CATASTROPHIC ACCIDENTS: INDEMNIFICATION OF CONTRACTORS AGAINST THIRD PARTY LIABILITY

*Paul G. Dembling**

A. Introduction

Much legislation has been enacted covering natural disasters such as hurricanes and floods.[1] However, except for the Price-Anderson Act, dealing with nuclear incidents[2] and NASA's coverage for users of space shuttle,[3] and several other relatively minor statutes,[4] there is no comprehensive statute to assure adequate protection to the public and to government contractors for widespread injury, death, or property damage that may arise out of man-made catastrophic accidents in government programs.

At least since 1959, government departments and agencies have sought authority to assure adequate protection to the public and to government contractors for such catastrophic accidents. The accidents on which attention was focused were those that might occur as a result of government contractual activities which involve space vehicles, toxic fuels, and other equipment and materials that have the potential to cause widespread destruction.

Stimulus for indemnification of contractors initially came from the contractors themselves. They requested an indemnification provision in their government contracts. They found that they could not adequately insure themselves against the risks of enormous potential destruction, either because insurance could not be obtained for the potential liability or because such insurance could be obtained only at what they believed to be a high cost. Government contractors were often reluctant to enter into contracts with the government because of their concern with the potential ruinous financial liability that they would sustain if a catastrophic accident occurred.

There is another aspect to this problem. In the event of an accident, not only the government contractor might be ruined, but those who suffered injury, damage or loss would have no effective means to be reimbursed for their loss. Assuming, for example, that the damage caused by an accident amounted to 500 million dollars and that the government contractor had acquired some insurance, there would be, in all likelihood, a

---

*Partner, Schnader, Harrison, Segal & Lewis, Washington, D.C., Former General Counsel of the National Aeronautics and Space Administration and of the U.S. General Accounting Office.

[1]*E.g.*, Disaster Relief Act of 1974, 42 U.S.C. §§ 5121-5202 (1977 & West Supp. 1981), amending the Disaster Relief Act of 1970, 42 U.S.C. § 439 (1970); Earthquake Hazards Reduction Act of 1977, 42 U.S.C. §§ 7701-7706 (West Supp. 1980).

[2]Amendments to Atomic Energy Act of 1954, 42 U.S.C. § 2210 (1973 & West Supp. 1981).

[3]42 U.S.C. § 2458(b) (West Supp. 1981) amending the National Aeronautics and Space Act of 1958 (indemnifying users of space vehicles).

[4]*E.g.*, National Swine Flu Immunization Program of 1976, 42, U.S.C. §247b(k) (West Supp. 1974-81). This statute established "substitute liability" in the Federal Government for claims against manufacturers of swine flu serum.

deficit even though the contractor's assets were liquidated and used to compensate the victims. It is probable that the victims could not successfully turn to the government under the Federal Tort Claims Act for reimbursement, since the implementation of the government's program would, under legal precedents, be considered a "discretionary function" within the meaning of that Act and as such, a defense to the claim. It was felt, however, that the government should be responsible to the public for the damage individuals may have sustained as a result of the government program, to the extent the public was unable to obtain satisfaction from the Government contractor and his insurer. What was needed was the authority to indemnify the contractor, and conceivably, authority to assuage the victims by providing some interim compensation on an emergency basis soon after the accident. To accomplish this, legislation was sought.

B. *Background: The Saga of Attempting to Secure Indemnification Legislation*

In the 86th Congress, H.R. 4148 was introduced which would have authorized the National Aeronautics and Space Administration ("NASA") to indemnify its contractors against hazardous risks and to limit the liability of contractors so indemnified. H.R. 9765, also introduced in the 86th Congress would have authorized NASA to indemnify its contractors with respect to research and development contracts. No action was taken on either of these bills.

During the 87th Congress, H.R. 7115, H.R. 8095, and S.1857 to amend the National Aeronautics and Space Act of 1958 were introduced. These bills would have provided NASA with authority to indemnify against third party liability and property loss or damage arising out of contracts with NASA which involve risks of an unusually hazardous nature. Hearings were held in the House and the Senate, but only H.R. 8095 was passed by the House.

In July of 1963, a report was issued by Columbia University dealing with catastrophic accidents in government programs.[5] The Columbia report drew upon an earlier 1956-57 study by the same group for the Atomic Industrial Forum, probing the financial protection problem faced by the nuclear power program. That 1956-57 study opened the way for the 1957 Price-Anderson Amendments to the Atomic Energy Act of 1954.

The 1963 Columbia report dealt both with the legal and policy ramifications of the problem and with its technical aspects. A supporting engineering study was directed by Professor Hassialis of the School of Engineering and Applied Science of Columbia University (and Chairman of the Henry Krumb School of Mines). A portion of the engineering study, subcontracted to Arthur D. Little, Inc., of Cambridge, Massachusetts, dealt specifically with the nature and extent of the technical risks involved in a number of government programs.

The Columbia report observed that "[f]orces of unprecedented power, only recently unleashed by science, are increasingly employed or directed by the United

[5] *Colum. U. Legis. Drafting Research Fund, Catastrophic Accidents in Government Programs* (1963).

States for governmental purposes in furtherance of the national interest."[6] It concluded that "[t]he possibility of devastating accidents is real and must be faced."[7] A two-phase program was recommended to deal with the need to protect both the public and government contractors and subcontractors by providing for interim emergency compensation as well as an ultimate remedy. Although several alternate legislative solutions were proposed, the report was clear that a legislative solution was necessary in order to "provide for the consequences of a disaster before the event rather than to rely on the hope that adequate measures would be promptly enacted in the turmoil following a disaster."[8] The report went on to say:

> Such experience as we have affords no assurance that either industry or the public would be promptly or adequately taken care of by subsequent congressional action; in the case of the Texas City disaster, which may serve as a gauge of the speed and adequacy of what Congress might do, relief legislation did not come until eight years after the accident, and then it provided a measure of compensation which in many cases was grossly inadequate.[9]

Starting in 1964, the Department of Defense (DOD) and NASA collaborated in the drafting of a comprehensive government-wide bill that followed to a large extent the recommendations of the Columbia study. The bill was circulated by the Bureau of the Budget throughout the Executive Branch and thereafter was further revised to accord more closely with the Price-Anderson approach. Action was suspended on the bill shortly thereafter.

In the early 1970s the Commission on Government Procurement also addressed the problem. One of its Study Groups (No. 8) evaluated the current statutes and proposed legislation as well as procedures governing government indemnification for man-made catastrophic accidents rather than natural disasters or "Acts of God." In its Report and Recommendations, this Study Group, after defining "Catastrophe" as "a disaster of such magnitude that the resulting claims for personal injury and property damage would exceed the monetary level for which there is reasonably available insurance coverage", went on to review and analyze the possibility of such catastrophes, the applicable law if catastrophe occurred, liability for catastrophe occurring abroad, the role of insurance, the problems of government indemnification of contractors under existing law, the problems confronting victims of catastrophes attempting to secure compensation for their injuries and damages and other related matters. The Study Group also supported the findings of the Columbia Study and the other previous studies that legislation was needed to rectify these matters. Specifically, the Study Group recommended the enactment of federal legislation "dealing with catastrophic

---

[6] *Id.* at 7.

[7] *Id.*

[8] *Id.* at 12.

[9] *Id.* Also consider that this was a Texas disaster and the then Speaker of the House of Representatives was Rep. Sam Rayburn of Texas and the then Senate Majority Leader was Senator Lyndon B. Johnson, also of Texas.

accidents before they occur to assure prompt and adequate compensation to the public and to shield contractors against losses beyond available insurance."

This recommendation was subsequently endorsed and adopted by the Procurement Commission in its Official Report. These recommendations were as follows:

> 4. Enact legislation to assure prompt and adequate compensation for victims of catastrophic accidents occurring in connection with Government programs.
>
> 5. Enact legislation to provide Government indemnification, above the limit of available insurance, of contractors for liability for damage arising from a catastrophic accident occurring in connection with a Government program.[10]

These recommendations were based upon the conclusion, stated in the Commission's Official Report, that:

> In summary, present means are inadequate for compensating for the consequences of a catastrophic accident arising from a Government program. They do not assure in advance prompt relief to members of the public who may be victims of such a catastrophe, and they do not protect Government contractors from potentially ruinous liabilities. . . .[11]

Subsequent to the Procurement Commission Report, an Intragovernmental Task Group was established to draft appropriate legislation, which, if enacted, would carry out the recommendations of the Commission on Government Procurement. A draft bill and report proposed by the Task Group were circulated by the Office of Federal Procurement Policy (OFPP)[12] for comment. The Report stated that "even though catastrophes of the magnitude contemplated. . .are rare. . .there should be a ready authority to provide aid to victims at the earliest time". It recommended coverage of "any legal liability" that resulted from a catastrophe. The proposed bill provided (a) interim payments for restoration of essential services and medical expenses of victims, (b) effected tort law reform by requiring waiver of defenses against indemnified claims, (c) defined "catastrophe" in terms of estimated total damages, and (d) established a maximum total liability limit of $500 million for all claims resulting from a single catastrophe.

