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I. INTRODUCTION

ABOVE ALL, we must guard against the misuse of outer space. We recognized early on that a legal regime was needed to prevent it [from] becoming another area of military confrontation. The international community has acted jointly, through the United Nations, to ensure that outer space would be developed peacefully. *But there is much more to be done.* We must not allow this century, so plagued with war and suffering, to pass on its legacy to the next, when the technology at our disposal will be even more awesome. We cannot view the expanse of space as another battleground for our earthly conflicts.

- Kofi Annan,¹ United Nations Secretary-General

Secretary-General Annan's admonition is particularly poignant when one recognizes that the international community has already seen its first space war. General Merrill A. McPeak, former Chief of Staff of the U.S. Air Force, described the Persian Gulf War as such,² largely due to the U.S.-led coalition's exploitation of outer space through the use of military and civilian satellites. Secretary-General Annan's words articulate an almost incontrovertible goal—the prevention of war and suffering in the new millennium. More importantly, they serve as a challenge to those willing to accept it: to find a way to step peacefully into the new frontier.

The purpose of this note is to evaluate the merits of an international, collaborative military effort in space. Such a proposition might at first seem counter intuitive. It is a proposal that calls for the increased militarization³ of space as a method by which to bring about peace. However, this is not so surprising if one accepts the inevitability of the full militarization of space. As noted by author, Bruce Hurwitz, "[t]he militarization of outer space was no doubt inevitable. Man has militarized every region which he has been able to

¹ Kofi Annan, *World Community Must Leave No One Behind As It Moves to Explore, Develop Outer Space, Declares UN Secretary-General* (visited Jan. 4, 2000) (emphasis added) <<http://www.un.or.at/OOSA/unisp-3/speeches/19sgspace.htm>>.

² See Douglas S. Anderson, *A Military Look Into Space: The Ultimate High Ground*, 1995-NOV ARMY LAW. 19, 20 (1995).

³ Throughout this paper, the term "militarization" includes *all* use of space for military purposes. This is in contrast to certain works which draw a distinction between general militarization and "weaponization"—the deployment of weapons in space.

function in (excluding Antarctica)."⁴ In light of the inevitable militarization of space, this proposed international collaboration serves as a pragmatic vehicle with which to at least *control* the inevitable escalation of military activity in space.

Further, this proposal is likely to be considered outside "the box" of conventional thinking.⁵ Yet, when one considers the human carnage wrought by man throughout history, it would seem irresponsible to leave any conceivable alternative unexplored. Moreover, respected scholars have at least hinted that an international effort could be the answer to the gravest of dangers facing the international community. For example, Professor Louis Henkin, a distinguished international law scholar, has noted with respect to nuclear weapons that "[n]o nation will wish to give up its nuclear deterrent, *unless perhaps it were to be replaced by some yet-to-be devised, effective, and reliable international force beyond the ken of present political planning.*"⁶

This note seeks to ensure that no option lies "beyond the ken" of those international players capable of influencing the direction of the international community. This note is organized into three parts. Initially, it will provide a sketch of what will hereinafter be referred to as the International Space Force (ISF). Secondly, it will assess five factors which bear heavily on the proposal for an ISF. Lastly, the ISF's compatibility with governing law will be examined.

II. THE ISF: ESSENTIAL FUNCTIONS

This section merely provides a sketch of what an ISF might look like by focusing on its primary attributes. More important than the exact lines of this sketch, which would admittedly have to be reworked by those more knowledgeable than this author, is the core concept behind the ISF. The concept is to create a legitimate, international vehicle capable of responding to terrestrial and extra-terrestrial threats which might be mitigated through military exploitation of space. The following description will provide the background necessary to conduct the subsequent discussion regarding whether an ISF is the proper course of action for the international community.

⁴ BRUCE A. HURWITZ, *THE LEGALITY OF SPACE MILITARIZATION* 4 (1986).

⁵ As the context would suggest, the "box" refers to thoughts restricted by boundaries. Boundaries are emplaced by conventional thinking, which only gives credence to methods or approaches that have gained general acceptance.

⁶ LOUIS HENKIN, *DISARMAMENT: BACKGROUND PAPERS AND PROCEEDINGS OF THE FOURTH HAMMARSKJOLD FORUM* 1, 16-17 (Lyman M. Tondel ed. 1964) (emphasis added).

A. Purpose and Intent

The primary purpose of the ISF is to provide a collective, global defense against threats to the peace which can be mitigated through limited, military exploitation of space. The intent is for the ISF to become a reliable defensive tool in the arsenal of all States.

B. Primary Objectives

The ISF will, in essence, be a limited manpower, permanent United Nations (U.N.) deterrent force whose orientation, principal assets, and capabilities lie in space.⁷ Notably, the idea of a "small but permanent" U.N. force is not a concept original to this paper.⁸ Various advocates have frequently argued for such a force. For example, a recent essay viewed the creation of such a force as a critical step to the U.N. of the future.⁹ Through this small force, the ISF will coordinate international energies to accomplish the following objectives:

1. Creation of a space-based global missile defense.
2. Performance of a comprehensive risk assessment of the risk posed by extra-terrestrial threats, such as asteroids and comets. Subject to this assessment, the ISF may then initiate efforts to create a planetary defense.
3. Establishment of a global communications and early warning system to be used in such cases as an accidental missile firing.
4. Verification of state compliance with arms control agreements.¹⁰

⁷ This force is closely related to a U.N. *deterrent action* taken in order to "deter aggression by signaling the international community's willingness to counter it militarily." William J. Durch, *Introduction* to *THE EVOLUTION OF UN PEACEKEEPING* 6 (William J. Durch ed. 1993). Such a deployment requires the consent of the threatened party, which in the case of the ISF, would be the international community. *See id.* Most importantly, a deterrent force deploys with both the capabilities and orders to engage in combat if necessary. *See id.* Two other related but distinct U.N. actions are peacekeeping and peace enforcement. Peacekeeping is primarily a political task, but does include the use of force in limited circumstances including self-defense. *See* William J. Durch, *Preface and Acknowledgments* to *THE EVOLUTION OF UN PEACEKEEPING* xii (William J. Durch ed. 1993). In contrast, "peace enforcement" involves the coercive use of force, such as that employed during the Persian Gulf War in 1990-91, in which economic sanctions, a blockade, and air, ground, and naval warfare were used to drive Iraq out of Kuwait. *See id.* at 6.

⁸ Saul H. Menlovitz & Burns H. Weston, *From Geopolitics to Human Geogovernance: Transition Steps*, in *PREFERRED FUTURES FOR THE UNITED NATIONS* 361, 366 (Saul H. Menlovitz & Burns H. Weston eds., 1995).

⁹ *See id.*

¹⁰ This includes both arms control agreements presently in force and any future agreements

5. Dissemination of information.

C. *Characteristics*

At least in the short term, the ISF will coordinate an international collaborative effort to develop the technology necessary to accomplish these goals. This emphasis upon technological development will have a two-fold effect. First, ISF dollars will most appropriately be spent on contracted-for research and development. Second, the ISF will at least initially be a small, highly technical force comprised primarily of scientists, engineers, and experts in military doctrine.¹¹ These individuals could work for the ISF in various capacities. One suggestion for a permanent U.N. force calls for the recruitment of individual volunteers from all countries.¹² These volunteers would be direct employees/members of the ISF. Another possibility, subsequently discussed, is for states to make armed forces available to the ISF, in compliance with a Security Council directive under Article 43 of the U.N. Charter.¹³ A hybrid of both of these possibilities could also be an option.

Regardless of how "troops" are drafted, the ISF has the potential to serve as a central repository for a potent, global talent pool. If given legitimacy by the international community, the ISF could be an international juggernaut of the best and brightest women and men the world has to offer. Given the oft-demonstrated industry of man, one can only imagine what feats could be accomplished by such an assembly of men and women.

Adequate funding for the ISF is absolutely critical to its success, and a variety of options are available to generate these funds. The most obvious option is simply to require nations to provide resources, financial and

that might limit space-based weapons. Notably, the ISF's performance of the verification mission could reduce the anxiety that often occurs where one nation is supposed to verify another's compliance with an arms agreement. See Bhupendra Jasani, *Introduction to PEACEFUL AND NON-PEACEFUL USES OF SPACE 2* (Bhupendra Jasani ed. 1991) (noting the benefit of an international verification process).

¹¹ Notably, this emphasis on technology is likely to have the added effect of creating a substantial physical separation between human combatants and any actual weapons of war. This feature should lessen what might otherwise be national reluctance to place soldiers in harm's way in furtherance of an international effort.

¹² Robert C. Johansen, *Reforming the United Nations to Eliminate War*, in *PREFERRED FUTURES FOR THE UNITED NATIONS* 147, 168 (Saul H. Mendlovitz & Burns H. Weston eds. 1995).

¹³ See U.N. CHARTER art. 43. Article 43 requires states to "make available (to the U.N.) . . . armed forces, assistance, and facilities . . . necessary for the purpose of maintaining international peace and security." *Id.*

otherwise, in a measure appropriate to their capability. This sharing of costs would enable even those nations contributing the most to divert funds, which otherwise might have been spent on military development to other areas such as education and other domestic needs. A more interesting proposal for funding a permanent U.N. force involves the imposition of a "tiny tax on the more than \$900 billion of international currency exchanges that occur *each day*."¹⁴ A tax of .01 percent, using 1992 numbers, would produce \$28 billion annually.¹⁵ Certainly, the ISF would not receive the entire amount, but even a moderate percentage of this sum would be an adequate beginning. There are numerous advantages to such a tax, especially considering the fact that a computerized system capable of making the necessary deductions from each transaction is already in place.¹⁶ Moreover, such a tax would not be levied directly on governments, but presumably only upon those parties most capable of paying, in proportion to their ability to pay. For example, the aforementioned tax of .01 percent would only deduct \$100 from a transfer of \$1 million.¹⁷

Development of the confidence of nations is paramount at every step of the evolution of the ISF. Open lines of communication, disclosure, and verification are the nutrients that will help this confidence grow. Such procedures as Rules of Engagement must be established to regulate any weapon system.¹⁸ An acceptable decisionmaking system is also critical. States must have absolute confidence that the ISF will respond to aggressive action in their defense. As the ISF develops and the international community gains confidence in its ability to work with other nations toward the common goal of collective security, the potential exists for the ISF to take on additional missions, obviating certain efforts of individual nations.

III. PRIMARY PERSUASIVE FACTORS

This section evaluates five factors that bear heavily on the proposal for an ISF. The first factor involves the principal counter-argument to establishment of the ISF. There is a legitimate concern that an ISF will unacceptably limit

¹⁴ Johansen, *supra* note 12, at 165-66.

¹⁵ *See id.*

¹⁶ *See id.*

¹⁷ *See id.*

¹⁸ Rules of Engagement are rules developed to govern the actions of military forces. "[T]hey are intended to describe clear circumstances and limitations under which . . . forces . . . may take necessary action, consistent with legal, political, and military requirements." *The Rules of Engagement Forum* (visited April 1, 2001) <<http://www.rulesofengagement.com>>.

state autonomy, thereby affecting the balance of power in the international community. The second factor involves a threat assessment to determine if there is even a need for some organization to perform the kinds of missions that would be undertaken by the ISF. Third, it is necessary to evaluate the direction of the international community with respect to the militarization of space. A conclusion that space will be merely an extension of the status quo on earth could militate for the ISF. Fourth, this paper will address the foreseeable future with respect to non-military space activities and the need for a secure environment. The fifth and last factor involves a survey of the direction of the international community with respect to interdependency and related implications.

