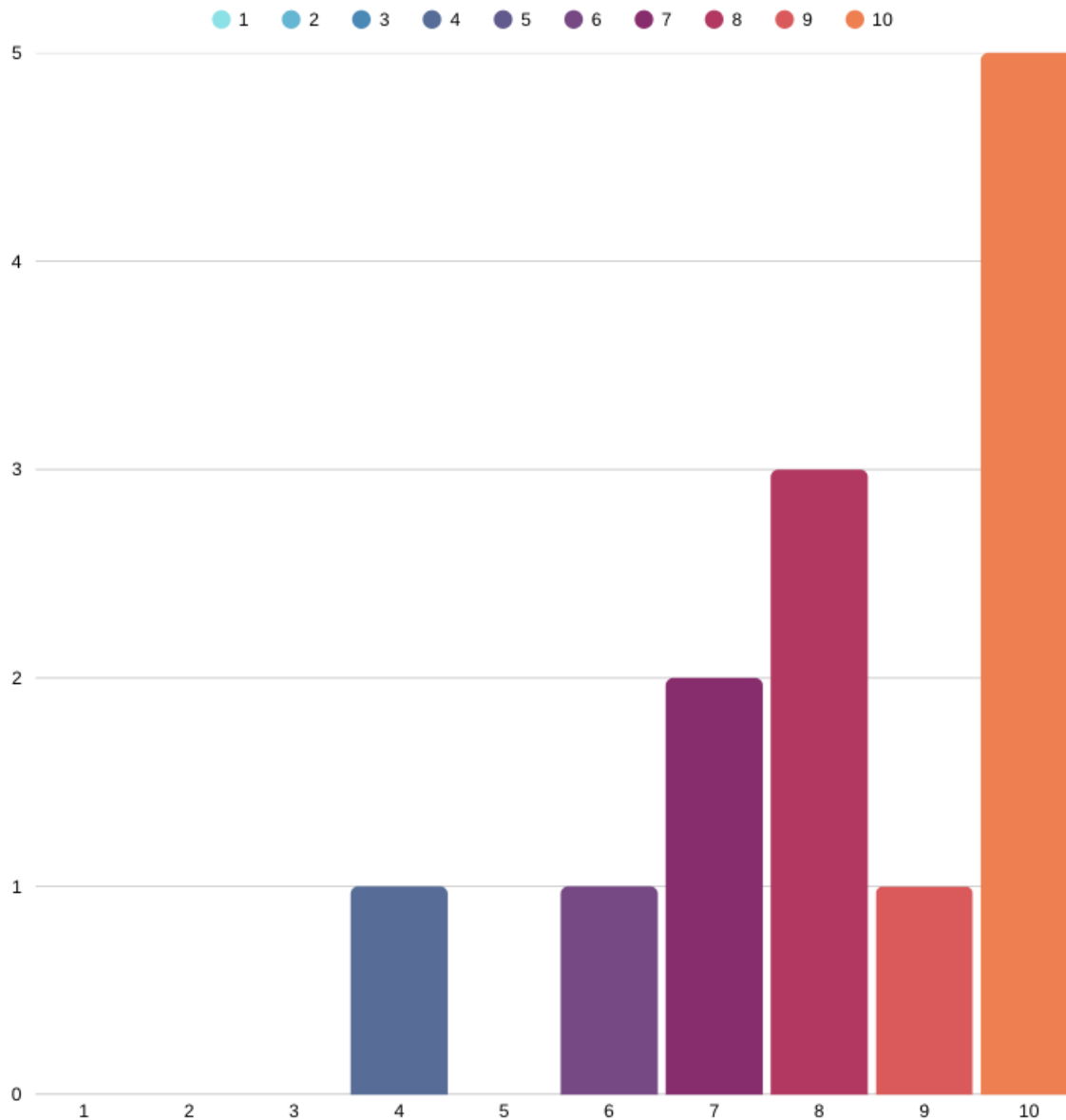


International Nuclear Controls: Their History and Key Premises

Part 3: Strategic Arms Control – A Topology

A presentation by
Henry Sokolski
Executive Director
Nonproliferation Policy Education Center
www.npolicy.org

© *Nonproliferation Policy Education Center*



On a scale from one to ten, should arms control be a serious pursuit (10) or is it hopelessly aspirational (1)?

QUESTIONS TO BE ANSWERED

- I. Why bother with arms control?**
- II. What have the key phases of U.S. strategic arms control been?**
- III. What were the objectives of these different phases of arms control?**
- IV. What might the future of strategic competitions and arms control focus on given China's military build up?**

SHORT ANSWER TO QUESTION 1

- A. *We need to be ready for good news.*** We didn't diplomatically win lasting peace after WWI but did better after WWII. We did poorly after the Soviet collapse.
- B. *Planning for and winning peace is more challenging*** and different than preparing for or winning wars
- C. *In cold and cool wars, arms control can*** help secure military advantages in peace.

SHORT ANSWERS TO QUESTION II

- I. 1945-49: *Nuclear Disarmament*
- II. 1950-60: *Incremental Disarmament*
- III. 1960-77: *Arms Control for Strategic Stability*
- IV. 1978-2008: *Compete to Cap Competitions*
- V. 2008-2016: *Convergence*
- VI. 2016-2024: *Renewed Strategic Competition to preserve diplomatic and military position*
- VII. 2025-Present: *Strategic Consolidation, prioritizing homeland, hemispheric security, & checking China*

SHORT ANSWERS TO QUESTION III

- I. **1946–49:** Maintain U.S. nuclear monopoly until other nuclear weapons programs could be eliminated under international controls
- II. **1950–60:** Maintain and strengthen U.S. nuclear superiority while preventing knockout blows & surprise attacks with arms control initiatives that would restrict Russia more than the U.S.
- III. **1961--77:** Modernize U.S. strategic nuclear forces and negotiate arms control agreements to reduce the prospect either side could strike the other 1st & to ensure both sides could strike 2nd if ever attacked
- IV. **1978–08:** Channel & cap military competitions to US advantage
- V. **2009 — 2016:** Subordinate strategic competitions to promote convergence with Russia and China
- VI. **2016 – 2024:** Compete militarily, economically, and diplomatically to catch up and constrain revisionist states (Russia, China, Iran, N. Korea)
- VII. **2025:** Reduce disadvantageous security commitments, consolidate protection closer to home to help keep America's most power competitor — China —at bay

SHORT ANSWER TO QUESTION IV

What might strategic competitions and arms control focus on militarily given China's military build up?

- Reducing the vulnerability of America's strategic weapons systems, critical civilian infrastructure, and military bases,
- Securing access and control of space,
- using AI and cyber to turn adversaries inward,
- leveraging strategic arms control proposals against Chinese and Russian fears and weaknesses

II. WHAT HAVE THE KEY PHASES OF U.S. STRATEGIC ARMS CONTROL BEEN?

I. 1945-1949: NUCLEAR DISARMAMENT & AMERICAN NUCLEAR MONOPOLY

1946-1949: U.S. BACKED INTERNATIONAL CONTROL OF ATOMIC ENERGY

DEAN ACHESON

Undersecretary of
State



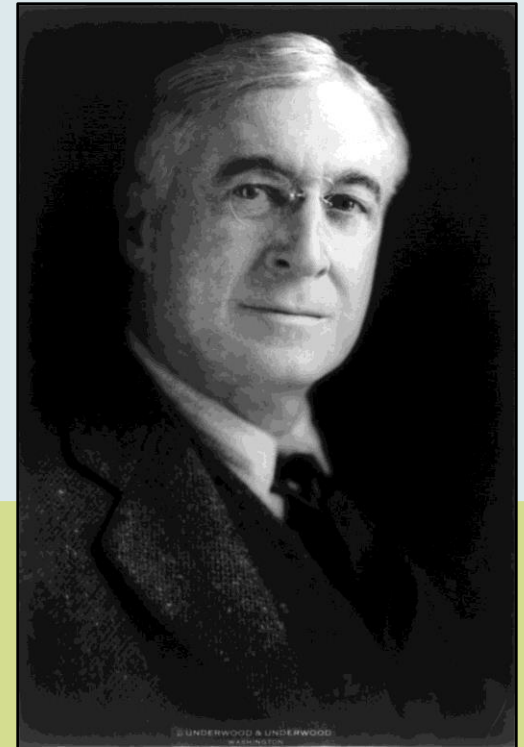
DAVID E. LILIENTHAL

Chairman Tennessee
Valley Authority



BARUCH

U.S. Rep., UN Atomic
Energy Commission



TRUMAN INITIALLY CURBED AMERICAN NUCLEAR ENTHUSIASM

GLOBAL NUCLEAR WEAPONS INVENTORIES, 1945-1953

YEAR	UNITED STATES	RUSSIA
1945	2	
1946	9	
1947	13	
1948	50	
1949	170	1
1950	299	5
1951	438	25
1952	841	50
1953	1,169	120

Poland falls January 1947

Czechoslovakia falls February 1948

Hungary falls May 1949

People's Republic of China created September 1949

East German Communist government formed 1949

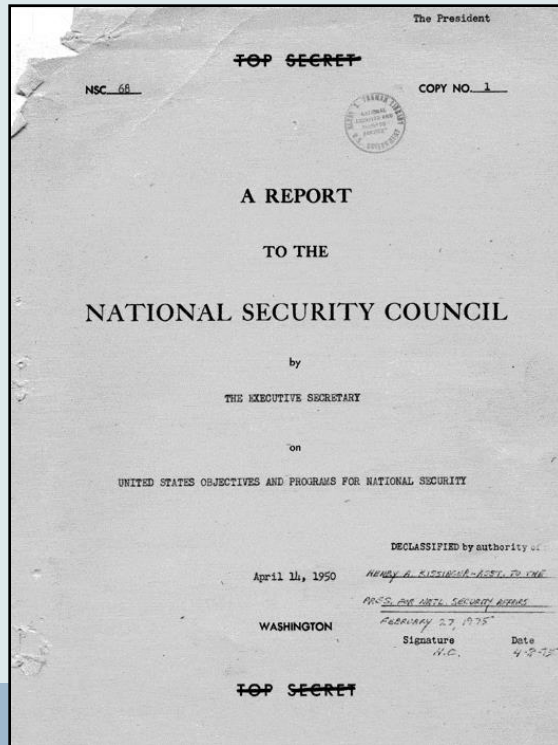
RUSSIA'S FIRST NUCLEAR TEST PUTS AN END TO THE BARUCH PLAN

August 29, 1949

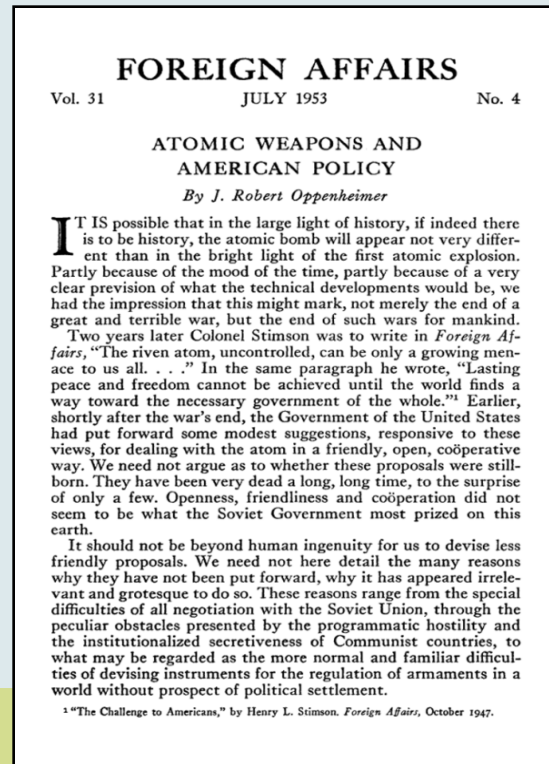


II. 1950-1960: INCREMENTAL DISARMAMENT, PREVENTING SURPRISE KNOCKOUT BLOWS WHILE MAINTAINING US MASSIVE RETALIATORY CAPABILITY

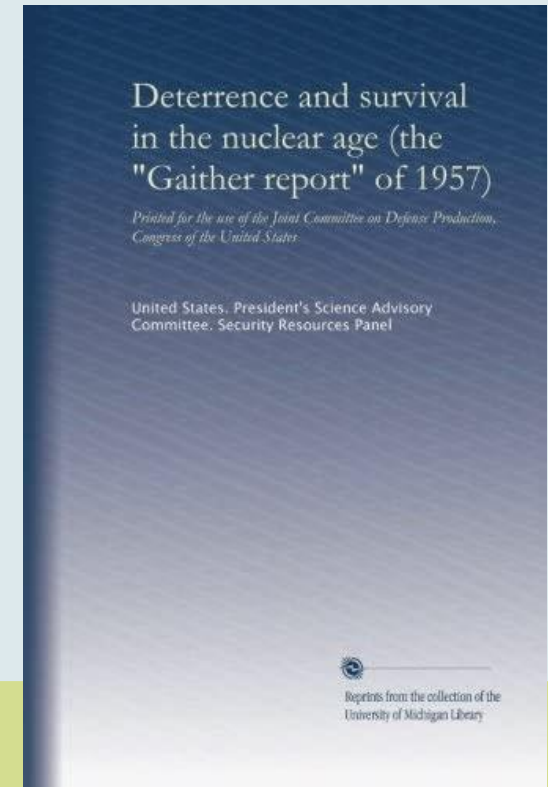
AFTER 1949, SURPRISE NUCLEAR “KNOCKOUT BLOWS” WERE THE WORRY