In 1978, OFPP released for comment a new draft bill which omitted the waiver of defenses (tort reform) and maximum liability limitation. This draft bill also abandoned the "unusually hazardous activity" requirement and substituted instead a requirement that the provisions of the bill would apply only to contracts wherein the head of the contracting agency determined that "cumulative account of liability. . .may exceed the higher of either $60 million or the amount of such insurance as may be required or

---

[10]*Report of the Comm. on Gov't. Procurement, Recommendations H-4 and H-5* 103 (1972).

[11]*Id.* at 104.

[12]*Office of Fed. Procurement Policy Memo.* (March 9, 1977).

approved under or for the contract. . .". Indemnification coverage was to be on a contract-by-contract basis, as was the case in the earlier draft bill. While the Task Force bill indemnified "any legal liability," the 1978 bill covered only liability for death, bodily harm or loss or damage to property and thus omitted coverage for economic losses.

The long history of attempting to agree on an Executive Branch position continues. A newly constituted Intradepartmental Task Force,[13] under the aegis of OFPP, submitted its report to the Administrator of OFPP on January 28, 1982. This report "concludes that there is justification for amending Executive Order 10789, as amended, so that an increased number of Executive Agencies may agree to indemnify its contractors if the national defense would be facilitated thereby and if either the contract work (i) is unusually hazardous or nuclear in nature or (ii) gives rise to the possibility of catastrophic losses."[14]

C. *Product Liability Law: Holding the Contractor Absolutely Liable*

The situation currently facing the government contractor is most unsatisfactory. In the case of a contractor, the concept of absolute liability in tort law where an "ultra-hazardous activity" is involved opens up the possibility that the contractor in a hazardous program may be liable merely upon establishment of causation. The development of the law governing products liability accents the exposed position of a company supplying equipment or services for a government program. Starting with *MacPherson v. Buick Motor Co.*,[15] the manufacturer or assembler of a product has increasingly become subject to liability to an ultimate user for harm or damage caused by his product. Moreover, liability is joint and several, which means that one company may be liable for all damages to all claimants even though a number of other industrial concerns and government employees and officials had participated in the work of the program. The supplier of a component part, the furnisher of faulty design specifications, the systems contractor who fails to detect a faulty component may each be found jointly and severally liable. Nor does inspection and acceptance by the government exonerate a company from such liability.

The following discussion illustrates the extent to which the law has developed in extending the application of the *MacPherson* doctrine to situations involving Government projects.

With the adoption of the Federal Tort Claims Act (FTCA) in 1946, Congress waived the government's immunity from tort liability and granted the federal district

---

[13]This task force was established in response to recommendations H-4 and H-5 of the Commission on Government Procurement and in response to a request dated June 12, 1981 from the General Counsel, NASA which identified a request by the Committee on Science and Technology, House of Representatives recommending that NASA coordinate an indemnification policy with cognizant Executive agencies.

[14]Report of the OFPP Interagency Task Force on Indemnification, Part I - Indemnification of Government Contractors Against Third Party Liability Claims, 1982, cover letter. *See infra* notes 29-38 and accompanying text.

[15]217 N.Y. 382, 111 N.E. 1050 (1916).

courts jurisdiction over subsequent tort claims against the government.[16] Four years later, the United States Supreme Court created an exception to the FTCA's general waiver of immunity in *Feres v. United States.*[17] In *Feres,* the Supreme Court held that active duty service personnel (and their heirs) could *not* recover from the government under FTCA for injuries or deaths sustained "incident to service." Courts have generally interpreted this phrase "incident to service" quite broadly, holding that *all* injuries suffered by active duty service personnel (whether or not these injuries result from the performance of a service-related task) are incident service.

In *Boeing Airplane Company v. Brown,*[18] the Court held the manufacturer of a plane operated by the Air Force liable for the death of an Air Force Major. Although the explosion and crash were the result of a malfunction of a component furnished by another company, Boeing was held negligent in assembling the airplane with an inadequate component. In *Sevits v. McKiernan-Terry Corporation,*[19] the Court upheld a complaint against a manufacturer by a Navy crew member based on injury sustained aboard a U.S. Navy aircraft carrier. The Court held that a component manufacturer could be liable even without proof of negligence. In *Stencel v. Aero Engineering Corp.*,[20] the Supreme Court ruled that the manufacturer of an aircraft component supplied to government had no third-party cause of action against the government in tort for liability to servicemen resulting from a defect in a component. *Stencel* involved a claim brought under the FTCA by a National Guard officer who had been injured when the ejection system of his fighter aircraft malfunctioned during a mid-air emergency. The faulty ejection system had been manufactured in accordance with government specifications.

Henry v. Bell Textron,[21] involved a helicopter delivered to the government in 1966. The helicopter had been used during two combat tours in Vietnam and had been damaged. It had been overhauled on two occasions and had been modified during normal maintenance to the extent that virtually every part had been replaced at least twice since manufacture. In 1976, an accident occurred which resulted in the death of two pilots performing training duty as members of the Virginia Army National Guard. The Court held that the manufacturer was liable although the Department of Army Report stated that the government "defendants were more responsible for the crash than Bell Textron." However, the Court stated: "Bell Textron is placed in a very difficult position by the expanding doctrines of product liability and Eleventh amendment immunity, but unfortunately for it, the law is clearly against it."

---

[16] 28 U.S.C§ 1346(b) (1976 & West Supp. 1981).

[17] 340 U.S. 135 (1950).

[18] 291 F.2d 310 (9th Cir. 1961).

[19] 264 F. Supp. 810 (S.D.N.Y. 1966).

[20] 431 U.S. 666 (1977).

[21] 577 F.2d 1163 (4th Cir. 1978).

In the recent case of *Vasina v. Grumman Corp.*,[22] the appellate court upheld a jury verdict against the manufacturer of an airplane designed and manufactured for the Navy, in an action brought by the estate of a serviceman killed in the crash of the airplane. At trial it was established that the plane crashed as a result of the failure of a wing which had been damaged during service in Vietnam and had been subjected to extensive repair by the Navy. The trial judge instructed the jury that "it is no defense to Grumman merely that the negligence of the Navy contributed to the death of Lt. Vasina." Because Lt. Vasina was killed in the line of duty, his survivors had no cause of action against the government under the Federal Tort Claims Act, and therefore could move only against the commercial manufacturer. The jury returned a verdict against Grumman of over one million dollars, which was sustained on appeal.[23] But for the sovereign immunity and other special defenses available to the Federal Government the original plaintiffs in these cases would have had viable tort claims against the government.

The above cases also illustrate the development of the doctrine of strict liability in cases involving alleged defects in high technology products. Beginning with *Henningsen v. Bloomfield Motors, Inc.*,[24] and continuing with the 1963 California Supreme Court case of *Greenman v. Yuba Power Products, Inc.*,[25] through the present *Vasina* case the Courts have increasingly held manufacturers liable without proof of negligence.[26]

D. *Available Financial Protection*

While the government contractor or supplier occupies a very exposed position in the event of a catastrophe; at the same time, members of the public injured by that same catastrophic accident have an uncertain remedy. This uncertainty is increased by the fact that a contractor may not offer protection to the public because reasonably priced insurance protection is limited in amount and does not approach the amount of coverage required to protect a company against a very large incident where claims in the aggregate might exceed $500 million. Not many companies would be able to survive such a liability, and the injured public would, in such event, not be able to collect full, if any damages.

Whatever the maximum amount of insurance obtainable by the very largest companies today may be, it is evident that it falls far below the potential liability of companies engaged in hazardous government programs. This is made even more obvious by the size of jury verdicts in recent personal injury cases.

---

[22]644 F.2d 112 (2nd Cir. 1981).

[23]*See also Foster v. Day and Zimmerman*, 502 F.2d 867 (8th Cir., 1974); *Bar v. Brezina Construction Co.*, 464 F.2d 1141 (10th Cir., 1972).

[24]161 A.2d 69 (N.J. Sup. Ct. 1963).

[25]377 P.2d 897, 27 Cal. Rptr. 697 (1963).

[26]*See also Goldberg v. Kollsman Instrument Corp.*, 12 N.Y. 2d 432 (1963); Prosser, *The Fall of the Citadel*, 50 *Minn. L. Rev.* 291 (1966), *Restatement (Second) Torts* § 402 A (1966).

