Russian and NATO Non-Strategic Nuclear Forces

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Non-Strategic Nuclear Warheads: Inventories

• U.S. and Russian combined stockpiles of non-strategic nuclear warheads reduced by roughly 90 percent since 1991. Neither has provided actual numbers

• Russia: two public declarations:
  
  2005: Russian “non-strategic nuclear forces” have been reduced “by four times” since 1991.
  
  2010: “the Russian arsenal of non-strategic nuclear weapons is reduced four times [75%]* in comparison with the USSR arsenal.”

  * Note: PNI declarations do not add up to 75%

• United States: two public declarations:


  2014: “The number of U.S. non-strategic nuclear weapons has declined by approximately 90 percent since September 30, 1991.

• Some 2,500 warheads remain assigned to non-strategic forces (Russia ~2,000; United States ~500)

• Several thousands additional retired, but still relatively intact, warheads in storage are awaiting dismantlement

• Stockpiles will likely continue to decline in next decade with or without arms control agreements
Russian Non-Strategic Nuclear Forces: Status

- Wide range of weapon types and platforms remain: possibly 20 weapon types for 25 platforms types

- Cruise missiles (anti-ship; land-attack), anti-submarine rockets, ground-launched ballistic missiles, bombs, air-to-surface missiles, air-defense missiles, ballistic missile defense interceptors; coastal defense missiles, depth charges

- Service breakdown of remaining roughly 2,000 warheads:
  - Air Force: 730
  - Navy: 700
  - Defense: 425
  - Army: 170

- Most are Soviet-era weapons; many will probably be retired in foreseeable future
Russian Non-Strategic Nuclear Forces: Modernization

Modernizations underway:

- Tu-22M3 upgrade; will be replaced by PAC-DA
- Su-24M: Su-24M2 but will be replaced by Su-34
- Su-34: Deployment underway at western bases
- SS-26 SRBM: Deployment underway at 3-5 garrisons in western Russia; replacing SS-21 at 10 garrisons
- Severodvinsk (Yasen) SSN: possibly with new LACM (Kalibr)
- Moscow ABM system reported under upgrade
- S-400 air defense system capability unknown
- Some platforms might see also some nuclear weapons replaced by conventional systems: Oscar SSGN; Kirov CGN

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Russian Non-Strategic Nuclear Forces: Locations

- At least 80 facilities have nuclear-capable delivery vehicles, storage facilities and/or weapons
- All non-strategic warheads said to be in central storage operated by 12th Main Directorate (GUMO)
- Total storage sites reduced from approximately 500 in 1991 to about 48 in 2014 (9-12 GUMO)
- Some storage sites are near bases with delivery vehicles
- Mission:
  - Regional deterrence
  - Compensate for inferior conventional forces
  - Because they are there
Russian Storage Sites

- 12 separate Russian nuclear weapon storage sites west of the Ural Mountains
- 8 are national-level sites managed by 12 Main Directorate; 6 appear to be active (red) but the others are maintained
- National-level sites store both strategic and non-strategic nuclear warheads
Russian Storage Sites: Sebezh-5

- Consolidation closed many sites, including some close to current NATO borders
- Sebezh-5, a former national-level nuclear weapons storage site, near the Lithuanian border
- Tourist photos show internal of 6 underground storage bunkers
- With 8 chambers/bays in each bay, site could potentially have stored many hundreds of warheads
- Main entrance has been converted to jail
Russian Storage Sites: Saratov-63

- Saratov-63: national-level nuclear weapons storage site with 5 igloos covering 9 km³

- In 1998, then-STRATCOM Commander Eugene Habiger visited Saratov-63 and later publicly described what he saw:

  “We went to Saratov, a national nuclear weapons storage site, where I saw not only strategic weapons, but tactical weapons ... And they took me into the side of a mountain, a hill, where we went behind two doors that were each several thousands of tons in weight. And you had to open up one door at a time, these sliding, massive doors, in order to get into the inner sanctum. In the inner sanctum, there were five nuclear weapon storage bays. They took me into one of those bays, and we had an interesting discussion.”

