IC/DV, the importer "...assumes the responsibility for preventing diversionary reexport to proscribed destinations."[21] Although IC/DV is not actually an enforcement system, it does facilitate cooperation between participating CoCom nations and by doing so may foster national enforcement measures when violations occur.

c. Third Country Controls

Another means of enforcement is through third country cooperation and is frequently used by the U.S. Known for its stringent technology security standards, the U.S. often tries to impose CoCom or CoCom-type controls on third party nations. Because there is no formal agreement in these cases, enforcement occurs at the discretion of the third party nation when a violation occurs. However, many of these nations have recognized the potential benefits of conforming to CoCom standards. Foremost among these benefits is access to advanced Western technologies. To date, "The governments of Austria, China, Finland, Hong Kong, India, Ireland, Singapore, South Korea, Sweden, Switzerland, Taiwan, and Yugoslavia have agreed to cooperate and assist in tracking CoCom-controlled goods and help with enforcement of CoCom restrictions."[22]

d. Common Standard

Finally, enforcement of controls is facilitated through the use of a "Common Standard." The principle of a Common Standard was first recognized and addressed in the U.S. via the Export Administration Act of 1985. In 1988, CoCom members followed the U.S. lead and agreed to end the requirement for a validated license for trade between CoCom member nations. Additionally, the U.S. passed legislation applying the principle of the Common Standard to non-CoCom nations as well. Under this legislation, much of the administrative burden associated with trade was waived if the goods were being exported to a country that had an effective control system in place which met the principles of the Common Standard. The Common Standard removed a great deal of administrative work for parties involved, provided an incentive to those nations that conformed to

CoCom standards, and was particularly important for the European Community which is working towards an integrated economy.

C. U.S. LEADERSHIP IN COCOM

Although CoCom is an agreement among equals, the U.S. has maintained the role of "unofficial leader" throughout the regime's existence. Initially, Western European nations and Japan generally acquiesced to U.S. desires. However, as the industrial base and technological capabilities of these nations grew, so too did the level of tension with the U.S. A large part of this tension was centered on the more stringent controls applied by the U.S. Since CoCom's inception, the U.S. has reserved the right to apply unilateral controls beyond the scope of the CoCom lists if it was deemed to be in the best interests of U.S. national security, primarily because the majority of advanced technology originated in the U.S. immediately following WWII and into the 1950s. This rigid, unilateral control system remains largely intact in the U.S. today.

The three most contentious aspects of these U.S. controls hinge on the assertion of the U.S. that it control all reexports of products and technology originating in the U.S., exports of foreign-made items with U.S. parts based on U.S. technology, and exports of non-U.S. items by U.S.-owned subsidiaries in foreign countries.[23] Many CoCom members perceive these unilateral controls as redundant and perhaps even insulting because they already adhere to the IC/DV system described earlier or to other forms of self-enforcement. Rigid, unilateral U.S. controls potentially breakdown the vital trust that must exist between CoCom partners if a multilateral control regime is to succeed.

In addition to increasing tension among CoCom members, the government-imposed higher standards of export control applied to U.S. exporters decrease the ability of American business to compete in an international marketplace. Specific disadvantages when operating with or competing against other CoCom members include: (a) excessive processing time for licensing, (b) less predictability with regard to the outcome of the request for license, (c) unilateral control of 27 additional categories of dual use technologies above CoCom's International List, and (d) reexport requirements.[24] Additionally, when attempting to compete against non-CoCom nations, U.S. exporters often must deal with nations that do not have any system of national security export controls. Foreign firms are increasingly able to obtain required technology on the open market from non-U.S. suppliers. As a result, many U.S. industries are at a disadvantage when trying to compete in the international marketplace.

D. CONCERNS FOR THE FUTURE

There are lessons to be learned from the CoCom experience that may increase the likelihood of success for contemporary and future multilateral regimes like the Missile Technology Control Regime (MTCR). Three questions must be fully addressed by these regimes if they are to succeed. First, what is the primary mission or rationale for existence? Second, who is the "enemy" or target of controls? Finally, what action will be taken if a violation occurs and how will it be enforced? These questions are *not* easily answered. This is a source of weakness in CoCom today. Its mission is evolving in light of a dramatically changed political and economic environment, and consensus among the most highly industrialized nations of the world seems more difficult to achieve in these

times of increased economic globalization and competitiveness, proliferation of dual-use technology, and decreased threat perception in the post-Cold War era.

Has CoCom outlived its Cold War era mandate? The answer appears to be no, but lingering doubts remain about its role in a dramatically changed world. What is clear, however, is that the long-term success of these multilateral control regimes like CoCom depends on the consensus of its members and their adherence to a well-defined mission. Further, violations of established controls must be enforced consistently, and the means of enforcement must be established ahead of time and imposed multilaterally. Realistically, export controls will never be able to *deny* access to advanced technology. They merely treat the symptoms of a growing demand. The underlying cause of this demand, especially when it involves weapons of mass destruction and the technology to deliver them, must also be addressed if long term solutions to contemporary proliferation concerns are to be found. Whatever the outcome of this evolution, it will impact the future shape and success of U.S. technology security policy.

NOTES

[1] John H. Henshaw, *The Origins of COCOM: Lessons for Contemporary Proliferation Control Regimes* (Washington, D.C.: The Henry L. Stimson Center, 1993), p. 10.

[2] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 94.

[3] Henshaw, *op. cit.*, p. 10, (italics added).

[4] Export Control Act of 1949, Chapter 11--Public Law 11.

[5] Michael Mastanduno, "The United States Defiant," *Daedalus*, Fall 1991, p. 95.

[6] Richard J. Ellings, *Embargoes and World Power: Lessons from American Foreign Policy* (Boulder, CO: Westview Press, 1985), p. 87.

[7] *Ibid.*, p. 88.

[8] Henshaw, *op. cit.*, p. 3.

[9] Mastanduno, *op. cit.*, p. 102.

[10] *Ibid.*

[11] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 113.

[12] Henshaw, *op. cit.*, p. 19. Henshaw describes a strategic embargo as one that permits most exports, except those that contribute significantly to an adversary's military capability.

[13] *Ibid.*, p. 3.

[14] *Ibid.*

[15] *National Security Strategy of the United States, op. cit.*, p. 16.

[16] Henshaw, *op. cit.*, p. 5.

[17] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 97.

[18] Aaron Karp, "Controlling Weapons Proliferation: The Role of Export Controls," *The Journal of Strategic Studies*, March 1993, p. 24.

[19] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 98.

[20] Karp, *op. cit.*, p. 40.

[21] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 99.

[22] Henshaw, *op. cit.*, p. 7.

[23] *Balancing The National Interest: U.S. National Security Export Controls and Global Economic Competition, op. cit.*, p. 96.

[24] *Ibid.*, p. 123.

IV. TECHNOLOGY SECURITY AND ICBMS: THE EMERGENCE OF THE MTCR

This chapter will address the role of the Missile Technology Control Regime (MTCR) and its link to U.S. technology security policy. Organized in the late 1980s, the MTCR is a relatively young regime, but has already become at least as important as CoCom as a tool for achieving U.S. technology security policy goals on a global scale. CoCom has narrowed the focus of its controls in the 1990s to better address proliferation concerns in the political, economic and military realities of the emerging world order. This is illustrated by CoCom's reduced restrictions on trade of dual-use items with the East, the establishment of regular review of CoCom controlled technologies and products, and the development of a significantly shorter "Core List" of dual-use, industrial technologies in 1991.[1]

Meanwhile, the MTCR goes to the heart of contemporary security issues today -- the proliferation of ballistic missile technology used to deliver potentially destabilizing weapons of mass destruction. By targeting ballistic missile technology, the MTCR complements the efforts of other arms and technology control regimes like the Non-Proliferation Treaty, the Biological Weapons Convention and the Chemical Weapons Convention by denying access to means of delivering those payloads rapidly and over long distances. While the proliferation of nuclear, biological, and chemical weapons of mass destruction is an equally serious threat to global security, this chapter will focus on the MTCR and its objectives.

The technology associated with ballistic missiles is more widely available than ever, thus increasing concerns of proliferation. As of 1992,

> ...28 countries...possess operational or near-operational ballistic missiles with flight ranges greater than 30 km, 23 have the capability to produce them, 5 have been supplying missiles to others, and 18 have ongoing indigenous capability that could lead to a supplier role in the future.[2]

In a sense, ballistic missiles have become the weapon of choice for an increasing number of developing nations. This is partly true because missile-related technology is more easily obtained and less expensive than the technology and materials associated with nuclear weapons, and can provide a source of prestige and leverage to nations acquiring this technology.[3] Further, some of the key technologies required for ballistic missiles are dual-use and can be obtained under the guise of legitimate scientific or technical programs. For example, a nation seeking rocket booster technology for developing a ballistic missile capability may claim that the technology will be used for space launch vehicles. This is one of the difficult challenges facing U.S. technology security efforts and the MTCR today.

A. SHIFTING FOCUS OF TECHNOLOGY SECURITY

As discussed in chapter III, U.S. technology security policy took the shape of economic warfare during the Cold War and was aimed squarely at Soviet bloc nations and the PRC. During this period, U.S. export controls were imposed against a wide-range of items and technologies that went far beyond those linked directly to military use. Internationally, the U.S. achieved many of its policy goals through CoCom. However, beginning in the late 1980s, the focus of both U.S. and

CoCom controls began a major transition in response to a rapidly changing global security environment. The key elements of this environment are these:

1. Collapse of USSR and Warsaw Pact as military threats
2. End of the East-West rivalry
3. Rise of Japan and Germany as economic powers
4. Resurgence of ethnic and religious tensions
5. New awareness of natural resources and environment
6. Rise of regional powers
7. Increasing subnational conflict.[4]

With these changes, the lines between East and West, once so clear and seemingly irreversible, blurred and so too did the need for the broad controls and limited aim of multilateral export control regimes like CoCom. This emerging environment introduced new threats and an increased demand for ballistic missile technology. The MTCR was developed to fill this gap and has become an integral part of contemporary technology security policy.

B. THE MISSILE TECHNOLOGY CONTROL REGIME

1. Origins

In the early 1980s, there was growing concern in Washington that U.S. ballistic missile technology was not adequately controlled by existing regulations. In fact, there were indications that "...U.S. missile technology was being acquired through commercial channels."[5] Existing technology control regimes like CoCom controlled some dual-use, missile-related technologies. However, CoCom's purview extended principally to East bloc nations and the PRC and did not address growing demand from developing nations. In an effort to address this perceived gap, President Ronald Reagan approved National Security Decision Directive 70 in 1982 to investigate means of countering the proliferation of ballistic missiles

and associated technologies.[6] Discussions between the Group of Seven (G-7) nations (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States) ensued and ultimately led to the formation of the Missile Technology Control Regime in 1987.

2. Organization

Like CoCom, the MTCR is based on an informal agreement among adherents and does not hold formal treaty status. It establishes "...guidelines and procedures that missile suppliers voluntarily follow to regulate their exports of offensive missiles and key supporting technologies or missile subcomponents."[7] Central to its mission are three tenets; to restrict the transfer of missile technology, to address the issue publicly, and to increase regional stability.[8]

In order to join the MTCR, a nation must sign a declaration stating that it:

> ...will not support the development of nuclear weapons delivery systems other than manned aircraft, including ballistic and cruise missiles, space launch vehicles, sounding rockets, target and reconnaissance drones, and other non-piloted vehicles which are capable of delivering a 500-kilogram payload a distance of 300 kilometers.[9]

The export controls of these technologies are imposed on two levels; first, by denying the transfer of the most sensitive equipment and technologies, and second by requiring export licenses for the transfer of other sensitive technologies. MTCR members meet biannually to review the list of controlled technologies and guidelines for achieving control, and to provide an informal network through which to pass relevant information and address related issues.

3. Membership

Today the MTCR includes 23 member nations as well as at least one informal member.[10] Although the PRC agreed to follow the provisions of the

MTCR in 1992, its recent transfer of missile technology to Pakistan suggests that its adherence to MTCR guidelines is questionable.[11] North Korea and the PRC, two of the largest potential suppliers of missile-related technology, are perhaps most problematic to this regime because of their indigenous programs and apparent willingness to sell their wares.[12] Russia had also been a major supplier of missile technology to nations offering hard currency, but its recent move to join the MTCR and its willingness to modify or cancel deals that would have violated MTCR provisions is encouraging news for non-proliferation advocates.