Contractors are reluctant to engage in work for the government unless they are protected against the risks of damages and liability resulting from the work to be performed which is beyond the coverage of reasonably available insurance.

In many instances, it is impossible, to induce contractors to perform this type of work unless the United States agrees to hold them harmless for damages and liability beyond the level of their insurance coverage.

E. *Current Statutory Framework*

The problem discussed in the preceding sections was, of course, the primary reason why the Price-Anderson amendments to the Atomic Energy Act were made applicable to AEC (now Department of Energy) contractors and subcontractors as well as to licensees. The Price-Anderson provisions,[27] however, are limited to nuclear incidents arising our of, or connected with, contractual activities or joint programs of the Department of Energy.

1. *"Research and Development" Indemnity Authority of DOD*

The Department of Defense has had available to it since 1952 authority to indemnify its research and development contractors against claims arising out of direct performance of their contracts which result from risks defined in the contracts as "unusually hazardous".[28] This statutory authority embraces only the military agencies, and thus cannot be utilized for hazardous programs conducted by other agencies of the government. It has also proved troublesome in other respects. It extends only to research and development contracts, and not to follow-on production contracts, which has created problems of definition and application. The indemnification authority also depends on negotiation of both its applicability and the specific terms of indemnification coverage. This has led to inconsistent treatment among the different departments and even within the same department. This authority (Section 2354) also contains ambiguities both with regard to the limiting words that claims must "arise out of the direct performance of the contract" and with regard to the coverage of lower tier subcontractors and suppliers.

Moreover, there are no provisions comparable to the 1966 amendments to the Price-Anderson Act designed to provide prompt and assured compensation to injured members of the public.

2. *Public Law 85-804 and the Reluctance of Agencies to Use It*

The ambiguities and shortcomings of 10 U.S.C. § 2354 led the DOD to seek other legislative authority under which to provide contractors engaged in hazardous programs with broader indemnity. Initially, the Department utilized special authority which it

---

[27] *See supra* note 2, at § 170 (d).

[28] 10 U.S.C. § 2354 (1975).

retained under the First War Powers Act. The law was eventually succeeded in 1958 by Public Law 85-804.[29]

While the statute does not explicitly deal with indemnification of contractors, its legislative history clearly supports its use for this purpose. The Senate Committee on the Judiciary in its report on this legislation discussed the indemnity authority provided in Public Law 85-804 in these terms:

> In addition to these two specifically authorized uses of this authority, the Departments authorized to use this authority have heretofore utilized it as the basis for the making of indemnity payments under certain contracts. The need for indemnity clauses in most cases arises from the advent of nuclear power and the use of highly volatile fuels in the missile program. The magnitude of the risks involved under procurement contracts in these areas have rendered commercial insurance either unavailable or limited in coverage. At the present time, military departments have specific authority to indemnify contractors who are engaged in hazardous research and development, but this authority does not extend to production contracts (10 U.S.C. 2354). Nevertheless, production of which may include a substantial element of risk, giving rise to the possibility of an enormous amount of claims. It is, therefore, the position of the military departments that to the extent that commercial insurance is unavailable, the risk of loss in such a case should be borne by the United States. The Atomic Energy Commission now possesses similar indemnification authority by virtue of the enactment of the Price-Anderson Act last year (Public Law 85-177).[30]

Furthermore, the Department of Justice has stated: "The legislative history of Public Law 85-804 thus indicates clearly that one of the legislative purposes, if not the most important one, which prompted the enactment of the legislation was the desire to enable contracting officers. . .to indemnify their contractors against uninsurable risks. . .".[31] The Memorandum went on to say that "agencies are presently vested with the power to enter into unlimited indemnity agreements"[32] and that such agreements entered into under Public Law 85-804 authority "are consistent with the fiscal provisions contained in the Constitution and the statutes."[33]

Executive Order 10789, as amended, implements Public Law 85-804 and deals with indemnification agreements specifically stating that the risks covered in such agreements must be defined as "unusually hazardous or nuclear in nature", for which commercial insurance is not reasonably obtainable. Actions taken, by the various heads of agencies provided the authority contained in Public Law 85-804, must facilitate the national

---

[29]50 U.S.C. §§ 1431-35 (West Supp. 1981).

[30]Sen. Rep. No. 2281 (August 9, 1958).

[31]Letter and attached Memorandum to writer, then General Counsel, National Aeronautics and Space Administration, from Acting Assistant Attorney General, Office of Legal Counsel, Department of Justice (August 11, 1967).

[32]*Id.* at 20.

[33]*Id.* at 5.

defense.[34] There is no uniform application of Public Law 85-804 authority, however, and some agencies are reluctant to use what they now have.

Some of the departments and agencies, such as military departments of the DOD, use the authority to indemnify contractors. Other departments and agencies[35] do not utilize, or are reluctant to use, this authority primarily because they do not want to characterize the work being performed under the contracts as "unusually hazardous". The designation of the work as "unusually hazardous" is required by the implementing Executive Orders.

NASA does not utilize the authority for its contracts. Similarly, the Federal Aviation Agency of the DOT, has been unwilling to utilize this authority to indemnify contractors in connection with its air traffic and navigation activities.

Because of the similar reluctance on the part of the Federal Railroad Administration, DOT, to employ this authority, the Congress recently passed and the President signed into law H.R. 12933, *Making Appropriations for the Department of Transportation and Related Agencies* which contains the following language: ". . .notwithstanding any other provisions of law, the provisions of Public Law 85-804 shall apply to the Northeast Corridor Improvement Program".[36] The Conference Report accompanying H.R. 12933 noted: "This provision will permit indemnification under the provisions of Public Law 85-804 without the necessity of any determination by the Secretary [of Transportation of unusually hazardous activity] and without referral to our consideration for any such agreement by either House of Congress."

It should be noted that the Intradepartmental Task Force in its recent report (January, 1982) discussed above, proposes an amendment to Executive Order 10789, as amended, which would permit for the first time an agency to authorize the indemnification of a contractor if the head of the agency determines that the risks under the particular contract give rise to the possibility of catastrophic losses. Catastrophic losses are defined as "losses which the particular contractor cannot reasonably protect against through private insurance or self-insurance by the payment of a reasonable premium or the establishment of or reliance on a reasonable self-insurance reserve."[37] If adopted, this would obviate the requirement for agencies to describe their activities as "unusually hazardous." Furthermore, the Task Force Report states:

> [W]e believe that the heads of these Government agencies may, pursuant to 50 U.S.C. 1431, broadly exercise their delegated authority to provide for the indemnification of a contractor whenever . . .he deems that such an action would facilitate the national defense. . . Where a contract may have a substantial connection with and facilitate the national health, safety, welfare or economy, we believe the head of an Executive Agency may determine based on the particular circumstances that the agreement to indemnify that contractor would facilitate the national defense.[38]

---

[34] 50 U.S.C. § 1431 (West Supp. & annot. notes).

[35] *I.e.*, Department of Transportation (DOT) and NASA.

[36] 45 U.S.C. § 851 (West Supp. & Annot. notes).

[37] *Supra* note 14 at 14.

[38] *Id.* at 13.

F. *Existing Statutory Authority is Inadequate to Serve Contractors or to Protect the Public*

The Columbia report, after a comprehensive analysis of the statutory and case law, arrived at the following conclusion: "We have found that under present law there is no assurance of compensation to the victims of a catastrophic accident, at the same time contractors are exposed to the danger of devastating liabilities with no sure means of guarding against them."[39]

This conclusion remains valid today in spite of certain developments since the issuance of the report in 1963.

The inadequacies of present statutory authority can be summarized briefly:

First, there is no clear Congressional policy encouraging widespread uniform use of the indemnity power, comparable to that of the Price-Anderson Act. Because they do not operate within a clear framework of Congressional policy, agencies such as the military departments have treated indemnity as a matter of contract-by-contract bargaining. As a result, the use of 10 U.S.C. sec. 2354 and of Public Law 85-804 has been sporadic, limited, and inconsistent.

Second, because the use of the indemnity authority under existing law is a matter of contract-by-contract bargaining, it is next to impossible for subcontractors and suppliers to obtain indemnity protection. The technique of the Price-Anderson Act which automatically extends the coverage of prime contract indemnities to all subcontractors and suppliers of the project, has not been incorporated in the provisions of 10 U.S.C. sec. 2354 or Public Law 85-804.

Third, some agencies that conduct programs of a hazardous character do not avail themselves of the existing authority provided to them.