**NSC 68: THE
“KNOCKOUT BLOW”
THREAT**
April 14, 1950

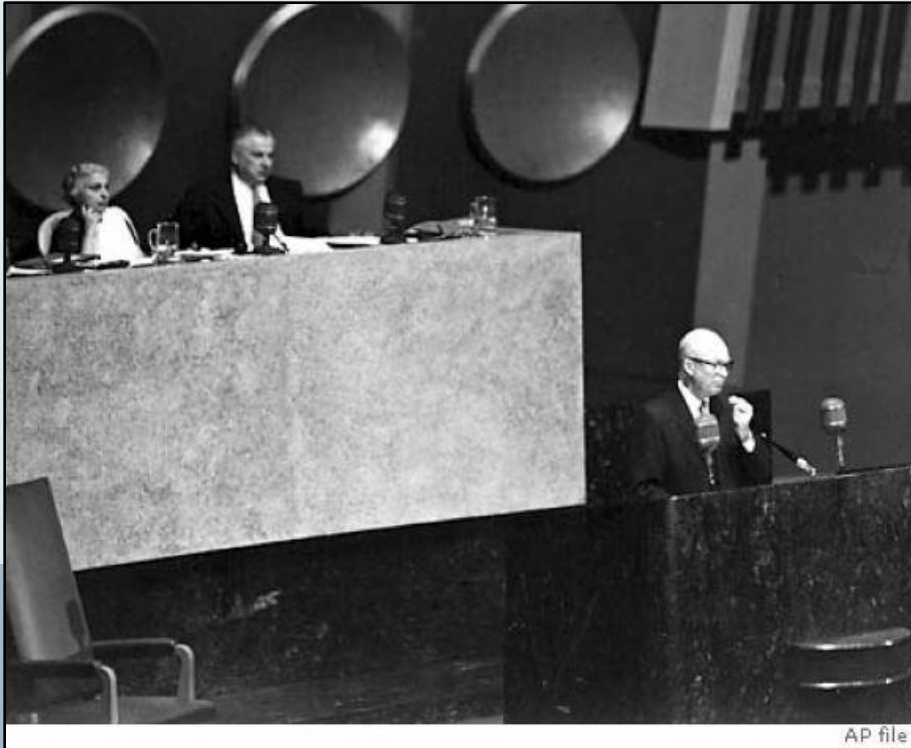


**PANEL OF CONSULTANTS
ON DISARMAMENT**
DECEMBER 1952



GAITHER REPORT
November 7, 1957

EISENHOWER'S ATOMS FOR PEACE PROGRAM AIMED TO LIMIT GROWTH OF SOVIET'S WEAPONS STOCKPILE



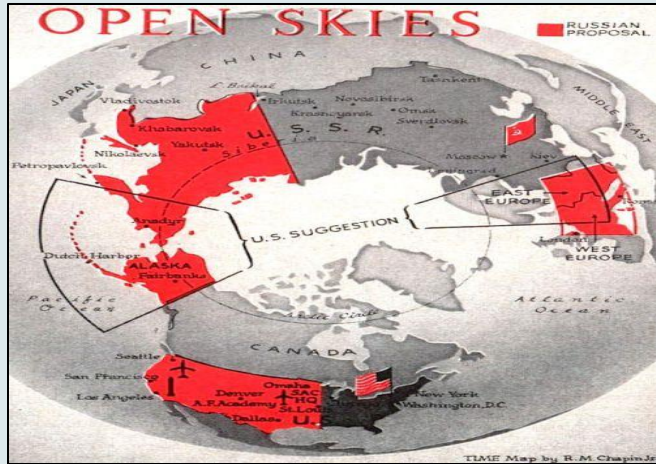
December 8, 1953, UN



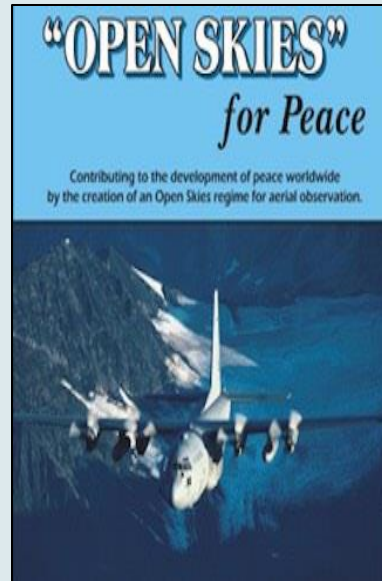
IAEA Statute
signed October
1956

**Fissile Material
Cutoff Treaty,**
proposed
January 12,
1957

OPEN SKIES, FREEDOM OF SPACE AIMED TO PREVENT SURPRISE ATTACKS



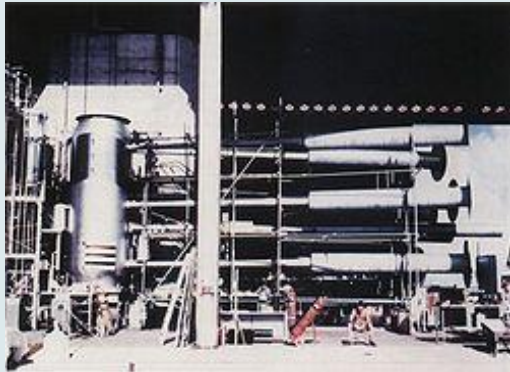
July 1955



December 1958



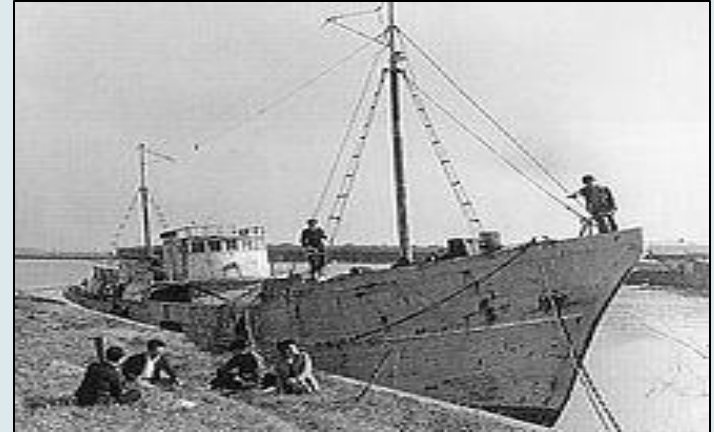
IVY MIKE, BRAVO CASTLE, THE UNLUCKY DRAGON, AND NUCLEAR TEST BANS



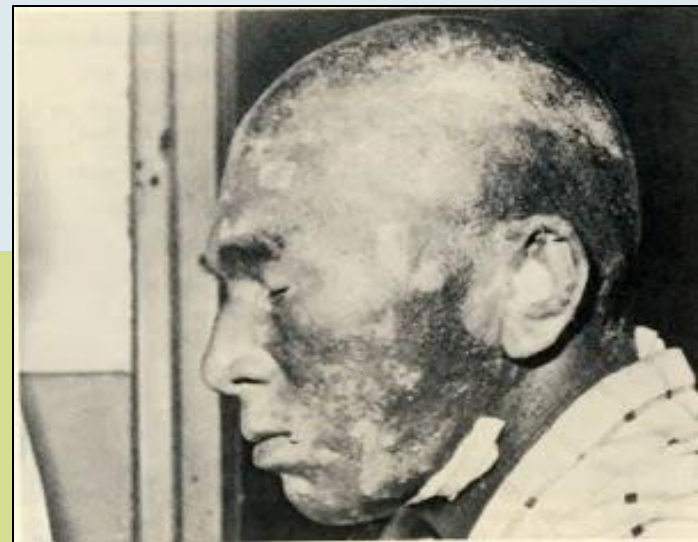
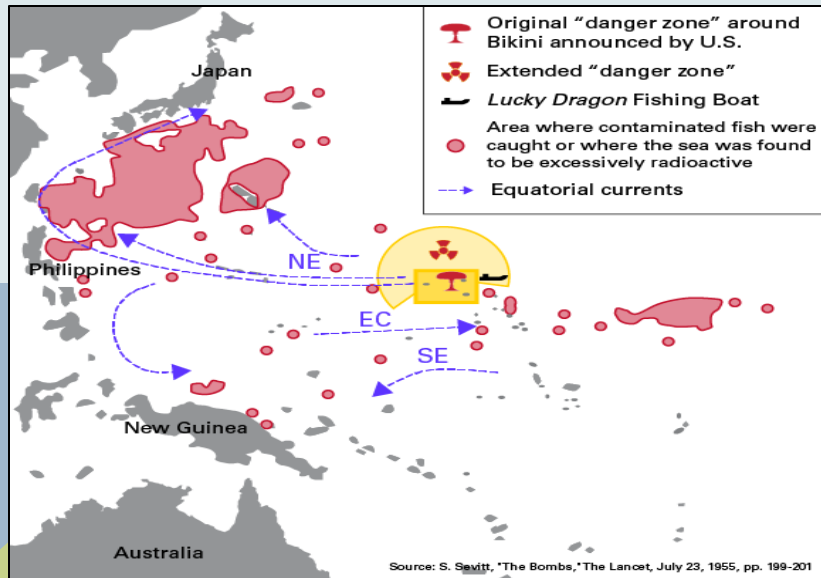
Ivy Mike shot
November 1952 & State
Panel of Consultants



Bravo Castle nuclear test
March 1, 1954



Japanese Lucky Dragon fishing boat



Lucky Dragon sailors contaminated by Bravo Castle radiation

WITH THE U.S. WAY AHEAD IN NUCLEAR TESTING, EISENHOWER AGREES TO 1-YEAR TEST MORATORIUM, JULY 1958



**First underground nuclear test
conducted in Nevada in 1957**



**Eisenhower and Strauss discuss
Operation Bravo Castle**

TO ASSURE SAFE PASSAGE OF US NUCLEAR ARMED AIRCRAFT CARRIERS, EISENHOWER AGREES TO ANTARCTIC TREATY



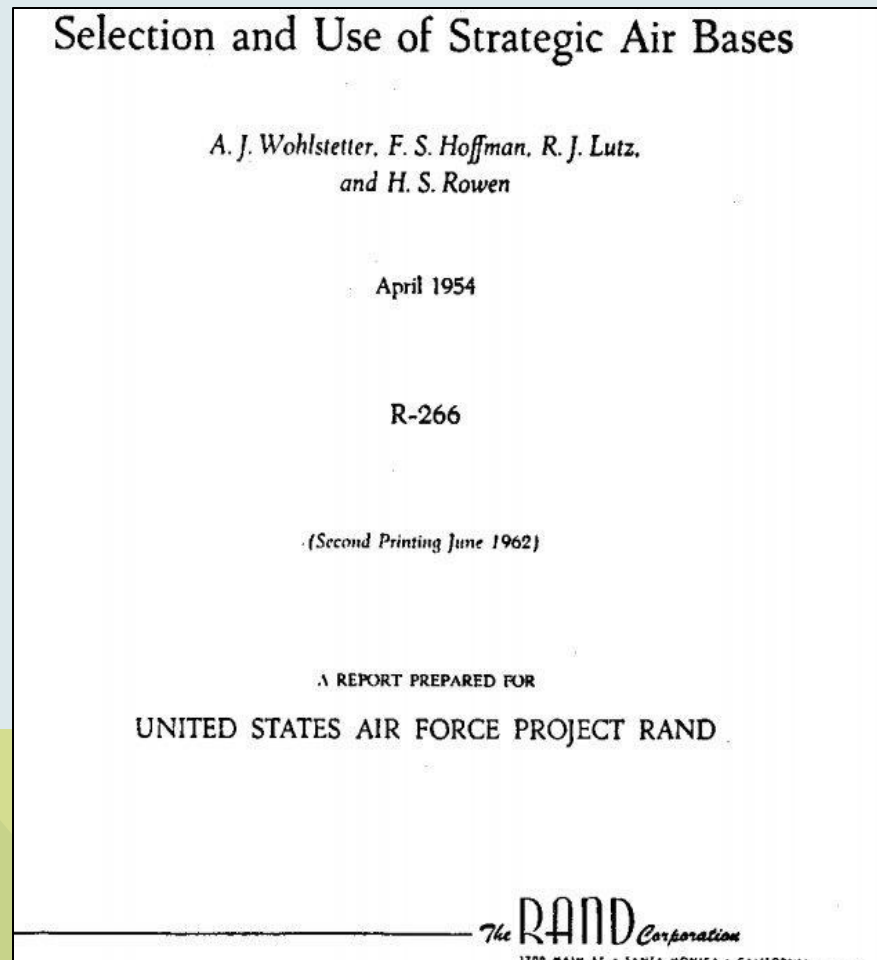
500 miles, Drake Passage



December 1, 1959

III. 1960-1977: AMERICA STRIVES FOR STRATEGIC STABILITY

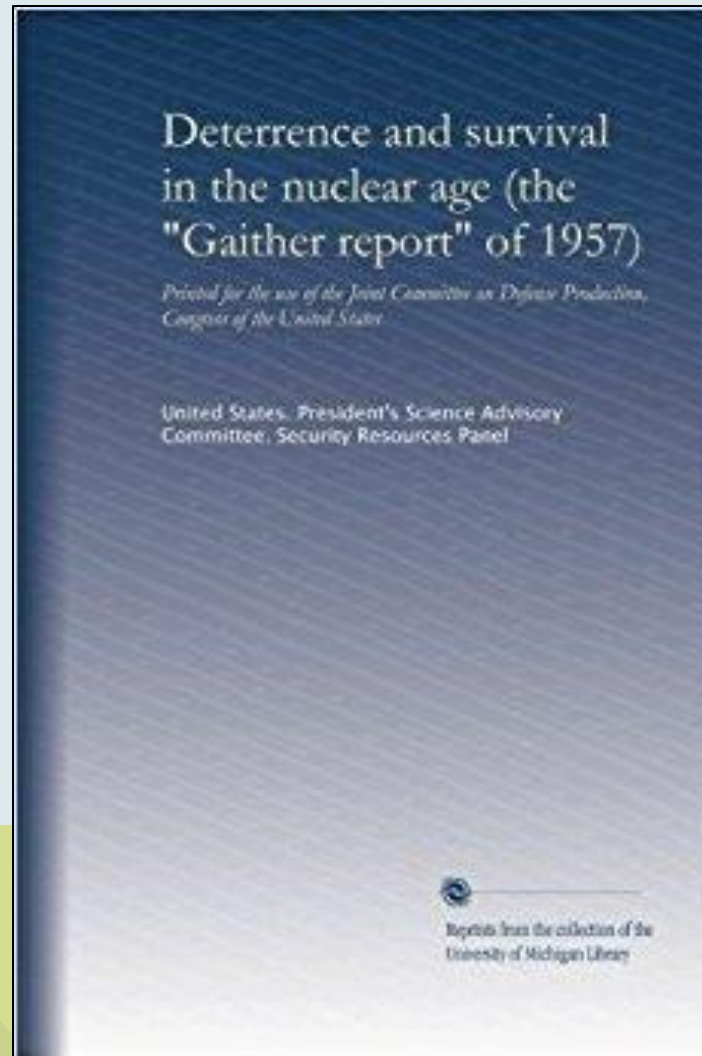
RAND ARGUES U.S. SECURITY REQUIRES SECURING AN ABILITY TO RETALIATE AFTER BEING STRUCK