4. Strengths

Even with only an informal arrangement, the MTCR is an effective tool for achieving the goals of non-proliferation interests in today's complex security environment. One of its principal strengths is the narrow focus of its mission, that is, control of ballistic missile technology. Although this narrow focus does not guarantee unanimous agreement in all cases, it certainly facilitates consensus among members. Further, the MTCR's informal arrangement might, in itself, be considered a strength. Some nations might consider formal treaty status too restrictive, whereas the MTCR leaves room for negotiation and flexibility in enforcement mechanisms (although some would place this argument in the "Weaknesses" discussion below). Like CoCom, much of this regime's strength is drawn from delaying or discouraging the transfer of missile-related technologies by applying diplomatic pressure or duress, or by invoking a sense of common interests.[13] Finally, there is a sense of shared values or common beliefs among MTCR members that furthers the goals of non-proliferation and technology control. However, many nations do not share these beliefs and instead see the

possession of ballistic missiles as a legitimate source of military, political, or economic leverage.[14]

5. Weaknesses

Although the MTCR enhances both U.S. and global security policies, inherent organizational weaknesses detract from its credibility and threaten its long term ability to succeed. Ironically, some of the MTCR's strengths addressed earlier can also be perceived as potential weaknesses. One such weakness is the lack of formal treaty status. In this informal arrangement, enforcement is left to independent legislation by each member, and the result is inconsistency in the enforcement of MTCR controls and in the application of punitive measures.[15] It was originally envisioned that adherents would "modify relevant legislation to bring their laws into conformity with the new guidelines;" however, this was not done in the U.S. until 1990, and most of the remaining members still have not taken this action.[16]

Further, the informal arrangement renders success dependent not only on the strength of national legislation implemented by MTCR adherents, but also on their willingness to act as a group in the face of violations. Such multilateral action is made even more difficult because the MTCR has no provisions for verification, "...relying instead on disclosure of information from government to government."[17] Fundamental differences in economic and political objectives of MTCR members may also preclude multilateral application of sanctions and hamper long term success.[18] Finally, the arguably defiant position of both the PRC and North Korea vis-a-vis the MTCR leaves a large supply of missile-related technology uncontrolled and further weakens the position of the MTCR.

6. Case Studies

The following case studies are drawn from recent reports and illustrate the role and relevance of the MTCR today. India is an example of a developing country seeking advanced, dual-use technology from industrial powers in order to expand indigenous "scientific" programs. Russia appears to be willing to sell advanced technology to gain desperately needed hard currency. The instability of the Russian economy increases the likelihood of such sales and has resulted in a concerted effort by other industrialized nations to bring Russia into the non-proliferation fold. Finally, the PRC has garnered considerable press coverage recently for its apparent willingness to sell missile-related technology, despite its promise to adhere to the MTCR. Each of these cases highlights some of the MTCR's strengths and weakness discussed earlier, and points to the complexity of controlling the proliferation of dual-use, missile related technology.

a. India

The failed transfer of a supercomputer between Cray Research Corporation of the U.S. and the Indian Institute of Science in December 1992 underscores the potential damage to U.S. business interests and to technology counterproliferation efforts caused by U.S. governmental in-fighting and technology security controls. Cray built the $10 million supercomputer for India in 1990, but two years of "...stubborn foot dragging by arms control specialists, egged on by nonproliferation forces outside of government, tied up the licensing process and in the end caused India to pull out of the deal."[19] Although India claimed the Cray supercomputer would be used for space vehicle development, proliferation foes feared the it would be used to develop nuclear weapons and the missiles to deliver them. Frustrated by U.S. indecision, India eventually applied

the $10 million to an indigenous program and developed their own supercomputer, the Param, that surpassed the technological capabilities of the Cray computer and reportedly costs only $350,000.[20] In the end, Cray was left with a $10 million machine that it could not sell, and India began exporting the Param. As the International Vice President of the U.S. Chamber of Commerce put it: "This is a horror story that hurts U.S. commercial interests and its nonproliferation concerns as well."[21]

b. Russia

Concerns over military-related technology transfers are particularly germane in the wake of the Cold War and the break-up of the former Soviet Union. A *Washington Post* headline aptly described the situation: "Nuclear Goods Traded In Post-Soviet Bazaar: Export Controls Lacking on Russia's Rim." The technologically advanced and vast nuclear and missile-related arsenals held by the Independent States of the former Soviet Union may seem inviting to developing nations seeking such technology. While briefing the Joint Economic Committee recently, one senior U.S. intelligence official stated, "Russia and Ukraine increasingly are authorizing export of sensitive, dual-use space-launch, chemical and biological technologies as they attempt to save their weapons facilities and prevent unemployment."[22] Hence, the U.S. and other industrialized nations are aggressively trying to bring these states, especially Russia and the Ukraine, into the non-proliferation fold, often through the use of technology security policy.

The urgency and delicacy of such efforts were recently underscored when Libya attempted to obtain materials from Russia for its chemical weapons and ballistic missile programs. In June of 1993, President Clinton sent President Yeltsin a letter warning that Russian companies faced economic sanctions if such

transfers occurred.[23] At the same time, the Clinton Administration was trying to gather congressional support for a $2.5 billion economic aid package for Russia. Although the sale was thwarted by indirect U.S. interdiction under the auspices of the MTCR and United Nations, this incident illustrates Russia's willingness to overlook the proliferation of military-related technology if the payoff, much needed hard currency, is large enough.[24]

In yet another example of technology security policy achieved through multilateral control regimes, the U.S. stepped in to stop a deal that would have sent advanced Russian rocket booster engines to India in violation of the MTCR. India claimed that the dual-use engines would be used in a commercial satellite-launching venture, but others feared that they would instead be used in an Indian ballistic missile program. The U.S. had been pressuring both Russia and India since mid-1992 to cancel the deal, and even "...announced sanctions against the state-owned enterprises involved...."[25] Under continuing pressure from the U.S., Russia officially canceled the sale in July 1993 on the day that the earlier announced sanctions were to go into effect. Negotiations between Russia and the U.S. yielded some additional concessions. First, the U.S. would include Russia in future potentially profitable joint space projects. Additionally, the U.S. conceded approval for the sale of "...some Russian engines, but not the related technology, to India."[26] Perhaps the most important concession was President Boris Yeltsin's agreement to sign the MTCR. This agreement was clearly a major achievement in the Clinton Administration's efforts to control arms proliferation.

c. PRC

The PRC has recently taken center stage in the ongoing debate over U.S. technology security policy in the 1990s. Two applications for export licenses

in late-1992 illustrate one dimension of the ongoing power struggles between U.S. government entities in matters concerning the control of dual-use, high-technology. The first one involved Cray Research Corporation again, this time seeking approval for the sale of a supercomputer to the PRC, ostensibly for the purpose of weather research. The sale was backed by the Departments of State and Commerce; however, the Defense Department's Defense Technology Security Administration (DTSA) and the Arms Control and Disarmament Agency opposed the sale, fearing that the supercomputer would instead be used for ballistic missile targeting.[27]

In the second incident, Allied-Signal Corporation submitted an application to sell the PRC the right to manufacture a turbofan engine for use in a jet trainer. As in the Cray request, DTSA and the Arms Control Disarmament Agency opposed the sale, while Commerce and State backed it. DTSA's concerns focused on the potential use of the engine in the Chinese cruise missile program, but Allied-Signal claimed that the engine used 1970s technology and was "'...too big, too heavy and too slow' for a missile."[28] Interestingly, the Allied-Signal spokesman also stated that the PRC might also export the trainer to Pakistan.

More recently, the PRC has been in the headlines for the reported transfer of ballistic missile technology to Pakistan. U.S. claims of Chinese sales of missile technology to Pakistan first surfaced in 1991. At that time, the Bush Administration placed sanctions on two Chinese companies and on one Pakistani government entity for violating MTCR provisions and, more specifically, 1990 U.S. legislation concerning missile sales. The sanctions were lifted in 1992 when the PRC agreed to abide by the MTCR provisions.[29]

The same charges were leveled again in 1993 and were considered serious enough for the Clinton Administration to impose more sanctions against the Chinese. However, the "State Department...decided not to impose the strictest measure of economic sanctions...."[30] Instead, the trade sanctions banned the export of U.S. high-technology goods to the PRC for two years and are expected to amount to $1 billion in lost sales, but will not impact U.S. imports from the PRC.[31] Interestingly, U.S. intelligence agencies, legislators, and the president were aware of the charges prior to the June 1993 reconsideration of the PRC's trade status, but the sanctions were not imposed until after the decision to extend for one year the most favored nation (MFN) trade status for the PRC. The MFN extension came with conditions for future extensions, including a halt in arms proliferation, as agreed upon by the Administration and some legislators.[32] However, the PRC had previously agreed to respect the provisions of the MTCR in order to receive an extension of MFN status in June 1992.[33]

These incidents exemplify the complex and delicate nature of the technology security policy issue today and the precarious balance that must be maintained between political, military and economic interests. This balance is perhaps most precarious in the cases of Russia and the PRC. The stability of Russia remains shaky following the break-up of the Soviet Union, and the U.S. government is trying to provide economic aid and political support to bolster the fledgling government of Boris Yeltsin. Yet U.S. law mandates strict economic sanctions against nations that contribute to the proliferation of missile technology, even when, like Russia, that nation is desperate for hard currency.

The U.S. faces a different dilemma with the PRC which offers a vast potential market for U.S. commercial ventures struggling to survive in a sluggish

domestic economy and to compete in the global marketplace. In this case, harsh U.S. sanctions imposed in the name of national and global security can potentially counter the administration's efforts to revitalize U.S. industry. Still, nonproliferation efforts remain at or near the top of the Clinton Administration's agenda which continues to attempt to balance commercial and security concerns in the new global economy.

C. EMERGING TECHNOLOGY SECURITY POLICY

The proliferation of dual-use, high-technology is an extremely complex problem for which there are no easy answers. This threat also requires that some difficult decisions be made by the nations that possess these technologies. One thing is evident based on the discussions of CoCom and the MTCR: the U.S. cannot stop the spread of advanced technology in the emerging global economy by imposing and enforcing stringent export control policies unilaterally. Although such action may keep the U.S. on the moral high-ground, it may also place U.S. commercial interests at an economic disadvantage in the international marketplace. Instead, the U.S. must continue to play a leadership role in multilateral regimes like CoCom and the MTCR. Unilateral action must remain an option when vital interests of the U.S. are at stake. However, the long-term success of these regimes in the new world order will depend upon agreement among adherents on clearly defined goals and multilateral enforcement of organizational guidelines.

The discussion of two important multilateral export control regimes, CoCom and the MTCR, in chapters III and IV gives some perspective on U.S. implementation of technology security policy during and immediately following the Cold War. These chapters also outlined the complexities of the emerging new

world order, most notably, the redefinition of national security to include and even emphasize economic security.[34] The case studies addressed earlier in this chapter brought the discussion to the present and offer a glimpse into the Clinton Administration's treatment of technology security issues in the emerging security environment. This Administration will continue to develop and fine-tune a technology security policy that will guide the U.S. through the remainder of this century and into the next, attempting to balance counterproliferation priorities with economic objectives.

Chapter V will more closely examine the current Administration's policy on technology security. One indication of the shape and priorities of their policy is the inclusion of $40 million in the FY 1994 defense budget request for "counterproliferation measures such as export control, technology security and research."[35] Treatment of this appropriation by the defense committees of the Congress during the budget process will likely reveal important information concerning post-Cold War technology security policy and the emphasis to be placed on multilateral technology control regimes like CoCom and the MTCR. The development of this appropriation illustrates the major changes in technology security policy during the transition from the Cold War regime. It will also reveal important differences among the decision-making bodies involved in this policy area, including the Administration and relevant congressional committees.

NOTES

[1] Mitchel B. Wallerstein, "Controlling Dual-Use Technologies in the New World Order," *Issues in Science and Technology*, Summer 1991, pp. 74-5 and Aaron Karp, *op. cit.*, p. 24.

[2] *Ballistic Missile Proliferation: An Emerging Threat 1992*, (Arlington, VA: Systems Planning Corporation, 1992), p. 22.

[3] *Ibid.*, p. iii.

[4] *Ibid.*, p. 31.

[5] Henshaw, *op. cit.*, p. 23.

[6] Janne E. Nolan, *Trappings of Power: Ballistic Missiles in the Third World* (Washington, D.C.: The Brookings Institution, 1991), p. 28.

[7] *Ballistic Missile Proliferation: An Emerging Threat 1992, op. cit.*, p. iii.

[8] *Ibid.*

[9] Henshaw, *op. cit.*, p. 24.

[10] MTCR membership includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Russia, Spain, Sweden, Switzerland, the United Kingdom and the United States. Russia, the newest member, agreed to join the MTCR in July 1993 (Daniel Sneider, "Russian Move To Join MTCR Stirs Protest," *Defense News*, July 26-August 1, 1993, p. 6). The PRC agreed to adhere to MTCR provisions in March 1992, but is not an official signatory (Lally Weymouth, "Chinese Take-Out," *Washington Post*, August 12, 1993, p. 27).

[11] Ann Devroy and R. Jeffrey Smith, "U.S. Evidence 'Suggests' China Breaks Arms Pact," *The Washington Post*, May 18, 1993, p. 9.

[12] *Ballistic Missile Proliferation: An Emerging Threat 1992, op. cit.*, p. 22.

[13] Karp, *op. cit.*, p. 40.

[14] Joseph S. Nye, "Arms Control After the Cold War," *Foreign Affairs*, Winter 1989/90, p. 60.

[15] *Ballistic Missile Proliferation: An Emerging Threat 1992, op. cit.*, p. 65.

[16] Henshaw, *op. cit.*, p. 30.

[17] *Ballistic Missile Proliferation: An Emerging Threat 1992, op. cit.*, p. 65.

[18] *Ibid.*

[19] Stuart Auerbach, "Cray Deal a Casualty of Atomic Weapon Fears," *Washington Post*, March 19, 1993, p. C6.

