

International Law Limitations on Offensive Military Space Activities

The 1967 Outer Space Treaty (OST) and other United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) Treaties

OST Article IV directly addresses military activities. The first paragraph prohibits nuclear weapons or weapons of mass destruction (WMD) in Earth orbit, on celestial bodies, or otherwise stationed in space. WMD is not defined within the OST. Though in a terrestrial context WMDs typically include nuclear, chemical, and biological weapons, “mass destruction” implies that an effects-based test should be employed. This limitation is the only one contained in the OST regarding military activities in Earth orbit or the “void” of outer space. The second paragraph of Art IV addresses limitations on military activities on celestial bodies; these restrictions are far more significant. Celestial bodies must be used for *exclusively* peaceful purposes; military personnel can be used for any peaceful purpose, and any equipment or facilities can be employed for peaceful exploration. There is a non-exhaustive list of prohibited activities articulated, which include weapons testing, military maneuvers, and placement of military bases/fortifications. This language parallels language in the Antarctic Treaty, and thus there is a reasonable expectation that military personnel and equipment could be used in a range of functions on celestial bodies, as in Antarctica.

Articles I, II, and IX create general limitations on space activities that would extend to military activities, though they do not address military activities specifically. Fundamentally, the OST in Article I preserves the freedom of exploration and use of space for all States. To maximize those rights for all States, Article II prohibits national appropriation (exercise of territorial sovereignty/ownership) over any area of outer space and Article IX requires States to act with “due regard” for other States’ space activities. As a note, a due regard requirement also exists in international law in the maritime and aviation domains.

Much of the OST, which utilizes substantially similar language as the 1963 UN Declaration of legal principles governing use of outer space, is widely seen as having crystallized into customary international law. While some provisions do not represent custom due to the absence of State practice (for example, the provisions relating to activities on celestial bodies), the limitations on nuclear weapons and WMDs, the prohibition of national appropriation, and the requirement to act with due regard (among others) are widely considered to represent rules of customary international law. Thus, a withdrawal from the OST would not relieve a State of those legal obligations.

Though they do not create particular limitations, it is notable that Articles VI and VII of the Outer Space Treaty and the Liability Convention in its entirety ascribe international responsibility and liability to States for all activities in space, regardless of whether they are conducted by governmental or non-governmental entities. Additionally, the Registration Convention creates a requirement for States to register their space objects, including military space objects. Finally, the obligations articulated in the Return and Rescue Agreement likewise apply to military equipment and personnel, though they do not create additional limitations. While the Moon Agreement does articulate limitations on military activities on celestial bodies, it is not addressed here because there are only 18 ratified parties to the agreement and those parties do not include the U.S., Russia, or China.

The 1963 Limited Test Ban Treaty

The Limited Test Ban Treaty directly limits military activity in the space domain. In particular, it bans nuclear weapons tests or *any* nuclear explosions in outer space.

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The Environmental Modification Convention (ENMOD)

The ENMOD prohibits military or other hostile employment of environmental modification techniques with widespread, long-lasting, or severe effects as a means to damage or injure another State Party. The Convention applies not only to the environment of Earth and its atmosphere, but also to outer space.

The International Telecommunication Union (ITU) Constitution

Article 48 of the ITU Constitution directly addresses Installations for National Defence Services. It reads, in relevant part:

- 1 Member States retain their entire freedom with regard to military radio installations.*
- 2 Nevertheless, these installations must, so far as possible, observe statutory provisions relative to giving assistance in case of distress and to the measures to be taken to prevent harmful interference, and the provisions of the Administrative Regulations concerning the types of emission and the frequencies to be used, according to the nature of the service performed by such installations.*
- 3 Moreover, when these installations take part in the service of public correspondence or other services governed by the Administrative Regulations, they must, in general, comply with the regulatory provisions for the conduct of such services.*

Thus, so far as possible, military installations must avoid harmful interference, which is defined in Radio Regulations 1.169 as follows: "Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with Radio Regulations." The Radio Regulations are also binding on Member States in accordance with Article 4 of the ITU Constitution.

