The Missile Technology Control Regime: Case Study of a Multilateral Negotiation

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How This Case Study Was Written

When the computers crashed in the State Department in 1988, the official files on the negotiation of the Missile Technology Control Regime were lost forever.

There were other electronic copies of the relevant documents, but they were dispersed in cyberspace. There had been well-organized hard copies of the State Department files, but they had been destroyed in a housecleaning after the 1987 completion of Missile Technology Control Regime (MTCR) negotiation.

Within months after the computer crash a rumor began to emanate from the State Department. The MTCR had never been approved by the U.S. government. The apparent entry into force of the regime had been an act of prestidigitation by the writer of this case study.

It was a distinct honor to be accused of hoodwinking seven governments into announcing the MTCR on April 16, 1987. Unfortunately, I had the proof that it wasn't so.

Working at the Office of the Secretary of Defense I had kept every scrap of paper on the MTCR negotiation that had fallen into my hands. I needed to. Until the late 1980's I was the only policy official in the world working full-time on the regime.

With regret I produced a copy of the March 1987 cable that formally recorded U.S. agreement to the MTCR. The "slug line" noted approvals from all of the relevant officials, including the Secretary of State personally, and from all of the affected agencies, including the White House. I had not pulled off one of the greatest scams in diplomatic history. I was merely a cog in the wheel.

More than a decade has passed since the beginning of negotiation on the MTCR. We are not getting any younger, and the files are not becoming any more accessible. So it is now time to record the salient points about this negotiation.

I have enjoyed a good deal of help in this process. The U.S. Institute of Peace has funded the project, and the Carnegie Endowment for International Peace has administered the funding. The Office of the Secretary of Defense and the National Security Council have supplied previously classified key documents in response to a Freedom of Information Act request. However, the State Department, after eight months,

has still not honored my request for documents. May a plague of frogs descend upon the responsible parties at the State Department.

Apart from the lack of responsiveness displayed by the State Department there are severe limitations to the documentation used in this book. The documents on the MTCR negotiation filled three five-drawer safes. The Office of the Secretary of Defense has a system for archiving classified documents, but it has remained impenetrable to me and my secretaries. I never worked in an office that could accommodate more than three safes. So, as we moved into the 1990's and a new generation of paper records, the documents on the early days of the MTCR began to be destroyed to make way for the new.

A large fraction of the destroyed documents were my hand-written notes, taken during negotiations, policy meetings, and phone conversations. The State Department has never recognized the legitimacy of my notes in setting out the record, so they were the first to be destroyed. The next to go were my records of particular missile export cases and bilateral negotiations -- from the Condor missile issue to the bilateral talks with the Soviets (and later the Russians). These I turned over to the Defense Technology Security Agency, which does know how to archive documents. They may still be retrievable.

The last to go were the key typed or printed documents on the negotiation and implementation of the regime as a whole -- covering a period through the time I left government in 1994. I possessed the best set of these, and -- culled down to a minimum -- they filled a single five-drawer safe. From these I selected three inches of really key documents -- the ones that might be repeatedly useful to officials trying to find out what this or that wording originally meant. It is these three inches of documents that I requested under the Freedom of Information Act. Even without the documents from the State Department, I have now obtained some 40 per cent of the requested documents relevant to the history of the MTCR through its announcement in 1987.

The net effect is that the presidential guidance, the development of key concepts, and the interagency battles are relatively well documented. The international negotiation is the weak point in this draft of the record.

But all is not lost. I have a memory. While I am precluded from revealing classified aspects of the international negotiation, the conceptual process of crafting the MTCR has been discussed publicly many times.

Moreover, I have been fortunate enough to benefit from the help of two participants in the MTCR negotiations:

Richard Perle, Assistant Secretary of Defense for International Security Policy from 1981 to 1987, and Douglas Feith, Deputy Assistant Secretary of Defense for Negotiations Policy from 1984 to 1986. They have both commented on the manuscript. Their expertise and their memories are invaluable contributions to this case study.

Moreover, other individuals -- knowledgeable on parts of the history or on nonproliferation in general -- have reviewed some or all of my draft manuscript. They are Maurice Eisenstein, Henry Sokolski, Leonard Spector, and anonymous folks still associated with the U.S. government.

My thanks go to all of these helpful people. But the final text was mine -- not theirs. Moreover, the opinions, findings, and conclusions or recommendations expressed in this case study are those of the author and do not necessarily reflect the views of the United States Institute of Peace or the Carnegie Endowment for International Peace.

The United States Institute of Peace sponsored this case study because it was interested in the process of negotiation. That interest limited the coverage to the period through April 1987. But there may be more to come. I hope to expand this case study into a history of the MTCR to the present day.

It will not be a story with a happy ending. In the past few years the MTCR has lost its bearings. Do you want to know what those bearings are? Read this case study. Do you want to know how those bearings were lost? Read The Rise (and Fall?) of the Missile Technology Control Regime if and when it appears.

Some of the reviewers of this manuscript have suggested that it has a value beyond the history of the MTCR. They think that this case study would be useful for any student of national security policy. That was certainly the intent of the U.S. Institute of Peace. And, come to think of it, the battle between "principle" and "flexibility" is an important subject, isnt it?

A word about the "I" word. It would be deceitful for me to present this case study as a disinterested piece of scholarship. I was in the middle of things. I am still a partisan with respect to some issues over which the MTCR negotiators agonized but that remain alive today -- for instance, the control of space launch vehicles. Moreover, the history of the negotiation process -- as opposed to its substance -- gets personal. So, in the name of truth in labeling, there will be lots of "I's" in the text. This case study was not written by a man from Mars.

Someone else did not write this case study -- a person who wanted to join me in writing it before she died in 1994. Dr. Jeanne S. Mintz, the Department of Defense lead person in the MTCR negotiations, had an inestimable impact. She never suffered fools gladly. The cast of characters in the negotiation included some fools, but it would have included more if she had not put her energies into personnel issues. Her refusal to compromise on positions that supported international security, her readiness to escalate the issues, and her moral force saved the day many times.

There was one overseas meeting that she could not attend. Her absence was noted by the most difficult foreign delegate with whom the U.S. was dealing. He turned to me and intoned slowly, "She is formidable."

Indeed she was. I dedicate this case study to her memory.

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Chapter 1

Ippendorf: October 1986

Gerold von Braunmuehl did not have a bodyguard. That made the gunmen's job easier.[1]

Von Braunmuehl, the highest ranking civil servant in the West German Foreign Office, always worked late. At 9:45 PM on a rainy Friday, October 10, 1986, he arrived by taxi at his home in the Bonn suburb of Ippendorf. As he left the taxi and reached for his briefcase, a man stepped out of the shadows.[2]

The man fired two shots at von Braunmuhl. As the taxi driver cowered, von Braunmuehl staggered away. Another man emerged from the shadows, blocking his path. More shots. Von Braunmuehl was dead.

The gunmen seized the briefcase and leaped into a red Opel Kadett. As they sped away, the gunmen tossed a seven page letter out of the getaway car. To the police and the world the gunmen declared that they were associated with the Ingrid Schubert branch of the terrorist Red Army Faction.

This was what the world heard about the assassination. Over the weeks the memory of the event disappeared into the slow process of police investigation.

Four weeks later the government of the Federal Republic of Germany had news. It delivered a classified message to the governments of Canada, France, Italy, Japan, the United Kingdom, and the United States. The message concerned the contents of von Braunmuehl's briefcase.[3]

Officials in all seven governments held their breaths.

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[1] James M. Markham, "Senior Bonn Official is Slain by Masked Gunman," New York Times, October 11, 1986.

[2] Rob Meines, "RAF schiet hoge Westduitse diplomat dood," NRC Handlesblad, Rotterdam, October 11, 1986. Jos Klassen, "Naaste medewerker van Genscher door RAF-terroristen vermoord," De Volkskrant, Amsterdam, October 13, 1986.

[3] Richard H. Speier, "Missile Non-Proliferation--Status/Possible Compromise," weekly activity report for the Office of the Secretary of Defense, November 12, 1986. Released by OSD April 21, 1995.

The briefcase contained secret documents -- the complete text of the Missile Technology Control Regime (MTCR), a common policy being submitted to the seven governments for final approval. Once approved, the MTCR would establish export controls to limit the proliferation of missiles capable of delivering nuclear weapons.

If the Red Army Faction or their sponsors chose to leak the contents of the briefcase to the press, the MTCR could be killed before it was born. Before the Seven could act in unison, the Soviet Union could demand a negotiating role in a policy that attempted to limit proliferation without damaging Western defense cooperation. Moreover, exporters of missile technology and Third World importers could place enormous pressure on individual members of the Seven to break the consensus.

But the contents of the briefcase never were leaked. Some six months after von Braunmuehl's assassination, on April 16, 1987, the seven governments announced the MTCR. It was arguably the most important international nonproliferation accomplishment of the 1980's.

In more than eight years since the announcement, 21 additional governments -- including Russia -- have become full participants in the regime. Still others -- including China, Israel, Romania, and Ukraine -- have announced that they have incorporated into their national practices the export limitations prescribed by the MTCR. Indeed, among major exporters of missile technology only North Korea has refused to acknowledge the MTCR as the international standard for missile nonproliferation.

The United States has incorporated the MTCR into legislation requiring sanctions against foreign entities engaged in certain missile-related transfers. This has led to major diplomatic interactions with China, India, Pakistan, Russia, and South Africa.

Moreover, the MTCR has become an international standard for the nonproliferation of other "dual-use" items, that is, items with both military and civilian applications. The MTCR was the basis of "dual-use" nuclear export controls agreed in 1992 by the members of the Nuclear Suppliers Group. With important modifications, it is the basis for monitoring Iraq's compliance with the UN ceasefire resolution ending the Gulf War. The MTCR is also likely to be the basis for a new international regime to control anti-personnel landmines.[4]

How did the MTCR come into being? This case study tells the story of a secret negotiation. It is a tale of military

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[4] Paul Lewis, "Makers of Anti-Personnel Mines Are Urged by U.S. to Ban Exports," New York Times, December 16, 1993.

technology, of diplomacy, and of conceptual innovation. It is a tale of moral courage, of bureaucratic warfare, and of international power politics. It is a tale of the influence of extraneous events -- including jet-lag, limited staff resources, and governmental inflexibility. It is a tale of the actual process by which nations attempt to negotiate improvements in international security.

I will tell the story in roughly chronological order. I will explore the substantive evolution of the concept of missile nonproliferation, the process of international and intranational negotiation, and the influence of events outside the negotiation process. And I will conclude with some implications for future negotiations.

Part I

The Concept of Missile Non-Proliferation

Chapter 2

What's So Bad About Missile Proliferation?

It wasn't even an arms race. The Nazis were all alone in developing the technology to deliver pushbutton death at a distance of hundreds of kilometers.[5]

The subsequent history of missile proliferation is a footnote to the Nazi development of the V-2 ballistic missile

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[5] This case study is not a systematic history of missile proliferation but rather of the negotiation to deal with it. For information on ballistic missile proliferation, see William C. Potter and Harlan W. Jencks, ed., The International Missile Bazaar: The New Suppliers' Network, Westview Press, Boulder, CO, 1994; Robert D. Shuey, et al., Missile Proliferation: Survey of Emerging Missile Forces, Report #88-642F, Congressional Research Service, Washington, D.C., October 3, 1988; Janne E. Nolan, Trappings of Power: Ballistic Missiles in the Third World, The Brookings Institution, Washington, D.C., 1991; Humphrey C. Ewing, Robin Ranger, and David Bosdet, Ballistic Missiles: The Approaching Threat, Bailrigg Memorandum 9, Centre for Defence and International Security Studies, Lancaster University, Cancashire LA1 4YL, United Kingdom, 1994; System Planning Corporation, Ballistic Missile Proliferation: An Emerging Threat, System Planning Corporation, 1550 Wilson Boulevard, Arlington, VA 22209, dated 1992; CIA, The Weapons Proliferation Threat, Nonproliferation Center, Central Intelligence Agency, Washington, DC, March 1995; Martin Navias, Ballistic Missile Proliferation in the Third World, Adelphi Paper 252, International Institute for Strategic Studies, London, Summer 1990; W. Seth Carus, Ballistic Missiles in the Third World: Threat and Response, Washington Papers 146, Center for Strategic and International Studies, Washington, DC, 1990; Aaron Karp, Ballistic Missile Proliferation, SIPRI, 1994; Herbert Krosney, Deadly Business: Legal Deals and Outlaw Weapons, Four Walls Eight Windows, New York, 1993; and Robert Windrem and William Burroughs, Critical Mass, Simon & Schuster, New York, 1993. For information on cruise missile proliferation, see David R. Israel, "History Repeats?", Strategic Defense Initiative Organization, September 21, 1992; W. Seth Carus, Cruise Missile Proliferation in the 1990s, Washington Paper 159, Center for Strategic and International Studies, Washington, DC, 1992; K. Scott McMahon and Dennis M. Gormley, Controlling the Spread of Land-Attack Cruise Missiles, American Institute for Strategic Cooperation, P.O. Box 9844, Marina del Rey, CA 90295, January 1995; and Humphrey C. Ewing, Robin Ranger, David Bosdet, and David Wiencek, Cruise Missiles: Precision & Countermeasures, Bailrigg Memorandum 10, Centre for Defence and International Security Studies, Lancaster University, Lancashire LA1 4YL, United Kingdom, 1995.

and the V-1 cruise missile. Several distinctions between the two missile types need to be emphasized.[6]

Ballistic missiles are guided rockets that are powered only for the first part of their flight. Thereafter, they coast ballistically as their burnout velocity is modified by the earth's gravity. *Cruise missiles* are guided unmanned air vehicles that are powered all the way from launch to target.

Ballistic missiles contain tens or hundreds of thousands of parts that operate under stressful conditions. The failure of one of these parts can neutralize the effectiveness of the missile. Cruise missiles, while containing many parts, operate under far less stressful conditions; they may be no more sophisticated than small airplanes.

As a result, ballistic missile development programs tend to be lengthy and expensive; and the resulting missile may be unreliable. Cruise missile development programs can be quick and inexpensive; and the resulting weapon is more easily made reliable. The Nazi V-2 ballistic missile program took some 10 times as long to bring to fruition as the V-1 cruise missile program. Used against the Allies in World War II, the V-2 ballistic missile killed fewer than 20% as many people as did the V-1 cruise missile even though the Allies were often able to intercept the V-1 in flight.

A ballistic missile, unless it embodies expensive advanced technology, is typically inaccurate. A cruise missile, with the commercial Global Positioning System (GPS) technology that became available in the early 1990's, can reliably strike the city block against which it is aimed. With commercial enhancements to GPS, a cruise missile can reliably strike a specific sector of a building -- even an individual room. In the Gulf War Iraq was able to strike cities with its inaccurate Scud ballistic missiles, but these strikes accomplished little military damage. The Coalition used three times as many Tomahawk cruise missiles as Iraq used Scuds, and these -- with an expensive guidance system now being partially replaced by GPS -- were precise and caused extensive military damage.

Ballistic missiles have one advantage over cruise missiles: greater terror. Ballistic missiles, traveling faster than sound, hit their targets before they are heard. Civilian victims feel helpless. As a result, London during the 1944-1945 V-2 attacks and Teheran during the 1988 "War of

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[6] The State Department, the White House, and some other governments have lost the message that the MTCR tries to prevent not only ballistic missile proliferation but also cruise missile proliferation. See McMahon and Gormley, op cit., for embarrassing examples of this technological amnesia.

the Cities" experienced major depopulations as civilians fled to non-target areas. Moreover, when in the 1950's ballistic missiles were married to nuclear warheads, there seemed to be no defense against annihilation. This focused the attention of the world on ballistic missiles as *the* missiles. As President Reagan said, "The ballistic missile is the most awesome, threatening, and destructive weapon in the history of man."[7] Maybe so.

But, as we shall see, when President Reagan issued the directive that led to the Missile Technology Control Regime, he was concerned with both ballistic and cruise missiles. And so were the nations that developed missiles after World War II.

The Soviet Union drew on German technology to develop the Scud ballistic missile and a family of ever longer range systems leading to ICBM's. They also developed cruise missiles.

The United States drew on German technology to develop the Sergeant ballistic missile and, ultimately, ICBM's. The U.S. also developed cruise missiles. The first U.S. missile capable of striking the Soviet Union was the Regulus, a cruise missile launched from a surfaced submarine. Over the years the U.S. developed long range cruise missiles -- the Matador and the Snark. And ultimately the U.S. developed the Tomahawk and ALCM in land, air, and sea-launched versions.

The U.K., France, and China followed in the development of ballistic and cruise missiles. Then came Israel, with the Jericho family of ballistic missiles and the Gabriel family of cruise missiles and its successors. By the early 1970's the Third World was most definitely interested in missiles. Taiwanese engineers were expelled from MIT after it was discovered that they were trying to obtain ballistic missile technology. India was to develop a space launch vehicle, the SLV-3, copied from the U.S. Scout. It was first successfully launched in 1980 and later served as the basis for its Agni ballistic missile "technology demonstrator." By the late 1970's the Soviets were marketing Scuds to their client states. Brazil initiated a program to develop space launch vehicles. South Korea adapted the U.S. Nike Hercules as a surface-to-surface missile.

A private German firm, OTRAG, began developing a "space launch vehicle", establishing a flight facility in Zaire and an office in France. Under international pressure, Otrag pulled out of its former sites, dropped its plans for launch

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[7] Speech to the U.N. General Assembly, October 24, 1985, cited in The New York Times, October 25, 1985.

sites in Brazil and Asia, and in 1981 situated itself in Libya.[8]

What was so threatening about the spread of these missiles? Three things.

First, missiles are relatively easy to use. Pushing a button is easier than flying a manned aircraft. And the cost of a missile system is usually far lower than the cost of the infrastructure and exercises necessary to keep manned aircraft effective.

Second, missiles can reach great distances. Ballistic missiles of intercontinental range or cruise missiles launched from ships can reach the United States. Shorter range missiles can reach our friends and allies. Third World problems are no longer limited to the Third World. *Their* problems, confined to a region, become *our* problems when the regional weapons can reach us.

Third, missiles are difficult to stop. Of course, ballistic and cruise missiles are difficult to shoot down once they are launched. But they are also difficult to find and attack before they are launched. They can be set in hardened launch positions, concealed, made mobile, and fired from a variety of platforms. In contrast, manned aircraft usually depend on large, fixed airfields; and these are among the earliest targets in a war.

So missiles -- ballistic *or* cruise -- add new threats when they spread to additional nations. The United States government realized this in the 1970's.

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[8] Robert P. Ropelewski, "Low-Cost Satellite Launcher Developed", Aviation Week & Space Technology, September 12, 1977. John Darnton, "Private German Rocket Base in Zaire Stirring Rumors", New York Times, April 29, 1978. "Move Into France By a Missile Builder Draws Soviet Protest", Wall Street Journal, June 23, 1978. "Otrag Considering Rocket-Launch Sites in Brazil and Asia", Wall Street Journal, June 30, 1978. John Vinocur, "Enigmatic West German Rocket Concern Finds a Home in Libyan Desert", New York Times, March 11, 1981. "Libya Reported to Sign Contract to Buy Missiles", New York Times, March 13, 1981.

Chapter 3

Early Missile Nonproliferation Policy

Even at the beginning of the 1970's, the U.S. government realized that there was a problem. The problem was not the broad range of threats from missile proliferation. Rather it was how the U.S. should regulate its growing space cooperation to avoid contributing to such proliferation.

President Nixon posed the question -- and related issues involving space cooperation -- in National Security Study Memorandum 72. Not until the third interagency study had been prepared in response to his questions was he prepared to approve a policy. The policy, National Security Decision Memorandum 187, was signed by Assistant to the President for National Security Kissinger on August 30, 1972.[9]

In signing NSDM 187 Kissinger wrote in the name of the President, "The President has reviewed....The President has approved....The President has also decided...." NSDM 187 was focused on communications satellite cooperation and on the embryonic Intelsat organization. It ran the gamut of objectives concerning science and technology, foreign policy, national security, and economics. But it laid out an objective and policies applicable to missile proliferation.

The objective was "To avoid proliferation of foreign capabilities to develop and deploy advanced weapons systems." The policies were twofold.

First,

> "Proposals or requests for the export of space hardware and technology should be met through the provision of 'hardware and related technical information' rather than 'technical assistance'....All requests...must specify the end use [and] shall be examined on a case-by-case basis....No U.S. space [exports] shall be made available by a recipient...to a third country without the express prior agreement of the U.S."

Second,

> "launch assistance will be available, consistent with US laws, either from US launch sites (through the

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[9] NSDM 187, "International Space Cooperation - Technology and Launch Assistance", August 30, 1972. Released by NSC June 27, 1995.

acquisition of US launch services on a cooperative or reimbursable basis) or from foreign launch sites (by purchase of an appropriate US launch vehicle). In the case of launchings from foreign sites the US will require assurance that the launch vehicles will not be made available to third parties without prior agreement of the US."

What should we make of NSDM 187? First, missile nonproliferation was a subset of space cooperation policy. The interchangeability of space launch vehicles (SLV's) with ballistic missiles (more on this later) forced the consideration of missile proliferation when considering SLV exports. But there was no broader policy to limit missile proliferation.

Second, the standard policies of munitions export controls were applied to SLV's: a preference for hardware over technology exports in order to prevent the creation of new hardware producers, the usual bland requirements for a case-by-case review of exports with attention to end use, and the standard munition export requirement that no retransfer occur without U.S. approval.

Third, the U.S. was willing to export SLV's -- subject to standard policy controls. Under this policy, the U.S. exported SLV's to Japan, Italy, and Sweden.

At the presidential level this was the U.S. missile nonproliferation policy for ten years. But among the national security bureaucracy the realization grew that a stronger policy was appropriate. In this the Arms Control and Disarmament Agency took the lead. On July 29, 1976, ACDA Director Ikle urged supplier states to restrain transfers of missiles and manned aircraft. He urged recipient states "to forgo acquisition of destabilising systems not yet introduced in to the area, particularly surface-to-surface missile systems having a long range beyond any defensive need and aircraft having a long-range strike role."[10]

The theme was amplified in succeeding years. On June 27, 1977, Under Secretary of State for Security Assistance, Science and Technology Benson stated in an address on arms transfers, "Our initial emphasis might well be on such obvious and troublesome problems as:

-- Arms sales to unstable regions;

-- Sales of sensitive weapons and technology, such as long-range surface-to-surface missiles...."

The characterization of the missile proliferation problems as one of "long-range surface-to-surface missiles"

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[10] Cited in Navias, op cit., page 49.

was a step forward from the exclusive focus on SLV's. By 1980 ACDA was ready publicly to tie these together in a wider definition of the problem.

> "One area of potential concern involves development and production of longer-range surface-to-surface missiles using technology either imported or developed indigenously. Such production could be particularly destabilizing if carried out by countries assessed capable of producing nuclear weapons. Thus, the availability and spread of technology potentially useful for ballistic missiles, space launch vehicles, cruise missiles, and remotely piloted vehicles could cause serious problems for regional stability in the coming decade."[11]

Much was happening in the bureaucracy during the 1976-1980 period in which official statements about missile proliferation were becoming increasingly precise. One group saw missile controls as the opening wedge of serious controls on conventional arms transfers. To them, control of "weapons of ill-repute", including long-range surface-to-surface missiles, were the way to a Conventional Arms Transfer (CAT) regime.[12] On October 3, 1978, Director of the Department of State Bureau of Politico-Military Affairs Gelb discussed the options before a congressional committee.