[20] *Ibid.*

[21] *Ibid.*

[22] Michael R. Gordon, "U.S. Warns Russia on Missile-Fuel Sales," *The New York Times*, June 23, 1993, p. 18.

[23] *Ibid.*

[24] R. Jeffrey Smith, "LIbyan Efforts to Get Weapons Materials Foiled, U.S. Says," *Washington Post*, June 24, 1993, p. 32.

[25] Fred Hiatt, "Russian Rocket Sale Strains U.S. Ties," *Washington Post*, June 24, 1993, p. 29.

[26] Elaine Sciolino, "Russia Is Halting Arms-Linked Sale," *The New York Times*, July 17, 1993, p. 4.

[27] John J. Fialka, "Sale of Technology to China Becomes Center of Debate Over Weapon Exports," *The Wall Street Journal*, December 21, 1992, p. B5.

[28] *Ibid.*

[29] Lally Weymouth, *op. cit.*, p. 27.

[30] Steven A. Holmes, "U.S. Determines China Violated Pact on Missiles," *The New York Times*, August 25, 1993, p. A1.

[31] *Ibid.*

[32] John J. Fialka, *op. cit.*, p. B5.

[33] Elaine Sciolino, "U.S. May Threaten China With Sanctions for Reported Arms Sales," *The New York Times*, July 20, 1993, p. A3.

[34] C. Fred Bergsten, "The World Economy After the Cold War," *Foreign Affairs*, Summer 1990, p. 96.

[35] Barton Gellman, "Aspin Sees No Need to Alter Defense Cuts Set for 1994," *The Washington Post*, March 26, 1993, p. A17.

V. THE CLINTON TECHNOLOGY SECURITY PROPOSAL

Previous chapters presented an historical perspective on U.S. technology security policy and introduced some of the major characteristics of the emerging global security environment that have brought about a shift in the focus of this policy. This chapter will narrow its focus to examine the treatment of the technology security issue by the Clinton Administration during its first year in office. The Administration's position is derived from several sources. The FY 1994 defense budget request gave some indication of the President's stance on the topic of technology controls. President Clinton signalled a shift in technology security policy in the recently unveiled national export strategy. The upcoming release of Presidential Review Directive 8 is likely to provide additional clues to the final shape of this policy. Finally, the comments and actions of executive branch members and government representatives during the early months of this Administration's tenure provide further insight into its policy goals.

The art of making and shaping policy in the U.S. government is a complex process that can take many paths. In the early stages of this process, policy is shaped and refined through a process of trial and error. During this time, the actions and statements made by governmental agencies and administration members set the policy on the desired course. This adds important focus to the issues surrounding the policy, and ultimately, to the policy itself. Policy is also shaped by the budget process and the many iterations inherent to that process. Because of the complexity of the policy process, analysis of a specific policy requires close scrutiny of many sources to develop a coherent result. What

follows is a review and analysis of the treatment of technology security policy by the Clinton Administration during its first nine months in office.

A. ADMINISTRATION PRIORITIES – SETTING THE COURSE

1. The Department of Defense

Perhaps the strongest treatment of technology security thus far in the Clinton Administration has come out of the Department of Defense. DoD's recently completed reorganization and "Bottom-Up Review" of its roles and missions in the new world order have focused attention on new and emerging threats. Featured prominently among these threats is proliferation of weapons of mass destruction, the associated technologies and delivery systems.[1] DoD's emphasis on the proliferation problem, including a spending initiative, highlights the importance of counterproliferation and export controls.

a. The Defense Budget Request

Earlier this year, Secretary of Defense Les Aspin and Secretary of State Warren Christopher set the course for the debate over and evolution of President Clinton's technology security policy. While discussing some of the spending initiatives in the FY 1994 defense budget proposal during a March 1993 address, Secretary Aspin outlined four emerging threats to American security.[2] Among these priorities was the proliferation of nuclear weapons. A related spending initiative, if approved, would earmark $40 million within the defense budget for "...counterproliferation measures, such as export control, technology security, and research."[3] This early identification of a separate line item for counterproliferation efforts within the defense budget was a clear indication of the importance of the technology security issue within the Administration.

In October 1993, Secretary Aspin provided additional details of the purpose and shape of the Administration's $40.5 million counterproliferation initiative. Designed to complement and strengthen existing U.S. nonproliferation efforts, this counterproliferation initiative would be carried out in three phases; (1) foster an international environment that discourages proliferation, (2) determine specific capabilities needed to counter proliferation and devise options to address any deficiencies in this area, and (3) improve the ability to deter the use of weapons of mass destruction, develop doctrine and tactics for dealing with them, and incorporate the threat posed by these weapons into U.S. planning.[4] Secretary Aspin further described this initiative as a multifaceted, multiyear effort, not all activities of which are covered within the FY 1994 $40.5 million budget request.

Following release of the President's defense budget request, confusion and delays caused by Defense Department restructuring and the Administration's confirmation process may have weakened the support for the technology security spending initiative. Initially, the Administration was slow to fill some high level civilian positions within the Department of Defense.[5] According to the Congressional Research Service (CRS), a nonpartisan research arm of Congress, presidents since the early 1960s, had, on average, tapped more than 80 percent of their top Pentagon officials by July 4, while President Clinton had filled only 30 percent of those same positions.[6]

Further complicating matters, the new defense hierarchy was in the throes of a reorganization move by Secretary Aspin, ostensibly to strengthen its involvement in foreign and domestic policy previously controlled by the State Department.[7] This reorganization move consolidated more than two dozen undersecretary positions into only four and provided new titles to some assistant

secretary positions, thus reflecting a shift in DoD's emphasis within the Clinton Administration.[8] The majority of these changes occurred in the Defense Policy branch and included the addition of six new Assistant Secretary positions: Regional Security, Economic and Environmental Security, Democracy and Human Rights, Nuclear Security and Counterproliferation, Strategy and Resources, and Plans and Policy.[9]

Although the defense request for $40 million in technology security funds are not linked to a single office within DoD, continued delays in the confirmation of senior DoD officials, notably Morton H. Halperin as the Assistant Secretary of Defense for Democracy and Human Rights, may further weaken the support for defense spending initiatives during the congressional budget process. The nomination of Mr. Halperin for this position was somewhat controversial and has drawn the ire of some Senate conservatives.[10] Senator John Warner (R-Va.), a senior member of the Senate Armed Services Committee which has jurisdiction over nominations for Pentagon appointments, went as far as to state that the president and Secretary of Defense should "...carefully reconsider this nomination."[11]

Regardless of the Administration's priority on technology security and nonproliferation, political disputes between the executive and legislative branches such as the one over the nomination of Mr. Halperin can potentially derail defense spending initiatives and delay implementation of the Administration's policy.

Although the confirmation process is traditionally time-consuming, the DoD reorganization effort caused additional confusion within the Department. This confusion was particularly disruptive from a policy-making standpoint because it occurred at a time when the Administration was developing its much

awaited budget proposal. The defense portion of the Administration's FY 1994 budget request received additional scrutiny because it came on the heels not only of a new administration, but it also carried the additional burden of the public's demand for a peace dividend. So it is not surprising that the $40 million spending initiative for counterproliferation within the FY 1994 DoD budget request would require a strong justification and support structure to survive the congressional budget process intact.

b. Other Policy Priorities

Deputy Secretary of Defense William Perry provided additional insight into DoD's stance on the issues of technology transfer and counterproliferation during a May 1993 address. In it, Perry stated that "The U.S. government should provide limited assistance to industry in making foreign sales as long as arms proliferation concerns are met and regional tensions are not aggravated."[12] However, DoD's overall role in the shaping of export control policy appears to lag that of State and Commerce.[13] Assistant Secretary of Defense for Nuclear Security and Counterproliferation Ashton Carter seemed to seek an increased role for DoD during his May 1993 confirmation hearings before the Senate Armed Services Committee. During these hearings, he told committee members that as "Arms control and proliferation control are becoming one. . .[the Pentagon] should be a more active player in formulating arms control and export control policies aimed at preventing proliferation."[14] These comments as well as DoD's new organizational structure highlight the priorities of the Defense Department under the Clinton Administration and emphasize the larger role it seeks in technology security issues.

2. Department of State

The Administration's technology security policy was further clarified by Secretary of State Christopher during a June 1993 interview. Secretary Christopher stated that the Clinton Administration would "...shift its overseas focus to controlling the global spread of arms," and went as far as to place the nonproliferation of weapons of mass destruction and the missiles that deliver them at the top of President Clinton's foreign policy agenda.[15] He outlined a strategy for addressing this issue that included:

> ...tougher enforcement of a host of Cold War-era statutes that control the worldwide shipment of items that could be used in development of weapons of mass destruction, as well as other laws that impose various sanctions on companies and countries that violate them. The United States has greater freedom to enforce the laws strictly now that it no longer has to weigh the impact on competition with the former Soviet Union.[16]

These comments suggest that the Clinton Administration will strictly enforce U.S. export controls and the provisions of existing multilateral export control regimes like CoCom and the MTCR, as well as nonproliferation treaties and conventions like the Nonproliferation Treaty, Biological Warfare Convention and the Chemical Warfare Convention. They also indicate the seriousness with which the Administration takes the technology security issue.

In related policy action, Secretary Christopher addressed the future of the U.S. Arms Control and Disarmament Agency (ACDA) and resolved a dispute between that agency and the State Department. The agency had been involved in what was described as a bureaucratic tug-of-war with the State Department that hampered the Administration's development of a coherent strategy concerning nonproliferation. State Department officials had planned to absorb ACDA, placing the agency within the realm of the department's undersecretary for

international security affairs in an effort to "...integrate arms control and nonproliferation with other foreign policy goals."[17] Christopher's assurance that the ACDA would remain independent is consonant with the Administration's position on the nonproliferation issue.[18] Christopher's action seemed to indicate that the ACDA mission would be better accomplished independent of other foreign policy aims.

3. Department of Commerce

In this era of competition for economic strongholds in foreign markets, the Department of Commerce has taken steps to facilitate U.S. commercial endeavors by seeking to ease export controls. One large step in this direction was achieved in September 1993 when the president announced a new national export plan aimed at increasing U.S. exports of goods and services.[19] At first glance, such efforts might seem to counter the Administration's emphasis on technology security and counterproliferation; however, the easing of export controls on dual-use technology is instead part of an overall government approach to balance non-proliferation requirements and commercial needs.[20] The Commerce Department, led by Secretary of Commerce Ronald Brown, appears to be bringing Cold War-era export controls up-to-date and refocusing these controls on U.S. technologies that are unique, rather than on dual-use items that are available from other nations. This new approach to counterproliferation provides incentives to developing nations in the form of greater access to more advanced computer, telecommunications and satellite technology in return for halting the spread of weapons of mass destruction.

In one ongoing case, the Commerce Department is pushing for eased controls on the export of computers and to allow foreign sales of more capable

supercomputers.[21] This comes at a time when many in the computer industry are claiming that U.S. controls exceed those of their foreign competitors. In the past, such efforts have often put the Commerce Department at odds with the State Department which is generally more conservative where dual-use advanced computer technology is concerned, fearing that such technology will be used in the development of nuclear or ballistic missile programs.[22] However, in this case, State and Commerce joined forces to overcome "traditional opposition from lower-level military and intelligence officials."[23] These new, relaxed export controls are expected to immediately benefit U.S. computer sales to Western Europe and other U.S. allies, and the Administration is reportedly making plans to get the new computer limits adopted by CoCom.[24]

In another recent show of support for U.S. industry, Secretary Brown made a highly unusual appearance at the 1993 Paris Air Show to promote the sale of commercial and military aircraft by U.S. defense companies.[25] The Department of Commerce already plays a large role in formulating and influencing technology security policy, and there is little doubt that it will continue to advocate more lenient controls in an effort to increase U.S. economic competitiveness.

4. The President's Agenda

By September 1993, presidential initiatives and actions had provided a clearer view of the Administration's technology security policy goals. These initiatives had also provided the impetus for legislative consideration of this issue in the budget process. President Clinton provided some indication of the direction of technology security policy in his address to the United Nations. In it, he reiterated his priority on nonproliferation, and stated that "We seek...increasingly open trade and technology for those states that live by accepted international

rules."[26] Perhaps a stronger and more detailed indication of President Clinton's treatment of this issue will be contained in the forthcoming Presidential Review Directive 8 (PRD-8). Although classified, this document will reportedly outline "U.S. policy on controlling the spread of ballistic missile technology...[and] provide recommendations by Clinton's top national security advisers on a new non-proliferation strategy."[27]

One of the two principle issues expected to be addressed in PRD-8 is U.S. controls on the export of space launch vehicle (SLV) technology.[28] The other issue taken up by the Directive will likely involve the production of weapons-grade chemicals used in nuclear weapons. SLV technology is a particularly contentious issue today because of its dual-use applications. While such technology can legitimately benefit a nation's space program, it can also easily be applied to the development of ballistic missiles. This ambiguity is at the center of the controversy surrounding SLV technology and presents major counterproliferation problems like those addressed by the MTCR.[29] One notable example involved a proposed sale of Russian rocket booster engines and the associated technology to India in violation of the MTCR. However, as discussed in chapter IV, Russia eventually modified the deal as a consequence of U.S. pressure and threatened sanctions.

