

Global Counterspace Capabilities and Multilateral Discussions

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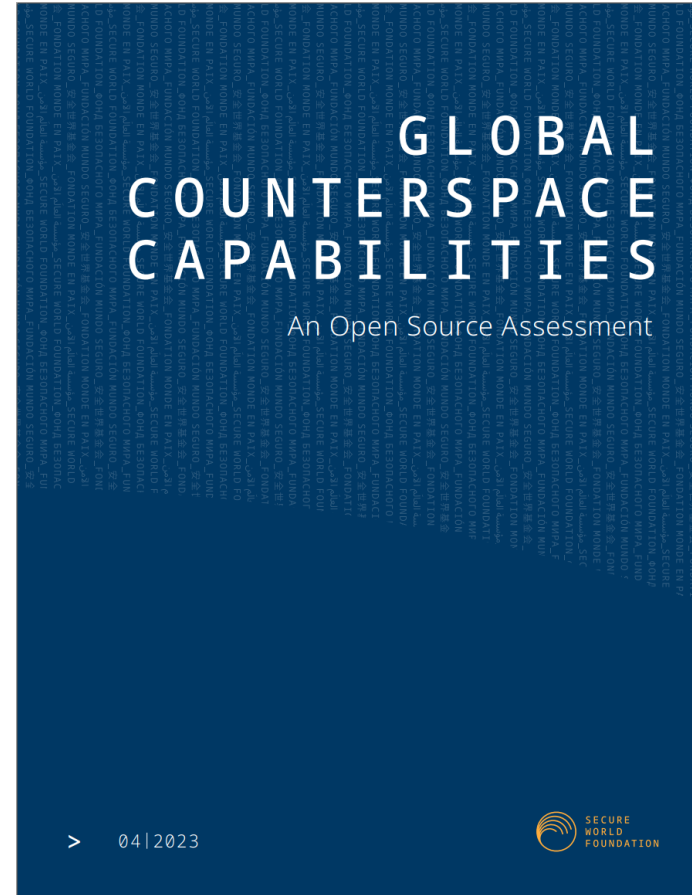


Secure World Foundation (SWF) is a *private operating foundation* that promotes cooperative solutions for space sustainability

Our vision: The secure, sustainable, and peaceful uses of outer space that contribute to global stability on Earth



- Existence of counterspace capabilities is not new, but the circumstances surrounding them are
- Significant R&D/testing of a wide range of destructive & non-destructive counterspace capabilities by multiple countries
- ***Only non-destructive capabilities are actively being used in current military operations***



