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China's Nuclear Modernization: Implications for Nuclear Arms Control, US-Chinese Strategic Stability and Asia-Pacific Security

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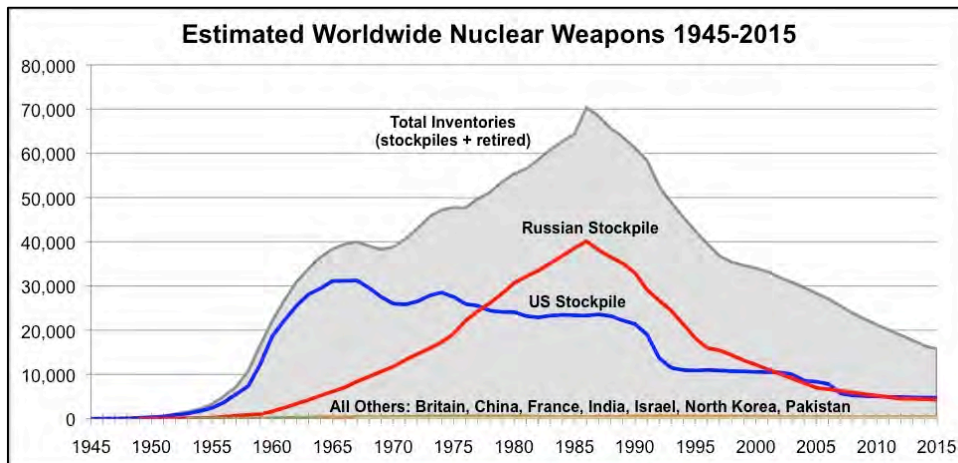
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Briefing to

Center for the Promotion of Disarmament and Non-Proliferation
Japanese Institute for International Affairs

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History and Status



More than 125,000 warheads produced since 1945
 Peak of 64,500 stockpiled warheads in 1986 (70,300 if including retired warheads)

Enormous reductions since 1986 peak:

- ~54,000 warhead stockpile reduction
- ~47,000+ warheads dismantled

~10,000 warheads in stockpiles (~16,000 if counting retired warheads awaiting dismantlement)

US and Russia possess 90% of global inventory (94% if counting retired warheads); **each has more than 4 times more warheads than rest of world combined**; 15 times more than third-largest stockpile (France)

Decreasing: US, Russia, Britain, France

Increasing: China, Pakistan, India

Israel relatively steady; North Korea trying

Trend: reductions are slowing



China: Modernization

Long, slow modernization; transition from slow liquid-fuel to quick solid-fuel missiles with longer range

ICBM / MRBM

- DF-31A (CSS-10 Mod 2) deploying
- New mobile ICBM test-launching
- Development of new mobile ICBM capable of delivering MIRV

SSBN / SLBM

- Jin (Type-094) SSBN fielding (4-5 expected)
- JL-2 (CSS-N-14) SLBM in development
- Type-096 SSBN possibly in development

Cruise Missiles (?)

- ALCM (CJ-20 on H-6 bomber) in development*
- GLCM (DH-10/CJ-10) fielding**

* Listed in 2013 AFGSC briefing

** Listed by NASIC as “conventional or nuclear,” the same designation as the Russian nuclear-capable AS-4 Kitchen ALCM



China: ICBMs



50-60 ICBMs deployed:

- 20 DF-5A (silo)
- 10 DF-31 (mobile)
- 20-30 DF-31A (mobile)
- (DF-4 retired?)