SELECTION AND USE OF STRATEGIC AIR BASES

April 1954

WHITE HOUSE REPORT POPULARIZES RAND'S RESEARCH



GAITHER REPORT
November 7, 1957

CUBAN MISSILE CRISIS CONFIRMS AMERICAN FEARS OF BEING KNOCKED OUT



AFTER CUBAN CRISIS: THREE ARMS CONTROL AGREEMENTS



Aug. 5, 1963

LIMITED TEST BAN TREATY



Jan. 27, 1967

SPACE TREATY



July 1, 1968

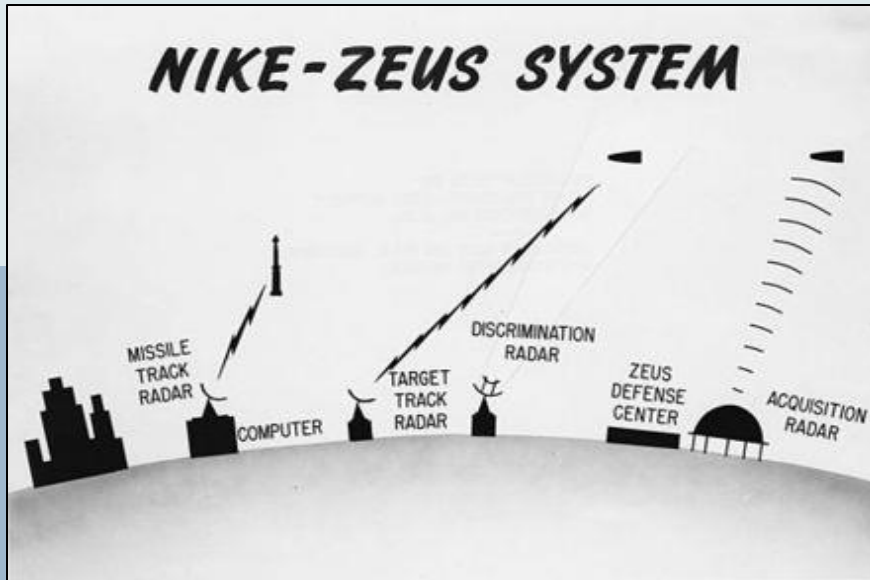
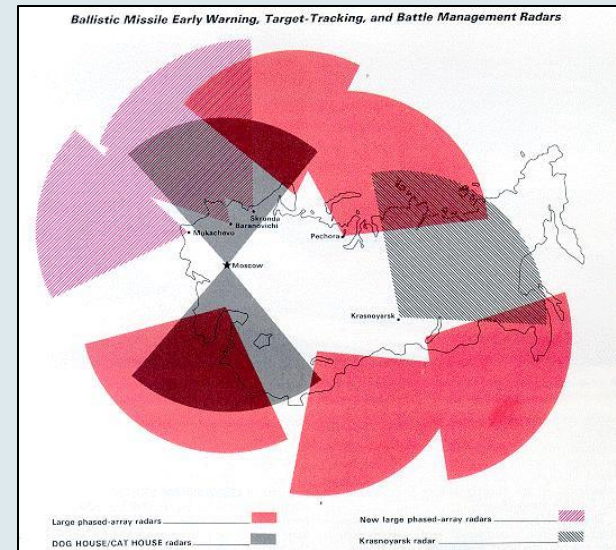
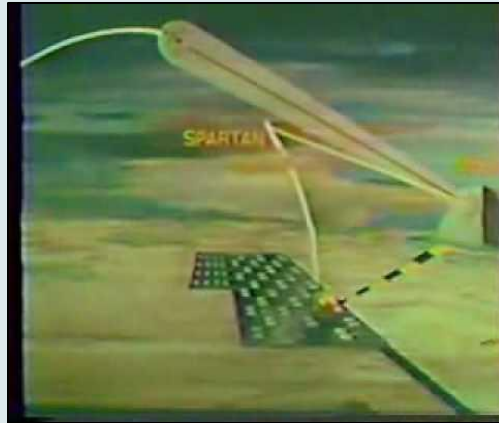
NPT

ABM TREATY JUSTIFIED AS “STABILIZING”

May 26, 1972



Soviet ABM-1 Galosh launcher



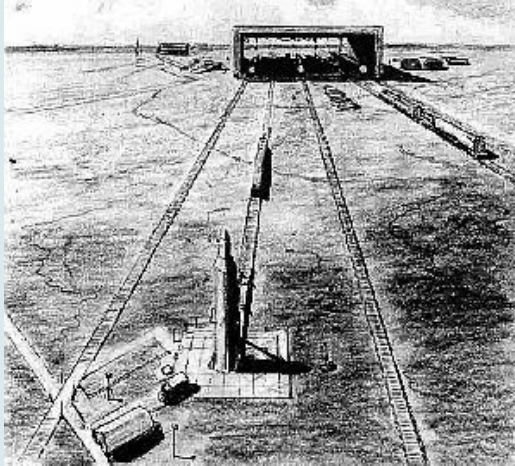
SO TOO WERE SALT I AND SALT II

May 26, 1972 and June 18, 1979



IV. 1978-2008: COMPETING TO CHANNEL, CAP, AND ELIMINATE STRATEGIC COMPETITIONS AGAINST THE SOVIETS

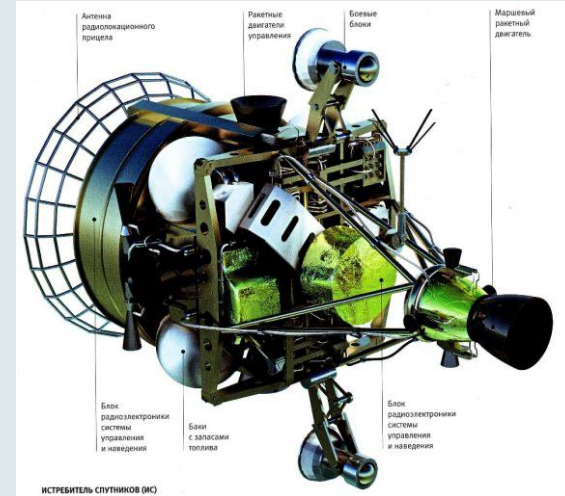
ASAT RIVALRY PROMPTS CARTER TO PROPOSE “DUAL TRACK” TALKS, 1977



**SOVIET ASAT LAUNCH
COMPLEX AT BAIKONUR**



PROGRAM 437 THOR



SOVIET IS ASAT



ASM-135

RUSSIANS TEST SS20 MISSILES AUGUST 10, 1979, ANNOUNCE IMMEDIATE DEPLOYMENTS



Soviet RSD-10 Pioneer missile

SOVIET EURO MISSILE DEPLOYMENTS PROMPT U.S.- NATO DUAL TRACK DECISION, 1979



**NATO MINISTERS DUAL TRACK
DECISION**

December 12, 1979

U.S. – NATO COUNTERS RUSSIAN INF DEPLOYMENTS



US BGM-109G Gryphon



US Pershing II missile

REAGAN SEES ARMS CONTROL AS KEY PART OF U.S. - RUSSIAN COMPETITION

2

COMMON SENSE AND THE COMMON DANGER

Policy Statement of the Committee on The Present Danger

I

Our country is in a period of danger, and the danger is increasing. Unless decisive steps are taken to alert the nation, and to change the course of its policy, our economic and military capacity will become inadequate to assure peace with security.

The threats we face are more subtle and indirect than was once the case. As a result, awareness of danger has diminished in the United States, in the democratic countries with which we are naturally and necessarily allied, and in the developing world.

There is still time for effective action to ensure the security and prosperity of the nation in peace, through peaceful deterrence and concerted alliance diplomacy. A conscious effort of political will is needed to restore the strength and coherence of our foreign policy; to revive the solidarity of our alliances; to build constructive relations of cooperation with other nations whose interests parallel our own—and on that sound basis to seek reliable conditions of peace with the Soviet Union, rather than an illusory detente.

Only on such a footing can we and the other democratic industrialized nations, acting together, work with the developing nations to create a just and progressive world economy—the necessary condition of our own prosperity and that of the developing nations and Communist nations as well. In that framework, we shall be better able to promote human rights, and to help deal with the great and emerging problems of food, energy, population, and the environment.

II

The principal threat to our nation, to world peace, and to the cause of human freedom is the Soviet drive for dominance based upon an unparalleled military buildup.

The Soviet Union has not altered its long-held goal of a world dominated from a single center—Moscow. It continues, with notable persistence, to take advantage of every opportunity to expand its political and military influence throughout the world: in Europe; in the Middle East and Africa; in Asia; even in Latin America; in all the seas.

The scope and sophistication of the Soviet campaign have been increased in recent years, and its tempo quickened. It encourages every divisive tendency within and among the developed states and between the developed and the underdeveloped world. Simulta-

~~SECRET~~
UNCLASSIFIED
THE WHITE HOUSE
WASHINGTON

SYSTEM II
91001

~~SECRET~~ SENSITIVE

January 17, 1983

National Security Decision
Directive Number 75

Declassify on: 7/16/94
under provision: E.O. 12958
by D. Van Tassel, National Security Council
194-1142

U.S. RELATIONS WITH THE USSR (S)

U.S. policy toward the Soviet Union will consist of three elements: external resistance to Soviet imperialism; internal pressure on the USSR to weaken the sources of Soviet imperialism; and negotiations to eliminate, on the basis of strict reciprocity, outstanding disagreements. Specifically, U.S. tasks are:

1. To contain and over time reverse Soviet expansionism by competing effectively on a sustained basis with the Soviet Union in all international arenas -- particularly in the overall military balance and in geographical regions of priority concern to the United States. This will remain the primary focus of U.S. policy toward the USSR.
2. To promote, within the narrow limits available to us, the process of change in the Soviet Union toward a more pluralistic political and economic system in which the power of the privileged ruling elite is gradually reduced. The U.S. recognizes that Soviet aggressiveness has deep roots in the internal system, and that relations with the USSR should therefore take into account whether or not they help to strengthen this system and its capacity to engage in aggression.
3. To engage the Soviet Union in negotiations to attempt to reach agreements which protect and enhance U.S. interests and which are consistent with the principle of strict reciprocity and mutual interest. This is important when the Soviet Union is in the midst of a process of political succession. (S)

In order to implement this threefold strategy, the U.S. must convey clearly to Moscow that unacceptable behavior will incur costs that would outweigh any gains. At the same time, the U.S. must make clear to the Soviets that genuine restraint in their behavior would create the possibility of an East-West relationship that would bring important benefits for the Soviet Union. It is particularly important that this message be conveyed clearly during the succession period, since this may be a particularly opportune time for external forces to affect the policies of Brezhnev's successors. (S)

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15 of 12 copies

NSDD 75
January 17, 1983

REAGAN SIGNS (INF) TREATY, VIEWED AS U.S. VICTORY

December 8, 1987



A YEAR LATER, THE BERLIN WALL FALLS



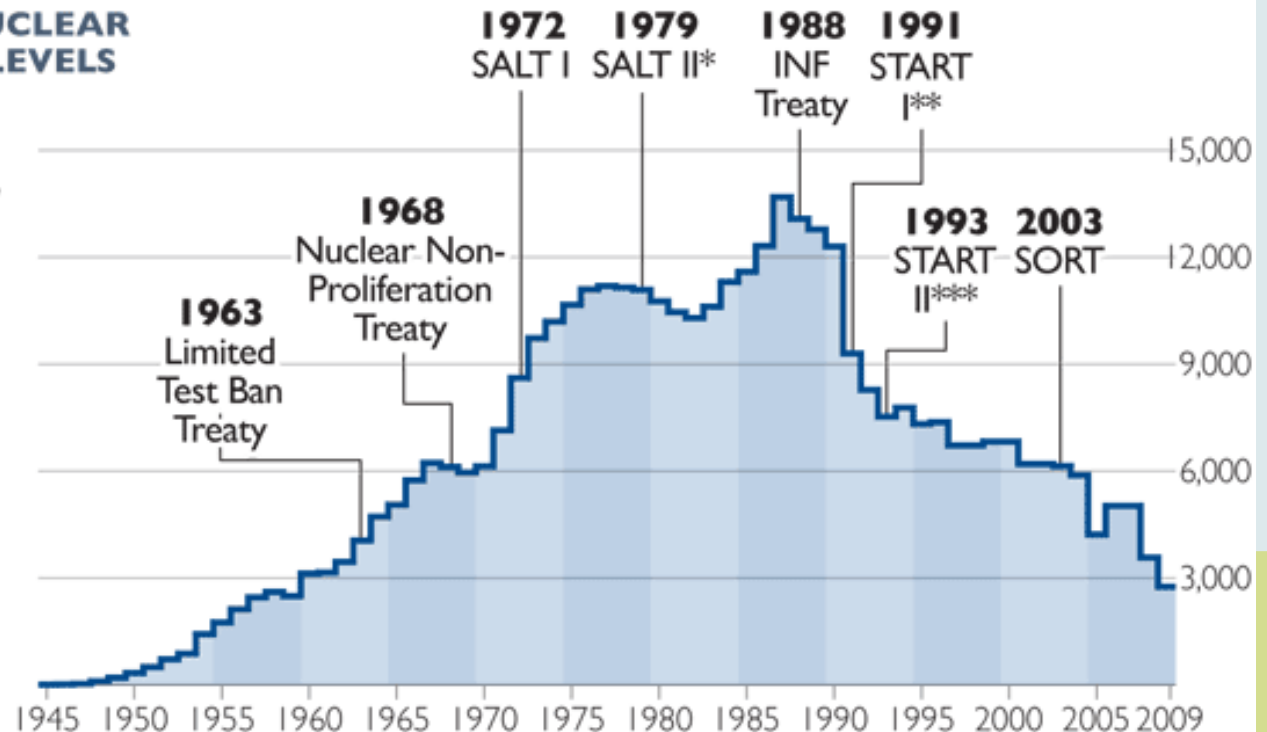
U.S. NUCLEAR ARSENALS IMMEDIATELY SHRINK

U.S. Nuclear Arsenal Shrinks, Nuclear States Still Emerge

The U.S. has 80 percent fewer nuclear weapons than it did in 1987. Since then, Pakistan and North Korea have become nuclear powers, and Iran has aggressively sought to develop nuclear weapons.

