

The militarization of space

Negotiating space

Recent political, military and technological developments indicate that the international consensus on the uses of space is under threat. Agreement on preventive arms control in space could soon be reached, as long as all countries choose to cooperate.

On 11 January 2007, the Chinese used a ground-based missile to destroy an aging weather satellite orbiting 800 km above Earth. This test of anti-satellite technology, the first in 20 years, demonstrated China's ability to target regions of space that are home to communications and spy satellites and space-based missile defence systems. The incident drew sharp protests from nations with satellite programmes, and raised international alarm about the possibility of an arms race in space.

Is that alarm justified, and if so, what steps are being taken to strengthen international space law to prevent an arms race in space becoming a reality?

The Outer Space Treaty (1967) represents the legal framework of international space law. The intent of the treaty, ratified by 99 states, is to ensure that no weapons are placed in outer space, and that the exploration and uses of outer space benefit all nations. But on closer inspection, existing international law does not actually prohibit *all* weapons in space. The Outer Space Treaty prohibits the placement of nuclear weapons and weapons of mass destruction in Earth orbit, and the Moon and other celestial bodies may be used only for peaceful purposes. But it does not prohibit the deployment of conventional weapons in orbit.☞

So far, nations have complied with the letter, but clearly not the spirit, of the Outer Space Treaty and other international agreements. Recent political, military and technological developments demonstrate that the consensus enshrined in these agreements is under threat.

Weapons in space

Since the launch of the first satellite *Sputnik* in 1957, the number of objects circling Earth has risen dramatically. There are now hundreds of satellites used for observation

summary

- The Outer Space Treaty prohibits the placement of weapons of mass destruction in space, but not of conventional weapons.
- In 2007, there were more than 200 dedicated military satellites in orbit, as well as hundreds of 'dual-use' observation and communication satellites.
- The debris resulting from collisions in space is a matter of growing concern for all nations with satellite programmes.
- Since 2006, there has been renewed international debate on ways to encourage peaceful uses of outer space, either by legal agreements or voluntary measures.
- In May 2009 the Conference on Disarmament agreed to resume discussions on proposals for preventing an arms race in outer space.

and communication, and for scientific research. Although no weapons have yet been placed in orbit, they could be deployed within a decade or so, threatening international peace and security.

The United States, the Soviet Union/Russia and other countries have been conducting military activities in space for decades. In 2007, there were more than 200 operational, dedicated military satellites orbiting Earth – 136 belonging to the US, and 67 to Russia. There are also many more 'dual-use' observation and communication satellites that are used for both civilian and military purposes. Several European countries, Canada, China, Israel, India, Japan and Thailand are also developing their own military capabilities in space.

A country that wishes to attack a foreign satellite outside Earth's atmosphere does not need armed satellites, however. Missiles can be fired from aircraft, warships or from the ground, as the Chinese test in 2007 demonstrated. Russia has suggested that it is developing an anti-satellite (ASAT) missile capability. Such developments are simply a new chapter in an old story. During the Cold War, the US and the Soviet Union funded programmes to develop ground-based ASAT missile systems. At present, 28 states can

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launch missiles up to suborbital heights, 10 nations have missiles that can reach orbit, and as many as 30 countries may have developed low-power lasers capable of damaging satellites. Japan and India may also be developing ground-based ASATs.

Ballistic missiles

The US withdrawal from the Anti-ballistic Missile (ABM) Treaty in 2002 led to a new arms race to develop intercontinental ballistic missiles (ICBMs) and a missile defence shield using anti-ballistic missiles (ABMs). Outer space is not immune to this arms race, because some ground-based ABMs can target ICBMs outside the atmosphere.

There have been frequent media reports about the controversial US plans for a missile defence shield, which were expected to include placing interceptor missiles and radar installations in eastern Europe by 2013, in order to protect the US and its allies against possible missile attacks by Iran. Recently, President Barack Obama announced that no long-range missiles will be placed in Poland, but that missile defence in Europe in the coming years will focus on short- and medium-range missiles that will not leave the

Star Wars: a purely fictional conception of warfare in space?

atmosphere.¹⁵ The US Congress has also looked into other alternatives, including placing missiles in other countries or on submarines, or retaining existing defence capabilities in Europe.

In June 2009, US deputy defence secretary William J. Lynn announced a ballistic missile defence review that will focus on the threats from extremist movements, emerging powers with sophisticated weapons, failed states, as well as the spread of weapons of mass destruction. This will be no small endeavour. President Obama has said he wants to reserve US\$7.8 billion (€5.5 billion) for ballistic missile defence in 2010. Russia is also planning to improve the capability of its (nuclear) ICBMs to overcome missile defences by 2016.