<https://swfound.org/counterspace>



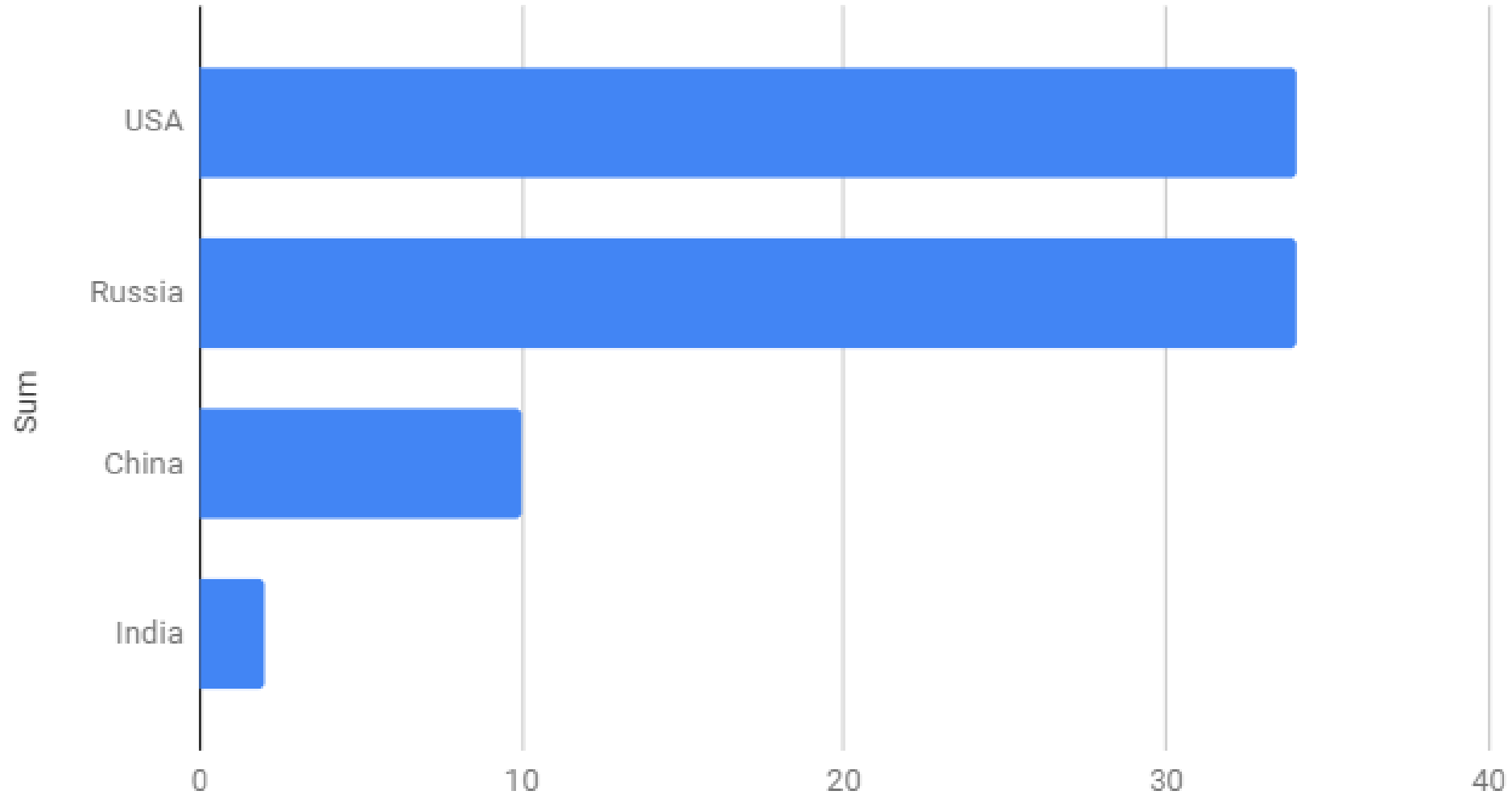
2023 Global Assessment

	U.S.	Russia	China	India	Aus.	France	Iran	Japan	North Korea	South Korea	U.K.
LEO Co-Orbital	■	▲	■	●	●	●	●	●	●	●	●
MEO/GEO Co-Orbital	■	▲	■	●	●	●	●	●	●	●	●
LEO Direct Ascent	■	■	▲	■	●	●	●	●	●	●	●
MEO/GEO Direct Ascent	■	■	■	●	●	●	●	●	●	●	●
Directed Energy	■	■	■	●	●	■	●	●	●	●	●
Electronic Warfare	▲	▲	▲	■	■	■	■	●	■	■	●
Space Situational Awareness	▲	▲	▲	■	■	■	■	■	●	■	■