> "There are a number of possible outcomes of our efforts to bring about restraint of arms transfers. One possibility would be an international treaty, although formal agreements probably are not the most effective approach to this complicated arms control problem. Other more realistic possibilities include the development of harmonized national guidelines for transfer restraint, such as the London nuclear export guidelines, and the establishment of restraint arrangements on a regional or sub-regional basis. In any event, the process of discussion and consultation on restraint provides important benefits in its own right. As we go along, we would continue to examine the issue of how best to translate restraint objectives into meaningful arrangements."[13]

Another group focused on missile proliferation in the context of SLV export policy. In the late 1970's, ACDA

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[11] U.S. Arms Control and Disarmament Agency, World Military Expenditures and Arms Transfers 1969-1978, December 1980, page 21.

[12] Navias, op cit., page 50.

[13] Statement before a Special Panel of the House Armed Services Committee: Conventional Arms Transfers, reprinted in Documents on Disarmament, 1978, United States Arms Control and Disarmament Agency, October 1980.

research established that missile production equipment and technology could be purchased component by component, ostensibly for civilian purposes through normal civilian export licensing procedures.[14] The ACDA official responsible for this research, Maurice Eisenstein[15], discussed the problem in 1982.

> "U.S. export policy for missile technology is very strict and evaluated on a case-by-case basis by the State Department. The control of dual-use technologies by the Department of Commerce is less stringent....It may be useful to consider cooperative agreements with friendly developing countries. Such agreements would limit use to peaceful purposes or control use in military programs....In principle, U.S. supply and involvement could keep military programs from being perceived as nuclear-related."[16]

Eisenstein's concept of cooperation on "peaceful" activities such as SLV's seemed to be the direction in which the U.S. government was heading. An interagency group had probed the issue in the late 1970's. One outcome was a 1980 U.S. decision to offer Brazil assistance in the development of an SLV.[17] Another was a draft presidential decision memorandum on SLV cooperation, never signed when President Carter left the White House. This left open the issue of SLV cooperation at the beginning of the Reagan Administration.

The Reagan Administration undertook two interagency reviews. One was on "space assistance and cooperation policy", leading to the decision document National Security Decision Directive (NSDD) 50 of August 6, 1982. The other was on "nuclear capable missile technology transfer policy", leading to NSDD 70 of November 30, 1982.[18]

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[14] Frederick J. Hollinger, "The Missile Technology Control Regime: A Major New Arms Control Achievement", in World Military Expenditures and Arms Transfers 1987, ACDA, 1988.

[15] Eisenstein is credited by a Carter Administration NSC official with being the "architect of the whole concept of the [missile nonproliferation] regime...the first guy to put his career on the line on the regime aspect." Benjamin Huberman, interview, October 1995.

[16] Maurice Eisenstein, "Third World Missiles and Nuclear Proliferation", The Washington Quarterly, Summer 1982.

[17] Maurice Eisenstein, interview, July 1995.

[18] A third study led to NSDD 94, "Commercialization of Expendable Launch Vehicles", May 16, 1983. Released by NSC June 27, 1995. NSDD 94 did not, however, concern itself with international transfers of hardware and technology. It limited itself to decisions on the terms and conditions under which the U.S. government would encourage space launch services.

NSDD 50, with excisions by the National Security Council reviewers, is reprinted in Appendix 1.[19] NSDD 50 evolved from, but replaced, NSDM 187. Like NSDM 187, NSDD 50 listed numerous policy objectives -- 17 in all, judging by the space devoted to excisions. Like NSDM 187, NSDD 50 permitted sales of U.S. SLV's for launch from foreign sites provided "that the launch vehicles will be used solely for peaceful purposes and will not be made available to third parties without prior agreement of the U.S."

In two critical areas NSDD 50 went beyond its predecessor. First, NSDD 50 permitted technical assistance for SLV's "under safeguards which ensure protection of U.S. national security and foreign policy interests....[and] adequate assurances to control replication and retransfer and ensure peaceful use." Second, the U.S. would "encourage other supplier nations...to establish controls on their exports which are comparable to those set forth in this policy." The process would be supervised by an interagency group chaired by the Department of State with representatives from "DOD, ACDA, NASA, NSC, OSTP, DOD [sic -- almost certainly DOC], DCI, and other interested agencies as appropriate...[for] oversight activities regarding bilateral agreements."

So the United States was ready to expand its transfers of SLV hardware and technology. Or was it? About halfway through the 8 single-spaced pages of NSDD 50 there appeared an obscure paragraph.

> "U.S. space [exports]...will not be used to contribute to or assist in the development of any foreign weapon delivery system. Further, any officially promulgated national security policy directive is overriding with respect to the transfer of military-related missile hardware, information or technology within its purview."

In other words, if NSDD 50 conflicted with NSDD 70, the latter would prevail. But NSDD 70 would not be signed for nearly four more months.

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[19] NSDD 50, "Space Assistance and Cooperation Policy", August 6, 1982. Released by NSC June 27, 1995.

Chapter 4

NSDD 70

NSDD 70 was worth the wait. It is reproduced in its entirety in Appendix 2.[20] Because of its importance it is worth discussing in detail.

NSDD 70 did not present itself as an evolution of previous presidential guidance on SLV cooperation. Rather, it described itself as an update of National Security Action Memorandum (NSAM) 294 of April 20, 1964, a narrowly drawn document dealing with specific issues of strategic missile transfers. NSAM 294 has not yet been released by the NSC.

NSDD 70 explained that it should "be considered in conjunction with applicable civil space launch vehicle directives", i.e., NSDD 50. As we have seen, NSDD 50 stipulated that later guidance such as NSDD 70 would be "overriding" in case of conflict.

Having set the bureaucratic groundwork, NSDD 70 turned to its central concern, "nuclear capable missile delivery systems." The focus on nuclear capable, as opposed to conventionally armed, missiles made sense at the time for several reasons. First, nuclear armed missiles in the hands of the Soviet Union were seen as the greatest threat to international security; their proliferation to additional nations would be so much the worse. Second, there were well-established international controls to prevent the proliferation of nuclear weapons; this gave legitimacy to the control their delivery vehicles. Finally, the threat of chemical and biological delivery by missile was not yet perceived as a proliferation issue; that perception would come a decade later.

NSDD 70 defined a "nuclear capable missile delivery system". It is an "unmanned rocket-powered or air-breathing vehicle" that is either (a) equipped for nuclear delivery or (b) "could reasonably be modified to carry a nuclear warhead a significant distance, i.e., beyond an immediate tactical area."

Other missile types were also covered by NSDD 70 but only if they "embody technologies important for the development of a longer range surface-to-surface missile." When this condition obtained, the directive covered conventionally armed missiles; short-range missiles; unguided

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[20] NSDD 70, "Nuclear Capable Missile Technology Transfer Policy (U)", November 30, 1982. Released by the NSC, July 5, 1995.

artillery rockets; and air-to-air, air-to-ground, surface-to-air, and anti-ship missiles.

Policy makers rarely read definitions. So it was easy for a later generation to believe that U.S. missile nonproliferation policy only covered ballistic missiles or surface-to-surface missiles.[21]

NSDD 70 then summarized the intelligence assessments of the time. It noted that "development of nuclear-capable missiles is possible through a dedicated military program or an ostensibly civil space launch vehicle program."

At this point NSDD 70 turned to policy. Unlike NSDM 187 and NSDD 50, there were no long lists of often contradictory objectives. There was only one objective, "to hinder the proliferation of foreign military missile systems capable of delivering nuclear weapons except as exempted below."

NSDD 70 then set out key elements of this policy. The most important were to

- "prohibit" exports that "would" contribute to missile proliferation,
- "control" exports "considered likely" to contribute to missile proliferation,
- "exempt on a case-by-case basis certain U.S. friends and allies" subject to Presidential approval, and
- "seek cooperation with supplier nations" in export limitations.

This was a strong policy -- except for the exemption provision. But a page later NSDD 70 made it clear that exemptions were not to be granted lightly. "An exemption shall be accorded to states such as the United Kingdom, in light of existing U.S. cooperation in the strategic and nuclear fields." The United Kingdom, not Brazil.

The next page laid out other details of this strong policy. The additional details may have had a different drafting history because they temporarily drop the carefully defined "nuclear capable missile" and substitute the undefined "strategic missile." But this section toughened the formulation of U.S. policy. Instead of a policy to "prohibit" exports that "would" contribute to strategic missiles, the policy became one to "deny" exports that "can

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[21] In 1991 this view resulted in a U.N. cease-fire resolution that, by omission, legalized Iraq's cruise missiles and SA-2 air defense missiles. The latter were to be components of Iraqi-designed long range ballistic missiles.

benefit" such programs. Instead of a policy to "control" exports "when considered likely" to contribute to proliferation, the policy became one to "generally approve, after case-by-case review" an export that "clearly is of no more than marginal benefit to a potential recipient's strategic missile program."

NSDD 70 listed the agencies that would administer the policy. It was the same list as that of NSDD 50, leading to the formation of the interagency "50/70 group" to deal with questions of SLV cooperation in the light of both directives.

NSDD 70 concluded by restating the policy a third time, this time in terms of "any non-exempt nation...assessed by the interagency group as pursuing a nuclear weapon delivery capability". The policy was one of "stringent export controls to prevent...any" U.S. missile-related transfers to that nation "either directly or through intermediaries." And it was a policy to "reduce, insofar as possible, the assistance of other supplier nations to the country (s) in question." This formulation, the toughest yet, was an embargo of all items controlled for missile reasons. The embargo was directed against nations rather than more specific end users, e.g., the missile programs within those nations. This was a "blacklist" of nations, an idea that reappears in policy discussions over the years.

Who deserves the credit for NSDD 70? The person who supervised the drafting was probably Donald Fortier, the NSC staff official responsible at the time for nonproliferation. Fortier had been the primary Congressional staff person for the tough nuclear nonproliferation legislation that was enacted during the Carter Administration. Fortier died in the 1980's, so we may never know his role in NSDD 70.

What should we make of NSDD 70? Its objective was unusually clear -- breathtakingly so for the product of a bureaucracy. Its language was unusually tough: "hinder," "prohibit," "deny," "stringent," "prevent...any." Its three policy formulations were not inconsistent, just sequentially tougher.

Compared to NSDM 187 and NSDD 50's bland policy prescriptions and attempts to please everyone, NSDD 70 was a wonder. It was clear enough to serve as a guide to action.

Part II

Defining a Regime

Chapter 5

A "Short List of Denials"

It started to drift. Through the "50/70 group" the crisp objective of NSDD 70 started to be watered down with the multifold objectives of NSDD 50.

From late 1982 to March of 1983 the U.S., led by Steph Halper of the State Department's Bureau of Politico-Military Affairs, undertook highly secret exploratory bilateral discussions on missile nonproliferation. The talks were conducted with the United States' economic summit partners: Canada, the Federal Republic of Germany, France, Italy, Japan, and the United Kingdom. This was a group of relatively like-minded governments with extensive military and economic cooperation. The group was large enough to influence the rest of the world with its policies but small enough to try to keep the talks under wraps.

Out of these talks there came, in the spring of 1983, a Department of State draft of "rules squishy enough to mean anything to anyone."[22] The two-page State draft, "Missile Technology Control", is reprinted in Appendix 3.[23] It listed "procedures [that] could form a general framework" and "guidelines [that] would govern the transfer of equipment and technology for nuclear capable missiles." The procedures included a confidential exchange of notes agreeing to a set of guidelines and an annex to the guidelines containing a list of equipment and technology to be controlled. The annex was to be reviewed "at least annually".

The characterization of the guidelines was not illuminating.

> "The guidelines...will be cast in general terms and call upon each government to monitor and control proposed exports....These controls are designed to prevent the proliferation of nuclear-capable missiles. Action of [sic] license applications should take account of the following factors....In authorizing export..., governments will obtain at a minium appropriate and credible assurances...."

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[22] Memorandum from Richard Speier to the Principal Deputy Assistant Secretary (ISP), "Proliferation of Nuclear Capable Missiles", June 23, 1983. Released by OSD March 23, 1995.

[23] Ibid

It was the all-permissive laundry-list approach of NSDD 50, not the "prohibit...deny...prevent...any" approach of NSDD 70. But "Missile Technology Control" had one lasting value. It set out the form, and in many of the lesser provisions the first draft of the content, of the future regime. (See Appendix 7 for the evolution of the texts.)

During this period there comes on the scene the first person. I am an eyewitness to most of what happened beginning in the spring of 1983.

Since 1973 I had worked on nuclear nonproliferation in ACDA. In November 1982 I was transferred to the policy side of the Office of the Secretary of Defense (OSD). I was to serve, with the title "policy assistant", as the first full-time nonproliferation official in OSD. At that time nonproliferation concerned nuclear weapons. But I was aware of the coming of missile nonproliferation and the imminent signing of NSDD 70.

I liked NSDD 70. It was strong stuff. Nuclear nonproliferation had been weakened by commercial and diplomatic interests. Perhaps missile nonproliferation could serve as a better example of how proliferation should be prevented.

Early in the spring of 1983 I sought out the OSD person in charge of implementing NSDD 70. On the policy side I found a military officer assigned to OSD's export control activity, the Office of International Economic and Technology Security Policy (IETSP). He was thinking about drafting a complex DoD regulation laying out the responsibilities of all DoD components for missile export control. He said that I should get back to him in a month or so. A month or so later he was still thinking.

I asked him for the name of the chief OSD person for NSDD 70 implementation -- not just on the policy side but throughout OSD. And so I met Dr. Jeanne S. Mintz of the research and evaluation side of OSD.

Jeanne Mintz, then 61 years old, had an impressive past. In the 1940's she worked with Indonesia to secure its freedom from the Dutch. In the 1950's she became the first woman to receive a Ph.D. from Harvard (in government). Her doctorate came only after a multi-year battle with Harvard's bureaucracy that culminated in her blasting the way through the glass ceiling for herself and all future female Ph.D. candidates. In the 1960's she worked for the Center for Naval Analysis and went to Vietnam in charge of a test of sensors to spot targets for interdiction fire. In all but name she became the first woman combat commander in Vietnam, directing artillery, assault boats, and aircraft. In the

1970's she went to the Pentagon, eventually becoming Assistant Deputy Under Secretary of Defense (International Programs) for Asia, the Middle East, and the Southern Hemisphere. In other words, she was in charge of cooperation with the Third World on military technology. In May 1983 she replaced Francis Kapper as the DoD lead on NSDD's 50 and 70.

Mintz was not an expert on technology; she was an expert on people. She could assemble experts on technology. She could distinguish the competent from the incompetent, the diligent from the lazy. She could (and frequently did) break the careers of the incompetent and the lazy.

As attested by her past, Mintz was willing to take on a fight. She hated compromise. If a principle was worthwhile, there was no sense in watering it down. She was willing to escalate issues and to terrorize her bureaucratic enemies. This was the person whom I met to find out why we seemed to be drifting in the implementation of NSDD 70.

The timing could not have been better. There was a forthcoming meeting of the 50/70 group to discuss SLV cooperation with Brazil. Mintz sent me to the meeting.

The meeting was chaired by a representative of State's Department of Oceans, Enviroment, and Scientific Affairs (OES). The chairman presented a draft agreement in which the U.S. would offer to provide Brazil with the technology to build a solid-fuel SLV to place large satellites in geosynchronous orbit. I knew enough physics to understand that this SLV would be larger than the world's largest solid-fuel ICBM.[24]

Reporting back to Mintz I suggested that perhaps we had lost track of of NSDD 70's objective. What we needed was an engineering definition of the parameters of the missiles that we wanted to prevent from proliferating. This would allow us to determine what specific instances of cooperation were permitted and what were prohibited.

Mintz liked the idea. She invited me to meet with her DoD technical working groups, which supported the interagency effort on NSDD 70. We met on June 3, 1983, with Working Group 1, which handled broad technical questions.

The meeting[25] tentatively defined "nuclear-capable missiles" in terms of payload, range, and accuracy.[26] The

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[24] Ibid.

[25] Memorandum from Richard Speier to Dr. Jeanne Mintz, "Nuclear-Capable Missiles, Working Group 1 (Capabilities)", June 8, 1983. Released by OSD March 23, 1995.

[26] Accuracy is defined in terms of Circular Error Probable (CEP), the radius of a circle within which 50% of the missiles would impact.

working group agreed that it would be desirable to control missiles with a minimum capability of a payload of 500 kilograms, a range of 300 kilometers, and a CEP of 10 kilometers at full range.

The 500 kilogram payload figure was derived from information supplied by a staffer of the "Z Division" of Lawrence Livermore Laboratory, a nuclear nonproliferation group within a nuclear weapons organization. The staffer estimated that the lightest nuclear payload likely to be developed by proliferators of concern in the medium-term future would weigh 450-1000 kilograms.

The 300 kilometer range figure was derived by inspection of the Korean theater, the most compact theater to which "nuclear capable missiles" might be expected to proliferate. The "minimum range likely to be interesting to local strategic planners" in that theater -- taking account of the desire to site missiles well back from the DMZ and to be able to strike targets well beyond the DMZ -- appeared to be about 300 kilometers.

The 10 kilometer CEP figure was approximately the minimum CEP that would significantly reduce the damage from a nominal-yield (20 kiloton) nuclear weapon targeted against a dispersed urban area.

These were the parameters of the missiles that the working group thought desirable to control. In order to make it difficult to acquire such missiles, the group suggested prohibiting the export of complete missile systems, complete plants for their manufacture, and possibly major subsystems. This would force a proliferator to assemble missiles out of smaller bits and pieces -- a difficult undertaking for the proliferator. Should a proliferator be able to manufacture a reliable missile from bits and pieces, the ranges and accuracies could be improved over the 300 kilogram range and 10 kilometer CEP parameters.

This analysis of parameters and associated transfer prohibitions was accepted by other U.S. agencies for presentation to the other governments participating in the missile nonproliferation discussions.[27] The presentation, reprinted in Appendix 4, was couched in an analogy to nuclear nonproliferation controls. Complete nuclear explosives (export prohibited by the Nuclear Non-Proliferation Treaty) were analogous to complete missile systems. Complete manufacturing facilities for weapons-usable material (export prohibited by agreement of the Nuclear Suppliers Group) were

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[27] "An Overview of Proposed Missile Technology Controls and their Relationship to Nuclear Non-Proliferation", attachment to memorandum from Richard Speier to the Principal Deputy Assistant Secretary (ISP), June 23, 1983, op cit.

analogous to complete manufacturing facilities for missiles. And so on, to lower levels of control.

The bottom line of this analysis appeared in a second document, also reprinted in Appendix 4. The document, 12 lines long, was carefully titled "discussion draft" when the U.S. submitted it to its international partners.[28] The rest of the title, "Short List of Denials", made the point. These were the items to be prohibited from export by a missile nonproliferation regime. They consisted of "complete missile or space launch systems" -- a formulation that explicitly challenged proposals for SLV cooperation, such as that with Brazil -- with capabilities equal to or greater than the 500 kg/300 km/10 km parameters. They also consisted of complete manufacturing facilities for such systems and seven types of complete subsystems.

Not everyone at the State Department was comfortable with such explicit controls. But no one at State had an alternative to the numbers. These were the parameters submitted by the U.S. to the first multilateral meeting of the seven partners, June 21-22, 1983, in Washington, D.C.

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[28] "Discussion Draft: Short List of Denials", attachment to memorandum from Richard Speier, June 23, 1983, ibid.

Chapter 6

The Cast of Characters

Jeanne Mintz used to say that a multilateral meeting is like a birthday party: Everyone needs to get a favor. Offices and individuals with little involvement with missile nonproliferation came out of the woodwork when a multilateral meeting was about to occur -- especially if it was overseas. So at this point it would be appropriate to review the offices and individuals involved.

The State Department had the lead on NSDD 70. Within State, the Bureau of Politico-Military Affairs (PM) had the lead, and within PM the Office of Strategic Technology and Nuclear Affairs (the name of the office changed from time to time as did the personnel). This office handled policy issues involving export controls in general and the Coordinating Committee (COCOM), a 19-nation international group controlling exports to the Soviet Bloc, in particular. At the first multilateral meeting in Washington Louis Warren headed the Office of Strategic Technology and Nuclear Affairs, and he chaired the meeting. His successor as Office Director, William Gussman, became the career-level leader of the U.S. interagency delegation that negotiated the MTCR.

Overseeing the Office was a PM Deputy Assistant Secretary. There were four in succession during the MTCR negotiations: Steph Halper, Thomas McNamara, Robert Dean, and Philip Hughes.

Another State bureau, OES, participated actively. The specialty of the OES participants was not export controls but rather space cooperation, so they leaned far more heavily toward NSDD 50 than toward NSDD 70.

Overseeing both bureaus was Under Secretary of State for Security Assistance, Science, and Technology William Schneider. He gave the opening address at the Washington multilateral meeting. His staff -- particularly Stan Sienkiewicz -- was to play a major and constructive role in future interagency disputes.

Missing from the State roster of active participants was the nuclear nonproliferation office in OES. They put in occasional appearances. But missile nonproliferation was treated by State as a subset of strategic export controls rather than as a close relative of nuclear nonproliferation.

The Department of Defense was critically important because of its technical expertise. Jeanne Mintz had the lead, but behind her was an army of technical specialists. Of particular importance was Navy Captain David McClary, the chairman of Mintz' second working group, with the mission of developing a complete list of items to be subject to missile nonproliferation controls.

I was still the one-man nonproliferation policy shop in OSD. I worked almost daily with Mintz but covered myself by clearing positions with my bosses. The highest ranking official with whom I worked was Under Secretary of Defense (Policy) Fred C. Ikle -- the same Fred Ikle who in 1976 had spoken out on the importance of restraint in the transfer of long-range surface-to-surface missiles.

Under Ikle was Assistant Secretary of Defense (International Security Policy) Richard Perle. In all my bureaucratic experience, I found him to be unique. Perle, a former Quiz Kid, had come to fame as a staffer for Senator Henry "Scoop" Jackson of Washington State. Perle carried the torch for Jackson's hard line against the Soviet Union. As a consequence, the Reagan Administration was comfortable offering him a key policy position even though he had worked for a Democrat. Perle quickly became notorious for his hard anti-Soviet line and his bureaucratic skills in dealing with the State Department. I was delighted to find that Perle's attitudes carried over to nonproliferation. He had no patience with those who wanted to be soft on nuclear weapon or missile programs in the Third World.

Perle was often called the "Prince of Darkness" or "Rasputin" because of the strong views with which he prevailed in the Administration. But his personal appearance was just the opposite. He was smiling, easy-going, mild-mannered, soft-spoken. He would phone his opposite numbers in other agencies and drown them in sweetness. His tactics were just the opposite of Jeanne Mintz' "off with their heads" approach. But he was far more effective. He was, in fact, the most skillful bureaucrat I have ever met.

And one of the brightest. He could read a position paper, internalize its arguments, understand its nuances, and return it to his underlings before they had a chance to sit down. He immediately identified the logical chain with which he could bind up his opponents. And he proceeded to bind them up, speaking softly all the time.

I had direct access to Perle and Ikle in the formative days of missile nonproliferation. This made all the difference. When I saw an imminent SLV loophole in the preparations for the first multilateral meeting, I walked into Ikle's office. He called Jonathan Howe, Director of

State's PM Bureau. And so the "short list of denials" gained its explicit reference to SLV's.

As the years moved on I worked more frequently with Perle. I introduced Jeanne Mintz to him, and it was love (figuratively speaking) at first sight. Both of them were eager to fight for their principles. Mintz had the experts and the eye for bureaucrats who needed to be neutralized. Perle had the skill and the clout to make things happen. With these key individuals, DoD was able to astonish the State Department and other advocates of SLV exports.

