Cruise control: Managing SLCMs under strategic arms agreements

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The returning international focus on arms control has revived the old problem of how to accommodate sea-launched cruise missiles. Dr Lee Willett reports

The strategic focus on arms control, as well as the nuclear and other systems within it, has returned to the centre of the international security debate. Nuclear powers are continuing with modernisation programmes as exercises, missile system tests, and operational deployments encompassing both nuclear and non-nuclear capabilities with strategic effect receive more political and public attention.

The arms control process is in a state of flux, however, with the 1987 Intermediate-Range Nuclear Forces (INF) Treaty collapsing in August 2019 and debate continuing on whether the 2010 New Strategic Arms Reduction Treaty (New START) – the last surviving US-Russian strategic nuclear arms control accord – will be extended, replaced, or scrapped as it approaches its expiration date of February 2021.

The crew of the Los Angeles-class fast-attack submarine USS Annapolis (SSN 760) successfully launches Tomahawk cruise missiles off California in June 2018. Sea-launched cruise missiles have consistently evaded the arms control net. (USN)
Within all these debates one capability poses a special conundrum for any country looking to operationally defend against it or restrict it through arms control: the cruise missile.

According to an early US Department of Defense (DoD) definition, a cruise missile is an “armed, unmanned, self-propelled guided missile sustained in flight by aerodynamic lift over most of its range”. A cruise missile can be air-, ground-, or sea-launched; short-range, long-range, or anything in between; aimed at targets ashore or at sea; and conventional or nuclear, using the same airframe. Ground-based systems can be fixed or mobile, while sea-based systems can be based on or below the surface. Operationally, cruise missiles enable the user to place conventional or nuclear warheads, fitted to a low-profile delivery system, in a ring around any potential adversary.

In arms control terms cruise missiles have never fitted easily into standard frameworks, largely because their broad spectrum of capabilities, deployment, operation, and output has tended to blur traditional strategic and political arms control guidelines. However, for those states likely to be involved in strategic arms control in the near term, cruise missiles are integral to their force structure. Russia and the United States have robust cruise missile arsenals, while China’s air-breathing missile inventory is expanding.

Air-launched cruise missiles (ALCMs) have featured in arms control agreements – such as the Strategic Arms Limitation Talks (SALT) of the 1970s and 1980s and Strategic Arms Reduction Talks in the 1980s onwards – while ground-launched cruise missiles (GLCMs) were a central element of the INF Treaty. Sea-launched cruise missiles (SLCMs), however, have consistently evaded the arms control net.

**Bargaining chip**

Throughout Russian/Soviet and US arms control history cruise missiles have hampered any party seeking a deal. In the early 1970s the Soviet Union held the technological lead in cruise missile developments, particularly at sea, and sought to maintain this lead by excluding such capabilities from the SALT process. Neither SALT I nor SALT II managed to tackle the generic cruise missile question to the complete satisfaction of Moscow or Washington.

US deployment of GLCMs in Western Europe between 1983 and 1986 complicated the ongoing discussions over both the INF Treaty and the START I agreement. After 1987 US development of the conventional variant of its Tomahawk SLCM held up START I again for long periods.

Throughout the arms control process from SALT, through INF, and onto START, the only written arrangement involving SLCMs agreed to leave them out. This was a joint statement released on 1 June 1990 at a summit in Washington, which declared that “SLCMs [would] not be constrained in the START Treaty”.

When cruise missiles first emerged into the operational arena they were widely viewed as a political bargaining chip, being an intriguing but untested technology. They were also somewhat seen as more peripheral to nuclear deterrence and arms control than the more prominent and more
traditional strategic systems. However, as deployment became more widespread, cruise missiles’ military use, particularly in terms of conventional capabilities, became more evident.

Today cruise missiles are not peripheral to arms control but central to it, likely being a continuing problem going forward. Russia and the US have used conventional cruise missiles in combat, while the INF Treaty collapsed – from the US and NATO perspective, at least – because of Russia’s alleged deployment of the 9M729/SSC-8 dual-capable GLCM, which features a range that exceeded the treaty’s restrictions.

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