Committee: United Nations Office of Outer Space Affairs

Country: Israel

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Since the dawn of its conception, Israel has always had a vested interest in the heavens, and has since become a confident and determined contributor to advancing the international space community. Israel has increased its scientific understanding at a respectable pace, from the National Committee of Space Research’s humble beginnings in Tel-Aviv University in 1960, to the official establishment of the Israel Space Agency in 1982. Israel’s space agency's goals include “advancing infrastructural research at academic and research institutions; supporting the development of innovative and unique space technologies by Israel Aerospace Industries; cultivating a new generation of space scientists through space education and community projects; and encouraging the expansion and growth of Israel's space industry”, and it has lived up to these goals. In 1988, Israel launched its first satellite, Ofeq 1, on top of a Shavit launch vehicle. Israel prides itself on this achievement, as it completed both the satellite and its launch vehicle on a development cycle of only 6 years, and a budget of less than $50 million USD per year. In addition, Israel completed this project with almost no foreign research or support. Despite these limitations, Israel has established itself as the eighth nation to send an object to orbit, and affirmed itself as one of only ten “space superpowers” to this day. As of now, Israel has launched over a dozen satellites into orbit, with the purpose of providing observational and communicational services to Israeli citizens, and the rest of the world. Israel has also sent a distinguished astronaut, Ilan Ramon, aboard Space Shuttle Columbia in 2003. Tragically, Ilan was killed along with the rest of the crew when heated gases shredded the orbiter. In this committee, Israel hopes to cooperate with all delegates to improve the safety and capability of space travel.

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

Israel believes that the environment is a key priority, in order to improve overall health and security for present and future generations. Thus, Israel has made strong commitments to decrease air pollution for its citizens. Since 2012, Israel’s Ministry of Environmental Protection has spent almost 100 million New Shequels ($27 million USD) on its National Pollution Reduction and Prevention Program. Since 2012, this program has aimed to minimize air pollution, through many targeted taxes, incentives, and research programs for industries and ground-based transportation.

However, Israel has not taken many steps to reduce the emissions from its aerospace sector. Statistically, aerospace endeavours only create about 5% of air pollution. This pales in comparison to the air pollution produced by automobiles, which accounts for 50-90% of all air pollution. In addition, of the 5% of pollution the aerospace industry creates, a vast majority is caused by civil aviation, as opposed to space travel, simply because of the sheer volume of flights. Though Israel does not consider aviation pollution a priority, it would of course be open to cooperating with the international community to create guidelines to minimize aviation’s pollution. After all, Israel has signed and ratified both the Climate Change Convention and the Kyoto Protocol as of 2004. Israel acknowledges that there are several ways to reduce black carbon emissions, the first of these being to create internationally agreed-upon regulations for airplane pollution. In addition, Israel believes that we must invest in aerospace technologies which will produce less black carbon and pollution. Less-polluting aerospace technology, like hydrogen-powered jet and rocket motors, have existed since the sixties. All this technology needs is more funding to become a reality. For this reason, Israel proposes a UN fund to research, develop, and commercialize clean air travel. Countries could contribute to this fund in proportion with their GNI or air pollution rankings.

However, Israel believes that space debris are of a high concern to the spacefaring community. Space debris are of a special concern to Israel. Due to political tensions between neighbouring nations, Israel has to launch its rockets on a retrograde trajectory, in the opposite direction of all other satellites. This means that any collision between debris could occur with relative velocities of up to 60,000km/h, which could create collisions several orders of magnitude higher than collisions between satellites on prograde trajectories. Even a stray fleck of paint going prograde could obliterate any retrograde satellite.

Unfortunately Israel recognizes that with the international community’s current technology and budget, little can be done to actively reduce the amount of debris in orbit. Any minimization of orbital debris is likely to occur over time, due to solar radiation pressure and thin atmospheric influence. For now, the best thing the worldwide space community can do right now to help minimize the risk of collision is to prevent any more space debris from being created in the future. We need to establish guidelines for both national and commercial spacecraft so that they do not pose risks to other spacecraft. These guidelines should include making deorbiting equipment- in the form of engines, solar sails, or other forms of technology -standard on future spacecraft. Alternatively, satellites should be put into orbits with a decay rate similar to their operational lifespans, so that by the time a spacecraft has deactivated or become obsolete, its orbit will have decayed, and it will harmlessly fall back to earth and burn up in the atmosphere. Establishing guidelines like these would drastically lower the rates of debris accumulation, and ensure a safer environment for future space missions, and for the planet as a whole.

**Topic 2: Militarization of Space**

Though Israel only joined the Committee On the Peaceful Uses of Outer Space in 2015, it is still committed to maintaining Earth’s orbit as a peaceful, prosperous, and inclusive area for all nations. Israel recognizes the profound entanglement present between space travel and military activity. Indeed, its Shavit launcher was originally developed based on the Jericho II ballistic missile. Israel recognizes that the developmental relationships between civilian and combat technology create unnecessary political divides, and prevent the propagation of peaceful space missions that would otherwise enlighten the scientific community. For instance, Israel’s space launch capabilities are significantly hampered by the fact that it has to launch its satellites retrograde, since the neighbouring Arab League considers Israeli rocketry as a threat. Israel understands why foreign missiles flying over an enemy’s territory could be perceived as aggressive. However, Israel believes that there is a distinct difference between civilian and military space technology, and the international community should recognize and respect this difference. Israel understands that much of the multinational tension spaceflight entails revolves around the uncertainty of payloads and capabilities. The development and flight of a spy satellite or ballistic missile could be disguised as a peaceful science operation, much like how a nuclear weapons program could be disguised as peaceful power plant development. However, in both of these circumstances, regulatory framework can easily be introduced to distinguish between civilian and military projects. Israel would propose an inspection organization similar in concept to the IAEA, that could inspect space missions before launch to determine their civilian or military capabilities. If a launch was deemed as peaceful by this organization, the international community would be notified, and access to better launch trajectories could be safely granted. To keep this organization from being intrusive, nations should be able to opt out from an inspection of any mission, but with the consequence of raising slight suspicion among the international community. Israel also thinks that these inspections of civilian and military capability should be regulated by modified International Humanitarian Law. This inspection framework would lower extra-planetary distrust among the international community.

