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Center for Arms Control, Energy and Environmental Studies at MIPT

Our comment

Collision of Two U.S. Nuclear Powered Submarines on March 19, 1998.

See also, [the author's answers to the questions of the U.S. nationwide policy debaters.](#)

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- U.S. attack submarines are technically incapable to conduct protracted trailing operations against modern Russian strategic submarines.
- Continuing covert activity of U.S. submarines in the vicinity of Russian naval bases does undermine the attempts of both countries to build mutual partnership. Moreover, such dangerous operations can lead to considerable environmental accidents.

The evidence of these conclusions was again demonstrated by [a recent collision of two U.S. submarines](#), that occurred at 9:30 am on March 19, 1998 off Long Island, NY. At the moment of collision the USS [Kentucky](#) (Ohio class ballistic missile submarine) was at the surface, and the USS San Juan (Los Angeles class attack submarine) was submerged. According to U.S. Navy official data, the submarines suffered minor damage and returned to Groton naval base for extensive checks. There were no casualties.

Though, most probably, the collision was caused by mistakes of the crews of both submarines, this incident again reveals the fact of limited technical capabilities of the acoustical means of detection.

An on-board sonar turned on in a passive mode provides the only means to observe outer environment around the submerged submarine, when the latter operates covertly. The submerged submarine can "see" surrounding targets such as surface ships or other submarines, provided that these targets generate enough noise, and the weather conditions are favorable. Otherwise, the detection distance of the submarine sonar against quiet targets is so small, that the submarine can only find a target when it runs into it.

Recent incident suggests, that the USS San Juan did not detect the USS [Kentucky](#), in spite of the fact that the latter was sailing surfaced and generating much more noise, compared to those, created by the SSBN moving with the same speed fully submerged. When a quiet target is submerged and operates covertly, detecting it becomes very difficult, not speaking about tracking the target.

The collisions of submarines with surface ships and other submarines are not rare events. Recently, on February 11, 1998, [a U.S. attack submarine sank South Korean fishing boat](#). The accident happened 7 kilometers off the South Korea. At shallow waters. especially. where the

relief of the bottom is complex, a submarine sonar detection range against a quiet target, such as a fishing boat or a modern submarine, drops to few kilometers even at the most favorable weather conditions.

Collisions of submarines with surface ships can be attributed to of accidental nature. Entirely different situation is created, when a submarine attempts to trail covertly another submarine, though technical capabilities of its sonar are not adequate to accomplish this task. It is such dangerous operations, that U.S. attack submarines conduct off the Russian coast. As an example, the USS Baton Rouge made an attempt to trail a Russian Sierra class (project 945) attack submarine, and this attempt resulted in a collision in February 1992. This incident is also notable, because it occurred in an area which Russia considers within its 12 miles territorial zone. Russian submarines based at Motovski and Kola bays routinely pass the collision region, as they go at sea and return from their patrols. Acting jointly, such factors as a short sonar detection range, a constrained area, an intensive shipping and, most importantly, covert behavior of submarines, lead to a high probability of collision incidents.

Another collision of U.S. and Russian submarines occurred in March 1993. That was the USS Grayling attempting to trail Russian "K-407" SSBN of Delta-4 class (project 667BDRM). Fortunately, as well as the previous incident, this collision in the Barents Sea did not result in casualties. The Russian submarines suffered damage of their outer hulls, and were subsequently repaired. As to the U.S. submarines, the U.S. Navy decided, that decommissioning the submarines would be a cheaper option. However, were the collision of USS Grayling and "K-407" occurred twenty seconds later, it could have resulted in the crushing of one or more of the submarine's missile compartments. Such a collision could have caused a deflagration event that could have most likely resulted in the loss of both submarines. Two submarines with uncontrolled reactors and at least 64 nuclear warheads would have sank to the bottom. All of the crew members of both submarines would have been lost.

