

Reducing the Risk of Inadvertent or Unauthorized Launch

The Problem

- U.S. and Russia deploy counterforce-capable forces which are vulnerable to attack:
 - silo-based ICBMs
 - in-garrison ICBMs, in-port SLBMs
- Both maintain the ability/option to launch these forces quickly, on warning of attack, as a hedge against surprise attack
- Concern about deliberate attack and crisis instabilities resulting from first-strike incentives has faded with end of Cold War, but...

The Problem

- Ability/option to launch on warning increases risk that missiles might be launched on false warning, or without proper authorization
- Concern focuses on Russia:
 - Degraded launch-warning systems
 - Lack of survivable forces
 - Concerns about training, discipline of military; possibility of severe political, economic crisis
- U.S. is not immune (history of false alarms)
- Concern may extend to China, India, Pakistan if they deploy alert and vulnerable forces

Not a Serious Problem?

- Existing safeguards make inadvertent or unauthorized launch highly unlikely
 - “U.S. forces are not on ‘hair trigger’ alert and rigorous safeguards exist to ensure the highest levels of nuclear weapons safety, security, reliability, and command and control. Multiple, stringent procedural and technical safeguards are in place to guard against U.S. accidental and unauthorized launch.” (NPR)
 - “In the current day-to-day operational environment—with all procedural and technical safeguards in place—an unauthorized or accidental launch of a Russian strategic missile is highly unlikely.” (NIE)

Not a Serious Problem?

- Cold war is over
 - neither side believes a deliberate attack is plausible, and that ample strategic warning would be available
 - neither side would launch on warning in peacetime?
- Russia no longer has LOW capability
 - Attack warning systems are so degraded that LOW is not a realistic option, leaders would not rely on the information provided warning systems

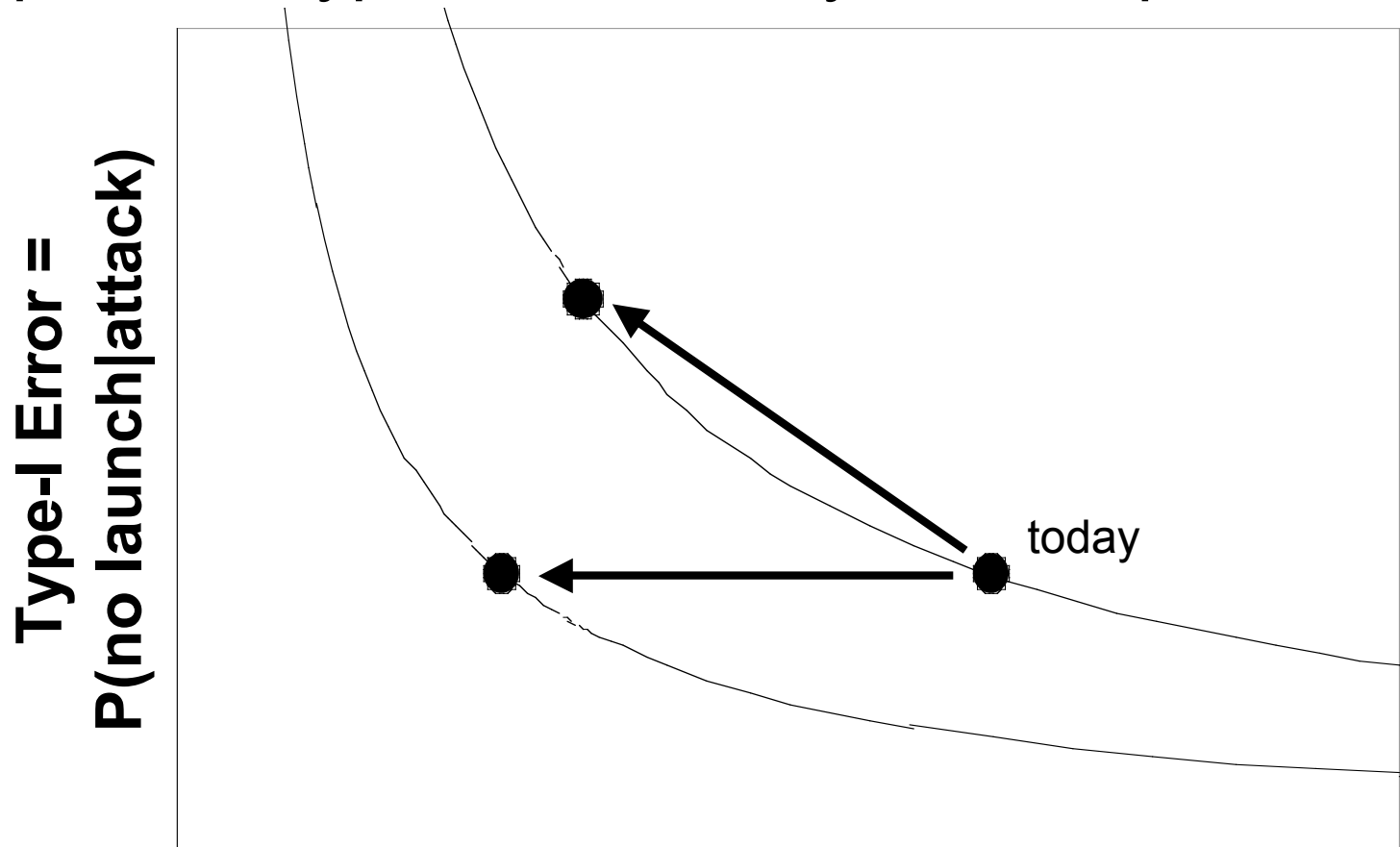
Counterarguments

- Risk judged sufficient to include intercept of accidental or unauthorized Russian launches as an NMD goal
 - “The New Triad addresses concerns about the accidental or unauthorized launch of certain foreign forces. For example, it provides missile defenses...” (NPR)
 - JCS reportedly resisted attempts to remove this goal (intercept of accidental or unauthorized Russian missile attack) during the Clinton administration