The number of nations seeking SLV technology has increased recently due to the potential profits from a commercial space launch program, and this in turn is impacting U.S. technology security policy. In the past, U.S. policy, as achieved through the MTCR, sought to ban the transfer of SLV technology. However, initial reports on the contents of PRD-8 suggest that the U.S. may attempt to shift its policy to allow such transfers, but only under strict conditions including the

importing nation's adherence to the MTCR, Nonproliferation Treaty and international nuclear, biological and chemical warfare conventions.[30] Some who view such a policy shift as problematic claim that it is too late to make such a major policy change, citing recent U.S. led efforts to halt SLV programs in Taiwan, Argentina, South Africa, Brazil, and India.[31]

Some members of the Senate Foreign Relations and Armed Services Committees clearly opposed this potential policy shift. Senators Bingaman and McCain introduced a resolution in the Senate which called for the strict interpretation by the U.S. of the MTCR by recognizing:

> ...(i) the inability to distinguish space launch vehicle technology from missile technology under the regime; and (ii) the inability to safeguard space launch vehicle technology effectively and prevent its diversion to military purposes.[32]

Congressman McCloskey introduced this same "sense of Congress" resolution in the House as part of an amendment he offered to the House Defense Authorization Act. During floor debate in the House, Congressman Kyl spoke in favor of the resolution and read from a *Space News* editorial that was critical of the move to relax controls on SLV technology. It noted:

> ...those behind a policy shift want to show friendship to other nations as a means of encouraging democracy and convincing them to join in nonproliferation efforts. Selling launch technology as a friendly gesture reflects inexcusable naivete about defense matters on the part of these public servants.[33]

The resolution was ultimately adopted in both the Senate and House versions of the National Defense Authorization Act, S. 1298 and H.R. 2401, respectively.[34]

Additionally, five members of the Senate Foreign Relations and Armed Services Committees sent a letter to the White House urging that tight controls of

SLV technology be maintained.[35] The letter, addressed to White House national security advisor Anthony Lake, outlined the committee members' concerns:

> Changing United States policy in this area would undermine United States missile nonproliferation efforts. It would open a substantial loophole in the MTCR regime, since participants would be free to export ballistic missile technology under the guise of "peaceful" space launch technology. Such a revised policy would, thus, in the long run eviscerate the MTCR -- a regime that the United States has worked hard to foster and maintain.[36]

The Clinton technology security policy agenda continues to take shape at this early stage of his administration. The contours will be set through the development of related policies such as the new U.S. national export strategy, directives like PRD-8, input from Cabinet members, and continued jockeying between governmental entities as described above. Interaction with multilateral control regimes like CoCom and the MTCR and legislative action on the Clinton budget proposals will also influence the technology security policy of this Administration.

B. EARLY TREATMENT OF EXPORT CONTROLS

1. The Administration and CoCom

CoCom was in a transitional state when the Clinton Administration began its tenure in early 1993. Its control lists had been pared back considerably in 1991, and the list of nations targeted by CoCom's controls was still evolving to reflect the dramatic change in East-West relations.[37] One indication of this change occurred during the April 1993 summit meeting in Vancouver between President Clinton and Russian President Boris Yeltsin. In the course of this meeting, President Clinton pledged to discuss the future of CoCom with the regime's other members.[38] The most likely forum for such a discussion was CoCom's annual

meeting that is traditionally held in June. However, the Clinton Administration still had not filled some key U.S. administration policy posts as late as May. Consequently, there were claims that the date for the annual CoCom meeting had not been set due in part to the slowness of the U.S. Administration.[39]

The annual meeting is an important feature of CoCom's operations primarily because it provides a vital forum for addressing serious disputes between CoCom members. By mid-1993, the U.S. and Germany were involved in just such a dispute. The American Electronics Association (AEA) was lobbying the Commerce Department to seek reductions in CoCom controls regulating computers. The AEA claimed that many computers "...subject to CoCom controls (were) widely available from a host of other countries including South Korea, Taiwan, China, India and Hong Kong."[40] Meanwhile, U.S. proposals to ease restrictions on computer sales to Russia were, in effect, held "hostage" in CoCom by a German request to ease limitations on telecommunications technology.[41] The U.S. opposed the German request, claiming that the technology in question could be used in the targeting of missiles.

Although these issues have not yet been settled, the Clinton administration plans to encourage CoCom to adopt more lenient computer limits.[42] Such efforts complement the recent relaxation of U.S. export controls on computer and communications satellite technology.[43] However, some U.S. officials fear that too many unilateral actions by the U.S. could induce U.S. allies to "...resist proposals to restructure CoCom."[44] These issues and others will likely be addressed in an upcoming international meeting to discuss the future organization and direction of CoCom.[45]

2. Easing U.S. Export Controls

Following a broad review of U.S. export controls that was begun in 1990, President Clinton recently proposed significant changes to existing Cold War-era controls.[46] These changes would relax export controls on some space launch technology, computers, fiber-optic technology, communications satellite parts and other dual-use technologies available elsewhere in the world.[47] President Clinton alluded to these changes during his address to the U.N. in September:

> We will also reform our own system of export controls in the United States to reflect the realities of the post-cold-war world. Where we seek to enlist the support of our former adversaries in the battle against proliferation at the same time that we stop deadly technologies from falling into the wrong hands, we will work with our partners to remove outdated controls that unfairly burden legitimate commerce and unduly restrain growth and opportunity all over the world.[48]

U.S. industry will be the primary beneficiary of more relaxed export controls. The license review process for identified technologies will now require the approval of only the Commerce Department, thus removing the "veto" authority of the State and Defense Departments and shortening the time for receiving export licenses.[49] While these changes impact only U.S. controls, there will likely be some carryover effect on international controls like those of CoCom and the MTCR.

3. The Clinton Administration and the MTCR

The MTCR has grown in importance since its inception in 1987, as concerns over the proliferation of ballistic missile technology have increased. The PRC, charged recently with MTCR violations, has proven to be a persistent problem for the Clinton Administration. According to one recent article, "...the administration finds itself trapped in a special dilemma regarding China."[50]

In May 1993, President Clinton granted a one year extension of the PRC's MFN trade status despite charges that it had violated MTCR provisions.[51] Critical of President Bush for being too lenient toward Chinese misconduct in this arena, President Clinton will likely confront the Chinese dilemma again in the future.[52] This will force him to strike a balance between two of his policy priorities -- a pledge to halt the spread of weapons and a need to stimulate jobs through exports.[53] Congressional Democrats have urged the president to link the PRC's trade status to its performance on the spread of weapons,[54] while at the same time business interests remind him of the "huge opportunity" presented by the Chinese market.[55] In the recent PRC-Pakistan case, President Clinton's solution was to impose lenient sanctions against the PRC. Even so, the president of the U.S.-China Business Council and a former China specialist in the State Department feared that because the sanctions were imposed unilaterally, "America's allies and business competitors...may rush to fill the void created by the U.S. sanctions."[56]

Just as President Clinton is reforming U.S. export controls on some dual-use technologies and will likely seek similar reforms in CoCom controls, he has also proposed steps to halt the proliferation of ballistic missile technology. Remarks made during President Clinton's address to the U.N. in September outlined his intentions:

> Now we will seek to strengthen the principles of the Missile Technology Control Regime by transforming it from an agreement on technology transfer among just 23 nations to a set of rules that can command universal adherence.[57]

The impact of a new national export strategy on U.S. technology security policy in general, and on the proliferation of ballistic missile technology in particular, remains unclear at this early juncture. However, there is little doubt

that these Clinton Administration proposals will ultimately reshape both domestic export controls and international controls imposed by CoCom and the MTCR to better reflect the post-Cold War security environment.

C. PRELIMINARY CONCLUSIONS

During its first months in power, the Clinton Administration's technology security policy has begun to take shape to address a dramatically changed global security environment. This chapter has attempted to piece together a broad view of this policy through review and analysis of comments from President Clinton, Secretary of Defense Les Aspin, Secretary of State Warren Christopher, other Administration officials, and U.S. industry representatives. The announcement of a new national export strategy as well as the release of Presidential Review Directive 8 and initial estimates of its contents have also lent credence to the Administration's emphasis in this arena. The picture that emerges reveals a set of policy goals and a defense budget request linked to the technology security issue that has received a great deal of attention from the Clinton Administration and will likely draw the interest of Congress as well.

Clearly one of the Administration's early policy goals has been to retard the proliferation of nuclear, biological and chemical weapons of mass destruction. This same focus has permeated the Administration's treatment of related counterproliferation issues like export controls, technology transfers and multilateral technology control regimes. The priority assigned to this policy was further emphasized by the Administration's budget request of $40 million within the defense budget for counterproliferation efforts.[58]

Although not an end in itself, this $40 million request and the Administration's discussion of it provides one view of President Clinton's emerging technology security policy. With the wheels of the budget process now set in motion on Capitol Hill, legislative treatment of this request will add further perspective to U.S. technology security policy. Chapter VI will present this analysis, focusing on legislative action taken by the congressional committees with jurisdiction in this arena, as well as final House and Senate decisions.

NOTES

[1] Les Aspin, *Report on the Bottom-Up Review* (Washington, D.C.: Government Printing Office, October 1993), p. 73.

[2] "FY 1994 Defense Budget Begins New Era," *Office of Assistant Secretary of Defense (Public Affairs) News Release*, March 27, 1993, pp. 1-3.

[3] *Ibid.*, p. 3.

[4] Aspin, *op. cit.*, p. 73.

[5] Eric Schmitt, "Aspin Moves In With Much Unsettled," *The New York Times*, January 22, 1993, p. A15.

[6] "Pentagon Appointments Lag Under Clinton," *Defense Daily*, July 23, 1993, p. 122. This study examined only the administrations of presidents who took over the reins of power by defeating an incumbent of a different political party. It did not include, therefore, Presidents Johnson, Ford and Bush.

[7] Michael R. Gordon, "Aspin Overhauls Pentagon to Bolster Policy Role," *The New York Times*, January 28, 1993, p. A17 and R. Jeffrey Smith, "Defense Policy Posts Restructured," *The Washington Post*, January 28, 1993, p. A4.

[8] Smith, *op. cit.*, p. A4.

[9] It should be noted that the evolution of the Pentagon hierarchy continues and these job titles are subject to change.

[10] "New Pentagon Post Uncovers Old Wars, Fresh Disputes," *Congressional Quarterly Weekly Report*, September 18, 1993, p. 2476.

[11] *Ibid.*

[12] David Silverberg, "Perry Backs Limited Aid To Boost U.S. Arms Exports," *Defense News*, June 7-13, 1993, p. 24.

[13] *Ibid.*

[14] George Leopold, "U.S. Begins To Map Out Proliferation Policy," *Defense News*, May 31-June 6, 1993, p. 10.

[15] Mark Matthews, "U.S. to Shift Focus to Arms Control," *Baltimore Sun*, June 4, 1993, p. 1.

[16] *Ibid.*

[17] *Ibid.*

[18] *Ibid.*

[19] Keith Bradsher, "U.S. Plans More Aid To Exports," *The New York Times*, September 30, 1993, p. C1.

[20] Andy Pasztor and John J. Fialka, "Export Controls On Computers To Be Relaxed," *The Wall Street Journal*, September 20, 1993, p. A2.

[21] Frantz, *op. cit.*, p. 17.

[22] John J. Fialka, "Sale of Technology to China Becomes Center of Debate Over Weapon Exports," *The Wall Street Journal*, December 21, 1993, p. B5, Douglas Frantz, "U.S. May Ease Export of Rocket Technology," *Los Angeles Times (Washington Edition)*, August 10, 1993, p. 17, and Silverberg, *op. cit.*, p. 24.

[23] Pasztor and Fialka, *op. cit.*, p. A16.

[24] *Ibid.*

[25] Frantz, *op. cit.*, p. 17.

[26] "In Clinton's Words: U.N. Cannot Become Engaged in Every World Conflict," *The New York Times*, September 28, 1993, p. A4 (excerpts from President Clinton's address to the United Nations).

[27] "USA to Pitch PRD-8 Against the Threat of Proliferation," *Janes Defence Weekly*, September 4, 1993, p. 24.

[28] *Ibid.*

[29] *Ibid.*

[30] *Ibid.*

[31] *Ibid.*

[32] "Sense of Congress Relating to the Proliferation of Space Launch Vehicle Technologies," U.S. Senate, *National Defense Authorization Act for Fiscal Year 1994* (S. 1298) (Washington D.C.: Government Printing Office, 1993) and U.S. House of Representatives, *National Defense Authorization Act for Fiscal Year 1994* (H.R. 2401) (Washington D.C.: Government Printing Office, 1993).

[33] Floor debate in the House of Representatives, *Congressional Record*, September 28, 1993, p. H7115.

[34] House and Senate floor action regarding the National Defense Authorization Act for Fiscal Year 1994, H.R. 2401 and S. 1298, respectively, *Congressional Record*, September 28, 1993, p. H7114 and *Congressional Record*, September 10, 1993, p. S11425.

