

2016 MANFRED LACHS SPACE LAW MOOT COURT COMPETITION

Team No. 1

IN THE INTERNATIONAL COURT OF JUSTICE

AT THE

PEACE PALACE, THE HAGUE



CASE CONCERNING SPACE DEBRIS, COMMERCIAL SPACEFLIGHT SERVICES AND LIABILITY

THE REPUBLIC OF BANCHÉ

v.

THE REPUBLIC OF RASTALIA

ON SUBMISSION TO THE

INTERNATIONAL COURT OF JUSTICE

MEMORIAL FOR THE RESPONDENT

THE REPUBLIC OF RASTALIA

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LIST OF ABBREVIATIONS

Agreed Facts	Facts of the present case, as agreed by the Parties
ARRA	Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space
ARSIWA	Articles on Responsibility of States for Internationally Wrongful Acts
CBDR	Common But Differentiated Responsibility
Clarification	Response to Requests for Clarification of the 2016 Manfred Lachs Moot Court Competition
Compromis	Special Agreement Between the Republic of Banché and the Republic of Rastalia
CW	Continuous Wave
GODA	Global-Orbiting Deflection Apparatus
I.C.J.	International Court of Justice
ILC	International Law Commission

LEO	Low Earth Orbit
LIAB	Convention on International Liability for Damage Caused by Space Objects
OST	Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies
P.C.I.J.	Permanent Court of International Justice
U.N. Charter	Charter of the United Nations
UNCOPUOS	United Nations Committee on the Peaceful Uses of Outer Space
U.N.	United Nations
USSR	Union of Soviet Socialist Republics
v.	Versus
VCLT	Vienna Convention on the Law of Treaties
WMD	Weapon of Mass Destruction

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QUESTIONS PRESENTED

- a. Whether Rastalia acted in conformity with international law by refusing to return Couleur and Commander Borsch to Banché and refusing the earlier return of Ms. Paula to Banché,
 - b. Whether Rastalia is not liable under international law for the damage to Couleur,
 - c. Whether Banché is liable under international law for the costs of recovery of Couleur, the rescue and medical expenses for commander Borsch, the costs of the evacuation of Lake Taipo, and the deaths of both Mr. Thomas and Mr. Barton;
- and to dismiss all claims to the contrary.

STATEMENT OF AGREED FACTS

1. The Republic of Banché is a highly developed country surrounded by sea. It has a long history and technical expertise in space exploration and exploitation. Its state-owned space station, Mira, placed in a north-south polar orbit, has been operating for nearly ten years since October 1st, 2020. On June 1st, 2021, Banché initiated a long-term national program “Open the Gateway for Mankind” to encourage its domestic private enterprises to provide private commercial spaceflight services in the international market.
2. The Republic of Rastalia is a landlocked state with natural resources. Its southern plain area is densely-populated. Its north is mountainous and sparsely populated. A developing country with a high annual GDP growth rate, Rastalia set up a national plan for space entitled “Beyond the Earth’s Surface” in early 2024. The plan’s initial goals were to focus on making extensive use of satellite technologies for various purposes and expanding the satellite market.
3. Banché and Rastalia are neighboring countries with an 800-kilometer contiguously shared border. Though historically, dating back centuries, there have been hostilities because of border issues, their relationship has improved by a series of cooperative projects in various fields during recent years. They are both Member States of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and actively take part in the discussions of COPUOS working groups concerning the space legal and technical issues.
4. Banché considers Rastalia as a significant rival in the commercial space marketplace and maintains strict export controls over high technologies against Rastalia. It considers Rastalia as a potential national security threat. The Banché Congress enacted the Export Control Act on February 1st, 2026, which stipulated strict national license controls over nuclear materials, nuclear reactors and laser technology. In addition, a special order was issued to prohibit governmental space cooperation between the two states, i.e. the Banché

government shall not cooperate in any way with Rastalia or Rastalia-owned companies in any space program.

5. Jardon Tech. Co. Ltd. (“Jardon”), a satellite company, was founded and registered in Rastalia in 2023. Soon after Rastalia initiated the Satellite Commercialization Development (SCD) project in 2026, Jardon received the authorization certificate to conduct commercial launching services from Rastalian government facilities pursuant to its National Space Commercial Launching Act (2016). Jardon became the major enterprise appointed by the Rastalian government to undertake the SCD project.
6. On January 20th, 2027, as part of the SCD project, Rastalia announced plans to launch three satellites (Lavotto-series) within three years. The main functions of the satellites developed as part of this project are commercial telecommunications, disaster monitoring, and medical data relaying services for rural and remote areas where conventional communications or other services are not available.
7. On January 15th, 2028, Jardon launched the first scientific satellite (Lavotto-1) from Rastalian territory. This satellite was placed in low Earth orbit (LEO), an elliptical orbit with a nominal average altitude of 600 kilometers. Lavotto-1 had an in-orbit dimension of 3.25 meters (10.6 feet) × 0.6 meter (2 feet) × 0.3 meter (1 foot) and a mass of 950 kilograms. The major structural material of Lavotto-1 was the latest composite research achievement of Jardon. Lavotto-1 marked the first operational use of the material in outer space. For end-of-life mission planning purposes, Rastalia, being farsighted, equipped the satellite with a capability either to de-orbit or to be maneuvered to a so-called “parking orbit”, a temporary orbit used during the launch of a satellite or other space probe. Rastalia registered the “Lavotto-1” satellite both in a national register within one month after the launch and with the UN two months after the launch.
8. On May 18th, 2028, four months after achieving full operational capability, Lavotto-1 suddenly ceased most of its functions (including the de-orbit capability) because of a rare

solar windstorm. Jardon immediately reported this failure to the Rastalian government and predicted that it would optimize the remaining possibility to maneuver the barely functional satellite to a higher parking orbit. Rastalia's State Department spokesman held a press conference to announce this incident to the international community and indicated that Jardon was endeavoring to repair the propulsion system of the satellite to boost it into an orbit with the aim of eliminating the threat to the other space traffic, and protect the space environment by reducing risks of on-orbit collision.

9. On May 25th, 2028, the Rastalian government announced that Jardon, under these exceptional circumstances, was unable to boost Lavotto-1 towards the expected parking orbit because the satellite power and thermal systems had failed during the orbit-altering maneuver because they had already been damaged by the rare solar storm. After Jardon's doomed to fail attempt to alter Lavotto-1's orbit, Jardon reported to Rastalia that the uncontrolled Lavotto-1 would pose a collision hazard to the Mira Space Station, which was at the same or slightly lower altitude to the Lavotto-1. Rastalia confirmed these findings and held a press conference where it reported that the collision probability would be greater if there was an attempt to use another Rastalian spacecraft to capture the satellite and de-orbit it because the Lavotto-1 became too fragile, after the solar storm, for such a mission.
10. The country of Mosolia describes itself as a permanently neutral state. It is highly advanced in space technologies. Its Moso Space Traffic Monitoring and Awareness Center (Moso Center) kept close track of Lavotto-1 before and after the malfunction. Mosolia does not have diplomatic relations with Rastalia. On May 28th, 2028, the Moso Center certified that it was the rare solar windstorm that led to the malfunction of Lavotto-1 and confirmed Rastalia's own report of the spacecraft's collision risks to the Mira Space Station to the international community. With the several announcements from Rastalia and Moso, Banché set up its own panel to investigate the potential hazards and collision

- threats to its space station; the panel reported its findings on June 15th, 2028, which denoted that the conjunction of Lavotto-1's and Mira's orbits was within 2 kilometers in LEO and there was a high probability that Mira would suffer a collision with Lavotto-1.
11. During the next several weeks, Rastalia and Banché conducted discussions through diplomatic channels. On July 30th, 2028, Rastalia, having exhausted all possible means, announced that "Rastalia is unable to resolve the malfunction of Lavotto-1 and declares that the spacecraft is a derelict object." Later that day the Banché defense minister held a press conference and announced "The Banché government considers the Lavotto-1 satellite to be abandoned and Banché will physically remove Lavotto-1 from its current orbit with the latest advanced robotic seizing and removing technologies, which will be implemented as part of its upcoming manned space flight."
 12. Solare Travel Services Ltd. ("Solare"), a company registered in Mosolia, has its principal office in Banché. Solare successfully qualified the spacecraft Couleur for commercial spaceflight services in early February 2025 after trial flights launched from the Banché spaceport. On July 1st, 2028, Solare shortlisted two persons through selection (a Mosolian citizen named Ms. Erin Paula and a Rastalian citizen named Mr. Andrew James) among a number of applicants for its debut launch, with a Banché astronaut named Mr. Mario Borsch as Couleur's commander.
 13. Ms. Paula is a well-known Mosolian scientist, who won its National Science and Technology Award in 2026. The Mosolian government provided full funding for her to take Couleur's first space trip. Mr. James is the CEO of Rastalia's largest oil company "Oxpeck" and he paid for the space ride himself; Couleur's commander, Mr. Borsch, formerly worked in the Ministry of National Defense of Banché during 2016-2021, serving as chief program director and engineer in charge of Banché's Anti-satellite Weapons (ASAT) project.

14. On August 1st, 2028, the Banché government signed a contract with Solare, which stipulated that Solare's spacecraft Couleur take up the job to remove Lavotto-1 from its current orbit using robotic seizing and removing technologies to be provided by the Banché Space Agency. Solare was also contracted to provide for the launching services of two Banché satellites in 2029.
15. On January 1st, 2029, Couleur was launched from the Banché spaceport and rendezvoused with Lavotto-1. On January 3rd, 2029, Couleur's commander, Mr. Borsch, started to operate the satellite removing system which consisted of a grappling arm. However, as Rastalia had warned, the grappling process resulted to Lavotto-1's damage; the composite structural material did not withstand the grappling and the satellite broke into two segments. Only one of the segments could be captured by Couleur's grappling arm and de-orbited. The other piece of Lavotto-1 remained in orbit, and posed catastrophic collision risks not only to Mira but also to Couleur and to other space objects in or intersecting the same orbit. After the failure of Banché's mission, on the same day, after consulting the flight control center on the ground, Commander Borsch decided to activate the Global-Orbiting Deflection Apparatus (GODA) Laser Satellite Removal System that the Banché Ministry of National Defense had equipped Couleur with before its launch. As designed for use by Couleur, the laser was supposed to cause an adjustment in the orbit of a target satellite, which would increase drag and ultimately result in the spacecraft re-entering the atmosphere and burning up.
16. On January 4th, 2029, GODA fired a continuous beam on the remaining piece of Lavotto1. Consequently, station keeping thruster propellant still on-board Lavotto-1 exploded which resulted in a cascade of debris fragments. Several minutes later, Couleur was struck by a debris fragment, which damaged the normal functioning of Couleur's communications and flight control systems, leaving only limited communications ability

and reduced maneuverability of the spacecraft. Commander Borsch decided to make an urgent landing at the Banché spaceport with the permission from Solare.