DoD's export control office, IETSP, later to become the Defense Technology Security Agency, participated with their skilled knowledge of export control systems. For a while they continued to have the nominal lead on NSDD 70 on the policy side of OSD. But the real action had shifted away from them. And their military officer was still thinking about his organizational directive.

The Department of Commerce was another regular participant. They controlled dual-use exports for the U.S. government, so their involvement was essential. DoC Deputy Assistant Secretary Vincent DeCain, a lawyer, took the lead for his agency. A DoC technical expert on export control regulations, usually Bruce Webb but sometimes Dan Cook, followed the day-to-day details. DoC expertise was unchallenged in formulating the details of dual-use controls. But on large policy issues, State and DoD were usually the key players.

ACDA appeared on the occasion of multilateral meetings, but they had lost a great deal of influence. Maurice Eisenstein had left the government after Norman Terrell, a Reagan appointee to ACDA, announced that he would take over missile nonproliferation. ACDA staff's role descended to occasionally making a proposal to weaken the implementation of NSDD 70 in order to make U.S. policy more widely acceptable. So Richard Perle was obliged to call ACDA's Director in order to try to correct the situation.

The Intelligence Community played a role in summarizing the missile proliferation threat for the benefit of the diplomats. Their influence would become more pointed in future years, when intelligence would lead to action.

At international meetings the U.S. delegation invariably included three core agencies: State, DoD, and the Department of Commerce. Both Mintz and I were on the delegation in virtually every case. The Commerce delegate was normally either Vincent DeCain or Bruce Webb. After 1983 the U.S. delegation was generally led by William Gussman -- except on those occasions when Robert Dean took the lead.

There were other participants: legal offices, NASA, staffers from the Executive Office of the President. Some of them would have their day of indispensibility. But all of them showed up for the birthday party.

Chapter 7

The First Multilateral Meeting

It was a free-for-all. The day before the June 21 meeting, the U.S. still did not have a position.

The previous week DoD staff thought it had an interagency consensus "to end a year of State-led drift and confusion."[29] The apparent consensus was for the distribution of the two documents in Appendix 4 as well as a third DoD-drafted document listing proposed rules for missile nonproliferation.

The third document was twelve lines long.[30] It listed three "proposed rules on short list of denials":

> "1. Members of this agreement will deny these items to non-members.
>
> 2. Additional members to this agreement may only be added by unanimous consent of the members of this agreement.
>
> 3. Exceptions to this agreement may only be made by unanimous consent of members of this agreement."

In other words, there was an embargo on the transfer of items on the denial list to non-members, except by unanimous consent. This was the COCOM procedure with respect to the transfer of controlled items to the Soviet Bloc.

The document also had two "proposed rules for alert list", the "alert list" being the list of controlled items other than those on the denial list:

> "1. Members will only sell items on this list to non-members upon the unanimous agreement of the members.
>
> 2. For the time being, members will seek to develop more specific rules for denial, or provision with assurances, of items on this list."

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[29] Memorandum from Richard Speier to Dr. Ikle, "Proliferation of Nuclear Capable Missiles", June 20, 1983. Released by OSD March 23, 1995.

[30] Ibid, attachment.

In other words, pending the development of specific rules, all controlled items would be handled like the items on the short list of denials -- but there would be a greater possibility of export of the alert list items.

Three days before the multilateral meeting, State and ACDA staff wavered.

> "They fear that the positions might 'reduce our flexibility to someday sell missiles or "space launch" hardware to such countries as Pakistan and Brazil.' Reducing our flexibility is, of course, the essence of supplier agreement to prevent proliferation. The only item of international commerce that would currently be affected by the 'short list of denial items' is the Soviet SCUD, and the Soviets are not yet a party to the negotiation."[31]

The wavering had its effect. The "short list of denials" went into the meeting relabeled "discussion draft". The DoD-proposed rules were replaced by those drafted by State (see Appendix 3), calling only for monitoring and control.

The multilateral meeting of June 21-22, 1983, featured foreign participants with a range of backgrounds. There were technical experts, often military, who worked with Captain McClary to develop an "alert list." There were no major disagreements among this group; the technology of missiles is a relatively objective topic.

Then there were the policy specialists. As in the United States, they tended to come from one of three backgrounds: space promotion, nuclear nonproliferation, or strategic (COCOM) trade controls. Each foreign government had its own mix of orientations.

In spite of this, the foreign delegations received the DoD drafts on parameters and on a denial list with far more equanimity than had State and ACDA staff. DoD viewed State as wanting more leeway even than the most commercial-minded of the other partners and as more concerned than the other governments to exempt launch vehicles from the toughest prohibitions. During the meeting, State sometimes made up rules as they went along, e.g., that all items should be exportable to all OECD countries.[32]

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[31] Memorandum from Richard Speier to Dr. Ikle, op cit.

[32] Memorandum from Richard Speier to the Principal Deputy Assistant Secretary (ISP), June 23, 1983, op cit.

The meeting went well from DoD's point of view. The partners agreed ad referendum to the concept of two control lists:

- a relatively long "alert list" of items subject to controls (items useful for cruise missile of 1000 km or greater range and ballistic missiles of 1200 km or greater range -- all missiles with a 500 kg payload) and

- a short "superalert" subsection of the list, comprising items that should be subject to stricter controls and, indeed, "not normally exported." These would include entire missiles or rockets of 300 km or greater range with a 500 kg payload, entire facilities for their manufacture, and entire major subsystems for them.[33]

The meeting had permanently changed the orientation of the discussions. No longer was the exercise one of developing a single list of items to which vague homilies ("monitor and control") would apply. Now there were two lists, and the shorter one would be subject to more stringent rules. Moreover, there was an emerging engineering definition of the items subject to the more stringent rules. The exercise was getting an edge.

But DoD had learned a lesson. U.S. positions needed to be put in writing and thoroughly cleared before the next multilateral meeting -- set for Rome late in the year. The next meeting would focus on the most contentious issue: the rules for missile technology control.

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[33] Memorandum from William E. Hoehn, Jr. to the Under Secretary of Defense for Policy, "Missile Proliferation Talks", August 13, 1983. Released by OSD March 23, 1995. The CEP parameter gradually dropped out with respect to complete missiles. This decision was taken because guidance sets can be changed, and CEP parameters cannot be determined by an external inspection of missiles. However, the CEP parameter was retained for guidance subsystems and their components.

The 1000 km "alert list" range for cruise missiles represented the range at which accurate guidance became especially difficult without technology that, at the time, was sophisticated. The 1200 km "alert list" range for ballistic missiles represented the range at which relatively sophisticated re-entry vehicle technology became necessary. Both of these ranges dropped out of later versions of the lists, with 300 km being used in all cases as the range for which controls would be applied.

Chapter 8

Rules

Richard Perle likes to say, "'Personnel' is policy." Jeanne Mintz went to work, not directly on policy but on personnel. She talked to her good friend, Under Secretary of State Willian Schneider.

Within six weeks of the Washington multilateral meeting a new State Department team had taken charge of the missile technology control talks. Deputy Secretary of State for Politico-Military Affairs Ted McNamara was the lead at the political level. And William Gussman became Director of the Office of Strategic Technology and Nuclear Affairs -- the day-to-day lead negotiator.

Gussman was a man after DoD's heart. An experienced foreign service officer, he was willing to say "no" to the petitioners for easy rules. And his "no's" were impressive. Over six feet tall, weighing over 200 pounds, with a booming voice, his "no's" reverberated.

Gussman knew how to work the State Department system, in which every position must be coordinated with many offices. He minimized intra-State Department meetings, at which attendees would spin out unrealistic options and call for time-consuming studies of them. Instead, he would draft cables or position papers and circulate them to other offices for wording changes. This saved time and kept the bureaucracy focused on operative policy documents.

Gussman needed to consider a broad range of foreign policy concerns, but he fully shared DoD's determination to achieve a strong and effective regime. Rumor had it that he used DoD as the bogeyman to frighten State Department offices into accepting stronger positions. Whatever he said about DoD to his colleagues, he communicated incessantly with DoD to try to keep the two agencies synchronized.

An August 13, 1983, DoD memorandum stated that after the personnel turnover at the State Department, there

> "has been an almost unbelievable turnaround in State behavior. In less than a week State has
>
> · jumped on [two partners in the negotiations] for helping Pakistan with nuclear missile technology;

- asked DoD to rescind its year-old approval of technology transfer to help Brazil test a 'space launch' vehicle that can also serve as an MRBM [a recommendation, like the approval of others favoring SLV cooperation, made by Mintz' predecessor]; and

- joined NASA in opposing a low level DoD approval of an export to South Korea for 'meterological [sic] support' that apparently is a cover for missile development.

We are immensely encouraged by the new tough stance from State, and Mintz has patted them on the back."[34]

More on the DoD export approvals in the next chapter. With respect to the rules for missile technology control, DoD recommended three for the U.S. to present to the Rome multilateral meeting:

- for "superalert" (renamed Category I) items, a requirement for unanimous agreement before an item could be exported to non-participants,

- for other "alert" items (renamed Category II), prior consultations in case of intended export outside the participants, and

- notifications among the participants whenever a non-participant sought items on the Category I or II lists -- in order to monitor procurement attempts and understand procurement patterns.[35]

After eight phone calls to State and ACDA by Richard Perle, this was the U.S. position in the Rome meeting, December 1-2, 1983, with the additional proviso that the notification of procurement attempts must be prompt.[36]

There was some good news at the Rome meeting. There was a broad agreement on the Category I list -- except that two governments had not yet agreed to include civilian space launchers.[37] And, within the first ten minutes of substantive discussion, the partners accepted first part of the U.S. draft on Category I controls: "In principle, Category I

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[34] Ibid.

[35] Memorandum from Jeanne S. Mintz to William Gussman, "Nuclear-Capable Missiles", August 25, 1983. Released by OSD March 23, 1995.

[36] Memorandum from Richard Perle to the Under Secretary of Defense for Policy, "Report on Meeting on the Proliferation of Nuclear-Capable Missiles, Rome, Italy, December 1-2, 1983", December 22, 1983. Released by OSD March 23, 1995.

[37] Ibid.

items will not be transferred to any destination to which the guidelines apply."[38]

But on other critical issues the U.S. now faced resistance from its partners.[39]

With respect to allowing Category I exports only by consensus, the partners were reluctant to create "another COCOM" in which nations would need to approve each other's exports. Surprisingly, the partners were more receptive when the U.S. explored stiffening the provision to allow for no exports whatsoever -- and, therefore, no need for an objectionable consensus provision.

With respect to consultations prior to Category II exports, the partners also objected, some because -- as other governments joined the arrangement -- the consultations would grow burdensome, others because of feared loss of commercial advantage.

With respect to prompt notification of shopping for controlled items, there was resistance to promptness -- apparently because of fear of losing commercial advantage -- but a willingness to give bulk notifications at intervals of a month to a year.

An unexpected event in Rome showed the fragility of the entire negotiation. The negotiations had been held in utmost secrecy. The fear was that premature disclosure would encourage the Soviets to intervene in a matter that delicately involved Western defense cooperation. Early disclosure would incite exporters and Third World governments to place pressure on governments that were trying to preserve their good will. But on December 1 a front page article in the Japanese newspaper Nihon Keizai spilled the beans.[40] The article hit the Rome press on December 2, and many of the delegates panicked. Most of the second day of the conference was consumed with caucuses and contingency planning. There was little substantive discussion except among the technical drafters of the "alert" list, who forged ahead.

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[38] Paper by Richard Speier, "Problems with the Missile Tech Effort and Some Possible Approaches", December 1983, and paper by Robert Davie, "Missile Technology Strategy Paper", March 16, 1984. Both papers released by OSD March 23, 1995.

[39] Memorandum from Richard Perle to the Under Secretary of Defense for Policy, "Report on Meeting on the Proliferation of Nuclear-Capable Missiles, Rome, Italy, December 1-2, 1983", December 22, 1983, op cit.

[40] "Seven Western Nations Heading Toward Embargo on Export of Nuclear Weapon-Related Products to Developing Countries; 'Dangerous Countries' Will be Specified; Negotiations on International Agreement Will Begin in Rome Today", Nihon Keizai, Tokyo, December 1, 1983.

So the meeting made some progress but had come to loggerheads over the stringency of the rules to be applied to the control lists. Now it was time for the U.S. delegates to regroup -- and to face their critics in the U.S. government.

Part III

The Fine Print

Chapter 9

The Most Important Country in the World

"Ladies and Gentlemen!" shouted the Deputy Assistant Secretary of Defense for Inter-American Affairs, beaming out at the space in front of him. I turned around and also looked out at the space in front of him. It was as I thought. We were alone in his office, one-on-one.

He was explaining to me the importance of Brazil in the world and the necessity for SLV cooperation with Brazil. We had engaged in this conversation twice before, each occasion punctuated with "Ladies and Gentlemen!" But I felt it was important to be polite.

Brazil was the largest and most populous country in Latin America, he declaimed. It was essential to keep Brazil friendly with the U.S. It was essential to have good military relations with Brazil. Brazil wanted to develop an SLV. No one could stop Brazil once it had committed itself. If the U.S. would not help Brazil, other major Western nations would. This would reduce U.S. influence with Brazil. And so, Ladies and Gentlemen!, it was essential for the U.S. to cooperate with Brazil's ambitions to develop an SLV.

I answered all these arguments for the third time. It was U.S. policy to prevent missile proliferation. SLV programs were interchangeable with ballistic missile programs, and there was abundant evidence that Brazil wanted to use its rocket technology to produce ballistic missiles.[41] We were working with the other major Western nations to jointly restrain the kind of rocket technology transfers that Brazil wanted. The partners would not restrain themselves unless the U.S. restrained itself as well.

Such restraint would have a major impact on Brazil's program. An export control regime did not need to block every item for a missile program -- only enough of the tens or hundreds of thousands of parts needed for a missile. The CIA and the U.S. Embassy in Brazil estimated that denial of foreign assistance would delay the earliest availability of a Brazilian MRBM by at least five years, should Brazil decide

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[41] See, for example, "Country's Role Under New Conditions of World Power Examined", Aviacao Em Revista, Sao Paulo, April 1983, and Roberto Godoy, "Possibility of Producing a Bomb by 1990 Discussed; Reaction", O Estado de Sao Paulo, December 9, 1983, both articles in Portuguese.

to build one. The analogy of our experience with infrastructures for nuclear proliferation would suggest that withholding foreign assistance could delay an MRBM much longer.[42]

Brazil did not need an SLV to enjoy the peaceful benefits of space. The U.S. or other nations selling space launch services could launch Brazilian satellites far more economically and reliably that Brazil itself could.

The Deputy Assistant Secretary and I were not going to be able to resolve this issue between ourselves. So in September 1983 a pair of memos, one from Richard Perle and, as an attachment, one from the Assistant Secretary of Defense (International Security Affairs) went to Under Secretary Ikle.[43]

The immediate issue in the memoranda was whether, as State had suggested the previous month, DoD should rescind its approval for U.S. technology for a static firing test stand for Brazil's two-stage Sonda IV rocket. The Sonda IV would be capable of being converted to an MRBM. The first stage of the Sonda IV would serve as a module for Brazil's ICBM-capable SLV.

The larger issue was whether, as long as a missile nonproliferation agreement was in prospect, the U.S. should bend over backwards not to undercut it. Specifically, should the U.S.

> "(1) disapprove exports that might appear to violate the agreement,
>
> (2) rescind past approval of such exports, where that is still possible, and
>
> (3) where compelling reasons exist for approving an export that might appear to come in conflict with the 'alert list', consult with the other [partners] first so that we do not jeopardize their good will."

Approval of this interim policy would go far beyond a reversal of DoD's approval of the static firing stand. It would set DoD against the State/OES-promoted SLV agreement with Brazil and would set DoD policy against other exports that could contribute to missile proliferation.

Under Secretary Ikle approved DoD advocacy of the three point interim policy. He tentatively agreed to reverse DoD's

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[42] Memorandum from Richard Perle to the Under Secretary of Defense for Policy, "Interim Policy During Missile Proliferation Talks", September 14, 1983. Released by OSD March 23, 1995.

[43] Ibid.

approval of the static test stand, pending consultation with allies -- the decision to be reviewed should a partner "undermine us completely."[44]

These decisions had several effects. They set in motion a new subject for discussion with our partners: real-world export cases. They caused the overt opposition of OSD's Brazil desk to abate somewhat. They gave Jeanne Mintz and me the backing to act in other export cases. For example, we were able to restrict the missile technology course to be taught in Brazil by Air Force Captain Dennis Vincent. And the decision led to a showdown between OSD and the State Department Brazil desk.

Journalists commonly assert that the "Zionist lobby" is the most powerful foreign influence on the U.S. government. As a former government official, I must say that only by being on the inside can one believe the intensity and tenacity of the Brazil lobby. The Brazil desks of the U.S. government are like no other. They seem to think that Brazil is the most important country in the world.

Over the next two years State's Brazil desk became the focus of reluctance to accept NSDD 70 guidance. DoD offered to work with them to develop a program of space cooperation with Brazil that did not entail the transfer of missile technology. The response of State's Brazil desk was to delay the clearance of diplomatic cables.[45] For ten months in 1985 State's Brazil desk blocked a cable to the missile nonproliferation partners listing missile projects of concern. The cable listed two Brazilian projects, and it was necessary for Richard Perle and Deputy Assistant Secretary of Defense for Negotiations Policy Douglas Feith personally to intervene before State's Brazil desk would release its hold.[46]

By the time that the cable was released, the climax of the battle between OSD and State's Brazil desk had already occurred. It came in the spring of 1985, when State's Brazil desk prepared to send a delegation on an inspection tour of Brazil's SLV infrastructure. Fearing a U.S. "seal of approval" on a project we opposed, Jeanne Mintz and I prepared to attend a meeting on the subject. The meeting, at the State Department, was to feature the participation of U.S. Ambassador to Brazil Anthony Motley. Mintz and I informed Richard Perle of the meeting. To our surprise, Perle announced that he would also attend.

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[44] Ibid, hand-written note by Under Secretary Ikle.

[45] Draft memorandum for the signature of Richard Perle to Donald Fortier, "Missile Non-Proliferation -- Immediate Problems", October 22, 1985, never signed. Released by OSD March 23, 1995.

[46] Richard Speier, "Missile Technology Controls--Projects of Concern", Weekly Activity Report, November 1985. Released by OSD March 23, 1995.

Mintz and I and Randy Rydell -- an intelligence specialist on loan to my office from Livermore Laboratory -- fed Perle everything from press articles to intelligence reports on Brazil's ambitions in the field of rocketry. Meanwhile, word spread like wildfire that Perle and Motley were about to lock horns. A sleepy meeting about a delegation tour was about to turn into a gladiator match. State scheduled the meeting in one of the largest conference rooms in the building, and it was packed.

State led off with some general remarks about fact-finding with respect to a purely civilian program. Perle then addressed the meeting, leading off with a soft-spoken statement that we had <u>not</u> prepared for him, "We all know that Brazil has a nuclear weapons program." This was a shocker, an outrage. It ran against the position not only of State's Brazil desk but also of its nuclear nonproliferation office. The only thing that could be said in defense of Perle's rude remark was that it was true. Perle went on for a few minutes laying out the logic of avoiding the appearance of cooperation with activities we opposed. But no one was listening. He had said the unsayable. The statement became sayable only after several years -- when it was said by the President of Brazil.

Over the next several months Rydell amassed a formidable compilation of reports on Brazil. With these -- and Perle and Feith's continued involvement -- the resistance of State's Brazil desk gradually weakened. By the end of 1985 they had abandoned all hope for U.S.-Brazilian cooperation on SLV development.

So one internal challenge to NSDD 70 was defeated. But others would not be so readily deflected. They came from the offices responsible for implementing NSDD 70.

Chapter 10

Interagency Intrigue

The outcome of the Rome meeting gave the critics their chance. The near-acceptance of the Category I list and the unanimous acceptance of the "in principle" no-export rule for Category I items did not impress the critics. Rather, they focused on the allied resistance to consensus, prior consultations, and notification. This was the critics' chance to show that DoD had gone too far and that "without some U.S. flexibility, it is unlikely that the current impass [sic] will be resolved in the near future."[47]

After the Rome meeting, the critics took three months to mount what I then described as a "coup d'etat".[48] Without visible involvement by Gussman or McNamara, a low-level State/PM official who had always favored "flexibility" drafted a proposal, "Missile Technology Project Strategy Paper".[49] The paper was carefully circulated to avoid exposure to Mintz and me. It was reviewed and modified by Under Secretary of State Schneider's staff; by Mintz' boss, who had always doubted the wisdom of NSDD 70; and by IETSP, the export control office with the military officer who, presumably, was still thinking about a DoD organizational directive.

The proposal focused on the issue of consensus approval of those Category I exports intended for destinations beyond the participants. The U.S. proposal tabled in Rome read

> "In principle, Category I items will not be transferred to any destination to which the guidelines apply. Exceptions can be made on a case-by-case basis by consensus."

The critics' alternative read

> "In principle, Category I items will not be transferred to any destination to which the guidelines apply. If a supplier feels that an exception is warrented (sic)

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[47] Paper by Robert Davie, "Missile Technology Project Strategy Paper", March 16, 1984. Released by OSD March 23, 1995.

[48] Memorandum from Richard Speier to Mr. Feith, "Coup d'Etat on Missile Proliferation", March 19, 1984. Released by OSD March 23, 1995.

[49] Paper by Robert Davie, "Missile Technology Project Strategy Paper", March 16, 1984, op cit.

> after careful review, other suppliers will be notified and given 90 days to submit comments prior to the supplier granting final approval of the transfer."

The critics' alternative kept changing, and at one point it appeared that some of the critics favored giving the partners the ability to block Category I exports by consensus.[50] But substance was not the point. The point was (1) deciding who was in charge and (2) deciding whether the U.S. was out to get an agreement at any price.

The question of who was in charge was a real concern. Gussman had not gone to the Rome meeting, and the State Department presentation there "was variously described as 'timid', 'tentative', 'ethereal', and 'lacking conviction'."[51] Mintz had been undercut by her boss, who would no longer pay for her travel for missile nonproliferation meetings.[52] And, worst of all, Richard Perle had apparently approved the critics' proposal without consulting Mintz or me.[53]

The question of an agreement at any price was more important. The "Missile Technology Project Strategy Paper" argued that dire consequences would follow from a lack of U.S. "flexibility".

> "If we cannot show that we have taken minimal account of Allied comments made in Rome, we could sour past progress on this project and negatively impact the COCOM list review negotiations and the President's Comprehensive Safeguards Initiative being negotiated by Ambassador Kennedy....We have no control regime now. As the proliferation of missile technology increases, getting agreement on and implementing an effective control regime will be more difficult."

The last argument was somewhat undercut by the critics' admission that

> "Even without a regime in place, the Allies have been very receptive to past U.S. demarches to stop transfers of sensitive items such as those envisioned in Category I."

If Mintz and I had been part of the discussion, we would have argued that "Rather than seek a compromise on the

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[50] Memorandum from Richard Speier, "Coup d'Etat on Missile Proliferation", March 19, 1984, op cit.

[51] Paper by Richard Speier, "Problems with the Missile Tech Effort and Some Possible Approaches", December 1983, op cit.

[52] Memorandum from Fred C. Ikle to the Under Secretary of Defense for Research and Engineering, "Commendation of Jeanne Mintz", July 5, 1984.

