

## ANALYSIS OF THE LEGAL AND POLITICAL BACKGROUND TO COOPERATION BETWEEN JAPAN AND THE UNITED STATES IN SPACE DEVELOPMENT

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### Abstract

Japanese space activity has relied significantly on the United States in many areas. These areas include the development of a series of Japanese launch vehicles; the construction of broadcasting, communication and meteorological satellites; space exploration using the U.S. Space Shuttle; the development of an International Space Station and the training of Japanese astronauts. These programs are realized in various ways, mainly in cooperation with the U.S. National Aeronautics and Space Administration (NASA) and the U.S. space industry under certain governmental agreements.

In determining how it will cooperate in space development with other countries, every country comes from a different perspective characterized by different concerns. Concerns such as technology development, (which is one of the main Japanese concerns), national and international security, foreign policy and industrial and trade policy. For instance, under the U.S.-Japan Space Agreement concluded on July 31, 1969 and the amendments thereto, the U.S. Government

permitted the U.S. space industry to provide the Japanese Government and Japanese space industry with unclassified technology and equipment, up to the Thor-Delta launch vehicle systems level. This was done for the development of Japanese launch vehicles, communications satellites and other satellites used for peaceful applications. This agreement was realized due to a U.S. decision taken mainly from a national security and foreign policy perspective. Likewise, when the U.S. decided to invite Japan to join the International Space Station Program in the early 1980s, this was largely a result of foreign policy and national security considerations. As well, in deciding whether to export the SRB-A related technology, a conflict arose in the U.S. between national security and economic benefit.

In this paper, we focus on the 1969 U.S.-Japan Space Cooperation Agreement and try to analyze the political background within the U.S. government involved in the creation of such bilateral cooperation.

### 1. INTRODUCTION

The U.S.-Japan space relationship is now proceeding smoothly in all areas of civilian space activity, including scientific applications and human space flight. This successful relationship has depended upon efforts within the United States Government to realize U.S.-Japan cooperation.

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In this essay, we have tried to summarize the kinds of political and/or legal considerations that were made within the U.S. government, and to analyze the various policy-making concerns which were debated in regards to this international cooperation. We take the case of the 1969 U.S.-Japan agreement as a typical example and support our findings with extensive declassified archives.

The historical facts cited here are considerably dependent on "Learning from the Leader. The Early Years of U.S.-Japanese Cooperation in Space" a monograph by Professor John M. Logsdon, which was largely based on two essays he prepared for NASDA.<sup>1</sup> The first of these essays is on the early years of U.S.-Japanese space cooperation, and the second is on the development of space cooperation over the 1969-1985 period.

## **2. PROCESSES LEADING TO U.S.-JAPAN SPACE COOPERATION<sup>2</sup> IN 1969**

### **2-1. OUTLINE OF THE 1969 AGREEMENT**

On July 31, 1969, the governments of the U.S. and Japan, through an exchange of diplomatic notes, agreed to significantly expand their space cooperation. The main points of this agreement are;

- (1) The U.S. Government undertakes to permit U.S. industry to provide the Japanese Government or Japanese industry under contract with the Japanese Government, unclassified technology and equipment for the development of Japanese N launch vehicles, communications satellites and other satellites used for peaceful applications.
- (2) The Japanese Government undertakes (a) to ensure that any technology or equipment transferred

to Japan will be used solely for peaceful purposes; (b) to take all available steps to prevent transfer of such technology and equipment to third countries. This includes any launch vehicles; communications or other satellites; as well as the components; parts; accessories and attachments thereof manufactured using such technology or equipment except as allowed mutual agreement between the two governments; and (c) to use communication satellites developed or launched with U.S. cooperation in accordance with the objectives and purposes of INTELSAT arrangements as they exist or evolve.

- (3) This Agreement covers unclassified technology and equipment up to the level of the Thor-Delta vehicle systems, exclusive of reentry and related technology.

### **2-2. RESTRICTION UNDER NATIONAL POLICY (NSAM)**

According to Prof. Logsdon, "this agreement was the culmination of over three years of discussions within the U.S. government over an appropriate posture towards Japan's space activities."<sup>3</sup> Consideration during the 1966-1968 period of how to expand space cooperation with Japan took place within a context created by several presidentially approved statements of national policy, which substantially limited the scope of cooperation.