Fourth, neither the military research and development statute nor Public Law 85-804 has any provision for interim relief for the injured public. Unlike the Price-Anderson Act, neither statute provides for waiver of defenses, which means that the injured public has a far less certain remedy under these statutes.

Fifth, both statutes are silent with regard to the matter of contractually required financial protection. This places the important policy question as to required insurance entirely up to the decision of each individual government agency. Such a situation invites inconsistent treatment as among the various agencies.

G. *A Legislative Solution is Needed*

The salient elements of a statute that would provide effective protection against the risk of catastrophic accidents in government programs have largely been anticipated by the foregoing discussion of existing statutory authority and its inadequacies. However, certain of these main points are restated below to the extent they serve as the framework of the basic provisions of a statute which the writer proposes should be enacted. Most have already been drafted and exist in the form of the Price-Anderson Act. Any new

---

[39]*Supra* note 5 at 71.

statute should be fitted into this mold in order to assure a consistent legislative approach that has been carefully formulted and tested by experience.

First, the new statute should be government-wide in scope and cover catastrophic accidents but, excluding the incidents covered by the Price-Anderson Act.

Second, the statute should only cover governmental programs conducted under contract or grant. The statutory remedies would be triggered by a Presidential determination that an incident which has occurred arose out of such a program and might involve in the aggregate claims exceeding $60 million. This mechanism of Presidential determination would avoid the necessity of any *a priori* definition of what constitutes an "unusual hazard."

Third, the statute should be made as self-implementing as possible. To do this, the indemnities should flow directly from the statute and should cover all tiers of contractors and suppliers. The indemnities should also cover any other persons who might be liable, except where the incident occurs outside the United States. Providing indemnity by direct operation of law rather than by contract is necessary because of the complex contractual structure typically involved in DOD and NASA programs.

Fourth, the role of insurance and private financial protection in government programs should be dealt with in more detail than is the case in the Price-Anderson Act. Private insurance has long played a significant role in connection with DOD and NASA contracts. Many DOD and NASA contractors have carried general liability policies covering both civilian and government activities. The cost of such insurance is reimbursable under current DOD and NASA procurement policies where the coverage is required or approved by the contracting officer. Where a government contractor has been carrying such insurance - particularly for the total of its activities both commercial and government - it has long been NASA and DOD practice to approve the insurance for cost reimbursement purposes. As a result, a substantial portion of the cost of insurance currently maintained by government contractors is reimbursed by the government.

Insurance plays a vital role in assuring that the contractor will be diligent and use reasonable care in his contract performance. As a condition for indemnity coverage, contractors should be required to obtain insurance considering its availability, cost, and terms. What is reasonably available insurance must be determined on the factors to be considered when a contractor seeks the particular coverage.

Fifth, indemnity coverage should be for losses which a contractor cannot reasonably protect against through private insurance by the payment of a reasonable premium or the establishment of or reliance on a reasonable self-insurance reserve.

H. *Conclusion*

A statute following the above general model and incorporating the above features, would accord closely with the carefully considered conclusions of the 1963 Columbia report and the recommendations of the Procurement Commission. It is also believed that such a statute would present a practical approach and one that should be acceptable to the various interests which would be most affected - the government agencies, the industrial firms engaged in such hazardous programs, and the insurance industry. Such a statute would also provide adequate and effective protection to the public in response to the challenging conclusion of the Columbia report that "[t]he possibility of devastating accidents is real and must be faced."

SOME OBSERVATIONS ON THE EFFORTS TO PREVENT A MILITARY ESCALATION IN OUTER SPACE.

*D. Goedhuis**

Introduction

When considering the present situation in outer space, the first thing to be noticed is that two of every three launchings of spacecraft serve military purposes. Military dependence on spacecraft is great and growing to a considerable extent. Although some efforts were made to arrive at a complete demilitarization in outer space in the first years after the launching of the first spacecraft, it soon was recognized that, as long as the world community was fragmented in sovereign States with conflicting interests, military competition was just as inevitable in outer space as it had been on land, sea and in the air. The world community was therefore faced with the dauntingly complex task of how to *contain* this competition at its most dangerous points and how to extend the rule of law governing international space activities.

As will be seen below, it is the development of anti-satellite weapons by the Soviet Union as well as by the United States, which has led to a clearer awareness of the dangers of a military escalation in space.[1] So far, outer space has remained free from "kill mechanisms" and the most important military applications in outer space have comprised the use of reconnaissance satellites which have provided valuable data on the course of military operations. In this context attention should be drawn to the increase in the satellite launchings during periods of conflict, such as those between China and the Soviet Union in 1969, between India and Pakistan in 1971, between the Arab States and Israel in 1973, between Greece and Turkey over Cyprus and between Iran and Iraq in 1980.

It should be recognized that the use of reconnaissance satellites offers one considerable advantage, namely that the very extensive information obtained by these satellites makes a surprise attack much more difficult.[2] This advantage would obviously

---

*Professor Emeritus, Leyden University; Chairman of Space Law Committee, International Law Association. The views expressed herein are those of the author and are not necessarily those of any organization of which he is a member.

[1]The Soviets have tested satellites that intercept other satellites. It was reported in May 1980 that the C.I.A. believed that the Soviets had deployed a land based anti-satellite laser. The U.S. has plans to test a ground-based anti-satellite system in which a miniature homing intercept vehicle would be carried in the vicinity of a low altitude target satellite by means of a two-stage air-launched rocket, then home in on the infra-red signature of the target to collide with and destroy it. *See* T. H. Karas, Implications of Space Technology for Strategic Nuclear Competition, Occasional Paper 25 of the Stanley Foundation, Iowa (July, 1981).

[2]As Solly Zuckerman, however, rightly remarked "Space photographs on their own cannot be expected to generate a sufficient sense of security. Are those launchers that can be seen in such and such a place in a state of readiness? Or are they not? Photographs will not tell. Space cameras cannot see into factories where missiles are made, or into the sheds of ship-yards." *See* Collins, Nuclear Illusion and Reality 130 (1982).

be lost should States develop the possibility of intercepting and destroying them. However, as only the United States and the Soviet Union possess at present the capabilities of launching reconnaissance satellites, many non-space countries are concerned about the acquisition by the two main space powers of military information over their territories. As will be seen below, this concern has led to proposals aimed at the creation of an international satellite monitoring agency.

A. *Present limitation on the use of arms in outer space*

Up till now, six treaties have been concluded which contain provisions aimed at some form of arms control in outer space.

First, the Treaty Banning Nuclear Weapon Tests in the Atmosphere in Outer Space and Under Water[3] which, in art. I, mentions outer space as one of the environments where such tests are prohibited.

Second, the Treaty on Principles Governing the Activities of States in the Exploration and the Use of Outer Space, including the Moon and other Celestial Bodies[4] which can be considered as the present Charter of Outer Space, and which provides in art. IV:

> 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 manoeuvres on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited.

Third, the Accident Measures Agreement[5] in conjunction with the Prevention of Nuclear War Agreement[6], which together oblige the Soviet Union and the United States to refrain from interference with the attack early-warning systems of either side, would include satellites that are components of such systems.

---

[3]Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water, August 5, 1963, [1963] 14 UST 1313, TIAS 5433, 480 UNTS 43 (effective Oct. 10, 1963).

[4]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"), Jan. 27, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205 (effective Oct. 10, 1967).

[5]Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War, September 30, 1971, [1972] 22 UST 1590, TIAS 7186, 807 UNTS 57 (effective Sept. 30, 1971).

[6]Agreement on the Prevention of Nuclear War, June 22, 1973, [1973] 24 UST 1478, TIAS 7654 (effective June 22, 1973).

Fourth, the Treaty between the United States of America and the USSR on the Limitation of Anti-Ballistic Missile Systems[7] which in art. IV prohibits the development, testing, or deployment of ABM systems which are sea-based, air-based, *space-based,* or mobile land-based.

Fifth, the Interim Agreement between the U.S.A. and the U.S.S.R. on Certain Measures with Respect to the Limitation of Strategic Arms[8] which provides in art. V (2) that "each party undertakes not to interfere with the national technical means of verification of the other party operating in accordance with par. 1 of this Article". By this Article the use of reconnaissance satellites in outer space is formally legalized.

Six, the Agreement Governing the Activities of States on the Moon and other Celestial Bodies[9]. Art. III of this Agreement provides:

> 1. The moon shall be used by all States Parties exclusively for peaceful purposes.
>
> 2. Any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the earth, the moon, spacecraft, the personnel of spacecraft or man-made space objects.
>
> 3. States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon.
>
> 4. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited.