[53] Memorandum from Richard Speier, "Coup d'Etat on Missile Proliferation", March 19, 1984, op cit.

important issues at this point, the U.S. should put more energy into selling our position." We had not conducted bilateral meetings to prepare the partners to consider our position "until the day (and in some cases the morning) before the Rome meeting."

> "The other delegations arrived at the multilateral meeting with little understanding of the rationale for the U.S. position. Thus, the Rome multilateral meeting served the function of having the U.S. explain its position. This is a function better served by bilaterals since at Rome much time for discussion was lost and since the initial doubts of other delegations tended to have a snowball effect....Until adequate international agreement has been secured through the bilaterals, there should not be another multilateral meeting....Many in State are now speaking of 'bridging the gap' between the U.S. and the Allies, 'compromising', or becoming 'flexible.' This on the basis of the most preliminary (and in some cases relatively low level) expressions of views from the Allies."[54]

How did all this get resolved? The question of who was in charge was resolved rapidly.

Richard Perle had a new Deputy Assistant Secretary of Defense (Negotiations Policy), Douglas Feith. Feith was a young lawyer who had worked with Richard Perle on Capitol Hill. Feith was fascinated by negotiations and by the multifold ways in which negotiating parties undercut themselves. Feith saw what was essential in an issue, and he loved precision and clarity in thinking and writing. This led him to produce some of the most elegant memoranda I had ever seen. But it also led him into "some pedantry" -- a self-confessed practice of rehashing memoranda with exasperated staff.

Feith's reaction to the "coup d'etat" was clear. He was not about to cede the fascinating missile technology talks to another part of OSD that preferred "flexibility" to a careful approach to the issues. He had a chat with Perle, and Perle disowned whatever approval he might have seemed to have given to the critics. Mintz and I were back in charge. At State, McNamara was soon replaced by Robert Dean as the political-level lead on NSDD 70. And Gussman would attend every international meeting for the next three years.

The substantive issue of a control rule for Category I items took longer -- more than two more years. The debate

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[54] Paper by Richard Speier, "Problems with the Missile Tech Effort and Some Possible Approaches", December 1983, op cit.

over that rule would be conducted in writing and in bilateral meetings for almost all of that time.

Chapter 11

Zealots and Issue Brokers

"I eat generals for breakfast, Bill. And I can eat your bosses for breakfast, too." Jeanne Mintz was doing her warmup exercises, using Bill Gussman as a punching bag. She was trying to get State to stop licking its wounds over the failed "coup d'etat" and start addressing the issues.

Gussman would have obliged. But greater forces were at play. The episode of the "coup d'etat" was part of a long-standing conflict over how to pursue national security negotiations.

From the point of view of many in the State Department, the missile technology talks had fallen into the clutches of Defense Department zealots. Jeanne Mintz and I were the chief zealots. We suffered from a myopic concern with missile nonproliferation to the exclusion of all the other issues in contention among the seven partners. Even if missile proliferation were important, the Category I nuances were not necessarily more important than other nonproliferation issues, to say nothing of NATO, East-West arms control, and economic and military cooperation. The zealots' tunnel vision ran the risk of alienating the same diplomats with whom we needed to work on the other issues.

The State Department had more to complain about. The zealots would not compromise. Negotiations would go nowhere if the U.S. could do nothing more than reiterate the same positions. Consensus approval for Category I exports was a non-starter; no partner seemed even to be open-minded on the subject. We had run up against immovable political constraints. Unless the U.S. showed some flexibility, we would sink not only the cooperative atmosphere necessary to resolve a range of issues but also the missile nonproliferation talks themselves.

Finally, the zealots had no idea of the importance of bringing international issues to closure. The State Department dealt with thousands of issues each day. Many of these escalated to top management. One more issue robbed the remaining issues of management attention. And the zealots, by their myopia and their refusal to compromise, were generating new issues, not resolving them.

How did Mintz and I and many others in the Defense Department feel about this? We felt that we were facing issue brokers.

A broker is someone who facilitates an agreement, for example an agreement to conduct a financial transaction. The broker does not necessarily care about the terms of the agreement; he only wants to bring the parties together to agree on something. In our experience an issue broker would seek agreements on international issues with no particular convictions about what made a good or a bad agreement. He was paid by the agreement, not by the effect on international security.

If the issue brokers weren't reined in, they could produce agreements that made short-term headlines and career enhancements but that, over the subsequent years of implementation, could have strongly negative effects on international security. One night of ecstasy, a lifetime of regret. A missile nonproliferation agreement that facilitated exports of SLV's or other Category I items would be worse than no agreement at all.

The Defense Department resounded with tales of State and ACDA promoting such agreements. We had all heard of cases in which State Department negotiators, in their rush to agree, had opened international meetings with the U.S. fallback position, which was not to be used except as a last resort. State would schedule international meetings without a U.S. position on what was to be accomplished at the meeting -- resulting in marathon last minute U.S. interagency meetings to cobble together a position and, as in Rome, insufficient time to prepare the negotiating partners for the U.S. position.

The State Department view of political constraints was one that met skepticism in many quarters of the Defense Department. Political constraints are not like a brick wall that crushes you if you crash into it. Political constraints are more like bad weather, changing with time and capable of being circumvented while you travel to your destination. In fact, the physical metaphor of a "constraint" is misleading. Far from being physical limits, political constraints are instructions given to negotiators or opinions held by those negotiators. Both can be changed by sweet reason or by dealing with people other than the negotiators themselves.

Of course, these two views of negotiations did not break in a simple fashion at the Potomac River divide between the two agencies. Many in the State Department had strong convictions about the issues. And many in the Defense Department -- especially the higher echelons -- suffered from issue overload and did not welcome the generation of additional issues.

How does the U.S. government handle such disagreements? Usually, through a key individual, the Deputy Assistant Secretary (DAS). The DAS is a political appointee whose nomination does not require formal Senate approval. The DAS supervises career government officials but reports to political officials. If there is an important interagency dispute, the first formal efforts to resolve it are made at the DAS level.

The DAS is, in my experience, the busiest official in the U.S. government. He must know everything important going on in the career staffs under him, he must filter the issues that are escalated to higher levels and must act as staff to those higher levels on such issues, and he must nurture an effective relationship with his counterparts in other agencies.

During the next two years Doug Feith, my DAS, and Robert Dean, the State/PM DAS handling the missile technology talks, were the first resort for resolving DoD/State disputes and for weeding out the issues that would get higher level attention. There were many such issues. Feith recalls that the missile technology talks may have generated more issues for Richard Perle's attention than all of Feith's other negotiations combined.[55] The other issues included arms control negotiations on chemical weapons and on European conventional forces.

Although Feith assigned a high importance to missile nonproliferation, he was not entirely unsympathetic with the State Department's view of Mintz and me as zealots. He, Perle, and Ikle had much more to worry about than missile nonproliferation. Mintz and I sometime seemed to think that only missile nonproliferation mattered. However, our hardline attitude had its advantages. It created a range of options for Feith and his bosses. And it spared them the necessity of reopening soft positions agreed at lower levels.

Feith and his bosses understood the pathology of the negotiation process. They were as impatient as anyone else in DoD with last minute panics to formulate a U.S. position, with preemptive surrender to "political constraints", and with agreements that could do more harm than good.

Feith agonized over memos to his bosses in order to fit our positions into a "thematic framework" that Perle and Ikle would support. This gave DoD bureaucratic flexibility and power. Perle and Feith and I could re-create each other's logic. Perle invariably supported Feith. Feith could enter last minute negotiations and know that his position would be supported by DoD. On the spot he could forge coalitions with

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[55] Douglas J. Feith, interview with the author, November 7, 1995.

the NSC and other agencies while the State Department issue brokers were obliged to check each new idea with their superiors. Because the debate was being conducted against deadlines, the ability to work from principles gave DoD a great advantage.

This was the team that tackled the two key issues for the missile non-proliferation regime: the control rule for Category I items and the status of SLV's as Category I items. Failure on either of these issues would lead to a regime that facilitated the spread of missiles.

Chapter 12

Space Launch Vehicles and Other Hardware

"Can't you put a black box on a rocket," an Assistant Secretary of Defense for International Security Affairs once asked me, "so that it can only go up into space and can't come back down to earth?" The answer is yes, if you win several Nobel prizes for rewriting the laws of physics.

President Kennedy had it right. When asked the difference between the Atlas rocket that put John Glenn into orbit and an Atlas rocket armed with a nuclear warhead, he answered in one word, "Attitude."

The hardware, technology, and production facilities for SLV's are interchangeable with those for ballistic missiles. It is impossible to control one without equally controlling the other.

That was the U.S. position at the Rome meeting. Space launch vehicles must be included in Category I. But two governments were not ready to agree. The problem was not one of technical disagreement. They simply could not get some of their domestic agencies to forgo the option of exporting SLV's to anyone who would pay.

After the Rome meeting Jeanne Mintz arranged for the U.S. Air Force to conduct a technical review that we could share with our partners. To no one's surprise, the Air Force concluded that "SLV and ICBM technology is practically indistinguishable."[56]

The U.S. pressed this analysis and other considerations on the SLV holdouts. In Rome there was unanimous support for language endorsing international cooperation on the peaceful uses of space.[57] Restricting SLV's did not mean restricting the benefits of space. One could sell space launch services rather than space launch hardware and technology. Either way the customer could get his satellite into the desired orbit. In fact, the customer would be better off buying the services. Then, he would not need to replicate the ground

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[56] Memorandum from Lt. General Howard Leaf, Assistant Chief of Staff, USAF, to SAF/ALS, "Space Launch Vehicles and Ballistic Missiles", February 22, 1984. Released by OSD March 23, 1995.

[57] Draft cable by Richard Speier, "Bilateral Consultations on Missile Technology Control", May 25, 1984. Released by OSD March 23, 1995.

facilities, which were invariably far more expensive than the launch vehicle itself. Restricting SLV's would not harm the European Space Agency. It had been established pursuant to a treaty. The missile nonproliferation regime would be a policy, and a policy cannot supersede a treaty.[58]

By 1985 U.S. Navy Captain Sherman "Bud" Alexander was heading the negotiation of the control list, and the number of SLV holdouts was down to one. In November 1985, during the most formidable series of bilateral meetings conducted by the U.S., the last holdout announced its willingness to treat SLV's as restrictively as ballistic missiles.[59]

The last obstacle to a Category I list had been eliminated. In the next multilateral meeting -- in London, December 3-4, 1985 -- the partners agreed ad referendum to the final wording of Category I.[60] It had taken two and a half years from DoD's draft of a "short list of denials" to the final draft of the Category I list. The similarities were obvious:

Short List of Denials, June 1983

"· Complete missile systems or space launch systems capable of delivering 500 kg at 300 km with CEP at range of 10 km.

· Complete manufacturing facilities for the above.

· Complete subsystems for the above:

- individual missile stages
- reentry vehicles (including heat shields)
- propulsion systems (engines and motors)
- guidance sets (including software)
- thrust vector controls
- rocket motor cases
- launch systems."

Category I List, December 1985

"(Item 1) Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and

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[58] Richard H. Speier, "The Missile Technology Control Regime", in Trevor Findlay, ed., Chemical Weapons & Missile Proliferation, Lynne Rienner Publishers, Boulder & London, 1991.

[59] Richard Speier, "Missile Technology Controls--State of Play", in Weekly Activity Report, November 1985. Released by OSD March 23, 1995.

[60] Memorandum from Richard Perle to the Under Secretary of State for Security Assistance, Science and Technology, "Missile Technology Controls", January 21, 1986. Released by OSD March 23, 1995.

reconnaissance drones) capable of delivering at least a 500 kg payload to a range of at least 300 km as well as the specially designed production facilities for these systems.

(Item 2) [See Appendix 6 for the complete text.] Complete subsystems usable in the systems in Item 1 as follows, as well as the specially designed production facilities therefor:

(a) Individual rocket stages;

(b) Reentry vehicles, and specially designed equipment therefore, as follows...;

(c) Solid or liquid fuel rocket engines, having a total impulse capacity of 2.5×10^5 lb-sec or greater...;

(d) Guidance sets capable of achieving system accuracy (CEP) of 10 km or less at a range of 300 km...;

(e) Thrust vector controls...;

(f) Warhead safing, arming, fuzing, and firing mechanisms...."

The remainder of the control list, the Category II portion, was agreed ad referendum in the spring of 1986. But the SLV issue was the essential one to resolve. Resolving it in the control list was only half the battle. The rules, discussed in the following chapters, could still loosen the controls.

At least the agreement at the Rome meeting, to endorse international cooperation on the peaceful uses of space, was resolved at the London meeting with a text that protected the controls:

> "The Guidelines are not designed to impede national space programs or international cooperation in such programs as long as such programs could not contribute to nuclear weapons delivery systems."[61]

In later years superficial readers of the Missile Technology Control Regime documents would notice only the first clause of this sentence and criticize (or praise) the regime for permitting cooperation on space launch vehicles. The full sentence, and the text of Category I, make the facts clear.

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[61] Guidelines for Sensitive Missile-Relevant Transfers, April 16, 1987, paragraph 1, sentence 2. See Appendix 5 for the complete text.

The multi-year focus on the SLV issue beclouded the fact that rockets and missiles were not abstract entities on a control list. They were real objects that were proliferating. By 1984 my time was increasingly taken up reviewing intelligence and scrutinizing export cases involving transfers that could undermine the objectives of NSDD 70.

Mintz and I sought to transform at least part of the dialog with our partners into a nuts-and-bolts discussion to prevent the proliferation of real systems. In January 1985 we succeeded in getting the CIA to produce a list to be transmitted as a diplomatic cable. It was a "dirty dozen" list to share with our partners. This list cited twelve projects for missiles that exceeded the 500 kg/300 km parameters and drew on exports from the partners. Two of the projects were in Argentina, two in Brazil, one in Egypt, four in India, two in Israel, and one in South Korea. In addition, there were "possible" projects in Egypt, Indonesia, Iraq, Libya, Pakistan, and Taiwan. (The Soviet Scud was not listed at the time because it did not draw on exports from the partners.) After ten months of refusal by State's Brazil desk to clear the cable (see Chapter 9), the cable went to the partners on October 29, 1985.[62] It was the harbinger of a regular series of intelligence exchanges.

The 1985 list and its successors became known as "projects of concern" lists. These lists made it far easier to administer effective export controls. Instead of thinking abstractly about whether, say, a gyroscope export to Ruritania could contribute to missile proliferation, an export controller could think concretely. Was the gyroscope useful for a "project of concern"? If so, could the gyroscope export to Ruritania end up in that project?

Although the words "project of concern" do not appear in the regime documents, the concept is a key to its implementation. All that does appear in the regime documents is the obligation of the partners to "exchange relevant information". This obligation is discussed in more detail in Appendix 7.

In addition to intelligence exchanges, Mintz and I wanted to draw the partners into the interim policy that Under Secretary Ikle had approved in September 1983. (See Chapter 9.) That is, we wanted to have all the partners "conform export control activities during the period of these negotiations to the prospect of a missile tech agreement

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62 Richard Speier, "Missile Technology Controls--Projects of Concern", November 1985, op cit.

along the lines of our discussions."[63] Robert Dean of the State/PM front office seized on this as a means of achieving early and visible progress. In early 1985 he proposed this on behalf of the U.S., and the partners quickly agreed. The "interim implementation" of the regime dates from March 1985.[64]

The next year, 1986, featured the arrival at the Central Intelligence Agency of a full-time expert on missile proliferation. Michael Hardin, formerly a missile analyst at the Defense Intelligence Agency, enormously improved the U.S. ability to deal with real-world proliferation. He became indispensible not only to intelligence exchanges but also to export reviews and diplomatic demarches.

In the last period of the missile nonproliferation negotiations by far the most threatening system was the Condor II ballistic missile. It was nominally a peaceful "scientific" rocket. In fact, in the early 1980's the Department of Commerce -- then responsible for exports for "meteorological" purposes -- had licensed the export of production equipment for the Condor. But the Condor II was, in fact, a solid-fuel, two-stage missile comparable to one of the most advanced missiles ever fielded, the Pershing II. Its accuracy would have been a few hundred meters or less, far more accurate than the Scud. It was being developed by Argentina, Egypt, and Iraq with the help of a large number of firms in partner nations. Even before the 1987 public announcement of the Missile Technology Control Regime, the U.S. assigned a high priority to working with our partners to block the missile's development.[65]

This was not easy. During a negotiation the Department of State understandably wants to avoid antagonizing our negotiation partners. Protests over their exports for Condor II and other projects inevitably would antagonize them. So, in spite of DoD's willingness to break crockery, the process of issuing diplomatic demarches was restricted during the missile technology talks.

During the same period the U.S. was negotiating on military and technical cooperation with India. Richard Perle and Jeanne Mintz were in the right places to influence these talks. Although we could not reveal the still-secret missile nonproliferation negotiation, we inserted caveats in the

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[63] Draft cable by Richard Speier, "Bilateral Consultations on Missile Technology Control", May 25, 1984, op cit.

[64] Richard H. Speier, "The Missile Technology Control Regime", 1991, op cit.

[65] Statement of Mr. Henry D. Sokolski, Deputy for Non-Proliferation Policy, Department of Defense, before the Subcommittee on Technology and National Security, Joint Economic Committee, U.S. Senate, April 23, 1991. Also see Krosney, op cit., and Windrem and Burroughs, op cit.

U.S.-Indian cooperation agreements to ensure that they would not assist India's strategic missile activities.

As the critics had noted in 1984, we could have worked with our partners to try to stop these missile programs without agreeing on general rules. But, if the rules could be written so that they did more good than harm, they would still be worth negotiating.

Chapter 13

The Rules for Category I

Nothing was happening. From January 1984 through March 1984, the month of the attempted "coup d'etat", to October 1984 there were no international meetings on missile nonproliferation. There was an interagency impasse on Category I rules. DoD wanted firmness; State wanted flexibility.

Other partners realized what was happening. They took less seriously such communications as they received from the U.S.

DoD offered an alternative to the consensus rule for Category I exports. The alternative was "no exports, period". This had received a better hearing in Rome than the consensus rule because it did not entail international review of a sovereign nation's export approvals. But the concept was not receiving a better hearing from the flexibility-minded State Department. State held out for prior notification of Category I exports.

Things started to move slowly after the summer 1994 arrival of Robert Dean in the front office of State/PM. He and Feith talked frequently. Perhaps we could try to make progress more cautiously. Rather than convening multilateral meetings in the expectation of agreeing on a complete text, we could meet bilaterally with the partners. Rather than drafting more text at this time, we could discuss concepts.[66] We could postpone adopting a new U.S. position until we had more information on the partners' reactions to these concepts.

And so began a fourteen month period of cables and bilateral meetings. My international travel schedule was as follows:

October 1984: London, Paris, Rome, Bonn, London
October 1984: Ottawa
June-July 1985: London, Bonn
October 1985: Ottawa
October 1985: Tokyo
November-December 1985: London, Rome, Paris, Bonn,

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[66] Draft cable by Richard Speier, "Bilateral Consultations on Missile Technology Control", May 25, 1984, op cit.

Tokyo, London.

Interspersed with these overseas bilateral meetings were bilateral meetings in Washington and meetings of the four European partners without U.S. attendence. And many, many diplomatic cables.

We learned a number of things. The partners were not thrilled with State's idea of prior notification of Category I exports. Some partners liked the idea of "no exports, period", but not all of them did.

There were other concepts. A few partners liked the idea of exceedingly tight restrictions aimed at a "blacklist" of recipient nations. But some flatly refused to consider a "blacklist" because of the effect on relations with those countries. The U.S. itself, when looking at the missile projects that it opposed, realized that many were in nations with which we had extensive economic, technical, and military cooperation. It became a standard position that the controls were not aimed at nations but rather at projects.[67]

Another idea was to have three control list categories, perhaps Categories Ia and Ib in addition to Category II. Then it would be possible to control some Category I items very restrictively and other Category I items more flexibly. But this seemed clumsy and inelegant, and no one could get enthused about it.

By late 1985 the State Department was getting multilateral fever. If progress was so slow in bilateral meetings, maybe inspiration could strike in a multilateral setting. DoD found this prospect terrifying. In a multilateral setting DoD's influence would be weakened. And the United States would lose control to whatever enthusiasms swept the conference room. Mintz and I had been through it before. Even the order of the speakers in a multilateral meeting was important. The first speaker to come up with an idea, no matter how half-witted, obliged the subsequent speakers to be polite and to try to make something of the idea. Even the time of day in a multilateral meeting was important; people were always crazy while digesting their lunch, especially a lunch with European wines.

No, we preferred bilateral meetings where the atmosphere was more informal and no one -- except the two delegations -- knew how little each of the participants thought of each other's ideas. We preferred cables even more; in clearing cables, DoD could nonconcur until State accepted a position more to DoD's liking (or until the issue escalated to a

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[67] Richard H. Speier, "The Missile Technology Control Regime", 1991, op cit.

higher authority -- which happened rarely with respect to such an arcane subject). In meetings, even bilateral meetings, State could spring a surprise that DoD would need laboriously to unravel.

So here it was, early November 1985, and State was

> "pushing for a fast multilateral: 'any agreement better than none', 'won't get any more concessions from allies.' Fact: Allies have been very forthcoming during carefully conducted bi-laterals [a situation which] lets DoD run the show. In multilateral, experience shows, things get crazy and State caves."[68]

There were a dozen remaining issues, and half of these were major ones. Some of them were exceedingly complex, involving interactions between the control rules and the list of items to be controlled. It was difficult to get the PM front office to pay attention to such subtle matters. But DoD wanted no multilateral meeting until these issues were resolved and there was full agreement on the relevant texts.[69]

And so began the diplomatic excursion from Hell. In an effort to resolve, or at least explore one more time, the remaining issues the U.S. delegation, led by Gussman, made a ten-day trip to London, Rome, Paris, Bonn, Tokyo, and back to London to prepare for the December 3-4 multilateral meeting.

Thus fortified, the U.S. delegation at the London meeting, now led by Robert Dean, tried a new formula for the condition under which "rare" Category I exports could occur:

> "Supplier involvement including continuous operational presence sufficient to ensure that the item will be put to its stated end use."[70]

The concept was that the next best thing to not making an export would be to keep the exported item in the continuous presence of nationals of the supplier state -- with enough control in the arrangement to ensure an acceptable end use.

It didn't fly. Each of the other governments raised a different objection, most of them operational and subject to further study. "Post-delivery controls" struck some partners as conferring extraterritoriality. They struck others as impossible to administer with private exporter personnel

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[68] Memorandum from Jeanne Mintz to Richard Perle, "Missile Tech -- Update", November 1985. Released by OSD March 23, 1995.

[69] Ibid and unattributed draft memorandum to Robert Dean, "Missile Technology Project -- The Next Three Weeks", November 12, 1985. Released by OSD March 23, 1995.

[70] Paper by Jeanne Mintz and Richard Speier, "Missile Tech--Treatment of Cat. I Exports", January 8, 1986. Released by OSD March 23, 1995.

eager to make a buck and even more impossible to administer with government personnel -- who would be subordinate to a private transaction.

It seemed to DoD that some partners were still not reconciled to tight restrictions on exports of SLV's and that they were using the debate over Category I rules to hold open the option of loosely-controlled SLV exports. DoD believed that no agreement was still an option -- and one that was preferable to an agreement that legalized insufficiently controlled Category I exports.[71]

The London meeting did make a great deal of progress. It agreed ad referendum (i.e., subject to review in capitals) on most of the text for a control regime. But the Category I question was still wide open.