Israel believes that any true space conflict is unlikely to occur until the far future, given the lack of attainable assets and resources available to nations, and the collateral damage and Keesler syndrome created by any space conflict. However, Israel believes the application of International Humanitarian Law in space is important; to ensure that any conflict in space is minimally destructive, and honorable to some degree. Most of International Humanitarian Law can easily be translated to exoatmospheric affairs, with a few notable exceptions: astronauts should be entitled to protection and aid if providing this aid would not be dangerous to the providing party. Violence and conflict should be defined as any destruction of property purposefully or semi-purposefully by an opposing party, including by conventional and unconventional weapons, and by space debris. If a satellite has more potential to aid military operations than civilian or scientific ones, it should be classified as military. In considering these modifications, we must also take to heart the Martens Clause, and existing outside treaties and principles, to ensure an all-rounded understanding of space conflict.

Finally, Israel recognizes that, as one of only ten countries with national spacefaring capability, there are stark imbalances in exoatmospheric domain among the international community. However, Israel commends the efforts the United Nations has already made to curb this imbalance. Israel applauds the UN’s decision to purchase a Dreamchaser spacecraft to launch the experiments of fourteen underdeveloped nations into orbit in 2021. Israel thinks that spacecraft like these are part of the short-term solution to making space travel accessible by all nations, and would be open to a second such mission to help more countries achieve their orbital desires. This mission could perhaps be funded partially by established spacefaring powers. As a long-term solution, Israel thinks that promoting international co-operation between spacefaring and non-spacefaring nations is the best way to close the gap in capability. Israel has already contributed to this goal, by helping South Africa to develop its space program through assisting in the production of RSA suborbital rockets.

Israel hopes that eventually, through co-operation between all nations of the world, we can remove the international distrust that accompanies rocket launches, allow underdeveloped nations and strengthen ties between nations with mutual desire for space travel.

**Topic 3: Commercialization of Space**

Israel believes that private organizations are incredibly valuable to the space industry, possibly even the key to humanity’s progression into space. After all, multinational companies are the only human entities capable of owning property in space. Although the Outer Space Treaty states that “outer space is not subject to national appropriation by claim of sovereignty”, and that “States shall be responsible for national space activities whether carried out by governmental or non-governmental entities”, it does not state any restrictions on ownership by multinational private industries with multinational private goals.

Therefore, private companies have theoretically limitless potential to access and appropriate celestial bodies, and to bring their discoveries and resources back to earth, provided the technology exists to do so. And given the rapid pace of research and development of many private companies, this technological capability may be closer than we think. After all, a recent NASA publication has proven that engines with infinite efficiency, “warp drives” if you will, may be possible. In addition, companies like SpaceX have made profound leaps in increasing the reusability and accessibility of space travel. For the first time in human history, space travel is a profitable industry.

Israel is proud to know that it has backed private space industries since the creation of its space program. Israel partnered with the company Israel Aerospace Industries (IAI) for the past 60 years, and has entrusted much of its rocket and payload development to this company. In addition, Israel has partnered with the global communications company Spacecom to launch satellites to enhance global communication and connectivity. Most recently, Israel’s Amos-6 satellite was planned to be launched on a SpaceX Falcon 9 rocket, to be used by Spacecom to provide internet access to the developing world. Unfortunately, this satellite was destroyed when the rocket’s helium loading system ruptured, destroying the rocket and its payload. Thankfully, the satellite was insured by IAI for $200 million, and by SpaceX for $50 million or a free launch. Although these insurance plans were enough to cover the immediate cost of the launch, they were not enough to cover the $200 million in communications contracts that were voided by this launch failure. In addition, SpaceCom’s stock plunged by close to a third in a single day because of this failure. This disaster has not only highlighted the financial risks associated with space travel, but also the profound gaps in the coverage and reliability of insurance policies. It is this unreliability that discourages nations and companies from investing in space travel, and leads some to unfortunately think of space travel as a “useless cash-sink”. From this recent catastrophe to the death of Israel’s only astronaut in the Columbia disaster, Israel’s attempts to expand into space have been marred by catastrophe.

Fortunately, Israel believes that there are solutions to these problems, starting with launch checks. There are few national and international regulations on the amount of technical inspection space missions require before launch. In the past, preflight inspection has been left up to national and private organizations’ discretion. However, with increasing public and private interests, and possibly even the lives of space tourists at stake, it is clear that new guidelines must be implemented to ensure that space missions are safer. The inspection checklist of the United States’ Department of Defence is exceptionally comprehensive, yet even it has some flaws, including error margins of up to 50% regarding heat loading and vibration. To ensure the reliability of space travel, we must establish international launch guidelines where every component of a spacecraft, or at least a spacecraft that carries humans onboard, has verified error margins of less than 50%.

In addition, we must create more comprehensive guidelines for space-related insurance, to improve the security and trustworthiness of exploratory endeavours. If private and public organizations know that their missions are covered with more comprehensive insurance, they will feel more secure investing in space travel and the industry will grow in profit and reliability. Even with increased regulations, it should be more than possible for insurance organizations to make a profit, since the launch industry has an overall success rate of about 95%. Through these two policies, we can ensure that private industries have more freedom and security when investing in space travel, and can therefore benefit the world with their investments.

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