Counterarguments

- Risk may be small in peacetime, but would increase during a crisis:
 - Increased likelihood of mistakes and false alarms
 - Leaders more likely to believe a false alarm is real
 - Possible crises:
 - Russia in military confrontation, US/NATO backs other country or breakaway republic
 - Russian crisis leading to assassination of president, military coup, seizure of strategic forces by breakaway faction, etc.
 - Coordinated terrorist attacks against NCA; detonation of stolen nuclear devices; nuclear war in South Asia
 - Coincident events: US-Russia military crisis + assassination or terrorist attack + false alarm

Even if overall risk is low, the balance between type-I and type-II errors may not be optimal



**Type-II Error = $P(\text{launch}|\text{no attack})$ =
"unauthorized, erroneous attack"**

Counterarguments

Political symbolism:

“There now are no ideological sources of conflict with Moscow...the United States seeks a more cooperative relationship...

Adjusting U.S. nuclear force requirements in recognition of the changed relationship with Russia is a critical step toward more cooperative relations.”

- Maintaining 2,000 alert warheads (1,000 by 2012) and options to launch on warning is a symbol of continued and profound distrust, does not reflect a fundamentally changed and more cooperative relationship

Risk Reduction Measures

- Improve attack warning
- Reduce prompt counterforce capability of nuclear forces
- Increase survivability of nuclear forces
- Eliminate LOW or counterforce options from war plans
- Destroy accidental and unauthorized launches if they occur

Improve Attack Warning

Reduce risk of inadvertent launch by reducing probability, improving identification of false alarms

- Improve communication and notification
- Share data from existing systems
 - Joint Data Exchange Center (JDEC)
 - No exchange of raw data; use information barriers?
- Help Russia improve its systems
 - Russian-American Observation Satellite (RAMOS)
 - Help Russia complete, upgrade radars
- Cooperative warning systems
 - Ground-based sensors (video cameras, seismic/ acoustic sensors) to monitor status of nuclear forces

Reduce Prompt Counterforce

Reduce risk of inadvertent launch by reducing threat posed to other side's vulnerable forces

- Reduce force size
 - Early implementation of SORT reductions
 - Reductions to level where counterforce impractical
- Transparently reduce readiness (“de-alerting”)
 - Silo-based ICBMs
 - obstruct or disable silo door
 - remove component (shroud, warhead, eject system)
 - monitor with satellites, remote sensors, OSIs
 - Road-mobile ICBMs (Russia only)
 - obstruct/disable erector; monitor with OSIs + seals, alarms
 - how to monitor out-of-garrison missiles without increasing vulnerability?

Reduce Prompt Counterforce

- Transparently reduce readiness (“de-alerting”)
 - In-port SLBMs (Russia only)
 - obstruct/disable hatch, remove component
 - monitor with OSIs, remote sensors, satellites
 - At-sea SLBMs
 - modified alert (hours/days to launch)
 - obstruct/disable hatch, remove component
 - patrol out of range (US only)
 - how to monitor without increasing vulnerability?
 - Partial dealerting
 - verifiably de-alert most/all silo-based ICBMs, in-port SLBMs
 - at-sea SLBMs on modified alert; mobile ICBMs on alert
- Reduce hard-target-kill capability

Increase Survivability

Reduce risk of inadvertent launch by reducing vulnerability of forces to attack, incentives for counterforce attack

- Increase alert rates of survivable forces (Russia)
 - more SSBNs, road-mobile ICBMs on patrol
 - without dealerting, moves in wrong direction? Cost?
- SSN keep-out zones to improve survivability of Russian SSBNs
- Reduce/eliminate vulnerable forces
 - silo-based ICBMs
 - LOW temptation will continue as long as vulnerable, counterforce-capable weapons exist

Change Nuclear Doctrine

Virtually eliminates risk of inadvertent attack by own forces, reassures other side

- Eliminate LOW option from war plans
 - War plans would contain options to launch only after detonation of enemy warheads
- Eliminate counterforce attack options
 - Retaliatory counterforce attacks are pointless; would only trigger launch of remaining forces
- Changes in war plans difficult to confirm, easily reversed without corresponding changes in force structure

Post-Launch Destruction

- NMD unlikely to reduce risk
 - inadvertent attack unlikely to be limited; unauthorized attacks also could be large
 - Russian countermeasures would render US NMD ineffective
 - Russian response to NMD could increase probability of inadvertent, unauthorized attack
- Equip missiles with self-destruct mechanism
 - narrow window: after false alarm or unauthorized launch confirmed, but before end of boost, reentry
 - could encourage reliance on LOW