

# **Stability, sustainability, and crises: The role tabletop exercises in space crisis dynamics can play in ensuring the long-term sustainability of space**

Victoria Samson, Brian Weeden, Rajeswari Pillai  
Rajagopalan, Abhijnan Rej  
68<sup>th</sup> IAC Adelaide, Australia  
Sept. 26, 2017

©2017 Secure World Foundation. Used with Permission

# TTX and Space Crisis Dynamics

- Why this is an issue for the long-term sustainability of space
- Goals of the Tabletop Exercises (TTX)
- Washington, DC, TTX
- New Delhi, India, TTX
- Conclusions

# Importance to space sustainability

- Increasing number of and diversity in *new actors*, concurrent with increasing *importance of space* in daily activities globally
- Stability rests upon *reliable and predictable access to space*
- *Lack of clarity* of the cause when satellite capabilities disappear

- Co-hosted by SWF and the Center for Strategic and International Studies (CSIS) in Washington, DC, in November 2016
- Hosted by the Observer Research Foundation in February 2017
- Intended to *raise awareness* about the risks of crisis escalation
- *Identify gaps* in existing mechanisms and deterrence capabilities
- Host discussions in an *unclassified, open* forum

- Four fictional countries, loosely based on real-life, given color codes
- Run by the Control Cell
- *Not for attribution discussions*
- Three moves over three hours
- DC: three scenarios; New Delhi: one scenario

- Position, navigation, and timing (PNT) downlink jammer used
  - Blue helicopter struck by a Red unmanned aerial vehicle (UAV)
- Saw the use of cyber attacks
- Hesitation to go directly to attacks on space assets
- Space assets used to increase transparency in an attempt to de-escalate
- Jamming and dazzling satellites perceived as escalatory as a more permanent attack

- Blue inspection satellites sent to monitor Yellow national security satellites in Geostationary orbit (GEO); both sides experience interference
- Blue mobilizing anti-satellite (ASAT) launchers and airborne dazzlers
- Orange attacks Blue's SSA ground stations
- Cyber-attack used as well
- Concerns about inspection satellites near strategic assets

- Proxy war, satellite jammers, space weather, lead to inadvertent satellite blinding
- Red threatens ASAT attack as a form of saber-rattling
- Yellow uses its dead satellite to ram into Blue ISR space assets, creating large debris field
- Cyber-attacks attempted on satcom
- Orange attacks Red ASAT ground stations



- Real *reluctance to use kinetic force* against satellites
- Loss of key military space capability could be partially compensated for
- Temporary and reversible interference not always perceived as such
- Threshold between strategic and tactical assets not always as clear
- In-kind responses not always warranted
- Space capabilities used an attempts to de-escalate

- ASAT aiming at a TV broadcasting satellite accidentally shoots down military communications satellite
- Yellow satellite is dazzled; goes to the Hague Permanent Court of Arbitration
- Yellow jams Blue's military PNT signal (localized to their border region), moves co-orbital assets near protected satellites in GEO against Blue
- Cyber-attack on ISR satellites
- Four-party talks started

- Reluctance to use kinetic force against satellites
  - Cyber attacks and other electronic interference seen as much more usable
- Important to have this discussion because counterspace efforts are being considered internationally
- Space actors need to consider the resilience of their space assets
- *Norms of behavior can help* guide debates about appropriate responses



*Promoting Cooperative Solutions for Space Sustainability*

**Questions?**

**Thanks.**

**[vsamson@swfound.org](mailto:vsamson@swfound.org)**

**1.202.568.6213**