So far, there are no satellites armed with missiles that can attack other satellites or targets on the ground. But that is not because no one has yet tried to develop them. In the 1980s, the US worked on 'Brilliant Pebbles', a programme to devise a system of satellite-based mini-missiles with conventional warheads that could intercept hostile missiles. Although the programme was cancelled in 1994, it is now being re-evaluated for possible future use.

Both the US and the Soviet Union have worked on directed energy systems, or lasers, capable of intercepting ICBMs during spaceflight. Even now, the US is continuing relevant missile defence R&D, but Congress is restricting funding. The US Missile Defense Agency is funding work by Lockheed Martin and Raytheon on 'multiple-kill vehicles' that can be launched on a single rocket and fired while in orbit to destroy ICBMs or satellites.

China, India, Israel and several EU countries are investing in dual-use technologies that could be used to place weapons in space. Richard Fisher, an analyst at the International Assessment and Strategy Center in the US, believes that the Chinese military may be developing a plane that could be used as a space-based ground attack weapons system.

Hostile policies

The weaponization of space is embedded in the defence policies of the growing number of countries with the capability to send missiles into space for various purposes.

Under the Bush administration, US National Space Policy was aimed at protecting US space activities and defending US national interests from space. The US also blocked international arms control agreements that would restrict US military activities in space. Although President Obama has not yet issued a new space policy, the signs are that he favours the integration of defence and civilian space programmes.

In Europe, military activities in space are still mainly the responsibility of national governments, but the European Commission wants to improve coordination between the defence and civilian space programmes. But there are growing concerns, says Frank Slijper, a researcher for the Dutch Campaign against the Arms Trade, about the gradual militarization of European space activities without adequate public debate. 📖

Russia has proposed arms control in outer space, but this could be part of a strategy to restore Russia's superpower status, warns Andrei Shoumikhin of the US National Institute for Public Policy. Russia currently does not have the resources for an arms race in outer space against the technologically superior US, so a comprehensive international ban could reduce the US advantage, enabling Russia to catch up.

Several other countries are also considering the use of outer space in their defence strategies. Japan passed a law permitting military uses of space in 2008, for example, and India is considering setting up an aerospace command and more military use of space.

Within a decade, armed satellites could be orbiting Earth, but would this necessarily be a bad thing? As long as they attack only other military satellites, perhaps that would be preferable to the current asymmetric ground warfare that results in so many civilian casualties. Even now, it is hard to hide from prying eyes in the sky. Suppose an enemy succeeds in dominating Earth orbit militarily and could not only see, but also destroy targets on the ground. And even if they could attack armed satellites, they could also threaten the communication and observation satellites on which the global economy and disaster monitoring now depend. Unless all nations refrain from putting weapons in space, some countries believe, they have no choice but to participate in the arms race.

Preventive arms control

So how realistic is the option of ensuring peace in outer space? Since 2006, there has been renewed international debate on ways to encourage peaceful uses of outer space, either by legal agreements or voluntary measures. But how effective is international law, what are the loopholes, and what proposals have been made to address them?

In 2006, the UN Conference on Disarmament (CD) in Geneva resumed its discussions on preventing an arms race

in outer space (PAROS). Detlev Wolter, chairman of the 60th session of the UN General Assembly First Committee on Disarmament, proposed to negotiate a new multilateral treaty on common security in outer space and to create an agency responsible for its implementation. In February 2008, Russia and China retabled a draft treaty, first discussed in 2002, on the Prevention of the Placement of Weapons in Outer Space (PPWT) aimed at preventing both the militarization of space and attacks on spacecraft. In Europe, faced with the unwillingness of the US to agree to a binding international agreement, the EU Council proposed an alternative draft code of conduct for outer space activities, as a sort of compromise.

Experts disagree on whether negotiating a new legally binding treaty or agreeing voluntary measures would be the best approach to improving security in outer space. In August 2008, Marius Grinius, Canadian ambassador to the CD, thought the time was ripe to discuss the two options in parallel. Although the US quickly rejected the draft PPWT treaty proposed by Russia and China, on the grounds that it would not be possible to verify reliably if all countries were respecting the treaty, the US position may change. In January 2009, President Obama proposed a 'worldwide ban on weapons that interfere with military and commercial satellites'. In December 2008, the UN General Assembly asked the Conference on Disarmament to discuss both proposals for preventing an arms race in outer space. The CD decided to do this in May 2009, after the US withdrew its opposition.

It seems that the table is set for discussions on preventive arms control in outer space, if only the countries involved can find a way out of the prisoner's dilemma, and decide that it is far better to cooperate. ■

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 - Relevant blogs include Res Communis (University of Mississippi School of Law): <http://rescommunis.wordpress.com> and UNIDIR's e-di@logue: www.unidir.org/html/en/e-dialog.html

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