A. State Autonomy

The most substantial barrier to creation of the ISF is likely to be the reluctance of states to accept new limitations upon their sovereign autonomy to use force in space. This reluctance is likely to stem from one or more of four perceived autonomy limitations. First, states are unlikely to accept limits on their autonomy to *unilaterally* apply defensive force in space. However, in the absence of an agreement to the contrary, the ISF will not inherently limit an individual state's ability to unilaterally deploy military assets in space consistent with international law. The intent of the ISF is not to prohibit state deployment of military assets in space, but to obviate the need and lessen the incentive to do so.

Second, states will likely perceive an autonomy limitation with respect to their ability to unilaterally utilize ISF systems. This is certainly a legitimate concern that will take substantial effort and negotiation to overcome. An acceptable result will likely include some form of agreed-upon, reliable Rules of Engagement. Third, as a practical matter, states may perceive an autonomy limitation due to resource limitations stemming from the diversion of resources to the ISF. Yet, as long as states maintain the ability to utilize ISF systems, they will likely have obtained more for their investment than they could have acting alone.

The last and arguably most formidable autonomy concern is closely related to the first three. The collaboration necessary for establishment of the ISF, including sharing information, resources, and assets, *will* alter the international balance of power. The ISF will constitute a powerful international actor, which will interpose itself into the international balance of power equation. The effect on individual nations will vary, increasing the relative power for some and decreasing it for others. Admittedly, this is a legitimate

concern, particularly for those nations such as the United States, which are vulnerable to having their *relative* power diminished by the ISF.

Most important regarding this potential shift in the balance of power is the connection between power and security.¹⁹ Certain nations will inevitably view any diminution in their *relative power* as a correlative diminution in security. Yet, this should not be considered a certainty; individual state power does not directly equate to security on the international level. In fact, "the international balance of military power, . . . left unbridled, [is] . . . a permissive, contributing cause of wars."²⁰ While a full discussion of this topic is outside the scope of this paper, the argument for the ISF is premised on the idea that collective security, achieved by pooling resources and sharing responsibility, could achieve a lasting peace where the paradigms of the past have failed. As one author noted, "the most fundamental security problem for all countries remains the insecurity inherent in the existing international balance of power system . . . the U.N. system represents the only realistic hope of overcoming this dangerous insecurity."²¹

These state autonomy and balance of power concerns are of particular significance when applied to the United States. Just as peacekeeping missions simply "do not get off the ground without Great Power support,"²² the ISF will not come to fruition without the strong leadership of the United States, the world's lone superpower. The United States has the "most dominant military force in the history of the world,"²³ and it is the one nation potentially capable of unilaterally achieving the goals of the ISF in the near term. Thus, the

¹⁹ Robert C. Johansen, while advocating for a permanent U.N. military force, aptly summed up the relative power/security dilemma:

Increasing the power of the world's symbolic political center [the U.N.] causes separate States to feel less secure about protecting their security interests against the center; however, not increasing the power of the center causes States to feel insecure about protecting their security interests against one another. This structural security dilemma acutely paralyzes the ability of governments to achieve security. Until this structural problem is directly faced, substantial security enhancements will be impossible. It is possible to transcend the two horns of this dilemma by constructing a genuinely powerful culture of enforcement within the U.N. context.

Johansen, *supra* note 12, at 156.

²⁰ *Id.* at 149.

²¹ *Id.*

²² See William J. Durch, *Getting Involved: Political-Military Context*, in *THE EVOLUTION OF UN PEACEKEEPING* 36 (William J. Durch ed. 1993).

²³ Pauline Jelinek, *Rumsfeld Calls for Missile Defense*, A.P. ONLINE, Jan. 11, 2001, in 2001 WL 3651485 (quoting Senator Carl Levine, the senior Democrat on the Senate Armed Services Committee).

United States arguably has the most to lose in terms of balance of power and therefore, probably provides the *largest* obstacle to its creation.

It would appear that the United States is unlikely to acquiesce, let alone lead the charge, to creation of the ISF without a paradigm shift in the way the United States approaches national security. The United States would have to believe that its interests are best protected by an international organization that provides collective security. The ISF could be such an international organization, a vehicle uniquely suited to equitably distribute the costs and benefits of security. Still, the United States has been fairly clear that it will not accept limits upon its autonomy in space.²⁴ The Clinton administration's official policy, issued in December 1999, and entitled "A National Security Strategy for a New Century," stated that "unimpeded access to and use of space is a vital national interest."²⁵ However, as previously mentioned, the ISF will not constrain state autonomy outside of any limitations in the Rules of Engagement. Thus, as long as the United States only attempts to use ISF assets consistent with these Rules, its autonomy will not be constrained. The larger issue with respect to the United States will be its willingness to submit to a diminution in its *relative* balance of power. A realistic assessment would have to conclude that it is doubtful that the United States will be so willing.

However, there is an argument to be made that the United States might be inclined to join in the creation of the ISF. First, the United States has forcefully articulated its support for the ISF's first objective, namely, the creation of a missile defense.²⁶ The Bush administration has clearly indicated strong support for some form of national missile defense, stationed in space or elsewhere.²⁷ By selecting Donald H. Rumsfeld, an ardent proponent for a national missile defense, as Secretary of Defense, President Bush "signaled that the politically and diplomatically divisive goal of building a shield against nuclear missiles will be at the core of the new administration's national security agenda."²⁸ In addition, General Colin L. Powell, U.S. Secretary of State, made clear his views when he called a defensive shield "an essential part" of the nation's security.²⁹ Thus, there is at least the remote possibility of U.S. support for the ISF, given both the missile shield objectives of the Bush

²⁴ See Caspar W. Weinberger, *The Clinton/Gore Antimilitary Bias*, FORBES, Jan. 2001, at 53.

²⁵ *Id.*

²⁶ Stephen Lee Myers, *Choice of Rumsfeld Creates Solid Team for Missile Shield*, N.Y. TIMES, Dec. 29, 2000, at A1.

²⁷ *See id.*

²⁸ *Id.*

²⁹ *See id.*

administration and the resistance thus far put forward by the international community to the U.S. initiative.

In addition, although such cooperation and communication as the ISF would require might at first seem "naive and far-fetched,"³⁰ multiple U.S. presidents have made statements that suggest otherwise, that the sharing of vital military information *is possible* and could create a more secure international environment. President Eisenhower proposed, in July 1955, during the Four-Power Summit Conference at Geneva, that the United States and the Soviet Union "give each other a complete blueprint of our military establishments."³¹ Further, President Reagan stated his willingness to give the Soviet Union the "secret of defense" if they would agree to eliminate all nuclear weapons.³² Former President Nixon specifically provided a rationale for an international anti-ballistic missile system when he stated:

We should formally offer to share any technology we develop for a space-based missile defense system with the Soviet Union or any other nation that joins us in seeking meaningful arms control. If all nations could deploy the system at once, none would suspect another of wanting to use it as a shield for attack.³³

Numerous multi-national proposals further support a conclusion that the collaboration inherent in the ISF is a practical possibility and not simply a pipe-dream.³⁴ For example, in 1957, western states, including the United States, proposed the creation of an "inspection system which would ensure the use of outer space exclusively for peaceful and scientific purposes."³⁵ Similarly, a more modern example is the former Soviet Union's 1985 proposal for the creation of a "World Space Organization," which would ensure "international cooperation in the peaceful uses of outer space in the context of its non-militarization."³⁶

³⁰ See HURWITZ, *supra* note 4, at 182.

³¹ *Id.*

³² *See id.*

³³ *Id.* at 182-83.

³⁴ *See id.* at 174.

³⁵ *See id.* (citing 1957 U.N.Y.B. 9).

³⁶ See HURWITZ, *supra* note 4, at 176 (citing Radio Moscow, Aug. 17, 1985 and Oct. 2, 1985).

B. *Missile and Asteroid Threat*

Earth-launched ballistic missiles and asteroids (or comets) on a collision course with Earth pose a threat that is understandably transparent to most world citizens. The possibility of an asteroid strike probably sounds like little more than fodder for Hollywood, rather than an imminent threat to be taken seriously by average citizens. Governments, however, have responsibilities that transcend those of regular citizens. The fact is that these threats are real; so is the potential for mitigation through some form of military counter-attack from space, such as that proposed as a function of the ISF. The following discussion analyzes these threats.³⁷

1. *Missile Threat*

Before surveying the missile threat, it is necessary to condition the information that follows. The subsequent information tells *only a part* of the story. It would be naive to suggest that all information regarding state military capabilities is available to the public. If it were, there would be little need for the various national military and civilian intelligence agencies whose primary function is the acquisition of "intelligence" regarding the military capabilities of potential adversaries. This situation is analogous to that of an iceberg. The portion of an iceberg that is visible above the surface of the water represents information available to the public. However, the portion of the iceberg beneath the surface,³⁸ hidden from sight and of unknown size, represents confidentially-held military information. The significance of this for purposes of this discussion is that the subsequent information *alone* paints a frightening

³⁷ This analysis does not reach threats other than the missile/asteroid threat, be they terrestrial or extra-terrestrial. It is important to briefly note that many respected authorities are convinced that "little green things" (some form of life) exist in outer space. Stephen Hawking, the Lucasian professor of mathematics at Cambridge, a position once held by Isaac Newton, certainly does, having provided this characterization. See Alan Taylor & Iain S. Bruce, *The Universe? We're Across It*, THE SUNDAY HERALD, Oct. 1, 2000 available in 2000WL26526045 (Scottish Media Newspapers Limited). In fact, the international community spends an estimated 25 billion dollars annually in pursuit of new planets and new forms of life. See *id.* Moreover, Dr. Andrew Collier Cameron, leader of a team operating out of St. Andrews University in Switzerland, which has recently located nine new planets orbiting distant stars, has noted that "it is not inconceivable that in 11 years or so we will be in a position to discover life on other planets." *Id.* The import of this is that at least the potential exists for the ISF to be called on to respond to as-yet unidentified threats.

³⁸ Generally, about 6/7 of an iceberg's mass is beneath the surface of the water. See 20 BRITANNICA ENCYCLOPEDIA 751 (Fifteenth ed. 1993).

picture of the potential for the proliferation and employment of weapons of mass destruction. One can only imagine how much more frightening the picture would be if all *classified* information were exposed to the public eye.

Although missiles are manufactured to travel a variety of distances, it is the long range ballistic missiles that provide a target of opportunity for the ISF since these missiles reach altitudes of 1,000 km during their trajectories.³⁹ There are essentially three different circumstances under which these long range missiles are likely to be fired. Missiles may be fired in the course of a traditional conflict, by a rogue nation or terrorist group, or under accidental circumstances. U.S. Central Intelligence Agency (CIA) Director, George Tenet, in testimony before the Senate Select Committee on Intelligence, recently addressed the long range missile threat.⁴⁰ Tenet described the present world situation with respect to proliferation of missile-borne weapons of mass destruction (WMD) as "stark and worrisome."⁴¹ Notably, at least sixteen different countries, including North Korea, have the Scud missile system or a more advanced ballistic missile system in their inventories.⁴²

Tenet acknowledged the long range missile threat posed by Russia and China, two nations that pose a threat to the United States in the context of a traditional conflict. Tenet was confident, however, that mutual deterrence and diplomacy would continue to serve as adequate safeguards.⁴³ Still, it is believed that China maintains up to two dozen long-range nuclear missiles, housed in silos.⁴⁴ While these have become increasingly outdated, China is developing new, advanced, mobile missile technology.⁴⁵ Russia, on the other hand, like the United States, maintains thousands of long range nuclear weapons.⁴⁶

Tenet was clearly more concerned about a number of emerging threats. These could be classified as non-traditional, rogue nation, or terroristic threats.