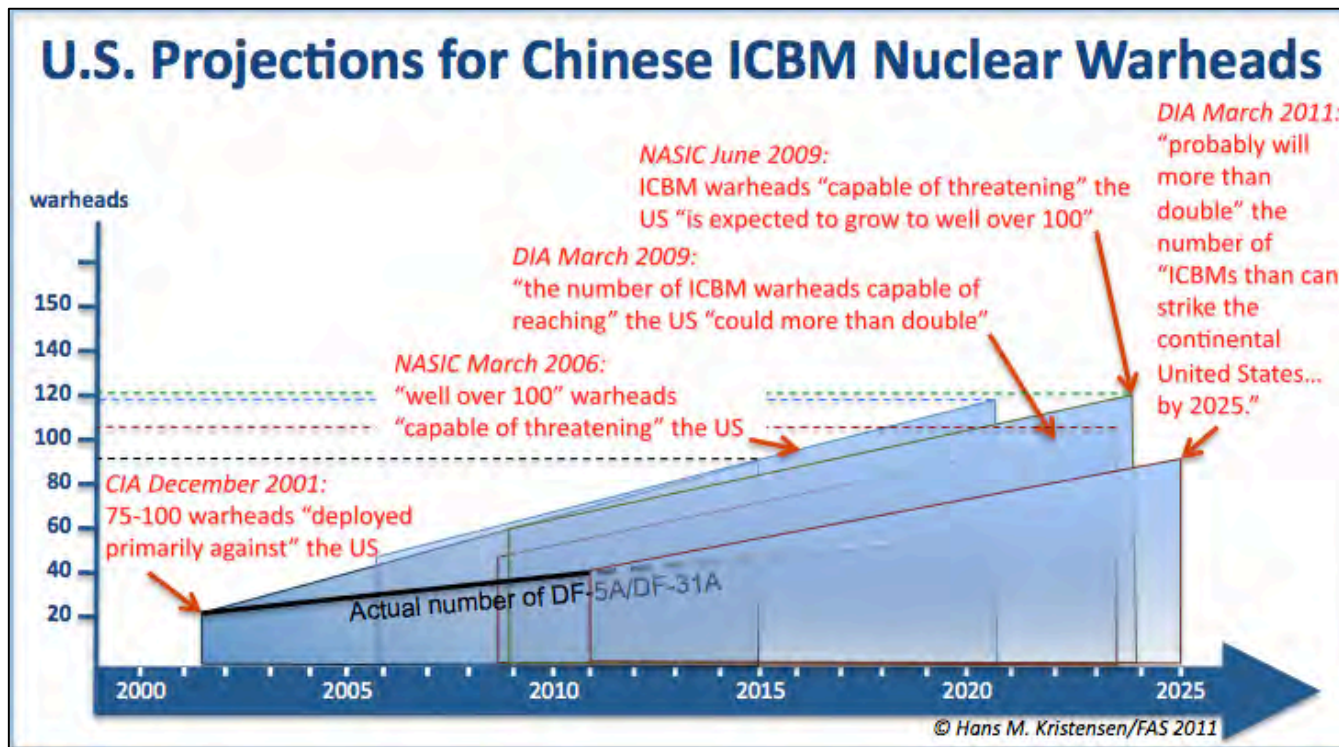
New ICBM being test-launched

New ICBM in development,
possibly capable of MIRV

China has had capability to deploy
MIRV on fixed DF-5 since 1990s

MIRV for mobile would be new
capability

China: ICBMs



US projections of Chinese ICBMs tend to predict too many too soon

China: ICBMs

Example of DF-31 or DF-31A launch unit training near Haiyan (Qinghai)

Probably launchers from 812 Brigade at Tianshui (Gansu)