Potential Saratov-63 storage capacity:
5 bunkers x 5 bays x 50-100 warheads = 1,250-2,500 warheads?
Russian Storage Sites: Olenegorsk-2

National-level storage site on Kola Peninsula includes three tunnels to underground warhead storage bays inside multi-layered fence perimeter. A separate storage bunker is located about 1 km from main site. Entire complex spans 3.1 km.
Russian Storage Sites: Services

- Navy and Air Force nuclear storage sites are smaller and closer to bases, or on bases

- The navy storage site at Shchukozero near Severodvinsk on the Kola Peninsula is only 0.5 km long with one igloo (right)

- The air force site at Shatalovo (right) near Belarus is 1.3 km long with two igloo (far right)

- These smaller sites are probably separate from the “central” storage sites managed by the 12th Main Directorate where Russia says all its tactical nuclear warheads are stored
Upgrade of apparent nuclear weapons storage site in Kaliningrad (near Chkalovsk). Clearing and improvement of perimeter, weapons igloos.

One of three igloos has quadruple fence typical of nuclear weapons storage facilities.

But does it contain nuclear weapons? Use visit to clarify nuclear status?
• Some air bases have nuclear remote weapon storage site. Example: Shaykovka Air Base near Belarus

• Tu-22M3 Backfired bombers with AS-4 Kitchen air-launched cruise missiles

• Between 2007 and 2009, the base’s nuclear weapon storage site was upgraded with new perimeter and buildings

• 2012: AS-4 long-range strike exercise

• 2014: training flight over Baltic Sea
Russian Non-Strategic Nuclear Forces: Crimea

- BBC (Nov. 11, 2014): “U.S. Gen. Philip Breedlove said Tuesday that Russian forces "capable of being nuclear" are being moved to the Crimean Peninsula, but NATO doesn't know if nuclear weapons are actually in place.”

- Rumors abound: Putin has approved deployment of Iskander, Backfires, some claim

- Youtube video from May 2, 2014 (left), claims to show “Iskander Missiles” rolling through Sevastopol in May 2014

- Although similar, the two trucks do not match images of Iskander launchers: rear-end extends too far beyond fourth axle

Source: http://www.youtube.com/watch?v=WJeJCOeyW-c
The Crimea Region

SS-N-12 SLCM loading on Slava cruiser (above) and SS-N-22 SLCM loading on Dergach corvette (below)

- Images of Gvardiesky Air Base show potentially nuclear-capable S-300 air-defense units moving in shortly after “referendum” in March 2014
- Nuclear-capable forces have been at the Russian Black Sea Fleet in Crimea for decades: submarines, ships, naval aircraft

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US/NATO Non-Strategic Nuclear Forces: Status

- Three versions on one bomb: B61-3, B-61-4, B61-10
- Three aircraft: F-15E Strike Eagle, F-16 Falcon, PA-200 Tornado
  - F-15E: USAF
  - F-16: Belgium, the Netherlands, Turkey
  - PA-200: Germany, Italy
- Roughly 500 tactical B61s left in inventory (184 in Europe)
- All non-strategic warheads for navy, marine corps, army use have been retired and dismantled
- All naval surface ships, attack submarines, and aircraft have been denuclearized
- The last naval non-strategic nuclear weapon (nuclear tomahawk land-attack cruise missile) was retired in 2010-2011 and its W80-0 warhead dismantled in 2012
- Although it calls all its nuclear weapons strategic, France has 2 fighter-bombers with short-range cruise missile that qualify as non-strategic weapons
  - Mirage-2000NK3
  - Rafale (air version: F3; naval version: MF3)
US/NATO Non-Strategic Forces: Locations

