

Docking: The Unspoken Threat to Space Objects

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The process of docking poses a substantial threat to manned space objects. This paper analyzes the Outer Space Treaty 1967, whereby docking may be refused in cases where safety of the manned space object is compromised. As per Article XII of the Outer Space Treaty, “*maximum precautions*” must be taken to assure safety and avoid interference of normal operations in the facility to be visited. However, in the same thread, the Article speaks of “*principle of reciprocity*”, wherein States are under an obligation to assist other States in times of distress. This paper shall assess the contradictory stance of refusing or denying docking by a State in times of distress, to a manned space object while under the obligation of Article XII. An analogy can be drawn with State practice in sea activities, wherein assistance can be refused to distressed ships, if, the safety of the coastal State is compromised.

I. Introduction

With the advent of a new era in space technology there is substantial requirement for reevaluating our legal stance with respect to recent ventures in space. The issue at hand is with regard to the possible threat that the process of docking may encompass, with respect to manned space objects. It is contended that docking may be refused by States, in view of the safety of their manned space object to be docked with and preserving the activities which may be carried on therein. Docking was first developed and successfully implemented during the United States Project Gemini¹, wherein the space shuttle had to dock with a target vehicle (Atlas Agena). Through the years, docking technology has evolved and gone through substantial change, becoming easier to maneuver and carry out. However, despite the improved technology, it is still faced with certain basic challenges². The potential dangers of docking were reflected during the

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1 Gemini : Bridge to the Moon, National Aeronautics and Space Administration at <www.nasa.gov/mission_pages/gemini/#.UqTIF_QW2yU>.

2 James E. Oberg, *United We Orbit*, Air and Space Magazine, Air and Space Smithsonian at <www.airspacemag.com/space-exploration/United-We-Orbit.html>.

Mir Space Shuttle incident whereby a miscalculation of the weight in the cargo drone resulted in the collision of the supply capsule with the hull of the Spektr module³. Hence, the process of docking though used frequently has not been perfected.

II. Exclusive Jurisdiction of States of Registry

Docking may be refused by the launching State for the safety of its astronauts. This can be observed from Article II (1) of the Registration Convention⁴ which States that:

When a space object is launched into Earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Each launching State shall inform the Secretary-General of the United Nations of the establishment of such a registry.

By virtue of Article VIII, of the Outer Space Treaty, the State on whose registry the space object or objects from which the space station is built would have jurisdiction and control over it and its personnel in outer space⁵. Article VII, of the Outer Space Treaty States that:

A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

A launching State has exclusive use of its space object; it also has the exclusive jurisdiction and control on the same. The jurisdiction rights conferred by such space treaties, allows that launching States decide if to accept or refuse the docking with the space object of another State. A launching State which believes that a docking maneuver may cause damage to its manned space object,

3 International Brief: Cosmonauts blamed for Mir Space Docking Accident at <www.rice.edu/projects/thresher/issues/85/970905/News/Story14.html>.

4 Convention on Registration of Objects Launched into Outer Space, *entered into force* Sept. 15, 1976, art. 2.

5 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* Oct. 10, 1967, art. 8.

has the authority to refuse docking with the space object of another, as the first State has full jurisdiction on its space object.

III. Right of Visitation

As the jurisdiction and control of such a space object is enjoyed by the launching State, it should be explored if such a right can exclude certain other States from the right of visitation on the space object at any time.

Right of visitation is enjoyed by registered States in case of a station built on the Moon or another celestial body⁶. Art. XII of the Outer Space Treaty spells out:

All stations, installations, equipment and space vehicles on the Moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. Such representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited.

According to this treaty obligation, States that have jurisdiction on a space object have the obligation to accept visits from representatives of other States. So far, such visits encompass docking maneuvers. Although the visiting State has a 'visiting' right conferred through Art. XII of the Outer Space Treaty, the question emerges which right is stronger. Interpreting Article VIII and XII of the Outer Space Treaty entry or docking to a space station may be refused by the launching State in certain circumstances. This crucial aspect was also addressed in the Intergovernmental Agreement of the International Space Station⁷, wherein an exception was made to the rule that no Partner would have jurisdiction over a non-national for misconduct committed on a foreign flight element. This exception was prompted by consideration for the overall safety of the manned base.

