
Part II
Workshop Proceedings

I - CHALLENGES AND OPPORTUNITIES

A. Introduction

In April 1985, the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation requested the Office of Technology Assessment to prepare a background paper that would examine the legal issues resulting from space station activities. Having completed a draft of this report, OTA held a workshop on May 2, 1986 to review the findings of the draft and to investigate other related issues. The workshop participants included lawyers from NASA and the European Space Agency, as well as legal experts from Canada, the Federal Republic of Germany, and Japan. In addition, a wide range of U.S. legal experts from academia, industry, private practice, and the government also attended.

Throughout the day-long workshop many legal issues were discussed and aggressively debated. No attempt was made to reach a consensus on particular issues, although in some cases agreements on fundamental principles evolved spontaneously. Most significantly, the panel agreed that:

1) Multinational space station activities will raise fundamental legal issues. The laws we take for granted on Earth--e.g. , those that regulate commerce, property, criminal activity, and personal interactions--may not be available in space or may conflict with similar laws held by other nations.

2) The United States should not attempt to fashion a novel 'space code' to cover all space station activities; rather, legal problems should be solved incrementally by the careful application of intergovernmental agreements, congressional action in the form of legislation, and, finally, the decisions of the highest courts of the land.

3) Determining jurisdiction (i.e., deciding which nation has the right to make and enforce rules of law) is the single most important legal question to resolve in the planning stage for the first space station. Although a legal concept, jurisdiction with respect to an international space station will involve important--and sometimes overriding--technical and foreign policy considerations.

4) Under the Constitution of the United States, most laws affecting

¹ Letter from Senators John C. Danforth, Slade Gorton, Ernest Hollings, and Donald W. Riegle, Jr. , Senate Committee on Commerce, Science, and Transportation, to John H. Gibbons, Director, Office of Technology Assessment, Apr. 22, 1985.

the rights of individuals (e.g., personal injury, contracts, property, wills and estates, employee's compensation, etc.) are State laws, not Federal laws. Since the substance of State laws varies considerably, it is essential that the jurisdiction of State courts and the applicability of State law to space station activities be determined clearly.

Although there was agreement on these general points, there was strong *disagreement* over which specific issues needed to be examined first and whether those issues needed to be resolved now or when they resulted in a mature case or controversy,

This report documents the issues that were discussed, the agreements and disagreements that surfaced, and the advice and words of caution offered by the participants during the workshop. It is--and on this point all the participants would agree--merely an early step in a long process that will require the close attention and hard work of talented individuals in the executive, legislative, and judicial branches.

B. Priorities in Decisionmaking

The panelists generally agreed that there was a wide range of legal issues to be addressed and that the resolution of these issues should be thought of as a process in which some things needed to be done now while other things could be done later. Nonetheless, there was substantial disagreement over the severity of specific problems and over the list of problems which required immediate attention. The wide range of viewpoints on this subject resulted, in part, from the fact that the panelists took three different approaches to the problem:

o **Technological approach** - Some panelists took the position that the legal issues could not be adequately addressed without first understanding the technology involved in a manned space station. They stressed that once one understood the physical structure, the unique demands, and the purpose of the space station, certain issues would tend to resolve themselves. For example, some theoretical problems of jurisdiction might turn out to be irrelevant if safety issues were to dictate a specific type of centralized control. Likewise, advanced communication and control technologies that would permit nations or private firms to transfer information to their own ground stations might go a long way toward resolving some troublesome intellectual property problems. These panelists maintained that once one understood space station technology, then one could establish an appropriate institutional arrangement. Once the institutional arrangement was in place, additional legal issues could be resolved through a variety of means including agreements between the concerned parties and appropriate domestic legislation.

o **Political approach** - Other panelists argued that the political issues surrounding the space station were the most important. They suggested that one had to first determine whether the space station was going to be a U.S.

space station with international participation or a truly international space station. Once one reached common ground on the institutional arrangement, then one could discuss the technical and the legal implications. They suggested that since jurisdiction was the most significant single legal issue, it must be resolved first, and that resolution of the jurisdiction question would clear up many other issues.

o **Incremental or 'practical' approach** - The majority of the participants took an incremental or practical approach to resolving legal issues. They pointed out that certain problems would result from the technologies chosen for the space station, others would result from the institutional arrangement chosen by the parties, and still others would be generic to all space activities. They noted that it is difficult for lawyers to work without facts, and suggested that only with operational experience could the true nature of certain legal problems be understood.