17. The Couleur, due to the damage to its key communications apparatus, did not achieve the correct orientation and failed to land at the Banché spaceport. Commander Borsch decided to land in the territory of Rastalia and was able to successfully touch down beside Lake Taipo, a major Rastalian tourist destination in the densely-populated south. During the landing process, a piece of spacecraft shell detached and hit a campsite near Lake Taipo, completely destroying the buildings near the lake and causing the death of a Rastalian, Mr. Dave Thomas, who was on holiday with his daughter Wendy. On January 6th, 2029, Banché issued a diplomatic note to Rastalia and formally demanded the immediate return of the Couleur spacecraft, Commander Borsch, and Ms. Paula.
18. A Rastalian Rescue and Recovery Team located and reached the landing site of Couleur within 18 hours after its de-orbit. In the interim, the Rastalian Foreign Minister issued a formal statement that the Rastalian Government strongly condemned the GODA Laser as a weapon of mass destruction, and its belief that such device must have been powered by nuclear materials. Therefore, the Rastalian Government ordered the evacuation of all persons within a 300 kilometer radius of Lake Taipo. The rescue and recovery team found that although Couleur's passenger cabin was relatively intact, the remainder of the craft was severely damaged. The three persons in the cabin were successfully rescued and sent to the hospital for medical treatment. The Couleur spacecraft was tested and no nuclear radiation leak was detected. One month later, the evacuation order for Lake Taipo was lifted.
19. On January 11th, 2029, in response to Banché's diplomatic note, the Rastalian Foreign Ministry spokesman announced that Mr. James would be sent to the Rastalian National Hospital for further health recovery. She also announced that the unscheduled landing also caused the death of another Rastalian citizen, Mr. Barton, who was under the flight

path and suffered a fatal heart attack because he witnessed the Couleur pass overhead. In addition, she stated that the Couleur GODA Laser system was an illegal weapon, and that Rastalia had the right to fully examine the spacecraft no matter how long it took to complete that process. Further, Commander Borsch would be held pending criminal charges, and Ms. Paula would be returned to Banché after Banché reimbursed Rastalia for the costs and damages incurred as a result of Couleur's illegal acts, including costs of recovery of the spacecraft, rescue costs and medical expenses for the personnel of the spacecraft, the costs of the evacuation of Lake Taipo, and the deaths of two Rastalians, including both Mr. Thomas and Mr. Barton.

20. On January 12th, 2029, the Mosolian press published a declaration signed by Commander Borsch, which was leaked to the Mosolian press. In the declaration, Commander Borsch asked for political asylum in Rastalia and refused to be sent back to Banché, but did not give any reasons. Banché insisted on the return of Commander Borsch, and claimed that he was being held illegally for his knowledge of sensitive technologies and information acquired during his service in the Banché Ministry of National Defense.
21. On January 20th, 2029, the Banché President made an announcement which condemned Rastalia's detention of Couleur's commander as a violation of international law, and she demanded his return without any precondition.
22. On February 10th, 2029, Mosolia's domestic privately owned newspaper International Reference News Observation (IRNO), peddled that a Banché investigation concluded that after Couleur's landing, Ms. Megan, a representative of the Rastalian National Defense Department, negotiated with Commander Borsch, and promised to drop all criminal investigations and to provide him with a key position in the Rastalian Space Research Institute (RSRI). Furthermore, it was bruited by the IRNO that Commander Borsch accepted the offer and signed an internal confidential agreement with RSRI, which listed the core space-related technologies he was to develop for Rastalia's National Defense

Department, including nuclear power systems, spacecraft navigation systems and laser ASAT systems.

23. After several months, following diplomatic negotiations, Rastalia released Ms. Paula to Banché. Negotiations for the return of Commander Borsch and the Couleur spacecraft were unsuccessful, and both remain in Rastalia.
24. Banché initiated these proceedings by Application to the International Court of Justice. Rastalia accepted the jurisdiction of the Court, and the parties submitted this Agreed Statement of Facts. There is no issue of jurisdiction before the Court.

Clarifications

1. Jardon Tech. Co. Ltd. and Solare Travel Services Ltd. are private companies.
2. Mira space station and Couleur were registered strictly in compliance with the Registration Convention.
3. Mira space station is manned.
4. The decision to activate the GODA system was taken without consultation of the Rastalian government; the Rastalian government was unaware of the existence of such device prior to its use during the recovery mission.
5. The special order (para. 4) which was issued by Banché is part of the national legislation.
6. Banché is the State operating or controlling the flight control center. (para. 15)
7. Mr. Thomas' death was caused by the collapse of the building.

SUMMARY OF ARGUMENTS

A. RASTALIA ACTED IN CONFORMITY WITH INTERNATIONAL LAW BY REFUSING TO RETURN COULEUR AND COMMANDER BORSCH TO BANCHÉ AND REFUSING THE EARLIER RETURN OF MS. PAULA TO BANCHÉ

Rastalia refused to return Couleur to Banché taking into account its hazardous nature under the ARRA. Rastalia holds Commander Borsch since Couleur's landing was intended and the Respondent exercises jurisdiction over him on the grounds of territoriality. Rastalia did not violate international law regarding the return of Ms. Paula considering that she is a spaceflight participant and that she was eventually returned in due time.

B. RASTALIA IS NOT LIABLE UNDER INTERNATIONAL LAW FOR THE DAMAGE TO COULEUR

The damage to Couleur was not caused by Lavotto-1. Rastalia complied with its legal duties deriving from the OST, customary environmental law and the UNCOPUOS Guidelines on debris mitigation. It, further, exhausted all appropriate means to mitigate the situation acting under *force majeure*. Thereby, Rastalia's conduct was not faulty. Additionally, Rastalia is not responsible for Couleur's damage.

C. BANCHÉ IS LIABLE UNDER INTERNATIONAL LAW FOR THE COSTS OF RECOVERY TO COULEUR, THE RESCUE AND MEDICAL EXPENSES FOR COMMANDER BORSCH, THE COSTS OF EVACUATION OF LAKE TAIPO, AND THE COSTS OF THE DEATHS OF BOTH MR. THOMAS AND MR. BARTON

Banché is liable under the ARRA for the costs of Couleur's recovery, since recovery is a necessary pre-condition for return. In any case, state practice has proven that request is not an indispensable prerequisite for the defrayment of recovery costs by the launching authority. Banché bears liability for Commander Borsch's medical expenses since Rastalia's relevant economic loss constitutes damage under Article VII OST. Banché is liable for the costs of the evacuation of Lake Taipo under the precautionary principle as well as the OST and liable for the deaths of Mr. Thomas and Mr. Barton under LIAB.

ARGUMENT

A) RASTALIA ACTED IN CONFORMITY WITH INTERNATIONAL LAW BY REFUSING TO RETURN COULEUR AND COMMANDER BORSCH TO BANCHÉ AND REFUSING THE EARLIER RETURN OF MS. PAULA TO BANCHÉ

I. Rastalia complied with Article 5 of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (hereinafter ARRA)¹ by refusing to return Couleur to Banché

Rastalia submits that Couleur's withholding falls within Article 5§4 ARRA. According to said Article, a State that discovers a space object in territory under its jurisdiction (1) and reasonably believes that it has "hazardous" or "deleterious" nature (2) may notify the launching authority (3) and refuse to return it.

1. The space object, Couleur, is discovered in Rastalia

Space objects are artificial manmade objects attempted to be brought into space.² When they are launched with humans on board, they constitute "spacecraft".³ *In casu*, Couleur is a spacecraft launched into outer space from Banché's spaceport.⁴ Thereby, it is a space object.

¹ Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, *entered into force* Dec. 3, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119.

² Frans G. von der Dunk, *International Space Law*, in HANDBOOK OF SPACE LAW, 87 (Frans G. von der Dunk & Fabio Tronchetti eds. 2015).

³ FRANCIS LYALL, PAUL B. LARSEN, *SPACE LAW: A TREATISE*, 98 (2009).

⁴ *Compromis*, paras. 12, 15.

The application of Article 5§4 ARRA requires the space object's discovery in territory under the jurisdiction of the Contracting Party.⁵ Couleur landed beside Lake Taipo within Rastalian territory.⁶

2. Couleur is of hazardous and deleterious nature because of GODA laser on board

“Hazardous” denotes *risky* and *dangerous* whereas “deleterious” *poisonous* or *physically harmful*.⁷ Subsidiarily, the International Law Commission (hereinafter ILC), in the Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, has defined hazardous activities as entailing a “risk of causing significant [...] detrimental effect on human health or property”,⁸ including perils for environmental contamination.⁹

Regarding lasers, they are devices of high accuracy emitting directed energy and can be powered *via* nuclear pumping. Lasers can operate in a continuous wave (CW) mode using a continuous light source and emitting light steadily.¹⁰ A high power CW Nuclear Pumped Laser has significant destructive capability¹¹ since its nuclear detonation could generate an electromagnetic pulse destroying unprotected satellites.

⁵ Paul G. Dembling & Daniel M. Arons, *The Treaty on Rescue and Return of Astronauts and Space Objects*, 9 WM. & MARY L. REV. 630, 656-657 (1968).

⁶ Compromis, paras. 17,18.

⁷ BLACK'S LAW DICTIONARY 451, 491 (9th ed. 2009).

⁸ U.N. GAOR, 56th Session, Supp. No. 10, U.N. Doc. A/56/10 (2001).

⁹ Vladimir Kopal, *Problems Arising from Interpretation of Agreement on Rescue of Astronauts, Return of Astronauts and Return of Objects Launched into Outer Space*, 11 PROC ON L. OUTER SPACE 98, 103 (1968).

¹⁰ BENGT ANDERBERG & MYRON L. WOLBARSH, LASER WEAPONS: THE DAWN OF A NEW MILITARY AGE, 27-28, 33, 49 (1992).

¹¹ Mark A. Prelas, Matthew L. Watermann, Denis A. Wisniewski, Janese A. Neher & Charles L. Weaver III, *A Review of Nuclear Pumped Lasers and Applications (Asteroid Deflection)*, 121st, ASEE 2014 ANNUAL CONFERENCE, 1; Guillermo Javier Duberti, *The Legality of Space Weapons in International Law*, 54 PROC ON L. OUTER SPACE 80, 82 (2011).