The legal ties and controls by a launching State over a space object, conferred by the Outer Space Treaty and affirmed by State Practice, will be the strongest right when addressed in reference to the visiting right. Therefore, entry to space objects can be restricted or limited by the launching State in cases where the safety of its personnel may be compromised. As the jurisdiction and control of such a space object is enjoyed by the launching State, it can be asserted that

6 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* Oct. 10, 1967, art. 12.

7 Agreement among the Government of the United States of America, Government of Member States of the European Space Agency, the Government of Japan and the Government of Canada on Cooperation in the Detailed Design, Development, Operation and Utilization of the Permanently Manned Civil Space Station, September 29, 1988.

such right can exclude other States from the right of visitation on the space object at any time under certain circumstances.

IV. Rights on Ships in the High Seas

As the practice of States so far seems to suggest that space objects are subject to the exclusive jurisdiction of the launching State, it can be compared to the privileges and immunities afforded to ships at seas. This rule of flag State exclusivity is codified in the UNCLOS I and III Conventions⁸.

Article 92(1)⁹ states:

Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas.

The flag State as per the UNCLOS has the exclusive jurisdiction on its ship. Due to this, the flag State has the control over the administrative, technical and social matters concerning the ship. In the Lotus case¹⁰, the International Court of Justice held that “*vessels on the high seas are subject to no authority except that of the State whose flag they fly*”. It has been further explained that “*to enter into a non-national vessel or to interrupt its course by a foreign power in time of peace is an act of force and is prima facie wrong, a trespass*”, which can only be done in exceptional circumstances¹¹.

It must be considered that space missions are of high risk and encompass huge technological efforts and financial investment. The Law of Seas can be interpreted as to be applicable to outer space activities. A launching State cannot be forced to open its space objects to other States. A ‘visit’ to a space object of one State requested by another State, where dangerous docking is involved, may be considered as an interference or interruption for its planned space mission. Such interference or interruption may result in time delays or financial loss. If such docking results in a mishap, this may produce damage to property, injury and even death to the persons on-board the spaces object to be visited.

Therefore, launching States may deny permission to dock with the space object of other State that may interfere or interrupt its course, as the space object is within its exclusive jurisdiction.

8 High Seas Convention of 1958, art. 22; UNCLOS III Convention, art. 110.

9 United Nations Convention on the Law of the Seas, art. 92.

10 S.S. Lotus (France v. Turkey), Permanent Court of International Justice, P.C.I.J. Ser. A.No. 10, 2 Hudson World Ct. Rep. 20 (1927).

11 The Freedoms of Outer Space and their Maritime Antecedents, Hamilton De Saussure, Space Law Development and Scope, International Institute of Space Law, Praeger.

V. Principle of Reciprocity

In sea activities, there are two ways of connecting two space objects: docking or berthing.

A docking procedure is used when one space object actively manoeuvres using its own propulsion system to connect to another space object.¹² A berthing mechanism is used when space station modules or space object are attached to one another by using a robotic arm – instead of their own propulsion systems – for the final few meters of the rendezvous and attachment process. Berthing typically involves connection to a space station.¹³ In case of a space station on the surface of the Moon, the question arises if docking or berthing of a space object can be denied by the State of registry in case of a threat to the safety of the personnel in the space object.

As already indicated, Art. XII of the Outer Space Treaty provides for two conditions, one is that it may be done so on the basis of ‘*the principle of reciprocity*’ and, secondly, that it must be done with ‘*reasonable advance notice of projected visit*’.

‘Reciprocity’ has been defined by Ambassador Goldberg at United Nations as follows: The meaning of the words...