³⁹ See Jasani, *supra* note 10, at 2.

⁴⁰ See *The Worldwide Threat in 2000: Global Realities of Our National Security Before the Senate Select Committee on Intelligence*, 106th Cong. (2000) (statement of George J. Tenet, Director of Central Intelligence) <http://www.odci.gov/cia/public_affairs/speeches/archives/2000/dci_speech_020200.html> (visited April 1, 2001) (last updated March 5, 2001) [hereinafter Tenet].

⁴¹ *Id.*

⁴² See Anderson, *supra* note 2, at 22 (citing Charles A. Horner, *Space Systems Pivotal to Modern Warfare*, DEF. 22, Issue 4 (1994)).

⁴³ See Tenet, *supra* note 40.

⁴⁴ Erik Eckholm, *Experts Try to Make Missile Shield Palatable to China* N.Y. TIMES, January, 28, 2001, at A1.

⁴⁵ *Id.*

⁴⁶ *Id.*

"Over the next 15 years . . . our cities [in the United States] will face ballistic missile threats from a wider variety of actors—North Korea, probably Iran, and possibly Iraq."⁴⁷ In fact, U.S. Secretary of Defense, Donald H. Rumsfeld, oversaw a commission in 1998 which, in contrast to U.S. intelligence agencies, determined that "rogue" nations could pose a ballistic missile threat to the United States sooner than analysts predict.⁴⁸ In some cases, this is because of indigenous technological development, and in other cases, because of direct foreign assistance.

James Mulvenon, an expert on the Chinese military at the Rand Corporation, recently expressed the concern that China might provide such foreign assistance to rogue nations. He noted that the "real worry" is that China may supply missiles to the very countries the United States' proposed missile shield is intended to protect against.⁴⁹ In addition, previous weapons technology importers, such as Iran, may become suppliers. Intelligence reports foretell that in the next few years, Iran may be able to supply not only complete Scuds, but also Shahab-3 missiles and related technology.⁵⁰ Iraq could also become a supplier in the next few years.⁵¹ In addition to these national suppliers, there is a further risk that new or nontraditional nuclear suppliers could emerge. Further, many nations have an increasing ability to not only import technologically skilled talent, but also to access the information needed to create a weapons arsenal.⁵² While the missile arsenals of these countries will be fewer in number, constrained to smaller payloads, and less reliable than those of the Russians and Chinese, they will still pose a lethal and less predictable threat.⁵³

Lastly, there lurks the danger of an accidental missile fire. Such accidents clearly *do happen*. For example, on December 28, 1984, an unarmed Soviet cruise missile violated the airspace of Norway and Finland. Despite the fact that the kinds of space-based anti-ballistic missile systems under consideration

⁴⁷ See Tenet, *supra* note 40. North Korea has already tested a space launch vehicle, the Taepo Dong-1, which it could theoretically convert into an Inter-Continental Ballistic Missile (ICBM) capable of delivering a small biological or chemical weapon to the United States. In addition, North Korea's Taepo Dong-2 missile may be capable of delivering a nuclear payload to the United States. In just a few years, Iran also may be able to deliver an ICBM with a light payload to the United States. The CIA also foresees that Iraq may obtain similar ability sometime within the next decade. See *id.*

⁴⁸ See Myers, *supra* note 26, at A1.

⁴⁹ See Eckholm, *supra* note 44, at A4.

⁵⁰ See Tenet, *supra* note 40.

⁵¹ See *id.*

⁵² See Eckholm, *supra* note 44, at A4.

⁵³ See *id.*

could not have destroyed this missile (in contrast to an armed ballistic missile), the example is still illustrative of the danger.⁵⁴

2. Asteroid (and Comet) Threat

The probability of an asteroid or comet strike, together with the almost incomprehensible potential for catastrophic loss, demands an effective approach to mitigating these threats. Such an approach must first include the ability to identify and track asteroids or comets that have the potential to cross Earth's path. Secondly, the approach must incorporate the ability to engage and negate these threats. The ISF is arguably the only organization capable of effectively pooling international resources and accomplishing both missions.

The Earth is no stranger to the effects of an asteroid or comet strike. For example, in 1908, an asteroid estimated to be 200 feet across exploded about four miles above Siberia with the force of 1,000 Hiroshima bombs, burning hundreds of square miles of trees in the Tunguska region.⁵⁵ One can only imagine the horrific loss of human life if such an asteroid had crashed into a densely populated area such as New York City. As well, "[a]irborne blasts in the kiloton to megaton range were observed in 1930 at the Curuca River in Brazil, in 1947 at Sikhote-Alin, Siberia, in 1965 over Revelstoke, Canada, over Ontario in 1966, and over Alaska in 1969."⁵⁶ The most recent example of a sizeable space rock actually crashing into earth occurred November 22, 1996, when a meteorite struck a Honduran coffee field leaving a 165 foot wide crater.⁵⁷ Of course, the most famous example of the destruction wrought by an asteroid or comet involved the extinction of the dinosaurs. Scientists now generally accept the once-revolutionary theory that 65 million years ago a comet or asteroid six miles in diameter crashed into the Yucatan Peninsula on the Gulf of Mexico, killing the dinosaurs and most other Earth species.⁵⁸

Although of lesser notoriety, scientists also believe that a space rock of 3 to 7 miles in diameter crashed into Earth about 251 million years ago.⁵⁹ This rock is believed to have initiated what has been referred to as "the great

⁵⁴ See HURWITZ, *supra* note 4, at 183.

⁵⁵ See Kathy Sawyer, *The Sky is Falling but Most Pieces Miss; Celestial Doomsday Rocks not Imminent, Experts Say*, THE WASHINGTON POST, Feb. 16, 1997, at A1.

⁵⁶ Michael B. Gerrard & Anna W. Barber, *Asteroids and Comets: U.S. and International Law and the Lowest Probability, Highest Consequence Risk*, 6 N.Y.U. ENVTL. L.J. 4, 5 (1997).

⁵⁷ *Id.*

⁵⁸ See Sawyer, *supra* note 55, at A1.

⁵⁹ See Paul Recer, *Space Rock Blamed for "Great Dying" on Earth*, ATLANTA JOURNAL-CONSTITUTION, Feb. 23, 2001, at A18.

dying”⁶⁰ and the “mother of all extinctions.”⁶¹ Ninety percent of ocean species and 70 percent of land species were extinguished within a short period of time.⁶² It is believed that when one of these space rocks crashes into the Earth, it can set off an “immense wave of superheated vapor that can roll for hundreds of miles, killing everything in its path.”⁶³ It is further thought that these impacts “can cause tidal waves and send millions of tons of dust and vapor into the atmosphere to darken the sun for months and chill the Earth.”⁶⁴ In addition to the actual crashes, there have also been near misses. On March 22, 1989, an asteroid crossed the Earth’s orbit at a place where the planet had been only six hours earlier.⁶⁵ This asteroid, labeled 1989 FC, came within 690,000 kilometers of Earth—“a near miss in astronomical terms.”⁶⁶

As previously mentioned, the ISF will initially conduct a comprehensive risk assessment to identify and then track space objects which have the potential to impact Earth. The heart of this risk assessment is the location and identification of the estimated 2000 asteroids and comets approaching one mile in diameter, which could someday cross Earth’s orbit.⁶⁷ Scientists estimate that it would take an object at least one mile in diameter to cause global ecological destruction.⁶⁸ Unfortunately, world astronomers to date have only located about 10 percent of this number—180 asteroids and twenty-six comets.⁶⁹ Notably, none of the *catalogued* near-Earth objects are expected to collide with Earth for at least 200 years, but confident predictions of the remaining 1800 cannot be made until they are discovered and their orbits calculated to see if they will cross Earth’s orbit.⁷⁰ Moreover, astronomers have even less information on long-period comets, which approach from outside the solar system and can be significantly more difficult to identify.⁷¹ In a worst

⁶⁰ *See id.*

⁶¹ *See id.* (quoting Luann Becker, geochemist and author of a study of this event at the University of Washington). In the way of evidence, scientists have discovered deposits in China and Japan of buckminsterfullerene, or “buckyballs”—a “form of carbon shaped like a volleyball with a hollow cage-like cavity inside.” *Id.* Scientists have “found within these cavities a helium isotope believed to be of extra-terrestrial origin.” *Id.*

⁶² *See id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *See* Gerrard & Barber, *supra* note 56, at 5.

⁶⁶ *Id.*

⁶⁷ *See* Sawyer, *supra* note 55, at A1.

⁶⁸ *See id.*

⁶⁹ *See* Gerrard & Barber, *supra* note 56, at 6.

⁷⁰ *See id.* at 7.

⁷¹ *See id.*

case scenario, comets approaching from the direction of the sun and hidden by the glare may not be located until only a few days or hours before collision.

A 1992 proposal made by advisers to NASA is an example of the kind of effort that would be necessary to locate these Earth-crossing asteroids. The NASA advisers called the effort the Spaceguard Survey and determined that six 2.5 meter telescopes strategically stationed around the world would be capable of detecting 90 percent of all Earth-crossing asteroids larger than a kilometer across.⁷² At the time of the proposal, the effort would have initially cost \$50 million and required \$10 million in annual operating costs.⁷³

Locating an asteroid or comet may be the easy part. The more difficult challenge will likely be the development of counter-measures capable of dealing with an asteroid or comet, once identified as on a collision course with the Earth. As one NASA official put it, "there is at present no response that has a high probability of success."⁷⁴ Yet, possible solutions have been proposed that generally involve destroying or deflecting the approaching asteroid or comet.⁷⁵ Various methods include: nuclear warheads, pulsed lasers, kinetic energy deflection, and very large solar sails that would be attached to the asteroid to capture radiation so as to exert pressure to move it off its course.⁷⁶ Notably the use of certain of these countermeasures—nuclear warheads, for example—may implicate international treaty prohibitions and thus, appropriate changes to the law would have to be made.

3. *Response Mechanism*

There are presently two potential approaches to dealing with these threats. The first is for capable nations, such as the United States, to respond unilaterally with whatever capabilities they maintain. The next section will discuss U.S. efforts to develop such capability. Regardless, U.S. capability does not mean global protection and will assuredly add to existing international insecurity and dissension. A second approach could involve a spontaneous, ad hoc amalgamation of the capabilities of individual nations. This could be organized by the United Nations, but would likely be another example of the "UN's cottage industry approach to planning, financing, command, and control."⁷⁷ Moreover, this amalgamation is likely to be beset

⁷² See *id.* at 8.

⁷³ See *id.*

⁷⁴ *Id.* at 12.

⁷⁵ See Gerrard & Barber, *supra* note 56, at 10.

⁷⁶ See *id.* at 12.

⁷⁷ William J. Durch, *Epilogue: Peacekeeping in Uncharted Territory*, in *THE EVOLUTION*

by "delays that occur in deploying ad hoc forces, . . . fears that ad hoc U.N. forces will not be impartial or effective, . . . difficulties in recruiting and deploying ad hoc forces . . . and . . . problems arising when attempting to integrate nationally diverse forces under a unified U.N. command."⁷⁸ Both of these approaches are patently unsatisfactory in that they fail to create a reliable international capability to respond globally to the aforementioned threats. This opens the door to a third option—a planned, cooperative, international effort led by the ISF.