Russian naval experts do not exclude the possibility, that "K-219" SSBN of Yankee class (project 667 AU) sank in the Atlantic ocean in October of 1986 because of a collision with a U.S. submarine. Few days after the death of the "K-219", the attack submarine USS Augusta arrived to its home port revealing its damaged hull. A collision with a U.S. submarine could have also been a cause of the death of "K-129" SSB of Golf II class (project 629A) in the Pacific in 1967. There are forcible reasons for these assumptions, but there is no persuasive proof.

However, what is not in doubt, and what has already much supporting evidence - is the continuing activity of U.S. submarines against Russian submarines. These operations are covert and aggressive by nature and mostly dangerous in the vicinity of Russian naval bases.

One of the recent incidents provides the confirmation of such an activity. This incident occurred on December 3-4, 1997, when SS-N-20 SLBMs were eliminated above the Barents Sea. The missiles were fired from a submerged SSBN of "Typhoon" class (project 941) and blown up at an altitude of 1.5-2 kilometers. The destruction procedure was performed in strict compliance with START I Treaty procedures, and an invited delegation from U.S. On-Site Inspection Agency was observing the procedure aboard a Russian hydrographic vessel in the area of firings. Nevertheless, an SSN of Los Angeles class was in the area as well. According to the information from the Main Staff of the Russian Navy, the U.S. submarine was dangerously maneuvering close to the Typhoon SSBN, so that the distance between the submarines was less than 4 kilometers. The Russian antisubmarine forces monitored the U.S. submarine for five hours and made numerous attempts to communicate with the boat. When the latter failed to respond to Russian requests to clear the area, concluding procedures were

the latter failed to respond to Russian requests to clear the area, explosive grenades were dropped on. Only then did the submarine leave the area.

In spite of the end of the cold war and warming of political climate, 2 or 3 U.S. attack submarines are operated off Kola peninsula and a similar number - off Kamchatka, i.e. at the places, which the Russian SSBN have to pass, when they sail on their patrol routes. Similarly as during the cold war years, the U.S. submarines make attempts to trail the Russian submarines exposing themselves and the targets to unjustified risks of collision. Such an activity became senseless in the end of 1970-s, when the Soviet Navy obtained quiet nuclear submarines of the third generation. By the way, U.S. Navy officials constantly underscore the difficulty of detection of modern Russian submarines.

Russian side raised protests many times and suggested, that U.S. and Russian Navies would work out an agreement on limiting this dangerous activity. Nevertheless, the U.S. Navy keeps ignoring the protests and refuses to sit at a negotiating table.

Two far reaching conclusions can be drawn from the recent collision incident.

- An opinion about overwhelming capabilities of U.S. attack submarines against Russian strategic submarines, which is still widely shared by the Russian public, does not correspond to the actual situation. The incident of March 19, 1998 shows again, that the noise level of modern submarines is very small to allow U.S. attack submarines constantly track the targets in a wide variety of weather conditions. This is especially true, when a quiet Russian SSBN operates covertly. The more detailed analysis shows, that deployment of strategic weapons at sea meets the criterion of survivability much better than other options. Survivability is becoming the most important feature of strategic forces in future.
- Covert activity of hostile submarines must be restricted at the vicinity of submarine bases and SSBN patrolling areas. Such dangerous operations may result in collisions of submarines with undesirable outcomes, such as loss of the boats, deaths of the crew members and considerable environmental accidents. An agreement between the U.S. and Russia on limiting submarine covert operations at certain areas could be a substantial addition to the bilateral "Agreement on the Prevention of Incidents On and Over the High Seas", which was signed at the peak of the cold war in 1972 and put in force in 1973. Such a step would correspond to the spirit of time and contribute to building confidence between the U.S. and Russia.

Eugene Miasnikov
Center for Arms Control, Energy and Environmental Studies at MIPT

Frequently asked questions. If you have a question, please send it to www-start@iris.mipt.ru

Additional sources of information

Press reports on the submarine collision incident of March 19, 1998

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- 2 Nuclear Subs In Collision Near N.Y. (*Seattle Post-Intelligencer*; March 21, 1998)
- Two U.S. Submarines Involved in Minor Collision off New England Coast. (*US Navy Wire Service*, March 20, 1998)
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