CREATING NUCLEAR TRANSPARENCY THROUGH SCIENCE, TECHNOLOGY AND COLLABORATION

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Overview

- Mission impossible: Creating estimates of the world’s nuclear weapons arsenals
- Aspiring arsenals: India and Pakistan’s nuclear arms build-up
- Observing opacity: Discovering China’s nuclear forces
- Mission creep: Documenting nuclear weapons policy
- Conclusions

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Estimating Nuclear Arsenals

- Create “best nonofficial estimates” of size and development of world’s nuclear arsenals
  - Russia (~11,000)
  - United States (~8,500)
  - France (~300)
  - China (~240)
  - United Kingdom (~225)
  - Pakistan (~100)
  - India (~90)
  - Israel (~80)
  - North Korea (?)

More than 23,000 nuclear warheads in the world
- enough for more than 120 warheads per country

Publish overviews:

Hans M. Kristensen, Federation of American Scientists, AAAS Briefing 2011 | Slide 3
Estimating Nuclear Arsenals

Wide range of sources:
- Official information: statements, annual reports, budget, etc.
- News media reports
- FOIA documents
- Commercial satellite imagery
- Leaks
- Chatting

Making some sense (read: “best estimate”) of available data; sometimes more art than science.
Estimating Nuclear Arsenals

2010 US disclosure of size and history of nuclear stockpile
- FAS/NRDC chart (top)
- Official chart (bottom)

Stockpile estimate only 13 weapons off actual size

Long-term collaboration with NRDC team of “giants” who started estimates in 1980s

Estimates widely used by officials, news media and NGOs
Pakistan-India

- Washington Post/New York Times articles (January 30/31, 2011) headlines:
  1. Pakistan stockpile “doubled” past several years
  2. “Pakistan has edged ahead of India”
  3. Pakistan on its way to “overtake” Britain and France

- Fact checking:
  2. Pakistan has always been ahead ✗
  3. British stockpile will drop to 180 in 2020s (✓)
     French stockpile is ~300 ✗
Pakistan-India

Pakistani and Indian Nuclear Weapons Stockpiles

- 1998 Nuclear Tests: Pakistan: 5 announced, only 2 detected
  India: 5 announced, only 4 detected

- India
- Pakistan

- F-16 aircraft
  (Mirage aircraft)
  Shaheen-1 SSM
  Guani SSM
  Ghaznavi SSM
  Babur cruise missile
  (Shaheen-2 SSM)
  (Ra’ad cruise missile)

- Jaguar aircraft
  Prithvi I SSM
  (Mirage aircraft)
  Agni-1 SSM
  (Agni-2 SSM)
  (Agni-3 SSM)
  (Dhruva 3LSM)
  (Sagarika/K-15 SLM)

Parenthesis indicates possible nuclear capability or, in the case of missiles, in development or not yet fully operational.

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Pakistan-India

Shaheen 2 mobile launcher. Not yet deployed in 2009, but probably now part of 90-110 estimate. Warheads already produced or in production.

China: Observing Opacity

2006: Observed Chinese SSBN base and tunnel near Qingdao

2007: Observed first new Jin-class (Type 094) SSBN

2008: Observed Jin-class deployment to naval base on Hainan Island (image)

Also observed first demagnetization facility (image)
China: Observing Opacity

2006: Observed Delingha and Da Qaidam DF-21 missile deployment areas in central China

2008: Observed expansive network of launch pads for mobile launchers in same area

2010: Observed mobile DF-21C launch units deploying in Da Qaidam area
China: Observing Opacity

2005: Use of FOIA to declassify US naval intelligence on Chinese submarine patrols:
- Very few patrols (sometimes none)
- Increase in 2007 - but still limited
- SSBN never conducted patrol

2010: Described US naval intelligence report about noisy Chinese nuclear submarines
Nuclear Mission Creep

1990s broadening of nuclear role role against regional WMD states

2002 White House guidance to create strategic strike plans against rogue states with WMD (NSPD-14)

2003 incorporation into OPLAN-8044 Revision 03 (replaces SIOP)

2004 CONPLAN 8022 preemptive strike plan in effect (later canceled)

2005 revision of Doctrine for Joint Nuclear Operation (JP 3-12) with preemptive missions
Nuclear Mission Creep

OPLAN 8010 Strategic Deterrence and Global Strike

Directed against six adversaries (deleted but probably: China, Iran, North Korea, Russia, Syria and 9/11 WMD scenario)

Nuclear employment plans:
- Selective Attack Options
- Basic Attack Options
- Emergency Response Options
- Directed/Adaptive Planning Options

Against four target categories:
- Military forces
- WMD infrastructure
- Military and national leadership
- War supporting infrastructure

Obama administration’s “reduction” of nuclear role does not appear to affect OPLAN 8010 since adversaries have WMD or are not in compliance with Nuclear Nonproliferation Treaty
Conclusions

- Private citizens have obtained extraordinary access to information and technology that have vastly improved transparency and scrutiny of nuclear forces and policies
- Internet and computers have been enabler for collaboration, data sharing and dissemination
- Two-edged sword: good information becomes widely known fast, but so does bad information and unsubstantiated rumors can live “forever”
- Some risk that Internet, daily-politicking and quick fame corrupt research, but also self-cleaning mechanism
- Career building (read: skills and institutional memory) hard because funding is precarious
Questions and Information

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