DoD still wanted to continue to explore the "no exports, period" option as well as the option of post-delivery controls on Category I exports. Little did anyone know that within three months a combination of the two options would sweep the field.

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[71] Background paper and talking points by Richard Speier for the Secretary of Defense, "Missile Technology Control Talks", December 10, 1985. Released by OSD March 23, 1995.

Chapter 14

Jet-Lag and Other Constraints

"I want a very fat lady who likes to be spanked." We were tired, and my fellow delegate was sitting next to me on the plane going from somewhere to somewhere else. I had seen a bag of ornate coat hangars that he had bought at our last stop. They looked like ping-pong paddles, and I had asked about them. This set off a fantasy about what he would say when he arrived at our hotel with a supply of paddles.

It was jet-lag and fifteen-hour days. The academic theory of negotiations is now sophisticated enough to take into account the clash of objectives between parties and the bureaucratic jealousies within parties. The theory should take a few other phenomena into account. They have major effects.

The last chapter listed tightly-scheduled sets of bilateral meetings, including the excursion from Hell. What was the effect of such frenetic travel -- often at night across many time zones -- on the outcome of the missile technology talks?

The effect was not helpful. At the Rome meeting, for example, the chief U.S. delegate conducted four bilateral meetings -- without other U.S. delegates present -- the morning he arrived, after little sleep on the plane.[72] It may have had an effect on the reluctance of other delegations seriously to consider the U.S. position, which they heard for the first time in Rome.

Some diplomats may be supermen who can operate in this environment. I found that, at meetings in Europe the morning after I had arrived from the United States, I often thought I was taking notes. But I was only imagining it. Piling onto this a day-after-day series of meetings throughout Europe -- let alone Japan -- did not help. I tried swimming and reading poetry to get my mind unjangled. My daughter Susanna supplied me with lyrical passages from Death in the Family by James Agee. It all helped. But was this any way to run a negotiation?

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[72] Richard Speier, "Problems with the Missile Tech Effort and Some Possible Approaches", December 1983, op cit.

The Japanese made it a practice to arrive at a European or American destination days before a negotiation. A good idea, but not feasible under U.S. funding constraints.

One partner seemed deliberately to take advantage of the weakened state of the U.S. negotiators. That partner would consistently seat the U.S. team in front of a south-facing window so that the sun roasted our backs. The same partner would complement our jet-lag with 16 hour negotiating sessions.

DoD had a point when it preferred cables to bilateral meetings and bilateral meetings to multilateral meetings. Apart from facilitating bureaucratic control, such a series of preferences also preserved mental acuity and limited the damage from the loss thereof.

Another underestimated constraint was lack of staff. Michael Hardin of the CIA and I were the only full-time participants in the missile nonproliferation process in the U.S. until late 1988. By contrast, throughout the U.S. government there were at least 80 full-time people working on nuclear export controls and well over 250 on East-West technology export control.[73] Reviewing the intelligence, following the diplomacy, reviewing the export cases, justifying export denials to governmental and non-governmental petitioners, meeting with bureaucrats, arguing with bureaucrats, writing position papers, writing cables, revising the cables of others, keeping the bosses informed and supportive, let alone meeting with the representatives of foreign governments -- it all took time.

There were consequences to the lack of staff. I found myself working 10-15 hour days. I bought a telephone headset for the office so that I could do two things at any one time -- reading, writing, or filing while I was continuously talking on the phone. Actions -- many actions -- were dropped because of lack of time.

In 1984 Feith brought Gerald Oplinger, who worked on nuclear proliferation for the Carter Administration National Security Council, to OSD to be my boss. He took over the nuclear issues so that I could work full-time on missiles. He watched the fort while I was away. But the workload grew.

In 1985 Feith and Perle secured funding for Livermore Laboratory's Z Division to help in the analysis of missile proliferation. They were a great help, but also a major management burden. The paperwork and travel associated with keeping them useful was staggering.

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[73] Dan Quayle, "Missile Woes", The Washington Post, July 14, 1987.

In 1986 Perle and Feith tried to help out in a new way. They offered me the resources to create a small Defense Technology Security Agency for nonproliferation. All I needed to do was to write reams of position justifications and hire the people. I had no time to do so.

Feith was able to bring Randy Rydell from Livermore and Joseph Pilat from Los Alamos onto the staff in temporary slots to help with the workload. And an occasional summer student would help out -- with astonishment at the intense life of managing issues, "like drinking from a firehose". My best employee was my 11 year-old son Alexander. For $2 per hour he filed my export cases. I hope the statute of limitations has run out on child labor laws.

Academicians and State Department officials find that proposals for new negotiations fall trippingly off the tongue. If the negotiations are to accomplish anything, they need someone to do the work. The U.S. is probably better endowed in this regard than any other nation. But beware of new negotiations; if they are serious, something else will have to give.

Finally, the inflexibility of government (in all but negotiating positions) had its effect. Jeanne Mintz was continually besieged by an unsympathetic chain of command and staff ethic ("you can't stop the spread of technology") in the Research and Engineering side of OSD. The only way to deal with it was by bureaucratic warfare -- at which she excelled.

I had my own problem. Do you remember the 1970's? It was a wild time. I partook of some of that wildness. This comes as no shock to anyone who enjoyed the Seventies, but the Security Office of the Defense Intelligence Agency (DIA) froze its world-outlook in the 1940's.

In the midst of the missile technology control talks, my security clearance came up for review. The reviewers asked questions I had never been asked before, and I answered truthfully. When the dust had settled, I was left with a Top Secret security clearance and access to nuclear weapons designs. But the DIA had denied me access to the most sensitive intelligence information. Perle protested, but the Director of the DIA replied that "recent media publicity" made the decision necessary. The "recent media publicity" concerned DIA security clearances held by Soviet spies. There was no concern that I was a spy, but DIA was under the gun to look tough.

I decided to try to turn a lemon into lemonade. If I couldn't work with the most sensitive intelligence information, I could work with unclassified information. I started compiling publicly available articles and data. A

summer student, John Gridley (a classics major, of all things) organized and summarized these into reviews of Third World missile programs. These had a major impact -- in helping us write diplomatic demarches with a minimum of classified material, in explaining to exporters why we could not approve their applications, and (see Chapter 17) in helping the world to realize the gravity of the missile proliferation threat.

The battle against the Condor II was the last one in which I had full access to intelligence data. The next battle I wanted to fight was against the Scud. But the lack of intelligence access deprived me of the ammunition I needed. Sorry about that, Tel Aviv.

Chapter 15

One Word Away from Agreement

"'Yet'," said Doug Feith, "should never be the first word of a sentence." I was about to explode. We were late for a key meeting between Richard Perle and representatives of a missile nonproliferation partner. I had written talking points for Perle, and Feith had caught a misspelling of the word "focused". This had led to a dissertation on the English language.

The meeting was taking place on January 30, 1986. For the previous three weeks we had worked with Perle, and he had worked with Under Secretary of State Schneider, on a possible way to break the Category I impasse.

DoD had wanted "no exports, period". State had wanted to find a more flexible formula than the one we had tabled in London, "supplier involvement including continuous operational presence sufficient to ensure that the item will be put to its stated end use". Now Perle thought we might have a way out.

It depended on the well recognized distinction in export controls between production facilities -- which are exceedingly sensitive because they can create new suppliers and because they last a long time -- and consumable hardware such as Category I missile systems and subsystems, which are launched and gone. Why not tighten up the London proposal with respect to Category I production facilities and their technology to make it one of "no exports, period". And why not loosen the proposal on consumables to make it "supplier government responsibility for the end use"?[74]

The State/PM front office had problems with this idea. The easing of controls on Category I consumables was great; it was just the kind of flexibility that DoD should approve. But the tightening of controls on production facilities was non-negotiable. There was no precedent for an embargo on production facilities.[75]

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[74] Paper by Jeanne Mintz and Richard Speier, "Missile Tech--Treatment of Cat. I Exports", January 8, 1986, op cit.

[75] Memorandum from Douglas J. Feith to Mr. Perle, "Forthcoming Call to You from Bill Schneider on Missile Tech", January 10, 1986. Released by OSD March 23, 1995.

On the last point the State/PM front office was wrong. France and the FRG announced in 1976 and 1977, respectively, that "until further notice" they would not export nuclear reprocessing facilities.[76] And nuclear reprocessing facilities, which produce weapons-usable material, are a strong analog for missile production facilities. Presidents Carter and Reagan had reaffirmed this same policy, which was originated by President Ford.

The debate between DoD and State raged for nearly two weeks. Perle assured Schneider that the definitions of "production facilities" and "technology" had been agreed in London. Moreover, the portion of the guidelines text agreed in London provided that "the transfer of design and production technology directly associated with any items...will be subject to as great a degree of scrutiny and control as will the equipment itself...."[77]

State's objections became psychedelic. A political-level PM official "has placed some of his professional credibility on the line by insisting that the DoD proposal is non-negotiable".[78] Schneider had a better idea, a "compromise"

> "that the U.S. should accept a proposal that calls for 'verification' of Category I exports but not for the restrictions that you proposed. Later (State has not yet decided whether this would be before or after the seven allies had reached final agreement) the U.S. would broach your more restrictive proposals. State thinks that this approach would 'preserve the momentum' of the negotiation whereas your proposals would slow down the negotiation by at least six months."[79]

Enough was enough. On January 23, 1986, Bill Gussman and I "tried out the [Perle] idea on [a delegation from one of the partners], and their receptivity to the concept surprised State".[80]

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[76] Embassy of France press release #76/182, "Foreign Nuclear Policy: Communique Following the Meeting of the Council on Foreign Nuclear Policy", December 16, 1976. Federal Republic of Germany Bulletin #651, "Statement of the Press Office", June 22, 1977, page 613.

[77] Memorandum from Richard Perle to the Under Secretary of State for Security Assistance, Science and Technology, "Missile Technology Controls", January 21, 1986. Released by OSD March 23, 1995.

[78] Memorandum from Jim Hinds to Mr. Perle, "Missile Tech--Possible Call from Bill Schneider", January 22, 1986. Released by OSD March 23, 1995.

[79] Memorandum from Jim Hinds to Mr. Perle, "Missile Tech--Bill Schneider's Forthcoming Call to You Today (Later Info)", January 22, 1986. Released by OSD March 23, 1995.

[80] Memorandum from Dick Speier to Jim/Doug, "Perle Missile Tech Proposal", January 24, 1986. Released by OSD March 23, 1995.

The key meeting occurred a week later. This was our chance to try out the idea on a high level group from the partner government that was blocking progress on the issue. If they liked it, the problem was solved. Feith eventually tore himself away from his English lesson, and we joined Gussman to meet Perle before the meeting. Perle scanned the talking points I had prepared. His only comment was, "You misspelled 'focused'."

The idea worked. Within a month all seven partners had agreed to Category I controls -- almost.

As of February 25 the U.S. proposal for the operative text of guidelines paragraph 2, the Category I rule, was as follows:

> "Particular restraint will be exercised in the consideration of Category I transfers. Until further notice, the transfer of Category I production facilities will not be authorized. The transfer of other Category I items will be authorized only on rare occasions and where the government (A) obtains binding government-to-government assurances from the recipient government called for in paragraph 5 of these guidelines and (B) takes responsibility for ensuring that the item will be put only to its stated end use."[81] [underlining added]

Only the underlined phrase was in real contention. The European partners were worried. What commitments did this phrase entail?

Another round of bilateral meetings was in the works: 11 hair-splitting days in March 1986 in Paris, Bonn, Rome, and London. The objections to the phrase were dazzling: Don't you trust our judgment? Doesn't this requirement infringe on our sovereignty? Isn't "ensuring" too strong? What will be the duration of our involvement in Category I transfers.

The U.S. delegation was now working harmoniously together, and we solved almost all the problems with the partners. We addressed the sovereignty issue by adding a final sentence to the paragraph: "It is understood that the decision to transfer remains the sole and sovereign judgment of the _____ Government."

We answered their concerns about "trust" and the term "ensuring".

"The standard for a Category I transfer must not be the

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[81] Paper by Richard Speier, "Missile Tech--Category I Controls", June 4, 1986. Released by OSD March 23, 1995.

> government's belief. That would give seven different results in a regime in which we want to harmonize our policies and avoid commercial discrimination. We need a formulation that identifies a shared standard... ('ensuring')".[82]

With respect to the duration of government involvement,

> "when a government approves a Category I export, it cannot disassociate itself from the consequences of this action....There must be security measures sufficient to prevent diversion. In the case of a risky destination, verification alone would not be adequate because it might merely serve to monitor a diversion. In a form appropriate to the circumstances, there needs to be a continuing responsibility for non-diversion."[83]

The spring holidays came and went, and the European partners agonized. By June they, in effect, had a single one of their governments speaking for them. That partner reduced the disagreement between Europe and the U.S. to one word.

The U.S. had by then modified its proposal to read that the supplier "takes all steps necessary to ensure that the item will be put only to its stated end use". The partner proposed, "takes all possible steps".[84] State and DoD agreed that "possible" was too week. It would permit exports with less than the steps that were "necessary".

On June 24, 1986, Perle was to meet with his counterpart from the spokesman government. We prepared Perle to hammer home that three and a half years of negotiation had now come down to a single word. If Perle's counterpart would accept "necessary", then all of the partners would.[85] Perle won the day.

The rest of the drafting was completed quickly. The operative phrase became

> "[B] assumes responsibility for taking all steps necessary to ensure that the item is put only to its stated end use."

The full text of the guidelines appears in Appendix 5.

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82 "Informal U.S. Delegation Observations on Guidelines Paragraph 2 (B)", March 25, 1986. Released by OSD March 23, 1995.

83 Ibid.

84 Memorandum from Jim Hinds to Richard Perle, "Missile Technology Controls--Talking Points for Tonight", June 24, 1986.

85 Ibid.

Oh, yes. There was one last, non-controversial change of which I am proud. In Ottawa in October 1985 the chief Canadian delegate had said that, as he understood matters their was a "presumption of denial" of Category I export applications. A good phrase.

So, as the text was being perfected, I suggested using that phrase. No one in the U.S. or any other government objected. The first sentence of the operative language quoted above now reads

> "Particular restraint will be exercised in the consideration of Category I transfers, and there will be a strong presumption to deny such transfers."

"A strong presumption to deny". A good phrase for a nonproliferator.

Part IV

Wrapping It Up

Chapter 16

Endgames

"Ooooooooouuuucccchhhhghghghgh," said Bill Gussman. He was trying to convey the response of one of the partner delegates on learning that the U.S. was going to pay yet another visit for bilateral talks. The response began with the musical tones of feigned delight and inexorably descended into the gutterals of revulsion. We were wearing out our welcome.

For a while, things had gone well. The resolution of the "all steps necessary" issue had led to a cascading series of ad referendum approvals of the entire text. By September 4, 1986, six of the partners had agreed ad ref.[86]

But there was a problem. The remaining partner had withheld its ad ref agreement, linking it to an extraneous issue. The partner threatened to wait another three months before addressing the text.[87]

According to one scholar, the partner was France. The scholar asserts that the issue was the Treaty of Raratonga, which established the South Pacific Nuclear Free Zone (SPNFZ) -- anathema to France.[88] Australia was promoting SPNFZ at the time, and the U.S. had not yet taken a stand.

Three months came and went, and the last partner still had not given its "ad ref". The U.S. was hounding the other partners to convince the holdout partner to come around, and the other partners were getting testy with the U.S.

Even DoD was getting impatient. The previous year there had been two near-leaks from Congress.[89] In October 1986 the lead speaker at a public conference took me to task for impeding aerospace exports -- and blamed people like me for

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[86] Memorandum from Douglas J. Feith to Dr. Ikle, "Missile Tech--[deleted] Only Holdout", September 5, 1986. Released by OSD March 23, 1995.

[87] Ibid.

[88] Deborah A. Ozga, "A Chronology of the Missile Technology Control Regime", The Nonproliferation Review, Monterey Institute of International Studies, Winter 1994, page 74.

[89] Questions Submitted for the Record by Senator Dan Quayle to General Abrahamson before the Senate Armed Services Committee SDI Hearing, February 21, 1985; John H. Cushman Jr., "Secrecy Long Kept In the Talks to Limit the Missile Spread", New York Times, April 17, 1987.

the $100 billion U.S. trade deficit. In November we learned that the Red Army Faction had stolen the complete text of the regime (see Chapter 1). And there was to be another leak in January 1987.[90] Could one or more of the partners be frightened away from giving official approval to the regime?

Moreover, the Soviets were getting restless. By early 1987 they had raised the subject of missile technology controls several times with U.S. Ambassador at Large for Nuclear Nonproliferation Richard Kennedy.[91] On November 27, 1986, Gorbachev gave an unhelpful address to a joint session of the India Parliament.

> "Today we make a proposal to establish, with the help of the leading space powers, an international centre to carry out joint research and develop space technologies at the request of developing countries....It would also have a facility for launching space-craft. If India were to express readiness to host such a centre in its territory, we would welcome it."[92]

As the situation became shaky, changes were taking place in the U.S. government. Robert Dean was replaced by Philip Hughes as the political lead in State/PM. At Dean's farewell reception, he made a few remarks. He said, "I've found myself seeing some of you in my dreams." I was standing in the back of the audience, but he was looking directly at me. To remove all doubt he said, "I'm talking about you, Dick." I wonder what he meant.

Now four months had passed since the sixth "ad ref". It was early January 1987, and there was still no word from the last partner. The U.S. decided to invite itself to foreign capitals for another round of bilateral talks. This prompted the exclamation from the foreign delegate.

In late January we swooped down on Paris, Bonn, Rome, London, and again Paris for a total of two weeks. Without rewriting the texts, we discussed and clarified our understandings of a number of points.

In early February the last partner gave its "ad ref". There were three steps left. First, the exchange of Notes Verbale among the seven partners, formally approving the regime. Second, a multilateral meeting in Paris to discuss

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90 "Missile Exports to Developing Countries to Be Banned; Seven Advanced Nations to Establish Guidelines; Will Also Affect High Technology Exports", Nihon Keizai, Tokyo, January 29, 1987.

91 Memorandum from Michael Huffington to Dr. Ikle, "Missile Non-Proliferation -- [deleted] Outcome and Next Steps", February 1987. Released by OSD March 23, 1995.

92 Unclassified cable from American Embassy New Delhi, "Gorbachev Speech to Joint Session of Indian Parliament", 281441Z Nov 86.

public affairs handling of the regime and extension of the regime to other adherents (notably the Soviet Union and China). And last, the public announcement.[93]

The exchange of Notes Verbale occurred in early March. The Paris multilateral meeting took place in the last week of March.

The biggest issue in Paris was how to handle the Soviet Union and China. The partners wanted them to agree to the guidelines and annex of the regime without access to the information exchanges among the seven partners -- provided for in paragraph six of the guidelines. DoD had resisted State's talk of "incentives" for Soviet and Chinese adherence.[94] The partners worked out a game plan of who would talk to whom, saying what and when.

The most contentious issue in Paris was the degree of emphasis to be given to the announcement. Initially, the State Department and other partners had wanted a "low profile" announcement that would minimize the effect on relationships with Third World nations.

DoD staff preferred a "high profile" announcement, preferably by the President.[95] This was not a matter of vanity. It was a matter of making the system work. The people who needed to know that the rules had changed were busy people. They were private exporters, and they were government personnel administering technical exchange agreements. Their in-boxes overflowed with "urgent -- must read" material that was years old. The best way to get to them was through the press -- preferably page one.

DoD won the dispute with State over the "high profile". But some of the partners were rattled. We learned that they had hoped to make the quietest announcement in the middle of the night in order to avoid offending their exporters and their friends in the Third World. On this seemingly peripheral issue, the fur flew in Paris and -- for days afterwards -- at astonishingly high political levels.

Finally, the U.S. showed its "flexibility". The President would not make the announcement. But the White House would -- with the Press Secretary speaking in the name of the President. And the U.S. would prime the journalistic pump. Two days before the announcement we would, on an

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93 Memorandum from Michael Huffington to Dr. Ikle, "Missile Non-Proliferation -- [deleted] Outcome and Next Steps", February 1987, op cit.

94 Ibid.

95 Ibid.

embargoed basis, brief reporters from The New York Times, The Washington Post, The Wall Street Journal, and Aviation Week. We would give them the guidelines and annex and the three-inch thick "Gridley package", the compilation of press clippings prepared in OSD over two summers by classics major John Gridley. We would also invite Leonard Spector, a Carnegie Endowment analysis of nuclear proliferation and the most respected American private authority on the subject, to share the briefing and the documents. This would allow the reporters to interview him on the significance of the announcement.

The announcement was to be on April 16, two and a half weeks after the Paris meeting. There was a scramble in the U.S. government, not only to handle the logistics of the event, but also to handle some troublesome domestic loose ends. The U.S. still had vestigial cooperation with Brazil's sounding rocket program and India's Balasore rocket launch center that needed -- at a minimum -- to be converted into something more benign.[96] And there was the DoD concern that nuclear nonproliferation guru Richard Kennedy would try to crash the party. Kennedy, who regularly denied to DoD information about nuclear diplomacy, was at last ready to become involved in missile nonproliferation. He could be expected to cut DoD out of the loop on this subject as well.[97]

If these issues were not settled by April 16, some progress was made. And the announcement came off as scheduled.

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96 Ibid.

97 Ibid.

Chapter 17

Going Public

Not all of the CIA's information comes from secret agents hiding under the bed. Some of it comes from the press. Early on April 16, 1987, Mike Hardin started watching the teletype machines for the Japanese, British, French, German, Italian, and Canadian announcements of the Missile Technology Control Regime.

He had a quiet day. The Japanese press issued a brief, puzzling article on new controls on "nuclear weapons technology exports".[98] Other than a short Associated Press item from London[99] and a comparably brief Reuters item from Paris[100], there was nothing else.

But the U.S. was busy. Congressional staffers had been briefed. Coordinated messages had gone or were in the process of going to foreign governments.[101] Secretary of State Shultz asked the Soviets to adhere to the guidelines of the regime (with the Soviets listening "politely").[102] The White House issued its press release (see Appendix 5). State, DoD, and Commerce gave a joint press conference at the State Department.[103]

Now we waited for the morning papers to tell us whether anyone would notice.

Bingo! Page 1 lead articles in the New York Times and the Washington Post and substantial articles in The Wall Street Journal and, the next week, in Aviation Week.[104]

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98 "Japan Adopts Curb on Nuclear Weapons Technology Exports", Kyodo, Tokyo, April 16, 1987.

99 Associated Press datelined London, "Seven nations agree to nuclear guidelines", Boston Globe, April 17, 1987.

100 Reuters datelined Paris, "Seven Western Nations Limit Rocket Technology", 10:33 EDT April 16, 1987.

101 For example, the unclassified cable from the State Department to all African diplomatic posts, "Missile Technology Control Regime: Explanations to African Governments", 180230Z Apr 87.

102 Henry Gottlieb, "Missile Controls", Associated Press datelined Washington, 10:29 EDT April 17, 1987.

103 For the gist see Richard H. Speier, "The Missile Technology Control Regime", 1991, op cit.

104 John H. Cushman Jr., "7 Nations Agreeto Limit Export of Big Rockets", New York Times, April 17, 1987; John M. Goshko, "7 Nations Bar

Within a few days there were favorable editorials.[105] Within a few months Congress passed a resolution endorsing the effort.