However, a weapon's capability should be examined *in concreto*, based on its destructive ability¹² and the circumstances under which it is used.¹³ A nuclear-pumped laser¹³ deriving its energy from nuclear explosion presents a large scale destructive effect and thus could potentially form a Weapon of Mass Destruction (hereinafter WMD). Particularly, space WMDs may produce a "cascade of debris fragments",¹⁴ posing serious threats to human lives and property, both in outer space and on Earth. Nuclear lasers are of hazardous or deleterious nature, given their capacity for severe harm.

Article IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter OST)¹⁵ forbids the deployment of "nuclear weapons or any other kind of weapons of mass destruction" in outer space.

One may argue that the mere transit of objects carrying WMDs in outer space is exempted from the general prohibition of WMDs' deployment.¹⁶ However, this is not the case, since Couleur did not move along a ballistic trajectory, and rendezvoused Lavotto-1 in orbit.¹⁷

¹² S.K. Agrawala, *An approach to Arms Control in Outer Space*, 45 ZAÖVR 497, 505 (1985).

¹³ Stephen Gorove, *Arms Control in Space: Issues and Alternatives*, 33 ZLW 191, 195-196 (1984).

¹³ David Williamson, Jr., *Space Weaponry and Its Implications*, 16 U. TOL. L. REV. 167, 171 (1984-1985).

¹⁴ Major Robert A. Ramey, *Armed Conflict on the Final Frontier: The Law of War in Space*, 48 A.F. L. REV. 1,132 (2000).

¹⁵ 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, 18 U.S.T. 2410, 610 U.N.T.S. 205.

¹⁶ David A. Koplow, *Asat-ification: Customary International Law and the Regulation of Anti-Satellite Weapons*, 30 MICH. J. INT'L. 1187, 1198 (2008-2009).

¹⁷ Compromis, para. 15.

According to the Compromis, Rastalia has serious grounds to believe that GODA is a nuclear CW laser on Couleur, given that:

- (1) Banché has excessive access to nuclear technology;¹⁸
- (2) Banché has an aggressive policy *via* its legislation towards Rastalia;¹⁹
- (3) Banché activated GODA without consulting Rastalia and without prior notification for its existence;²⁰
- (4) GODA laser as a directed energy CW laser²¹ is conceivably nuclear pumped;

Therefore, the Respondent's submission that GODA was fueled by nuclear materials posing a nuclear contamination danger on Rastalia is valid. Hence, the "hazardous" and "deleterious" GODA constitutes an illegal weapon under OST.

3. Rastalia informed Banché for Couleur's nature

In consonance with Article 5§4 ARRA, the territorial State may notify the launching authority for the "hazardous" or "deleterious" nature of the space object.

"Notification" is either upon the State's discretion²² or an obligation requiring no formality and promptness.²³

In the present case, the Rastalian foreign Minister issued a formal statement in less than 18 hours from Couleur's landing and Banché was notified by *note verbale*²⁴ for its nature. Article 5§4 ARRA is applicable, since a space object's recovery containing a nuclear WMD

¹⁸ Compromis, para. 4.

¹⁹ *Ibid.*, Clarification no. 19.

²⁰ Compromis, para. 11, Clarification no. 14.

²¹ Compromis, footnote 2.

²² *supra* note 3 at 101.

²³ Stephen Gorove, *The Recovery and Return of Objects Launched into Outer Space: A Legal Analysis and Interpretation*, 4 INT'L L. 682, 684 (1969-1970).

²⁴ Compromis, paras. 18, 19.

requires careful examination. Concluding, Rastalia respected international law by refusing Couleur's return.

II. Rastalia's refusal to return Commander Borsch to Banché is in conformity with international law

Rastalia is not obligated under Article 4 ARRA to return Commander Borsch to Banché since not all conditions of said Article are met (1). If the Court decides that Article 4 is applicable, Rastalia submits that Borsch is not returned because the Respondent exercises territorial jurisdiction (2).

1. Couleur's landing was neither due to accident, distress or emergency nor was it unintended

Article 4 ARRA obliges States to safely and promptly return a spacecraft's personnel landed in territory under their jurisdiction to representatives of the launching authority in cases of accident (a), distress, emergency (b) or unintended landing (c). Article 4 does not apply *in casu* since Couleur's landing was intended.

a. Couleur did not experience an accident

"Accident" is a random event without deliberate design.²⁵ It does neither occur in the usual course of "events" nor could it "be reasonably anticipated".²⁶ In air law,²⁷ "accident" refers to events that cause physical damage to vehicles involved and consequently leads to injury or

²⁵ J. William Doolittle, *Man in Space: The Rescue and Return of Downed Astronauts*, 9 U.S. A.F. JAG L. REV. 4, 7 (1967).

²⁶ BLACK'S LAW DICTIONARY 16.

²⁷ Annex 13 to the 1944 Chicago Convention: Aircraft Accident and Incident Investigation, 10th edition, incorporating Amendments 1-14, July 2010.

death of persons aboard. In the present case, Mr. Borsch's actions, interfering with Lavotto-1²⁸ were highly risky and their results are considered expected.

b. Couleur was not in distress or emergency

“Distress” refers to extremely perilous situations endangering the lives of persons²⁹ and causing grave and dire necessity.³⁰ “Emergency”, on the other hand, is a “serious situation unexpectedly arising and demanding immediate action”.³¹

Both the 1979 Hamburg International Convention on Maritime Search and Rescue³² and Annex 12 of the 1944 Chicago Convention on International Civil Aviation indicate that distress exists when “there is a reasonable certainty that a person or [...] other craft is threatened by grave and imminent danger and requires immediate assistance”.³³

In the case at hand, communication and maneuverability systems were still functioning, even at a reduced and intermittent pace.³⁴ No grave necessity existed so that the very operation of Couleur to cease and the persons to be at stake.

c. Couleur's landing was intended

²⁸ Compromis, para. 9.

²⁹ James Crawford & Simon Olleson, *The Character and Forms of International Responsibility*, in INTERNATIONAL LAW, 466 (Malcolm D. Evans, ed., 2010); Alfred-Maurice de Zayas, *Ships in Distress*, in 11 ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW (LAW OF THE SEA, AIR AND SPACE), 287 (Rudolf Bernhardt ed. 1989).

³⁰ ANTHONY P. MORRISON, PLACES OF REFUGE FOR SHIPS IN DISTRESS: PROBLEMS AND METHODS OF RESOLUTION, 13-14 (2012).

³¹ Irmgard Marboe, Julia Neumann & Kai-Uwe Schrogl, *Article 1*, II COLOGNE COMMENTARY ON SPACE LAW 46 (Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl eds. 2013); BLACK'S LAW DICTIONARY 277.

³² International Convention on Maritime Search and Rescue, *entered into force* Jun. 22, 1985, 1405 U.N.T.S. 97.

³³ Annex 12 to the 1944 Chicago Convention: Search and Rescue, 8th edition, incorporating Amendments 1-17, July 2004.

³⁴ Compromis, para. 16.

In absence of “accident”, “distress” or “emergency”, the landing is considered intentional. The selection of the landing site *per se* due to a navigational error³⁵ does not constitute the proper criterion for the landing’s characterization.

Couleur landed after Commander Borsch’s decision.³⁶ Despite the spacecraft’s limited communication ability,³⁷ this landing was not a navigational error’s result, but it was merely based on personal evaluation on the existing alternative solutions.³⁸ Additionally, the Respondent provides that:

- (1) Banché’s 2000 kilometer coastline presents unlimited possibility for landing at sea³⁹ (as shown in Orion’s Landing Choice⁴⁰);
- (2) Mr. Borsch could land Couleur on Banché’s territory, on Lake Taipo’s surface⁴¹ or in northern Rastalia which is mountainous and sparsely populated⁴² to prevent a collision with humans or property. For instance, Rosetta spacecraft launched by ESA made a touchdown on 67P/ Churyumov- Gerasimenko comet despite its mountainous nature.⁴³

Therefore, Couleur’s landing resulted from Borsch’s personal choice and thus was intended.

³⁵ Charles A. Riccio, Jr., *Another Step for Mankind – The Agreement on the Rescue of Astronauts and the Return of Objects Launched in Outer Space*, 12 U.S. A.F. JAG L. REV. 142, 146 (1970).

³⁶ Compromis, para. 17.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ Compromis, para. 1.

⁴⁰ <http://www.universetoday.com/12199/water-or-land-the-orion-landing-choice/> [Universe Today].

⁴¹ Compromis, para. 17.

⁴² Compromis, paras. 2, 17.

⁴³ <http://sci.esa.int/rosetta/> [ESA].

2. Rastalia exercises jurisdiction over Borsch on the basis of territoriality

If this High Court finds that Couleur's landing falls within Article 4 ARRA, Rastalia's exercise of criminal jurisdiction over Borsch (a), and its right to grant him asylum (b) prevail its international obligation under Article 4.

a. Rastalia exercises criminal jurisdiction over Borsch

In the *Lotus Case*, the Permanent Court of International Justice decided upon the fundamental character of territorial jurisdiction in criminal matters.⁴⁴ On the basis of national sovereignty, States apply domestic criminal laws to perpetrators of crimes inside their territory.⁴⁵

For astronauts found on territory beyond the launching authority's jurisdiction, no rule of international law excludes them from territorial jurisdiction. Besides, the term "envoys of mankind" detected in Article V OST does not grant astronauts with privileges or functional immunities,⁴⁶ having a moral rather than legal significance.⁴⁷

In the present case, Borsch faces pending criminal charges.⁴⁸ *Ratione loci* Rastalian courts are competent to exercise jurisdiction over him. Therefore, Rastalia's refusal to return Borsch to Banché does not violate international law.

b. Rastalia retains Borsch while examining his request for political asylum

⁴⁴ *SS Lotus (France v Turkey) (Judgment) 1927 P.C.I.J. 20 (ser. A) N° 10 (Sept. 7).*

⁴⁵ ANDRÉ HUET & RENÉE KOERING-JOULIN, *DROIT PÉNAL INTERNATIONAL*, 210 (1994).

⁴⁶ GABRIELLA CATALANO SGROSSO, *INTERNATIONAL SPACE LAW*, 306 (2011); Yan Ling, *Does the Rescue Agreement Apply to Space Tourists*, 54 *PROC. ON L. OUTER SPACE* 192, 193-194 (2011).

⁴⁷ J. Szabo, *Air-Crew and Space-Crew – A Modest Analysis of Analogies from Air and Space Law Rules*, 26 *PROC. ON L. OUTER SPACE* 97, 97 (1983).