#### **(1) NSAM 294**

First, National Security Action Memorandum (NSAM) 294, issued in April 1964, dealt with preventing the proliferation of strategic delivery technology, and set strict limits on export from the U.S. of technologies that could help other countries develop nuclear weapon delivery capabilities.<sup>4</sup> This prohibition also limited the assistance that the

U.S. government and American industry could provide to countries trying to develop their own independent launch capability.

## (2) NSAM 338

Second, NSAM 338, "Policy Concerning U.S. Assistance in the Development of Foreign Communications Satellite Capabilities," approved by President Nixon in August 1965, noted that "the U.S. should refrain from providing assistance to other countries which would significantly promote, stimulate or encourage proliferation of communications satellite systems" in order to preserve the virtual monopoly enjoyed by the U.S. by means of the U.S. dominated INTELSAT system. This memorandum also noted that "agreements for direct assistance to allies ... should require satisfactory assurance that the assistance furnished will be used only within the framework of agreements and arrangements to which the United States is a participant and will not be transmitted or transferred to a third nation without prior U.S. authorization." As well, "U.S. firms are required to comply with the Munition Control licensing procedure prior to communicating satellite or related technology, transferring equipment or components as embraced by the United States Munitions List, including booster technology and launch services, to foreign nations or firms."<sup>5</sup>

## (3) NSAM 354

Third, NSAM 354, a memorandum on "U.S. Cooperation with the European Launcher Development Organization (ELDO)", approved by President Nixon in July 1966, included "facilitating export licenses for ELDO requirements" and "on a case by case basis, subject to export control approval, "technology related to the Atlas launch vehicle."<sup>6</sup> Although it was never implemented in the case of ELDO, this policy statement set a precedent for U.S. assistance to a foreign entity in developing launch vehicles. It would

have been difficult to deny similar assistance, under similar restrictions, to Japan when such was requested two years later.

## 2-3. CONTROVERSY WITHIN THE U.S. GOVERNMENT

The National Aeronautics and Space Council, established in 1958 as the White House level mechanism for developing U.S. space policy, chaired by the Vice President and including senior officials of related departments or agencies began consideration of cooperation with Japan in the development of liquid-fueled launch vehicles in September 1966.<sup>7</sup> In the Space Council working group, NASA expressed its concern about the "efficacy of Japanese export controls" to avoid launch-related technology being re-transferred to other countries, particularly the Peoples Republic of China.<sup>8</sup> Conversely, the Arms Control and Disarmament Agency (ACDA) took the position that "a significant program of U.S. space cooperation directed towards enhancing Japan's space capabilities can have beneficial nuclear nonproliferation activities by bolstering her prestige, demonstrating her worldwide and regional scientific prowess, and affirming U.S. involvement with that nation." Although the ACDA was concerned that Japan's indigenous solid-rocket capabilities "provide her with the ability to develop strategic nuclear-capable ballistic missiles within a time-frame of three years independent of U.S. actions", that the U.S. needed to restrict the export of their solid-fueled rocket technology, the ACDA also argued that cooperation in regards to liquid-fueled launcher technology could still offer arms control benefits, since "our ability to influence the course of Japan's rocket developments could increase; certain areas of space-rocket technology have less relevance to missiles".<sup>9</sup>

The ACDA and the State Department thought that in order to achieve non-proliferation objectives, the United States

might provide launch services or launch vehicles to other countries without requiring either financial reimbursement or mutual scientific benefits.<sup>10</sup> This was contrary to NASA's policy on international cooperation which was that any undertaking should benefit the U.S. space program as well as the cooperating partner. NASA, however, recognized that "there is increasing interest in using space cooperation as a means toward achieving political objectives abroad, and it should be up to the State Department and the White House to justify the projects." On the other hand, the Department of Defense opposed any moves that would make U.S. launch vehicle technology available to other countries, holding to NSAM 294 and 338's point that it should be U.S. policy to discourage other countries from developing national booster capabilities.