Legend: none ● some ■ significant ▲



ASAT Tests by Country





ASAT Tests by Year

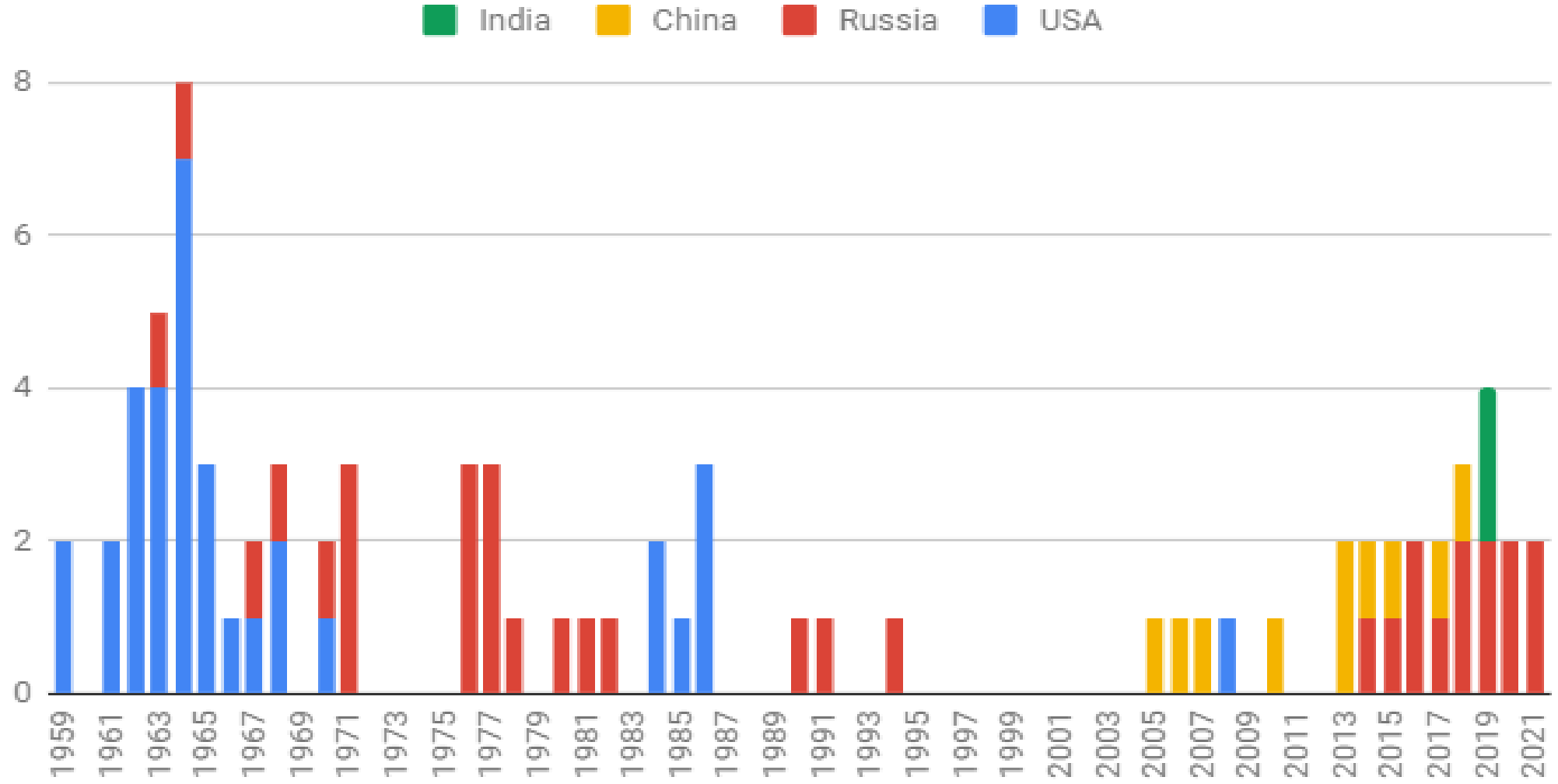




TABLE 5-1 – ORBITAL DEBRIS CREATED BY ASAT TESTS IN SPACE

DATE	COUNTRY	ASAT SYSTEM	TARGET	INTERCEPT ALTITUDE	TRACKED DEBRIS	DEBRIS STILL ON ORBIT	TOTAL DEBRIS LIFESPAN
Oct. 20, 1968	Russia	IS	Cosmos 248		252	79	50+ years
Oct. 23, 1970	Russia	IS	Cosmos 373		147	35	50+ years
Feb. 25, 1971	Russia	IS	Cosmos 394		118	45	50+ years
Dec. 3, 1971	Russia	IS	Cosmos 459		29	0	3.3 years
Dec. 17, 1976	Russia	IS	Cosmos 880		127	57	45+ years
May 19, 1978	Russia	IS-M	Cosmos 970		73	64	40+ years
Apr. 18, 1980	Russia	IS-M	Cosmos 1171		48	6	40+ years
Jun. 18, 1982	Russia	IS-M	Cosmos 1375		64	60	35+ years
Sept. 13, 1985	U.S.	ASM-135	Solwind	530 km	287	0	18+ years
Sept. 5, 1986	U.S.	Delta 180 PAS	Delta 2 R/B		17	0	< 1 year
Dec. 26, 1994	Russia	Naryad-V?	Unknown		27	24	25+ years
Jan. 11, 2007	China	SC-19	FengYun 1C	880 km	3536	2786	15+ years
Feb. 20, 2008	U.S.	SM-3	USA 193	220 km	175	0	1+ year
Mar. 27, 2019	India	PDV-MK II	Microsat-R	300 km	130	1	3+ years
Aug.-Dec. 2019	Russia	Cosmos 2535	Cosmos 2536		30	16	3+ years
Nov. 15, 2021	Russia	Nudol	Cosmos 1408	470 km	1790	300	Unknown
Total					6850	3472	



State of Multilateral Security Discussions

- No forward movement on space security and stability discussions at the UN for decades
 - Disagreement on nature of the threat and how to respond
- UNGA 75/36: Dec. 2020
 - National submissions to the UNSG on nature of the threat to space, responsible/irresponsible behavior, and possible paths forward
 - Four trends: space debris, placement of weapons in space (that could lead to space debris), harmful interference, role of dual-use space objects
- UNGA 76/231: Dec. 2021
 - Created an Open-Ended Working Group to meet four times over 2022 and 2023
 - Goal: come up with recommendations on possible norms, rules and principles of responsible behaviors relating to threats by States to space systems



SSA for Monitoring & Verifying Behavior

- SSA capabilities might be used for monitoring behaviors in space and verifying compliance with current and future agreements, but are limited in terms of what kinds of threats can be detected, monitored, and attributed
 - There are significant challenges still in interpreting the meaning of the technical data
- SSA capabilities can be used to verify certain threats to space systems in orbit, such as destructive anti-satellite (ASAT) tests and uncoordinated close approaches
 - Less helpful in verifying threats that are less visible and not as easy to attribute to a specific actor
- SSA in general can help both in identifying patterns of life for normal space activities and when space objects diverge from those normal patterns
 - Determining **why** divergence happens is not a job for SSA, but rather for analyses that pull in a wider set of data from different sources

Questions?

Thanks.

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