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INTERNATIONAL COOPERATION IN LAUNCHING FACILITIES¹

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Introduction

International Space Law stresses the importance of cooperation in view of the adopted regime for outer space, which is to be used for “the benefit of mankind.” A close look at this realm of exploration, however, reveals that the driving force in its development to date has been national rivalries. International and regional organizations have been limited in their participation because of military concerns by the great powers, and by a lack of independent funding sources, leaving the arena to development by private and public sector organizations with national funding sources and allegiances.

This paper explores alternatives to promote international cooperation in this area, by examining how depoliticized launch facilities and globally chartered corporations can provide both revenues

and legal foundation to accelerate development of the frontier.

Background

a. Framework of International Space Law

At the end of the Second World War, in 1945, the Organization of the United Nations was formed. For its Security Council, China, France, Soviet Union (USSR), Great Britain and the United States of America (USA) were chosen to make decisions in the international area. The Soviet Union and the USA, with more advanced technologies, were dominant powers.

During the same period the North Atlantic Treaty Organization (NATO)

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was established by the industrialized Western countries, as a defense regional organization, while the industrialized Eastern countries created as counterpart defense organization, the Warsaw Pact. COCOM and COMECOM, the Western and the Eastern economic alliances, completed the bipolarization of the economic and politic system.

Competition between East and West intensified during the "Space Race," which began with the launching of Sputnik into orbit by the Soviet Union in 1957.

In 1967 the "Treaty on Principles Governing the Activities of States in the Exploration and Use of Space, Including the Moon and Celestial Bodies", defined space as an area dedicated exclusively for the pacific uses, for the benefit of "Mankind". Despite this principle, the use of arms in space increased, with the argument that use of space for defense purposes would assure "peace for all mankind." In this scenario of confrontation between the more market economies of the West and the state-run economies of the East, control of access to advanced technologies, such as the technologies applied to outer space, was considered a fundamental issue in the balance of power.

Despite the fact that in 1989 the bipolar system was shattered by the fall of the Berlin Wall, many of the legal premises established in the Cold War continue to apply to activities taken place in outer space – limiting access by developing countries to benefits of the space frontier.

b. National Laws and Regulations applying to Space Activities

With the end of the Cold War, an acknowledgement grew on all sides of the need to reorganize and restructure policies. However, restrictions to advanced technologies have continued as a central focus of the main spacefaring powers, justified by present and perceived threats from multiple sources (terrorists, rogue states, and criminal organizations including international drug dealers).

i. Russia

Russian non-proliferation efforts in the post-Cold War period have come in two parts: domestic controls and involvement in international controls, especially with the United States and the expansion and strengthening of its export control system. In January 1998, President Yeltsin issued the following important decrees:

- a) Presidential Decree n. 54, "the Implementation of Government Policy in the Rocket Space Industry" placed the export and production of missile technology under the authority of the Russian Space Agency, and directed the government to undertake measures to restructure the Russian rocket and space industry,
- b) Governmental Decree n. 440 ratified the list of government agencies and organizations subordinated to the Russian Space Agency, and lists enterprises and joint stocks companies subject to the export control policy outlined by Presidential Decree 54.

- c) Presidential Decree n. 57 "On Enhancing Export Controls for Dual Use Goods and technologies, Related to the Weapons of Mass Destruction and Their Missile Delivery Means", established a "catch-all" provision to control any items intended for use in developing weapons of mass destruction- which imposes heavy burden on exporters to screen their customers and ascertain the end use of exported goods and technology.

In a speech to the governing board of its Ministry of Foreign Affairs, on May 12, 1998, President Yeltsin declared that "preventing the spread of weapons of mass destruction and means of their delivery is one of the priority issues for Russia's national security".

Export controls are new to the Russian system, and have proven challenging to implement. In the West, by contrast, these regulations have been in place for more than 50 years as well the corresponding mechanism for its implementation.