[35] Signatories of the letter included Senate Foreign Relations Committee Chairman Claiborne Pell (D-RI), the committee's senior Republican, Senator Jesse Helms (R-NC), and U.S. Senate Armed Services Committee members, Senators Jeff Bingaman (D-NM), John Glenn (D-Ohio) and John McCain (R-Ariz.). Douglas Frantz, "Senators Oppose Technology Sales," *Los Angeles Times*, August 12, 1993, p. 8.

[36] U.S. Senate Committee on Foreign Relations letter to the Assistant to the President for National Security Affairs, August 6, 1993.

[37] Aaron Karp, *op. cit.*, p. 24.

[38] Michael S. Lelyveld, "Cocom Delay Laid to Europe Conflicts, Clinton's Slowness in Filling Key Posts," *Journal of Commerce*, May 3, 1993, p. 12.

[39] *Ibid.*

[40] *Ibid.*

[41] *Ibid.*

[42] Pasztor and Fialka, *op. cit.*, p. A16.

[43] Lawler, *op. cit.*, p. 3 and Pasztor and Fialka, *op. cit.*, p. A2.

[44] Pasztor and Fialka, *op. cit.*, p. A16.

[45] *Ibid.*

[46] Andrew Lawler, "U.S. Eases Export Limits on Satellite Parts," *Defense News*, September 20-26, 1993, p. 3 and Pasztor and Fialka, *op. cit.*, p. A2

[47] *Ibid.*

[48] "In Clinton's Words: U.N. Cannot Become Engaged in Every World Conflict," *op. cit.*, p. A4.

[49] Lawler, *op. cit.*, p. 28 and Michael K. Frisby, "Clinton Export Strategy to Allow Aid To Be Tied to Buying of U.S. Products," *The Wall Street Journal*, September 30, 1993, A4.

[50] Lally Weymouth, *op. cit.*, p. 27.

[51] Steven Greenhouse, "$1 Billion in Sales of High-Tech Items to China Blocked," *The New York Times*, August 26, 1993, p. A4.

[52] Douglas Jehl, "China Breaking Missile Pledge, U.S. Aides Say," *The New York Times*, May 6, 1993, p. A8.
[53] Frantz, *op. cit.*, p. 1.
[54] Jehl, *op. cit.*, p. A8.
[55] "U.S. Imposes Trade Sanctions Against China," *The Wall Street Journal*, August 26, 1993, p. A14.
[56] *Ibid.*, p. A3.
[57] "In Clinton's Words: U.N. Cannot Become Engaged in Every World Conflict," *op. cit.*, p. A4.
[58] Gellman, *op. cit.*, p. A17.

VI. CONGRESS AND THE CLINTON TECHNOLOGY SECURITY PROPOSAL

As discussed in the previous chapter, the Clinton Administration's technology security policy has begun to take shape from the initiatives and actions taken in 1993. This chapter will turn its focus to the legislative branch's treatment of the Clinton technology security proposal in order to gain additional perspective on the future direction of U.S. technology security policy. The analysis in this chapter will focus on congressional treatment of the Clinton Administration's $40 million defense budget request for counterproliferation measures as it moved through the congressional budget process. Emphasis will be placed on the treatment of and changes made to this request by the congressional committees with jurisdiction in this arena, namely the House and Senate Armed Services Committees and the House and Senate Defense Appropriations Subcommittees.

A. THE CONGRESSIONAL BUDGET PROCESS

1. Defense and the Budget Process

At this juncture, it is useful to briefly review the congressional budget process as it affects the defense budget request. Once the president has completed his budget proposal, it is submitted to Congress, where the House and Senate Budget Committees take the first step in the legislative budget process. The Budget Committees report budget resolutions to their respective chamber for consideration and passage. Once each chamber has passed its version of the budget resolution, the congressional budget committees meet in conference to

develop a concurrent budget resolution. The conference agreement on a budget resolution sets total spending for defense for the upcoming year. The budget resolution does not indicate how defense dollars are to be spent, nor does it make any funds available. These tasks are the responsibility of the authorizing and appropriating committees.

In the case of the defense budget, the authorizing committees are the House and Senate Armed Services Committees. These committees identify specific programs to be funded within the budget total for defense in the budget resolution and authorize spending ceilings within each program. The resulting House and Senate Defense Authorization Bills are then passed by the respective chambers of Congress. Differences between the two bills are resolved in conference, and the resulting agreement must then pass both the House and Senate. The president then signs or vetoes the conference agreement on defense authorization. Authorization legislation allows DoD to appropriate funds, but it does not actually make any funds available. That process, the final sequence of the defense budget cycle, occurs when appropriations bills are passed

The committees with jurisdiction over the lion's share of defense appropriations are the House and Senate Defense Appropriations Subcommittees. These two subcommittees fall under the House and Senate Appropriations Committees, respectively, and are responsible for developing spending floors based on the concurrent budget resolution and the Defense Authorization Bill. Once passed on the floor of both the House and Senate, the respective defense appropriations bills are taken into conference. The resulting Defense Appropriations Conference Agreement is then voted on in both chambers of

Congress and sent to the president for signature or veto. Passage of an appropriations bill for DoD makes funds available for the next fiscal year.

2. Legislative Centers of Power

Both the authorizing and appropriating committees are extremely powerful and influential bodies. Their debate and actions determine not only how much money will be made available to DoD annually, but also where and on what that money will be spent. These committees provide both policy oversight and funding authority for DoD programs. New initiatives such as the Clinton Administration's nonproliferation program must be approved by these committees. New or controversial proposals are frequently changed by one or more of the defense committees, either in terms of objectives or funding level.

B. THE BUDGET PROCESS AND TECHNOLOGY SECURITY

In March 1993, the Department of Defense released its FY 1994 defense budget request. Outlined in this request were three new spending initiatives addressing the dangers of proliferation of weapons of mass destruction. One of these initiatives was a $40 million request for "counterproliferation measures, such as export control, technology security, and research."[1] However, during the budget process, the defense committees significantly modified these proposals.

To understand the congressional rationale for the modification of this proposal, it is useful to track this item through each step in the budget process. Initially, the priority assigned to counterproliferation measures by the Clinton Administration, and DoD in particular, resulted in the $40 million defense budget request being broken out under the title of "counterproliferation."[2] For "administrative convenience" during the legislative treatment of this issue, the

entire counterproliferation budget request ($40 million) was folded into the DTSA account, under O&M for Defense Agencies.[3] Once the congressional committees began their work, however, the DoD counterproliferation line item received varying treatment. The path of this budget request through the budget process was messy and at times camouflaged. In the end, only a fraction of the Administration's $40 million request was allocated to counterproliferation, under DTSA. What follows is a map through this budget jungle.

1. The Authorization Process

a. The Senate Armed Services Committee

The Senate Armed Services Committee (SASC), chaired by Senator Sam Nunn (D-NC), reported the National Defense Authorization Act for FY 1994 (S. 1298) to the Senate in late July. After much debate over its contents and proposed amendments, the Bill was passed on the floor on September 14, 1993.[4] The SASC devoted considerable attention to technology security and recommended that a number of actions be taken to address that issue. The SASC-reported version of this Bill outlined these actions and associated spending ceilings under Title XI -- Prevention and Control of Proliferation of Weapons of Mass Destruction. Report language accompanying the unamended Authorization Act states:

> ...since the end of the Cold War, the proliferation of weapons of mass destruction has become perhaps the key security threat to the United States and its allies. The Congress, therefore, has good reason to require the Executive Branch to report on the resources that the defense community is devoting to address this threat. The data on personnel and budgets are needed to assist Congress in determining whether resources are adequate to perform the relevant nonproliferation missions that the Department of Defense and the Department of Energy have been granted. It is not possible

for Congress to properly assess the efficiency and effectiveness of these programs without this information.[5]

However, by the time the Authorization Bill was passed on the floor, treatment of this issue was relegated to the position of a subtitle of Title II -- Research, Development, Test, and Evaluation, and the SASC recommendations had been modified significantly through amendments.[6]

(1) Joint Committee for Review of Nonproliferation Programs. The Senate version of the Authorization Act for FY 1994 reiterates the serious threat presented by weapons of mass destruction and related technologies, as well as missile systems and other delivery systems used to deliver such weapons.[7] These sentiments are in accordance with the foundations of the Clinton Administration's technology security proposal. As a result, the SASC directed that a new joint committee be established to address these threats. This committee was to be composed of representatives from the Departments of Defense and Energy, the Central Intelligence Agency and the Joint Chiefs of Staff. The SASC-reported version directs that the committee be chaired by the Under Secretary of Defense for Acquisition and Technology [USD(A&T)].

The Senate version of the Authorization Bill, however, designated this committee as the "Non-Proliferation Program Review Committee" and assigned the chairmanship to the Secretary of Defense, with the further stipulation that this responsibility may be delegated to the USD(A&T).[8] In both the committee-reported and Senate-passed versions of this bill, the duties of the committee remain the same, that is, to identify and review existing and proposed capabilities (including counterproliferation capabilities) and technologies for support of U.S. nonproliferation policy, to include the support of export control programs.

Although the Non-Proliferation Program Review Committee survived in the Senate-passed bill, its budget authorization was modified somewhat. The SASC-reported version of the Defense Authorization Act did not authorize a specific dollar amount for the committee. Instead, under the "Budget Recommendations" subparagraph relating to this committee, the bill states that the new committee may submit:

> ...any recommendations regarding existing or planned budgets as the committee considers appropriate to encourage funding for capabilities and technologies at the *maximum* level necessary to support United States nonproliferation policy.[9]

It is interesting, and perhaps telling, to note the change in wording to this subparagraph in the amended bill. The "Budget Recommendations" passage is identical in both the committee-reported and Senate-passed versions of the Authorization Act, with the exception of one word. The SASC-reported bill recommended funding "...at the maximum level necessary...," while the amended bill removed the word "maximum," leaving funding "...at the level necessary."[10] The omission of this one word and the implications of such an action is further reflected in the Senate's treatment of the Clinton Administration's budget request for counterproliferation initiatives.

(2) Counterproliferation Initiatives. The SASC-reported bill and accompanying report language clearly assigned higher priority to counterproliferation activities and programs than did the Senate-passed version of this bill. This is best illustrated by the deletion of authorization for nonproliferation and counterproliferation activities and programs in the Senate-passed version of the bill.

Section 1105 of the SASC-reported bill, titled the International Nonproliferation and Counterproliferation Initiative, outlined a number of activities related to technology security. These included "Activities in support of monitoring and control of transfers of weapons of mass destruction, and *delivery systems, related technologies, and other sensitive goods and technologies*; and support of participation in and cooperative activities under *multilateral arrangements to control sensitive goods and technologies.*"[11] This section also addressed various technology security measures included in the list of "activities." Specifically, the report language provides for:

> ...assistance for the development by other countries of export control systems that effectively -- (i) provide safeguards for imported sensitive goods and technologies; (ii) reduce the risk of transfer and proliferation of indigenously produced sensitive goods and technologies; and (iii) contribute to preventing the transshipment of sensitive goods and technologies through territories of recipient countries.[12]

SASC treatment of the technology security issue was fairly detailed. In its FY 1994 defense budget request, the Clinton Administration sought $40 million for counterproliferation measures, such as export control, technology security, and research. The SASC authorized appropriations of $37,549,000, to be directed to three related areas of concern: international nonproliferation and counterproliferation initiatives, DTSA, and studies relating to U.S. nonproliferation policy. The committee allocated $25 million for the nonproliferation initiatives, $9.5 million for DTSA and $3 million for studies relating to U.S. nonproliferation policy. Under this last category, funds could be spent on research and analysis relating to "counterproliferation deterrence strategies and doctrines, streamlining and harmonization of export control regimes,

arms control and nonproliferation regime enforcement, and military and threat analysis, wargaming, and strategic analysis for export control policies."[13]

The National Defense Authorization Act as passed on the floor of the Senate, however, deleted all authorizations for nonproliferation and counterproliferation activities and programs. Recorded debate on this issue is sparse, but one source reported that the SASC "...bowed to Senate Foreign Relations Committee objections, and struck authorizing language that had been included in the Committee markup."[14] It is likely that the Foreign Relations Committee viewed the Administration's $40 million request as a matter of foreign policy, and thus, exerted pressure to signal that foreign policy matters belong under the purview of the State Department, not DoD. This deletion impacted subsequent appropriations activity and also sent a signal to the Administration that its move to improve U.S. foreign policy through DoD was, perhaps, too hasty and overly ambitious.

TABLE 1: Senate Action on Counterproliferation Initiatives (dollars in thousands)

	Budget Request	**Committee Markup**	**Authorization Act**	**Change from Budget Request**
Counterproliferation Initiatives	25,000	25,000	0	-25,000
Research & Analysis	6,000	3,049	0	-6,000
DTSA	9,500	9,500	0	-9,500
Total	**40,500**	**37,549**	**0**	**-40,500**

Sources: SASC-reported *National Defense Authorization Act for FY 1994* (S. 1298), Title XI, Senate-passed *Authorization Act*, Title II, Subtitle E, and National Security Council memorandum, *Status of Counterproliferation Initiative Legislation*.