They thought that many of these problems would be resolved through a series of unrelated international agreements, domestic legislation, and private contracts. As time passed, other unique problems would arise but these could be resolved on an *ad hoc* basis using the legal tools that were developed incrementally.

C. Responsive v. Preventive Legislation

Advocates of the 'incremental' approach were almost evenly divided on the question of whether domestic and international law should respond to immediate problems or attempt to prevent problems from occurring. Some argued simply that: "If it isn't broken, let's not fix it;" others responded that we already had a pretty good idea of where the system was going to break down; therefore, we ought to work to prevent this from happening.

1) *The arguments for responsive legislation*

Those who supported responsive legislation often did so because they thought that law should not race too far ahead of experience. One panelist pointed out that, "a space station is at least . . . 8 years away. Even as slowly as Congress sometimes works. . . many of these [issues] are going to be [resolved]." The panelist noted that although we already know that certain issues, such as criminal law and jurisdiction, will need to be resolved, "We can better address [these issues] . . . once we really know what. . . the space station is going to be."

Other panelists expressed concern that attempts to develop domestic laws and international agreements in advance of real problems might unnecessarily restrict our future options. Citing the specific example of patent law, one panelist noted, "that's fine for the shuttle because the shuttle is flying and, in fact, some inventions have already been discovered as a result of the shuttle. . . [But] maybe you will not want the same kind of legislation [for the space station]."

Another panelist concurred, noting that one might not want the same rules and regulations for a space station used solely for government research and development as one would want for a purely private sector space station engaged in commercial operation. The panelist argued that we may not want arrangements for this space station to govern our activities on other future space stations: "...the arrangements we work out for this particular space station--which will. . . [reflect].. how a particular set of governments decides it wants to handle these matters--need not govern. . . another space station that the U.S. puts up. . with a completely different set of governments."

Supporters of responsive legislation believed that the majority of potential legal problems could be resolved by the interested parties through the use of intergovernmental negotiations or private contracts. Although acknowledging that one needed a "backdrop of tort law, criminal law, [etc.] that you. . . take for granted here on the ground. . .," one representative from the business community maintained that, to control liability, "I would look first at the contractual area. . .negotiating a relationship with the government, with other contractors, that laid out in very great detail who would suffer what loss in what eventuality." The panelist noted, "the inter-party waiver of liability that NASA has in its launch service agreement. . does a very good job of. . . creating a lawyer's anti-employment act. It really does force parties to face up to the fact that they might lose what they are investing, and that they have to accept that." One of the disadvantages of this approach is the high cost and limited availability of insurance, "But on the other hand, it really sets out things pretty clearly, and that's a big advantage for a business. "

The panelist urged a practical approach: "look at exactly what's involved in the space station, the fact that you have fewer people on the station than you have in this room. . . [that all are healthy, pre-screened, and constantly monitored] . . .Put all that together and I think you have the kind of situation where the contractual issues really take on a great predominance. . .you don't expect to have crimes," he argued, "YOU don't expect to have torts."

The panelist ended by recommending that the laws for the space station be based on contract and negotiation supplemented by national laws (for criminal law, tort law, etc.) and international arbitration as the need arises.

2) The arguments for preventive legislation

Many panelists rejected the notion that legislation should merely respond to, rather than try to prevent, problems. They contended that such a policy would: 1) increase uncertainty thereby decreasing the private sector's interest in investing in space; and 2) offer no guidance on which, if any, of the laws currently on the books in the United States (the so-called 'legal backdrop' acknowledged as necessary by the proponents of responsive legislation) would apply to space station activities.

Panelists representing the U.S. firms interested in doing research in space stressed that: "In regard to some of these issues, [e.g., intellectual property, product liability, and antitrust], American business would take the position that you [must act] now." Although the space station is 8 years away, "business decisions are being made today that will impact the space station, how it operates, under what laws it operates and those decisions can't go a'begging or the station will get up there and it won't have any customers or inhabitants other than the lawyers maybe, still arguing [these] point[s] ."