Reference should also be made to the Convention on Registration of Objects launched in Outer Space[10] which—although it does not contain any specific arms control measures—could, provided it would be interpreted in the right way, play a confidence-building role in the military sphere. Art. IV of this Convention requires States launching space objects to provide the Secretary-General of the United Nations information on a number of data, including "the general function of the space object". In this context, it should be noted however that, notwithstanding the fact that more than 70% of American and Soviet satellites launched so far serve military purposes, not one of these launchings registered has been described as having a *military* function.

---

[7]Treaty on the Limitation of Anti-ballistic Missile Systems, May 26, 1972, [1973], 23 UST 3435, TIAS 7503 (effective Oct. 3, 1972).

[8]Interim Agreement on Certain Measures With Respect to the Limitatin of Strategic Offensive Arms With Protocol, May 26, 1972, [1972]TIAS 7504 (effective Oct. 3, 1972) (no longer in force).

[9]Draft Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, U.N. GAOR, 34th Sess., Supplt. No. 20 (Doc. A/34/20).

[10]Convention on Registration of Objects Launched Into Outer Space (hereinafter "Registration Convention"), January 14, 1975, [1978] U.S.T. 695, T.I.A.S. 8480 (effective Sept. 15, 1976).

B. *The divergencies on the interpretation of the meaning and the content of the main principles contained in these Treaties*

The scope of the present article does not permit me to give a survey of the many controversial opinions on the extent to which the rules so far adopted have constrained the military uses in outer space. Attention should be drawn however to some statements made in the last few years, which demonstrate the present misconceptions regarding the legal content of the present most important rules aimed at a limitation of these uses.

In the first place it has been asserted that under the terms of the Outer Space Treaty the *whole* of outer space has been established as the "common heritage of mankind".[11] In an article published in the *Columbia Journal of Transnational Law,* the present writer argued that this contention should be rejected.[12] Although the discussions both in the Law of the Sea Conference and in the U.N. Committee on the Peaceful Uses of Outer Space (COPUOS) have shown that the import of this term is far from agreed upon, one of its basic, generally recognized, implications is that the area to which the concept applies should be dedicated to exclusively peaceful purposes and, contrary to the opinion of some writers who have asserted that under the terms of the Outer Space Treaty of 1967 all military activities in outer space are prohibited,[13] art. IV (2) of this Treaty makes it abundantly clear that this medium is only *partially* demilitarized. It is only regarding the moon and other celestial bodies that the principle of their use for "exclusively peaceful purposes" has been accepted.

In this context the crucial question arises whether this provision means that the moon is completely demilitarized. Since the conclusion of the Outer Space Treaty the interpretation of the term "peaceful purposes" has given rise to fundamental controversies. In the limited context of this article no critical analysis of the wide-ranging views on the meaning of this term can be given. However, as a great lack of awareness appears to exist on the harmful consequences of the conflicting views, some comments on these consequences may be made.

Two fundamentally different interpretations of the term "peaceful purposes" have come to the fore. Under one, this term means "non-military", while under the other it means "non-aggressive". The latter interpretation has been and is being followed by the United States.[14]

---

[11]*See* Committee on Peaceful Use of Outer Space (COPUOS), U.N. Doc. A/AC.105/C.2/SR 314, at 4 (1979) (Statement by Swedish Delegate); U.N. Doc. A/AC.105/PV. 197, at 6 (1979) (Statement by Chilean Delegate).

[12]*See* D. Goedhuis, *Some Recent Trends in the Interpretation and the Implementation of the Rules of International Space Law,* 19 Colum. J. Transnat'l L. 218 *et. seq.*, (1981). *See also* the observations made by S. Gorove, *Studies in Space Law: Its Challenges and Prospects* 65 ff. (1977) and those made by C. Christol, *The Common Heritage of Mankind Provision in the 1979 Agreement Governing the Activities of States on the Moon,* 14 Int. Law. 184 *et seq.* (1980).

[13]*See, e.g.,* M. Marcoff, *Traité de Droit International Public de l'espace* 357, 370, 679 (Fribourg, 1973).

[14]*See* COPUOS, U.N. Doc. A/AC.105/PV 203, at 22 (1979) (Statement of American Delegate, S. N. Hosenball).

In an article published in 1968 the present writer drew attention to the damaging consequences of this interpretation and suggested that during the deliberations in the Outer Space Committee of the U.N., prior to the conclusion of the Space Treaty, the great majority of delegates insisted that the term "peaceful" should be interpreted in the sense of "non-military".[15] The consequences of the former interpretation become particularly apparent in the context of the Moon Treaty of 1979.

Art. III (4) of this treaty, reiterating art. IV (2) of the Space Treaty, provides that the use of military personnel for scientific research or for *any other peaceful purposes* shall not be prohibited and that the use of any equipment or facility necessary for the peaceful exploration of the moon and other celestial bodies shall also not be prohibited. By virtue of art. IX of the Moon Treaty States may establish manned and unmanned stations on the Moon. As the use of military personnel on these stations for *peaceful purposes* is not prohibited, the interpretation of this term as "non-aggressive" would mean that the stations could be used for all types of military purposes so long as they could not be considered aggressive. But if one would follow this line of reasoning one would necessarily come into conflict with the provision laid down in the first sentence of art. III (4) by which the establishment of military bases has been forbidden.

Another example may be given of the dissensions which would result from permitting the use of the moon for non-aggressive purposes. It has been submitted that since defensive and *deterrent* capatilities serve the cause of peace, it is only when such devices are *intentionally* used for aggressive purposes that they lose their peaceful status. As all arms have deterrent capabilities, States—on the basis of such a contention—would be able to claim that any arms on the moon would constitute a use of the moon for peaceful purposes.

What about the position of the Soviet Union on this issue? In the treatise "International Space Law", edited by Professor A.S. Piradov, who acted as Soviet representative in several meetings of COPUOS, the following statement was made: "The principle of the partial demilitarization of outer space and the *total demilitarization of celestial bodies* (emphasis supplied) is formulated in art. IV of the Space Treaty."[16] Another authoritative Soviet expert on space law, Professor G.P. Zhukov, in his lectures to the "Académie de Droit International" in 1978, remarked in the same sense: "Le Traité de l'Espace de 1967 établit pour la lune et les autres corps célestes *le régime de démilitarization complète.*"[17]

From these statements the conclusion might be drawn that an important gap exists between the position of the two major space powers on this issue, the Soviet Union interpreting the term "peaceful" as "non-military".

---

[15]*See* D. Goedhuis, *An Evaluation of the Leading Principles of the Treaty on Outer Space of 27th January 1967*, 15 Neth. Int'l L. Rev. 17 at 25 (1968); *See also* M. Lachs, *The International Law of Outer Space*, Recueil des Cours de l'Académie de Droit International 90 (1964,III).

[16]*See* A. S. Piradov, *International Space Law*, 91 (Moscow, 1976).

[17]*See* G. P. Zhukov, *Tendences Contemporaines du Development de Droit Spatial International*, Recueil des Cours de l' Academie de Droit International 257 (1978, III).

However, as mentioned above, not one of the launchings of Soviet satellites has been described in the Register maintained by the U.N. Secretary-General, as having a *military* function. The Soviet Union, like the United States, pretends that all its satellites serve peaceful purposes, apparently considering that none of their present military activities can be considered as "non-peaceful".

The second question which arises in the context of art. IV (2) of the Space Treaty and art. III (3) of the Moon Treaty, concerns the interpretation of the term "weapons of mass destruction". This notion, which also appears in the Treaty on the Prohibitions of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed, the Ocean Floor and the Subsoil Thereof (which was "commended" by the U.N. General Assembly on 7 December 1970), was discussed in the Conference of the Committee on Disarmament. At this Conference it became clear that the powers had a certain understanding about what was covered, including biological, chemical and radiation weapons, but speculation was extended to lasers, weather modifices and anti-satellite devices.[18]

As the meaning and the content of this prohibition is elusive and may lead to disputes, it is important—especially in view of the uncertainty whether the emplacement of anti-satellite devices in outer space is covered by the term—that an attempt be made to clarify precisely what the notion implies. Insofar as the suggestion is concerned that antisatellite weapons may be considered to be included in the prohibition, the negotiations between the United States and the Soviet Union on this matter[19] indicate that they reject the view that under the terms either of the Space Treaty or of the Moon Treaty, the emplacement of anti-satellite devices in outer space is prohibited. From the fact that, during the discussions in the last Session of COPUOS, a considerable number of the delegates made a strong appeal to the two main Space Powers to resume without delay their negotiations on a ban of anti-satellite weapons, the conclusion can be drawn that they also consider the term in question as not covering the emplacement in outer space of such devices. As to the question whether laser weapons should be considered to be covered by the term "weapons of mass destruction", some observations will be made below.