There were enough angles to the story to make it interesting. On the day the New York Times reported the announcement, it ran a companion article on the singular U.S. achievement of keeping the negotiations secret for more than four years.[106] And comments from the Third World started to come in. On April 19, Shahnaz Anklesaria Aiyar, writing in the Indian Express, reported from New York that the agreement "means a final no to India's frequent requests for technology assistance for launch vehicles for its space satellites used entirely for civilian purposes".[107]

Word had gotten out. Additional journalists sought interviews. Scholars sought interviews. Trade associations sought speeches. And far-flung offices involved in international cooperation on hardware and technology sought briefings.

Not everyone had a happy ending. Bill Gussman, despite an award from the Secretary of State for his work on the MTCR, was notified that he had not been promoted in the career foreign service and would have to retire later in the year.[108] Jeanne Mintz continued to work in an environment hostile to the idea of restraint in technology transfer. I was the only career official to come out better than before. In 1988 I received a medal from the Secretary of Defense and enough additional staffers to allow me to discard my telephone headset.

The team broke up. Doug Feith had left his position in late 1986 to return to private law practice. Richard Perle left the government in mid-1987 soon before the departure of Secretary of Defense Weinberger.

What was the meaning of it all? Appendix 7 gives my commentary on the MTCR texts. But the fine print obscures the larger picture. In less than five years we had

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Sales of Missiles", Washington Post, April 17, 1987; John J. Fialka, "Allies to Curb Flow of Missile Technology", Wall Street Journal, April 17, 1987; David M. North, "Seven Nations Curb Nuclear Weapon Launch System Exports", Aviation Week & Space Technology, April 20, 1987.

105 "In Arms Control, a Quiet Success", New York Times, April 20, 1987; "Missile Control", Washington Post, April 20, 1987.

106 John H. Cushman Jr., "Secrecy Long Kept In the Talks to Limit The Missile Spread", New York Times, April 17, 1987.

107 Unclassified cable from American Embassy New Delhi, "Indian Press Reports of U.S. Decision to Limit Transfers of Missile Technology and Equipment", 201302Z Apr 87.

108 John M. Goshko, "America's Fading Foreign Service: Tradition Bows To the Demand for Management Skills", Washington Post, April 27, 1987.

established an international standard to limit the missile threat. We had gone from the NSDD 50 decision to permit technical assistance for SLV's to the NSDD 70 directive to "prohibit...deny...prevent" assistance for nuclear-capable missiles, including SLV's, and to work with other suppliers to "hinder" the proliferation of such missiles. We had gone from the text in the 1982-3 exploratory talks to cast the guidelines "in general terms and call upon each government to monitor and control proposed exports" to "a short list of denials" that included SLV's. We had gone from "in principle, Category I items will not be transferred" to "a strong presumption to deny" with the provisoes that the transfer of production facilities "will not be authorized" and that, in the case of "rare" transfers of other Category I items, the supplier must take "all steps necessary" to ensure the stated end use.

Now, all that was required was to implement the regime.

Chapter 18

Implications

Reprieved! Again and again the MTCR negotiations had been saved from the abyss. What can we learn from this? Are there any winning elements in the MTCR case history that can be brought into future negotiations on international security?

By my count there are ten.

(1) A supportive chain of command.

DoD's positions prevailed in large part because DoD had the active involvement of five levels of officials with a shared attitude toward negotiations and a shared concern for nonproliferation. From the lowest to the highest, during the most critical periods of the talks, they were I, Jerry Oplinger, Doug Feith, Richard Perle, and Fred Ikle. With only a few breaks, quickly repaired, these five levels of officials shared a set of basic principles and a commitment to uphold these principles against expediency. Jeanne Mintz had access to technical resources that were vital to the outcome of the talks, but she was only able to use them effectively by stepping outside her own chain of command and working within ours.

Other agencies -- and other governments -- could be turned around when DoD escalated (or deescalated) its communications with them. As Feith put it, as an institution the State Department preferred, in principle, flexibility to principles. At some level these other agencies or governments didn't care about the issue enough to resist a strong intervention from DoD. DoD cared at every level.

(2) A no-agreement option.

DoD recognized that some things were worse than no agreement at all. Legalizing SLV transfers, for example, would have been too high a price to pay for an agreement. Moreover, ad hoc diplomatic demarches -- which require more effort than demarches based on a common set of groundrules -- could substitute for an agreement.

So DoD was in no hurry to reach an agreement. The State Department was. When there was an impasse, as there was for 10 months after the Rome meeting, State felt a greater

urgency to get things moving than did DoD. So State, after failing to end-run the troublesome officials in DoD, was obliged to come to terms.

If you want it bad, you'll get it bad. DoD's involvement may well have quadrupled the length of the negotiations. But the regime was being implemented on an "interim" basis midway through the talks. And greater haste to conclude the agreement would have meant weaker international standards against missile proliferation.

(3) A clear objective.

NSDD 70 and the June 1983 DoD-drafted road maps (see Appendices 2 and 4) both showed a clear sense of where we wanted to go. We wanted to "prohibit...deny...prevent...any" transfers of systems with certain well-defined technical characteristics. This objective swept away the approaches "cast in general terms...to monitor and control". The NSDD 70/DoD objectives united the technical and the normative issues in a way that calls for "flexibility" could not.

If you don't know where you want to go, you may not get there. If you know where you want to go, you always have an answer for those who aren't quite sure what to do next. DoD's clarity of purpose was often the only available guide to action. So people ended up following it.

(4) Rules appropriate to the objective.

It would have been easy to put SLV's on the Category I list and then allow their export under minimal restrictions. State (and other governments) proposed such schemes countless times. But their schemes would have undercut the objective -- unless the objective was a cosmetic agreement.

DoD was willing to hang tough, raising the "no export, period" proposal as many times as others raised proposals for exports with "verification". The test of a proposal, in DoD's view, was not its ease of negotiability but rather its contribution to nonproliferation.

(5) U.S. leadership

The U.S. is the 800 pound gorilla in international negotiations. With its economic and military strength -- and its extensive supporting staffs -- the U.S. must be listened to. Unless, of course, the U.S. is divided. As the aftermath of the "coup d'etat" illustrated, a divided U.S. invited the other partners to ignore us.

But once the U.S. decisively endorsed a position, as it did in the later stages of the MTCR negotiation, the other

partners faced a different decision. The could choose to cooperate with the U.S. or not to cooperate. Once the partners saw that the DoD and State positions were the same, progress in the negotiations was easier to achieve.

(6) Skepticism about political constraints.

There is something to be said for concern about political constraints, but it is overblown. There is a price to be paid for disregarding the views of our partners; it makes cooperation more difficult.

But just as many in the State Department thought DoD had tunnel vision -- ignoring all other issues in order to focus on missile nonproliferation, so many in the State Department had tunnel vision in their excessive solicitude for the partners' views of the moment and in their overwrought concerns with the dire consequences of not accepting those views. The fact is that our partnerships are flexible, and our partners are reasonable and mature. With these partners, reasonable policy objectives can be pursued rather than sacrificed.

(7) Staffwork.

DoD studied the technology and the rules. We studied regimes, and we studied foreign regulations. When the most feared foreign delegate announced that a U.S. proposal violated his government's export regulations, our team produced a translation of those regulations -- supplied by Randy Rydell. A quick check of the original-language text, and everyone agreed that the U.S. proposal was feasible under the regulations.

Facts are immensely influential in a bureaucracy. If they aren't addressed, a bureaucrat becomes vulnerable to great embarrassment. Theories can be spun many ways, and foreign governments -- typically shorter on staff resources than the U.S. -- depend on them. Facts are more difficult to spin. Consequently, U.S. staffwork regularly set out the data on which all of the negotiations were based. It was an easy step from controlling the data to controlling the agenda.

(8) Attention to human limitations.

We regularly found ourselves in negotiating situations in which we or our partners could barely function. For example, negotiations after a grand European lunch, negotiations the morning after a trans-Atlantic flight, negotiations with a cast of thousands where every bad idea needed as considerate a reception as every good idea.

It is best to avoid these situations. That is why cables are often better than meetings, and bilateral meetings are often better than multilateral ones. After lunch it is time for the delegations to caucus, not to negotiate.

These observations may sound trivial against the great tapestry of international events. But if you look closely at that tapestry, you may find some missing stitches.

(9) Publicity at the right time.

Sometimes diplomats seek secret deals secretly arrived at. But many activities affecting international security require the coordinated action of a great many people. These people get their information more often from the media than through bureaucratic channels.

So part of the negotiation must often deal with the issue of how to get the word out. The U.S. got the word out far more effectively than any other partner in the MTCR negotiations. But we would have done even better if we had anticipated the degree of divisiveness of the issue and inspired partner governments to do more.

(8) Eternal vigilance.

In a negotiation, silence is not golden. It means that something may be going on behind your back.

A negotiation is not a set-piece process of presenting a position and receiving a reply. There are complex sub-negotiations, with new arguments and new channels of influence appearing and disappearing. To the extent possible, these need to be watched and dealt with before they undercut your negotiating objectives.

The "coup d'etat" of March 1984 was an example of a sub-negotiation that almost got out of hand. There were long pauses in the international negotiating process during 1984-1986 when comparable mischief was afoot -- particularly among the European partners. Bill Gussman tried to monitor these developments by frequent, informal phone chats with his opposite numbers in partner governments. This was time-consuming, but it was and is an indispensable activity for a negotiator.

Moreover, "eternal vigilance" must continue after the negotiation is concluded. Dry ink on a piece of paper does not guarantee that an agreement will be implemented conscientiously. The years after April 1987 would make this abundantly clear.

Appendices

Appendix 1

NSDD 50, August 6, 1982

(2a)

August 6, 1982

SPACE ASSISTANCE AND COOPERATION POLICY

I. INTRODUCTION

The fundamental aspects of National Security Decision Memorandum (NSDM) 187 of August 30, 1972, as they apply to today's international space activity have been reviewed. This review highlighted the substantial lead the U.S. enjoys in a wide variety of technological and space related areas -- a lead which should be maintained when considering and implementing any international activity or transfer governed by the following directive. Based upon this review, this directive which replaces NSDM 187 is approved and provides general guidance for U.S. space launch assistance; space hardware, software and related technologies assistance; and international space cooperation. Specific implementing guidelines are being issued by the Assistant to the President for National Security Affairs.

II. POLICY GOVERNING SPACE LAUNCH ASSISTANCE

In dealing with requests from foreign governments, international organizations or foreign business entities for assistance in launching foreign spacecraft, the following general policy guidance is provided.

[redacted]

Partial Text of NSDD 50

III. POLICY GOVERNING SPACE HARDWARE, AND RELATED TECHNOLOGIES ASSISTANCE

In dealing with requests for the transfer of, or other assistance in the field of space hardware, software and related technologies, the following general policy guidance is provided.

Sales of unclassified U.S. space hardware, software, and related technologies for use in foreign space projects will be for peaceful purposes; will be consistent with relevant international agreements and arrangements and relevant bilateral agreements and arrangements; [redacted] will contain restrictions on third country transfers; will favor transfers of hardware over transfers of technology; will not adversely affect U.S. national security, foreign policy, or trade interests through diffusion of technology in which the U.S. has international leadership; and will continue to be subject to the export control process. A special interagency coordinating group chaired by the Department of State will be established to consider special bilateral agreements covering the transfer of space hardware, software, and related technologies.

IV. OBJECTIVES OF INTERNATIONAL COOPERATION IN SPACE ACTIVITIES

The broad objectives of the United States in international cooperation in space activities are to protect national security; promote foreign policy considerations; advance national science and technology; and maximize national economic benefits, including domestic considerations. The suitability of each cooperative space activity must be judged within the framework of all of these objectives.

IMPLEMENTING GUIDELINES TO THE SPACE ASSISTANCE AND COOPERATION POLICY

A. Policy Governing Space Launch Assistance

1. Space launch assistance will be available, consistent with U.S. laws, either from U.S. launch sites through the acquisition of U.S. launch services on a cooperative or reimbursable basis or from foreign launch sites by purchase of an appropriate U.S. launch vehicle (see policy guidance under Section B). In the case of launchings from foreign sites, the U.S. will require assurance that the launch vehicles will be used solely for peaceful purposes and will not be made available to third parties without prior agreement of the U.S.

2. Although due consideration is to be given to Intelsat definitive arrangements, the absence of a favorable Intelsat recommendation regarding such arrangements should not necessarily preclude U.S. launching of public domestic or international telecommunications satellites when such launching is determined to be in the best interests of the U.S.

3. With respect to the financial conditions for reimbursable launch services from U.S. launch sites, foreign users (including international organizations) will be charged on the same basis as comparable non-U.S. Government domestic users.

4. With respect to the priority and scheduling for launching foreign payloads at U.S. launch sites, such launchings will be dealt with on the same basis as U.S. launchings. Each launching will be treated in terms of its own requirements and as an individual case. Once a payload is scheduled for launch, the launching agency will use its best efforts to meet the scheduling commitments. Should events arise which require rescheduling, such as national security missions, the U.S. will consult with all affected users in an attempt to meet the needs of the users in an equitable manner.

5. Interface drawings and hardware (i.e., spacecraft attach fittings, etc.) provided in connection with the launch assistance provisions of this policy shall be exempt from the provisions of Section B.

B. Space Hardware, and Related Technologies Assistance

1. For the purpose of this policy, the following distinctions are recognized:

a. Hardware, software, and related technical information include:

(1) Equipment in the form of launch vehicle components and spacecraft including subsystems and components thereof, associated production and support equipment.

(2) General physical and performance specifications, and operating and maintenance information on the above equipment.

b. Technical assistance (technology, data and know-how) necessary for design, development and production of space hardware and software, including pertinent laboratory and test equipment or performance of functions and/or the conveyance of oral, visual or documentary information involving the disclosure of information relating to:

(1) Development and testing activities, detailed design drawings and specifications, managerial and engineering know-how and problem solving techniques.

(2) Production activities in the form of licenses, detailed production drawings, process specifications, and identification of requirements for production equipment.

[redacted] This does not mean that transfer of certain "technical assistance" under appropriate safeguards should not be considered on a case-by-case basis. In those cases in which "technical assistance" is provided, it should be done under safeguards which ensure protection of U.S. national security and foreign policy interests. Thus, whether the sale involves "hardware, software and related technical information," or "technical assistance," or some combination, adequate assurances to control replication and retransfer and ensure peaceful use must be provided in advance of the transfer through bilateral agreements, export licensing procedures or other mechanisms.

[redacted]

3. All requests for the export or exchange of either space "hardware, software and related technical information" or "technical assistance" as defined above must specify the end use for which it is sought.

4. All such requests shall be examined on a case-by-case basis in accordance with applicable U.S. laws and regulations to determine the net advantage to the U.S. The determination shall take into account relevant international agreements and arrangements, relevant bilateral agreements and arrangements, and our objectives for international cooperation in space activities (see Section C).

5. U.S. space "hardware, software and related technical information" or "technical assistance" as defined above shall be made available solely for peaceful purposes. No U.S. space "hardware, software and related technical information" or "technical assistance" as defined above shall be made available by a recipient to a third party without the express prior agreement of the U.S. This includes any cases where U.S. space hardware is launched from a foreign site.

6. U.S. space "hardware, software and related technical information" or "technical assistance" as defined above, or any hardware, software, or technical information and processes derived from such transfers, will not be used to contribute to or assist in the development of any foreign weapon delivery system. Further, any officially promulgated national security policy directive is overriding with respect to the transfer of military-related missile hardware, information or technology within its purview.

7. In view of the sensitivity of space technology, the following distinctions shall be applied in reaching decisions as to its export. These distinctions shall apply both to transfer abroad by federal agencies and to commercial export.

a. Proposals or requests for the export of space "hardware, software and related technical information" should be met, when in the interests of the U.S., through the provision of "hardware, software and related technical information" rather than "technical assistance" as defined above, whenever possible and reasonable to do so.

b. "Technical assistance" as defined above shall be exported only under adequate safeguards providing for its use and protection.

8. In instances where space "hardware, software and related technical information" and "technical assistance" are intended specifically for use in operational communication satellite projects to provide public domestic or international telecommunications services, its export shall be governed as specified in Section III of the Space Assistance and Cooperation Policy and Section A, paragraph 2 above.

9. Recognizing distinct U.S. national interests, special bilateral agreements covering the transfer of space launch vehicle "hardware, software and related technical information" or "technical assistance" may be considered under the following guidance:

a. The Department of State will convene and chair a special interagency coordinating group consisting of representatives from DOD, ACDA, NASA, NSC, OSTP, DOD, DCI, and other interested agencies as appropriate to recommend policy and to decide upon, formulate, negotiate, and provide general guidance on implementation oversight activities regarding bilateral agreements covering transfer to selected foreign governments and international organizations.

b. Such agreements with selected foreign governments and international organizations will contain provisions for peaceful use assurances, restrictions on third country transfers and other appropriate safeguards as may be deemed necessary and mutually agreed.

c. Any agreements that would result in funding demands on the U.S. Government must be approved through the budgetary process prior to any commitment with a foreign entity.

d. Transfer of specific space "hardware, software and related technical information" and "technical assistance" under such agreements will continue to be subject to the export control review process.

10. The U.S. should encourage other supplier nations of space "hardware and related technical information" and "technical assistance" to establish controls on their exports which are comparable to those set forth in this policy.

C. Objectives of International Cooperation in Space Activities

National Security Objectives

[redacted]

Foreign Policy Objectives

a. To gain other countries' support for the U.S. in general by promoting the U.S. national interest through bilateral and multilateral cooperation.

b. To assist in the achievement of foreign policy objectives through:

(1) Strengthening our allies and improving our working relationships with them.

(2) Promoting multilateral cooperation with, and among, other nations (similar to on-going U.S. cooperation with the European Space Agency) through suitable cooperation with their programs, on a commercial or joint program basis, in the event they desire such cooperation.

c. To encourage other countries to associate their interests with our space program.

d. To enhance U.S. prestige and ensure the U.S. position as the world's leader in science and technology.

e. [redacted]

f. To demonstrate that the U.S. is a reliable partner in international ventures.

Scientific and Technological Objectives

a. To foster cooperation in basic scientific research.

b. To develop precedents and experience in substantial cooperative undertakings which will lend themselves to other international scientific and technological activities.

c. To obtain support and assistance in the development of our national program through (1) acquisition of scientific and technical contributions from areas of excellence abroad and (2) use of facilities abroad that are necessary for mission support - tracking stations, overflights, contingency recovery, etc.

Economic Objectives

a. To maximize economic benefit by appropriately weighing:

(1) Implications of releasing technology which involves commercial "know-how";

(2) [redacted]

(3) ensuring a reasonable return on the American investment in space technology; and

(4) promoting positive effects on domestic employment and our balance of payments.

b. [redacted]

c. To seek opportunities to enhance our overall competitive position in space technology.

d. To seek more productive aggregate use of American and foreign resources and skills.

e. [redacted]

f. To enhance the cost-effectiveness of space systems through increased and more effective use.

D. Effective immediately, National Security Decision Memorandum 187 is rescinded.

Appendix 2

NSDD 70, November 30, 1982

THE WHITE HOUSE

WASHINGTON

November 30, 1982

SECRET

NATIONAL SECURITY DECISION
DIRECTIVE NUMBER 70

NUCLEAR CAPABLE MISSILE TECHNOLOGY
TRANSFER POLICY (U)

I. INTRODUCTION (U)

I have reviewed NSAM 294 of April 20, 1964 and its specific guidance on the transfer of strategic missile hardware and technology. Since the missile-related portion of NSAM 294 is updated in the following paragraphs, and the nuclear weapon section is governed by the Atomic Energy Act, NSAM 294 is rescinded. This directive provides policy guidance with respect to the transfer of nuclear capable missile delivery systems' hardware and technology. It should be considered in conjunction with applicable civil space launch vehicle directives with respect to the transfer of dual use space hardware and technology, as well as with NSDD 5 and other directives governing the export of conventional missiles and technology. Specific guidelines will be prepared to implement this policy statement. (S)(U)

For purposes of this directive, a nuclear capable missile delivery system is defined as:

(a) an unmanned rocket-powered or air-breathing vehicle that has been equipped to deliver a nuclear warhead, or

(b) an unmanned rocket-powered or air-breathing vehicle that could reasonably be modified to carry a nuclear warhead a significant distance, i.e., beyond an immediate tactical area. Conventionally armed short-range air-to-air, air-to-ground, and suface-to-air missiles and conventionally armed anti-shipping and artillery rockets shall not be subject to this directive, unless they embody technologies important for the development of a longer range surface-to-surface missile. (S)(U)

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DoD

II. POLICY GOVERNING NUCLEAR CAPABLE MISSILE TECHNOLOGY (S)(U)

An increasing number of states are developing both the technical option to produce nuclear explosives and the means to deliver them. Foreign acquisition of technology for ballistic missiles and cruise missiles is growing. Development of nuclear-capable missiles is possible through a dedicated military program or an ostensibly civil space launch vehicle program. Recognizing that such a development could provoke regional instability or ultimately threaten the United States or its allies, it is the policy of the United States to hinder the proliferation of foreign military missile systems capable of delivering nuclear weapons except as exempted below. (S) (U)

The United States will:

-- Prohibit exports of equipment and/or technology that would make a contribution to a foreign country's strategic military missile program. (S) (U)

-- Exempt on a case-by-case basis certain U.S. friends and allies from this policy, subject to appropriate non-transfer assurances and a Presidential approval that such transfers promote U.S. foreign policy and national security objectives. (S)

-- Control dual use items and technology when considered likely to contribute to an identified nuclear capable missile program in a non-exempt country. (S) (U)

To provide the basis for further action and decision, I hereby direct that the United States Government:

-- Maintain an intelligence watch on countries suspected of having intentions of developing indigenous strategic missile programs which could pose a threat to the U.S. or its foreign policy interests. (S) (U)

-- Seek cooperation with supplier nations in limiting the export of strategic missile related hardware and technology by:

(a) identifying the range of commodities and technology available abroad, and

(b) consulting on items to be restricted, with special attention to the retransfer, modification, and control of these items. (S) (U)

III. IMPLEMENTATION OF POLICY (U)

All Executive Branch agencies having responsibilities or authorizations for export controls, including missile-related commodities, will adopt stringent export controls on technology and equipment which could make a direct or significant

contribution to the design, development, production, inspection, testing or use of nuclear capable missile delivery sytems and related components. At a minimum this will include guidance sub-systems and related software, propellants, propulsion systems, rocket nozzles and related control sub-systems, re-entry sub-systems, missile structure, and unique support equipment. (S)(U)

The United States will, within the scope of current export authorities:

-- Deny approval of export of technology and related knowledge on the design, development, production, inspection, and testing of missile systems and related components that can benefit a recipient's strategic military missile program. (S)(U)

-- Generally approve, after case-by-case review, export of dual use equipment that can be judged clearly to be for a valid civil use or clearly to apply to a recipient's peaceful program and clearly is of no more than marginal benefit to a potential recipient's strategic missile program, when consistent with the applicable legislation and U.S. policy. (S)(U)

The Departments of State, Defense, and Commerce shall ensure that adequate procedures are developed to identify critical export items falling under this directive. (U)

In making case-by-case decisions, the agencies and departments will consider:

1. The strategic, technical, economic, qualitative, political and time-dependent nature of the item to a foreign nuclear capable program.

2. Alternative non-U.S. sources for the technology or end-item or comparable and adequate substitutes, with a view towards bilateral discussions with alternate sources to preclude foreign availability.