C. Space Militarization: Where We Are and Where We Are Going

Space has been, presently is, and will continue to be militarized. Moreover, "[s]pace and military technology have gone hand in hand since Hitler's V2 rockets became the basis of the early Apollo missions."⁷⁹ The conclusion that space will continue to be militarized is almost unassailable in light of: 1) the lessons of history regarding the nature of man; 2) national policies toward space militarization; and 3) the present and expected future practices of nations with respect to space militarization. This conclusion is important for two reasons. First, it should foreclose the wasteful dialogue carried on by those who pray for the demilitarization of space. Second, it demands a proactive, pragmatic approach to space in order to prevent "this century, so plagued with war and suffering, [from] . . . pass[ing] on its legacy to the next."⁸⁰ This note constitutes an assessment of one such pragmatic approach—the ISF.

1. History and the Inherent Nature of Man

Twenty million children, women, and men have been killed in over 100 major conflicts around the world *since* the end of World War II and the creation of the United Nations.⁸¹ Could even the most idealistic world citizen plausibly argue that the international community has seen its last armed conflict? The shortest and best answer is "no." It is also inevitable that space capable nations will attempt to exploit space in effort to gain military advantage in future conflicts. From the longbow to the nuclear warhead,

OF UN PEACEKEEPING 463, 463 (William J. Durch ed., 1993).

⁷⁸ JOHANSEN, *supra* note 12, at 168.

⁷⁹ Taylor & Bruce, *supra* note 37.

⁸⁰ Annan, *supra* note 1.

⁸¹ See LOUIS HENKIN ET AL., INTERNATIONAL LAW 1001 (3rd ed. 1993) (citing the UN Secretary-General's report entitled "An Agenda for Peace").

mankind has continually demonstrated his willingness to use the newest, most effective technology available to accomplish his military and strategic aims.

Man is an aggressive, competitive, and combative creature. One need only page through a newspaper or history book to find it replete with examples of the violence one man is willing to perpetrate upon another in the name of one cause or the next. Better yet, stand outside an American schoolyard, watch the children play, and put these assertions to the test. Whether this behavior is learned, innate, or a combination of the two, there is little evidence to suggest that a change in the basic nature of man is forthcoming.

2. National Policies Toward Space Militarization

Although the rhetoric of most nations would seem to indicate a common preference for demilitarizing space, a closer look reveals a sharp divergence of position. On the one hand is the U.S. position, embodied in a statement by General Colin Powell while he was Chairman of the Joint Chiefs of Staff. The "Gulf War taught us that the United States must 'achieve *total control of space* if [it is] to succeed on the modern battlefield.'"⁸² Having been recently appointed Secretary of State, Powell brings these views to the national security team, where they can reasonably be expected to influence future U.S. military development.

On the other hand are those nations, such as Russia and China, which claim to desire complete demilitarization. The Chinese Ambassador to the United Nations on Disarmament recently voiced his country's view that "[t]he prevention of an arms race and the prohibition of weapon systems in outer space will . . . exempt outer space from wars . . . [and will] be crucial for maintaining peace, security, and stability on the Earth."⁸³ Moreover, the Chinese ambassador, in a statement seemingly targeted at the United States, stated that "attempts to seek so-called 'absolute superiority' for oneself at the expense of the security of others will definitely go nowhere and benefit nobody."⁸⁴ In addition, Russian President Vladimir Putin, who ostensibly

⁸² Anderson, *supra* note 2, at 21 (citing Colin S. Gray, *Space Power Survivability*, AIRPOWER J., at 27 (Winter 1993) (emphasis added). The reason why control of space is important will be subsequently discussed. Suffice it to say for now that, as noted by Major Douglas S. Anderson, space is the "ultimate high ground" and "[i]t is axiomatic to military commanders that possession of the high ground usually means the difference between victory and defeat." *Id.*

⁸³ *Envoy at UN Opposes Outer Space "Arms Race,"* BBC SUMMARY OF WORLD BROADCASTS, Oct. 5, 2000.

⁸⁴ *Id.*

holds to the same position, initiated and hosted in April 2001 an international conference aimed at preventing an arms race in space.⁸⁵ Participants from the United States and Great Britain were noticeably absent.⁸⁶

While even the United States would concur in the desire to prevent an arms race in space, the position advocated by Russia and China with respect to the complete demilitarization of space is neither honest nor practical. It may be dishonest since these nations recognize the United States' superior ability to develop military space capability and therefore, they advocate restraint simply because they do not have the economic or technological capability to compete.⁸⁷ Presuming for the sake of argument that the position of Russia and China is actually based on principle and not merely on the desire to freeze the balance of power, their prayer for demilitarization is still untimely and impractical. It is untimely because, as will be discussed subsequently, the militarization of space has already commenced and, once begun, there is no going back. Moreover, it is impractical given the previously discussed, inherent, or combative nature of man proven time and again throughout history. The persistent lack of an international, comprehensive agreement on nuclear disarmament supports this argument. The same obstacles that thwart such an agreement with respect to nuclear arms are likely to stymie a space agreement as well.⁸⁸

⁸⁵ See Colum Lynch, *U.N. Summit Ends with Ambitious Declaration; Pledge on Poverty, AIDS, and Peacekeeping No Cure for Finances, Mideast Stall*, THE WASHINGTON POST, Sept. 9, 2000, at A16. See also Fred Weir, *Russia Honors First Space Hero*, THE TORONTO STAR, Apr. 12, 2001, Edition 1.

⁸⁶ See *id.*

⁸⁷ The irony of Russia's position is worth mentioning. It was the Soviet Union and its allies which opposed U.S. proposals in 1957 to create an inspection system that would ensure that the sending of objects into outer space would be exclusively for scientific and peaceful purposes. See Jasani, *supra* note 10, at 7. This was at a time when the Soviet Union had already launched two artificial satellites and the United States had launched none. See *id.* Now, their roles having reversed, Russia, successor to the Soviet Union, has called for complete demilitarization at a time when it fully realizes the United States' lead in space.

⁸⁸ Professor Henkin has provided two explanations for the lack of a comprehensive disarmament agreement on Earth which are applicable to this discussion. One explanation is that states simply refuse to bargain away what they perceive as the "basics of national survival." Adequate weapon systems lie at the core of the basics necessary for defense of the state, and states simply will not bargain them away, whether on Earth or in space. A second explanation is that states may theoretically be open to comprehensive disarmament, but will only be moved to make such a "radical readjustment" in response to "unusual fears and crises." It is uncertain what kind of fear or crisis would qualify but obviously the invention of weapons of mass destruction is insufficient. Henkin provides, by way of explanation, that this may be due to the belief that large weapons cannot truly be disarmed because the knowledge of how to make new ones cannot be eradicated. Further, weapons stockpiles can be placed beyond the reach of

These disparate views arguably open the door to the ISF as a compromise solution. Russia, China, and others who advocate demilitarization simply will not have their way in the face of the evident U.S. intent to control space. The ISF, however, could be a compromise solution wherein these nations could contribute to and share in collective security, and work towards arms control measures.

3. *National Military Practices in Space*

As discussed with respect to the missile threat, this section can only hope to tell a part of the story of national military practices in space. Consistent with the aforementioned analogy to an iceberg, the subsequent facts represent only those facts which are visible and available to the public. The significance of this for purposes of this paper is that the "visible" information available to the public *alone* convincingly establishes that space presently is and in the future will be militarized. One can only imagine how much more convincing the proof would be if otherwise "confidential" information were exposed.

At least as far as one can find in publicly available information, nations have not yet deployed actual weapon systems in space. As previously mentioned with respect to the Persian Gulf War, however, they have used satellites to perform military support missions.⁸⁹ These "military satellites"⁹⁰ take a variety of forms to include reconnaissance satellites for target identification,⁹¹ communications satellites for command and control, and navigation satellites which are used to guide weapons to their targets.⁹² Military satellites are, in essence, "components of terrestrial weapon

detection, and delivery vehicles can be hidden or "hardened" to the point of indestructibility. See HENKIN, *supra* note 81, at 1044. In the absence of a sufficient fear or crisis, it is reasonable to find space demilitarization equally as unlikely as comprehensive disarmament.

⁸⁹ See Peter Jankowitsch, *Legal Aspects of Military Space Activities*, in SPACE LAW: DEVELOPMENT AND SCOPE 144 (Nandasiri Jasentuliyana ed., 1992).

⁹⁰ An example of a satellite used for military purposes is the Lacrosse imaging satellite, deployed by the U.S. National Reconnaissance Office (NRO) at a cost of \$1.5 billion. See Robert A. Raimey, *Armed Conflict on the Final Frontier: The Law of War in Space*, 48 A.F.L. REV. 1, 15 n.53 (2000) (citing C. Couvalt, *Secret Relay, Lacrosse NRO Spacecraft Revealed*, AV. WK. & SPACE TECH., Mar. 23, 1997, at 27). The Lacrosse, originally developed in 1986 to track the weaponry of Warsaw Pact countries, uses radar to obtain images through darkness, foliage, or clouds, and produces images with resolution down to one meter. See *id.*

⁹¹ Reconnaissance satellites are also used for "tracking fleet movements, identifying supply and transport facilities, monitoring air activities, intercepting communications, warning of enemy preparation or attack, and so on." Jankowitsch, *supra* note 88, at 144.

⁹² See Jasani, *supra* note 10, at 1. Navigation satellites are also used by military forces to provide three-dimensional positions worldwide. See Jankowitsch, *supra* note 88, at 144.

systems."⁹³ Importantly, these satellites form merely the leading edge of military space technology.

Primary prospective military technologies include anti-satellite (ASAT) weapons, anti-ballistic missile (ABM) weapons, and space-based nuclear weapons.⁹⁴ The heart of ASAT and ABM systems is likely to be laser technology currently under development. The potential of the laser as the "bullet" of the future is breathtaking. A laser beam, which travels at 186,000 miles per second, could cover thousands of miles in less time than a missile can travel a few feet.⁹⁵ A powerful, 100-megawatt laser could knock out a missile by puncturing its thin skin with a pointed attack, striking with a force equal to that of hand grenade.⁹⁶ The U.S. Army is already testing lasers and, most specifically, their ability to target an orbiting satellite. In October 1997, the Army targeted a U.S. Air Force satellite with the MIRACL (mid-infrared advanced chemical laser) laser from White Sands Proving Ground in New Mexico.⁹⁷ Undoubtedly, the United States and other nations are highly motivated to develop this laser technology and related ASAT ability, as well as corresponding satellite protection measures.⁹⁸

Space-based anti-ballistic missile (ABM) programs are also currently under development. Former Chairman of the Committee on the Peaceful Uses of Outer Space (COPUOS), Peter Jankowitsch, has described what would be required of an effective ballistic missile defense system.⁹⁹ "[K]inetic-energy

⁹³ Jasani, *supra* note 10, at 1.

⁹⁴ See Jankowitsch, *supra* note 89, at 144.

⁹⁵ See Ben Bova, *Laser Foes Forget Crossbow's History*, USA TODAY, January 7, 1998, at 15A.

⁹⁶ See *id.*

⁹⁷ See *id.* The MIRACL was fired two times at an aging satellite in order to (as articulated by the Pentagon) "measure the vulnerability of American satellites to laser attack." *In Test, Military Hits Satellite Using a Laser*, N.Y. TIMES, Oct. 21, 1997, at 18A.