[...]“[O]n the basis of reciprocity” in article XII is in fact the meaning which common sense would dictate-and which was fully accepted by all the members of the Legal Subcommittee in Geneva; namely, that representatives of a State party to the treaty conducting activities on celestial bodies will have a right of access to the stations, installations, equipment, and space vehicles of another State party on a celestial body, regardless of whether the second State has ever claimed, or has ever exercised, a right of access itself. The fact that the second State may not have asserted such a right, or may not have exercised it, in no way impairs the first State’s right to access. However, if the first State has denied access to representatives of the second State, then the latter is not required, on the principle of reciprocity, to grant access to representatives of the first State.¹⁴

The principle of Reciprocity was also forwarded by the Soviet Union in international fora in order to safeguard the safety of the personnel on board the installations¹⁵. It is therefore, maintained that the manner of the visit was important¹⁶. As the manner of visit is essential along with *advance notice* to visit the space station before docking, both these aspects are dependent upon the consent of the launching State, which has jurisdiction on the space object

12 “ISS Interface Mechanisms and their Heritage” (PDF). NASA. Retrieved 2011-11-04.

13 “Advanced Docking/Berthing System - NASA Seal Workshop” (PDF). NASA. 2004-11-04. p. 15. Retrieved 2011-03-04.

14 Statement of Ambassador Goldberg, made on Dec. 17, 1966, in Committee I of twenty-first General Assembly session. 56 DEP’T STATE BuLL. 78, 80 (1967).

15 Morozov (USSR), UN Doc A/AC.105/C.2/SR 63, 20 October 1966, pp. 4-5.

16 Ambassador Goldberg, supra note 14.

to be visited. The requirement of advance notice of a projected visit and of subsequent consultations before inspection is beneficial to the unique condition of the space environment. The concern for the safety of both the astronauts and their facilities on celestial bodies seems to have made such a stipulation desirable¹⁷. Therefore, if the launching State of a lunar space station feels that sufficient notice was not given or the manner of visit may produce damage, it can deny visitation rights to any space object.

Art. XII of the Outer Space Treaty that was drafted considering the concerns of space actors expressed in the United Nations. As per observations of US Ambassador Goldberg and also by the Soviet representative at United Nations, a launching State has the right to deny access to its space object to representatives of another launching State. Furthermore, a launching State is *not bound* by the *principle of reciprocity* in case where permission has not been granted to it by another launching State on a previous occasion.

Docking and Berthing of a space object may be refused by the State of registry if the conditions of Article XII of the Outer Space Treaty are not met.

VI. Right of Assistance Due to Distress

In the exploration and use of outer space, it is essential that, States Parties to the Treaty shall be guided by the principles of co-operation and mutual assistance and shall conduct all their activities in outer space, including activities on celestial bodies, with due regard for the corresponding interests of other States. The question arises if a launching State has the obligation to give assistance to persons of other State that are under a distress situation.

The notion of 'province of all mankind' brings the lead provision of the Outer Space Treaty in line with the legal regulation of human activities in other common spaces, such as activities on the High Seas, the Deep Sea bed and the Antarctic.¹⁸ The High Seas clearly provides for a model which is relevant for the Outer Space. The similarities in legal principles include that both domains are free from control of a territorial sovereignty¹⁹ and are the common heritage of mankind, to be used for peaceful purposes.²⁰ Hence, laws governing the High Seas may, by analogy²¹ be used to determine as a relevant standard to offer parallels.²² As per the Laws of the High Seas, a ship may deny aid to another

17 C. Cmustusl, *Tim International Law of Outer Space* 263-300 (1966).

18 *Cologne Commentary on Space Law* by S. Hobe Volume 1.

19 *Convention on the High Seas*, 1958, 450 U.N.T.S. 82, art. 2 [Hereinafter *High Seas Convention*]; *United Nations Convention on the Law of the Sea*, 1982, 21 I.L.M. 1261, art. 89 [Hereinafter *UNCLOS*]; art 1, *Outer Space Treaty*.

