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**Topic 1: The Environment and Space Activity**

Space exploration since the mid 20th century has tremendously advanced scientific and technologic research. However, the exploration of outer space has also lead to issues relating to the environment. Though some initiatives were created by the United Nations to address outer space issues, such as UNISPACE, such initiatives concentrate their efforts on space development, accessibility and diplomacy. For instance, space exploration leads to the creation of space debris that end up orbiting the Earth.. Many satellites have already collided and been destroyed as a result, only furthering the creation of debris. Other issues relating to outer space concern the emission of greenhouse gases as a result of rocket launches.

The United Kingdom of Great Britain and Northern Ireland, as one of the world’s strongest developed economies, has been strongly invested in space exploration. The British space program was first created in 1952, and today its activities largely consist of satellite and rocket research, conducted through the UK Space Agency. Though manned space activities aren’t part of the UK space program, the UK does provide funding for the International Space Station. Its various initiatives, combined with the United Kingdom’s special relationship with the United States, therefore makes it a key actor when it comes to space exploration.

The United Kingdom is a strong believer that space exploration missions should be conducted in a way as to minimize environmental impact. For instance, the proliferation of artificial space debris, mostly a result of depreciated satellites orbiting, have led to a few collisions over the years. Although the NASA currently holds a database of the largest space objects, not all debris can be tracked, and evasion maneuvers can be costly and takes planning in advance. The UK would also like to remind that space-related activates are extremely costly to all countries, and the cost of measures adopted must be weighted against scientific and commercial benefits. As such, though the destruction of space debris isn’t a viable solution, implementing an international database of space debris would be the right path towards minimizing the creation of space pollution while simultaneously ensuring the protection of space equipment. The UK, as a signatory to the Kyoto protocol, also believes that carbon-reducing initiatives should extend to outer space as well. Though the issue of black carbon isn't as serious currently, frameworks concerning GHG emissions originating from outer space should be considered very soon.

**Topic 2: The militarization of space and international law**

Just as mankind has explored outer space over the past few decades, such exploration has also been deeply intertwined with space militarization. In fact, many of the now-civilian inventions used today, such as satellites, were initially military inventions designed to grant better intelligence and communication. Although the Cold War has ended since 1989, military space technologies have continued to evolve. For instance, satellite destruction and/or jamming technologies, ASAT, have been developed by China, Russian and the USA. Fortunately, the use of military technology in space is mostly involved in data gathering, as no country has ever directly weaponized rockets or satellites so far. However, the distinctions between civilian applications and military ones keep getting blurred. As such, drafting clear policies as to prevent the militarization of space should be a top priority, given that outer space is common property of the Earth and should be accessible to as many countries as possible for peaceful research and development.

The United Kingdom is one of the initial three signatories the Outer Space Treaty of 1967, then between the United States, the United Kingdom and Russia. As such, the country has pledged to refrain from appropriation outer space or to place weapons of mass destruction on outer space, the moon or other celestial bodies, and has respected that pledge ever since its signature. Although the United Kingdom has developed reconnaissance satellites to be placed in outer space, its current generation of such satellites, Skynet 5, is used to establish secure communication channels rather than for intel recognition. The vast experience the United Kingdom has acquired over space militarization therefore makes it well placed to spearhead resolutions dealing with space militarization.

Though the United Kingdom still operates military satellites as for communication, the United Kingdom firmly opposes any military initiatives in outer space beyond simple data-transmission. In fact, doing so can catalyze a space arms race, not too dissimilar to the nuclear arms race during the Cold War, and the consequences of a space arms race could be, needless to say, disastrous. Though extending the IHL might be necessary in the future, it should not be the only measure taken. As such, the United Kingdom believes that clear guidelines diffentiating between allowed, civilian launch of equipment into space and military initiatives should be drafted, with clear distinctions between what military uses should be allowed (eg communications) and what should not (eg space-mounted nuclear weapons).

**Topic 3: Space Commercialization**

Parallel to the rise of space research and exploration has been the rise of private space initiatives. For instance, sub-orbital flights, space launches for research missions and commercial sourcing of space parts are all example of initiatives sponsored by national or international space programs, yet conducted by private aerospace companies. Others industry actors are involved in the rapidly developing space tourism sector. Given the high costs and the high risks associated with space activity, which includes the potential loss of human lives in the case of manned transport, regulation of commercial space activities is crucial for further development in the field.

The United Kingdom has long adopted a policy of sourcing many government-sponsored activities to private aerospace companies. For instance, the UK Space Agency has sponsored Reaction Engines Limited for its Skylon prototype of reusable spacecraft, and its Skynet satellites are manufactured by EADS Astrium. These various private companies are not solely involved in government contracts either: for instance, Virgin Galactic, a key player in space tourism, is involved in sub-orbital flights. The United Kingdom therefore has extensive experience in private space initiatives.

As one of the world’s prominent players in space commercialization, the United Kingdom understands the need of furthering the regulation of private space activities given the risks and opportunity cost associated with such initiatives. Given that public support for government mandated space exploration is mainly limited to exploration, scientific research and satellite communication, privatization should be encouraged for other purposes, such as transportation or tourism. However, the United Kingdom believes that these fully private companies should be held to the same standard as their government or government-sponsored counterparts, as failing to uphold the highest standards of engineering and security will lead to disastrous consequences. On the international level, resolutions building upon the Outer Space Treaty should emphasize the common heritage of outer space, while extending the importance non-sovereignty to all private parties as well. Policies should also cover smaller outer space objects like asteroids as well, as the exploitation of resources without a claim to sovereignty should be enforced in order to level the field for all future players.

**Bibliography**

**Topic 1**

D’Ascanio N. and Salameh S., *Background* *Guide*: UNOOSA-ICAO (SSUNS, 2016).

"Agreement Governing the Activities of States on the Moon and Other Celestial Bodies." United Nations Office for Outer Space Affairs. December 05, 1979. Accessed September 05, 2016.

Garcia, Mark. "Space Debris and Human Spacecraft." NASA. July 26, 2016. Accessed September 05, 2016. http://www.nasa.gov/mission\_pages/station/news/orbital\_debris.html.

"Benefits Stemming from Space Exploration." International Space Exploration Coordination Group. September 2013. Accessed September 05, 2016.

**Topic 2**

D’Ascanio N. and Salameh S., *Background* *Guide*: UNOOSA-ICAO (SSUNS, 2016).

Billings, Lee. “War in Space May Be Closer Than Ever.” Scientific American. August 10, 2015. <http://www.scientificamerican.com/article/war-in-space-may-be-closer-than-ever/>.

Stratfor. “The Real Danger from Space Weapons.” February 22, 2016. https://www.stratfor.com/analysis/real-danger-space-weapons.

**Topic 3**

D’Ascanio N. and Salameh S., *Background* *Guide*: UNOOSA-ICAO (SSUNS, 2016).

Dunbar, B. (2012, November 19). NASA Space Act Agreement. Retrieved September 12, 2016, from http://www.nasa.gov/open/space-act.html.