⁴⁸ *Compromis*, para. 19.

Asylum is a customary⁴⁹ discretionary form of relief to individuals.⁴⁸ As stated in the *Asylum* Case,⁴⁹ the grant of asylum constitutes a State's protective unilateral and sovereign act without requiring further justification.⁵⁰

However, while applying Article 4 ARRA, a conflict of laws arises between the astronauts' prompt and safe return to the launching authority and the rule of international human rights law (enshrined *inter alia* in Article 14 of the Universal Declaration of Human Rights⁵¹) that recognizes the right to grant asylum.⁵² ARRA's preamble evokes "sentiments of humanity", while its *travaux préparatoires*⁵³ reveal that numerous nations objected Article 4's "precedence over national statutes providing for asylum" and thus the rights of aliens under national law are not impaired by ARRA.⁵⁴ Therefore, ARRA's humanitarian rationale leads to asylum's prevail over the obligation of astronauts' return to the launching authority.⁵⁵

When applying Article 4 ARRA another conflict of laws arises between the exclusive jurisdiction of the territorial State and the launching authority's jurisdiction over the

⁴⁹ Atle Grahl-Madsen, *Asylum, Territorial*, in 8 ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW (HUMAN RIGHTS AND THE INDIVIDUAL IN INTERNATIONAL LAW, INTERNATIONAL ECONOMIC RELATIONS), 45 (Rudolf Bernhardt ed. 1981).

⁵⁰ Marc M. Harrold, *Asylum-Seekers in Outer Space, A Perspective on the Intersection Between International Space Law and U.S. Immigration Law*, 32 J. SPACE L. 15, 21 (2006); *Asylum Case (Colombia v. Peru) (Judgment)* 1950 I.C.J. 274 (Nov. 20).

⁵¹ Universal Declaration of Human Rights, GA Res 217A (III), UNGAOR, 3rd Sess., Supp. No 13, UN Doc A/810 (1948)

⁵² Oswald K. Seneadza, *The Granting of Asylum: A Discretionary Right or Mandatory Right of the State? The Ghanaian Law and Practice in Retrospect*, 4 KNUST LAW JOURNAL 60, 64 (2008); LÉOPOLD PEYREFITTE, *DROIT DE L'ÉSPACE*, 202 (1993).

⁵³ Summary Record of the Eighty Seventh Meeting of the Legal Sub-Committee, Special Session, UN Doc. A/AC. 105/C. 2/SR. 87, 10.

⁵⁴ *supra* note 5 at 653.

⁵⁵ Alexandre-Charles Kiss, *L' Accord sur le Retour et le Sauvetage des Astronautes et la restitution des objets Lancés dans l' espace extra – atmosphérique*, 14 ANNUAIRE FRANÇAIS DE DROIT INTERNATIONAL 736, 740 (1968).

spacecraft's personnel.⁵⁶ When such a clash between competent jurisdictions appears, the personal jurisdiction must yield to the territorial.⁵⁷ This conflict is further resolved in favor of territorial jurisdiction, especially when the landing is intended.⁵⁸ Rastalia, while reviewing Mr. Borsch's claim for political asylum, exercises territorial jurisdiction over him and thereby delays his return to Banché.⁵⁹

Hence, Commander's Borsch retention in Rastalia complies with international law on the basis of pending criminal charges pronounced to him by the territorial State and his request's review for political asylum. Whatsoever, under Article 4 ARRA, the only reasonable obligation would be to "let the astronauts simply go free on their own".⁶⁰ Thus, Rastalia did not breach any obligation given that no duty of physical and active return stems from said Article.

III. Rastalia acted in conformity with international law by refusing the earlier return of Ms. Paula to Banché

As proven above, Article 4 ARRA does not apply in this case, since Couleur's landing was intended. Even if this Court decides otherwise, said Article does not apply because Ms. Paula is not an astronaut or personnel of the spacecraft, but a spaceflight participant (1).

⁵⁶ IMRE ANTHONY CSABAFI, *THE CONCEPT OF STATE JURISDICTION IN INTERNATIONAL SPACE LAW: A STUDY IN THE PROGRESSIVE DEVELOPMENT OF SPACE LAW IN THE UNITED NATIONS*, 118 (1971); V.S. Vereshchetin, *Elaborating the Legal Status of Astronauts*, 7 HASTINGS INT'L & COMP. L. REV. 501, 501-502 (1983-1984).

⁵⁷ S. PRAKASH SINHA, *ASYLUM IN INTERNATIONAL LAW*, 156 (1971).

⁵⁸ Stephen Gorove, *International Protection of Astronauts and Space Objects*, 20 DE PAUL L. REV. 597, 602 (1971).

⁵⁹ *Compromis*, paras. 19, 20.

⁶⁰ Roy S. K. Lee, *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, in *MANUAL ON SPACE LAW VOLUME I*, 69 (Nandasiri Jasentuliyana & Roy S. K. Lee eds. 1979).

Alternatively, even if Article 4 ARRA is to apply, Rastalia returned Ms. Paula to Banché, within the time frame of “promptly” (2).

1. Ms. Paula is a spaceflight participant

On the absence of a definition for the term “astronaut”, several criteria have been set including training, altitude and selection process. Judge Manfred Lachs stated that their mission “justifies the special standing and legal protection afforded to them.”⁶¹ “Personnel”, on the other hand, is a broader term including mission specialists performing certain functions on board.⁶² These terms are distinguished from that of “spaceflight participant”.⁶³ The term “envoys of mankind” in Article V OST excludes from the return obligation any passive participants on a commercial flight.⁶⁴

Ms. Paula is a Mosolian scientist selected among other applicants⁶⁵ for Couleur’s first trip. Her duties on board are not determinant for Couleur’s trip or operation. Thus, Ms. Paula is a spaceflight participant.

Even if Paula is rescued under a *sensu lato* application of Article 4 ARRA for humanitarian reasons,⁶⁶ she is not to be returned in compliance to said Article since return is not an integral

⁶¹ MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAWMAKING*, 68 (20).

⁶² Zhao Yun, *A Legal Regime for Space Tourism: Creating Legal Certainty in Outer Space*, 74 J. AIR L. & COM. 959, 978 (2009).

⁶³ Patrick Collins & Koichi Yonemoto, *Legal and Regulatory Issues for Passenger Space Travel*, 41 PROC. ON L. OUTER SPACE 224, 224 (1998).

⁶⁴ Mark J. Sundahl, *The Duty to Rescue Space Tourists and Return Private Spacecrafts*, 35 J. SPACE L. 163, 178 (2009).

⁶⁵ Compromis, para. 13.

⁶⁶ Frans G. von den Dunk, *Legal Aspects of Private Manned Spaceflight*, in *HANDBOOK OF SPACE LAW*, 711-712 (Frans G. von den Dunk & Fabio Tronchetti eds., 2015).

part of the rescue duty.⁶⁷ In accordance with general humanitarian principles, customary international law only grants assistance in distress but not any return obligation.⁶⁸

2. Ms. Paula's return to Banché was conducted in due time

According to Article 4 ARRA, the return should be safe and prompt. "Promptly", in general, refers to the earliest possible and unconditional return⁶⁹; it means directly or within a reasonable time under the circumstances⁷⁰ and the context used.⁷¹ Ms. Paula was returned to Banché after several months,⁷² in order for the diplomatic negotiations to be conducted and the matter of cost reimbursement to be regulated.⁷³

Therefore, even if Article 4 ARRA was to apply, *in casu*, Rastalia would have fulfilled its obligation.

⁶⁷ *supra* note 52, PEYREFITTE, at 200 .

⁶⁸ Stephan Hobe, Space Tourism as a Challenge to the Astronaut Concept, in THE ASTRONAUTS AND RESCUE AGREEMENT-LESSONS LEARNED, 71 (G. Laffarranderie & S.Marchisio eds. 2011).

⁶⁹ Philippe Achilleas, *L' Astronaute en droit international*, in LEGAL AND ETHICAL FRAMEWORK FOR ASTRONAUTS IN SPACE SOJOURNS, PROCEEDINGS OF A SYMPOSIUM CO-ORGANIZED BY ECSL, ESA, IDEST, UNESCO (COMEST), 29 OCTOBER 2004, PARIS, 19.

⁷⁰ BLACK'S LAW DICTIONARY 725.

⁷¹ *Buck v. Scalf*, No. M2002-00620-COA-R3-CV, 2003 WL 21170328, at *5 (Tenn. Ct. App. May 20, 2003); *State v. Chesson*, 948 So.2d 566, 568 (Ala. Civ. App. 2006); *Morgan Guaranty Trust Co. of New York v. Bay View Franchise Mortgage Acceptance Co.*, 2002 U.S. Dist. LEXIS 7572, at *17 (S.D.N.Y. Apr. 23, 2002).

⁷² Compromis, para. 23.

⁷³ Compromis, para. 19.

B) RASTALIA IS NOT LIABLE UNDER INTERNATIONAL LAW FOR THE DAMAGE TO COULEUR

Rastalia submits that it is neither liable for Couleur's damage under Article III of the Convention on International Liability for Damage Caused by Space Objects (hereinafter LIAB)⁷⁴ (I) nor responsible under Article VI OST and Articles 1 and 2 of the 2001 ILC's Articles on Responsibility of States for Internationally Wrongful Acts (hereinafter ARSIWA)⁷⁵ (II).

I. Rastalia is not liable for Couleur's damage

Article III LIAB establishes fault-based liability for damage caused in outer space. A State is liable under said Article when both the prerequisites of causality (1) and fault (2) are met, which are not satisfied in the present case.

1. Couleur's damage was not caused by Lavotto-1

According to Article III LIAB, damage must be "*caused by*" a space object. Particularly, causality constitutes a *conditio sine qua non*, meaning that the damage must not have arisen *but for* the act in question.⁷⁶ Additionally, the damage must have been produced by an event legally sufficient and reasonably expected to provoke that damage alone, without any other

⁷⁴ Convention on International Liability for Damage Caused by Space Objects, *entered into force* Oct. 9, 1973, 24 U.S.T. 2389, 961 U.N.T.S. 187.

⁷⁵ Articles on the International Responsibility of States for Wrongful Acts, Report of the International Law Commission on the work of its 53rd Session, Official Records of the General Assembly, 56th Sess., Supp. No. 10, A/56/10 (2001).