20 *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, *entered into force* Oct. 10, 1967, art. 1.

21 *Space Law* By Gyula Gal Oceana Publications, Inc.-Dobbs Ferry, N.Y. U.S.A., 1969.

22 *Space Law* By Gyula Gal Oceana Publications, Inc.-Dobbs Ferry, N.Y. U.S.A., 1969.

ship in 'distress' if its own safety is compromised. The right to refuse ships in distress is said to be recognized in the London Salvage Convention of 1989²³, the European Directives on the Port State Control²⁴ and Traffic Monitoring²⁵ and the Bonn Agreement Counter Pollution Manual²⁶.

It is essential to note what can be termed as a condition of distress. 'Distress' has not been defined but has been understood to mean a situation where an unavoidable decision has been made²⁷.

In space activities, a situation of distress arises when astronauts without suffering an accident (yet) are still in trouble and in continuous threat of an accident to occur.²⁸ Therefore, during times of distress it would be logically very important to allow a spacecraft to dock in the closest ports to the place of distress.

Nevertheless, the principle of assistance due to distress is not a peremptory norm in International Law. In Sea Law the docking of ships even during times of distress is dependent upon conditions where the State whose territory the ship wants to dock is willing to permit docking if there are any chances of contamination to its port. Reference has been made to the basic right of self-protection of States under international law. It can be argued *a fortiori* that if a coastal State is allowed to take action on the high seas to prevent environmental pollution – for example by towing a tanker away or setting it on fire – it may most certainly refuse a ship of this sort to entry its ports.

The theory that coastal States or port authorities have a clear-cut right to refuse ships in distress and that in consequence there is no right of access whatsoever

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- 23 Art. 9 provides under the heading "Rights of Coastal States": "Nothing in this Convention shall affect the right of the coastal State concerned to take measures in accordance with generally recognized principles of international law to protect its coastline or related interests from pollution or the threat of pollution following upon a maritime casualty or acts relating to such a casualty which may reasonably be expected to result in major harmful consequences, including the right of a coastal state to give directions in relation to salvage operations".
- 24 See in particular Art. 11.6 of the Council Directive 95/21/Ec of 19 June 1995 Concerning the Enforcement, in Respect of Shipping Using Community Ports and Sailing in the Waters under the Jurisdiction of the Member States, of International Standards for Ship Safety, Pollution Prevention and Shipboard Living and Working Conditions (Port State Control), Oj L 157, 7 July 1995, 1 (as Amended).
- 25 Directive 2002/59/Ec of the European Parliament and the Council of 27 June 2002 Establishing a Community Vessel Traffic Monitoring and Information System and Repealing Council Directive 93/75/Eec, Oj L 208, 5 August 2002, 10. For more about the Traffic Monitoring Directive, see below Item 2.4.
- 26 Interim Chapter 26, that contains i.a. the following passage: "However, at present there exists no binding obligation on the part of a contracting party to offer pre-defined places of refuge or safe havens".
- 27 Oppenheim International Law, Volume-1.
- 28 Supra viii.

is supported only by a very small minority of international law specialists.²⁹ However, the repeated refusals mean that the general practice of States (*usus*) has changed and the conviction that there is a legal duty to grant access (*opinion juris*) has been abandoned by States. Furthermore it has been asserted that the old customary law right of access was based solely in the desire to save lives and was therefore motivated by purely humanitarian considerations, which are irrelevant when it is a matter of protecting ships, cargoes, and commercial interests.

There have been few landmark incidents in sea activities of States refusing a docking or refusing access to foreign ships to enter territorial waters. Some examples are: The Prestige Oil Ship Case³⁰, Esperanza Case, the Tampa Case and the Castor Incident.

In the Esperanza Case a ship was refused docking at the US port on the ground of security risk³¹.