- 184 U.S. B61 bombs scattered in 87 underground vaults underneath 87 aircraft shelters at six bases in five European countries:
  - Belgium: for Belgian F-16s
  - Germany: for German Tornados
  - Italy: for US F-16s and Italian Tornados
  - the Netherlands: for Dutch F-16s
  - Turkey: for US F-15s or F-16s (not on base) and (possibly still) Turkish F-16s

- Additional bombs in the United States for extended deterrence missions elsewhere

- 50 French ASMPA cruise missiles at three bases for 3 squadrons (2 air and 1 naval)

- French ASMPA-capable naval aircraft for the aircraft carrier at Toulon are based at Landivisa
NATO Nuclear Roles

Of NATO’s 28 member countries:

- 3 have nuclear weapons
- 5 non-nuclear countries are equipped to deliver nuclear weapons if necessary
- 9 (10, 15, ?) non-nuclear countries support nuclear mission with conventional forces (SNOWCAT)
- 27 participate in nuclear planning
- 28 participate in nuclear policy
- 7 have nuclear strike missions (8 if counting France)
- 7 have non-strategic nuclear weapons on their territory (6 in Europe, including France)

Non-proliferation signal:
US personnel supervises German airmen loading a US B61 bombs on a German Tornado

<table>
<thead>
<tr>
<th>Country</th>
<th>Nuclear State</th>
<th>Nuclear Sharing</th>
<th>SNOWCAT*</th>
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* SNOWCAT: Support of Nuclear Operations With Conventional Air Tactics

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US/NATO Non-Strategic Nuclear Forces: Modernization

- Major nuclear facelift underway of NATO non-strategic nuclear forces
- Modification of B61 bomb from “dumb” bomb to guided, standoff weapon with guided tail kit assembly that will increase targeting accuracy and efficiency
  - Integration on F-15E in 2013-2018
  - Integration on F-16 in 2015-2018
  - Integration on PA-200 in 2015-2017
- B61-12 First Production Unit in 2020
- Addition of nuclear-capability to F-35A II Lightning fighter-bomber
  - Integration of B61-12 in 2015-2021
  - Delivery to Italy, the Netherlands, and Turkey
- B61-12 will also be integrated onto strategic bombers (B-2 and LRS-B)
- Upgrade of storage sites and handling
- Cost: a decade worth of European Reassurance Initiatives
- Mission: deterrence, (fake) reassurance, tradition
US/NATO Non-Strategic Nuclear Forces: Risks

- Weapons are most vulnerable to accident, sabotage, theft during transportation (left, top)

- USAF discovered in 1997 that a nuclear detonation would be possible if lightning strikes during B61 maintenance in NATO Weapons Maintenance Truck (left, middle)

- In 2010, unauthorized personnel managed to penetrate deep into Kleine Brogel Air Base before encountering any reaction from security forces (right)

- When dual-capable non-strategic aircraft are used, is it a conventional or a nuclear signal: US F-16 at Lask AB (left); Russian Tu-22M3 with AS-4 over Baltic June 2014
Conclusions

- Considerable reductions of non-strategic nuclear forces have been accomplished since the Cold War
- Yet Russia and NATO retain sizeable non-strategic nuclear weapon arsenals
- Both sides are modernizing their remaining forces
- The two arsenals are very asymmetrical, both in size, composition, location, and management:
  - In size, Russian has at least four times as many non-strategic warheads as NATO
  - In composition, Russia has many more types of warheads, delivery systems, and bases than NATO
  - In location, Russia’s non-strategic warheads are in central storage while NATO weapons are widely dispersed in five European countries and the United States
  - In management, only Russia is directly involved while NATO involves 3 nuclear-armed states and 5 non-nuclear states in nuclear strike missions as well as 27 countries in overall nuclear planning
- Non-strategic nuclear forces are located near potential flashpoints
- Because they tend to be dual-capable, non-strategic nuclear delivery systems are often used in exercises and posturing that may not be intended to send a nuclear signal
- Although secure while in storage, non-strategic nuclear weapons are exposed to risks and vulnerabilities during transportation