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Report on Working Group 2
Weaponisation of Space and Missile Defence

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Introduction and Working Group Focus

The Working Group on *Weaponisation of Space and Missile Defence* was composed of 22 members from 11 countries (including 6 members from the International Student Young Pugwash). This report of the working group is the sole responsibility of the rapporteurs, and while there was a high level of consensus in the group, this does not necessarily represent consensus on all points.

The majority of the discussion was focused on continuing efforts on the prohibition of space weapons as instigated during the 52nd Pugwash Conferences in La Jolla and the First Annual workshop on *Preserving the Non-Weaponisation of Space* held in Castellón de la Plana, Spain in May 2003. The threat assessments, underlying motivations and arguments concerning missile defence (MD) and the potential weaponisation of space were not discussed in detail here since they were well covered in Castellón, although the workshop briefly considered two papers from participants on regional debates and implications of missile defense, which focused on North-East Asia and Britain respectively.

Missile Defence

In general, it was agreed that developments in missile defenses could have major effects on international and regional security and that many components in the currently proposed multi-tiered, layered system are technologically far from proven.

Firstly, we discussed that the effects on regional security must be rigorously analysed by each individual country invited to join. It was argued that the development of missile defense could create a new regional missile arms race in

the Korean Peninsula, Japan, China, and Taiwan region. The practical application of missile defense was debated in the context of international stability and world order, and concerns were raised that with the current direction under the leadership by the United States, ballistic missile defences (BMD) could be detrimental to overall security.

A useful paper on the revolution in military affairs (RMA) led to consideration of the relationship between RMA, increased reliance on space assets in a military context, and the ideological commitment of the Bush administration to space control and the development of missile defense systems. An important linkage between the missile defense debate and the weaponisation of space is the intended US deployment of a testbed for space-based interceptors in 2008. This is seen as the nearest term threat to the status quo of no weapons in space. It was noted that while both the issues of missile defense and space weapons are exceedingly important, each needs to be addressed in different ways. In considering the regional and international merit and disadvantages of missile defense, attention must be given to alternative mechanisms and arrangements for addressing missile threats, controls, and non-proliferation. One main recommendation was for Pugwash to initiate regional discussions on the impact of missile defense for specific regions.

While recognising that a growing number of states, including NATO, were being drawn into discussions on BMD collaboration, it was noted that there was a need for more information to inform public debate on the issue, and that the costs appear to be out of proportion with the threats from missiles and the capabilities of MD systems to aid national security.

Space Security

Following on from the more general discussions in Castellón, the workshop chose to focus specifically on short and medium term initiatives currently being undertaken, and consideration of roles for Pugwash and its members. The discussions developed a working objective, as follows: *Pugwash should seek to facilitate incremental steps leading to a comprehensive space security architecture to ensure the peaceful uses of space*. Initiating this discussion, we heard from the Canadian Department of Foreign Affairs and International Trade (DFAIT), which has been working with international experts to develop a knowledge base to facilitate constructive dialogue on the issue of the weaponization of space. This dialogue has evolved to be in the context of 'space security,' and is defined to be the 'equitable, sustainable, and secure use of and access to space and freedom from space-based threats'. There is development of a Space Security Index aimed to be a research-based trend analysis that provides a net assessment of the collective progress, or lack of progress, towards space security. The Canadian Space Security Index is envisaged to measure twelve indicators within three themes of space security; space environment (e.g. space debris, allocation of orbital slots), the

intentions of space security actors (e.g. space military doctrine) and capabilities of space security actors (e.g. launch capabilities, ASAT, space weapon capabilities).