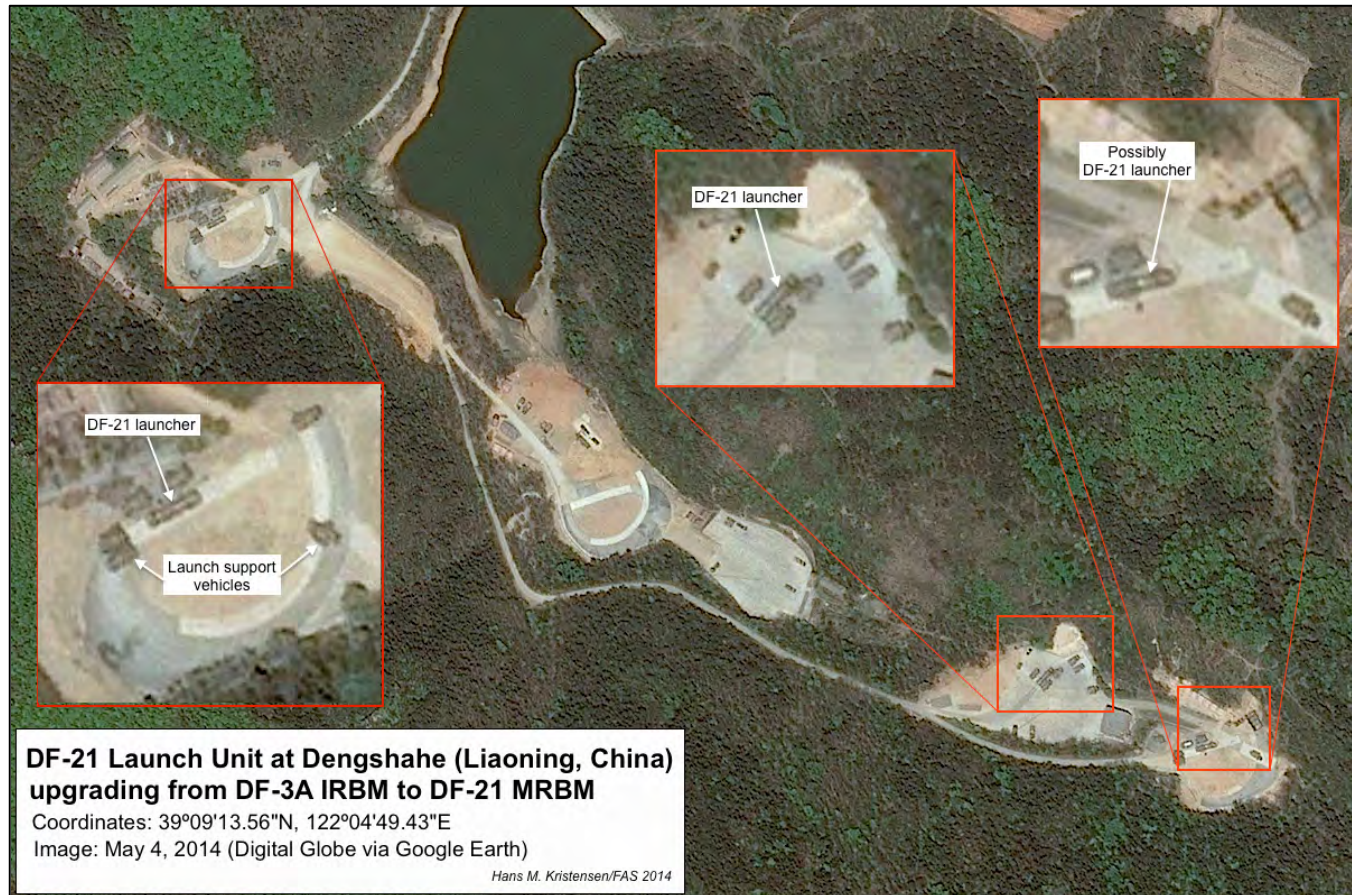


China: MRBMs

Example of DF-21 launch unit training near Dengshahe (Liaoning)

Probably part of 810 Brigade at Jinzhou (Liaoning)

Recently replaced DF-3A



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China: Submarines



Building class of 4-5 Jin SSBNs
Each with 12 JL-2

First seen in 2007 on commercial
satellite photos

3 in service, but JL-2 not yet
operational

US intelligence community
anticipates first patrol soon



Two Jin-class SSBNs at Xiaopingdao
Image: Geo Eye via Google Earth, March 29, 2011
Coordinates: 38°49'2.51"N, 121°29'37.14"E
Hans M. Kristensen, Federation of American Scientists, 2011

China: Submarines

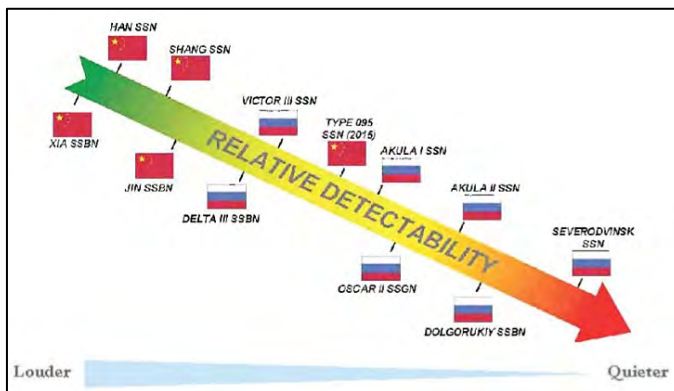


Expansion of Hainan submarine base

First Jin SSBN presence in 2008

Base includes demagnetization facility, underground submarine pier, SLBM handling and transportation system

China: Submarines



Important new capability, but...

- Jin SSBN noisy compared with Russian SSBNs
- To target USA a Jin SSBN would have to sail far into Pacific or Sea of Japan
- Command and control capability is limited

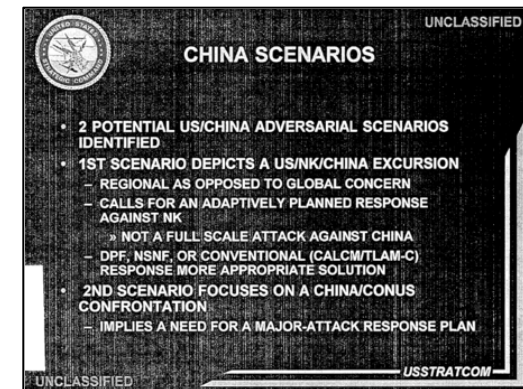
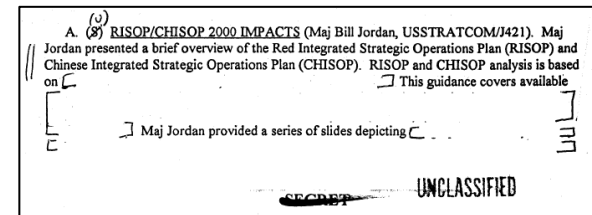


Key unknown: Will Chinese government authorize deployment of nuclear warheads on JL-2 SLBMs in peacetime ?