According to one panelist, legal advice is an integral part of the decisionmaking process in his company: "There isn't a division operating committee meeting. . . that goes by that I don't give some advice at a very early and formative stage in respect to some new product . . . Whether the first step should be taken, oftentimes, will depend on what legal opinion I give them. . ." He stressed that U.S. business: "Can't wait for the scientists to figure it out or until the marketing people decide how best to sell it." Other panelists representing the private sector declared that they wanted to have certain ground rules made clear, such as how intellectual property would be protected or what would be a company's recourse in the face of industrial espionage by nationals of another country.

Although these panelists said they understood the importance of allowing certain legal rules to evolve over time, they emphasized that a balance must be struck that recognized business' need for certainty. One panelist said that his firm could operate without "certainty," but that they would like some "reasonable expectation of what would result if a legal dispute arises. " At a very minimum, they would like to know which *countries'* laws were going to apply.

Some panelists stressed that we need to acknowledge that we are making decisions and developing principles that will have a strong influence over our future activities. These panelists rejected the notion that the *ad hoc* agreements entered into and the legal principles developed for this space station will not bind us in the future. "We should proceed as though what we do now will be at least considered in future negotiations, " the panelist explained, "there will be the usual disclaimers [saying that these decisions apply only to this first space station], but... as a practical matter we need to proceed as though we are [establishing important precedents]."

Panelists generally agreed that the two most important domestic issues for the United States would be: 1) which State's laws would apply in a particular situation; and 2) which current laws would apply to space without special legislation. Although neither of these concerns necessarily involves the development of new legislation, they both present serious problems. For example, product liability law varies substantially from State to State. If a person from Nevada is injured on the space station by equipment manufactured aboard the space station by a Delaware corporation, which State has jurisdiction over the injury and which State law does the judge apply?

In addition, there has to be a way to determine which of the hundreds of existing laws that might be applied to the space station should be so

applied. For example, we know that the Fair Labor Standards Act does not apply to NASA employees, but does it apply to other space workers? If it does apply, are these people limited to an 8 hour work day on the space station? Furthermore, what about the Federal Tort Claims Act, Buy-America Act, U.S. export laws, patent laws, tax laws, and literally hundreds of other pieces of legislation? How do we go about determining which of these many Federal as well as State laws apply?

In order to answer these and many more similar questions, advocates of preventive legislation argue that Congress should undertake a thorough assessment of current Federal and State law. This assessment would determine which laws should be extended to the space station and which were limited to the territory of the United States, and would clarify the role of State law with respect to space activities.

D. The Utility of Analogies

Since the beginning of the space age, lawyers have debated whether and to what extent the principles of international and commercial law already found in air and maritime law could be applied to outer space activities.² Workshop participants agreed that the legal principles embodied in air and sea law could not be transferred wholesale into the realm of space, but disagreed over value of air and sea law principles as analogies to assist in the development of a unique body of space law.

Some panelists objected in principle to the use of analogies, stating that all analogies were misleading. Others objected on the more specific grounds that analogies did not take into consideration the technological and political circumstances unique to the space station. For example, they pointed out that the multinational nature of the space station has no corollary in the air or sea, and that fundamental concepts such as state sovereignty in national air space, the partially demilitarized nature of outer space, and state responsibility for national space activities were not interchangeable.

One panelist differed, saying, "Space is very much like the high seas. Space objects are already very much like vessels on the high seas. . . Oceans and space are both media for transportation, communication and they are both repositories for resources." Although the panelist admitted that, ". . . there is a good deal of need for caution in trying to go too far with the analogy between maritime law and space law," he suggested that the way current maritime law applies to vessels might offer some useful insights with respect to questions of jurisdiction over space stations.

Another panelist suggested that analogies, although defective in certain respects, were useful for regulating interpersonal relationships. How

² McDougal, *et al.*, *Law and Public Order in Space*, (Yale University Press, 1963) p. 227.

nations compensate injuries, keep track of and transfer personal property, delegate authority, and punish minor wrongs on the space station need not differ substantially from how these issues are resolved in the air or on the high seas.