U.S. NUCLEAR ARMS LEVELS

*Strategic
Offensive
Warhead
Levels*



BUSH I GETS RUSSIA TO REDUCE CONVENTIONAL FORCES

CFE TREATY ENTITLEMENTS

	Belgium	Canada	Denmark	France	Germany	Greece	Italy	Netherlands	Norway	Portugal	Spain	Turkey	UK	US
Tanks	334	77	353	1306	4069	1735	1348	743	170	300	891	2795	1015	4006
Artillery	320	32	503	1292	2445	1920	1955	607	491	450	1370	3523	636	2742
ACV	1005	263	336	3820	3281	2498	3339	1040	275	430	2047	3120	3176	5152
Helicopters	46	13	18	374	280	65	142	50	24	26	80	130	356	396
Aircraft	232	90	106	800	900	650	650	230	100	160	310	750	900	784

	Armenia	Azerbaijan	Belarus	Bulgaria	Czech Rep	Georgia	Hungary	Kazakhstan	Moldova	Poland	Romania	Russia	Slovakia	Ukraine
Tanks	220	220	1800	1475	957	220	835	50	210	1730	1375	6350	478	4080
Artillery	285	285	1615	1750	767	285	840	100	250	1610	1475	6315	383	4040
ACV	220	220	2600	2000	1367	220	1700	200	210	2150	2100	11280	683	5050
Helicopters	50	50	80	67	50	50	108	20	50	130	120	855	40	330
Aircraft	100	100	294	235	230	100	180	15	50	460	430	3416	100	1090

Note: Iceland has no Treaty-limited equipment entitlements in the area of application;
Luxembourg has entitlements to 40 ACV, but has not yet applied any holdings



START I TREATY REMOVES NEARLY 80% OF DEPLOYED STRATEGIC WEAPONS

July 31, 1991



STRATEGIC OFFENSIVE REDUCTIONS TREATY (SORT) DROPS STRATEGIC WARHEADS EVEN FURTHER

June 1, 2003



1,700-2,200 by end of 2012

V. 2009-2016: US AS TOP POWER PUSHES CONVERGENCE AND THE GOAL OF ZERO NUCLEAR WEAPONS

CONVERGENCE PRESUMES LITTLE OR NO STRATEGIC COMPETITION

NATO's eastward expansion

1990



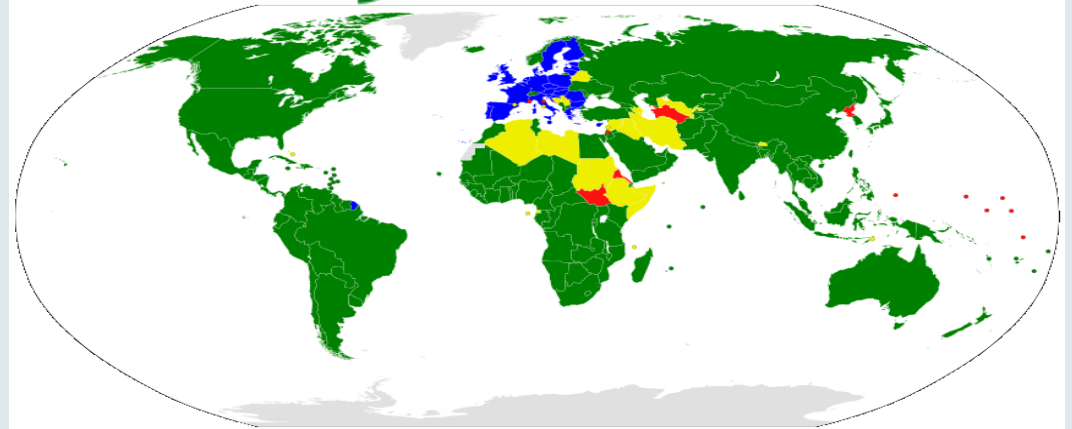
2009



WORLD TRADE ORGANIZATION



Member Observers
Member (EU) Non-participants



Francis Fukuyama

THE END
OF HISTORY
AND
THE
LAST
MAN

NEW START MORE STRATEGIC REDUCTIONS

April 8, 2010



NUCLEAR SECURITY SUMMITS: A GLOBAL NUCLEAR THREAT REDUCTION EFFORT

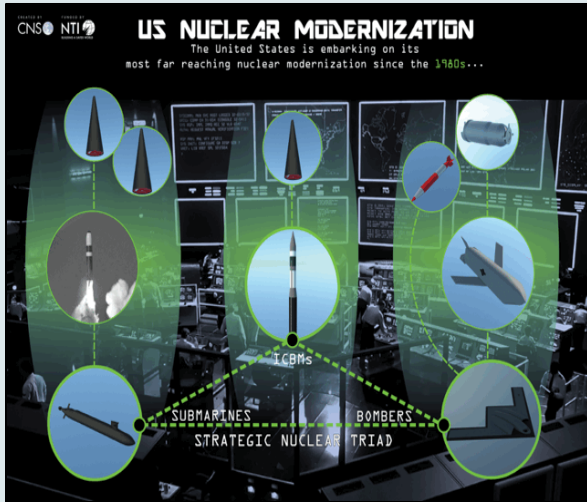


VI. 2016 - 2024: RENEWED COMPETITION TO PRESERVE DIPLOMATIC AND MILITARY POSITION

US MUST COMPETE AGAINST RIVALS TO BE SECURE



U.S. FLEXES AND MODERNIZES ITS NUCLEAR FORCES TO COMPETE



B61s in Europe



US B-1 bombers fly near North Korean border



**Al Udeid Air Base,
Qatar, April 9, 2016**



**US SSN at Busan,
South Korea**



**Yokosuka Naval Base in
Kanagawa**

TRUMP'S INITIAL STRATEGIC WEAPONS AGENDA WAS VAGUE



“...[Nuclear] proliferation is ... the biggest problem in the world... If we can do something to .. ideally get rid of them, maybe that's a dream, but certainly it's a subject that I'll be bringing up with [Putin]”
President Trump, News Conference, July 13, 2018

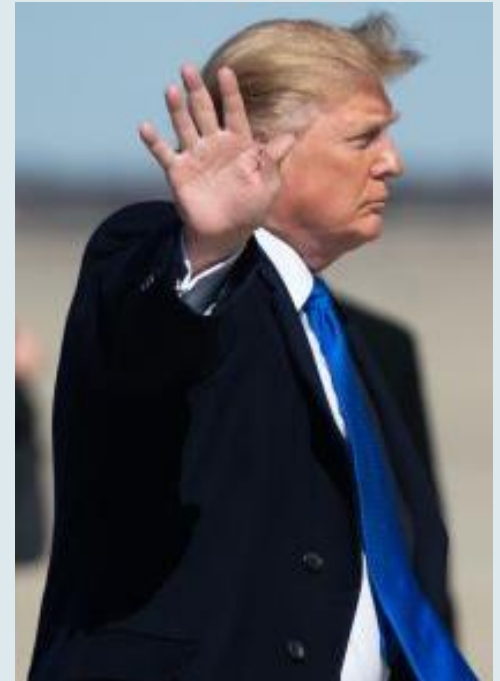
PUTIN'S ARM CONTROL AGENDA DURING THE TRUMP ADMINISTRATION WAS NOT

- **INF Treaty issues**
- **Extending New START**
- **Non-placement of weapons in space**
- **Upholding the Iran nuclear deal**



TRUMP'S RESPONSE

- **Withdrew from INF Treaty**
 - **Questioned extending START**
 - **Promoted Space Force and the placement of weapons in space**
 - **Withdrew from the Iran Deal**
-
- **Tried to pressure China into three-way arms control talks**



BIDEN'S AGENDA

- **Attempt to revive Iran deal**
- **Extend New Start**
- **Engage China in any forms of threat reduction (AI controls hotlines, unconditional talks, etc.)**
- **Promote space rules of the road (kinetic ASAT testing bans)**
- **Incremental military upgrades to America's military**

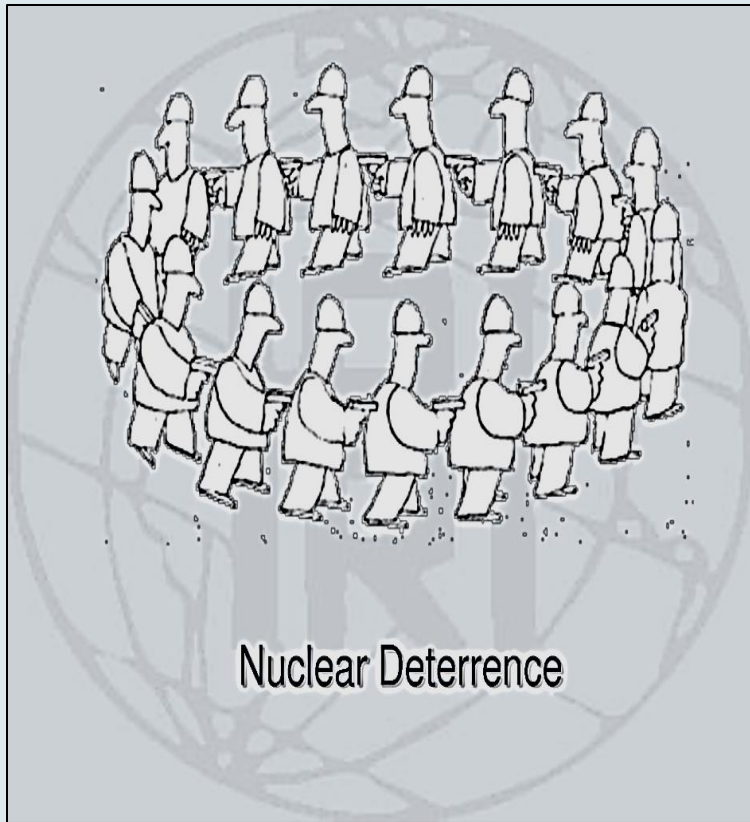
VII. 2025 – PRESENT: HOMELAND SECURITY & CHECKING CHINA

US NATIONAL DEFENSE STRATEGY EMPHASIZES HOMELAND DEFENSE & COUNTERING PRC

- Deemphasize Middle East, NATO commitments
- Increased use of troops on US-Mexican border
- Creation of anti-narco terrorist Puerto Rican base
- Golden Dome for America
- US troops to combat domestic crime
- Create a hemispheric sphere of influence
- Build up of forces to counter China in Western Pacific

IV. WHAT MIGHT THE FUTURE OF STRATEGIC COMPETITION AND ARMS CONTROL BE GIVEN CHINA'S MILITARY BUILD UP?

THIS POINT IS NOW GETTING LOST



OR



THE OBJECTIVES FOR SOUND ARMS CONTROL AND MILITARY SCIENCE ONCE WERE VIEWED TO BE THE SAME:

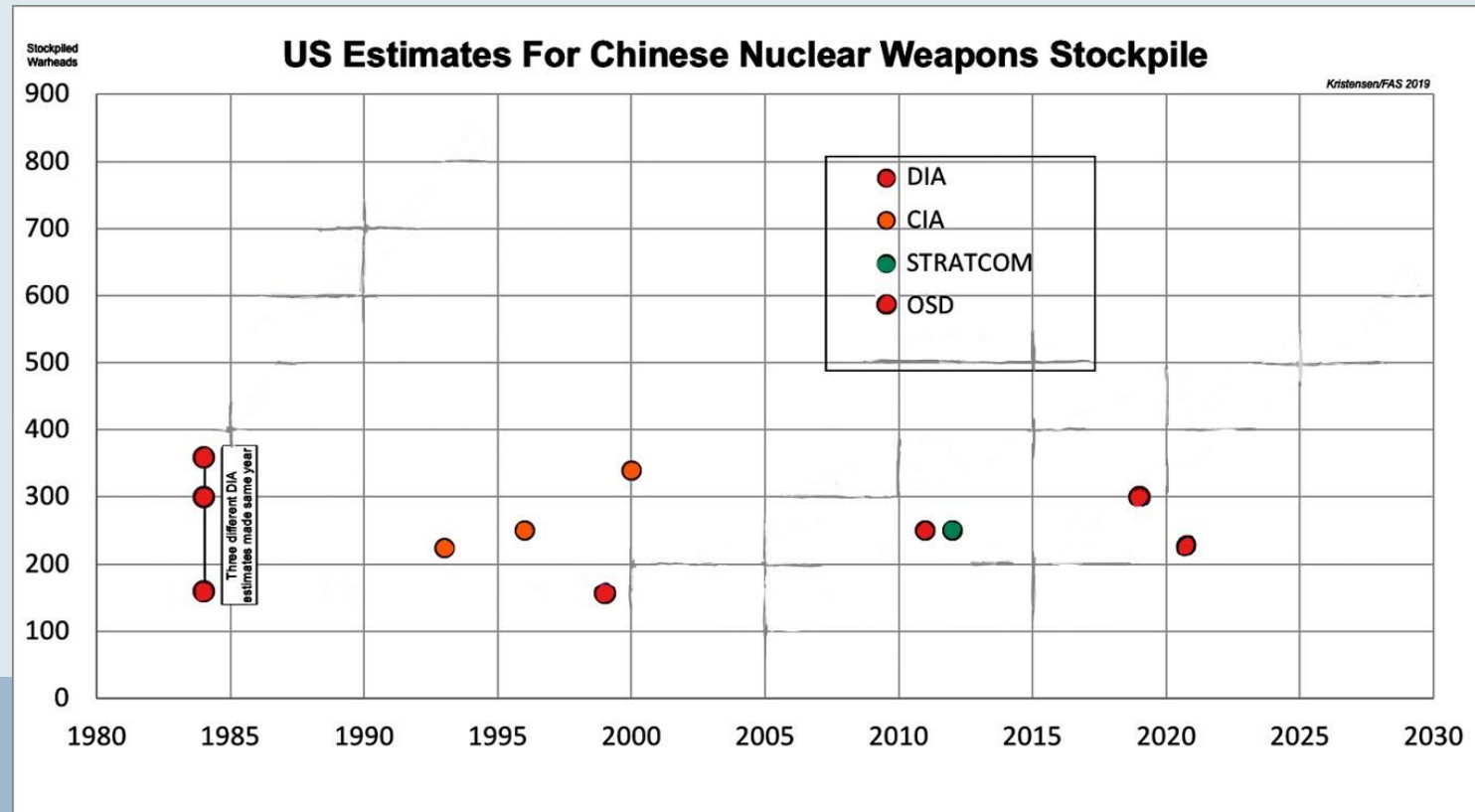
- 1. Reduce the probability of war;**
- 2. Reduce the destructiveness of the wars that do occur; and**
- 3. Reduce military expenditures**

Source: Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control*, New York: The Twentieth Century Fund, 1961.

CHINA: A NEW ARMS CONTROL HEADACHE

- **China's strategic capabilities—nuclear, space, cyber, and missile—are growing**
- **China and Russia are strategic partners**
- **Three-way talks have gone nowhere**

1985-2021: US REPEATEDLY ESTIMATED PRC HAD ROUGHLY 200 TO 300 WARHEADS



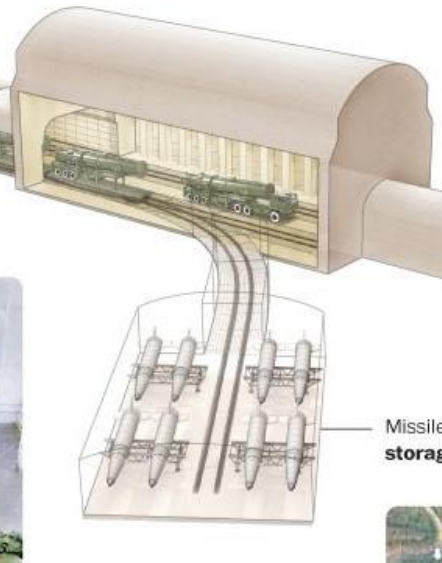
2010: DOD CONFIRMATION OF 3,000 MILES OF MISSILE TUNNELS RAISED THE SPECTER OF LARGER NUMBERS

MOBILIZING A MISSILE IN THE CHINESE TUNNEL SYSTEM

Each network of tunnels leads out to multiple, redundant portal openings in case of attack, in which an enemy may try to block missiles from getting out to launch.

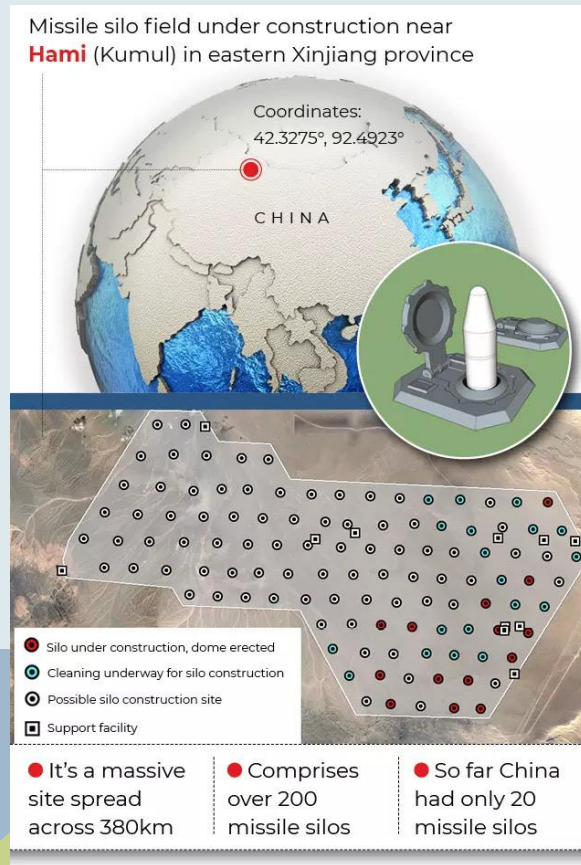
Trains or transport vehicles enter system through blast doors.

Illustration is schematic

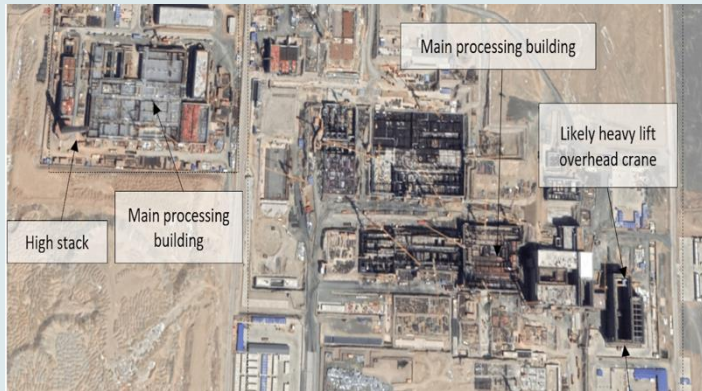


THE WASHINGTON POST

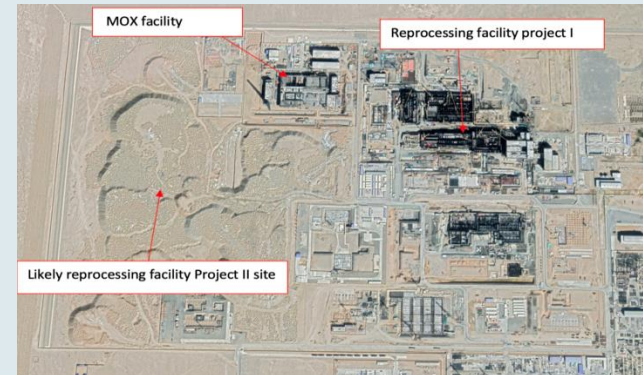
2021: COMMERCIAL IMAGERY REVEALED PRC IS BUILDING 350 NEW MISSILE SILOS, RAISING LAUNCH ON WARNING CONCERNS



2019-21: PRC REVEALED IT'S RAMPING UP ITS PLUTONIUM PRODUCTION CAPACITY NEARLY 10-FOLD



1st PRC 200 tHM/yr plant under construction to be on line by 2025



2nd PRC 200 tHM/yr reprocessing plant to be on line before 2030



PRC 50 tHM/yr Pilot plant: ~100 bombs worth of plutonium/yr, initial operation 2010

2019-21: PRC CONFIRMED IT'S EXPANDING ITS SUPER-WEAPONS-GRADE PLUTONIUM-PRODUCING FAST REACTOR CAPACITY 60-FOLD

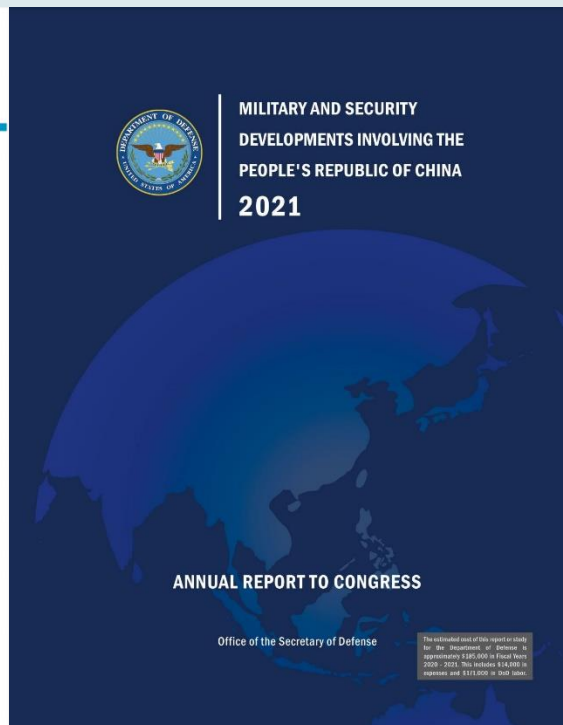
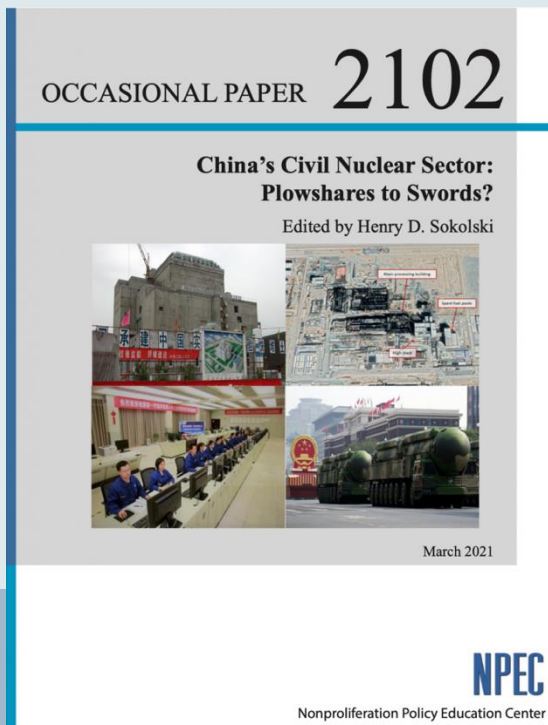
China Experimental Fast Reactor, 20 Mwe, initial operation 2010



Fast Reactors under construction, first 600 Mwe reactor to begin operation in 2023, second plant to begin operation in 2026



NOV. 2021: DOD PROJECTS PRC WILL ACQUIRE “AT LEAST 1,000” NUCLEAR WARHEADS BY 2030. NOV. 2022, OCT. 2023, DOD PROJECTS “1,500 BY 2035.” CITES NPEC STUDY.



“The PRC is constructing the infrastructure necessary to support this force expansion, including increasing its capacity to produce and separate plutonium by constructing fast breeder reactors and reprocessing facilities...the PRC likely intends to use some of this infrastructure to produce plutonium for its expanding nuclear weapons program. **A Western think tank publication indicated that the PRC could field more than 1,000 nuclear warheads by the end of the decade, judging from the amount of plutonium that could be produced from reactors under construction.**”

Pg 92

<https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>

WHAT TO DO: CURRENT POPULAR IDEAS

If China has X number of nuclear warheads, we should have at least X times X as much. Frank C. Miller, 3000-3500 warheads, April 21, 2022.

<https://www.wsj.com/articles/outdated-nuclear-treaties-new-start-treaty-russia-putin-china-xi-heighten-risk-nuclear-war-missile-test-ukraine-deterrence-11650575490>. Matthew Kroenig, June 16, 2021. <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/the-special-role-of-us-nuclear-weapons/>.

Don't build more: Focus U.S. nuclear targeting against cities. Lieber and Press, May 2023

<https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/us-strategy-and-force-posture-for-an-era-of-nuclear-tripolarity/>. Glaser, Acton, Fetter October 5, 2023 <https://www.foreignaffairs.com/united-states/us-nuclear-arsenal-can-deter-both-china-and-russia>

Build no more nuclear warheads, consider conventional ICBMs.

<https://www.rand.org/blog/2021/10/the-us-doesnt-need-more-nuclear-weapons-to-counter.html>

Add reserve warheads to existing ICBMs and SLBMs, actively and passively defend our nuclear forces, fortify nuclear C3I. Livermore Report, March 2023

https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf. Congressional Commission on the Strategic Posture of the United States https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf

THESE VIEWS IMPLICITLY RECOGNIZE THAT DEPLOYMENT OF NEW US ICBMS AND SLBMS WILL BE NEITHER CHEAP NOR QUICK



Ground based strategic deterrent, 400 missiles with 50 spares, \$100 B to acquire, \$264 B for full lifetime cost, to enter service by 2029 and be fully operational by 2036

ALSO THAT US BALLISTIC MISSILE SUB PROGRAMS SLIPPING

New US nuclear-missile submarines hobbled by billions in growing costs and delays. By **TONY CAPACCIO** ,BLOOMBERG • June 8, 2022.

<https://www.bloomberg.com/news/articles/2022-06-08/new-us-submarines-hobbled-by-billions-in-added-costs-and-delays> 12 boats 112 b dollars 2031

Navy Will Have ‘Challenges’ Meeting Submarine Delivery Schedules, Admiral Tells Senate, By: [John Grady](#), April 20, 2023 6:50 PM.

