

May 29, 2009



From left, Nicholas Kasirer (Dean of McGill Law School), Gerard Brachet (Managing Director of Sic Itur) and Dr. Ray Williamson (Secure World Foundation Executive Director). Photo courtesy Alejandro Restrepo Marino.

What Can the World Do About Space Debris? An Urgent Call to Action

Now is the time to reduce the threat to both human spaceflight and satellites from destructive space debris. That viewpoint emerged from a major gathering of space experts at the International Interdisciplinary Congress on Space Debris, held May 7-9, 2009, at the [Faculty of Law, McGill University](#) in Montreal, Canada. The Congress brought together legal, policy,

and technical experts from around the globe, including the United States, Russia, India, China, Canada, and Europe – a unique gathering of officials to thrash out legal and technical ideas for the next phase of dealing with the space debris issue.

Critical steps and options

Over the past decade and a half, the world's major space agencies have been developing a set of orbital debris mitigation guidelines aimed at stemming the creation of new space debris and lessening the impact of existing debris on satellites and human spaceflight. A version of these guidelines was unanimously endorsed by the United Nations in 2007 and several States are in the process of implementing or have already implemented these voluntary measures.

The Congress noted that a critical next step is engaging with the growing number of developing countries that are using satellites to help protect their populations and manage natural resources. While they may not have independent spacefaring capabilities, orbital debris is an area of concern for them and they can contribute meaningfully to the process. "Space debris is primarily a global issue. Global problems need globally solutions, which must be effectively implemented internationally as well as nationally," said McGill University's Ram Jakhu, Chair of the Congress.

"Tackling the difficult issue of mitigating the destructive effects of space debris requires the attention of experts versed in the legal, policy, technical and scientific aspects of space debris," said [Dr. Ray Williamson](#), Executive Director of Secure World Foundation (SWF). "This interdisciplinary Congress illuminated many of the most difficult and thorny issues inherent in tackling space debris problems and provided some important suggestions on a way forward," Williamson said.

To this end, the Congress explored a variety of legal options for further implementation of debris mitigation guidelines. One possibility mentioned is the establishment of an international regime for dealing with orbital debris similar to the [Missile Technology Control Regime](#), or perhaps the [Limited Test Ban Treaty](#) of 1963. There are a variety of other means within international law as well, including codes, declarations and treaties.



Next phase of debris mitigation

Until now, the debris mitigation process has had a mainly technical focus, with an enormous amount of research producing excellent recommendations, noted [Brian Weeden](#), SWF Technical Advisor. "However, the community is now starting to focus on the legal aspect, which is critical for broadening and strengthening the adoption of debris mitigation guidelines and space safety in general," Weeden said.

Weeden explained that the recent Congress explored lessons from terrestrial environmental pollution law as well as maritime law that could be applicable to outer space. Furthermore, international law isn't necessarily the only method for implementing the guidelines. "We are also looking at a variety of other mechanisms, to include economics and industrial standards," he said.

News Bits



► [Victoria Samson](#) (left), Washington Operations Director for SWF, wrote a piece on orbital debris for [Niman Watchdog](#)

entitled "[Space debris - a growing concern](#)," designed to help journalists interested in writing about the subject of orbital debris using a question and answer format. Questions answered include: Can debris be created intentionally? How can we ensure the long-term sustainability of outer space? What is the White House's policy regarding debris mitigation?



► [Michael Krepon](#) (left), co-founder of the [Henry L. Stimson Center](#), spoke on the subject of space security during

May's installment of the [Space Security Lunch Series](#). The lunch series is co-sponsored by SWF and the Aerospace Law and Policy Association at the University of Colorado Law School. Krepon spoke on the history of space activities through the lens of international policy, then discussed options for space governance with special emphasis on the need for a code of conduct.

► The [Council on Foreign Relations](#) issued a Task Force report, titled [U.S. Nuclear Weapons Policy](#), which focuses on near-term policies to reduce nuclear weapons to the lowest possible level consistent with maintaining a credible deterrent. On page 4 of the Executive Summary, it states "The report proposes a ban on the testing of anti-satellite weapons, which should include Russia and eventually be globally applicable."