⁹⁸ See Jankowitsch, *supra* note 89, at 145. Elementary military doctrine provides the underlying reason why satellites are so important and why they are able to perform the aforementioned functions. Satellites in essence sit atop the "high ground," a vantage point which offers tactical advantage to whoever holds it. The goal of an ASAT system is to eliminate an opponent's tactical advantage by destroying a satellite's ability to function, thereby blinding the opponent. See generally Anderson, *supra* note 2, at 20.

⁹⁹ The Committee on the Peaceful Uses of Outer Space was established as an ad hoc committee in 1958 by the U.N. General Assembly, and became a permanent body the next year. See Nandasiri Jasentuliyana, *The Lawmaking Process in the United Nations*, in *SPACE LAW: DEVELOPMENT AND SCOPE* 33, 43 n.1 (Nandasiri Jasentuliyana ed., 1992). The Committee was charged with reviewing "practical and feasible means for giving effect to programs in the peaceful uses of outer space which could be undertaken under United Nations auspices." *Id.* The Committee was further asked to organize the exchange of information regarding outer space

and directed-energy space weapons would need effective target surveillance and acquisition systems, decoy discrimination capability, pointing and tracking systems, kill assessment capability, and infallible command and control arrangements."¹⁰⁰ Such a system, particularly one deployed by the ISF, would provide world-wide coverage. At least one author has suggested the benefits of a satellite-based system: "Satellites capable of destroying ballistic missiles over intercontinental ranges might be an enormous stride toward world peace. Such satellites orbit the entire world. With the proper political control, they could be used to protect every nation against attack by any nation—or terrorist group."¹⁰¹ In the absence of an ISF, the United States is likely to be the first to deploy a space-based ABM system. The United States has maintained one missile defense program or another since 1956,¹⁰² with the most recent effort under the auspices of the Ballistic Missile Defense Office (BMDO). It was former U.S. President, Ronald Reagan, however, who initiated the concept of a *space-based* missile defense program, called the Strategic Defense Initiative (SDI).¹⁰³ Reagan challenged U.S. scientists to "render nuclear weapons 'impotent and obsolete.'"¹⁰⁴ This challenge remains unmet.

Although the U.S. missile defense concept has undergone a number of changes over time, it remains alive today. In 2000, the U.S. Pentagon spent \$4.8 billion on developing and testing a limited missile defense system only to have the test fail.¹⁰⁵ Moreover, one of President George W. Bush's top two

research and to encourage national research programs. Lastly, the Committee was directed to study legal issues that might arise from space exploration. See *id.*

¹⁰⁰ See Jankowitsch, *supra* note 89, at 144-45.

¹⁰¹ Bova, *supra* note 95, at 15A.

¹⁰² The United States Army's Nike-Zeus program in 1956 was the United States' first effort to develop a ballistic missile defense system. See Anderson, *supra* note 2, at n.37 (citing John E. Parkerson, Jr., *International Legal Implications of the Strategic Defense Initiative*, 116 MIL. L. REV. 67, 73). However, it was President Ronald Reagan who initiated a space-based defensive concept—the Strategic Defense Initiative (SDI)—in the early 1980s to "counter the awesome Soviet missile threat with measures that are defensive." See Anderson, *supra* note 2, at 22 (citing President Ronald Reagan's speech, N.Y. TIMES, Mar. 24, 1983, at A20). "President George Bush streamlined the scope of SDI, renaming the program the Global Protection Against Limited Strikes (GPALS)." Anderson, *supra* note 2, at 22-23 (citing Charles Shotwell et al., *United States Air Force, Ballistic Missile Defense for the Twenty-First Century*, AIRPOWER J., Special Ed. 1994, at 47). It was President William Clinton who changed the name to the Ballistic Missile Defense Office (BMDO), but maintained the focus on a space-based defense system. See Charles Shotwell et al., *United States Air Force, Ballistic Missile Defense for the Twenty-First Century*, AIRPOWER J. Special Ed. 1994, at 44, 47.

¹⁰³ SDI has been commonly (and sometimes derisively) referred to as "Star Wars."

¹⁰⁴ See Jankowitsch, *supra* note 89, at 143.

¹⁰⁵ See Myers, *supra* note 26, at A1.

defense goals is to field a national missile defense system.¹⁰⁶ Although the early focus has been on fielding a ground-based defense system, President Bush has advocated expanding research into sea and space-based systems.¹⁰⁷ This effort would be consistent with a law, passed by Congress and signed by former President William J. Clinton, which *required* the deployment of an ABM system as soon as technologically feasible.¹⁰⁸ In the words of Thad Cochran, Senator from Mississippi, "I think the technology is ready."¹⁰⁹

Admittedly, there are many naysayers who consider these technological possibilities, particularly those associated with an ABM system, to be "technically fanciful."¹¹⁰ Perhaps these naysayers should address their doubts to the many acclaimed scientists who "published 'proof' [circa 1900] that heavier-than-air flight was impossible."¹¹¹ By the year 2000, hundreds of people have *flown to space*. Given the explosive advance of military and civilian technology just in the last 50 years, together with even a moderate respect for the ingenuity of man, the label "technically fanciful" is simply fantastic. All things created are the product of an evolution, as will be the case with military space technology. Can there be any *reasonable* doubt that the United States, let alone a U.S.-led international effort, will produce an ABM system in the near future?

An additional issue with respect to the militarization of space is that individual nations may choose to create their own space force. The United States already has a space force organized as component commands of the Army, Navy, and Air Force, and falling under the overall control of the United States Space Command (USSPACECOM).¹¹² Moreover, many have called for the allocation of more assets to the Space Command. For example, U.S. Senator Bob Smith (R-N.H.) has demanded that the U.S. Air Force commit more resources to developing "space power."¹¹³ In fact, he declared that he had not taken the option of a separate United States space force off the table.¹¹⁴

¹⁰⁶ Eric Schmitt & Steven Lee Myers, *Bush Courts Key Lawmakers for Support on Defense Goals*, N.Y. TIMES, Jan. 9, 2001, at A1.

¹⁰⁷ See *id.*

¹⁰⁸ See *id.*

¹⁰⁹ See *id.*

¹¹⁰ Jankowitsch, *supra* note 89, at 144.

¹¹¹ Taylor & Bruce, *supra* note 37 (citing remarks made by Dr. Patrick Collins, Azabu University, Japan).

¹¹² See generally U.S. Air Force Space Command: Command News (visited April 16, 2001) <<http://www.spacecom.af.mil/hqafspc/news/default.htm>>.

¹¹³ See William B. Scott, *U.S. Adopts 'Tactical' Space Control Policy*, AVIATION WEEK & SPACE TECHNOLOGY, Mar. 29, 1999.

¹¹⁴ See *id.*

While creation of the ISF will not prohibit the United States or other nations from developing such a space force, it could have the effect of negating the incentive.

A closely related issue of concern is that the international community may presently but quietly be involved in an arms race in space. Such a race could be limited by partial disarmament (presuming complete disarmament is implausible) or arms control.¹¹⁵ Given the aforementioned U.S. position, it appears that arms control would be the only possible option. The concept of arms control presumes that there will be a "dialogue to steer . . . [an arms] race towards an equilibrium between the powers."¹¹⁶ The ISF could be a key player in an arms control agreement, by both facilitating dialogue and assisting in achieving a security equilibrium.¹¹⁷ The ISF, as a neutral and reliable international actor, could provide stability by obviating the need for nations to unilaterally expend resources in hot pursuit of military space capability.

D. Non-military Space Activities

Man's exploitation of space has begun. Public and private efforts, often working in concert, are increasingly turning their attention to the as-yet unfathomable opportunities in space. The most heralded recent example is, of course, the international effort to establish a permanent human presence in space on board the International Space Station (ISS). The ISS, with a completion date of 2004, will cost over \$40 billion and will be the product of the collaborative efforts of the United States, Russia, 11 European nations, Canada, Japan, and Brazil.¹¹⁸ The ISS will in essence serve as an orbiting international laboratory with select nations having additional individual laboratories.¹¹⁹

¹¹⁵ Disarmament is "the process arising from any measure taken on the basis of a legal obligation entailing a *reduction in the existing level* of armaments." Jean-Pierre Cot & Pascal Boniface, *Disarmament and Arms Control*, in *INTERNATIONAL LAW: ACHIEVEMENTS AND PROSPECTS* 811, 811 (Mohammed Bedjaoui ed. 1991). The intent of arms control, on the other hand, is "not only to limit the volume and growth of arsenals, but also to control the uses to which existing weapons are put." *Id.*

¹¹⁶ *Id.*

¹¹⁷ A crucial part of the ISF's involvement would be the facilitation of "confidence-building measures." These are measures taken by States which involve some form of information exchange regarding military capacities, but which do not regulate arms. *See id.* at 812.

¹¹⁸ *See* Space Station Timeline (visited April 1, 2001) <<http://www.msnbc.com/news/220058.asp>>. This Internet site provides a year by year, pictorial representation of the construction of the ISS.

¹¹⁹ *See id.*

Another example of the fusion of public and private energy in space is NASA's upcoming \$63 million effort to place an exploration vehicle, the Lunar-Prospector, on the moon.¹²⁰ The Lunar Research Institute, a private company which has plans to mount a mining operation on the moon, has provided the majority of the funding.¹²¹ Similar mining operations have been discussed with respect to asteroids as well.¹²² One step in this direction occurred in February, 2001. Scientists responsible for the NEAR (Near Earth Asteroid Rendezvous)—Shoemaker, a deep space robot ship which had orbited the Manhattan-sized asteroid, Eros, for 11 months conducting a geologic study,¹²³ crash-landed the probe onto the asteroid.¹²⁴ The import of this crash-landing is that it would seem to be a precursor to controlled landings, with the subsequent potential for industrial exploitation.

In addition, the space tourism industry may well be initiated on April 30, 2001. On that date, former NASA engineer turned investor millionaire, Dennis Tito, is expected to launch for the ISS, as long as he receives the necessary approvals.¹²⁵ He will spend six days on board as both a tourist and as an assistant to the crew, helping with a variety of tasks to include the transfer of supplies and scientific experiments.¹²⁶ Although Tito agreed not to disclose the "ticket price," it is widely believed to be about \$20 million. Given the large number of millionaires around the globe and the need of most national space programs for money, one can only wonder how many potential "space tourists" are just waiting for their chance.¹²⁷ As well, it is expected that

¹²⁰ See Taylor & Bruce, *supra* note 37.

¹²¹ See *id.* In addition, at least six other companies are presently preparing industrial strategies to exploit space. See *id.*

¹²² See James Chapman, *Touchdown on an Asteroid*, DAILY MAIL (LONDON), Feb. 13, 2001, at 2.

¹²³ See Richard Stenger, *NASA to Attempt Asteroid Landing in February* (visited Jan. 4, 2001) <<http://www.cnn.com/2001/TECH/space/01/04/asteroid.landing/index.html>>. Shoemaker beamed back to Earth approximately 150,000 images. See *id.*

¹²⁴ See Chapman, *supra* note 122, at 2. Shoemaker had concluded its mission and its fuel and funding were nearly gone. Although the probe was not designed to land, NEAR scientists correctly believed that the probe could send back unprecedented, low altitude, high-resolution pictures of the asteroid. See Stenger, *supra* note 123.