On the basis of the above considerations, it is submitted that the need to clarify the meaning and the content of the two terms referred to, can hardly be denied.[20]

C. *Present efforts to prevent an escalation of military competition in outer space*

a) *Negotiations between the United States and the Soviet Union on the control of anti- satellite weapons (ASAT's) in outer space*

President Carter, concerned with the crucial military and political implications of

---

[18]*See* D. P. O'Connell, The Influence of Law on Sea Power 156 (1975).

[19]*See* F. Asbeck, The Militarization of Space, Armament and Disarmament Information Unit No. 2 (Apr.-May, 1980).

[20]*See* S. Gorove *op. cit.* supra note 12.

the programs designed to develop a capability to interfere with reconnaissance satellites and other military space systems, proposed that the Soviet Union enter into negotiations aimed at maintaining outer space free from anti-satellite systems. The Soviet Union having responded favorably to this proposal, a first round of bilateral talks was held in Helsinki in June 1978, followed by discussions in Berne in February 1979. Further discussions took place in Vienna in April 1979 just prior to the SALT II summit.

Little information about these talks is available. Two main stumbling blocks appear to have emerged.

First, the Soviet Union wanted only satellites "owned" by the United States and the Soviet Union to be immune from interference, while the United States wanted to cover all satellites in which the other side "has an interest", thus extending protection to NATO spacecraft and other allies. Second, the Soviet Union wanted to exempt from protection any satellites performing "hostile and pernicious acts" that would infringe on national sovereignty, whereas the United States proposed to protect all kinds of spacecraft. In this context the question arises whether the Soviet proposal implies that direct broadcasting or remote sensing satellites which the Soviet Union *might* consider to infringe upon national sovereignty would *not* be protected.

The propsects of a resumption of negotiations on this issue are considered below.

b. *The Resolution taken by the Special Session of the U.N. General Assembly devoted to disarmament.*

On the initiative of the Italian Government this special session adopted the following resolution:

> "In order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held, in accordance with the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and use of Outer Space, including the Moon and other Celestial Bodies".[21]

As a follow-up to this resolution, the Italian Government, on March 26, 1979, introduced in the Committee on Disarmament in Geneva a proposal for the elaboration of an additional protocol to the Space Treaty. The Italian delegate, Mr. La Rocca, in the 193rd meeting of COPUOS, specified[22] that the purpose of the proposal was to ensure that outer space, including the moon and other celestial bodies, be used only for peaceful purposes and that States refrain from engaging in, encouraging or authorizing, directly or indirectly or in any way participating in any measure of a military or other hostile nature such as the establishment of military bases, installations or fortifications, the stationing of devices having the same effect, the launching into earth orbit or beyond of objects carrying weapons of mass destruction or any other type of devices

[21] *See* G. A. Res. S-10/2, par. 80.

[22] *See* U.N. Doc. CD/9 (1979).

designed for offensive purposes, the conduct of military manoeuvres as well as the testing of any type of weapons.

When one analyses this proposal, the following question arises. On the one hand the proposal is directed towards a prohibition of *any* measure of a military or other hostile nature in the use of outer space including the moon and other celestial bodies but on the other hand the proposal, in its second part, refers to a prohibition of launching types of devices for offensive purposes. Does this mean that the launching in orbit or the stationing in outer space, including the moon, of devices for *defensive* purposes would be allowed? Does this not contradict the proposal to prohibit any measure of a military nature? In his explanation on the proposal, the Italian delegate stated that "of course, the use of reconnaissance, surveillance and communication satellites and, indeed, of any space system which would reinforce strategic stability by ensuring, *inter alia,* the verification of disarmament and other limitation agreements will not be prejudiced". Does the statement that any space system reinforcing strategic stability imply that by virtue of the proposal, measures in outer space, including the moon, which could be considered as reinforcing such stability would be permitted? Again one is faced with the crucial questions arising in the interpretation of the term "peaceful purposes", questions to which neither the Outer Space Treaty nor the Moon Treaty has given an answer.

c. *The French proposal to establish an International Satellite Monitoring Agency (ISMA)*

At the first Special Session of the U.N. General Assembly devoted to disarmament in May 1979, the French delegation, convinced of the need for establishing a satellite monitoring agency which could make an important contribution to the verification of arms control agreements, proposed the establishment of ISMA. At its 33rd session, the General Assembly requested the Secretary-General to undertake, with the assistance of qualified governmental experts, an in-depth study of the technical, legal and financial implications of establishing such an agency. In pursuance of this Resolution, the Secretary-General appointed a group of experts which prepared a comprehensive report in February 1981.[23]

In considering the prospects of arriving at a universal agreement on the establishment of such an agency, it should be noted that whereas a considerable number of States were convinced of the need of creating an international convention on this issue, the two main Space Powers, the United States and the Soviet Union, objecting to the institution of an international monitoring agency, did not participate in the Government Expert Committee. Some comments on the apparent reasons for their opposition and on the question as to whether this opposition is likely to persist, are given below.

---

[23]*See* U.N. Rep. SM/2-GE.81-61130 (April 19, 1981). On this issue, as well as on several other aspects of limiting the military uses of outer space, important discussions took place at a Symposium of the "Stockholm International Peace Research Institute" (SIPRI), 17-20 November 1981. The papers presented at this Symposium will shortly be published by the Institute.

d. *The Soviet Proposal to ban deployment of all types of weapons in outer space*

On August 10, 1981, the Soviet Foreign Minister, Andrei Gromyko, addressed a letter to the U.N. Secretary General Waldheim containing the following paragraph: "The Soviet Union believes that outer space should always remain unsullied and free from any weapons and should not become a new arena for armsrace or a source of strained relations between States."

Attached to this letter the Soviet Union submitted a Draft Treaty on the Prohibition of the Stationing of Weapons of any kind in Outer Space (See Annex I). This draft was considered by the 34th General Assembly of the U.N. and, although the urgent need to prevent an arms race in outer space was generally recognized, many States maintained that the draft in several respects fell short of satisfying this need. Attention was drawn to the following flaws in the Draft.

First, the proposal did not cover anti-satellite weapons that could strike their target directly from the ground. Second, the text said nothing about dismantling anti-satellite weapons which had already been acquired and deployed. Third, the Draft proposed that, to assure compliance with its provisions, each participating Nation should use the *national* technical control facilities at its disposal. At present only the United States and the Soviet Union possess the technology to perform this task, it is difficult to visualize that many nations would become parties to a treaty of this type unless an international verification agency (as proposed by France) was created.[24]

The discussions of the General Assembly finally led to the adoption of a resolution entitled "Prevention of an Arms Race in Outer Space" (See Annex II) on which the following comments may be made.

First, the proposal did not cover anti-satellite weapons that could strike their target directly from the ground. Second, the text said nothing about dismantling anti-satellite weapons which had already been acquired and deployed. Third, the Draft proposed that, to assure compliance with its provisions, each participating Nation should use the *national* technical control facilities at its disposal. At present only the United States and the Soviet Union possess the technology to perform this task, it is difficult to visualize that many nations would become parties to a treaty of this type unless an international verification agency (as proposed by France) was created.

The discussions of the General Assembly finally led to the adoption of a resolution entitled "Prevention of an Arms Race in Outer Space" (See Annex II) on which the following comments may be made.

I. *The quesion of the most appropriate forum to study the problem of devising further arms control measures in outer space*

During the Twenty-Fourth Session of COPUOS held in New York from June 22 through July 2, 1981, the delegates from Sweden, Canada, Romania, Brazil, Chili, Austria, Egypt and India expressed the opinion that it would be the duty and

[24] *Cf.* the observations made in the Report of a Space Group, chaired by Professor K. Tsipis and published in the Stanley Foundations' "Strategy for Peace Conference," October 16-18, 1981.

responsibility of COPUOS to prevent an arms race. The American delegate, however, stated that since arms control in outer space was inseparable from the complex question of security on Earth and arms control in general, the issue went well beyond the expertise and mandate of COPUOS.[25] Point 3 of the operative part of the U.N. Resolution shows that the American view prevailed. Instead of COPUOS, the Committee on Disarmament was requested to consider the question of negotiating effective and verifiable agreements aimed at preventing an arms race in outer space.

II. *The negotiation of an agreement to prohibit anti-satellite systems*

By virtue of Point 4 of the U.N. Resolution the General Assembly requested the Committee on Disarmament to consider as a matter of priority the question of negotiating an effective and verifiable agreement containing a prohibition against anti-satellite systems.