<https://news.usni.org/2023/04/20/navy-will-have-challenges-meeting-submarine-delivery-schedules>



RECOGNIZES ENERGY DEPARTMENT EFFORTS JUST TO MAINTAIN FIELDDED WARHEADS ARE SLIPPING

NNSA Has No Reliable Schedule, Cost Estimates For Pits, GAO Says, *Defense Daily*, By: [Dan Leone](#), January 11, 2023



US plutonium pit production at Los Alamos 30 pits/year by 2026



Planned Pit production plant at Savannah River, Georgia 50 pits/year by 2035

UNCLEAR IF PLANNED TRITIUM PRODUCTION CAN DO MORE THAN REPLENISH EXISTING STOCKPILE

Initial production at Watts Bar 1 encountered difficulties that set production back

Production at Watts Bar 1 had to be doubled with Watts Bar 2 to meet current weapons tritium requirements

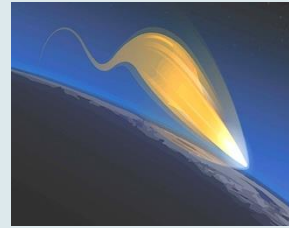
Unclear how major additional requirements would be met

Watts Bar Nuclear Generating Station



WHAT ALL CURRENT VIEWS IGNORE

Nonnuclear PRC intercontinental missiles



The future role of space systems in America's strategic structure



The need for advanced cyber and AI to win the coming cool information campaigns



Any new, competitive arms control initiatives



Nuclear proliferation beyond North Korea, Iran could result in a nuclear 1914

WHAT MIGHT BE DONE

RATHER THAN PROLIFERATE WEAPONS, INCREASE THEIR POSSIBLE LOCATIONS & LAUNCHERS, DRIVING UP WHAT MUST BE TARGETED



ICBMs in silos,
LOW or LUA



Boeing 777



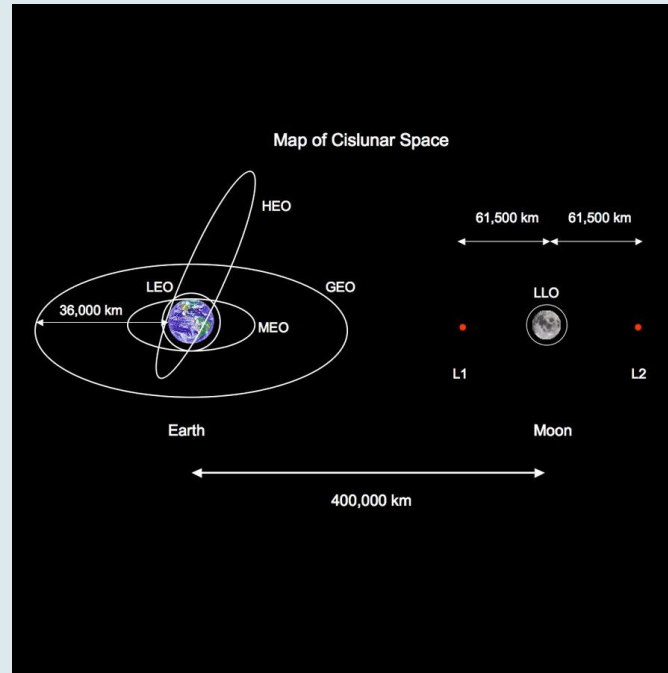
Rotary missile launcher

Versus

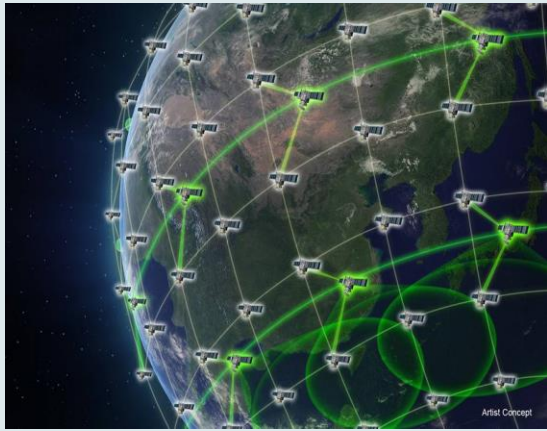


Mobile ICBM Concepts

RATHER THAN SEEK NUCLEAR QUANTITATIVE SUPERIORITY, SECURE US- ALLIED SPACE ACCESS AND CONTROL



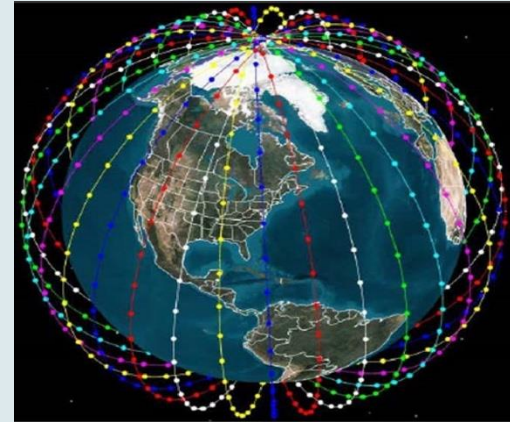
US DEVELOPING DISTRIBUTED MILITARY AND COMMERCIAL SATELLITE CONSTELLATIONS THAT MIGHT HELP



US DARPA's Blackjack demonstration Program

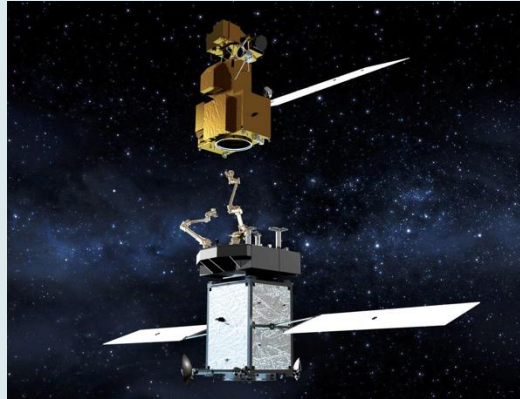


Elon Musk's Starlink Internet, 4408 satellites



Keiper, Amazon 3,236 satellites

“PEACEFUL” RENDEZVOUS SATELLITES WILL BE NEEDED TO SERVE AS BODYGUARDS



NASA's proposed Restore-L



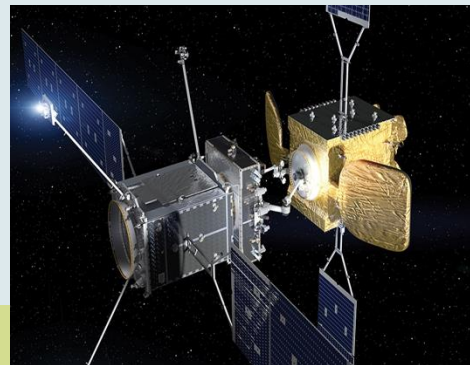
ESA's e.Deorbit



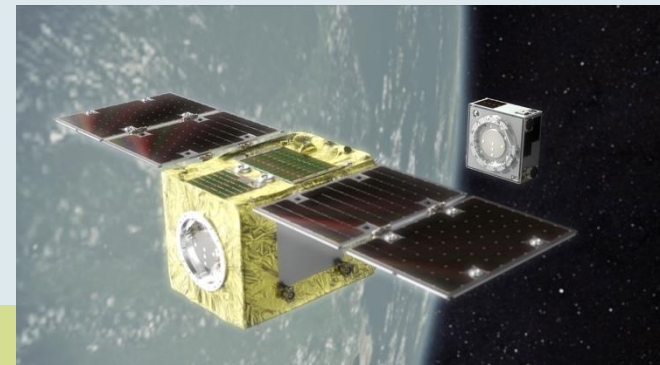
Japan's KIKU-7 “Chaser” &
“Target”



Japanese Sky Perfect JSAT
Corp



MEV (Mission Extension
Vehicle)



Japanese Astroscale
Satellite

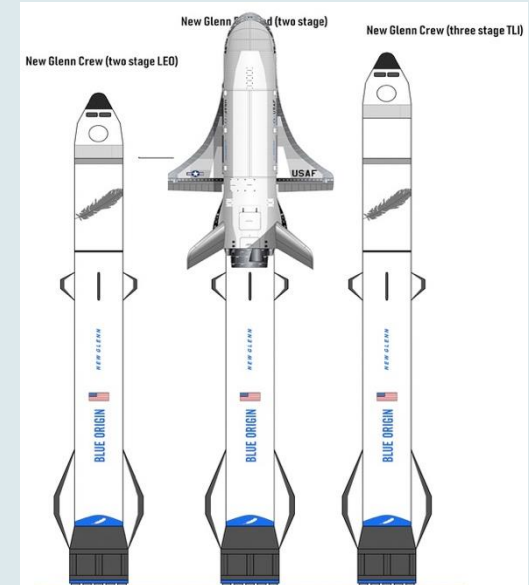
CHEAP, QUICKLY REUSABLE HEAVY LIFT WILL BE NEEDED TO ASSURE US-ALLIED SPACE ADVANTAGE



SpaceX Starship

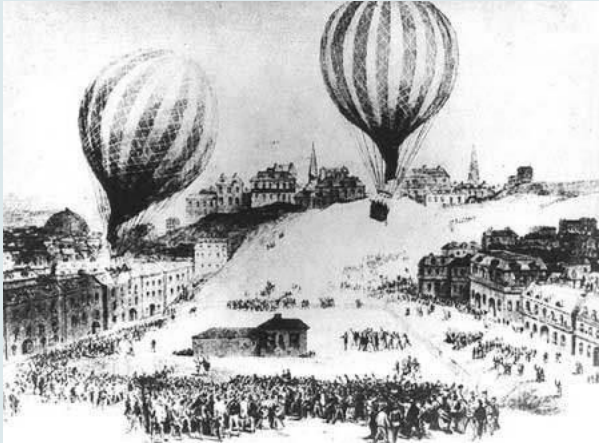


Starliner



New Glenn
Crew

NEED TO TRANSITION FROM STATIC TO DYNAMIC MILITARY MOVEMENTS IN SPACE AS DONE IN THE AIR LAST CENTURY



RATHER THAN USE AI AND CYBER TO “KNOCKOUT” HARD TARGETS, USE THEM TO TURN ADVERSARIES INWARD

Cool Wars — information campaigns — require AI and cyber to break firewalls and to establish pathways for messaging in and within hostile states

Aim is to get our adversaries to spend more time and effort to deal with spotlighted domestic issues than causing problems outside of their borders

Hold lines of communication from those who rule over those that are ruled at risk as part of strategic deterrence

RATHER THAN RELEGATE STRATEGIC ARMS CONTROL DIPLOMACY TO MAINTAINING LEGACY AGENDAS, MAKE IT MORE COMPETITIVE

Leverage Chinese fears of US nuclear weapons redeployments to RoK and Japan to spotlight need for Beijing to freeze plutonium weapons production

Propose agreements not to target cities with nuclear weapons (China and Russia are more urbanized than the US).

Propose legal and diplomatic ways to deter additional states from leaving the NPT (something China may fear RoK and Japan might do)

Tie agreeing to due-regard rules of keeping a safe distance from others' satellites to access to commercial space-related insurance

Clarify Protocol I guidelines on targeting power reactors (something China is worried about)

**TO DETER, US CAN'T OUT MUSCLE, BUT
CAN OUT SMART AND DISABLE IF IT
CAN THREATEN BLOWS TO THE HEAD**



ADDITIONAL SLIDES

CONNECTING OUR NUCLEAR POSTURE WITH ARMS CONTROL, THOUGH, IS REQUIRED BY LAW

Public Law No: 115-91, December 12, 2017: National Defense Authorization Act, Fiscal Year 2018

Sec. 1671. Nuclear Posture Review (NPR)

(a) SENSE OF CONGRESS.—It is the sense of Congress that the *nuclear posture* review should...

(3) consider input and views from all relevant stakeholders in the United States Government... on *issues pertaining to nuclear deterrence, nuclear nonproliferation, and nuclear arms control.*

PAIR BOOST PHASE INTERCEPT WITH NPT-BASED MISSILE LAUNCH LIMITS

- **Propose a UN resolution where nations that violate the Nuclear Nonproliferation Treaty may not launch nuclear capable missiles outside of their air space and if they attempt to do so, these missiles may be neutralized within their airspace**

National Review

What to Do about Pyongyang

Nuclear nonproliferation is on the ropes. Does the U.S. have the will to act?

By Henry Sokolski

April 2, 2009

PAIR U.S. INF MISSILE PROGRAMS WITH NEW U.S.- RUSSIAN INF MISSILE LIMIT TALKS

Work with Russia on an agreement to prohibit INF missiles in the European theater but allow conventional ones in Asia.



Future of the Intermediate Range Nuclear Forces (INF) Treaty

By Jim Thomas
CSBA, July 16, 2014

PAIR MISSILE MODERNIZATION WITH TALKS TO LIMIT GROUND-BASED MISSILES

- **Begin multilateral talks, starting with Russia and China, to ban all “nuclear missiles” – i.e., ground based nuclear-capable missiles beyond Missile Technology Control Regime Category I limits**

Globalizing Reagan’s INF Treaty: Easier Done Than Said?

By David A. Cooper

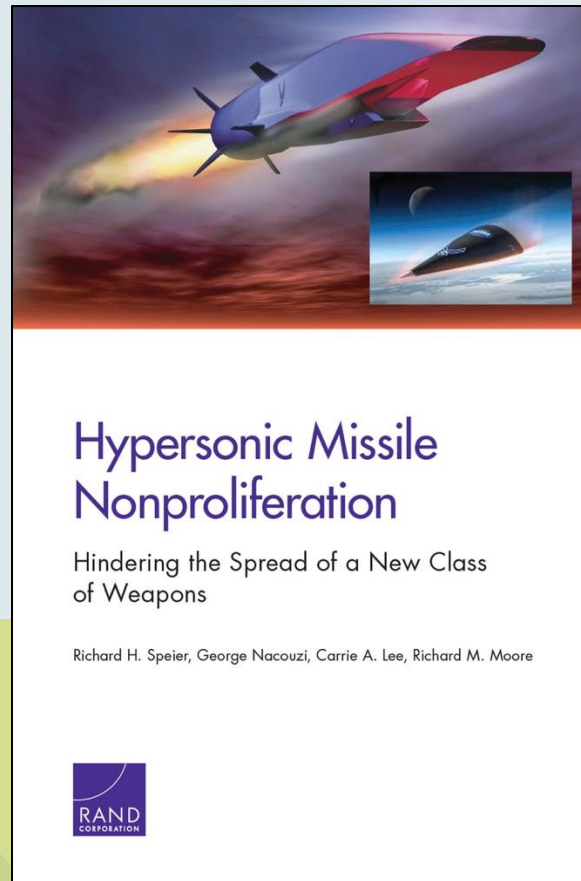
The Nonproliferation Review, Volume 20, No. 1,
2013.