3. The end use of the item. (S)(U)

An interagency group chaired by the Department of State, and including representatives from DOD, ACDA, NASA, NSC, OSTP, Commerce and CIA, shall be established to monitor transfer of strategic military missile technology. (S)(U)

When, and if, any non-exempt nation is assessed by the interagency group as pursuing a nuclear weapon delivery capability, the interagency group shall determine whether exemption status is to be granted to it and shall make a recommendation to the NSC for a decision. An exemption shall be accorded to states such as the United Kingdom, in light of existing U.S. cooperation in the strategic and nuclear fields. (S)(U)

With regard to nations not granted exemptions and to cases outside the specific exempted categories, the United States will:

-- Apply stringent export controls to prevent the transfer of any missile-related U.S. controlled technology and hardware from reaching that nation, either directly or through intermediaries.

-- Institute measures to reduce, insofar as possible, the assistance of other supplier nations to the country(s) in question. (S)

Ronald Reagan

Appendix 3

State Department Draft, "Missile Technology Control", Spring 1983

~~SECRET~~

discussed in 12/82 (in 3/83 with Japan) — refined with other gvt. comments

MISSILE TECHNOLOGY CONTROL

The following procedures could form a general framework for controlling missile-related technology and equipment.

A. The governments would exchange bilateral confidential notes among themselves which would confirm by uniform, unilateral undertakings (statements of national policy), their adoption of the agreed export policy, as set forth in the guidelines attached to the note.

B. The guidelines attached to the notes will be cast in general terms and call upon each government to monitor and control proposed exports of items (including technology) listed in the annex to the guidelines.

C. The guidelines will provide for assurances to be obtained from recipient country governments where exports are approved.

D. The annex to the guidelines will contain a list of specified equipment and technology, the export of which governments will control according to their national regulations. This list will function as a "referral" list, requiring exporters to obtain the permission of the competent national authorities before proceeding with the export to any country.

E. Implementation of the guidelines will be the responsibility of national governments. The guidelines will include provisions for consultation and revision.

F. Review of the list of technologies to be controlled will be held at least annually.

The following guidelines would govern the transfer of equipment and technology for nuclear-capable missiles.

A. Governments should monitor and control proposed exports of items (including technology) listed in the attached annex. These controls are designed to prevent the

proliferation of nuclear-capable missiles. Action of license applications should take account of the following factors:

(1) The significance for nuclear-capable missiles of the item;

(2) The use to which the item is likely to be put;

(3) The missile and/or space program(s) of the recipient state, and foreign involvement in such program(s);

(4) The applicability of relevant international agreements; and

(5) Whether the recipient state is located in a region of particular instability or sensitivity.

B. In authorizing export of specific items (or relevant technology) to specific destinations, governments will obtain at a minimum appropriate and credible assurances that:

(1) The item (or relevant technology) or derivations of these will be used only as stated in the export application and that such use will not be modified and the item will not be replaced without prior consent of the exporting government;

(2) The item (or relevant technology) or derivations of these will not be retransferred to a third state without the consent of the exporting government.

C. Governments should consult on matters connected with the implementation of these guidelines as required.

D. Unanimous consent is required for any changes to these guidelines or to the list of controlled technologies.

Appendix 4

DoD-Drafted Papers on Nuclear-Capable Missiles, June 1983

~~SECRET~~

An Overview of Proposed Missile Technology Controls and their Relationship to Nuclear Non-Proliferation

We have prepared a draft concept paper for your consideration which may be of assistance in preparing control lists and export procedures. Non-proliferation procedures offer a valuable precedent for our proposed missile technology controls. We have also outlined proposed parameters of controlling nuclear capable missiles.

The most basic control (the Non-Proliferation Treaty--NPT) prohibits a nuclear weapon state party from "assisting, encouraging, or inducing" the acquisition by a non-weapons state of complete nuclear explosives. The minimum analog in missile controls would be the prohibition of sales of complete missile systems of a given capability.

Second, by a mid-1970's agreement of the Nuclear Suppliers Group, nations will not sell complete manufacturing facilities for weapons-usable material to countries in sensitive regions. The missile analog would also be complete manufacturing facilities.

Third, the NPT has led to the development of an internationally agreed "trigger list" of items "especially designed or prepared" (EDP) for producing weapons-usable material. Parties to the treaty agree to export EDP items to non-weapons states only under a system of "safeguards" that includes peaceful use assurances, accounting, and international inspections. The missile analog to the "trigger list" is a list of items "especially designed or prepared" for use in nuclear capable missiles and subject to either prohibitions or at least peaceful use assurances and verification.

Fourth, there is a relatively new international non-proliferation effort, the "second track," reflecting agreement by suppliers to apply controls to certain largely "dual-use" items with both peaceful and nuclear-weapons applications. Different nations have different degrees of export control authority with respect to these items, so the "second track" list only entails agreement among nations to take the strongest measures--consistent with their national laws--to control the items.

Beyond international controls, the US has a domestic list of nuclear weapon related items, the export of which we either prohibit or subject, inter alia, to peaceful use assurances. When a government observes a nation shopping for a sensitive item, it may issue a "nuclear export alert" to ensure awareness in other nations. On rarer occasions, a government may issue a demarche to a nation to block a particularly sensitive export. Missile controls could work in an analogous manner.

~~SECRET~~

Parameters

The following nominal strategic missile parameters could be used in developing control lists:

	Payload (kg)	Range (km)	CEP at Range (km)
All missiles -- desirable to control	500	300	10
Ballistic missiles -- see text	500	1200	2
Cruise missiles -- see text	500	1000	6 (3 if guidance updated)

These parameters represent the minimum capabilities that we would like to or could control in the name of controlling "nuclear capable missiles." Five hundred kg is the lightest nuclear payload likely to be developed by proliferators of concern in the medium-term future.

The "desirable to control" range of 300 km approximates the minimum range likely to be of concern to local strategic planners. The 10 km CEP at range is approximately the minimum CEP likely to significantly reduce the threat of nominal-yield nuclear weapons against dispersed urban areas. These "desirable to control" missile capabilities can be achieved with relatively widely available technology. The primary control approach for these capabilities would be to prohibit export of complete missile systems, of complete plants for their manufacture, and possibly of major subsystems. A missile system based on heterogenous parts and subsystems and assembled indigenously would be far less reliable than one produced and assembled in a complete, integrated manufacturing process in an advanced nation.

In the case of ballistic missiles, technology controls down to the component level would probably become more reliably effective for weapons that must go out of the atmosphere, i.e., over 1200 km range. The 2 km CEP at range (i.e., about 0.2%) represents a level at which improved accuracy becomes more difficult to achieve without access to highly specialized technology.

Cruise missiles are a more difficult technology to analyze, and more characteristics than payload/range/CEP need to be specified in order to know what one is trying to control. The 6 km CEP at 1000 km range represents accuracies attainable with commercial inertial navigation systems. However, if guidance information is updated (by use of terrain following or external navigation signals), then accuracies of 0.3% or less should be attainable.

A more definitive control list will require much more time for further study and refinement of the parameters.

Discussion Draft: Short List of Denials

- Complete missile systems or space launch systems capable of delivering 500 kg at 300 km with CEP at range of 10 km.
- Complete manufacturing facilities for the above.
- Complete subsystems for the above:
  - individual missile stages
  - reentry vehicles (including heat shields)
  - propulsion systems (engines and motors)
  - guidance sets (including software)
  - thrust vector controls
  - rocket motor cases
  - launch systems

Appendix 5

White House Announcement and MTCR Guidelines, April 16, 1987

THE WHITE HOUSE

Office of the Press Secretary
(Santa Barbara, California)

For Immediate Release April 16, 1987

STATEMENT BY THE ASSISTANT TO THE PRESIDENT
FOR PRESS RELATIONS

The President is pleased to announce a new policy to limit the proliferation of missiles capable of delivering nuclear weapons. The U.S. Government is adopting this policy today in common with the governments of Canada, France, the Federal Republic of Germany, Italy, Japan, and the United Kingdom. These nations have long been deeply concerned over the dangers of nuclear proliferation. Acting on this concern, these seven governments have formulated Guidelines to control the transfer of equipment and technology that could contribute to nuclear-capable missiles. This initiative was completed only recently, following several years of diplomatic discussions among these governments. The fact that all seven governments have agreed to common guidelines and to a common annex of items to be controlled serves to prevent commercial advantage or disadvantage for any of the countries. Both the Guidelines and its Annex will be made available to the public.

The President wishes to stress that it is the continuing aim of the United States Government to encourage international cooperation in the peaceful use of modern technology, including in the field of space. The Guidelines are not intended to impede this objective. However, such encouragement must be given in ways that are fully consistent with the non-proliferation policies of the U.S. Government.

The United States, and its partners in this important initiative, would welcome the adherence of all states to these guidelines in the interest of international peace and security.

# # #

Notice to the Press

The State Department will address this topic at their daily briefing today at 12:30 pm, and they will also hold a briefing by specialists at 2:00 pm at the State Department.

# # #

EMBARGOED UNTIL
6:AM EDT 4/16/87

MISSILE TECHNOLOGY CONTROL REGIME: FACT SHEET TO ACCOMPANY PUBLIC ANNOUNCEMENT

The United States Government has, after careful consideration and subject to its international treaty obligations, decided that, when considering the transfer of equipment and technology related to missiles whose performance in terms of payload and range exceeds stated parameters, it will act in accordance with the attached Guidelines beginning on April 16, 1987.

GUIDELINES FOR SENSITIVE MISSILE-RELEVANT TRANSFERS

1. The purpose of these Guidelines is to limit the risks of nuclear proliferation by controlling transfers that could make a contribution to nuclear weapons delivery systems other than manned aircraft. The Guidelines are not designed to impede national space programs or international cooperation in such programs as long as such programs could not contribute to nuclear weapons delivery systems. These Guidelines, including the attached Annex, form the basis for controlling transfers to any destination beyond the Government's jurisdiction or control of equipment and technology relevant to missiles whose performance in terms of payload and range exceeds stated parameters. Restraint will be exercised in the consideration of all transfers of items contained within the Annex and all such transfers will be considered on a case-by-case basis. The Government will implement the Guidelines in accordance with national legislation.

2. The Annex consists of two categories of items, which term includes equipment and technology. Category I items, all of which are in Annex Items 1 and 2, are those items of greatest sensitivity. If a Category I item is included in a system, that system will also be considered as Category I, except when the incorporated item cannot be separated, removed or duplicated. Particular restraint will be exercised in the consideration of Category I transfers, and there will be a strong presumption to deny such transfers. Until further notice, the transfer of Category I production facilities will not be authorized. The transfer of other Category I items will be authorized only on rare occasions and where the Government [A] obtains binding government-to-government undertakings embodying the assurances from the recipient government called for in paragraph 5 of these

Guidelines and [B] assumes responsibility for taking all steps necessary to ensure that the item is put only to its stated end-use. It is understood that the decision to transfer remains the sole and sovereign judgment of the United States Government.

3. In the evaluation of transfer applications for Annex items, the following factors will be taken into account:

A. Nuclear proliferation concerns;

B. The capabilities and objectives of the missile and space programs of the recipient state;

C. The significance of the transfer in terms of the potential development of nuclear weapons delivery systems other than manned aircraft;

D. The assessment of the end-use of the transfers, including the relevant assurances of the recipient states referred to in sub-paragraphs 5.A and 5.B below;

E. The applicability of relevant multilateral agreements.

4. The transfer of design and production technology directly associated with any items in the Annex will be subject to as great a degree of scrutiny and control as will the equipment itself, to the extent permitted by national legislation.

5. Where the transfer could contribute to a nuclear weapons delivery system, the Government will authorize transfers of items in the Annex only on receipt of appropriate assurances from the government of the recipient state that:

A. The items will be used only for the purpose stated and that such use will not be modified nor the items modified or replicated without the prior consent of the United States Government;

B. Neither the items nor replicas nor derivatives thereof will be retransferred without the consent of the United States Government.

6. In furtherance of the effective operation of the Guidelines, the United States Government will, as necessary and appropriate, exchange relevant information with other governments applying the same Guidelines.

7. The adherence of all States to these Guidelines in the interest of international peace and security would be welcome.

SUMMARY OF THE EQUIPMENT AND TECHNOLOGY ANNEX

[Only the full text of the Annex is authoritative, and it should be consulted for precise details.]

Category I

-- Complete rocket systems [including ballistic missile systems, space launch vehicles, and sounding rockets] and unmanned air vehicle systems [including cruise missile systems, target drones, and reconnaissance drones] capable of delivering at least a 500 kg payload to a range of at least 300 km as well as the specially designed production facilities for these systems.

-- Complete subsystems usable in the systems in Item 1, as follows, as well as the specially designed production facilities and production equipment therefor:

--Individual rocket stages;
--Reentry vehicles;
--Solid or liquid fuel rocket engines;
--Guidance sets;
--Thrust vector controls;
--Warhead safing, arming, fuzing, and firing mechanisms.

Category II

-- Propulsion components.

-- Propellants and constituents.

-- Propellant production technology and equipment.

-- Missile structural composites: production technology and equipment.

-- Pyrolytic deposition/densification technology and equipment.

-- Structural materials.

-- Flight instruments, inertial navigation equipment, software, and production equipment.

-- Flight control systems.

-- Avionics equipment.

-- Launch/ground support equipment and facilities.

-- Missile computers.

-- Analog-to-digital converters.

-- Test facilities and equipment.

-- Software and related analog or hybrid computers.

-- Reduced observables technology, materials, and devices.

-- Nuclear effects protection.

Appendix 6

MTCR Annex, April 16, 1987

EXPERTISE IN PROLIFERATION

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Cover Sheet

To: JESSE CRUMP
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Number of pages (including this cover): 1 ~~2~~

Comments: AS REQUESTED, ORIGINAL MTCR ANNEX.

EMBARGOED UNTIL
6:AM EDT 4/16/87

EQUIPMENT

AND

TECHNOLOGY

ANNEX

EQUIPMENT AND TECHNOLOGY ANNEX

1. Introduction.

(a) This annex consists of two categories of items, which term includes equipment and technology. Category I items, all of which are in Annex Items 1 and 2, are those items of greatest sensitivity. If a Category I item is included in a system, that system will also be considered as Category I, except when the incorporated item cannot be separated, removed or duplicated. Category II items are those items in the Annex not designated Category I.

(b) The transfer of design and production technology directly associated with any items in the Annex will be subject to as great a degree of scrutiny and control as will the equipment itself, to the extent permitted by national legislation.

2. Definitions For the purpose of this Annex, the following definitions shall apply:

(a) The term technology means specific information which is required for the development, production or use of a product. The information may take the form of technical data or technical assistance.

(b)(1) Development is related to all stages prior to serial production such as
- design
- design research
- design analyses
- design concepts
- assembly and testing of prototypes
- pilot production schemes
- design data
- process of transforming design data into a product
- configuration design
- integration design
- layouts

(2) Production means all production stages such as
- production engineering
- manufacture
- integration
- assembly (mounting)
- inspection
- testing
- quality assurance

(3) Use means
- operation
- installation (including on-site installation)
- maintenance (checking)
- repair
- overhaul and refurbishing

(c)(1) Technical data may take forms such as blueprints, plans, diagrams, models, formulae, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.

(2) Technical assistance may take forms such as
- instruction
- skills
- training
- working knowledge
- consulting services

(d) Note: This definition of technology does not include technology in the public domain nor basic scientific research.

(1) In the public domain as it applies to this Annex means technology which has been made available without restrictions upon its further dissemination. (Copyright restrictions do not remove technology from being in the public domain.)

(2) Basic scientific research means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena and observable facts, not primarily directed towards a specific practical aim or objective.

(e) The term production facilities means equipment and specially designed software therefor integrated into facilities for prototype development or for one or more stages of serial production.

(f) The term production equipment means tooling, templates, jigs, mandrels, moulds, dies, fixtures, alignment mechanisms, test equipment, other machinery and components thereof, limited to those specially designed or modified for prototype development or for one or more stages of serial production.

ITEM 1 - CATEGORY I

Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) and unmanned air vehicle systems (including cruise missile systems, target drones, and reconnaissance drones) capable of delivering at least a 500 kg payload to a range of at least 300 km as well as the specially designed production facilities for these systems.

ITEM 2 - CATEGORY I

Complete subsystems usable in the systems in Item 1, as follows, as well as the specially designed production facilities and production equipment therefor:

(a) Individual rocket stages;

(b) Reentry vehicles, and specially designed equipment therefor, as follows, except as provided in note (1) below for those designed for non-weapons payloads:

(1) Heat shields and components thereof fabricated of ceramic or ablative materials;

(2) Heat sinks and components thereof fabricated of light-weight, high heat capacity materials;

(3) Electronic equipment specially designed or modified for reentry vehicles;

(c) Solid or liquid fuel rocket engines, having a total impulse capacity of 2.5 x 10^5 lb-sec or greater, except as provided in note (1) below for those specially designed or modified for orbital correction of satellites;

(d) Guidance sets capable of achieving system accuracy (CEP) of 10km or less at a range of 300 km, except as provided in note (1) below for those designed for missiles with range under 300 km or manned aircraft;

(e) Thrust vector controls, except as provided in note (1) below for those designed for rocket systems with range under 300 km;

(f) Warhead safing, arming, fuzing, and firing mechanisms, except as provided in note (1) below for those designed for systems other than those in Item 1.

Notes to Item 2:

(1) The exceptions in (b), (c), (d), (e), and (f) above may be treated as Category II if the subsystem is exported subject to end use statements and quantity limits appropriate for the excepted end use stated above.

(2) CEP (circle of equal probability) is a measure of accuracy; the radius of the circle centered at the target, at a specific range, in which 50 percent of the payloads impact.

ITEM 3 - CATEGORY II

Propulsion components and equipment usable in the systems in Item 1, as follows, as well as the specially designed production facilities therefor:

(a) Lightweight turbojet and turbofan engines (including turbocompound engines) that are small and fuel efficient;

(b) Ramjet/Scramjet engines, including devices to regulate combustion, and specially designed production equipment therefor;

(c) Rocket motor cases and specially designed production equipment therefor;

(d) Staging mechanisms and specially designed production equipment therefor;

(e) Liquid fuel control systems and components therefor, specially designed to operate in vibrating environments of more than 12g rms between 20 H_z and 2000 H_z including:

(1) Servo valves designed for flow rates of 24 liters per minute or greater at a pressure of 250 bars, and having flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium;

(2) Pumps (except vacuum pumps), having all flow contact surfaces made of 90 percent or more tantalum, titanium or zirconium, either separately or combined, except when such surfaces are made of materials containing more than 97 percent and less than 99.7 percent titanium.

Notes to Item 3:

(1) Item 3(a) engines may be exported as part of a manned aircraft or in quantities appropriate for replacement parts for manned aircraft.

(2) Item 3(e) systems and components may be exported as part of a satellite.

ITEM 4 - CATEGORY II

Propellants and constituent chemicals for propellants as follows:

(a) Propulsive substances:

(1) Hydrazine with a concentration of more than 70 percent;

(2) Unsymmetric dimethylhydrazine (UDMH);

(3) Spherical ammonium perchlorate with particles of uniform diameter less than 500 microns;

(4) Spherical aluminum powder with particles of uniform diameter of less than 500 microns and an aluminum content of 97 percent or greater;

(5) Metal fuels in particle sizes less than 500 microns, whether spherical, atomized, spheroidal, flaked or ground, consisting of 97 percent or more of any of the following: zirconium, titanium, uranium, tungsten, boron, zinc, and alloys of these; magnesium; Misch metal;

(6) Nitro-amines (cyclotetramethylene-tetranitramine (HMX), cyclotetramethylenetrinitramine (RDX)) when specially formulated as propulsive substances.

(b) Polymeric substances:

(1) Carboxy-terminated polybutadiene (CTPB);

(2) Hydroxy-terminated polybutadiene (HTPB);

(c) Composite propellants including molded glue propellants and propellants with nitrated bonding and aluminum content in excess of 5 percent.

(d) Other high energy density fuels such as Boron Slurry, having an energy density of 40 x 10^6 joules/kg or greater.

ITEM 5 - CATEGORY II

Production technology or production equipment specially designed or modified for production, handling, mixing, curing, casting, pressing, machining and acceptance testing of the liquid or solid propellants and propellant constituents as described in Item 4.

ITEM 6 - CATEGORY II

Equipment, technical data and procedures for the production of structural composites usable in the systems in Item 1 as follows, and specially designed components and accessories and specially designed software therefor:

(a) Filament winding machines of which the motions for positioning, wrapping and winding fibres are coordinated and programmed in three or more axes, specially designed to fabricate composite structures or laminates from fibrous and filamentary materials; and coordinating and programming controls;

(b) Tape-laying machines of which the motions for positioning and laying tape and sheets are coordinated and programmed in two or more axes, specially designed for the manufacture of composite airframes and missile structures;

(c) Interlacing machines, including adapters and modification kits for weaving, interlacing or braiding fibres to fabricate composite structures, except textile machinery which has not been modified for the above end-uses;

(d) Specially designed or adapted equipment for the production of fibrous and filamentary materials as follows:

(1) Equipment for converting polymeric fibers (such as polyacrylonitrile, rayon, or polycarbosilane) including special provision to strain the fibre during heating;

(2) Equipment for the vapor deposition of elements or compounds on heated filamentary substrates; and

(3) Equipment for the wet-spinning of refractory ceramics (such as aluminum oxide);

(e) Specially designed or adapted equipment for special fibre surface treatment or for producing prepregs and preforms. Note: Equipment covered by this sub-item includes but is not limited to rollers, tension stretchers, coating equipment, cutting equipment and clicker dies.

(f) Technical data (including processing conditions) and procedures for the regulation of temperature, pressures or atmosphere in autoclaves when used for the production of composites or partially processed composites.

Note to Item 6: Specially designed or adapted components and accessories for the machines covered by this entry include, but are not limited to, moulds, mandrels, dies, fixtures and tooling for the preform pressing, curing, casting, sintering or bonding of composite structures, laminates and manufactures thereof.

ITEM 7 - CATEGORY II

Pyrolytic deposition and densification equipment and technology as follows:

(a) Technology for producing pyrolytically derived materials formed on a mold, mandrel or other substrate from precursor gases which decompose in the 1300°C to 2900°C temperature range at pressures of 1 mm Hg to 150 mm Hg (including technology for the composition of precursor gases, flow-rates, and process control schedules and parameters);

(b) Specially designed nozzles for the above processes;

(c) Equipment and process controls, and specially designed software therefor, specially designed for densification and pyrolysis of structural composite rocket nozzles and reentry vehicle nose tips.

ITEM 8 - CATEGORY II

Structural materials usable in the systems in Item 1, as follows:

(a) Composite structures, laminates, and manufactures thereof, including resin impregnated fibre prepregs and metal coated fibre preforms therefor, specially designed for use in the systems in Item1 and the subsystems in Item 2 made either with an organic matrix or metal matrix utilizing fibrous or filiamentary reinforcements having a specific tensile strength greater than 7.62×10^4m (3×10^6 inches) and a specific modulus greater than 3.18×10^6m (1.25×10^8 inches);

(b) Resaturated pyrolized (i.e., carbon-carbon) materials specially designed for rocket systems;

(c) Fine grain artificial graphites for rocket nozzles and reentry vehicle nosetips having all of the following characteristics:

(1) Bulk density of 1.79 or greater (measured at 293K);

(2) Tensile strain to failure of 0.7 percent or greater (measured at 293K);

(3) Coefficient of thermal expansion of 2.75×10^{-6} or less per degree K (in the range of 293K to 1,255K);

(d) Ceramic composite materials specially designed for use in missile radomes.