Because of the present stage of arms development in outer space, the problem of anti-satellite systems must be considered as the most paramount issue. The consensus to treat this issue as a matter of priority should be welcomed. However, reference was made above to the talks between the United States and the Soviet Union aimed at arriving at a ban of these weapons. Although these two powers are at present the only ones who have ASAT weapons programs, it can be assumed that by the end of this decade, a number of other States may have the capability of deploying such weapons. Moreover, it is clear that *all* States have an interest in the regulation of weapons competition in this field.

Nevertheless, there are strong arguments in favour of a resumption of the talks between the United States and the Soviet Union, at present the two states most directly affected by the ASATS' programs. These talks could proceed parallel with the negotiations in the Committee on Disarmament.[26]

III. *The verification problem*

Under both Point 3 and Point 4 of the U.N. Resolution, the General Assembly urges the need of negotiating *verifiable* agreements aimed at preventing an arms race in outer space.

As mentioned above, the Soviet Draft Treaty contains the proposal that to assure compliance with a ban to deploy all weapons in outer space, States shall use the *national* technical control facilities at their disposal. Such a provision could not be expected to receive the support of all States which at present lack such facilities.

But what are the prospects of the Committee on Disarmament agreeing on some form of verification system? The opposition of both the United States and the Soviet Union to the creation of an international satellite monitoring agency, as proposed by France, demonstrates the obstacles to be overcome before an agreement on a verification

[25] *See* U.N. Doc. A/AC,105/PV220 (1981).

[26] *Id.*

system can be reached. However, from the fact that both Space Powers accepted the U.N. Resolution affirming the need for *verifiable* agreements aimed at a prevention of an arms race in outer space, it may be inferred that both powers recognize an interest in international regulation.

Their opposition to the creation of ISMA apparently was based primarily on the possible risks involved in the transfer to and control of the data gathered by their military reconnaissance satellites to an international organization.

One of the reasons which has led the United States and the Soviet Union to agree *in principle* to some verification system of a ban on anti-satellite weapons may be that they both realize that their present monopoly of anti-satellite capabilities will not continue. It is expected that by the end of the present decade France, the United Kingdom, India, Japan and China will possess such capabilities.

The question arises as to what *kind* of verification would offer the best prospects of being universally acceptable. In this context if may be suggested that the verification of the *deployment* of anti-satellite weapons, without an on-site inspection which the Soviet Union has always refused, would be practically impossible. However, a ban on the operational *testing* of such weapons *would* be verifiable. A negotiated verifiable ban on such testing would seem the best approach to be followed by the Committee on Disarmament.[27]

Concluding Remarks

On the basis of the above observations some tentative conclusions may be drawn.

The awareness among politicians and space experts of the dangers of escalation of military competition in space has been growing considerably in the last few years. As previously mentioned, it is generally recognized that the present most important issue of arms control in outer space concerns the prohibition of the use of anti-satellite weapons.

Attention was drawn to the provision contained in the U.N. Resolution on the Preventing of an Arms Race in Outer Space in which the Committee on Disarmament was requested to consider, as a matter of priority, the question of negotiating an agreement to prohibit anti-satellite systems. In this context, although an approach aimed at a solution of this problem is indispensable, a resumption of the bilateral talks between the United States and the Soviet Union on banning anti-satellite weapons would be appropriate as a complimentary negotiation to the discussion in the Committee on Disarmament. In this context attention may be drawn to the following observation regarding negotiations on arms limitations. Barry M. Blechman stated that "there clearly must be a shift in emphasis from U.S.-Soviet negotiations to multilateral forums. There has been a tendency to seek U.S.-Soviet agreement as a first step, believing that once that nut has been cracked, wider agreement would follow. This has not only placed undue burdens on U.S.-Soviet relations, but has nurtured the fears of those who see arms control as an expression of U.S.-Soviet Condominium thereby aggravating the political problems already surrounding the negotiations."[28]

---

[27] In the same sense, the Report referred to *supra* note 24.

[28] *See*, "Do Negotiated Arms Limitations Have a Future?", Foreign Affairs, Fall 1980 at 124.

The question arises as to whether the serious detoriation of Soviet-American relations might obviate an early initiation of the talks both between the two Super Powers as well as between the members of the Committee on Disarmament. Although at present, the Polish crisis has prevented the fixing of a date for the opening of the Strategic Arms Reduction Talks (START) by the United States and the Soviet Union, there are, insofar as a ban of the use of anti-satellite weapons is concerned, certain factors which might provide an incentive not to delay the negotiations on this issue.

Both countries appear to be firmly convinced that unconstrained anti-satellite activities could lead to a breakdown of the current strategic balance and to a space weapons race.

As outer space has up till now remained free from kill-mechanisms, the obstacles to be overcome on arriving at some limitation of the use of arms in outer space will be *comparatively* less arduous than those arising in other fields where an unbridled military competition has already taken place.

A delay in the discussions on the prohibition of the use of anti-satellite systems would very likely result in a further development of these systems and would consequently make an agreement on this issue infinitely more difficult to achieve. The present tension in Soviet-American relations has of course in no way diminished the overriding mutual interest of the super powers to contain the military competition in outer space at its most dangerous points.

Attention was drawn to the highly complex problem of the verification of a limitation of anti-satellite weapons. Verification is obviously fundamental in any control of arms. As a verification on the *deployment* of such weapons would practically be impossible to achieve, it was submitted that the only realistic way of attempting to restrain the use of these weapons would lie in seeking a ban on the *operational testing* of anti-satellite weapons.

An agreement on such testing can obviously only be considered as a first step in the achievement of the aim of preventing a military escalation in outer space. As was submitted in the introduction of the present article, efforts to arrive at a complete demilitarization of outer space are bound to fail, but there are several issues, connected with provocative acts of interference with satellites, to which the Committee on Disarmament should give attention. Apart from the systems which are being developed for the explicit purpose of being used as anti-satellite weapons, there are many systems deployed for other purposes which have anti-satellite capabilities. The great problem in this respect is that satellites used for civil purposes, such as communication satellites and meteorological satellites, can also exercise military functions.

In the Report of the Space Group referred to above,[29] an interesting distinction was made between "dedicated" and "non-dedicated" systems of potential anti-satellite weapons. It was suggested that one should concentrate on the testing and deployment of such "dedicated" systems which would provide time, negotiating experience, and a measure of mutual confidence that could permit the United States and the Soviet Union to proceed with the second part of the treaty that would devise verifiable "rules of the road" aimed at barring the use of "non-dedicated" systems in anti-satellite activities.

---

[29] *See supra* note 24.

It should, however, be noted that the Space Group considered that an anti-satellite treaty in a multinational forum such as the U.N., would be very difficult to obtain: the two parties most directly affected could not, in the Group's opinion, satisfy their most urgent concerns, while many other parties would be likely to introduce extraneous and even damaging treaty provisions. The Group decided that a bilaterally-concluded treaty could make provision for later accession by other interested States.

However, from the fact that both the United States and the Soviet Union adopted the U.N. Resolution by which the Committee on Disarmament has been requested to consider the question of negotiating agreements on the prevention of an arms race in outer space, the conclusion can be drawn that they do not share the fears expressed by the Space Group. They appear to be confident that their decisive influence in the Committee's negotiations would counteract any proposals that they might consider contrary to their interests.

Earlier in this article, consideration was given to the harmful consequences of the divergence in the interpretation of the term "peaceful purposes" and the term "weapons of mass destruction", both contained in the Outer Space and Moon Treaties. To give an example of the crucial importance of clarifying the meaning of the term "peaceful", reference should be made to an article published in the Daily Telegraph on 12th November 1981, according to which the United States is studying a plan to site laser weapons on the moon. It was suggested that although there was as yet no clear evidence that the Soviet Union was contemplating a similar project, the military advantages of a lunar laser gun were so great that the Soviets seemed likely to do so.

There can however be no doubt that the execution of such a project would infringe the terms of the Moon Treaty aimed at a complete demilitarization of the moon.[30]

The possibility of control measures of laser and particle beam weapons in outer space, which would lead to a profound change in the technological time scale of warfare these weapons would cause, should be another crucial subject for study in the Committee on Disarmament.[31]

Insofar as the future general approach towards arms limitations in outer space is concerned there is one highly important point which should be taken into consideration. Existing treaties prohibit certain kinds of activities. This implies that everything that is not prohibited is allowed. The problem here is that such treaties can only be effective during a limited period. As some writers have widely remarked, future technological advances will tend to create uncontrollable instabilities. The question arises whether it would be possible to follow a different approach that would provide for treaty-formulations by which certain activities would be allowed on the understanding that anything else is prohibited.[32]

---

[30]*See* Goedhuis, *Conflicts in the Interpretation of the Leading Principles of the Moon Treaty of 5th December 1979*, 28 Neth. Int'l. L. Rev. 22 (1981).