Emerging consensus

There was definite consensus from the gathering on the importance of space situational awareness for all space actors, as a means of learning more about the space debris problem and how to tackle it. Many also believed that any international space debris regime also needs to be developed with an eye to the future and an eventual international space traffic control system.

The discussion of orbital debris doesn't stop with the McGill Congress, however. Planning for a second workshop at the University of Cologne in May 2010 is already underway. Sponsored by the German government, this follow-on event will take the inputs and discussions from the McGill Congress and generate specific policy, legal and technical recommendations for the next phase of dealing with debris mitigation.

Additionally, researchers are moving towards the next phase of scientific study. "There is an emerging consensus among the technical community that simply preventing creation of new debris is not going to be enough," Weeden emphasized. "At some point we will need to actively remove debris from orbit. Fortunately, new studies are showing that removing as few as five or six objects per year could stabilize the debris population over the long term. The big question right now is which objects to remove first and what is the best method to do so."

SWF Leadership Attends Air War College Forum on National Security

Dr. Ray Williamson, SWF's Executive Director, attended the [56th Annual National Security Forum \(NSF\)](#) held in May 2009 at [Maxwell Air Force Base](#) in Alabama. Williamson accepted a personal invitation from the [Secretary of the Air Force](#) to attend the forum at the [Air War College](#).



Williamson

The purpose of NSF is to expose influential citizens to senior U.S. and international officers and civilian equivalents in order to engage each other's ideas and perspectives on Air Force, national and international security issues. During the week of May 18-22,

Words of Wisdom



"While our first reaction was that we faced a military problem of technology inferiority, the testimony from scientists and engineers convinced us that outer space had been opened as a new environment and that it could be used worldwide for peaceful uses of benefit to all humankind, for communications, navigation, meteorology and other purposes. Use of space was not confined to military activities. It was remarkable that this possibility became evident so soon after Sputnik and its significance cannot be understated. The problem became one of maintaining peace rather than preparing the United States to meet the threat of using outer space for war. Fear of war changed to hope for peace."

- Eilene Galloway (1906-2009), shortly after the launch of *Sputnik 1* in 1957

In the main text of the report, "kinetic ASATs" are specifically mentioned.

► **Eilene Galloway**, a key contributor to the birth of the [National Aeronautics and Space Administration \(NASA\)](#) and leading figure in the development of space policy and law, passed away on May 2, 2009, just shy of her 103rd birthday. She was one of Washington's most influential space experts, supporting nine NASA Advisory Committees as special consultant. Galloway also contributed to the establishment of the [United Nations Committee on the Peaceful Uses of Outer Space \(UNCOPUOS\)](#), and was a founding member of the International Institute of Space Law (IISL). From 1966 to 1975, Galloway was a senior specialist in international relations focusing on national security for the [Congressional Research Service \(CRS\)](#), and contributed as special consultant to both the Senate Committee on Aeronautical and Space Sciences (from 1958 to 1977) and the Senate Committee on Commerce, Science and Transportation (1977 to 1982).

The Month Ahead

**June 3-13
(Vienna, Austria)**

Plenary session of the UN Committee on the Peaceful Uses of Outer Space. SWF Executive Director **Dr. Ray Williamson**, SWF Legal and Policy Advisor **Ben Baselevy-Walker**, and SWF Space Policy Consultant **Agnieszka Lukaszczyk** to attend.

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**June 9-11
(Keystone, Colorado)**

[Space Warfare Symposium](#). SWF Communications Director **Phil Smith** to attend.

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**June 11-12
(Boulder, Colorado)**

approximately 130 civilian leaders in business, education and government from all over the United States met with senior military leaders to explore current and future national security issues facing our nation.

The forum included discussion of cybersecurity, the robotics revolution and conflict in the 21st century, diplomacy and security challenges in the broader Middle East, diplomatic efforts related to the nuclear programs of Iran and North Korea, as well as a major address to those attending by the Honorable [Michael B. Donley, Secretary of the Air Force](#).