Jus ad Bellum

The United Nations Charter is applicable in all domains including outer space, and is explicitly tied into the international space law regime through Article III of the OST. Article 2.4 prohibits "the threat or use of force against the territorial integrity or political independence of any state." Permitted uses of force are those authorized by the UN Security Council under Chapter VII and those taken in self-defense (or collective self-defense) against an armed attack under Article 51. It should be noted that there also exists a customary right to self-defense and that right also permits defense against an imminent attack (articulated, for example, in the *Caroline* incident).

Generally speaking, *Jus ad Bellum* addresses the question of when a use of force is permissible under international law. In order to determine whether a use of force is permissible under *Jus ad Bellum*, it is also necessary to determine whether the act is conducted in accordance with the relevant principles of necessity and proportionality. Given the unique characteristics of the space domain and potential for long-lasting debris creation and given the frequently dual-use nature of space assets, the analysis of what actually constitutes a use of force and whether a use of force meets the requisite necessity and proportionality tests can be quite complex. The Tallinn Manual has advanced the discussion of these issues for the cyber domain, and given similarities between the two domains, can serve as a helpful guide for space, as well. The forthcoming Woomera Manual and McGill Manual (MILAMOS) will address these considerations specifically for space.

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Countermeasures and Grey Zone Conflict

An action that would otherwise be a wrongful act in international law (a breach of a treaty obligation, rule of customary international law, or general principle of international law) may be permissible in the presence of a circumstance precluding wrongfulness. For example, a use of force would be wrongful but is not so in the case of self-defense as articulated above. Countermeasures may be lawfully employed, even if they would otherwise be wrongful, if they are conducted to induce a breaching State's compliance with international law. Countermeasures must not rise to the level of use of force, must be necessary and proportionate, and must be temporary/reversible. The State against which the measure is being deployed must also be notified that the measure is being implemented to induce their compliance with a legal obligation. In a space context, activities such as jamming can constitute lawful countermeasures. As a note, "retortion" is sometimes used to describe lawful retaliatory acts that do not rise to the level of countermeasures.

Jus in Bello

Jus in Bello, also known as the law of armed conflict (LOAC), addresses permissible actions by the belligerents in the course of an armed conflict. It is also worth noting, especially with regard to the space domain, the law of neutrality governs those States who are not party to the armed conflict. Neutral States incur both rights and obligations; rights to stand apart from the conflict and not be adversely harmed by it and obligations to remain impartial and not participate. The dual-use nature of space activities, the use of commercial providers by military customers, the use of services by multiple different States, and the imputed responsibility to the State for its private actors all lead to difficulty in determining which States are neutral and how to protect them from adverse harm during a conflict.

While non-LOAC treaty obligations may be suspended during an armed conflict with respect to conduct between the belligerents, such suspension does *not* remove the obligations of a belligerent to fulfill their treaty obligations with respect to third parties. Thus, while a belligerent State could be released from its duty to treat another belligerent State's space activities with due regard (OST Art IX), it would still need to uphold its due regard obligation toward States not party to the conflict. Given the nature of space operations, it could prove difficult to manage these obligations.

One aspect of LOAC that will have significant bearing on any conflict that takes place in or extends to outer space will be the principles relevant to targeting. For an action to be permissible under LOAC, it must take into account five characteristics: military necessity (action required to defeat the enemy, target is a valid military objective – derives from customary law as articulated in Geneva Convention Additional Protocol I, Art 52), avoidance of unnecessary suffering (the principle of humanity, derived from the Hague Conventions), proportionality (weighing military advantage gained against foreseeable damage to civilian personnel or assets), distinction (discrimination between combatants/non-combatants and military objectives/non-military objectives), honor (good faith). For the reasons articulated above including: dual-use assets, commercial services employed by militaries and actors from multiple States, and orbital characteristics and potential for debris creation, deploying these LOAC principles for targeting space assets will be challenging. Additionally, there is no State practice to reinforce interpretations of these norms in the context of an armed conflict between space powers, so the principles have not been tested in that context.