In the Tampa Case, the Government of Australia refused permission to the Norwegian cargo vessel *MV Tampa* to enter the territorial sea, to prevent the entrance of asylum-seekers that were aboard the ship³². The Australian Federal Court held that the right to determine who enters the mainland is crucial to the sovereignty of the nation.³³

In the Castor incident³⁴ where a Spanish ship in distress was off the coast of Gibraltar, it was implicitly observed that coastal States, in this case UK, should not be forced to put themselves at risk by accepting allegedly substandard ships, even if those ships are in distress³⁵. Spain even allegedly feared that the grinding metal from the crack on the ship's deck would create sparks that might cause the ship's cargo to ignite.³⁶ These cases affirm State practice in this regard where many States have refused to allow ships, some in distress, to dock or enter territorial waters.

So far there have not been situations of distress in outer space in which one launching State has denied assistance to persons of another, by refusing the docking of space objects. Nevertheless, State practice in sea activities can serve

29 Somers, E., *Inleiding tot het Internationaal Zeerecht*, Antwerp, Kluwer, 1997, 35, No. 26.

30 Oil Spill Intelligence Report, *Tanker Breaks up in Storm; Leaks oil off Spanish Coast: Impacts Wildlife*, Vol XXV No. 47, November 21, 2002.

31 Esperanza Case at <www.greenpeace.org.uk/forests/esperanza-refused-entry-to-us-port>.

32 *Ruddock v Vadarlis* [2001] FCA 1329 127.

33 *Ibid.*

34 Donald Urquhart, *Outcast Castor's 40-day Ordeal Close to End*, BUS. TIMES (Singapore), Feb. 20, 2001, at 1.

35 See Andrew Spurrier, *France Rina Hits Back at Official Erika Disaster Report*, LLOYD'S LIST (London), Dec. 19, 2000, at 3; Sandra Speares, *Malta Defends Decision to Deny Castor Safe Haven*, LLOYD'S LIST (London), June 7, 2001, at 3; Jean-Pierre Dobler, *Areas of Refuge Must be Decided*.

36 See David Hughes, *Priorities Must be Identified When Handling Casualties*, BUS. TIMES (Singapore), Jan. 15, 2001, Shipping Times, at 2.

as precedent that may be applied to space activities, should a distress situation occur.

It is thereby contended, that a launching State may be given a statutory right to deny assistance, by docking, in cases where the safety of its own space object and persons on-board are at risk.

VII. Conclusion

All space faring nations have solemnly declared that the use and exploration of outer space must be guided by certain principles, one which is that:

In the exploration and use of outer space, States shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space with due regard for the corresponding interests of other States. If a State has reason to believe that an outer space activity or experiment planned by it or its nationals would cause potentially harmful interference with activities of other States in the peaceful exploration and use of outer space, it shall undertake appropriate international consultations before proceeding with any such activity or experiment.³⁷

To perform its responsibility a launching State must exercise a certain degree of ‘control’ over its space object. This ‘control’ may sometimes mean denying access to its space object in circumstances where harm may be caused to the space object and to the personnel. As the ‘jurisdiction’ and ‘control’ of a space object rests with the launching State, it has a right to allow or deny docking and berthing to the manned space object even during times of distress. It has been observed that in sea activities, docking has been denied to certain ships due to the fear that in saving them, the safety of another ship may be compromised, establishing the fact that there are exceptions to Duty “*to Render all Possible Assistance*”³⁸. According to Article XII of the Outer Space Treaty, to exercise the Principle of Reciprocity³⁹ the conditions of ‘*maximum precaution*’ and ‘*advance notice*’ must be met. However, these terms have ambiguous, unexplored definitions, wherein until a consensus is reached between all the member nations of the Outer Space Treaty to understand the practicality of such situations, this principle should not be applied. It is thereby essential to note that exceptions should be granted to launching States in cases where the security and safety of its own space object is compromised at the cost of access to the space object.

37 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.

38 Duty “*to Render all Possible Assistance*” - Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* Oct. 10, 1967, art. 5.

39 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* Oct. 10, 1967, art. 12.