¹²⁵ See Jim Banke, *Space Tourist Pays His Full Fare* (visited Jan. 2, 2001) <<http://www.msnbc.com/news/509288.asp>>. Tito had originally arranged and trained for a flight to Russia's Mir space station, but with Russia's decision to crash Mir and allocate their resources to the ISS, Tito will head there instead. See *id.*

¹²⁶ See *id.*

¹²⁷ For example, a research company in Great Britain recently put the number of millionaires in Britain alone at 73,990, and growing by more than 17 per cent a year. See Bill Jamieson, *So Now the Rich are Really no Different, and They Pay More Tax*, THE SCOTSMAN, April 3, 2001,

"[o]nce travel to orbit falls in price . . . tourism and many associated business activities in space, including space hotels, can all grow more or less without limit."¹²⁸

It is important to note the sheer volume of space activity expected to take place in the coming years. For example, 2,035 commercial and government payloads are proposed to be launched between 1998 and 2007.¹²⁹ The realization of these goals will add to what the European Space Agency has estimated to be 500 "live," operational satellites presently orbiting Earth, and another 1,500 no longer alive but still in orbit.¹³⁰ Such a high number of entries into space must be surprising to the uninitiated who at most are aware of occasional U.S. space shuttle launchings. Many space activities, which just a few years back would have been considered pure science fiction, are now either in the planning or executory phase.¹³¹ Without a doubt, the future is now.

Understandably, man's further exploitation of space is dependent upon a stable environment in which investment can grow. Government and private enterprise will be unwilling to invest in efforts jeopardized by the potential for armed hostilities. This need for a stable environment in space is international in nature, providing costs or benefits to all. Thus, it is appropriate that a neutral but international actor, such as the ISF, be called upon to provide this stability.

E. The Global Village and Collaboration to Solve Complex Problems

The progress of man, spurred by rapid technological advancement, has linked the fates of all peoples. The satellite, which has the capability to connect every human on the planet, is arguably the most celebrated example of this technology. As noted by United Nations Secretary-General Kofi Annan, the satellite itself has ushered in the "phenomenon" known as

at 9.

¹²⁸ See Taylor & Bruce, *supra* note 37 (citing remarks made by Dr. Patrick Collins).

¹²⁹ See OFFICE FOR OUTER SPACE AFFAIRS, HIGHLIGHTS IN SPACE 1998 2 (1998). This number includes: Middle East-22; international consortia such as Intelsat and Inmarsat-25; Latin America and the Caribbean-52; Asia and the Pacific Rim-140; Europe-208; Russian Federation-241; United States-1,347. See *id.*

¹³⁰ See Bruce Dorminey, *In the Shadow of Sputnik*, GEOGRAPHICAL MAG., Feb. 1, 1998, at 21.

¹³¹ A simple Internet search under "space" turns up an enormous volume of material describing these activities.

"globalization."¹³² Globalization is in essence the process of creating what some have referred to as a "global village." Mr. U.R. Rao (India), President of the UNISPACE-III Conference, held in July, 1999, noted that "[t]he global village is on the verge of transition from a concept to reality."¹³³ The "[i]nterconnectivity of both natural and anthropogenic phenomena occurring anywhere on earth, . . . [has] inextricably linked the fate of each country with that of the world as a whole."¹³⁴

Another way to describe this "linking" of fates might be to say that nations have become interdependent upon each other, economically and otherwise. This interdependency has resulted in what appears to be an international trend toward collaboration to solve complex international problems. Nations recognize their interdependency and the benefits to be gained by sharing costs. Examples of this modern trend essentially fall into one of two categories: those in which the collaboration is of a military nature and those in which it is not. For example, the international community has collaborated in virtually all recent armed conflicts, from the Persian Gulf War to Bosnia and Kosovo.¹³⁵ In fact, organizations such as NATO have been formed for the very reason of collaborating in the use of force. Outside of the military paradigm, the international community has collaborated with respect to the IMF, the WTO, and the International Space Station.

Even those nations once considered closed to international involvement have begun to recognize the benefits of joint ventures which benefit all. For example, China has recently adopted new market rules as part of a "sweeping overhaul of [its] . . . economy accelerated by the country's effort to join the World Trade Organization [WTO]" in early 2001.¹³⁶ These rules allow

¹³² See Annan, *supra* note 1.

¹³³ U.R. Rao, *Third United Nations Conference on the Exploration and Peaceful uses of Outer Space* (visited April 1, 2001) <<http://www.un.or.at/OOSA/unisp-3/speeches/19rao.htm>>. UNISPACE-III was the third such conference in a series (1968, 1982, 1999) and the first U.N. space conference since the end of the Cold War. See *Space Benefits for Humanity in the 21st Century* (visited April 1, 2001) <<http://www.oosa.unvienna.org/unisp-3>>. At the conclusion to the two week conference, the "Vienna Declaration on Space and Human Development" was adopted which laid out a "blueprint for the peaceful uses of outer space in the twenty-first century." *Vienna Declaration on Space and Human Development Adopted by UNISPACE III, As It Concludes Two-Week Session* (visited April 1, 2001) <<http://www.oosa.unvienna.org/unisp-3>>.

¹³⁴ Rao, *supra* note 133.

¹³⁵ See Jane Perlez, *Arms Control Nominee Defends Shifting View*, N.Y. TIMES, March 30, 2001, at A10.

¹³⁶ Craig S. Smith, *China at Gate of Profound Shift*, N.Y. TIMES, Dec. 28, 2000, at B1.

privately-owned companies access to the country's capital markets.¹³⁷ Previously, Chinese entrepreneurs were generally unable to raise money from public investors without government support.¹³⁸ This overhaul is motivated by Beijing's realization of the need to make its markets competitive *vis á vis* the global competition with which China's markets will contend upon entering the WTO.¹³⁹ Thus, *even China* desires a link to the international community, albeit for self-interested, financial reasons.

One should not depart a discussion of globalization without attending to those who may not share the benefits associated with global connectivity. The Group of 77 developing countries, in particular, has voiced concern over the perpetuation in space of the earthly world order with respect to the "haves" and "have-nots."¹⁴⁰ The spokesman for the Group of 77 developing countries and China at UNISPACE III expressed the group's concern regarding the use of outer space for military or military-related activities, and the fact that military related expenditures account for a substantial portion of the total money spent on space activities.¹⁴¹ These are certainly legitimate concerns. However, as previously discussed, any inquiry regarding *whether* space ought to be militarized is moot. The Group's concerns are more appropriately addressed to the *manner* in which space will continue to be militarized. The reality is that the Group of 77 will gain relatively much more through the creation of an ISF than through a military free-for-all in space. The Group will fall under the umbrella of protection provided by the ISF and as a partner, will be privy to all military-technological developments. Moreover, they will gain all of this while contributing quantitatively much less than more developed nations.

In light of the interdependency inherent in the "global village," the corresponding commonality of fate, and the ensuing international trend toward collaboration to solve complex problems, the ISF appears to be a logical step into the new frontier. Perhaps with the shared interests of the international community should come a shared venture to secure these interests, together with the associated shared costs. The ISF could be just the answer.

¹³⁷ See *id.*

¹³⁸ See *id.*

¹³⁹ See *id.*

¹⁴⁰ See *Statement of the G-77 & China* (visited Jan. 4, 2000) <<http://www.un.org.at/OOSA/unisp-3/speeches/19chn.htm>>.

¹⁴¹ See *id.*

IV. COMPATIBILITY WITH GOVERNING LAW

In order for the ISF to be compatible with governing law, it need contend with the following layers of law: A) the U.N. Charter; B) outer space legal instruments; C) applicable treaties; and D) state domestic law. The ISF must also contend with customary law, which will be addressed in connection with each of these "layers." The conclusion to the subsequent analysis is that changes will need to be made in order to ensure the legal viability of the ISF and its acceptance by the international community. However, these changes seem plausible if only because in many cases they would merely validate the present practices of individual nations.

*A. U.N. Charter*¹⁴²

The directly applicable provisions of the U.N. Charter are those provisions in Article 1 describing the purposes of the U.N. and those provisions in Chapter VII which circumscribe the use of force.

1. Principal Purpose

The United Nations was created to do the "job" of ensuring "global collective security."¹⁴³ Article 1 expressly provides that the Charter's principal purpose is "[t]o maintain international peace and security, and to that end: to take effective *collective measures* for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace"¹⁴⁴ In plain terms, the purpose of the ISF is to assist the United Nations with doing its "job." The ISF's express purpose of providing a "collective defense against threats to the peace" closely aligns with that of the United Nations. In addition, the United Nations purports to "develop friendly relations among nations" and "achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian

¹⁴² The applicability of the U.N. Charter to space activities is affirmed by the Outer Space Treaty's requirement that states parties carry on space activities in accordance with the U.N. Charter. See Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (entered into force Oct. 10, 1967) [hereinafter Outer Space Treaty or OST].

¹⁴³ William J. Durch, *Peacekeeping in Uncharted Territory*, in THE EVOLUTION OF UN PEACEKEEPING 463 (William J. Durch ed. 1993).

¹⁴⁴ U.N. CHARTER, art. 1, para. 1 (emphasis added).

character.”¹⁴⁵ Given that confidence among nations is the *sine qua non* for bringing the ISF to fruition, “friendly relations” are likely as a by-product. Moreover, the proposed missions of the ISF target international problems—the ballistic missile threat, the asteroid threat, and the lack of confidence in the peaceful intentions of other nations.

2. Use of Force Provisions

The U.N. Charter generally prohibits the use of force. Article 2(4) of the Charter requires members to refrain from the “threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.”¹⁴⁶ Notably, the substance of Article 2(4) has become accepted as customary law and has acquired the character of *jus cogens*.¹⁴⁷ This provision has been the subject of much national and scholarly debate regarding the scope of its prohibition.¹⁴⁸ However, most importantly, while Article 2(4)¹⁴⁹ facially prohibits the kinds of actions the ISF would take, at least two other Charter provisions—Chapter VII and, particularly, Article 51—provide exceptions to the prohibition. Chapter VII arguably provides authority for the creation of and use of force by the ISF. Article 51, in particular, authorizes the use of force in precisely the kinds of situations in which the ISF would be employed.

a. Chapter VII

Chapter VII appears to provide authority for the creation of the ISF and authority for ISF use of force within limited parameters. Articles 39–43 of Chapter VII work in concert to provide this authority. Article 39 of the Charter authorizes the Security Council to “determine the existence of any *threat to the peace*, breach of the peace, or act of aggression, and . . . make recommendation, or *decide what measures shall be taken* in accordance with

¹⁴⁵ U.N. CHARTER, art. 1, para. 1, 2.

¹⁴⁶ U.N. CHARTER, art. 2, para. 4.

¹⁴⁷ See RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE U.S. § 102, cmt. k, n.6. “Jus cogens” refers to “a norm having the force of fundamental international law.” Lawrence W. Newman, *Disputes With Foreign States*, NEW YORK LAW JOURNAL, October 30, 2000, at 3.

¹⁴⁸ See generally HENKIN, *supra* note 81 (discussing the predominant issues regarding interpretation of Article 2(4)).

¹⁴⁹ Article 2(4) presumably applies to outer space, as it does to land, sea, or air. See Jankowitsch, *supra* note 88, at 145.

