

US-USSR Bilateral Arms Control

Short Course on Nuclear Security

AAAS, July 22, 2011

John Steinbruner

Basis for Presentation

- OSD Study
- Estimates Panel
- CIASC Dialogues

Of Background Note

- US became principal venue for nuclear weapons development because of geographical isolation not scientific leadership.
 - Explosive potential of U235 first described in valid technical detail in a memorandum to the UK government in 1940.
 - UK government recognized that uranium enrichment and plutonium production could not be done in the UK because of German aerial bombardment.

- Despite relying on international initiative and participation in the Manhattan project, US attempted to exercise exclusive national control in the aftermath.
 - By-passed the opportunity to pursue exclusive international control.
 - Underestimated Soviet scientific capability.
 - Did not test Soviet willingness to except equitable restraint.

- During the ensuing period of national monopoly (1945 – 1949) US maintained nuclear weapons in modest numbers under immediate civilian control.
 - Less than 400 fabricated weapons in 1949.
 - Not dispersed to operational military commands.

Basic Deployment Story

- Large scale active deployment initiated in reaction to the Korean war.
 - Presumption of global aggression.
 - Presumption that nuclear weapons would be used for all combat missions.
 - 5 PU production reactors and 2 gaseous diffusion plants in 1950 => 8 additional production reactors and 2 additional diffusion plants under construction in 1953.
 - 400 fabricated weapons in 1949 =>1000 in 1953 => 18,000 in 1959.
 - Dispersal of weapons under operational control of military commanders.
 - Exaggerated assessment of USSR deployment in the absence of hard evidence.

- Resulting posture featured:
 - Massive attack plans
 - Focused on DL (preemptive) missions
 - Requiring continuous alert operations

- Internal operational planning:
 - focused on efficient allocation of available weapons.
 - Did not attempt to judge aggregate sufficiency.

- US did not comprehend the degree of superiority achieved until satellite evidence became available in 1961.
- Imposed an internal ceiling on SNDVs at that point
 - Did not cut back the authorized deployment
 - Expanded offensive capacity by MIRV retrofits
 - Could not settle the internal AD/DL debate
 - Could not reconcile technical and political assessments of BMD.

- USSR
 - Did not initiate a nuclear weapons program until after WWII.
 - Clearly committed to qualitative matching.
 - Initially focused on regional defense in Europe rather than global confrontation.
 - Apparently interested from the outset in agreed restraint on intercontinental range forces.
 - Reflects priority of territorial defense over global power projection
 - And understanding of inherent economic disadvantage.
 - Driven to matching US global deployment by experience in the Berlin and Cuban crises.

Berlin/Cuba Experience

- US used nuclear weapons for effective coercive threats in both instances.
- Soviet deployment in Cuba appears to have been an improvised reaction to forced capitulation in Berlin.

- US had potentially decisive pre-emptive potential against Soviet intercontinental range forces during both crisis:
 - **Did not** authoritatively discuss it as an operational option.
 - **Could not** have been confident about eliminating Soviet theater range systems.
 - **Did** conduct ASW operations during the Cuban crisis without Excom knowledge or authorization.
 - **Was** prepared to conduct conventional preemptive attacks against missile sites in Cuba not knowing that Soviet nuclear armed air defense systems had been deployed in Cuba.

- Retrospective assessment:
 - Soviet failure to legitimize the Cuba deployment exposed them to coercion.
 - Operational control of deployed forces difficult to assure under crisis conditions.
 - Deterrent effect strong but not reliably decisive.
 - Both sides considered the use of nuclear weapons to be a serious possibility.
 - Potential triggering event – US conventional air strike in Cuba/Soviet nuclear armed air defense response – avoided by a single day.

Bilateral Arms Control

- Process initiated by Eisenhower
 - Separating the test ban treaty idea from the GCD formulation.
- Enacted by Kennedy in aftermath of the Cuban crisis
- Expanded under Johnson as an extension of the internal AD/DL/BMD debate.

- Core concept was stability in two dimensions
 - Force level ceilings to prevent competitively increasing deployments.
 - Constraint on preemptive potential.
- Basic principles:
 - Limit defensive deployment to assure mutual AD capability
 - Limit relative hard target attack potential.
- 1972 SALT I / ABM treaties were the foundation documents.

- Both the concept and the operational principles were accepted by the USSR **planning** system.
 - Comprehensive reprogramming to bring ICBM deployment plans in line.
 - Improvised SS – 20 program to cover theater missions pending anticipated limits on those systems.

- Neither the concept nor the implementing principles were accepted within the US **political** system.
 - Soviet reprogramming perceived but not formulated or credited.
 - Mantra of relentless momentum instead.
 - SS-20 interpreted as a threat to Europe.
 - Internal AD/DL/BMD debate not resolved by the foundation agreements.
 - Potential for agreed deployment limitation underestimated.

- Primary initiative for progress beyond the foundation agreements came from Gorbachev:
 - Attempt at the 1986 Reykjavik summit to initiate 50% reductions in offensive forces within the foundation agreement formula (contingent limitation on BMD).
 - 1987 INF agreement
 - eliminated all nuclear armed missiles and conventionally armed ground-launched cruise missiles in 500-5500 km range.
 - Provided for extensive on-site inspection arrangements.

- Accomplishments:
 - Egregiously excessive deployment levels have been reduced.
 - Preemptive potential has been constrained but not eliminated or balanced.
 - Process of exchanging verification information has provided meaningful but not decisively adequate reassurance.
 - No crisis engagement since 1983.

- Assessment:
 - Destructive potential
 - has not been proportionately affected, not even substantially affected by operational force reductions.
 - Far exceeds any plausible deterrent requirement.
 - Continuously alert operations
 - pose an unjustified risk of inadvertent or catalytically triggered catastrophe.
 - lock the RF – US security relationship into fundamental confrontation
 - that limits collaboration on weapons/material security.
 - Residual imbalance in preemptive potential virtually precludes incremental progress on the bilateral agenda as the US currently conceives of it.