#### **2-4. LEADERSHIP OF U. ALEXIS JOHNSON**

U. Alexis Johnson, who had chaired the Space Council subcommittee on international cooperation between May and October 1966, and was named U.S. ambassador to Japan in October 1966, played a key role in stimulating a new U.S.-Japanese space relationship. He had always sought to find ways to counter-balance what he perceived as a pro-European bias in U.S. foreign policy by increasing U.S. interactions with Asia, particularly Japan.<sup>11</sup> It was his view that "both countries would profit if we licensed our space technology to Japan on a commercial basis: Japan in R&D time and expense, the United States in sales and balance of payments," and that "we would be much smarter to be in bed with Japan from the outset rather than have it develop a new rocket of which we would be ignorant."<sup>12</sup> The State Department itself recognized the rationale for space cooperation with Japan as follows;

"We are concerned by the implications of Japan's continuing to pursue an independent peaceful space program. An acceptance of U.S. assistance would provide attractive advantages to Japan in cost and time economies. An important dividend in Japan's achieving the status of a leading space power at an early date would be its increased prestige in Asia vis-à-vis the Chinese Communists."<sup>13</sup>

On January 17, 1968, Ambassador Johnson met with Prime Minister Sato in Tokyo to deliver "a proposal for virtually complete cooperation between the United States and Japan on launches and satellites." The proposal went "far beyond what we had offered any other country."<sup>14</sup> Although NASA and the Department of Defense were opposed to this proposal, Ambassador Johnson and others in the State Department were able to prevail in their belief that it was in the overall foreign policy and national security interests of the United States to foster close cooperation with Japan in key sectors such as space. However, because these key government agencies were skeptical, the proposal that eventually emerged stressed industry-to-industry cooperation, rather than government-to-government cooperation. This emphasis was also supported by U.S. firms such as McDonnell Douglas, manufacturer of the Thor Delta rocket who foresaw significant revenues from potential technical assistance contracts and licensing agreements with Japanese firms. The major U.S. principles and policies included in this proposal were;<sup>15</sup>

- (a) Under NSAM 338, we are prepared to cooperate in all aspects of communications satellite development and launch on the assumption that both governments will continue to act in this sphere in conformance with their INTELSAT commitments. Therefore, we would

approve technology transfers only after determining to our satisfaction that it would be used only in (I) purely experimental as opposed to operational systems or (II) operationally domestic systems compatible with INTELSAT obligations as they evolve.

- (b) Only unclassified U.S. technology is involved.
- (c) There must be Japanese Government commitment on third country controls. Transfers of technology derived from U.S. cooperation to Communist China or the Soviet Union must be explicitly excluded. Sales or technical exchanges involving other third countries will require prior U.S./GOJ agreement, based on common policy for U.S. and GOJ suppliers.
- (d) Licenses for export of equipment or technology will be granted if equipment or technology is unclassified and related to an identified Japanese peaceful space program or objective; and
- (e) We are satisfied that the end-use of the technology applied to communications satellites will be consistent with INTELSAT agreements as they develop.

Almost eighteen months after this proposal, the July 31, 1969 exchange of diplomatic notes, which embodied the principles and policies above, was concluded.

### **3. ANALYSIS OF THE POLITICAL ELEMENTS RELATED TO THE 1969 U.S.-JAPAN AGREEMENT**

#### **3-1. ELEMENTS OF POLICY-MAKING**

In the 1966-1968 period described above, main the political elements and approaches considered within the U.S. government with

regard to the 1969 agreement can be categorized as follows;

#### **(1) National Security Policy**

(a) One of the primary interests of the U.S. government was the non-proliferation of strategic delivery technology. We think that there were two approaches which recognized this political goal;

(A) 'The positive approach', as applied by the State Department and the ACDA, which was to transfer liquid-fueled launch vehicle technology in order to dissuade Japan from independently developing a solid-fuel booster rocket which could be converted into ballistic missiles

(B) 'The negative approach' which, along with NSAM 294 was applied by NASA and the DOD, this was to set strict limits on export from the U.S. of technologies that could help other countries develop nuclear weapon delivery capability, in order to avoid launch-related technology being re-transferred to third, particularly Communist countries, and to discourage other countries from developing national booster capabilities.