Article 41 and 42, to maintain or restore international peace and security."¹⁵⁰ In order for the Security Council to make the requisite Article 39 finding, it will have to determine that one or more of the ISF missions, such as space targeting of accidental ballistic missile firings, involves engagement of a "threat to the peace." However, such a Council finding would be unprecedented. The Security Council has only found threats to the peace, breaches of the peace, or acts of aggression on six occasions, all of which involved actual instances of aggression.¹⁵¹ Moreover, the Council only authorized use of collective force in two of these situations-in response to North Korea's invasion of South Korea and Iraq's invasion of Kuwait.¹⁵²

Despite the lack of precedent, there remains a strong argument that the Council should still find a threat to the peace posed by rogue nation or accidental missile firings, or asteroids. These might be referred to as threats-in-waiting. The reason is that the technology does not exist to engage the threats potentially targeted by the ISF. If the Council were to wait until, for example, a rogue nation missile firing occurred or was imminent, an Article 39 finding at that point would be futile.

If the Council finds a threat to the peace, then under Article 42, the Council may "take . . . action *by air*, sea or land forces as may be necessary to maintain or restore international peace or security."¹⁵³ Outer space is not specifically mentioned as an avenue through which the Security Council may take action. However, this is most likely due to the technological limitations at the time of drafting. An amendment here seems to be a reasonable change to the law as it would comply with the ostensible intent of the drafters to fully enable the Security Council.

Although Article 42 permits the Security Council to "take . . . action," the Security Council has no organic assets with which to do so. Article 43 provides for this inadequacy: "(a)ll members of the United Nations, in order to contribute to the maintenance of international peace and security, *undertake to make available* to the Security Council, on its call and in accordance with a special agreement or agreements, *armed forces, assistance, and facilities* . . . necessary for the purpose of maintaining international peace and security."¹⁵⁴ Article 43 is mandatory. It creates a legal obligation for Member States to make available to the Security Council forces, assistance, and facilities.¹⁵⁵

¹⁵⁰ U.N. CHARTER, art. 39 (emphasis added).

¹⁵¹ See HENKIN, *supra* note 81, at 968.

¹⁵² See *id.*

¹⁵³ U.N. CHARTER, art. 42 (emphasis added).

¹⁵⁴ U.N. CHARTER, art. 43 (emphasis added).

¹⁵⁵ See HENKIN, *supra* note 79, at 1003.

Article 43 is the only article which appears to specifically authorize the Council to take such action as the creation of an ISF. However, there is an argument to be made that the Council has comprehensive authority to do so. This authority was hinted at by the International Court of Justice in its advisory opinion in the *Expenses* case. The Court rejected an inference that the Council may only take measures under Articles 41 and 42, stating that it could not "accept so limited a view of the powers of the Security Council."¹⁵⁶ Importantly, the Court's opinion "suggests that the Council could act on a more liberal construction of its authority derived from its general powers to maintain and restore international peace and security."¹⁵⁷ These "general powers" could further support the Council's creation of an ISF in order to maintain international peace and security.

In addition, even Article 51, which recognizes a state's inherent right to self-defense ultimately defers to the Council. Under this Article, the Security Council "retains the authority and responsibility to take such action as it deems necessary to restore international peace and security."¹⁵⁸ Thus, the Council "may decide on the limits and objectives of the military action authorized as collective self-defense."¹⁵⁹ Therefore, at least on paper, States parties to the U.N. Charter have already accepted Security Council authority over unilateral and collective defensive actions.

b. Article 51 and the Right of Collective Self-Defense

The ISF will only engage in accordance with the Charter's Article 51 Self-Defense exception. This exception allows for the "*inherent right of individual or collective self-defence* if an armed attack occurs."¹⁶⁰ However, controversial issues surround defensive use of force such that "the rules of self-defense fall far short of a code of conduct that would provide precise 'hard law' for many cases likely to arise."¹⁶¹ Accordingly, "[v]arying views have been advanced by governments and scholars relating to the kinds of illegal force that would trigger the right of an armed defensive response."¹⁶² There appears to be a

¹⁵⁶ Oscar Schachter, *United Nations Law in the Gulf Conflict*, 85 A.J.I.L. 452, 463 (1991), reprinted in HENKIN, *supra* note 81, at 972, 976.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 975.

¹⁵⁹ *Id.*

¹⁶⁰ U.N. CHARTER, art. 51 (emphasis added).

¹⁶¹ OSCAR SCHACHTER, *INTERNATIONAL LAW IN THEORY AND PRACTICE* 141-46 (1991), reprinted in HENKIN, *supra* note 79, at 919.

¹⁶² *Id.* at 918.

general consensus regarding the paradigmatic case, that where there is an armed attack on the territory or instrumentality of a State. In such a case, use of force is probably permitted under the Charter's Article 51 Self-Defense exception. Thus, the ISF's engagement of an in-flight ballistic missile would appear to be justified as against an armed attack. Such engagement further comports with the International Court of Justice's statement that an armed attack is the "condition *sine qua non* required for the exercise of the right of collective self defense."¹⁶³

Outside the paradigmatic case, however, state views vary. For example, may a state mount an "anticipatory defense," such as a preemptive strike where a ballistic missile has not yet been launched? "Most governments have been reluctant to legitimize expanded self-defense actions that go beyond the paradigmatic case."¹⁶⁴ This reluctance is "evidence of a widespread perception that widening the scope of self-defense will erode the basic rule against unilateral recourse to force."¹⁶⁵ However, there is a strong argument to be made that self-defense is acceptable outside of the armed attack scenario, provided that sharp limitations are observed. This argument flows primarily from the view that Article 51 did not eliminate customary law's recognition that the right of self defense goes beyond cases of armed attack.¹⁶⁶ The often cited formulation of this customary law was articulated by U.S. Secretary of State Daniel Webster in a letter to the British Prime Minister in 1842 regarding the *Caroline*.¹⁶⁷ Webster required that self-defense be limited to cases in which "the necessity of that self-defence is instant, overwhelming, and leaving no choice of means, and no moment for deliberation."¹⁶⁸ Thus, ISF action that conforms to this definition could be legally acceptable as an exception to the prohibition against use of force. Moreover, it is conceivable that advances in technology could enable the ISF to nearly instantaneously strike a missile pre-launch, in a manner that conforms with the customary law definition. Regardless, even if the international community refuses to allow the ISF to make anticipatory strikes, that merely limits the timing and perhaps the accuracy of the ISF engagement, but does not curtail the ISF's ability to defend.

¹⁶³ See *Military and Paramilitary Activities (Nicar. v. U.S.)*, 1986 I.C.J. 4 (June 27).

¹⁶⁴ SCHACHTER, *supra* note 151, reprinted in HENKIN, *supra* note 81, at 920.

¹⁶⁵ *Id.*

¹⁶⁶ See generally Oscar Schachter, *The Right of States to Use Armed Force*, 82 MICH. L. REV. 1620, 1633 (1982), reprinted in HENKIN, *supra* note 81, at 926.

¹⁶⁷ See *id.*

¹⁶⁸ *The Caroline*, 2 MOORE, DIGEST OF INTERNATIONAL LAW 412 (1906), reprinted in HENKIN, *supra* note 81, at 872.

As discussed with respect to Chapter VII, the self-defense exception is of limited utility when applied to space. Man simply has not developed the ability to defend from space. In circumstances where such defense is required, the self-defense allowance is worthless. Further, as Article 51 states, nations have an "inherent right" to self-defense.¹⁶⁹ To limit states' ability to defend from space is to violate this inherent right.

B. Outer Space Legal Instruments

The formal body of space law is comprised of five international legal instruments.¹⁷⁰ The following discussion focuses on the first and most important of these, the Outer Space Treaty, as it is the only instrument which has gained general acceptance and which specifically addresses military activity in space.

1. Outer Space Treaty

The Outer Space Treaty,¹⁷¹ adopted by the U.N. General Assembly in 1966 and which entered into force in 1967, has come to be considered the "Magna Carta" of international space agreements.¹⁷² Despite the preeminence of this Treaty, however, it does not adequately articulate the limits of acceptable military activity in space,¹⁷³ thereby opening the door to varying state interpretation. Disparate interpretation increases the probability of inconsistency in compliance. The Treaty's inadequacies also complicate the assessment of ISF compatibility. Amendment to the Treaty is necessary in order to clarify the intent of the signing parties.¹⁷⁴ In addition, account must be made for technological advances that have occurred since the drafting of the

¹⁶⁹ U.N. CHARTER, art. 51.

¹⁷⁰ See *Spacelaw: Frequently Asked Questions* (visited Dec. 15, 2000) <<http://www.oosa.unvienna.org/FAQ/splawfaq.html>>. These include the following: (1) Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies [hereinafter Outer Space Treaty]; (2) Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space; (3) Convention on International Liability for Damage Caused by Space Objects; (4) Convention on Registration of Objects Launched into Outer Space; (5) Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. See *id.*

¹⁷¹ Outer Space Treaty, *supra* note 142.

¹⁷² See Jankowitsch, *supra* note 89, at 146.

¹⁷³ See *id.*

¹⁷⁴ See *id.* at 148.

Treaty.¹⁷⁵ If an ISF is to be brought to fruition, still further amendment of the Treaty may be necessary in order to permit the ISF to accomplish its mission.

Two provisions in the Treaty are germane to this discussion. The Preamble articulates principles which have intrinsic importance and which are also helpful in assessing the second critical provision, Article IV. Article IV is the only provision that explicitly addresses and limits military activity in space.

a. Preamble

While not binding,¹⁷⁶ the Preamble provides a number of principles, a few of which are specifically helpful in determining whether the ISF comports with the intent of the drafters. First, man has a "common interest" in the "use of outer space for peaceful purposes."¹⁷⁷ This principle highlights arguably the most controversial issue with respect to the ISF's compatibility with the Treaty. Certainly the intent of the ISF is to universally safeguard man's common interest in security, both on Earth and in space. However, the question remains as to whether deployment of the ISF, a military actor, comports with the principle that space be used for "peaceful purposes."

This principle of "peaceful purposes" is arguably the most controversial in the entire Treaty and has received a substantial amount of scholarly treatment. Interpretations range from calls for complete demilitarization of space to those who believe that the military use of space is acceptable as long as it is non-aggressive.¹⁷⁸ Support for the complete demilitarization argument may be found in most multilateral agreements in which "peaceful" activities are addressed; it is generally interpreted to mean non-military.¹⁷⁹ However, there are treaties such as the 1982 Convention on the Law of the Sea in which "peaceful" is meant to mean simply non-aggressive.¹⁸⁰ Moreover, the "clearly intentional" narrow scope of the specific prohibitions in the second paragraph of Article IV support this contrary argument that complete demilitarization was probably not the intent of the drafters.¹⁸¹ In fact, military support systems

¹⁷⁵ See *id.*

¹⁷⁶ The Treaty expressly states that the parties only agreed to the articles. See Outer Space Treaty, *supra* note 142.

¹⁷⁷ See *id.*

¹⁷⁸ See Jasani, *supra* note 10, at 16.

¹⁷⁹ See *id.* at 7.

¹⁸⁰ See Ivan A. Vlasic, *The Legal Aspects of Peaceful and Non-Peaceful Uses of Outer Space*, in PEACEFUL AND NON-PEACEFUL USES OF SPACE 38 (Bhupendra Jasani ed., 1991).

¹⁸¹ See Jankowitsch, *supra* note 89, at 147.

existing at the time of the Treaty's entry into force are "generally accepted as compatible with the Treaty."¹⁸² The second preamble principle of note with respect to the ISF is that outer space "should [be] . . . for the benefit of all peoples."¹⁸³ This principle is clearly compatible with the ISF as the core of the ISF's purpose is to provide global security, which will benefit all peoples.