⁷⁶ Armel Kerrest & Lesley Jane Smith, *Article II*, II COLOGNE COMMENTARY ON SPACE LAW 126 (Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl eds. 2013); Kevin D. Heard, *Space Debris and Liability: An Overview*, 17 CUMB L. REV. 167, 182-183 (1986- 1987).

incident's intervention.⁷⁷ In the 2007 *Genocide Case*, the ICJ demanded that the causal nexus was sufficiently direct and certain.⁷⁸ Speculative or remote damage is not compensated.⁷⁹

In casu, Banché could alternatively maneuver its Mira Space Station.⁸⁰ Nevertheless, it launched Couleur to de-orbit Lavotto-1,⁸¹ despite the warning about Lavotto-1's fragility and of the certain failure of any capturing operation.⁸² Commander Borsch used a grappling arm device,⁸³ breaking the satellite into two segments.⁸⁴ To rectify the situation and without prior notification, Commander activated GODA weapon,⁸⁵ hitting Lavotto-1's thruster propellant and blowing it up.⁸⁶ Several debris were created, one of which crashed with Couleur.⁸⁷

Thereupon, if GODA had not been used, the thruster propellant would not have exploded and would not have caused space debris. Hence, it was GODA laser on Couleur that provoked the damage.

2. Rastalia was not at fault

⁷⁷ Carl Q. Christol, *International Liability for Damage Caused by Space Objects*, 74 AM J. INT'L L. 346, 362 (1980); Stephen Gorove, *Cosmos 954: Issues of Law and Policy*, 6 J. SPACE L. 137, 141, 143 (1978).

⁷⁸ Case concerning Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosn. & Herz. v. Serb. & Mont.) (Judgment), 2007 I.C.J. 234 (Feb. 26).

⁷⁹ The Factory at Chorzów (Germ. v. Pol.) (Merits) 1928 P.C.I.J. 57 (ser. A) N^o 17 (Sept. 13); Paul G. Dembling, *Cosmos 954 and the Space Treaties*, 6 J. SPACE L. 129, 135 (1978).

⁸⁰ such manoeuvres are a standard procedure for space objects, like the ISS; see www.nasa.gov/mission_pages/station/news/orbital_debris.html [NASA]; blogs.esa.int/promisse/2012/01/13/dam-sollazzo/ [ESA].

⁸¹ *Compromis*, para. 14.

⁸² *Compromis*, para. 9.

⁸³ *Compromis*, para. 15.

⁸⁴ *Ibid.*

⁸⁵ *Ibid.*

⁸⁶ *Compromis*, para. 16.

⁸⁷ *Ibid.*

Rastalia's conduct complied with its legal duties (a), proportionally to its capacity to mitigate the situation (b), while a *force majeure* rendered any additional measures impossible to be taken (c).

a. Rastalia complied with its legal duties

States must observe the standards of reasonable care and adopt the available and most practical means to prevent damage.⁸⁸ Violation of these due diligence standards denotes fault.⁸⁹

Due diligence standards are included in prior obligations, whose violation activates state responsibility.⁹⁰ *A contrario*, they can be measured by non-binding standards, not *per se* activating State responsibility.⁹¹

Thereby, Rastalia acted in conformity with Article IX OST and customary environmental law (i) and the United Nation's Committee on the Peaceful Uses of Outer Space (hereinafter UNCOPUOS) Guidelines⁹² on space debris mitigation (ii).

⁸⁸ JAN WILLISCH, STATE RESPONSIBILITY FOR TECHNOLOGICAL DAMAGE IN INTERNATIONAL LAW, 278-280 (1987); Pierre Marie Dupuy, *Due diligence in the International Law of Liability*, in LEGAL ASPECTS OF TRANSFRONTIER POLLUTION, 369 (OECD ed. 1977).

⁸⁹ Lesley Jane Smith, *Facing up to Third Party Liability for Space Activities: Some Reflections*, 52 PROC. ON L. OUTER SPACE 255, 257 (2009); HANQUIN XUE, TRANSBOUNDARY DAMAGE IN INTERNATIONAL LAW, 296 (2003).

⁹⁰ see Russian Claim for Interest on Indemnities (Russia v. Turkey) 1912, 11 R.I.A.A. 42; BIN CHENG, GENERAL PRINCIPLES OF LAW AS APPLIED BY INTERNATIONAL COURTS AND TRIBUNALS, 224 (2006); Gabriele Salvioli, *Les Règles générales de la paix*, 46 RECUEIL DES COURS 1, 96-98 (1933-IV).

⁹¹ Lotta Viikari, *Environmental Aspects of Space Activities*, in HANDBOOK OF SPACE LAW, 735 (Frans G. von der Dunk & Fabio Tronchetti eds., 2015); JAMES CRAWFORD, BROWNLIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW, 561 (2012).

i. Rastalia conformed to Article IX OST and customary environmental law

Article IX OST sets the principle of “*due regard to the corresponding interests*” and, hence, obliges states to act *bona fide*, with care and observance.⁹³ States must exhaust all possible measures “beyond reasonable doubt”.⁹⁴ Specifically, States shall “*avoid harmful contamination*” in the detriment of the users of outer space.⁹⁵ Essentially, they must avoid forward biological contamination,⁹⁶ leaving at their discretion the selection of the most appropriate measures.⁹⁷ Additionally, States “*shall undertake appropriate international consultations*” when evaluating a planned activity or experiment that may harmfully interfere with other state’s activities.⁹⁸ Given the principle of good faith and the provision’s purpose,

⁹² Report of the Committee on the Peaceful Uses of Outer Space, U.N. GAOR, 62nd Sess., Supp. No. 20, at 47-50, U.N. Doc. A/62/20 (2007).

⁹³ Jinyuan Su, Lixin Zhu, *The Environmental Dimension of Space Arms Control*, 54 PROC. ON L. OUTER SPACE 44, 46 (2011); OGUNSOLA O. OGUNBANWO, INTERNATIONAL LAW AND OUTER SPACE ACTIVITIES, 65, 68 (1975); Mahulena Hofmann, *Is There Any Legal Regime for the Protection of the Moon’s Environment*, 50 PROC. ON L. OUTER SPACE 302, 303 (2007).

⁹⁴ Sergio Marchisio, *Article IX*, II COLOGNE COMMENTARY ON SPACE LAW 175,176 (Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl eds. 2009).

⁹⁵ Sethu Nandakumar Menon & V. Gopala Krishnan, *State Responsibility and Need of International Legal Consensus For Debris- Free Environment*, 50 PROC. ON L. OUTER SPACE 273, 279, 280 (2007)

⁹⁶ HOWARD A. BAKER, SPACE DEBRIS: LEGAL AND POLICY IMPLICATIONS, 255-256 (1988); Aditya Sharma, *Protection of The Outer Space Environmental: Need To Revisit The Law*, 54 PROC. ON L. OUTER SPACE 69, 73 (2011).

⁹⁷ LOTTI VIHKARI, THE ENVIRONMENTAL ELEMENT IN SPACE LAW: ASSESSING THE PRESENT AND CHARTING THE FUTURE, 60 (2008); Nicolas Mateesco-Matte, *Environmental Implications and Responsibilities in the Use of Outer Space*, 32 PROC. ON L. OUTER SPACE 489, 492 (1989).

⁹⁸ *ibid* VIHKARI.

States shall, *ad minimum*, provide the affected states with sufficient information.⁹⁹ USA invoked such an interpretation prior to the USA-193 de-orbit operation in 2008.¹⁰⁰

In the *Legality of the Threat or Use of Nuclear Weapons* Advisory Opinion,¹⁰¹ this Court stated that the respect of the environment of areas beyond national control falls within “the corpus of international law”. This rule reflects the customary¹⁰² principle of prevention¹⁰³. Thereupon, in space activities, conformity to international standards requires measures to prevent or minimize significant damage to outer space environment.¹⁰⁴

It should be noted that the aforementioned obligations are of conduct without demanding specific outcome.¹⁰⁵

⁹⁹ Michael C. Mineiro, *FY-1C and USA-193 ASAT Intercepts: An Assessment of Legal Obligations under Article 9 of the Outer Space Treaty*, 34 J. SPACE L. 321, 338-339; P.J. Blount, *The Development Of International Norms To Enhance Space Security Law In An Asymmetric World*, 52 PROC. ON L. OUTER SPACE 153, 156 (2009).

¹⁰⁰ U.S. Department of Defense News Transcript, *DoD News Briefing with Deputy National Security Advisor Jeffrey, Gen. Cartwright and NASA Administrator Griffin*, Feb. 14, 2008.

¹⁰¹ *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) 1996 I.C.J. 241 (Jul. 8); *Gabcikovo - Nagymaros Project* (Hung. v. Slov.) (Judgment) 1997 I.C.J. 41 (Sept. 25).

¹⁰² *Case Concerning Pulp Mills on the River Uruguay* (Arg. v. Urug.) (Judgment) 2010 I.C.J. 56 (Apr. 20); see also Timothy J. Heverin, *Legality of the Threat or Use of Nuclear Weapons: Environmental and Humanitarian Limits on Self-Defense*, 72 NOTRE DAME L. REV. 1277, 1284 (1997); Neil Craik, *Transboundary Environmental Impact Assessment in North America: Obstacles and Opportunities*, in *THEORY AND PRACTICE OF TRANSBOUNDARY ENVIRONMENTAL IMPACT ASSESSMENT*, 94 (Kees Bastmeijer & Timo Koivurova eds. 2008).

¹⁰³ See also Declaration of the United Nations Conference on the Human Environment, adopted June 16, 1972, Principle 21, U.N. Doc. A/Conf.48/14/Rev. 1(1973); 11 ILM 1416 (1972); Rio Declaration on Environment and Development, Principle 2, U.N. Doc. A/CONF.151/26 (vol. I) (1992).

¹⁰⁴ K. Gorove, *Protection of the Space Commons: New Customary law?* 26 J. SPACE L. 208, 211 (1998); Ulrike M. Bohlmann, *Connecting the Principles Of International Environmental Law of Space Activities*, 54 PROC. ON L. OUTER SPACE 301, 303 (2011).

¹⁰⁵ *supra* note 96, Mateesco-Matte, at 492; *supra* note 90, VIKARI, at 61; *supra* note 101, Craik.

In casu, after the solar storm and Lavotto-1's malfunction, Rastalia announced that Lavotto-1 would pose collision hazard to space traffic,¹⁰⁶ as was *ad minimum* obliged by Article IX. Additionally, to safeguard the space environment and other state's activities, Rastalia avoided using another spacecraft to capture the fragile satellite¹⁰⁷ and by expressing its cooperative attitude, it held diplomatic discussions with Banché. After the exhaustion of all possible measures, it proceeded to the lawful¹⁰⁸ and common practice¹⁰⁹ of abandoning its space object, Lavotto-1¹¹⁰. Hence, Rastalia's conduct was in compliance with its legal duties.