#### **(2) Foreign policy**

This was also a significant concern taking especially into account the then international political and strategic situation. We categorize this using the following elements;

(a) To counter-balance a pro-European bias in U.S. foreign policy by increasing U.S. interactions with Asia (DOS)

(b) To increase Japanese prestige in Asia vis-à-vis the Chinese Communists (DOS)

- (c) To maintain a balance with offers to other countries, especially Europe (NASA, DOD)

(3) Economic policy

- (a) To preserve the U.S. virtual monopoly of INTELSAT (NSAM 338)
- (b) To gain significant revenue on a commercial basis (DOS, U.S. industry)

### 3-2. ANALYSIS ON POLICY-MAKING ELEMENTS

During the consideration of these elements, NASA's conventional policy on international cooperation, which required mutual scientific benefit, and the 'negative approach' regarding non-proliferation outlined above were strongly insisted upon. Eventually, however, the 'positive approach' on non-proliferation and foreign policy in Asia, and especially concerns related to the Chinese Communists prevailed over NASA's conventional approach and the 'negative approach' in the context of the overall foreign policy and national security interest of the U.S. in fostering close cooperation with Japan in key sectors such as space. In addition, economic policy on conformity with INTELSAT and commercial revenue desires were finally adopted in the agreement.

It appears that which political elements the U.S. government gave priority to depended on the political and economical situation surrounding both countries at that time.

### 4. FOLLOWING THE SIGNING OF THE 1969 U.S.-JAPAN AGREEMENT<sup>16</sup>

The United States believed that the 1969 U.S.-Japan agreement called only for the technical assistance required to achieve the Japanese space plan, aimed at the

development of an N rocket capable of placing a 130-kilogram satellite in geostationary orbit and small applications satellites in the order of 100-130 kilograms. On the other hand, Japan had planned to upgrade the N rocket as rapidly as possible with U.S. assistance under the 1969 agreement. This gap in expectations caused tension between the U.S. and Japanese governments.

The issue was what level of Thor-Delta technology the U.S. was willing to license to Japan, because this launch vehicle (which during the 1970s became known simply as the Delta) was constantly being improved to increase its performance and reliability. In other words, it was not specific which model of the Thor-Delta rocket would serve as the baseline against Japanese requests for technical assistance and technology transfers under the 1969 agreement.

The U.S. government had determined that the Model 58 vehicle of the Delta series, which was the least sophisticated version capable of achieving the geostationary target of 130 kg, was the baseline configuration.<sup>17</sup> But, in 1972, Japan informally indicated to the U.S. government its desire for the transfer of several additional technologies found in post-Model 58 versions of the Delta launcher which are required in order to upgrade the N-I launcher, capable of launching 130 kg to the N-II, capable of launching a 350 kg satellite into geostationary orbit.<sup>18</sup> After this request, the U.S. government reviewed and concluded that only the sale of the hardware requested should be approved, not the transfer of the related technology, under an export license. Also, unlike previous transactions with Japan, the price charged was to include a fee intended to recover a portion of the U.S. government R&D funding. This change in position was communicated to Japan at the end of 1973 by the State Department and the White House Council on International Economy Policy.<sup>19</sup> The major impetus behind

this policy change was a several-year controversy between the United States and Europe over the conditions under which the United States would launch a French-German communication satellite that appeared to combine experimental and operational uses. The U.S., in a policy adopted in September 1971, indicated the conditions under which it would either provide launch-related hardware to other countries or offer launch services to those countries on a reimbursable basis using U.S. launch vehicles. This policy also applied to Japan.<sup>20</sup>

Based on the policies above, a new U.S.-Japan Space Cooperation Agreement was concluded through an exchange of diplomatic notes in 1976, under which Japan would not only receive a transfer of technology but also purchase from the U.S. the hardware required for developing the N-II launcher. The limits set by the U.S. on the export of technology related to the N-I vehicle upgrades forced Japanese space officials to recognize that they would likely have to develop the desired technologies in Japan.

In 1978, Japan decided to develop a new type of launch vehicle, the H-I, capable of placing a 550 kg satellite into geostationary orbit, and in order to have the H-I ready by the late 1980s, Japan decided to continue to use as its first stage a version of the N-II first stage based on the licensed Thor-Delta technology. These decisions meant that a second version of the original 1969 U.S.-Japanese agreement was required. That revision was accomplished by a December 1980 exchange of diplomatic notes.

## 5. CONCLUSION

As outlined in Section 2 above, the U.S. Government began consideration of bilateral cooperation with Japan from various perspectives even before Japan officially requested the U.S. to provide them with

technical assistance related to space development. As a result of a long argument inside the U.S. Government, the U.S. took their non-proliferation policy as a primary consideration along with foreign policy concerns, especially concerning the Asian region. The interesting thing here is that the U.S. did not apply the negative approach, which would have strictly limited any technology transfer to Japan but rather applied the positive approach, allowing it to transfer its liquid-fueled rocket technology and satellite technology.