Key questions: If China is concerned about the vulnerability of its retaliatory nuclear force, why deploy a significant portion of it at sea where it can be sunk by enemy submarines ?

China In US Nuclear Strategy

- Korean War: Nuclear target to offset large Chinese conventional attack
- 1958 Taiwan Strait crisis: Matador cruise missile deployed to Taiwan; US moves nuclear bombs to Guam and Okinawa to target Chinese air fields
- 1960s: Proliferation development; deterring Chinese nuclear use; US deploys nuclear bombs to Taiwan; SSBN deployments begin at Guam
- 1970s: NUWEP-74 with 2 major attack options and ; bombs withdrawn from Taiwan and Okinawa; fighter wings at Okinawa, Philippines and South Korea continued SIOP alert against China; 10 SSBNs in Pacific
- 1980s: China removed from SIOP (partner against Soviet Union); Poseidon SSBNs phased out in Pacific; Trident SSBNs deployed; China responds with new ICBMs
- 1990s: STRATCOM identifies need for “major-attack response plan” (see image); Taiwan Strait crisis (1995-1996); China returned to SIOP (PDD-60, 1997); increased targeting
- 2000s: CHISOP planning (see image); China is “immediate or potential contingency;” Trident II D5 SLBM and W88 deployed in Pacific (hard target kill); most SSBNs patrol in Pacific; continued bomber deployments to Guam
- 2010s: Jin SSBNs and emerging MIRV potential; Trident II enhancements; B61-12 and LRSO; increased focus on advanced conventional (precision, missile defense, cyber)



China In Nuclear Strike Planning



~~SECRET~~

OPLAN 8010 Background

- OPLAN 8010 base plan approved Dec 07, including:
 - [REDACTED] (b)(1)
 - Nuclear force employment plans

- Status of Adversary Appendices:
 - [REDACTED] Next review forecasted [REDACTED] (b)(5)
 - [REDACTED] Assumptions and concept approved [REDACTED] (b)(5)
 - [REDACTED] Final review/approval scheduled [REDACTED] (b)(5)
 - [REDACTED] Approval of assumptions and concept scheduled [REDACTED] (b)(5)
 - [REDACTED] Approval of assumptions and concept forecasted [REDACTED] (b)(5)
 - [REDACTED] Mission analysis in progress
 - [REDACTED] Mission analysis in progress

Source: STRATCOM OPLAN 8010 briefing slide obtained by FAS under FOIA

- Strategic planning against China is embedded in STRATCOM's OPLAN 8010-12 (July 2012): *Strategic Deterrence and Force Employment*
- China one of six adversaries (probably Russia, China, North Korea, Iran, Syria and 9/11-type WMD scenario)
- OPLAN 8010-12 is nuclear employment portion (previously SIOP) of larger plan (OPLAN 8010 base plan)
- Includes four types of nuclear attack options:
 - Basic Attack Options (BAOs)
 - Selective Attack Options (SAOs)
 - Emergency Response Options (EROs)
 - Directed/Adaptive Planning Capability Options
- STRATCOM also supports PACOM regional strike plan against China

United States: Modernization

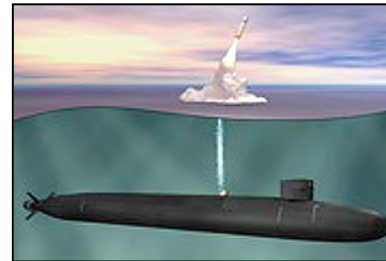
ICBM

- Minuteman III life-extension completing
- Warhead fuzes/interoperable warhead planned
- GBSD (ICBM replacement) in development



SSBN / SLBM

- Trident II D5 SLBM life-extension development
- SSBN replacement development (12 planned)
- W76-1 warhead life-extension deploying
- W88-1 warhead life-extension development



Bombers

- Upgrade of B-2 and B-52 underway
- LRS-B next-generation bomber in development
- B61-12 guided standoff bomb in development
- LRSO (ALCM) replacement in development



Tactical

- F-35A nuclear capability in development
- B61-12 guided standoff in development



Infrastructure

- Uranium Processing Facility (secondaries) construction
- Plutonium production facilities (primaries) construction
- Warhead surveillance/simulation facilities upgrade

Summary

- Chinese nuclear modernization long-coming, slow, but significant with important operational and targeting implications
- Strategic stability challenged by overall asymmetry of nuclear and conventional forces, conventional DF-21, and Jin SSBN operations
- How to allow China to “rise” in stable manner? Is it possible?
- Increased focus of US nuclear (and other) planning
- US/allies confident in extended deterrence capabilities
- Growing US missile defense capability may trigger Chinese MIRV
- Nuclear arms control in Pacific region stalled with important danger of worsening (Chinese modernization and increase, Russian modernization, North Korea, US modernization)
- New initiatives needed to reverse trend