Moreover, Rastalia followed the prevailing technical tendency to construct space objects with lighter material. For instance, ESA and NASA use aerogels,¹¹¹ which, although fragile by nature, are among the lightest known material with outstanding flexibility and thermal insulation.¹¹² Thereby, Lavotto-1's fragility does not render Rastalia at fault.

ii. Rastalia conformed to UNCOPUOS Guideline 6 on debris mitigation

Pursuant to the U.N. Res. 62/217,¹¹³ the U.N. General Assembly endorsed the UNCOPUOS Space Debris Mitigation Guidelines. Regardless their non-binding legal status, these

¹⁰⁶ Compromis, para. 8.

¹⁰⁷ Compromis, para. 9.

¹⁰⁸ BIN CHENG, *STUDIES IN INTERNATIONAL SPACE LAW*, 466 (1997).

¹⁰⁹ see for example Skylab, Salyut 7, Prospero, USA-165, Viking, NEXTSat.

¹¹⁰ Compromis, para 11.

¹¹¹ for current space application of aerogels, see ESA Innovation Triangle Initiative Activities concluded in 2008, at 12 (https://iti.esa.int/iti_public/file/ITI%20BROCHURE%202008.pdf [ESA]).

¹¹² <http://www.esa-tec.eu/space-technologies/from-space/silica-based-aerogel/> [ESA]; <http://www.nasa.gov/topics/technology/features/aerogels.html> [NASA].

¹¹³ G.A. Res. 62/217, U.N. GAOR, 62nd Sess., U.N. Doc. A/RES/62/217 (2008).

Guidelines reflect State consensus and existing practices¹¹⁴ and hence constitute -at least emerging- customary law.¹¹⁵

According to Guideline 6, States should place in a graveyard orbit or de-orbit no longer operational space objects in LEO, which in practice require significant amounts of fuel.¹¹⁶

Contrarily, Guideline 5 proposes the passivation of on-board energy sources to minimize the risk of break-ups. The passivation process may occur at the end of the space object's functional lifetime, so that the communication and electronic systems are functioning.¹¹⁷

According to the Compromis, Rastalia applied the aforementioned Guideline and had taken preventive measures by equipping Lavotto-1 with both a de-orbit and a parking orbit capability.¹¹⁸ Nevertheless, a rare solar storm rendered such maneuvers impossible for Rastalia.¹¹⁹ Furthermore, compliance with the aforementioned duties, and Lavotto-1's non-functionality precluded Rastalia to deplete the stored energy, as Guideline 5 endorses.

¹¹⁴ See for example "Draft International Code of Conduct for Outer Space Activities" (31/03/2014), ESA's "Requirements on Space Debris Mitigation for Agency Projects", "NASA Technical Standard (NASA-STD-8719.14.)", "JAXA-Management Requirements 003 (JMR-003)", Russian National Standard "General Requirements to Spacecraft and Orbital Stages on Space Debris Mitigation" (GOST R 52925-2008).

¹¹⁵ Frans G. von der Dunk, *International Space Law*, in HANDBOOK OF SPACE LAW, 104-105 (Frans G. von der Dunk & Fabio Tronchetti eds. 2015); see also G.A. Res. 70/82, U.N. GAOR 70th Sess., U.N. Doc A/RES/70/82 (2015); G.A. Res. 52/56, U.N. GAOR 52th Sess., U.N. Doc A/RES/52/56 (1998).

¹¹⁶ https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/media/Section%20III.4.1.5%20Maneuvering%20in%20Space.pdf [Federal Aviation Administration].

¹¹⁷ Nicholas Johnson, *End-of-life Debris Mitigation Measures*, in SAFETY DESIGN FOR SPACE OPERATION, 575-576 (Tommaso Sgobba, Firooz A. Allahdadi, Isabelle Rongier, Paul D. Wilde eds. 2013).

¹¹⁸ Compromis, para. 7.

¹¹⁹ Compromis, paras. 8,9,11.

Whatsoever, there is no causal link between the energy's non-depletion and Couleur's damage, as the thruster propellant exploded by the laser beam.

b. Rastalia exhausted all appropriate means to mitigate the situation

Capacity to mitigate risks should *inter alia* be proven, to establish fault. States should have breached their duties, despite possessing the necessary infrastructures and the capacity to act diligently.¹²⁰ The content of due diligence standards depends on States' technical and financial capabilities.¹²¹ In the *Nicaragua* Case, ICJ reaffirmed that developing States are not expected to demonstrate the same degree of diligence as their developed counterparts.¹²²

This criterion evokes the “common but differentiated responsibility” (hereinafter CBDR) principle. Although its legal and binding nature are disputed,¹²³ it provides guideline to interpret existing obligations.¹²⁴

¹²⁰ British claims in the Spanish Zone of Morocco (Spain v. UK) 1925, 2 R.I.A.A. 615; First Report on Due Diligence in International Law of the International Law Association's Study Group (2014), http://www.ila-hq.org/en/committees/study_groups.cfm/cid/1045 [International Law Association].

¹²¹ LYNNE M. JURGIELEWICZ, GLOBAL ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW: PROSPECTS FOR PROGRESS IN THE LEGAL ORDER, 57 (1996); PATRICIA BIRNIE, ALAN BOYLE & CATHERINE REDGWELL, INTERNATIONAL LAW AND THE ENVIRONMENT, 136 (2009); *supra* note 87, Dupuy at 376.

¹²² Case Concerning Military and Paramilitary Activities in and against Nicaragua (Nic. v. USA) (Merits) 1986 I.C.J. 85 (Jun. 27); see Timo Koivurova, *Due Diligence*, in MAX PLANK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW, 8.

¹²³ Thomas Deleuil, *The Common but Differentiated Responsibilities Principle: Changes in Continuity after the Durban Conference of the Parties*, 21 RECIEL 271, 274 – 277 (2012); Philippe Cullet, *Differential Treatment in International Law: Towards a New Paradigm of Inter-state Relations*, 10 EJIL 549, 575-579 (1999).

¹²⁴ PHILIPPE SANDS & JACQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW, 234-235 (2012); Yoshiro Matsui, *The principle of “Common but differentiated responsibilities”*, in INTERNATIONAL LAW AND SUSTAINABLE DEVELOPMENT: PAST ACHIEVEMENTS AND FUTURE CHALLENGES, 95-96 (Nico Schrijver & Friedl Weiss eds. 2004).

The CBDR principle encompasses that States share the responsibility to protect the global environment; albeit, proportionally to their contribution to environmental degradation and their ability to mitigate it;¹²⁵ thus the prosperous developed countries carry a heavier burden than the less fortunate ones.¹²⁶ This “double standards” concept has been drawn in widely accepted legal instruments, as the Rio Declaration, the UN Framework Convention on Climate Change¹²⁷ and the Paris Agreement¹²⁸.

The CBDR principle constitutes an expression of the legally binding¹²⁹ international principle of equity¹³⁰. Moreover, Article XII LIAB reads that compensation for damages shall be accordingly to the principle of equity, as expressed in the CBDR principle.

In casu, Rastalia is a developing country’ recently involved in space activities,¹³¹ while Banché is a highly developed country with a long history and technical expertise in space exploration and exploitation.¹³²

¹²⁵ *Ibid*, SANDS & PEEL, at 233-237; Lavanya Rajamani, *The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime*, 9 RECIEL 120, 121-122 (2000).

¹²⁶ *supra* note 123, Matsui, at 81-84; TUULA HONKONEN, THE COMMON BUT DIFFERENTIATED RESPONSIBILITY PRINCIPLE IN MULTILATERAL ENVIRONMENTAL AGREEMENTS: REGULATORY AND POLICY ASPECTS, 2-3 (2009); Mary J. Bortscheller, *Equitable but Ineffective: How the Principle Of Common but Differentiated Responsibilities Hobbles the Global Fight Against Climate Change*, 10 SUSTAINABLE DEV. L. & POL’Y 49, 50 (2010).

¹²⁷ United Nations Framework Convention on Climate Change, *entered into force* Mar. 21, 1994, 1771 U.N.T.S. 107, 31 I.L.M. 849 (1992).

¹²⁸ Paris Agreement, *not yet entered into force*, FCCC/CP/2015/L.9/Rev.1.

¹²⁹ Case Concerning the Continental Shelf (Tun. v. Lib.) (Judgment) 1982 I.C.J. 60 (Feb. 24); North Sea Continental Cases (Germ. v. Den. & Neth.) (Judgment) 1969 I.C.J. 48 (Feb. 20); Case Concerning Diversion of Waters from the River Meuse (Neth. v. Belg.) (Judgment) 1937 PCIJ 50, (ser. A/B), N° 70 (Jun. 28), M. Anzilotti Dissenting Opinion.

¹³⁰ FRIEDRICH SOLTAU, FAIRNESS IN INTERNATIONAL CLIMATE CHANGE AND POLICY, 180-193 (2009); Michael Bothe, *The United Nations Framework Convention on Climate Change - an Unprecedented Multilevel Regulatory Challenge*, 63 ZAÖRV 239, 251-252 (2003).

Hence, since Rastalia is not as technically competent as Banché, the use of removing technologies or military lasers is not reasonably expected. Thereby, Rastalia acted proportionally to its capacities and thus lawfully.

c. Rastalia was acting under *force majeure*

Force majeure derives from an event either unforeseen or foreseen but inevitable or irresistible.¹³³ That event, beyond the obligor's control, makes any operation materially impossible.¹³⁴

This notion is incompatible with fault,¹³⁵ because “*a state cannot be held to the impossible*”¹³⁶ as similarly stated in the *Prats Case Award*¹³⁷; diligence must be proportionate to the risks¹³⁸. Fault requires, on State's behalf, awareness of the potential harm and objective risks of its activity,¹³⁹ a condition, which is incompatible with *force majeure*. Moreover, fault is

¹³¹ Compromis, paras. 2, 5.

¹³² Compromis, para. 1.

¹³³ “*Force majeure*” and “*fortuitous event*” as circumstances precluding wrongfulness: survey of State practice, international judicial decisions and doctrine—Study prepared by the Secretariat (Document A/CN.4/315), in YEARBOOK OF INTERNATIONAL LAW COMMISSION 69 (1978); ANTONIO CASSESE, INTERNATIONAL LAW, 254 (2005).

¹³⁴ *Ibid.*

¹³⁵ *supra* note 89, CHENG at 218-232; Andrea Gattini, *La Notion de Faute à la Lumière du Projet de Convention de la Commission du Droit International sur la responsabilité internationale*, 3 EJIL 253, 271-272 (1992).