Space Security Strategy

A considerable amount to time was spent on widening discussion of the strategy initiated in the Castellón workshop, and identifying specific actions for moving forward (see also the key papers from the workshop on the Pugwash website). In this regard, it was felt that Pugwash could play an important role in increasing the knowledge base and the public and political salience of space security. The strategy for preserving the non-weaponization of space is to start with three themes, which need to interact in parallel: continue to build the knowledge-base and increase salience; stopping financial resources via the US Congress toward the 2008 space weapons testbed; and working on incremental confidence building and regulation steps, while laying the groundwork for comprehensive international agreements within the space security architecture. The following outlines the three main themes in greater detail:

1. Increase the knowledge base
    a. Space Security Index (see above)
        i. Coordinate a network of experts on space, especially from the scientific community, in order to facilitate the Space Security Index (SSI) and fulfill specified research and analysis needs
        ii. Produce publication on space security to collate the knowledge base gathered in the SSI.

    b. Increase Salience
        i. Networking: reaching out to public, space scientists and space users
        ii. Reach out to space scientists who are under represented in Pugwash
        iii. Encourage development of a Space Security Bulletin to inform space community on recent news
        iv. Co-convene a conference with Pugwash and Committee on Space Research (COSPAR) potentially on Space Debris
        v. Reach out to commercial actors and industries using space assets and increase their awareness of the effects of the weaponization of space
        vi. Reach out to military community and space scientists to encourage dialogue amongst space actors and users
        vii. Increase public outreach through space NGOs

    c. Further Research and Rigorous Analysis
        i. Feasibility of threats to space-based assets from ASATs launched by non-traditional space powers
        ii. Feasibility of a 'Space Pearl Harbor' scenario
        iii. Space Security Index
            1. The hazard posed by Space Debris

2. Access to space and equity

iv. Costs and Benefits of space weapons

v. The impact of space weapons on the commercial space sector

2. Political Initiatives towards prohibition of space weapons

a. Major goal is to make sure that there is no US test-bed deployed by 2008

i. Engage the US Congress in dialogue to cut spending from space weapons development prior to a critical debate

ii. To convene a roundtable or workshop to improve the understanding of the issue amongst politicians.

3. Laying the groundwork for a comprehensive space security approach

a. Discussions with US Military, Congress and the White House

b. Iincrease the visibility of existing as well as new research and reports

c. Research into verification for potential agreements

d. High-profile spokespeople for public attention

e. International space security summit

f. Consider the pros and cons of advocating a moratorium on no first testing, deployment or use of space weapons

g. A timeline for political/legal initiatives

i. On-going work on CBMs (debris management, compliance issues, etc.)

ii. Track II initiatives

iii. Increase number of parties to the Outer Space Treaty (OST) towards universalisation

iv. UNGA resolution to multilateralise agreement on non-interference with space assets, building on the provisions in the CFE and other treaties

v. Negotiations on banning ASAT, weapons in and from space and international rules of the road regulations, either as a protocol to the OST or as separate legal instruments.

Recommended Priorities

In order to move forward on the detailed issues mentioned above, the working group identified potential organizations for each action, some of which already have work underway on space security-related issues, and some which Pugwash members could invite to get them involved in the space security movement. Below is a list of the suggested short-term priorities for Pugwash and International Student Young Pugwash to focus their continued efforts on the space security movement.

Pugwash priorities

1. Reach out to military community and space science community to encourage dialogue on space security including, where possible, participation in the development of the Space Security Index

2. Coordinate further research and work on space debris as part of raising awareness of the need for legally instituted rules of the road
3. Research into potential verification measures to increase the credibility of political and legal initiatives.

Student/Young Pugwash priorities

1. Push universal ratification of Outer Space Treaty
    a. Create a Ratification kit
    b. Work with the Space Generation Advisory Council and possibly the United Nations Office of Outer Space Affairs
2. European Union

    a. Input to the development of EU White Paper on space policy
    b. Increase knowledge among senior EU people
3. Cost-benefit analysis in collaboration with military actors

    a. Publish in high-level journal
    b. Use that as a connection to meet more military contacts
4. Identify space scientists / and policymakers for Space Security Index expert base