The Security Threats Nuclear- Capable Missiles Pose and How to Best Control Them

By Alexander G. Savelyev
Head of the Department of Strategic
Studies, Institute of World Economy and
International Relations (IMEMO), Russian
Academy of Sciences

LIMIT HYPERSONICS PROLIFERATION

- **Begin negotiations to limit the further spread of hypersonic technologies among the major developers of such technology – US, Russia, and China. Tighten MTCR controls on the technology**



THE TRUMP ADMINISTRATION'S NATIONAL SPACE STRATEGY RECOGNIZES THIS

“We will strengthen U.S. and allied options to deter potential adversaries from extending conflict into space and, **if deterrence fails, to counter threats used by adversaries for hostile purposes.**”

America First National Space Strategy, Fact Sheet, March 23, 2018

AS WE MODERNIZE OUR SPACE SYSTEMS, PUSH SPACE RULES OF THE ROAD & AGREEMENTS TO PREVENT SPACE PEARL HARBORS

- Assert what we and our allies want to establish as “space keep-out zones” and what the right to self-defense entails
- Negotiate with Russia and China and other satellite faring states to allow each state only to transit near another state’s key satellite assets for so long with so many satellites.
- Agree that if these limits are violated, the violated party could exercise their right to self defense
- Pair clarification of these rules with more traditional limits on ground-based ASATs

*Strategic Studies
Quarterly*

Brian G. Chow

“Stalkers In Space:
Defeating the Threat”

Summer 2017

“Space Arms Control: A
Hybrid Approach”

Summer 2018

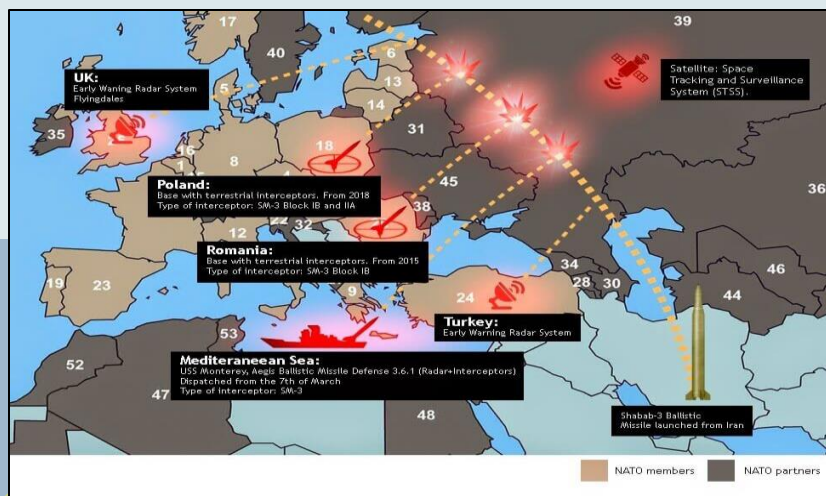
WHEN NUCLEAR DETERRENCE FAILS: MISSILE DEFENSES?



US and Japanese planners take part in Integrated Air and Missile Defense Wargame



THAAD Deployment in S. Korea



Missile Defenses in Europe



US approves \$15 billion sale of THAAD missile launchers to Saudi Arabia

BUT FIRST, AMERICA WILL COMPETE



“We have more money than anybody else by far. *We’ll build it up until they come to their senses.* When they do, then we’ll all be smart, and we’ll all stop.”

– October 20, 2018

UNSPOKEN INTELLECTUAL UNDERPINNING

SAMUEL P.
HUNTINGTON

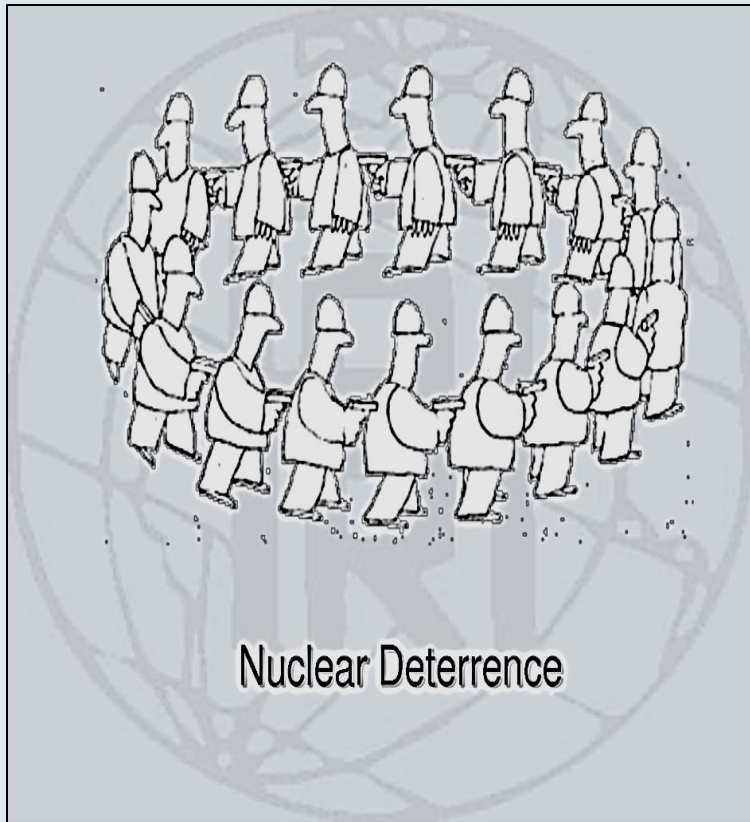
THE NEW YORK TIMES BESTSELLER

THE CLASH OF
CIVILIZATIONS
and the Remaking of World Order

"Dazzling in its scope and grasp of the intricacies of contemporary global politics." —FRANCIS FUKUYAMA, *The Wall Street Journal*

WITH A NEW
FOREWORD BY
ZBIGNIEW
BRZEZINSKI

THIS POINT IS NOW GETTING LOST



OR



TRUMP: LOOKED FOR “BETTER DEALS”

“I hope to be able to make a deal with [Iran]: a good deal, a fair deal, a good deal for them, better for them.” – 5/10/18

“Perhaps we can negotiate a different [INF] agreement, adding China and others.” – 2/6/19

“We stand ready to engage with Russia on arms control negotiations. . . . This would be a fantastic thing for Russia and the United States, and would also be great for the world.” – 2/1/19

THE LAST NPR OFFERS AN ARMS CONTROL MODEL

Indeed, U.S. pursuit of a SLCM may provide the necessary incentive for Russia to negotiate seriously a reduction of its non-strategic nuclear weapons, **just as the prior Western deployment of intermediate-range nuclear forces in Europe led to the 1987 INF Treaty. As then Secretary of State George P. Shultz stated, “If the West did not deploy Pershing II and cruise missiles, there would be no incentive for the Soviets to negotiate seriously for nuclear weapons reductions.”**

MEDIUM-SIZED MINDS THINK ALIKE?

From: Henry Sokolski <henry@npolicy.org>

Date: Tue, Jun 13, 2017 at 1:37 PM

Subject: 2 points for the upcoming nuclear posture and arms control review

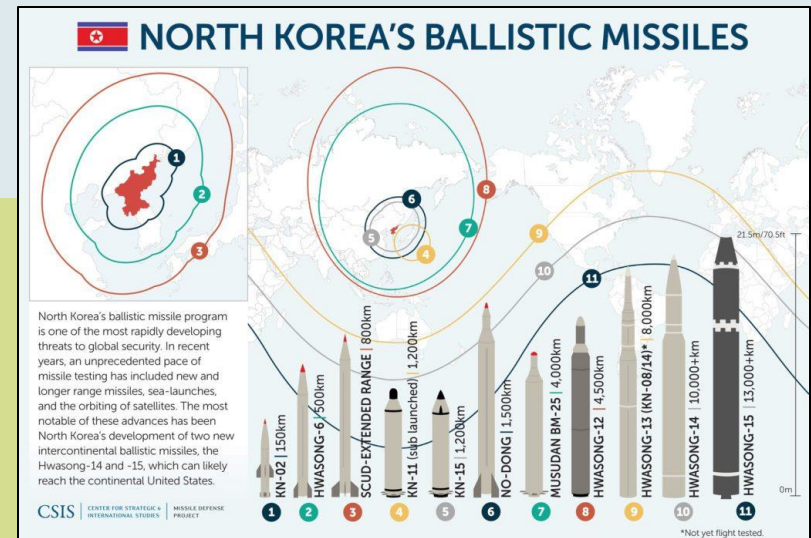
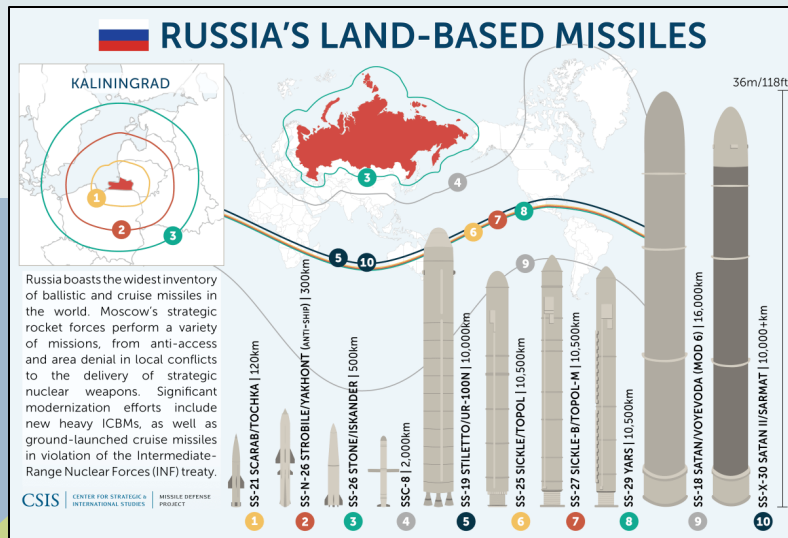
To: [REDACTED]

[REDACTED] -- I got to believe you're under a mountain of emails and other communications. We can talk about these matters later but just to answer the mail (you just sent) literally, the two simple points worth considering that I discussed with [REDACTED] are as follows:

1. ***Every policy worthy of its name has got to have a happy ending.*** We don't just compete to compete, we compete (as our president has emphasized) to win. Much of what's been written and that will and should guide the nuclear posture review is the need to be competitive in the realm of nuclear strategic activities and programs. That means modernizing existing forces. Fair enough. The ultimate question, however, is how might our efforts to catch up and compete in this realm end. ***In the Carter – Reagan years, we understood that the deployment of INF systems was slaved with talks to eliminate them. What we ended up with was an agreement not to deploy that helped discredit the Soviet military, which, in turn, helped bring down the Soviet union. It maybe too early to specify publicly what the happy endings might be to any military efforts we undertake now but it's not too early to start off line thinking about this as no expensive long-term military modernization effort is likely to be sustainable without it.*** One thing is certain: after every Republican administration there's a Democratic one and if we don't have a positive narrative about arms control, they will substitute theirs for ours. What I'd like to talk to you about is what those positive narratives might look like.

WHAT EMERGING THREATS NEED TO BE ADDRESSED?