¹³⁶ see latin maxim “*ad impossibile nemo tenetur*”.

¹³⁷ Case of Salvador Prats v. United States (Mex.v. U.S.A.) 1868, R.I.A.A. 187.

¹³⁸ Alabama Claims of the United States of America against Great Britain (U.S. v. G.B.) 1871, R.I.A.A. 125.

¹³⁹ Trail Smelter Arbitration (U.S. v. Canada) 1938/1941, R.I.A.A. 1905; Corfu Channel (UK v. Alb.) (Merits) 1949 I.C.J. 18-23 (Apr. 9). Martha Mejia-Kaiser, *Collision Course: 2009 Iridium-Cosmos Crash*, 52 PROC. ON L. OUTER SPACE 274, 276-279 (2009); *supra* note 120, BIRNIE, BOYLE & REDGWELL, 142, 152-154.

dependent upon free will¹⁴⁰ in contradiction to *force majeure*. Consequently, under *force majeure* the actor is released from its obligations.

Regarding solar storms, they increase the atmospheric drag in LEO, forcing space objects to burn more fuel so not to decay.¹⁴¹ They disable electronic and communication systems,¹⁴² sometimes completely destroying the satellite.¹⁴³ The damaging and unforeseen character of such solar storms simulates a *force majeure* situation.

According to the Compromis, a rare, unpredictable solar windstorm occurred.¹⁴⁴ Due to this storm, most of Lavotto-1's functions ceased.¹⁴⁵ Consequently, Rastalia announced that it was impossible to control Lavotto-1, declared it as derelict¹⁴⁶ and under *force majeure* was not at fault.

Concluding, Rastalia was not at fault and did not provoke Couleur's damage and it shall not be held liable for it.

¹⁴⁰ Frans G. von der Dunk, *Too-close Encounters Of The Third-party Kind: Will The Liability Convention Stand The Test Of The Cosmos 2251- Iridium 33 Collision?*, 52 PROC. ON L. OUTER SPACE 199, 203 (2009); note 89, CHENG, 226-227.

¹⁴¹ JOSEPH A. ANGELO, JR., ENCYCLOPEDIA OF SPACE AND ASTRONOMY, 263, 551, 557 579 (2006); JENNIFER A. GRIER & ANDREW S. RIVKIN, INNER PLANETS, 116 (2010); JAMEY L. JENKINS, THE SUN AND HOW TO OBSERVE IT, 13, 14 (2009).

¹⁴² *Ibid.*

¹⁴³ <http://www.smithsonianmag.com/science-nature/what-damage-could-be-caused-by-amassive-solar-storm-25627394/?no-ist>. [Smithsonian magazine].

¹⁴⁴ Compromis, para. 8.

¹⁴⁵ Compromis, paras. 7, 8, 9.

¹⁴⁶ Compromis, paras. 8, 9, 11.

II. Rastalia is not responsible for Couleur's damage

Pursuant to Article III OST, State responsibility for space activities is regulated by the ARSIWA, which codify existing rules of international law.¹⁴⁷ However, Article VI OST, as *lex specialis* to the ARSIWA, broadens state responsibility to include incumbency for national space activities conducted by non-governmental entities.¹⁴⁸

According to Articles 1 and 2, a State is responsible for a breach of international law attributable to it. However, according to Article 23, the wrongfulness of an act is precluded when under *force majeure*. Hence, Rastalia submits that it is not responsible for Couleur's damage because it acted in accordance to international law. Nevertheless, even in the opposite case, *force majeure* would exclude the wrongfulness of its acts.

Explicitly, according to Article 23 ARSIWA, *force majeure* is an irresistible force or an unforeseen event, beyond the State's control provoking "absolute and material impossibility".¹⁴⁹ It has been previously proven that the rare solar windstorm rendered impossible for Rastalia to actually dispose Lavotto-1.

Besides, Article 23§2 requires that the State has not contributed substantially to the situation; in contrast, it may invoke the Article, even if its conduct had a minor impact on the situation,

¹⁴⁷ OLUFEMI AMAO, CORPORATE SOCIAL RESPONSIBILITY, HUMAN RIGHTS AND THE LAW: MULTINATIONAL CORPORATIONS IN DEVELOPING COUNTRIES, 173 (2011).

¹⁴⁸ Horst Bittlinger, *Private Space Activities: Questions of International Responsibility*, 30 PROC. ON L. OUTER SPACE 191, 191 (1987); MARIETTA BENKÖ, WILLEM DE GRAAFF & GIJSBERTHA C.M. REIJNEN, SPACE LAW IN THE UNITED NATIONS, 178-179 (1985).

¹⁴⁹ Case concerning the difference between New Zealand and France concerning the interpretation or application of two agreements concluded on 9 July 1986 between the two States and which related to the problems arising from the Rainbow Warrior Affair (New Zealand v France) 1990, R.I.A.A. 215.

but did not change its unforeseeable character.¹⁵⁰ The State must also not have accepted the risk.

When for sudden unanticipated solar storms, States cannot predict and thus not assume any risks.

In the present case, the rareness of the storm and its impact indicates that it was unpredictable and too powerful to abate. Thereby, Rastalia had neither contributed to Lavotto1's malfunction nor had it assumed the risks of the unknown event.

In conclusion, Rastalia has not violated its legal duties. Alternatively, the rare solar windstorm as *force majeure* precludes the wrongfulness of any acts. Thereby, Rastalia is not responsible for Couleur's damage.

¹⁵⁰ JAMES CRAWFORD, THE INTERNATIONAL LAW COMMISSION'S ARTICLES ON STATE RESPONSIBILITY: INTRODUCTION, TEXT AND COMMENTARIES, 173 (2002).

C) BANCHÉ IS LIABLE UNDER INTERNATIONAL LAW FOR THE COSTS OF RECOVERY OF COULEUR, THE RESCUE AND MEDICAL EXPENSES FOR COMMANDER BORSCH, THE COSTS OF THE EVACUATION OF LAKE TAIPO, AND THE DEATHS OF BOTH MR. THOMAS AND MR. BARTON

I. Banché is liable under Article 5 ARRA for the costs of Couleur's recovery

According to Article 5§5 ARRA, Banché shall bear the costs of Couleur's recovery. The Respondent considers the request for Couleur's return to include the request for its recovery

(1). If the Court decides that no request for recovery was issued, state practice affirms that the launching authority bears the recovery expenses, despite the absence of request (2).

1. Recovery constitutes return's necessary precondition

Article 5§5 ARRA regulates the expenses for the recovery and return of space objects, set in Articles 2 and 3 ARRA to be borne by the launching authority.

The recovery procedure under Article 5§2 ARRA lies upon the territorial State's discretion¹⁵¹ and facilitates the space object's return.¹⁵² Both §2 and §3 of Article 5 ARRA set as prerequisite for the recovery and return of space objects, respectively, the launching authority's request. If the return is requested while recovery not, both operations shall occur, since recovery is return's logical precedent; *a maiore ad minus*, return cannot be completed without recovery, despite the absence of the respective request.

¹⁵¹ Spencer M. Beresford, *Principles of Spacecraft Liability*, in XITH INTERNATIONAL ASTRONAUTICAL CONGRESS STOCKHOLM 1960: PROCEEDINGS VOL. III THIRD COLLOQUIUM ON THE LAW OF OUTER SPACE, 154 (Carl W.P. Reuterswärd ed. 1961).

¹⁵² *supra* note 60 at 79.

Banché is Couleur's launching authority, since it launched Couleur from Banché's spaceport and it explicitly requested the return of its spacecraft *via* diplomatic note.¹⁵³ Although the note referred only to Couleur's return, recovery was indispensable for the realization of its return.

2. States have proceeded to recovery without request while applying ARRA

According to Article 31 VCLT, state practice is taken into account along with the treaty's context. Although no definition of "state practice" exists, it refers to the objective state practice, the official conduct of States, as well as the subjective attitude of States, namely actual practice.¹⁵⁴

Regarding space objects' recovery, during 1999 Pegasus launch vehicle incident, Japan sent a *note verbale* to the UN Secretary General and proceeded to the recovery under ARRA without "the request of the launching authority".¹⁵⁵ Likewise, at the 2000 French Ariane rocket incident, France reimbursed USA for the space object's recovery albeit without having requested the operation.¹⁵⁶

Thereby, state practice supports that lack of request does not free the launching authority from its duty to cover the recovery expenses under Article 5 §2 ARRA. Hence, the expenses of Couleur's recovery should be compensated, even if the Court finds that no request occurred.

¹⁵³ Compromis, para. 17.

¹⁵⁴ Rein Müllerson, *The interplay of objective and subjective elements in customary law*, in INTERNATIONAL LAW: THEORY AND PRACTICE: ESSAYS IN HONOUR OF ERIC SUY, 166 (Karel Wellens ed. 1998); JACK L. GOLDSMITH & ERIC A. POSNER, LIMITS OF INTERNATIONAL LAW, 23 (2005).

¹⁵⁵ Frans G. Von der Dunk, *A Sleeping Beauty Awakens: The 1968 Rescue Agreement After Forty Years*, 34 J.SPACE L. 411,427,428 (2008).

¹⁵⁶ *supra* at 411, 427, 428, 429.

Whatsoever, as proven, Rastalia respected Article 5§4 ARRA by not returning Couleur.

II. Banché bears liability for Commander Borsch's rescue and medical expenses under Article VII OST

Article VII OST reads that a launching State is liable when its space object causes damage to another state's space object either in outer space or in airspace or on Earth. Said Article has a wider scope than LIAB, despite regulating the same matter and stands as a *lex generalis* to LIAB's rules.¹⁵⁷

Consequently, according to the maxim *lex specialis derogat legi generali*,¹⁵⁸ Article VII OST applies only when LIAB does not. Rastalia submits that Borsch's rescue and medical expenses resulted from Couleur's landing. However, Article II LIAB is inapplicable because the condition of damage caused "on the surface of the Earth" is not fulfilled. Contrarily, Banché is liable under Article VII OST, as its requirements, namely causality (1) and existence of coverable damage (2) are met.

1. Couleur caused Rastalia's damage

As proven above, in order to establish liability, the damage must not have arisen but for the act in question.¹⁵⁹

¹⁵⁷ Nandasiri Jasentuliyana, *Space Debris and International law*, 26 J. SPACE L.139, 142 (1998); Frans G. von den Dunk, *Passing the Buck to Rogers: International Liability Issues in Private Spaceflight*, 86 NEB. L. REV. 400, 410 (2007); Eilene Galloway, *Space Law in the 21st century*, 26 J. SPACE L. 187, 190 (1998).