While not directly addressing the deletion of authorizations for counterproliferation and nonproliferation initiatives, the debate over amendment 836, offered by Senators Byrd and Warner and passed on the Senate floor,

provides further insight into this action. The amendment was offered to "...enhance the prevention and control of proliferation of weapons of mass destruction."[15] It shifted the treatment of this matter from Title XI to a subtitle of Title II of the bill. Additionally, the amendment provided for the establishment of a joint committee for review of non-proliferation programs of the U.S. and directed that the committee report its findings to Congress. However, it does not provide authorizations for the international nonproliferation and counterproliferation initiative contained in the SASC-reported bill. Instead, the amendment seemed to substitute government coordination for further appropriation, thus suggesting that existing funding in this area may be sufficient. The joint committee has been tasked, albeit indirectly, to make this judgement.

Comments made on the floor by Senators Nunn, Byrd and Warner support amendment 836 and address the Executive Branch's technology security efforts. Senator Nunn, the SASC Chairman, backed this amendment, stating "This underscores the Senate's continued commitment in cooperating with President Clinton in carrying out effective policy to control proliferation of weapons of mass destruction."[16] Senator Warner provided background information, commenting that:

> Reviews of the nonproliferation and counterproliferation programs of these three organizations [DoD, DoE and CIA] conducted by the staff of the Armed Services, Intelligence, and Appropriations Committees indicate that all three of them have increased funding and activities to stem or counter the tide of the proliferation of such weapon systems. Unfortunately,...the programs developed by these agencies are not well coordinated.[17]

Hence, the proposed joint committee was designed to "...jointly review current and proposed programs, prioritize them, and insure that the most promising capabilities are adequately funded."[18] Senator Byrd ended the debate as

follows, perhaps alluding to the reason for deleting $31 million in authorizations for the Administration's counterproliferation and nonproliferation initiative:

> The current informal mechanisms established by the defense and intelligence community are not, I believe, adequate as a permanent solution to the difficult task of consolidating and coordinating the counterproliferation research and development program throughout the Government . . . the committee, composed as it is of senior-level members, can actively influence all relevant agency budget decisions in order to maximize the effective use of resources . . . This amendment is a needed step in focusing the resources and efforts of the Executive Branch on the requirements, programs and planning needed to address it on an urgent basis.[19]

b. The House Armed Services Committee

The House of Representatives passed its National Defense Authorization Act for FY 1994 (H.R. 2401) on September 29, 1993.[20] The treatment of the Administration's counterproliferation and nonproliferation initiative by the House Armed Services Committee (HASC) and on the floor of the House was in sharp contrast to the actions taken in the Senate. Ultimately, the House Defense Authorization Act closely resembled the Administration's budget request on these issues.

When reported to the House, the HASC markup contained no authorizations of appropriations for counterproliferation initiatives. During House debate, however, the committee Chairman, Ronald Dellums (D-CA), offered an amendment that was subsequently passed and incorporated into the Bill. This amendment added three sections to Title X -- General Provisions, Subtitle C -- Other Matters, that address the issue of counterproliferation. In addition to authorizing appropriations for almost the full amount requested by the Administration, these three sections, (415) International counterproliferation

activities, (416) Counterproliferation policy, and (417) Semiannual report, outline limitations and requirements for spending these funds.

(1) International Counterproliferation Activities. Section 415 of the House-passed DoD Authorization bill approves $25 million to be used by the Secretary of Defense, under the guidance of the President, for the support of specified activities relating to the nonproliferation of weapons of mass destruction and their delivery systems.[21] Included among the activities for which assistance may be provided are:

(1) Support of nonproliferation monitoring programs, nonproliferation inspection programs, and nonproliferation compliance programs.

(2) Monitoring and control of transfers of weapons of mass destruction, related technologies, and other sensitive goods and technologies.

(4) Efforts to improve international capabilities and cooperation in deterring and responding to terrorism, theft, and proliferation involving weapons of mass destruction.[22]

Prior to obligating any part of these funds, however, the House Bill directs the Secretary of Defense to notify the appropriate congressional committees 15 days in advance.

(2) Counterproliferation Policy. Section 416 of the House DoD Authorization Act addresses U.S. counterproliferation policy. This section corresponds to the Administration's budget request for research and analysis linked to the counterproliferation issue. The House authorized $6 million, the full amount of the Administration's request in this area, to "...explore defense policy issues linked to efforts to prevent and counter the proliferation of weapons of mass destruction and their delivery systems."[23] The House Bill also directs the

Secretary of Defense to designate the Under Secretary of Defense for Policy to coordinate these research programs.

TABLE 2: House Action on Counterproliferation Initiatives (dollars in thousands)

	Budget Request	Committee Markup	Authorization Act	Change from Budget Request
Counterproliferation Initiatives	25,000	0	25,000	0
Research & Analysis	6,000	0	6,000	0
DTSA	9,500	0	8,698	-802
Total	**40,500**	**0**	**39,698**	**-802**

Sources: HASC-reported *National Defense Authorization Act for FY 1994* (H.R. 2401), amendment offered by Congressman Dellums, *Congressional Record*, and National Security Council memorandum, *Status of Counterproliferation Initiative Legislation*.

The House DoD Authorization bill essentially rubber-stamps the Administration's budget request for counterproliferation initiatives. Although sections 415, 416 and 417 of this bill stipulate numerous guidelines for obligating the funds authorized, they are general enough to give considerable leeway to the Administration. The wording of these sections seems designed, however, to preclude the indiscriminate spending of these funds by the Administration. For example, the prior notification clause attached to the $25 million international counterproliferation funds allows Congress to retain its coveted power of the purse and conduct fiscal oversight of the Administration's counterproliferation initiatives. Of course, this discussion presumes that the funds authorized for appropriation by the House and Senate are included in the conference agreement and subsequently appropriated by both chambers of Congress.

c. Conference Report on National Defense Authorization

The final step in the authorization portion of the budget process is the conference agreement which works out the differences between the Senate and

House-passed versions of the National Defense Authorization Act. Once this process is complete, both chambers of Congress must then pass this final version of the bill. The FY 1994 conference agreement was passed on November 8, 1993, and included a separate title addressing arm control matters.[24] Not surprisingly, the conference agreement's treatment of technology security policy was very much a compromise between the Senate and House bills.

Title XVI, Subtitle A, Programs in Support of the Prevention and Control of Proliferation of Weapons of Mass Destruction, contained five sections germane to the Administration's $40 million budget request. Section 1601 called for a study of global proliferation of strategic and advanced conventional military weapons and related equipment and technology. Section 1602 authorized funds for international nonproliferation initiatives which were introduced in the FY 1993 Authorization Act. Section 1603 authorized the full amount requested by the Administration for analysis and studies linked to counterproliferation policy. Finally, sections 1605 and 1606 directed the establishment of a Joint Non-Proliferation Program Review Committee as originally noted in the SASC version of this bill.

(1) Advisory Board on Arms Proliferation Policy. The conference agreement directed the establishment of an Advisory Board on Arms Proliferation Policy to study global proliferation of strategic and advanced conventional military weapons and related equipment and technology. The five board members will be appointed by the President and will be supported by a federally funded research and development center with expertise in such matters. Specifically, section 1601 states:

> The President shall conduct a study of (1) the factors that contribute to the proliferation of strategic and advanced conventional military weapons and related equipment and technologies, and (2) the policy options that are available to the United States to inhibit such proliferation.[25]

In doing so, the President is encouraged to seek and consider the advice of the board. Additionally, the Advisory Board is tasked to complete its own study and present it to the President no later than May 15, 1994. The President will subsequently present these two studies to Congress by June 1, 1994, along with his findings and conclusions regarding matters considered in the board's study.[26] The Advisory Board will terminate 30 days after the President presents his findings to Congress.

This section of the conference agreement appears to be a compromise of Title XV which was included in the House version of the Authorization Act. Title XV called for the establishment of a "National Commission on Arms Control," and was added to the HASC-reported bill in an amendment offered by Congressman Kasich of Ohio as part of Congressman Dellum's en bloc amendment.[27] The Advisory Board on Arms Proliferation Policy called for in the conference agreement is almost identical to the House version's National Commission on Arms Control except for two key areas -- membership and funding.

The duties and report required of the Advisory Board are almost identical to those of the Commission called for in the House version of this bill. With regard to membership, however, the Advisory Board would include five members appointed by the President from "among persons in private life who are noted for their stature and expertise," while the Commission would have been composed of 12 members appointed by the President and majority and minority

leaders of both the House and Senate. Further, the conference agreement makes no provision for funds for the Advisory Board. The House's Commission was to be authorized appropriations "...as may be necessary to carry out this title."[28]

(2) Extension of Existing Authorities. Title XVI of the conference agreement also included a section authorizing "extension of existing authorities." This section extends additional authorizations in the amount of $25 million for international nonproliferation initiatives that were included in section 1505 of the FY 1993 Authorization Act. Specifically, this extension of authorities authorizes these funds for activities carried out by the International Atomic Energy Agency (IAEA), the On-Site Inspection Agency in support of the U.N. Special Commission on Iraq, collaborative international nuclear security and safety projects, and efforts to improve international cooperative monitoring of nuclear proliferation.[29]

While the provision of these funds is not unusual, the amount authorized bears some consideration. Interestingly, the Administration's FY 1994 defense budget request included $25 million for counterproliferation and nonproliferation initiatives. The House-passed version of the Authorization Act granted this request while the Senate version denied it based on its objections to DTSA control of the funds. The $25 million authorized for international nonproliferation initiatives in the conference agreement may represent another compromise between the two chambers. If so, the dollar amount authorized would satisfy the Administration's request in this area, while allocating the funds in such a way that would satisfy congressional demands for accountability of these funds.

(3) Counterproliferation Studies and Analysis. Section 1603 of the conference agreement authorizes $6 million for "studies and analysis

programs...intended to explore defense policy issues that might be involved in efforts to prevent and counter the proliferation of weapons of mass destruction and their delivery systems."[30] This is the full amount requested by the Administration and authorized in the House-passed version of the Authorization Act. The language describing this authorization in these two versions of the bill is almost identical. In both, the USD(P) is designated as the coordinator of the funds which "...shall be derived from amounts made available to [DoD] for fiscal year 1994 or from balances in working capital accounts of the [DoD]."[31] In any case, DoD will not receive any part of the funds until 15 days after the appropriate congressional committees are notified of the spending plan, including:

(1) a description of all of the activities within [DoD] that are being carried out or are to be carried out for the purposes stated in this section;

(2) the plan for coordinating and integrating those activities within [DoD];

(3) the plan for coordinating and integrating those activities with those of other Federal agencies; and

(4) the sources of funds to be used for such purposes.[32]

Interestingly, this entire provision is left to the discretion of the Secretary of Defense. The conference agreement states that the Secretary "...*may* conduct studies and analysis programs in support of counterproliferation policy of the United States."[33] By doing so, however, three additional reports are mandated. The first report, described above, is essentially a spending plan required for congressional oversight of these funds. The other two are biannual reports due April 30 and October 30 of each year detailing activities carried out during these studies. Again, the reporting requirements seem excessive, especially in light of

section 1603(f)(5) which calls for an effectively managed and comprehensively coordinated process for such studies.[34]

(4) Joint Committee for Review of Proliferation Programs of the U.S. Just as the conference agreement provided for an Advisory Board on Arms Proliferation Policy as a gesture to the House version of the Authorization Act, it is likely that this agreement included authorization of a Joint Committee for Review of Proliferation Programs of the U.S. as a gesture to the Senate. Originally, the SASC-reported bill called for the establishment of a "Non-Proliferation Program Review Committee." The conference agreement retained the language contained in the Senate's Authorization bill, but, significantly, added three modifications. First, it provided State Department representation on the committee. Second, it added to the duties of the committee a requirement to "review the programs...developed by the Department of State to counter terrorism involving weapons of mass destruction and their delivery systems."[35] Third, it provided a termination clause, specifying that the committee will cease to exist six months after providing a report to Congress. This report will be due no later than May 1, 1994 and will be presented by the Secretary of Defense.

The modifications to the provisions for this joint committee tend to support the contention of jurisdictional dispute between the Departments of Defense and State in the area of proliferation policy. The first two changes which provide for State Department participation on this committee distribute the powers of this committee more evenly among federal agencies. In fact, these changes make a great deal of sense since one of the purposes of the committee is to identify and eliminate redundancies or uncoordinated efforts in the nonproliferation arena. Further, the inclusion of a termination clause may be an acknowledgment of the

powers and responsibilities of the Arms Control and Disarmament Agency (ACDA) which potentially could have been threatened by a permanent committee.

It is somewhat ironic that the final National Defense Authorization Act for FY 1994 would establish two reviewing bodies to study matters relating to U.S. nonproliferation and counterproliferation policy, including issues of redundancy and inter-agency coordination. As illustrated in table 3, there seems to be enough overlap of duties to suggest that these two bodies resulted from political compromise in the final Authorization Act. Both of these bodies are also temporary, further suggesting compromise. Permanent committees would have been far more threatening to existing organizations with nonproliferation or counterproliferation roles.