At the September Summit in Moscow, President Clinton and Yeltsin issued a joint statement on the importance of expanding export control cooperation between Russia and the USA to halt the spread of mass destruction thought the control of export of technologies. The Moscow Summit outlined several measures to be undertaken, including the establishment of seven working groups to tackle practical matters of export control and non-proliferation.^{1/}

Any launch operator in Russia must indemnify the Russian government with respect to any international claim that is

caused by the space object. Strict liability is also imposed on the launch operator with respect to any damage caused within Russia by the space object. The operator has to take out compulsory insurance for its liability.^{2/}

ii. United States of America (USA)

The US Government considers that potential threats from emerging economies pose a challenge to the country's security interests and defense capabilities.

In the US, exports of technologies used for launching spacecraft are considered of dual use and therefore subject to the control of the government. The Arms Export Control Act (22USC 2778(a) and 2794(7) revised in 1993 provides that the President shall designate the articles and services deemed to be defense articles and defense purposes.^{3/} The items so designated constitute the United States Munitions List, whose designations are made by the Department of State with the concurrence of the Department of Defense. This list includes among others: Missile technology, launch vehicles, rockets (including but not limited to meteorological and other sounding rockets), missile and space launch vehicle power plants and all specifically designed or modified components, parts, accessories, attachments and associated equipment for the articles in this category. Also, technical data directly related to the manufacture or production of any defense articles are designated as significant military equipment.

The regulations require that "any person who engages in the US in the business or either manufacturing or exporting defense articles is required to register

with the Office of Defense Trade Controls.”

The Commercial Space Launch Act 1988 applies to any launching activity conducted in the territories of the US and also to overseas launching activities of any foreign corporation in which a US national holds a controlling interest – the office of the Assistant Administrator for Commercial Transportation (AST) provides a licensing system for commercial operations and requires the operators to take out liability insurance up to the amount of maximum probable loss. 4/

c. Trends in the global launching sites market

A growing international market exists for private satellite launch centers. Commercial launch organizations, many of which (e.g. Kistler Aerospace, Beal Aerospace and Microcosm) have been developing new reusable concepts, are now seeking affordable alternatives to established launch ranges, which are often characterized by high costs, inflexible government constraints, onerous regulations, non-optimal locations, and unfavorable tax regimes.

Drivers of demand for commercial launch operations include the growing demand for communications bandwidth, and remote sensing for resource monitoring and information gathering. As costs of access to orbit decline in coming years, new markets such as space entertainment and tourism, energy, manufacturing of unique products, and private space research can be expected to emerge. Commercial space is at the verge of a decades-long growth trend that will ensure it becomes a major part

of the world economy in the coming century.

New international launch facilities also will have inherent tourism potential. Associating space-themed tourism parks and amenities with such a facility can lend impetus to its eventual utilization as a departure point for public space travelers, generating near-term revenue as terrestrial-based space tourism grows to become a large segment of the worldwide tourism industry.

In response to growing market opportunities, some notable launch site initiatives are under way:

- Brazil, whose Alcantara launch site has an ideal equatorial location;
- Anguilla and Guyana, who have been in negotiations with Beal Aerospace;
- and Australia, which has marketed both its existing Woomera range, which will host Kistler Aerospace’s test flights, and Cape York, which has an attractive azimuth and latitude situation.

However, even when originating in developing countries, the basis of these initiatives has remained national rather than global.

The restrictions imposed by governments on the export of technologies applied in commercial space ventures pose a bottleneck for the growth of activities that could bring economic and social development to the less developed countries. Taken with national licensing systems on

commercial space launching, it is clear that these export controls limit opportunities for commercial launch organizations to operate in a truly international manner.

Furthermore, national controls and restrictions have prevented the international cooperation in this area, to the extent that these controls have been used for trade-related issues (that is, prevention of the entrance of other countries in the controlled market) and not exclusively for the prevention of transfers of arms of mass destruction (national security concerns).

Thus, if the uses of outer space are truly to “benefit all mankind,” a new approach to promote the international use of the technology applied in outer space should be in place.

III. Opportunities for Cooperative Global Launch Endeavors

A clear near-term opportunity exists for developing countries to provide a modern international launch facility, spaceport and space tourist resort that can compete not only with those of the developing countries mentioned above, but also to offer commercially competitive services relative to those offered by national space initiatives of the major space powers.