¹⁵⁸ TIM HILLIER, SOURCEBOOK ON PUBLIC INTERNATIONAL LAW, 83, (1998).

¹⁵⁹ Lawrence P. Wilkins, *Substantive bases for recovery for injuries sustained by private individuals as a result of fallen space objects*, 6 J.SPACE L. 161,165,168 (1978).

In casu, Commander Borsch was successfully rescued and sent to the hospital for medical treatment.¹⁵⁰ Had Couleur not landed near Lake Taipo, Rastalia would have not undertaken rescue and nursing operations. Hence, these costs were provoked by Couleur's landing.

2. Rastalia's economic loss constitutes damage under Article VII OST

Article VII OST does not include an explicit definition for "damage"; all forms of damage (direct or indirect) are compensated.¹⁶⁰ Notably, economic loss *-damnum emergens-* is considered damage to property, covered under said Article.¹⁶¹

According to the *Compromis*, Rastalia bore the operations' expenses for Borsch's rescue and medical treatment¹⁶² and suffered economic loss. To conclude, Banché is liable under Article VII OST for the financial damage incurred by Couleur.

III. Banché is liable for the costs of Lake Taipo's evacuation

Rastalia's evacuation order in the view of a highly probable environmental damage is legitimate and compatible with the precautionary principle. Therefore, the costs of the operations are to be borne by Banché under Article VII OST.

The precautionary principle dictates that while in threat of serious or even irreversible environmental damage, preventive and immediate action must be taken.¹⁶³ States must

¹⁶⁰ Armel Kerrest & Lesley Jane Smith, *Article VII*, I COLOGNE COMMENTARY ON SPACE LAW, 141 (Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl eds. 2009).

¹⁶¹ Michael Gerhard, *Article VI*, II COLOGNE COMMENTARY ON SPACE LAW, 112 (Stephan Hobe, Bernhard Schmidt-Tedd & Kai-Uwe Schrogl eds. 2013).

¹⁶² *Compromis*, para. 18.

undertake precautionary measures, even if the damage is merely a probability, a contingency¹⁶⁴ or even when there is no solid scientific proof for its occurrence.¹⁶⁵

The precautionary principle is customary, since the conditions for the formation of custom, state practice and *opinio jure sive necessitatis*¹⁶⁶, are met.¹⁶⁷ International jurisprudence has occasionally dealt with the principle's nature. Judge Weeramantry in its Dissenting Opinion on the *Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests* case recognized the precautionary principle as an "important principle(s) of environmental law".¹⁶⁸ Furthermore, in the *Gabcikovo-Nagymaros Project* case, Hungary justified its conduct on the precautionary principle's application in order to fulfill its obligation of prevention of damage.¹⁶⁹ The Court accepted that both States indeed followed this principle by adopting precautionary measures.¹⁷⁰ Therefore, States acting contrary to this principle violate existing obligations.¹⁷¹

¹⁶³ IAN G. THOMAS, ENVIRONMENTAL MANAGEMENT PROCESSES AND PRACTICES FOR AUSTRALIA, 129 (2005).

¹⁶⁴ John S. Applegate, *The Taming of the Precautionary Principle*, 27 WM. & MARY ENVTL. L. & POL'Y REV. 13, 25 (2002); Kenneth L. Mossman & Gary E. Marchant, *The Precautionary Principle and Radiation Protection*, 13 RISK 137,139 (2002).

¹⁶⁵ James Cameron & Juli Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 B. C. INT'L & COP L. REV. 1, 2 (1991).

¹⁶⁶ STATUTE OF THE INTERNATIONAL COURT OF JUSTICE, art. 38, para 1(b).

¹⁶⁷ David Freedstone, *International Fisheries Law Since Rio: The Continued Rise of the Precautionary Principle*, in INTERNATIONAL LAW AND SUSTAINABLE DEVELOPMENT : PAST ACHIEVEMENTS AND FUTURE CHALLENGES, 137 (Alan Boyle & David Freedstone eds. 1999); ARIE TROUWBORST, PRECAUTIONARY RIGHTS AND DUTIES OF STATES, 8 (2006).

¹⁶⁸ Request for an examination of the situation in accordance with paragraph 63 of the court's judgment of 20 December 1974 in the Nuclear Tests (New Zealand v. France) (Judge Weeramantry Dissenting Opinion) 342-344, 1995 I.C.J. (Sept. 22).

¹⁶⁹ Gabcikovo - Nagymaros Project (Hung. v. Slov.) (Judgment) 1997 I.C.J. 68 (Sept. 25).

¹⁷⁰ *supra* at 62

¹⁷¹ James Cameon & Jull Abouchar *The Status of the Precautionary Principle in International Law*, in THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW - THE CHALLENGE OF IMPLEMENTATION, 52 (D. Freedstone & E. Hay eds. 1996).

In the present case and as already indicated,¹⁷² Rastalia had reasons to believe that there was a nuclear radiation leak hazard. Hence, it ordered the evacuation of Lake Taipo,¹⁷³ under the precautionary principle.

Banché bears under Article VII OST the evacuation's costs, as the latter constitutes damage caused by Couleur. As explained,¹⁷⁴ liability is born when damage succeeds the "but for" and "proximate cause" test and economic loss constitutes damage under OST.

In casu, Couleur's potential nuclear radiation leak constituted a serious reason for Rastalia to expend resources and evacuate Lake Taipo. Thus, had Couleur not landed in Rastalia, the economic loss would have never occurred and thereby, Banché shall bear its reparation.

IV. Banché is liable under international law for the deaths of both Mr. Thomas and Mr. Barton

Article II LIAB holds liable the launching State whose space object or component part causes damage on the surface of the Earth.¹⁷⁵ According to Article I (d) LIAB, damage consists *inter alia* of "loss of life, personal injury or other impairment of health". LIAB also covers indirect damages, namely damages flowing naturally but not directly from the act in question, after an intervening event.¹⁷⁶ Indeed, Article 31 VCLT reads that a treaty shall be interpreted in accordance to the ordinary meaning of its terms in their context, *inter alia* text and annex, and

¹⁷² *supra*, Claim A, I, 2.

¹⁷³ Compromis, para. 18.

¹⁷⁴ *supra*, Claim B, I, 1.

¹⁷⁵ LIAB Article 1d.

¹⁷⁶ *supra* note 75, Kerrest & Smith, at 126; Arnel Kerrest, *Liability for Damage Caused by Space Activities*, in *SPACE LAW: CURRENT PROBLEMS AND PERSPECTIVES FOR FUTURE REGULATION*, 99 (Marietta Benko & Kai Uwe Schrogl eds. 2005).

in the light of its object and purpose.¹⁷⁷ Additionally, any relevant international law rules, the special meaning that the parties intended awarded to the treaty and subsequent state practice shall be taken into account.

A broad definition of damages under LIAB serves the treaty's objectives¹⁷⁸ and its victim-oriented character, as its annex underlines the need of "effective international rules and procedures" and "full and equitable measure of compensation".¹⁷⁹ Moreover, Article XII LIAB reads that compensation is awarded in accordance to international law and the principles of justice and equity.

As for international jurisprudence, the Arbitral Tribunal in the *Trail Smelter Arbitration* case stated that "it will be enough if the evidence show the extent of the damages as a matter of just and reasonable inference, although the result be only approximate."¹⁸⁰ The *Chorzow Factory* case decision reads that "reparation must, as far as possible, wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed".¹⁸¹ Besides, in the Cosmos 954 incident, Canada and the USSR agreed on compensation under LIAB for clean-up operations¹⁸² which

¹⁷⁷ MARK EUGEN VILLIGER, COMMENTARY ON THE 1969 VIENNA CONVENTION ON THE LAW OF TREATIES, 425-443 (2009).

¹⁷⁸ Jean-Marc Sorel & Valérie Borél Eveno, *Article 31 Convention of 1969*, in I THE VIENNA CONVENTIONS ON THE LAW OF TREATIES: A COMMENTARY, 831 (Olivier Corten & Pierre Klein eds. 2011).

¹⁷⁹ *supra* note 175, Kerrest, at 92.

¹⁸⁰ *supra* note 138, Trail Smelter Arbitration, at 142.

¹⁸¹ Factory at Chorzow (Germ. v. Pol.) (Merits) 1928 P.C.I.J. 21 (ser. A), No. 17 (Sept. 13).

¹⁸² Settlement of Claim between Canada and the Union of Soviet Socialist Republics for Damage Caused by "Cosmos 954", released on Apr. 2, 1981, art. II and para 14; *supra* note 75, Heard, at 179.

are considered consequential damages. Thereby, indirect damage is to be compensated.¹⁸³ Nevertheless, the particular circumstances of each case determine whether damage is to be compensated.¹⁸⁴

Mr. Thomas died after a Couleur's fragment collided with a building and the latter collapsed over him.¹⁸⁵ Mr. Barton suffered a heart attack after witnessing Couleur passing by.¹⁸⁶ It is obvious that both losses were caused by Couleur's landing. The building collapsed on Mr. Thomas due to the fall of Couleur's fragment. The lethal heart attack of Mr. Barton was due to Couleur's passing by. Thereby, both deaths are due to Couleur's landing and shall be compensated by Banché.

Concluding, Banché is liable under Article II LIAB for the deaths Couleur caused.

¹⁸³ *supra* note 76, Christol, at 362; Elena Carpanelli & Brendan Cohen, *Interpreting "Damage caused by space objects" under the 1972 Liability Convention*, 56 PROC. L. OUTER SPACE 29, 38-39 (2013).

¹⁸⁴ *supra* note 45, SGROSSO, 116-117; W. F. Foster, *The Convention on International Liability for Damage Caused by Space Objects*, 10 CAN. Y. B. INT'L L. 137, 184-185 (1972).

¹⁸⁵ Compromis, para. 17.

¹⁸⁶ Compromis, para. 19.

SUBMISSIONS TO THE COURT

For the foregoing reasons, the Government of the Republic of Rastalia, Respondent, respectfully requests the Court to adjust and declare that:

1. Rastalia acted in conformity with international law by refusing to return Couleur and Commander Borsch to Banché and refusing the earlier return of Ms. Paula to Banché,
2. Rastalia is not liable under international law for the damage to Couleur,
3. Banché is liable for the costs of recovery of Couleur, the rescue and medical expenses for Commander Borsch, the costs of evacuation of Lake Taipo, and the deaths of both Mr. Thomas and Mr. Barton.