TABLE 3: Comparison of the Two Reviewing Bodies Established in the Authorization Act

	Advisory Board on Arms Proliferation Policy	**Non-Proliferation Program Review Committee**
Membership:	5 - Persons in private life with stature and expertise in arms proliferation matters	6 - Secretaries of Defense (Chmn), State, and Energy, Director CIA, Director ACDA, Chmn JCS
Duties:	1. Identify factors contributing to global weapons proliferation which can be most effectively regulated. 2. Identify and assess policy approaches available to U.S. to discourage transfer of targeted weapons and related equipment and technology. 3. Assess effectiveness of current multi-lateral efforts to control the transfer of weapons and related equipment and technology. 4. Identify and examine methods by which U.S. could reinforce these efforts. 5. Identify circumstances under which U.S. national security interests might best be served by a transfer of conventional military weapons and related equipment/technology, assess whether such circumstances exist when such a transfer is made to an allied country which, with the U.S., has mutual national security interests to be served by such a transfer. 6. Assess effect on U.S. economy and the national technology and industrial base which might result from potential changes in U.S. policy controlling the transfer of such military weapons and related equipment and technology.	1. Identify and review existing and proposed capabilities and technologies for support of U.S. non-proliferation policy with regard to: a. intelligence b. battlefield surveillance c. passive & active defenses d. counterforce capabilities e. inspection support f. support of export control programs 2. Review all directed energy and laser programs as related to the above areas with a view to the elimination of redundancy and optimization of funding. 3. Review State Dept. programs to counter terrorism involving weapons of mass destruction/delivery systems. 4. Prescribe requirements and priorities for U.S. nonproliferation capabilities and technologies. 5. Identify deficiencies in existing capabilities and technologies. 6. Formulate short-, medium-, and long-term programmatic options for meeting requirements and eliminating deficiencies identified by the committee.
Report Due:	May 15, 1994 - report to President June 1, 1994 - reports to Congress	May 1, 1994
Termination:	30 days after presidential report	6 months after report date

Source: Conference Report on HR 2401, National Defense Authorization Act for FY 1994

Treatment of the Administration's $40 million counterproliferation initiative was detailed considering the relative insignificance of the size of this request as a percentage of the entire DoD budget. However, the attention it received may indicate the gravity of the issues involved and the degree of attention that can be expected in future related policy debates and legislation. Finally, the discussion of priorities noted within the authorization process presumes that the funds authorized for appropriation by the House and Senate in the conference agreement are subsequently appropriated by both chambers of Congress, the topic of discussion which follows.

2. The Appropriations Process

a. The House Appropriations Committee - Defense Subcommittee

The Defense Subcommittee of the House Appropriations Committee (HAC-D) reduced the Administration's budget request for counterproliferation initiatives significantly. The Department of Defense Appropriations Bill, 1994 (H.R. 3116) as passed by the House on September 30, 1993, did not appropriate funds for the counterproliferation initiatives and research that had been authorized by the House.[36] Instead, the House appropriated only $8.435 million in Operations and Maintenance (O&M) funds for DTSA technology security efforts.[37]

TABLE 4: House Action on Counterproliferation Initiatives (dollars in thousands)

	Budget Request	Committee Markup	Appropriations Act	Change from Budget Request
Counterproliferation Initiatives	25,000	0	0	-25,000
Research & Analysis	6,000	0	0	-6,000
DTSA	9,500	8,435	8,435	-1,065
Total	**40,500**	**8,435**	**8,435**	**-32,065**

Sources: HAC-D-reported *National Defense Appropriations Act for FY 1994* (H.R. 3116), House-passed *Appropriations Act*, and National Security Council memorandum, *Status of Counterproliferation Initiative Legislation*.

The HAC apparently did not question the need for the counterproliferation funds; rather, it objected to the placement of these funds under the control of DTSA which had been criticized by the DoD Inspector General in 1992 for its administrative practices.[38] The refusal to appropriate funds for the Administration's counterproliferation initiatives will clearly hamper efforts in this arena, but apparently was not aimed at any shortcomings within the Administration's proposal.

Although not directly related to the counterproliferation initiatives funds, it is interesting to note the HAC-D's treatment of the Administration's Global Cooperative Initiatives request in the House version of the DoD Appropriations Bill for FY 1994. The HAC-D reduced the $448 million requested by the Administration in this category to $383 million for the following reason:

> ...the Committee is very concerned that by seeking a fund dedicated to peace making and peacekeeping, the administration is asking Congress to prospectively approve the necessary funding resources to engage in unspecified and undetermined future military operations. The Committee strongly disagrees with this precedent which incrementally erodes the constitutional prerogative of the Congress to control the purse strings.[39]

It is possible that these same or similar reasons also contributed to the HAC-D denial of funding for the counterproliferation initiatives. Although the

Administration's request outlined three areas for spending in this category (counterproliferation measures, technology security and research), there was apparently no formal plan detailing how the funds would be spent. The slowness with which top Pentagon positions were filled may have contributed to the lack of such a plan. It is not surprising then that Congress would be hesitant to appropriate a sizable pool of money, especially in an era of decreasing budgets, without a detailed plan for spending the requested funds.

b. The Senate Appropriations Committee - Defense Subcommittee

The Defense Appropriations Subcommittee of the Senate Appropriations Committee (SAC-D), like the HAC-D, reduced the Administration's request for new counterproliferation spending initiatives. The SAC-D appropriated funds for DTSA and eliminated the remaining portion of the $40 million Administration request dealing with research and other counterproliferation initiatives.

The SAC-D appropriated $9.198 million for technology security efforts by DTSA, which was $763,000 more than allowed by the HAC-D. While this change in DTSA funding is not significant, the committee's decision to cut all funding for counterproliferation efforts deserves closer attention. The report language accompanying the bill explains the reduction this way:

> The Committee denies $31,000,000...for counterproliferation studies. The Department [DoD] has failed to provide detailed plans or other convincing justification for the use of these funds. The Senate-passed version of the fiscal year 1994 Defense authorization bill also denies this funding request.[40]

TABLE 5: Senate Action on Counterproliferation Initiatives (dollars in thousands)

	Budget Request	Committee Markup	Appropriations Act	Change from Budget Request
Counterproliferation Initiatives	25,000	0	0	-25,000
Research & Analysis	6,000	0	0	-6,000
DTSA	9,500	9,198	9,198	-302
Total	**40,198**	**9,198**	**9,198**	**-31,302**

Sources: SAC-D-reported *National Defense Appropriations Act for FY 1994*, Senate-passed *Appropriations Act*, and National Security Council memorandum, *Status of Counterproliferation Initiative Legislation*.

By law, funds must be both authorized and appropriated by Congress in order to be spent. Accordingly, the SASC's refusal to authorize funds for the Administration's counterproliferation initiatives sent a clear signal to both the SAC-D and the Administration. Interestingly, it was Senator Byrd, the SAC Chairman, who co-sponsored amendment 836 to the Senate Defense Authorization Act which deleted authorizations for the counterproliferation initiatives. This made it much easier for the SAC to deny appropriations for counterproliferation.

c. Conference Report on DoD Appropriations

The conference agreement on DoD Appropriations was passed in Congress on November 10, 1993.[41] As occurred with the Authorization Act, the conference agreement on the DoD Appropriations Act for FY 1994 was a compromise between the Senate and House versions of the bill. However, unlike the Authorization Act, there was little variation between the two versions of the Appropriation Act, so the portion of the conference report relating to the Administration's technology security proposal was far less detailed. In fact, neither the Senate nor the House appropriated the $31 million requested by the Administration for counterproliferation initiatives. The conference had only a small difference in funding for DTSA to be resolved.

The treatment of this funding in the conference agreement was brief. In the end, only $8.435 million of the Administration's approximately $40 million request was appropriated, all of it for DTSA. This represents only 20 percent funding of the original request. In fact, this final appropriation amount was the lower of the two appropriations for DTSA in the House and Senate bills. Funding for counterproliferation initiatives and studies was denied completely, thus accounting for $31 million of the total reduction. Such a significant reduction, especially in light of almost full funding of the Administration's initiative in the final DoD Authorization Act, sends a clear signal to the Administration.

C. SUMMARY

With the recent completion of the DoD budget debate and passage of the final Defense Authorization and Appropriations Acts in Congress, the following observations of the legislative treatment of the Clinton Administration's budget request for counterproliferation measures can be made.

Technology security policy, whether under the guise of counterproliferation, nonproliferation, or export controls of sensitive technologies, was clearly a prominent topic of discussion throughout the congressional debates surrounding the defense budget. In both the House and Senate, much of the debate over the defense budget hinged on the end of the Cold War and trying to determine the appropriate shape, priorities and funding levels for the post-Cold War era DoD. Weapons of mass destruction and their delivery systems were frequently discussed as the primary threat to U.S. national security as well as to international stability by both the Administration and the Congress.

One lesson from this research is that discussion of and concern about a given topic does not necessarily equate to funding for that issue. Such is the case for the Clinton Administration's technology security proposal. The Administration presented Congress with a request for approximately $40 million for counterproliferation measures. The results of congressional consideration of this proposal are summarized in the following table.

TABLE 6: Counterproliferation Measures Summary (dollars in thousands)

Bill	Budget Request	House	Senate	Conference
Authorization	40,500	39,698	0	39,698[42]
Appropriations	40,500	8,435	9,198	8,435

Sources: National Security Council memorandum, *Status of Counterproliferation Initiative Legislation*, *Conference Report on H.R. 3116*, and *Conference Report on H.R. 2401*.

Even with a consensus on the importance of technology security measures in both the Executive and Legislative branches, the bottom line was a significant decrease in the Administration's budget request. Several different factors likely contributed to the decrease. First, the Administration, and DoD in particular, probably hurt its chances for full funding by not providing a detailed plan or convincing justification for the use of these funds to Congress.[43] This factor was cited by the Senate Defense Appropriations Subcommittee as the basis for its reduction. Part of the blame for this shortcoming can be attributed to the recent overhaul of the top Pentagon hierarchy by Secretary of Defense Aspin. Beyond the change in the structure of the organization, however, was the slowness with which DoD policy-making positions were filled and the controversy surrounding some of the nominations.[44]

A second factor, was the HAC's refusal to appropriate funds for counterproliferation initiatives, not because of weak justification, but rather

because the funds were to be placed under the purview of DTSA, an organization that has been criticized recently for questionable administrative practices.

A third factor involved issues affecting jurisdiction between the Defense and State Departments triggered by the Administration's $40 million request. This initiative would have placed traditional foreign policy matters under the purview of DoD in an ambitious, and perhaps too hasty, move by the Administration to reinvent and improve the U.S. foreign policy establishment. As a result, the Senate Foreign Relations Committee, siding with the State Department, reportedly pressured the SASC to strike language which had authorized $37.5 million for counterproliferation initiatives. The addition of State Department representation on the Non-Proliferation Program Review Committee, the call for an Advisory Board on Arms Proliferation Policy in addition to the Review Committee, and the temporary status of both bodies further highlight this power struggle.

Out of the six pieces of legislation researched, only the HASC's Authorization Bill, as amended, and the final National Defense Authorization Act for FY 1994 provided approval for almost the full amount of the Administration's budget request. This was to no avail, however, because the majority of those funds were never appropriated by the HAC, SAC, or conference committee.

In hindsight, perhaps the Administration's counterproliferation measures could have received full funding if DoD had taken more time to develop its plan for spending these funds. The timing seemed appropriate for such a request, given the rapidly changing shape of the new world order and the serious threat posed by the proliferation of these potentially dangerous technologies. Even in this era of a shrinking defense budget, it seems that the measures proposed by the Administration could have been sold to Congress by a well-organized and better-

established Pentagon hierarchy. When presented with a vague request for funding of undetermined "initiatives," however, Congress' decision was clear. Congress approved much less funding than was requested and demanded much more information than was provided.

NOTES

[1] "FY 1994 Defense Budget Begins New Era," *News Release from the Office of Assistant Secretary of Defense (Public Affairs)*, March 27, 1993, pp. 2-3.
[2] "FY 1994 DoD Budget - New Initiatives," DoD document, September 1993.
[3] "Status of Counterproliferation Initiative Legislation -- Information Memorandum," National Security Council document, October 7, 1993.
[4] U.S. Senate, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 1994*, S. 1298 (Washington, D.C.: Government Printing Office, 1993).
[5] U.S. Senate, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 1994 Report*, Report No. 103-112 (Washington, D.C.: Government Printing Office, 1993), p. 189.
[6] Text of the Senate National Defense Authorization Act for Fiscal Year 1994, *Congressional Record*, September 15, 1993, p. S11774.
[7] Report No. 103-112, *op. cit.*, p. 243.
[8] *Congressional Record*, September 15, 1993, *op. cit.*, p. S11786.
[9] Report No. 103-112, *op. cit.*, p. 250, (italics added).
[10] *Congressional Record*, September 15, 1993, *op. cit.*, p. S11786.
[11] Report No. 103-112, *op. cit.*, pp. 254-55, (italics added).
[12] *Ibid.*, p. 255.
[13] *Ibid.*, p. 258-59.
[14] "Status of Counterproliferation Initiative Legislation -- Information Memorandum," *op. cit.*
[15] "Amendment 836," *Congressional Record*, September 10, 1993, p. S11417.
[16] Senate floor debate on amendment 836, *Congressional Record*, September 10, 1993, p. S11418.
[17] *Ibid.*
[18] *Ibid.*
[19] *Ibid.*, pp. S11418-19.
[20] "Chamber Action -- House of Representatives," *Congressional Record*, September 29, 1993, p. D1059.
[21] U. S. House of Representatives, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 1994*, H.R. 2401 (Washington, D.C.: Government Printing Office, 1993).
[22] "Amendment Offered by Mr. Dellums," *Congressional Record*, September 28, 1993, p. H7110.
[23] *Ibid.*
[24] "Chamber Action," *Congressional Record*, November 9, 1993, p. H9273.
[25] "Section 1601," *Conference Report on HR2401, National Defense Authorization Act, FY 1994*, November 10, 1993.
[26] *Ibid.*
[27] "Amendment Offered by Mr. Kasich of Ohio," *Congressional Record*, September 13, 1993, pp. H6622-3.
[28] *Ibid.*, p. H6623.
[29] U. S. Congress, *National Defense Authorization Act for Fiscal Year 1993, Conference Report*, Report No. 102-966, (Washington, D.C.: Government Printing Office, 1992), p. 265.