[31]*Cf.* T. H. Karas, *supra* note 1 at 21. "Finding a verifiable set of limitations on ground testing of laser weapons may be difficult, but an agreement banning space testing and development should be easier to frame. The time to plan for such negotiations is now, before billions are committed to test and deploy space laser weapons." *Id.*

[32]*Cf.* S. Gorove, *op. cit.* note 12, at 91, proposes to identify types of activities which are permissible.

It should always be kept in mind that war has become increasingly a matter of competing technologies rather than competing armies. As Michael Howard rightly observed: "Arms races are in fact continuing and open-ended attempts to match power with power. To support that they in themselves are causes of war implies a naive, if not totally mistaken view, of the relationship between the two phenomena. Arms races can no more be isolated than wars themselves from the political circumstances that give rise to them."[33]

To end the present article, some observations on the attitude of the world population towards the conquest of outer space may be submitted. This attitude demonstrates the crucial difficulties that arise in the human mind's attempt to adapt itself to revolutionary technological developments.

Shortly before the first Sputnik was put into orbit, the British Astronomer Royal made the earth-shaking remark: "Space travel is bilge."

A few months later, the Archbishop of Canterbury remarked: "The only people who are interested in this space business are people who have nothing better to think of, poor fellows." Soon after the start of human space activities, several military experts expressed the opinion that space developments would not be of any military value. An interesting parallel can be drawn here with the attitude of a number of their colleagues towards the military implications of the conquest of airspace in the first decade of this century. It was still in 1910 that the British Minister of Defense denied the importance of aircraft for military purposes.

Now, in the twenty-five year period that has elapsed since the first astronaut circled the earth, those *directly* concerned with space applications in the political, economic, and cultural fields have become aware of the enormous potential of these applications. The world population *as a whole* is—to a very great extent—still in the dark regarding the immense effect which space developments are going to have on all human life.

It is this lack of perception in the world of what is at stake in outer space which has an unfortunate effect on the aim of achieving arms limitations in this medium. Whereas one may be hopeful of the possibility of arriving at a ban on the testing of anti-satellite weapons, the chances of reaching a universal agreement on arms limitations in space *on a broader scale,* will—to a considerable degree—depend on a much more widespread public consciousness of the vital need to reach such an agreement.

The paramount importance of creating and arousing world public opinion on this matter is apparent.

---

[33] *See* M. Howard, *The Causes of War, Historians and the Problem of Power,* Encounter, March 1982, at 28.

Annex I*

DRAFT TREATY ON THE PROHIBITION OF THE STATIONING OF WEAPONS OF ANY KIND IN OUTER SPACE

The States Parties to this treaty,

Motivated by the goals of strengthening peace and international security,

Proceeding on the basis of their obligations under the Charter of the United Nations to refrain from the threat or use of force in any manner inconsistent with the Purposes of the United Nations,

Endeavoring not to allow outer space to become an arena for the arms race and a source of strained relations between States,

Have agreed on the following:

ARTICLE 1

1. States Parties undertake not to place in orbit around the earth objects carrying weapons of any kind, install such weapons on celestial bodies, or station such weapons in outer space in any other manner, including on reusable manned space vehicles of an existing type or of other types which States Parties may develop in the future.

2. Each State Party to this treaty undertakes not to assist, encourage or induce any State, group of States or international organization to carry out activities contrary to the provisions of paragraph 1 of this article.

ARTICLE 2

States Parties shall use space objects in strict accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and mutual understanding.

ARTICLE 3

Each State Party undertakes not to destroy, damage, disturb the normal functioning or change the flight trajectory of space objects of other States Parties, if such objects were placed in orbit in strict accordance with article 1, paragraph 1, of this treaty.

ARTICLE 4

1. In order to ensure compliance with the provisions of this treaty, each State Party shall use the national technical monitoring facilities available to it, in a manner consistent with generally recognized principles of international law.

*Taken from U.N. Gen. Ass. Doc. A/RES/36/97 (15 Jan. 1982), pp. 3-5.

2. Each State Party undertakes not to place obstacles in the way of the national technical monitoring facilities of other States Parties performing their fucntions in accordance with paragraph 1 of this article.

3. In order to promote the implementation of the purposes and provisions of this treaty, the States Parties shall, when necessary, consult each other, make inquiries and provide information in connexion with such inquiries.

ARTICLE 5

1. Any State Party to this treaty may propose amendments to this treaty, The text of each proposed amendment shall be submitted to the depositary, who shall immediately transmit it to all States Parties.

2. The amendment shall enter into force for each State Party to this treaty accepting the amendment when the instruments of acceptance of the amendment by the majority of States Parties have been deposited with the depositary. Thereafter, for each remaining State Party deposits its instrument of acceptance.

ARTICLE 6

This treay shall be of unlimited duration.

ARTICLE 7

Each State Party shall in exercising its national sovereignty have the right to withdraw from this treaty if it decides that extraordinary events related to the subject-matter of this treaty have jeopardized its supreme interests. It shall notify the Secretary-General of the United Nations of the decision adopted six months before withdrawing from the treaty. Such notice shall include a statement of the extraordinary events which the notifying State Party considers to have jeopardized its supreme interests.

ARTICLE 8

1. This treaty shall be open for signature by all States at United Nations Headquarters in New York. Any State which does not sign this treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations.

3. This treaty shall enter into force between the States which have deposited instruments of ratification upon the deposit with the Secretary-General of the United Nations of the fifth instrument of ratification.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Secretary-General of the United Nations shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification and accession, the date of entry into force of this treaty and other notices.

ARTICLE 9

This treaty, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

Annex II*

PREVENTION OF AN ARMS RACE IN OUTER SPACE

The General Assembly,

Inspired by the great prospects opening up before mankind as a result of man's entry into outer space,

Believing that any activity in outer space should be for peaceful purposes and carried on for the benefit of all peoples, irrespective of the degree of their economic and scientific development,

Recalling that the States Parties to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,[4] have undertaken in article III to carry on activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law and the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding,

Recalling also article IV of the said Treaty,

Recalling further paragraph 80 of the Final Document of the Tenth Special Session of the General Assembly,[5] in which it is stated that, in order to prevent an arms race in outer space, further measures should be taken and appropriate international negotiations held in accordance with the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

Noting the important and growing contribution of satellites both for civilian purposes and the verification of disarmament agreements and aware of the possibilities of their use to promote peace, stability and international cooperation,

Mindful of the widespread interest expressed by Member States to ensure that the exploration and use of outer space should be for peaceful purposes, *interalia,* in the course of the negotiations on and following the adoption of the above-mentioned Treaty and taking note of proposals submitted to the General Assembly at its tenth special

---

*Taken from U.N.G.A. Doc. A/36/192 (Aug. 11, 1982).

[4]General Assembly Resolution 2222 (XXI), annex. (Ed. note: original footnote number retained).

[5]Resolution S-10/2. (*Ed. note:* original footnote number retained).

session, devoted to disarmament, and at its regular sessions and to the Committee on Disarmament,

Aware of the need to prevent an arms race in outer space and in particular of the threat posed by anti-satellite systems and their destabilizing effects for international peace and security,

Convinced that further measures are needed to prevent outer space from becoming an area of military confrontation, contrary to the spirit of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

Considering it necessary for the international community to give attention to specific measures regarding the question of anti-satellite systems in the Committee on Disarmament,

Bearing in mind that the restraint of anti-satellite systems has already been a subject of negotiations between the Union of Soviet Socialist Republics and the United States of America,

1. *Considers* that further effective measures to prevent an arms race in outer space should be adopted by the international community;

2. *Urges* all States, in particular those with major space capabilities, to contribute actively to the goal of preventing an arms race in outer space and to refrain from any action contrary to that aim;

3. *Requests* the Committee on Disarmament to consider, as from the beginning of its session in 1982, the question of negotiating effective and verifiable agreements aimed at preventing an arms race in outer space, taking into account all existing and future proposals designed to meet this objective;

4. *Requests* the Committee on Disarmament to consider as a matter of priority the question of negotiating an effective and verifiable agreement to prohibit anti-satellite systems, as an important step towards the fulfilment of the objectives set out in paragraph 3 above;

5. *Requests* the Committee on Disarmament to report on its consideration of this subject to the General Assembly at its thirty-seventh session;

6. *Requests* the Secretary-General to transmit to the Committee on Disarmament all documents relating to the consideration of this subject by the General Assembly at its thirty-sixth session;

7. *Decides* to include in the provisional agenda of its thirty-seventh session an item entitled "Prevention of an arms race in outer space and prohibition of anti-satellite systems".