JOURNAL OF SPACE LAW

A journal devoted to the legal problems arising
out of man's activities in outer space

VOLUME 10 SPRING 1982 NUMBER 1

CONTENTS

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).