According to Prof. Logsdon, "the cooperation in launch vehicle development between U.S. and Japanese industry, operating under the guidance of their respective governments, was a clear success story, at least from the Japanese perspective", and "without that cooperation, Japan's space development would have had to proceed much more slowly".<sup>21</sup> We agree with this and at the same time, we believe that the U.S. also succeeded in its political goals by making the decision leading to the 1969 U.S.-Japan space cooperation agreement, in the context of national security and foreign policy perspectives.

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<sup>1</sup> John M. Logsdon, *Learning from the Leader, The Early Years of U.S.-Japanese Cooperation in Space*, undated, Space Policy Institute, Elliott School of International Affairs, The George Washington University

<sup>2</sup> John M. Logsdon, op.cit., supra, Chapter 2 "The Early Years of Japanese - U.S. Cooperation" at pp.3-17

<sup>3</sup> Ibid., at p.3

<sup>4</sup> See the discussion of NSAM 294 in Department of State, "U.S. Nuclear Export Controls: Policy and Procedures," December 10, 1964. (National Security Archives, George Washington University)

<sup>5</sup> NSAM 338, "Policy Concerning U.S. Assistance in the Development of Foreign Communications Satellite Capabilities," August 25, 1965

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- <sup>6</sup> Attachment to NSAM 354, "Policy Concerning US Cooperation with the European Launcher Development Organization (ELDO)," July 29, 1966
- <sup>7</sup> Department of State, Memo to Participants of the Working Group for the International Cooperation Subcommittee of the National Aeronautics and Space Council, "Fifth Meeting of the Working Group," September 19, 1966
- <sup>8</sup> NASA, Office of International Affairs, "Consideration Affecting Possible US/Japan Rocket Cooperation," September 7, 1966
- <sup>9</sup> Arms Control and Disarmament Agency, "Space Cooperation with Japan: Arms Control Considerations," September 6, 1966
- <sup>10</sup> Department of State, "Summary Notes –Meeting of the Working Group on Expanded International Cooperation in Space Activities – September 22, 1966," at p.3.  
Department of State, Airgram to Amembassy Tokyo, "Proliferation of Solid-Fuel Rocket Technology," December 12, 1966
- <sup>11</sup> Interview with U. Alexis Johnson by Prof. Logsdon, January 29, 1996
- <sup>12</sup> U. Alexis Johnson with Jef Olivarius McAllister, The Right Hand of Power (Englewood Cliffs, N.J.: Prentice-Hall, 1984), at p.487
- <sup>13</sup> Department of State, Visit of Prime Minister Eisaku Sato of Japan, November 14-15, 1967, SCIENTIFIC AND TECHNOLOGICAL COOPERATION, undated. (U. Alexis Johnson papers, Lyndon Baines Johnson Presidential Library, Austin, Texas)
- <sup>14</sup> Johnson, The Right Hand of Power, at p.487
- <sup>15</sup> Department of State Telegram 93721 from the Secretary of State to the American Embassy, Tokyo, "Space Cooperation with Japan," January 1968
- <sup>16</sup> Logsdon, op.cit., supra, Chapter 4 "Developing Japanese Launcher Capabilities a Fruitful but Tense Relationship" at pp.27-36
- <sup>17</sup> Letter from Vincent Johnson, NASA, to John Sipes, Director, Office of Munitions Control, Department of State, October 30, 1970
- <sup>18</sup> Memorandum to the Administrator from Assistant Administrator for International Affairs, "Courtesy Call by Dr. Hideo Shima," September 13, 1972
- <sup>19</sup> Arnold Frutkin, Diary Notes "Japanese/Shima Visit," April 8, 1974
- <sup>20</sup> Documents related to interactions with Europe during the post-Apollo period are contained in
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- John M. Logsdon with Dwayne A. Day and Roger D. Launius, Exploring the Unknown: Selected Documents in the Evolution of the U.S. Civil Space Program, Volume II, External Relations, NASA SP-4407 (Government Printing Office: 1996), at pp.49-87.
- <sup>21</sup> Logsdon, *ibid.*, at p.34