ITEM 9 - CATEGORY II

Compasses, gyroscopes, accelerometers and inertial equipment and specially designed software therefor, as follows; and specially designed components therefor usable in the systems in Item 1:

(a) Integrated flight instrument systems which include gyrostabilizers or automatic pilots and integration software therefor, specially designed or modified for use in the systems in Item 1;

(b) Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies;

(c) Accelerometers with a threshold of 0.005 g or less, or a linearity error within 0.25 percent of full scale output or both, which are designed for use in inertial navigation systems or in guidance systems of all types;

(d) Gyros with a rated free directional drift rate (rated free precession) of less than 0.5 degree (1 sigma or rms) per hour in a 1 g environment;

(e) Continuous output accelerometers which utilize servo or force balance techniques and gyros, both specified to function at acceleration levels greater than 100 g;

(f) Inertial or other equipment using accelerometers described by subitems (c) and (e) above or gyros described by subitems (d) or (e) above, and systems incorporating such equipment, and specially designed integration software therefor;

(g) Specially designed test, calibration, and alignment equipment for the above;

(h) Specially designed production equipment for the above, including the following:

(1) For ring laser gyro equipment, the following equipment used to characterize mirrors, having the threshold accuracy shown or better:

(i) Rectilinear Scatterometer (10 ppm);
(ii) Polar Scatterometer (10 ppm);
(iii) Reflectometer (50 ppm);
(iv) Profilimeter (5 Angstroms);

(2) For other inertial equipment:

(i) Inertial Measurement Unit (IMU Module) Tester;
(ii) IMU Platform Tester;
(iii) IMU Stable Element Handling Fixture;
(iv) IMU Platform Balance Fixture;
(v) Gyro Tuning Test Station;
(vi) Gyro Dynamic Balance Station;
(vii) Gyro Run-In/Motor Test Station;
(viii) Gyro Evacuation and Fill Station;
(ix) Centrifuge Fixture for Gyro Bearings;
(x) Accelerometer Axis Align Station;
(xi) Accelerometer Test Station.

Note to Item 9: Items (a) through (f) may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 10 - CATEGORY II

Flight control systems usable in the systems in Item 1 as follows, as well as the specially designed test, calibration, and alignment equipment therefor:

(a) Hydraulic, mechanical, electro-optical, or electro-mechanical flight control systems (including fly-by-wire systems) specially designed or modified for the systems in Item 1;

(b) Attitude control equipment specially designed or modified for the systems in Item 1;

(c) Design technology for integration of air vehicle fuselage, propulsion system and lifting and control surfaces to optimize aerodynamic performance throughout the flight regime of an unmanned air vehicle;

(d) Design technology for integration of flight control, guidance, and propulsion data into a flight management system for optimization of rocket system trajectory.

Note to Item 10: Items (a) and (b) may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 11 - CATEGORY II

Avionics equipment specially designed or modified for use in unmanned air vehicles or rocket systems and specially designed software and components therefor usable in the systems in Item 1, including but not limited to:

(a) Radar and laser radar systems, including altimeters;

(b) Passive sensors for determining bearing to specific electromagnetic sources (direction finding equipment) or terrain characteristics;

(c) Equipment specially designed for real-time integration, processing, and use of navigation information derived from an external source;

(d) Electronic assemblies and components specially designed for military use incorporating any of the following:

(1) Specially designed, integral structural supports;
(2) Techniques for conductive heat removal;
(3) Radiation hardening;
(4) Design for reliable short term operation at temperatures in excess of 125°C;

(e) Design technology for protection of avionic and electrical subsystems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards from external sources, as follows:

(1) Technology for design of shielding systems;
(2) Technology for the configuration design of hardened electrical circuits and subsystems;
(3) Determination of hardening criteria for the above.

Notes to Item 11:

(1) Item 11 equipment may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

(2) Examples of equipment included in this item:

- Terrain contour mapping equipment;
- Scene mapping and correlation (both digital and analog) equipment;
- Doppler navigation radar equipment;
- Passive interferometer equipment;
- Imaging sensor equipment (both active and passive).

ITEM 12 - CATEGORY II

Launch and ground support equipment and facilities usable for the systems in Item 1, as follows:

(a) Apparatus and devices specially designed or modified for the handling, control, activation and launching of the systems in Item 1;

(b) Military vehicles specially designed or modified for the handling, control, activation and launching of the systems in Item 1;

(c) Gravity meters (gravimeters), gravity gradiometers, and specially designed components therefor, designed or modified for airborne or marine use, and having a static or operational accuracy of one milligal or better, with a time to steady-state registration of two minutes or less;

(d) Telemetering and telecontrol equipment suitable for use with unmanned air vehicles or rocket systems;

(e) Precision tracking systems:

(1) Tracking systems which use a translator installed on the rocket system or unmanned air vehicle in conjunction with either surface or airborne references or navigation satellite systems to provide real-time measurements of inflight position and velocity;

(2) Software systems which process recorded data for post mission precision tracking enabling determination of vehicle position.

ITEM 13 - CATEGORY II

Analog computers, digital computers, or digital differential analyzers specially designed or modified for use in air vehicles or rocket systems and usable in the systems in Item 1, having any of the following characteristics:

(a) Rated for continuous operation at temperatures from below -45°C to above 55°C;

(b) Designed as ruggedized or radiation hardened equipment and capable of meeting military specifications for ruggedized or radiation-hardened equipment; or,

(c) Modified for military use.

Note to Item 13: Item 13 equipment may be exported as part of a manned aircraft or satellite or in quantities appropriate for replacement parts for manned aircraft.

ITEM 14 - CATEGORY II

Analog-to-digital converters, other than digital voltmeters or counters, usable in the systems in Item 1 and having any of the following characteristics: rated for continuous operation at temperatures from below -45°C to above 55°C; designed to meet military specifications for ruggedized equipment, or modified for military use; or designed for radiation resistance, as follows:

(a) Electrical input type analog-to-digital converters having any of the following characteristics:

(1) A conversion rate of more than 200,000 complete conversions per second at rated accuracy;

(2) An accuracy in excess of 1 part in more than 10,000 of full scale over the specified operating temperature range;

(3) A figure of merit of 1×10^8 or more (derived from the number of complete conversions per second divided by the accuracy).

(b) Analog-to-digital converter microcircuits having both of the following characteristics:

(1) A maximum conversion time to maximum resolution of less than 20 microseconds;

(2) A rated non-linearity of better than 0.025 percent of full scale over the specified operating temperature range.

ITEM 15 - CATEGORY II

Test facilities and equipment usable for the systems in Item 1, as follows:

(a) Vibration test equipment using digital control techniques and specially designed ancillary equipment and software therefor capable of imparting forces of 100 kN (22,500 lbs) or greater;

(b) Supersonic (Mach 1.4 to Mach 5), hypersonic (Mach 5 to Mach 15), and hypervelocity (above Mach 15) wind tunnels, except those specially designed for educational purposes and having a test section size (measured internally) of less than 25 cm (10 inches);

(c) Test benches with the capacity to handle solid or liquid fuel rockets of more than 20,000 lbs of thrust, and capable of measuring the three thrust components.

Note to Item 15(a): The term "digital control" refers to equipment, the functions of which are, partly or entirely, automatically controlled by stored and digitally coded electrical signals.

ITEM 16 - CATEGORY II

Specially designed software, or specially designed software and related specially designed analog or hybrid (combined analog/digital) computers, for modeling, simulation, or design integration of rocket systems and unmanned air vehicle systems, usable for the systems in Item 1.

ITEM 17 - CATEGORY II

Technology, materials, and devices for reduced observables such as radar reflectivity, optical/infrared signatures and acoustic signatures (i.e., stealth technology), for military application in rocket systems and unmanned air vehicles, and usable for the systems in Item 1, for example:

(a) Structural materials and coatings specially designed for reduced radar reflectivity;

(b) Optical coatings, including paints, specially designed or formulated for reduced optical reflection or emissivity, except when specially used for thermal control of satellites.

ITEM 18 - CATEGORY II

Technology and devices specially designed for use in protecting rocket systems and unmanned air vehicles against nuclear effects (e.g., Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects), and usable for the systems in Item 1, for example:

(a) Hardened microcircuits and detectors specially designed to withstand radiation as follows:

(1) Neutron dosage of 1×10^{12} neutrons/cm^2 (single event);

(2) Gamma dose rate of 1×10^9 rads/sec;

(3) Total dose 1500 rads (single event).

(b) Radomes specially designed to withstand a combined thermal shock greater than 100 cal/cm^2 accompanied by a peak overpressure of greater than 7 pounds per square inch.

Note to Item 18(a): A microcircuit is defined as a device in which a number of passive and active circuit elements are considered as indivisibly associated on or within a continuous structure to perform the function of a circuit.

Appendix 7

Commentary on the MTCR Texts

Appendix 7

Commentary on the MTCR Texts

If a Martian decided to put together a regime for controlling the transfer of a mix of single-use and dual-use items, I believe he would come up with something very much like the MTCR. Without political constraints, he might make the Category I rules even tighter. But there would be the same steps to solve the problem that were taken in the missile technology talks.

This is one reason why the MTCR served as a model for the Nuclear Supplier Group dual-use controls and why it may serve as a model for a convention to limit anti-personnel landmines. Another reason, of course, is that once an institutional approach works in dealing with a problem, people tend to copy the approach to deal with other problems.

These considerations suggest that a stroll through the texts of the MTCR may offer more than historical information. We shall comment on,

- the operative paragraph of the Note Verbale, which was the transmittal note of the MTCR documents. This paragraph appears in Appendix 5, at the top of the page entitled "Missile Technology Control Regime: Fact Sheet to Accompany Public Announcement".

- the guidelines, paragraph by paragraph, and

- the Category I items in the MTCR annex.

These regime texts -- Note Verbale, guidelines, and annex -- were anticipated in the State Department document that was written in the spring of 1983, after exploratory discussions with the partners. We shall refer to this document by its title, "Missile Technology Control", in the commentary. The document is reprinted in Appendix 3.

This commentary uses the United States version of the texts. The other partners exchanged identical English language texts, except that the name of the appropriate nation appeared in place of "the United States". The exception was France, which also supplied a French language text. The French language text had a unique footnote concerning cruise missiles in Category I, Item 1. I have never seen a translation of that footnote.

Operative Paragraph of the Note Verbale

> "The United States Government has, after careful consideration and subject to its international treaty obligations, decided that, when considering the transfer of equipment and technology related to missiles whose performance in terms of payload and range exceeds stated parameters, it will act in accordance with the attached Guidelines beginning on April 16, 1987."

The key phrase here is "subject to its international treaty obligations". Existing treaties such as NATO (to which the U.S. is a party), the European Space Agency Convention and the treaties establishing the European Community (to which the U.S. is not a party) cannot be superceded by a mere policy such as the MTCR. These treaties may require the sharing of missile-related technology or may prevent export controls of the type required by the MTCR. Of course, it would not be consistent with the MTCR policy to conclude a new treaty with such provisions.

The criticism is often directed against the MTCR that it should have been a treaty. NSDD 70, of course, did not call for a treaty. And the partners were hardly about to approve a treaty that dealt with their jealously guarded sovereign prerogatives of controlling exports -- particularly when a great deal of subtle judgment was required to determine the end-use of some exports. The critics reply that the treaty should be worldwide in scope and not limited to suppliers. The answer is that the dynamics of such a treaty negotiation would undoubtedly lead to the legalization of some types of missile proliferation.[1]

Guidelines for Sensitive Missile-Relevant Transfers

> "1. The purpose of these Guidelines is to limit the risks of nuclear proliferation by controlling transfers that could make a contribution to nuclear weapons delivery systems other than manned aircraft. The Guidelines are not designed to impede national space programs or international cooperation in such programs as long as such programs could not contribute to nuclear weapons delivery systems. These Guidelines, including the attached Annex, form the basis for controlling transfers to any destination beyond the Government's jurisdiction or control of equipment and technology relevant to missiles whose performance in terms of payload and range exceeds stated parameters. Restraint

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[1] Richard Speier, "An NPT for Missiles?", in Henry Sokolski, ed., Fighting Proliferation: New Concerns for the Nineties, Air University Press, Maxwell, Alabama, 1996.

> will be exercised in the consideration of all transfers of items contained within the Annex and all such transfers will be considered on a case-by-case basis. The Government will implement the Guidelines in accordance with national legislation."

The first sentence exempts transfers contributing to manned aircraft from the coverage of the guidelines. The manned aircraft exception is reflected in the text and footnotes for several annex items. The drafters of the regime recognized that there was some overlap between the range and payload of manned aircraft and the shorter range missile systems that the regime was trying to control. However, there was no feasible way to introduce controls comparable in effectiveness to those of the missile tech regime into the world aircraft market, which had existed for decades and had annual trade in the tens of billions of dollars. As discussed in Chapter 2, missiles pose threats -- especially in the Third World -- that in many respects are greater than those of manned aircraft.

The second sentence, often cited without the last clause, is discussed in Chapter 12.

The third sentence has two noteworthy features. First, it makes it clear that the annex -- which is the control list of equipment and technology -- is part of the regime. This is not a trivial point. Many commentators have criticized the regime for failing to cover space launch vehicles or cruise missiles. Their criticisms can be traced to a failure to turn the pages and read at least Item 1 of the annex. Second, the guidelines apply to transfers "to any destination beyond the Government's jurisdiction or control". This language was intended to exempt from the guidelines the overseas movement of missiles with national military forces. Those missiles are under the Government's control.

The third sentence's application of the guidelines to "any destination beyond the Government's jurisdiction or control" and the fourth sentence's requirement for a "case-by-case" review have been handled inconsistently by the partners in the implementation of the regime. The British, for example, announced in the late 1980's an Open General Export License (OGEL) that lifted the requirement for a case-by-case review of dual-use exports to MTCR members and to Hong Kong. Proposed U.S. legislation would also relax such case-by-case reviews for dual-use exports to partners in nonproliferation regimes.

One reason for this inconsistency is presented in the last sentence, which makes the important point that national legislation, like a treaty, supercedes a mere policy such as the MTCR. However, it is not consistent with MTCR policy to

approve new legislation or to promulgate new regulations that undercut the MTCR.

Most emphatically, nothing in the MTCR guarantees that members will receive missile technology. Some governments have suggested that this is true in order to convince their parliaments or their aerospace organizations to acquiesce to MTCR membership. The argument may be effective, but it is untrue.

> "2. The Annex consists of two categories of items, which term includes equipment and technology. Category I items, all of which are in Annex Items 1 and 2, are those items of greatest sensitivity. If a Category I item is included in a system, that system will be considered as Category I, except when the incorporated item cannot be separated, removed or duplicated. Particular restraint will be exercised in the consideration of Category I transfers, and there will be a strong presumption to deny such transfers. Until further notice, the transfer of Category I production facilities will not be authorized. The transfer of other Category I items will be authorized only on rare occasions and where the Government [A] obtains binding government-to-government undertakings embodying the assurances from the recipient government called for in paragraph 5 of these Guidelines and [B] assumes responsibility for taking all steps necessary to ensure that the item is put only to its stated end-use. It is understood that the decision to transfer remains the sole and sovereign judgment of the United States Government."

The story of this paragraph and of the associated annex items is the main thread of this entire case study.

This paragraph sets out the rules for Category I transfers. The question is sometimes asked where to find the rules for Category II transfers. The words "Category II" do not even appear in the guidelines. But, as the first sentence of this paragraph explains, there are two categories of items in the annex. The rules of this paragraph apply only to Category I transfers. The rest of the guidelines applies to all transfers, i.e., both Category I and Category II transfers.

The astute reader will notice that the phrase "in principle" does not appear in this paragraph even though it appeared in the draft Category I rule that the U.S. presented in Rome. DoD never did like "in principle". It could mean anything. As one wit in a partner government said, "'In principle, no' means 'yes'." DoD sat still for "in principle" as long as it was accompanied by the consensus

rule for approving exceptions to the "principle". Once the consensus rule died, so did "in principle".

> "3. In the evaluation of transfer applications for Annex items, the following factors will be taken into account:
>
> A. Nuclear proliferation concerns;
>
> B. The capabilities and objectives of the missile and space programs of the recipient state;
>
> C. The significance of the transfer in terms of the potential development of nuclear weapons delivery systems other than manned aircraft;
>
> D. The assessment of the end-use of the transfers, including the relevant assurances of the recipient states referred to in sub-paragraphs 5.A and 5.B below;
>
> E. The applicability of relevant multilateral agreements."

This paragraph originated with guidelines paragraph A in "Missile Technology Control". Two features of that earlier text disappeared over the years of redrafting.

First, the reference to "foreign involvement" as a factor to be taken into account in judging "the missile and space programs of the recipient state". (Compare guidelines paragraph A [3] of "Missile Technology Control" and paragraph 3 [B] above.) Foreign involvement, by itself, did not make a missile or space program "safe". It was more germane to look at the capabilities and objectives of the program. However, because objectives can change, the key constraints of the MTCR apply regardless of the recipient's objectives.

Second, paragraph A (5) of "Missile Technology Control" has disappeared altogether. This earlier provision sets as an evaluation factor "whether the recipient state is located in a region of particular instability or sensitivity." This smacked too much of a "blacklist" for some of the partners. But, outside the MTCR, the phrase has returned to fashion in recent years.

My experience has been that these evaluation factors are so vague that they are rarely used in real-world decisions. The intelligence sharing on "projects of concern" has provided a much sharper focus for export evaluations.

> "4. The transfer of design and production technology directly associated with any items in the Annex will be subject to as great a degree of scrutiny and control as will the equipment itself, to the extent permitted by national legislation."

This was not to be found in "Missile Technology Control", but a similar sentiment appeared in NSDM-187 (see Chapter 3). This paragraph represented such a fundamental

tenet of export controls that the principle -- as opposed to the precise wording -- was straightforward to negotiate. The purpose, of course, was to prevent the creation of new, uncontrolled suppliers. The effect of this paragraph is to add many technology items to the annex even though they are not explicitly listed. Moreover, when paragraph 2 embargoes the transfer of "Category I production facilities", the paragraph above expands this embargo to cover the technology of such facilities.

In the world of export control, technology is divided into tangible technology (blueprints, computer data, etc.) and intangible technology (the knowledge and experience in a person's head). The former British Commonwealth countries have constitutional problems controlling the transfer of intangible technology because of the implied necessity for controls on emigration. Thus, the last phrase, "to the extent permitted by national legislation."

> "5. Where the transfer could contribute to a nuclear weapons delivery system, the Government will authorize transfers of items in the Annex only on receipt of appropriate assurances from the government of the recipient state that:
>
> A. The items will be used only for the purpose stated and that such use will not be modified nor the items modified or replicated without the prior consent of the United States Government;
>
> B. Neither the items nor replicas nor derivatives thereof will be retransferred without the consent of the United States Government."

Language similar to that of subparagraphs A and B originated in the deep, misty past of export control. Such language appears in NSDM 187, and it appears again in "Missile Technology Control".

The lead-in phrase to this paragraph, requiring assurances "where the transfer could contribute to a nuclear weapons delivery system", is new. It did not appear in "Missile Technology Control", which called for assurances in every case. In that sense, it is a liberalization of the text in "Missile Technology Control". But the real issue with the language was "would" versus "could". The choice of "could" means that assurances are required whenever there is the technical feasibility that the transfer could contribute to nuclear capable missiles -- regardless of the objectives of the recipient's program.

Some fast-talking bureaucrats (usually Brazilian desk officers) have tried to justify Category I exports on the grounds that they purportedly meet the tests of paragraphs 3 and 5. Not so fast. The tests of paragraph 2 must be met for a Category I export before you can proceed further.

"6. In furtherance of the effective operation of the Guidelines, the United States Government will, as necessary and appropriate, exchange relevant information with other governments applying the same Guidelines."

This little-noticed paragraph corresponds to a similar text in "Missile Technology Controls". It sounds bland. But, arguably, it and paragraph 2 (on Category I controls) are the most important elements of the guidelines.

The glue that holds the MTCR together is the exchange of information. With that glue it is possible to dispense with a treaty. With that glue it is possible to tailor decisions to the circumstances rather than to wrestle with inappropriate general rules.

MTCR members now meet multilaterally about once a year, but they exchange information far more often. The information can concern missile projects, diplomatic developments, export cases, questions of technical interpretation, issues of regime operation -- or any other matter where expertise or base-touching is called for.

Remember the "no-agreement option"? Without other rules, the exchange of information among governments comes close to it. Such exchanges can and do accomplish a great deal.

The MTCR, however, has gone far beyond the "no-agreement option". Its information exchanges have become highly specialized. For example, at multilateral meetings, there are now different sessions to handle intelligence exchanges, technical issues, and political issues.

"7. The adherence of all States to these Guidelines in the interest of international peace and security would be welcome."

This last paragraph urges all states to observe the restraint called for by the guidelines (and, by reference, the annex). The paragraph does not invite them to become members of the regime. That is, it does not invite them to attend regime meetings or to participate in regime information exchanges. Such a degree of participation must be approved by the members of the regime.

But some states have adhered to the guidelines -- by adopting appropriate legislation and regulations and by establishing appropriate export control procedures -- without becoming formal members of the regime. Their motivations vary. They may believe in missile nonproliferation or want to promote it in their region. They may want to show their credentials as good international citizens. They may want to

reduce their exposure to U.S. sanctions laws. Or they may unilaterally adhere to the regime as a preliminary step to joining the MTCR.

The Equipment and Technology Annex

The body of this case study discusses the evolution of the Category I list from its origins as "a short list of denials". Without reprinting the text here (see Appendix 6 for the full text), a few subtleties are worth noting.

Item 1 includes rockets and unmanned air vehicles "capable" of delivering a 500 kilogram payload to a range of 300 kilometers or more. The word "capable" describes physical capacity, not intent. Missiles can trade payload for range -- as Iraq demonstrated by doubling the range of its Scuds after reducing the payload by two-thirds. So the nameplate parameters of a missile do not necesarily reveal its capabilities. A Soviet press report, which appeared shortly after the announcement of the MTCR but is now lost in the files, claimed that the Scud was not covered by Category I because its 1000 kilogram payload could only be delivered to a range of 299 kilometers. Good try.

The Chinese made similar claims with respect to their 800 kilogram payload, 290-some kilometer range M-11 ballistic missile. Again, good try.

To eliminate the grounds for future "good tries", the most recent version of the MTCR annex specifically states that tradeoffs of range and payload must be taken into account in determining missile "capability".

It is noteworthy that the annex, which contains detailed definitions of a number of technical terms, does not contain a definition of "payload". But missile engineers know that payload is more than the "warhead", i.e., more than the munitions component of the mass that is delivered. "Payload" includes the aeroshell of a ballistic missile's re-entry vehicle, a component that -- in the case of the Scud -- weighs some 200 kilograms by itself. It also includes support equipment for the munition device, e.g., power systems, dispensers, or terminal guidance devices.

Item 2 (c) of the annex covers rocket engines with a total impulse capacity (thrust integrated over time) of 250,000 pound-seconds. Four engines of this total impulse capacity, if assembled in parallel, can deliver a 500 kilogram payload to a range of 300 kilometers.

Item 2 of the Category I list, as well as many Category II items, feature exceptions and footnotes designed to permit

transfers for satellites and manned aircraft. These exceptions and footnotes do not necessarily exempt the items from any controls whatsoever. They sometimes only downgrade the controls from Category I to Category II. And, in all cases, a review must be conducted to determine whether the transfer fits the criteria for the exception.

A final word. The MTCR guidelines were modified once since 1987 to extend the regime's coverage to missiles capable of delivering chemical and biological weapons as well as nuclear weapons. The MTCR annex has been modified more frequently. The texts in this case study are those released on April 16, 1987. They should not be confused with the current texts.