To date, as launch site specialists such as James C. Bennett and Rand Simberg have noted, no existing commercial launch facility has combined the following ingredients desired by a new generation of commercial launch organizations:

- Flexibility in safe launch azimuths to reach all useful earth orbital inclinations;
- Low costs;
- Up-to-date infrastructure without legacy-derived limitations, including ample and versatile facilities for rapid payload and launch-vehicle processing;
- Flexible and streamlined regulation, able to deal with innovative technologies while still meeting safety concerns;
- Ability to meet the concerns regarding weapons-proliferation issues, without which a site cannot be commercially feasible;
- Favorable launch weather year around, day and night;
- Desirable living location for launch crew and their families;
- Commercial (not government) ownership, operation, and orientation, with no concerns of being “bumped” or delayed for national security reasons;
- Accessibility to technology centers in developed nations; and
- A business-friendly tax, Customs, and regulatory environment.

A new generation of international, nonmilitary, commercial launch facilities has potential to meet these needs –and to generate revenues for sustained, cooperative global initiatives in space.

a. Opportunities for creation of international “free zone” launch sites

Developing countries have an opportunity to turn to a proven instrument for economic growth, as a catalyst for attracting new commercial launch operations.

Since the time of the Phoenicians, tax-free trade zones have been established as defined geographic areas as depoliticized areas for business. Such free zones are open to peaceful economic transactions among organizations from all countries, offering a business climate considered extraterritorial to tax and other economic controls.

A policy of establishing a hospitable investment and trade environment, with a level playing field for business and nongovernmental organizations from all countries, is today proving its value in many locations.

Hong Kong and Singapore – the world’s most successful free ports – have become leading centers for international business as a result of their applied free zone policies. More recently, the five Special Economic Zones of China have overtaken these free ports as the fastest growing parts of the world economy, with sustained annual growth rates of more than 20 percent. Countries ranging from Mauritius in Africa to the Dominican Republic in the Americas have similarly moved to the top rank of the international growth rates through adoption of free zone policies.

International launch facilities that offer world-class investment and trade environments for commercial enterprises of all kinds and nationalities can expect similar investment inflows and growth outcomes in the future.

b. Mechanisms for self-sustaining funding sources

A new generation of international free zone launch facilities has the potential to

generate substantial financial returns, a portion of which can be applied to global space initiatives. /5

Adoption of free economic zone policies can ensure a rapid rise in land values. In the case of the free port of Hong Kong, for example, a policy of auctioning land leases now nets for the Government an income in excess of \$1 billion a year.

Another income source is also available for a new generation of international launch facilities. Sponsoring countries can also take a lead in establishment of a new category of offshore companies: globally chartered corporations.

Offshore corporate registry has become a substantial revenue source for sponsoring countries. Panama, for example, earns than \$500 million a year from corporate registry, ship registry, aircraft registry, and Internet registry. These precedents can be adapted and applied by countries sponsoring free zone-based international launch centers. In addition, they can establish a new genre of globally-chartered spacefaring corporations and spacecraft registrations.

Part of the revenue flows from free zone land leases and company registrations can fund new developing country space launch and satellite technology application initiatives. These can initially focus on distance learning, telemedicine, and other applications of space technology of immediate benefit to developing countries.

c. Audit and arbitration systems to ensure non-military uses

The proposed global free zone launch sites can also become a new venue for international cooperation to prevent

overt or covert military applications of space at their facilities.

To accomplish this, an international technical audit system can be established by international organizations and countries agreeing to sponsor or make use of the new international launch sites, providing a new method for preventing the spread of arms for mass destruction. Sites destined to international commercial launches, for example, could be made subject to audits from technicians of at least three neutral countries to ensure that military activity will not take place in the site. International arbitration can be established as the chosen method to resolve any dispute arising from launching at the sites, and international organizations can participate in registration and insurance of spacecraft launched from international launch sites.

IV. Conclusion

If the goal of national states is to promote the welfare of their citizens, and if the global economy is to be effective in opening new markets with competition on a truly level playing field, times appear favorable for emergence of a new type of international launch facility. Developing countries can take the lead in opening new space technology applications markets, by unilaterally establishing commercial launch sites as free economic zones, applying revenues generated from these facilities, and working to implement truly neutral technical audit systems to ensure peaceful applications of the space frontier.

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