[30] "Section 1603," *Conference Report on HR2401, National Defense Authorization Act, FY 1994*, November 10, 1993.

[31] *Ibid.*

[32] *Ibid.*

[33] *Ibid.*, (italics added).

[34] *Ibid.*

[35] *Ibid.*

[36] "Chamber Action -- House of Representatives," *Congressional Record*, September 30, 1993, p. D1070.

[37] U. S. House of Representatives, Committee on Appropriations, *Department of Defense Appropriations Bill, 1994, Report*, Report No. 103-254, (Washington, D.C.: Government Printing Office, 1993), p. 82.

[38] "Status of Counterproliferation Initiative Legislation -- Information Memorandum," *op. cit.*

[39] Report No. 103-254, *op. cit.*, p. 9.

[40] U. S. Senate, Committee on Appropriations, *Department of Defense Appropriations Bill, 1994, Report*, Report No. 103-153, (Washington, D.C.: Government Printing Office, 1993), p. 81.

[41] "Chamber Action," *Congressional Record*, November 8, 1993, p. H8978.

[42] This figure includes $25 million for international nonproliferation initiatives, $6 million for counterproliferation research and analysis, and $8,698 for DTSA. The DTSA funds are not broken out in the conference agreement, but rather are included within the O&M budget total for defense-wide activities. Hence, the $8,698 million figure is an estimate carried over from the breakout within the House version of this bill.

[43] Report No. 103-153, *op. cit.*, p. 81.

[44] Schmitt, *op. cit.*, p. A15 and R. Jeffrey Smith, *op. cit.*, p. A4.

VII. CONCLUSIONS AND RECOMMENDATIONS

This thesis has presented an historical analysis of U.S. technology security policy since the onset of the Cold War and a financial analysis of the $40 million budget request for technology security, counterproliferation, and export controls in the Clinton Administration's FY 1994 defense budget presentation. The analysis of CoCom and the MTCR provided a glimpse of Cold War era U.S. technology security measures which emphasized multilateral control regimes and the use of export controls as enforcing mechanisms. In the initial stage of the post-Cold War era, U.S. technology security policy has begun to shift somewhat in order to account for the dramatically changed global economic and security environment. Financial analysis of the $40 million budget request for counterproliferation measures contained in the Clinton Administration's FY 1994 defense budget presentation served as a prism for viewing the emerging shape and priorities of U.S. technology security policy. The result, as presented in this thesis, is the identification of some of the problems and policy issues associated with technology security in the post-Cold War environment.

A. PROBLEMS AND POLICY ISSUES

1. Limitations Affecting U.S. Policy

U.S. technology security policy is influenced by more than just legislative rules and procedures and the priorities of the president in office. This was illustrated by the complexities surrounding many of the issues addressed in the preceding pages. The technology security policy emerging from this

Administration was also shaped and limited by a variety of domestic and international factors.

President Clinton entered office during a time of transition. One of his challenges has been to reform a U.S. technology security policy designed to deal with the old Soviet and Eastern Bloc threat into one better able to address the realities of the new world order. The collapse of the Warsaw Pact nations has had a wide-reaching impact, and has forced U.S. leadership to start redefining its national security environment. With the communist threat no longer looming large on the horizon, the demand for a peace dividend and less-regulated global trade has been compelling. This political and economic imperative has significantly impacted the defense budget in general, and also set in motion a series of measures to ease regulation of previously restricted technologies. Yet the rate of change involving Congress and the governmental agencies linked to U.S. technology security policy (i.e., Commerce, State and Defense) has varied, resulting in a number of conflicts and adding to the confusion surrounding this issue.

The role of Congress in the U.S. governmental structure is one of checks and balances, particularly with regard to policy-making by the Executive Branch. In the case of the Clinton Administration's emerging U.S. technology security policy, congressional debate and control over the purse strings clearly impacted this policy. Within the annual budget cycle, the authorizing and appropriating processes are executed according to priorities set by both the Legislative and Executive Branch. The congressional committees with jurisdiction over defense funding and policy, namely the Armed Services and Appropriations Committees, had a large role in shaping this policy. Operating within the constraints of a U.S. economy weakened by massive federal and trade deficits, the role of Congress has

become even more difficult and important. Scarce resources, in turn, set the stage for budget battles and power struggles, both within and between the branches of the U.S. Government.

During the debate over the Administration's $40 million budget request for counterproliferation measures, some of these power struggles became evident. For example, even after the HASC authorized $39.698 million in appropriations for counterproliferation measures, the HAC cut this down to $8.435 million. The rationale for this move was that although the committee members did not disagree with the need for these counterproliferation measures, they did not approve of the decision to place the funds under the purview of DTSA. This is only one example of intra-governmental conflict overshadowing perceived requirements and influencing the final budget outcome. As it turned out, this pattern was repeated in the conference agreement, and the Administration's counterproliferation measures received only $8.435 million in the final defense budget. Other conflicts were addressed in the discussion of the differing treatment of this issue by the congressional committees with jurisdiction in this area, as well as within Executive Branch Agencies.

Finally, the Administration's eagerness to reshape U.S. technology security policy may have contributed to the lack of success of their FY 1994 counterproliferation initiatives. The Clinton Administration officially took office in late-January of 1993 and their much-anticipated budget proposal was expected only a few months thereafter. Meanwhile, the Administration still had to officially nominate and receive confirmation of its senior leadership positions. Additionally, Secretary of Defense Les Aspin, immediately began a major reorganization of that department in order to better address the needs of a post-Cold War world. Hence,

the Administration's FY 1994 counterproliferation proposal, albeit only a $40 million program, may have been presented prematurely. While the topic at hand was indeed timely and pressing, DoD officials seemed to lack a detailed plan for spending these funds effectively and efficiently. Consequently, the proposal met resistance during congressional debate over its funding.

B. PRIMARY RESEARCH QUESTION AND FINDINGS

This thesis addresses a wide range of issues relating to technology security policy, and, in doing so, answers the primary and subsidiary research questions. The primary research question was this: How did Congress change the FY 1994 defense budget for technology security as a consequence of the changing role of U.S. defense technology policy after the Cold War? There is no question that this issue attracted much attention in both the Executive and Legislative Branches of government. There seems to be consensus among these bodies that steps must be taken to resolve the problems associated with this issue.

However, research suggests that there is no consensus yet on the shape of the required resolution. Congress cut the Administration's budget request significantly for a number of reasons including the lack of a detailed spending plan, criticism of the agency assigned oversight of the funds, and a turf war between the Defense and State Departments and various governmental bodies supporting these two departments. The uncertainty produced by the rapidly evolving global security and economic environments in the post-Cold War era also contributed to the lack of consensus within the U.S. government.

C. CONCLUSION

The information presented in this thesis provides some insight into emerging U.S. technology security policy and the role that the budgeting process plays in its formation and evolution. It is important to remember, however, that the scope of the research was necessarily limited. Financial analysis of the Administration's $40 million defense budget request for counterproliferation measures is only one piece of a larger and more complex U.S. technology security policy.

Both Congress and the Executive Branch seem to agree that the proliferation of advanced, dual-use technology, particularly as related to weapons of mass destruction and their delivery systems, is a serious threat to U.S. national security and international stability. However, this consensus narrows when it comes to deciding how the U.S. should respond to this threat. The lack of consensus on a solution is attributable, in part, to the speed at which this problem is unfolding. This thesis has shown that while awareness of the threat exists, Congress seems unwilling to throw funds at this problem haphazardly. Congressional treatment of the Administration's $40 million budget request illustrates this finding.

Even with the adverse treatment of the budget request presented in this thesis, interest in this issue is unlikely to diminish in the near future. As mentioned above, the U.S. Export Administration Act expires in June 1994 and legislation has already been introduced to revise this Act. As proposed, the revised EAA would end "...export controls aimed at preventing the export of technology to the former Soviet republics and China, and redirects the controls toward halting the proliferation of weapons."[1] Additionally, the legislation would shift the focus of controls away from technology not directly linked to weapons and onto so-called "chokepoint technologies" critical to the manufacturing of high-interest weapon

systems. Early reports suggest that the Clinton Administration, including Department of Defense officials, support such changes.[2] In a recent appearance before Congress, Ashton Carter, Assistant Secretary of Defense for Nuclear Security and Counterproliferation, stated that the U.S. should "...only apply controls to particular technologies and weapons when other nations also agree not to export these products."[3] Clearly, the debate over this issue is far from finished.

The rapidly changing global security and economic environment seems likely to ensure a continuing demand for these potentially dangerous technologies for the foreseeable future. The challenge for U.S. leadership is to develop an effective technology security policy that balances the harsh reality of U.S. economic constraints and the threats posed by the new world order.

D. RECOMMENDATIONS FOR FURTHER STUDY

In answering the research questions, others have been raised. The purpose of this section is to briefly describe potential areas of interest for follow-on research relating to this topic.

First, the role of multilateral control regimes continues to evolve in the post-Cold War environment. As discussed earlier, CoCom and the MTCR have played large roles in U.S. technology security policy in the past. Clearly, such regimes will continue to have an important role in this policy debate in the future. The role of the MTCR will likely remain on center stage in the near future as the PRC continues to flex its muscles in the new world order. For example, during his September 27, 1993 address to the United Nations, President Clinton suggested that the MTCR should be strengthened and transformed "...from an agreement on technology transfer among just 23 nations to a set of rules that can command

universal adherence."[4] Such a move would spread the burden of counterproliferation and nonproliferation efforts more evenly among participating nations. Further research on moves to strengthen the MTCR may provide useful information on the future role of these regimes. The PRC is likely to continue to test the strength and resolve of the MTCR member-nations. Accordingly, an ongoing and more detailed case study of this nation and its treatment of advanced, dual-use technology would be both interesting and beneficial for its applications to and influence on U.S. technology security policy.

The future of CoCom as a critical part of U.S. technology security policy seems to be far less certain. Following the breakup of the Soviet Union and Warsaw Pact, the members of CoCom have struggled with the question of whether to incorporate these former communist nations into their organization or to disband CoCom altogether now that the threat from the Eastern Bloc appears to have faded. U.S. industry appears to be the primary advocate for easing restrictions on exports to these countries. This is reflected in legislation recently proposed in Congress to revise the Export Administration Act (EAA) which expires in June 1994.[5] Further research on the development of and debate over the revised EAA will likely impact U.S. technology security policy and provide additional insight into the Clinton Administration's evolving policy priorities and objectives in this arena.

Second, it might prove useful to conduct a similar analysis of any counterproliferation proposal offered by the Administration for FY 1995. A significant factor in the denial of $31 million in funds for counterproliferation and nonproliferation initiatives in the FY 1994 budget was the lack of a well-developed plan for spending such funds. This is partly attributable to the

reorganization of senior DoD positions by Secretary of Defense Les Aspin and the slowness with which these officials were named. Once all of these positions are filled, however, this factor should no longer affect the outcome of the Administration's policy and any associated budget requests. Thus, it would be useful to track a FY 1995 counterproliferation proposal through the budget process and compare the results and related debate to the data presented in this thesis. Such a comparison would provide some indication of the perceived importance of this issue. Assuming the Administration resolves its internal problems, such policies will stand more chance of being judged on their merits rather than on turf wars and political maneuvering.

Finally, future counterproliferation proposals will likely be influenced by the reports to be submitted by the Non-Proliferation Program Review Committee and Advisory Board on Arms Proliferation Policy in May 1994. These are the two bodies established by the FY 1994 Defense Authorization Act. Although funds were not appropriated specifically for these two bodies, it is likely that they will be established anyway because of their temporary nature and since operating funds were initially set to be paid "out-of-pocket" by participating federal agencies. The charter of the committees is to investigate and prioritize all ongoing counterproliferation and nonproliferation initiatives within the Federal Government in order to better coordinate these efforts as well as to ensure that the best ones are adequately funded. The findings of these two committees and the attention given to the resulting reports by Congress and the Executive Branch are likely to impact future budgeting decisions regarding U.S. technology security policy.

NOTES

[1] *Ibid.*
[2] *Ibid.*
[3] *Ibid.*, p. 36.
[4] "In Clinton's Words: U.N. Cannot Become Engaged in Every World Conflict," *op. cit.*, p. A4.
[5] Stephen C. LeSueur, "Lawmakers Press to Ease U.S. Export Controls," *Defense News*, November 1-7, 1993, p. 3.

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