Lastly, the Outer Space Treaty's framers were clearly interested in "broad international cooperation" and the positive impact such cooperation would have on developing "friendly relations between States." This appears to be consistent, as well, with the ISF as both international cooperation and, arguably, friendly relations are essential to bring the ISF to fruition. Yet, the drafters did not expressly nor implicitly advocate military cooperation. Instead, they sought cooperation in the scientific and legal aspects of the use of space for peaceful purposes. While it is admittedly a bit of a stretch, a view of the ISF as in part a cooperative scientific effort aimed at promotion of peaceful use of space is not unreasonable. As previously discussed, the ISF will initially be composed of a "highly technical force, comprised primarily of scientists, engineers, and experts in military doctrine."¹⁸⁴

b. Article IV

Article IV directly, though inadequately, addresses military activities in space. The full provisions of Article IV are as follows:

States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be

¹⁸² See *id.*

¹⁸³ See Outer Space Treaty, *supra* note 142.

¹⁸⁴ See discussion, *supra* p.7.

prohibited. The use of any equipment or facility necessary for peaceful exploration of the Moon and other celestial bodies shall also not be prohibited.¹⁸⁵

Analysis of Article IV reveals a number of potential obstacles for the ISF. First, Article IV jeopardizes the ISF's ability to use the moon or other celestial bodies for military purposes. The second paragraph of Article IV is quite clear in its prohibition of military activities.¹⁸⁶ While the ISF need not violate this provision, a change to this provision would likely facilitate the ISF's ability to construct a fixed, space-based operations center. In contrast to its absolute prohibitions with respect to the moon and other celestial bodies, Article IV would appear to allow the ISF to use space itself for non-aggressive and defensive military activities (provided they comport with the U.N. Charter and other international law).¹⁸⁷

The second potential obstacle in Article IV is the proscription of certain weapons. The prohibition on nuclear weapons and weapons of mass destruction¹⁸⁸ has instigated a substantial amount of disagreement over its actual meaning and over what changes might be appropriate. There are certainly those who would solve the dispute by a complete ban on all weapons in space.¹⁸⁹ However, the OST, by its terms, does not prohibit "the stationing of defensive weapons in space."¹⁹⁰ Moreover, as discussed with respect to national military policies and practices in space, such a ban is simply impractical. The question remains as to what kinds of weapons might fall outside the Article's specific prohibition.

The implication is that conventional weapons and military support systems (often components of weapons systems) are not banned.¹⁹¹ However, due to technological advancements since the drafting of the Treaty, the scope of conventional weapons is uncertain.¹⁹² For example, it is uncertain whether developing laser and particle-beam anti-satellite weapons will be compatible

¹⁸⁵ Outer Space Treaty, *supra* note 137, art. iv.

¹⁸⁶ See S. Chandrashekar, *Problems of Definition: A View of an Emerging Space Power*, in *PEACEFUL AND NON-PEACEFUL USES OF SPACE* 81 (Bhupendra Jasani ed. 1991).

¹⁸⁷ See *id.*

¹⁸⁸ "Weapons of mass destruction" are not "defined in the Treaty" but they are "generally understood to include chemical and biological weapons also." Jasani, *supra* note 10, at 5.

¹⁸⁹ See Jasani, *supra* note 10, at 5. In 1979, Italy proposed a prohibition on "the development and use of earth- or space-based systems designed to damage, destroy, or interfere with the operations of other States' satellites." *Id.*

¹⁹⁰ Chandrashekar, *supra* note 186, at 82.

¹⁹¹ See Jankowitsch, *supra* note 89, at 147.

¹⁹² See *id.*

with the Treaty.¹⁹³ One such "X-ray" laser is powered by a nuclear explosion, giving rise to dispute over whether a nuclear-powered laser constitutes a nuclear weapon.¹⁹⁴

The net effect of the lack of specificity in the Outer Space Treaty, particularly with respect to the "peaceful purposes" provision in the preamble and the prohibitions in Article IV, is that the legal alternatives available to the ISF are uncertain. Modifications must be made to the Treaty in order to enable the ISF to legally perform its proposed missions.

C. *Related Treaties*

In addition to the space agreements, a number of other international agreements directly bear on the ISF's ability to perform its proposed functions. The ISF must come to terms with, *inter alia*, the Anti-Ballistic Missile Treaty¹⁹⁵ and the Nuclear Test Ban Treaty.¹⁹⁶

1. *Anti-Ballistic Missile (ABM) Treaty*

The ISF will violate the ABM Treaty in the absence of amendment. The ABM Treaty prohibits nations from developing and erecting ballistic missile defenses which are, *inter alia*, based in outer space. Thus, creation of an ABM space-based system would be an express violation of the terms of the Treaty. However, the policy underlying the Treaty was maintenance of the status quo. This meant mutually assured destruction for the United States and the Soviet Union during the Cold War, should one or the other strike. Underlying this policy was a desire to preserve the balance of power. In contrast to the effect of a lone nation developing a missile defense which it could unilaterally deploy, an ISF-run system could neutralize any potential change in the balance of power while providing the protection many nations desire. Thus, the ISF is arguably compatible with the policy underlying the ABM Treaty, if not with its express provisions.

As noted by Hurwitz, "if the ABM Treaty was amended (or if the Parties were to withdraw from it), then a jointly (*i.e.*, U.S.-U.S.S.R.), and preferably *internationally owned and operated non-autonomous space-based missile*

¹⁹³ See *id.*

¹⁹⁴ See *id.*

¹⁹⁵ Treaty on the Limitation of Anti-Ballistic Missile Systems, U.S.-U.S.S.R., May 26, 1972, 23 U.S.T. 3435, T.I.A.S. No. 7650 [hereinafter ABM Treaty].

¹⁹⁶ Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, Aug. 5, 1963, 14 U.S.T. 1313, 480 U.N.T.S. 43 [hereinafter Test Ban Treaty].

defense system would be legal."¹⁹⁷ Moreover, an international system may be the only way to prevent the United States from developing a system solely run by the United States. All indications regarding President George W. Bush's intentions suggest that he will focus U.S. efforts on creating a system, be it land, sea, air, or space-based.¹⁹⁸ In fact, although President Bush and the U.S. Secretary of Defense, Donald Rumsfeld "have not advocated abandoning the treaty, they have suggested that they will not be bound by its prohibition on developing a missile defense."¹⁹⁹

2. Nuclear Test Ban Treaty

The Nuclear Test Ban Treaty, *inter alia*, outlaws the testing of atomic weapons and atomic explosions in outer space.²⁰⁰ The Treaty could impact the manner in which the ISF performs its missions by limiting the ISF's ability to use nuclear energy. Thus, it may need to be amended to enable the ISF to perform its mission. However, not all States have ratified this treaty, most importantly the United States, so it may not prove a significant obstacle.

As recently as October 1999, the U.S. Senate rejected the Treaty by a vote of 51-48.²⁰¹ If the U.S. Secretary of Defense, Donald Rumsfeld, has his way, the U.S. will not change its position. Rumsfeld has strongly opposed the Treaty, opining that "[b]y weakening confidence in existing U.S. weapons designs, and by inhibiting the development of new designs to respond to a changing world, the C.T.B.T. (test ban treaty) . . . would have begun a slow erosion of U.S. and allied confidence in our stockpile."²⁰²

There is, however, some reason to think that the U.S. may ultimately change its position. A recently concluded study of the treaty by former chairman of the Joint Chiefs of Staff, General John M. Shalikashvili, determined that the United States must ratify the Treaty in order to effectively limit the spread of nuclear weapons. As well, Colin L. Powell, newly appointed U.S. Secretary of State, backed the Treaty in 1993 describing it as "necessary for the safety . . . of the world."²⁰³ Moreover, the recent federal election resulted in a 50-50 Republican-Democrat split in the Senate, and there

¹⁹⁷ HURWITZ, *supra* note 4, at 181 (emphasis added).

¹⁹⁸ See discussion, *supra* p. 21-22.

¹⁹⁹ See Myers, *supra* note 26.

²⁰⁰ See Test Ban Treaty, *supra* note 196.

²⁰¹ See Michael R. Gordon, *Report to Clinton Asks U.S. to Ratify Test-Ban Treaty*, N.Y. TIMES (visited Jan. 5, 2001) <<http://www.nytimes.com/2001/01/05/world/05NUKE.html>>.

²⁰² *Id.*

²⁰³ *Id.*

are many new faces. Still, it does not look good for Treaty proponents as the U.S. Constitution requires a two-thirds vote to ratify a treaty and the Test Ban Treaty has a long way to go.

D. State Domestic Law

Lastly, note must be made of the potential legal hurdle created by individual state domestic laws, such as the U.S. Constitution. The extent of this obstacle will vary from state to state and will implicate intra-national politics as well. The United States, for example, has refused to honor Article 43's requirement that it earmark forces for U.N. peacekeeping operations. This could be due to U.S. reluctance to either strengthen the relative power of the United Nations or to place its nationals under non-U.S. commanders.²⁰⁴ As former Senator Bob Dole articulated in introducing legislation to prevent U.S. soldiers from having to serve under a "foreign command," "our military personnel should be asked to risk their lives *only* in support of U.S. interests, in operations led by U.S. commanders."²⁰⁵ However, this statement presumes that U.S. interests may not be served by U.N. operations. The previous discussion regarding the inter-dependency of the world community would suggest that almost any U.N. operation would at least in part serve U.S. interests.

V. CONCLUSION

Sunday morning, December 7, 1941 was a day that will forever be carved into the very soul of the collective American spirit.²⁰⁶ On that date, "a date which will live in *infamy*,"²⁰⁷ 189 Japanese bombers struck Pearl Harbor, leaving 2,433 dead, 1,178 wounded, 18 warships sunk, and 188 planes destroyed.²⁰⁸ It was this singular event which galvanized the resolve of the American people to go to war, both in Europe and Japan.²⁰⁹ The United States and the international community must not wait for *another* Pearl Harbor—a

²⁰⁴ See Johansen, *supra* note 12, at 173.

²⁰⁵ See *id.* at 173 (citing Sen. Bob Dole, *Peacekeepers and Politics*, N.Y. TIMES, Jan. 24, 1994, at A15) (emphasis added).

²⁰⁶ See PETER JENNINGS & TODD BREWSTER, *THE CENTURY* 230 (1998).

²⁰⁷ See *id.* President Franklin Delano Roosevelt articulated these words in a speech to Congress on December 8, 1941.

²⁰⁸ See *id.*

²⁰⁹ See *id.*

rogue nation missile strike or a catastrophic asteroid impact—to galvanize the resolve necessary to thwart these and the other aforementioned threats.

Admittedly, the creation of an ISF will be no easy feat. There are strong arguments to be made for and against such an initiative, and a formidable wall of insecurity to be scaled. Yet, surely the tragedies that seed the field of human history are sufficient to motivate citizens and leaders to overcome their insecurities and open their minds to a new course for mankind. The ISF, as described herein, may not be the perfect solution for the international community. However, there is strong reason to believe that some similar form of international military collaboration is the best and, more importantly, the *most practical solution* among arguably undesirable alternatives. The inevitable *continued* militarization of space, together with the ever-increasing, interconnected and interdependent nature of international relations leads to this conclusion.

Undoubtedly, such a collaboration will begin slowly and build incrementally, with every gain in the confidence of nations. Such collaboration will require nations to stretch themselves to fully appreciate the interdependent nature of the global community, and then act accordingly. Nations must *think strategically* with a far-reaching vision of the future of humankind that transcends the coming decades and comprehends the coming centuries. In this venture, leaders must lead. Women and men around the globe must begin now, and seize the initiative, in order to provide some form of lasting, reliable framework for peace in space.