The Air War College is the senior professional development school in the [Air Force](#) officer education system as a part of the [Air University](#), the Air Force's center for professional military education. The Air War College educates selected senior officers to lead at the strategic level in the employment of air and space forces. The curriculum focuses on coalition warfighting and national security issues, with emphasis on the effective employment of aerospace forces in joint and combined combat operations.



Phil Smith shows correspondent Greg Dobbs a chart describing orbital debris concentrations. **Courtesy HDNet.**

SWF Featured on HDNet's World Report to Discuss Orbital Debris Risk to STS-125 Mission

HDNet *World Report* featured a story May 12, 2009 on the STS-125 servicing mission to the Hubble Space Telescope (HST), which successfully launched the previous day. Phil Smith, SWF Communications Director, was interviewed by correspondent Greg Dobbs.

The first half of the segment detailed the mission of *Atlantis* and the HST. The second half addressed orbital debris and the concern that this might impact the mission. HDNet contacted SWF to weigh in on the subject, specifically to address what is being done about the mitigation of orbital debris. SWF is actively working with partners to establish a regime designed to address how to minimize the production of orbital debris, an issue that requires significant technical and policy coordination.

The segment, the first third of Episode #55, can be found on [iTunes](#) listed under "HDNet World Report".

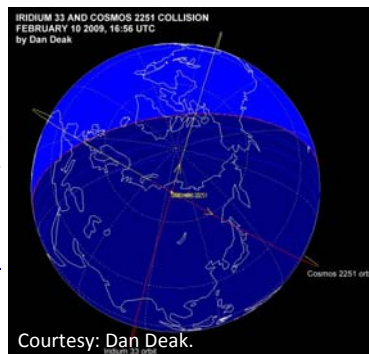
Satellite Collision: Debris to Remain Hazard for Years

In February 2009, the collision between two satellites created a mess in Earth orbit, Lieutenant General Larry James, Commander of the [Joint Functional Component Command for Space](#) testified before a [Senate Subcommittee on Strategic Forces](#).

James provided an update on the [collision](#) between an inactive Russian Cosmos satellite and an operational Iridium commercial communications spacecraft.

"To date we have cataloged over 940 pieces of debris that resulted from the Iridium-Cosmos collision and there are likely thousands of smaller pieces our sensors can't track," James reported. He added in written testimony that only 18 items of debris have reentered so far.

The orbiting leftovers are expected to be circling Earth for decades, James added. "This debris will slowly decay due to natural forces, but it will remain a hazard to manned and unmanned spaceflight in low Earth orbit, and to satellites transiting that region, for several years," James explained.



[University of Colorado Fiske Planetarium](#) lecture series. **Phil Smith** to present.

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June 15-16
(Geneva, Switzerland)

[United Nations Institute of Disarmament Research \(UNIDIR\)](#) Conference. **Dr. Ray Williamson, Ben Baseley-Walker** and **Agnieszka Lukaszczyk** to attend.

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June 17-19
(Albuquerque, New Mexico)

Air Force Space Safety Council meeting. SWF Technical Advisor **Brian Weeden** to present on current status of international civil SSA.

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June 18-19
(Paris, France)

L'Institut Français des Relations Internationales (IFRI) workshop. **Dr. Ray Williamson** and **Agnieszka Lukaszczyk** to present.

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June 24
(Washington, DC)

Space Weapons Briefing. Presentation by SWF in partnership with [Space Foundation](#). SWF Washington Office Director **Victoria Samson, Ben Baseley-Walker** and **Brian Weeden** to participate.

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June 25
(Washington, DC)

[NORAD](#) Space Situational Awareness Workshop. **Dr. Ray Williamson, Victoria Samson, Brian Weeden** and **Ben Baseley-Walker** to participate.

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June 26
(Washington, DC)

Security for a New Century briefing series. SWF staff will present.

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For past issues of our newsletter, please go [here](#).