1: GROUND-BASED MISSILES



TODAY'S ACCURATE, CONVENTIONAL MISSILES CAN ACCOMPLISH STRATEGIC MISSIONS



September 14, 2019

HYPERSONICS, FRACTIONAL ORBITING MISSILES CAN EVADE MISSILE DEFENSES

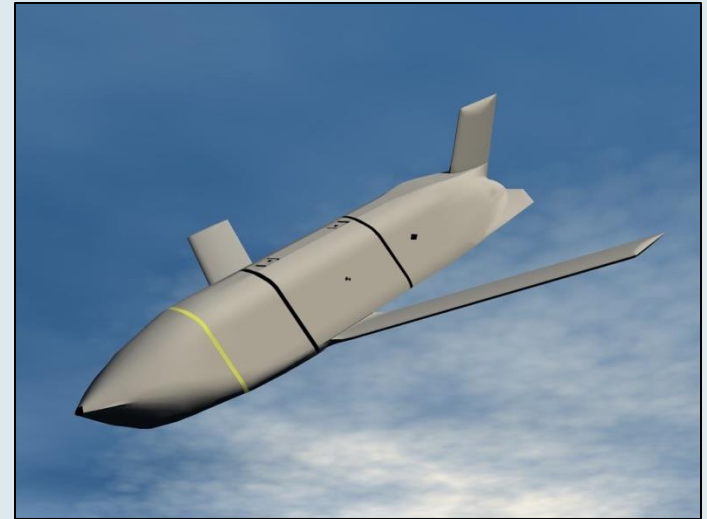


Fractional Orbiting Missile

RESPONSE 1: NEW U.S. NUCLEAR MISSILES TO BALANCE RUSSIA AND CHINA



Low Yield Warhead, Poseidon Missile



Standoff weapon

RESPONSE 2: HYPERSONICS, INF MISSILES

HTV-2
Hypersonic

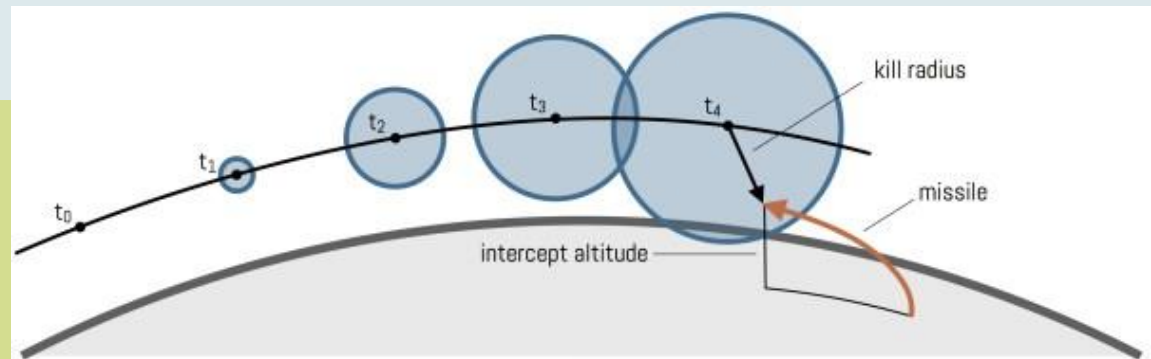
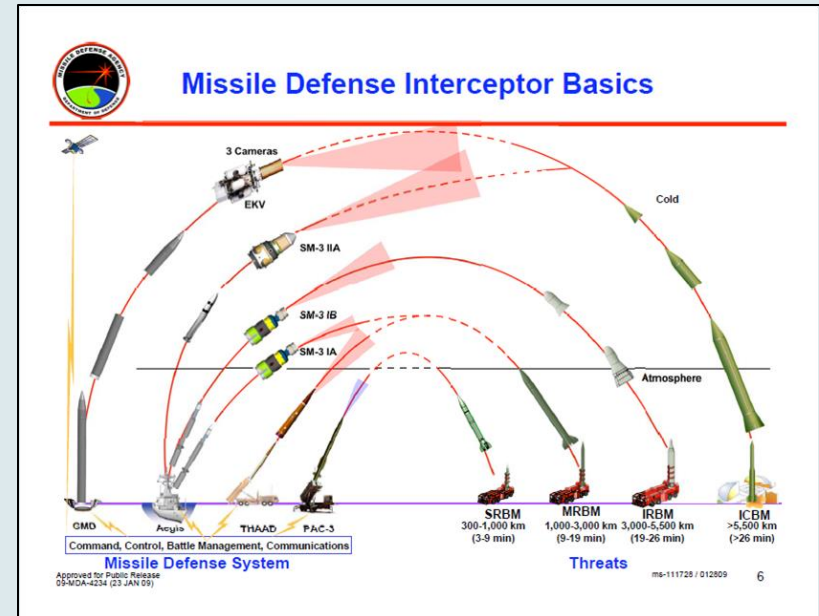
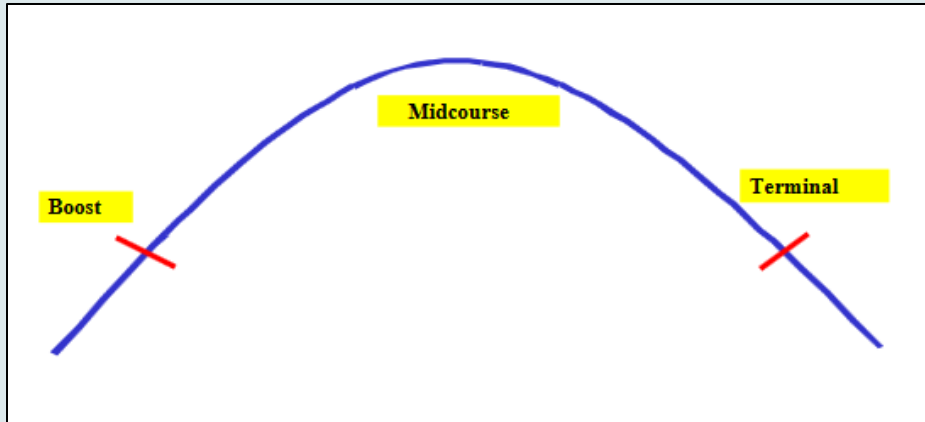


X51
hypersonic
cruise
missile



Common Hypersonic Glide Body

RESPONSE 3: MISSILE DEFENSE SYSTEMS



BUT THESE MILITARY RESPONSES WON'T SUFFICE

- **Current U.S. missile defenses can be overwhelmed by numbers, low fliers**
- **Effective boost-phase intercepts are deemed extremely difficult and may entail violating international law**
- **Russia and China are developing advanced missiles and hypersonics too**

WHAT MIGHT HELP MILITARILY

Organize current U.S. military programs to give them geographically focused narratives that would prompt China and Russia to spend more on defenses

- A “Prompt (Nonnuclear) Missile Initiative” (re: China and Russia)
- A “Regional (Nonnuclear) Missile Initiative” (re: North Korea/Iran)

Consider assisting allies in the development of long range missiles and sharing targeting information

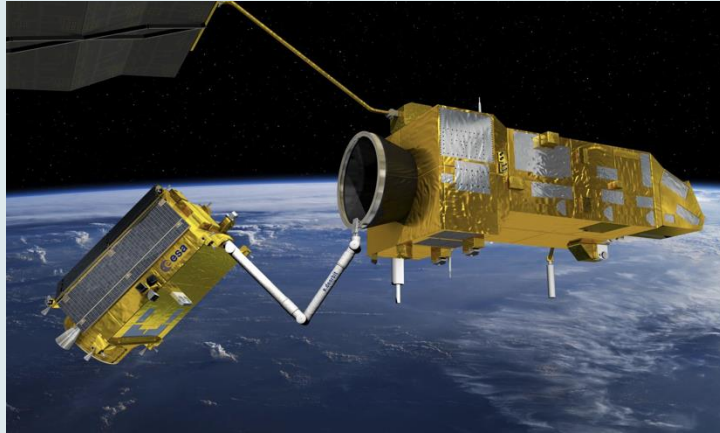
WHAT MIGHT HELP DIPLOMATICALLY

Announce U.S.-allied policies not to strike cities with nuclear weapons, seek agreements with Russia & China to reduce nuclear stockpiles' numbers and total yield proportionally

Tie the right of non-weapon states to launch nuclear capable missiles to NPT adherence

Encourage limits on long-range hypersonics and export controls on hypersonic technology

THREAT 2: “PEACEFUL” RENDEZVOUS SATELLITES COULD LOBOTOMIZE OUR MILITARY



ESA's e.Deorbit



Japan's KIKU-7 “Chaser” & “Target”



NASA's Proposed Restore-L



**China's SJ-12 & SJ-06F
Also Aolong-1**



Russia's Olimp-K

THREAT 2 CONTINUED: GROUND-BASED LASER ASATS



U.S. AIRFORCE SODIUM LASER



CHINA WANTS TO DESTROY SPACE JUNK WITH GIANT LASERS

<https://inhabitat.com/china-wants-to-destroy-space-junk-with-giant-lasers/>



**RUSSIAN, MOBILE
PERESVET LASER ASAT**

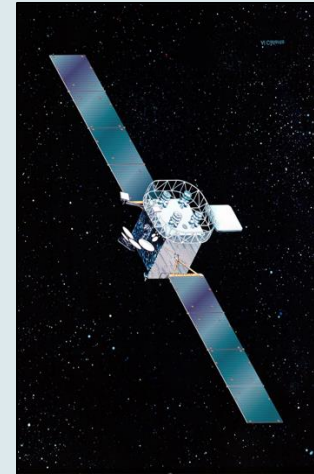
STRATEGIC SATELLITES THAT ARE VULNERABLE INCLUDE



GPS



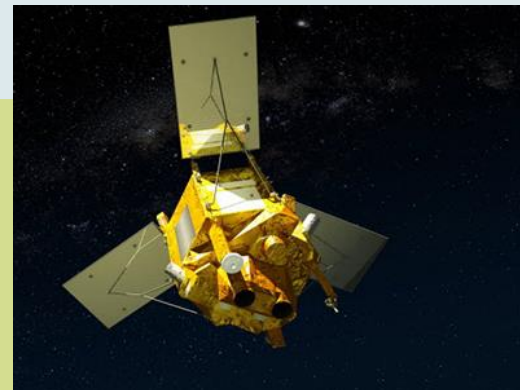
SBIRS



U.S. MIL-SAT



ESA Galileo Navigation Satellite



French Spot-6

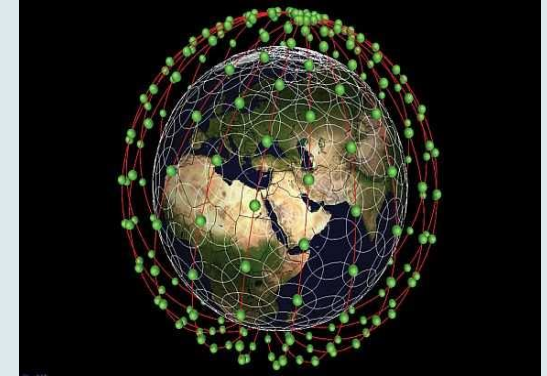
RESPONSE: DISTRIBUTED, QUICKLY REPLENISHABLE SATELLITE SYSTEMS



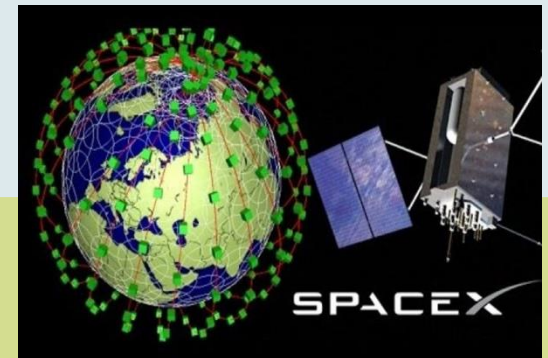
US Airforce autonomous space shuttle X-37



SPACEX launch and reentry



DARPA BLACKJACK Program



Elon Musk's Satellite Internet

RESPONSE, CONTINUED: MANEUVERING, DEFENSIVE, STEALTHY SATELLITE SYSTEMS



**DARPA RSGS: Robotic Servicing of
Geosynchronous Satellites**



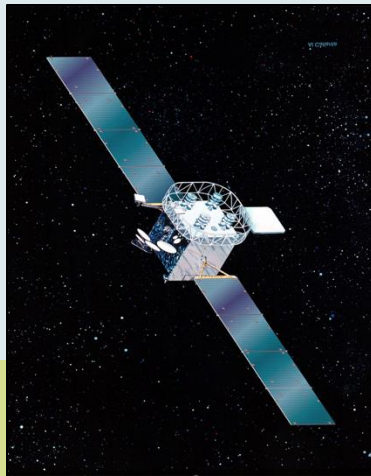
**US Airforce maneuvering
satellite**



Misty US Stealthy Satellite Program

BUT EVEN WITH SUCH SPACECRAFT, WE ARE STILL IN A BIND

None of these systems alone can prevent our legacy military satellites from being disabled for the next decade without public clarity on what an act of war in space is & what self-defense entails



U.S. MIL-SATs

WHAT MIGHT HELP MILITARILY & DIPLOMATICALLY

- Encourage new “rules of the road,” clarifying space liability in the case of “conjunctions”
- Clarify what the U.S. believes are red line activities and zones in space and if it supports French space self defense zones and bodyguards
- Encourage verifiable limits on ground-based lasers
- Consider banning debris-producing kinetic ASATs



**French Defense
Minister
Florence Parly,
announces
Space self-
defense zones
and bodyguards,
July 2019**

WHAT MIGHT AN AMERICAN ARMS CONTROL AGENDA ENTAIL?

It should:

I. Support US strategic military objectives.

II. Be competitive: Exploit economic and technological trends that advantage the United States.

WHAT TO DO: FOUR SEMI-OFFICIAL ANSWERS

Target enemy weapons but be “prepared to inflict intolerable costs” if damage limitation fails to end war

Hedge: Load up spare warheads in the next 24 months; build up nuclear mobilization base

Increase ICBM and national command systems survivability (make ICBMs mobile, rely less on space-based c-cubed I systems)

Prepare for an “unconstrained environment”

China’s Emergence as a Second Nuclear Peer

https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf

SHORT ANSWERS TO QUESTION II

- I. **1945-49: *Nuclear Disarmament*** Baruch Plan
- II. **1950-60: *Incremental Disarmament*** Atoms for Peace, FMCT, Open Skies, Freedom of Space, Test Moratorium, Antarctic Treaty (NWFZ)
- III. **1960-77: *Arms Control for Strategic Stability***; LTBT, Outer Space Treaty, NPT, SALT I, BWC, ABM, SALT II
- IV. **1978-2008: *Compete to Channel, Cap, and Eliminate Strategic Military Competitions***; START, INF, CFE, CTR, CWC, SORT
- V. **2008-2016: *Convergence***, New START, N. Security Summits, WTO expansion
- VI. **2016-2024: *Competition*** to catch up to revisionist powers
- VII. **2025-Present: *Homeland security and checking China***

SHORT ANSWERS TO QUESTION III

The objectives of the key phases of American strategic arms control were as follows:

- I. **1946 - 49:** Maintain US nuclear monopoly until they might be eliminated
- II. **1950 - 60:** Strengthen US nuclear superiority while preventing knockout blows & surprise attacks, push incremental arms control to restrict Russia
- III. **1961 - 77:** Modernize US strategic nuclear forces & negotiate control agreements to reduce risk either side could strike the other 1st
- IV. **1978 - 08:** Channel & cap military competitions to US advantage
- V. **2009 - 2016:** Subordinate competitions to promote convergence with Russia & China
- VI. **2016 - 2024:** Compete militarily, economically, and diplomatically to catch up and constrain revisionist states (Russia, China, Iran, N. Korea)
- VII. **2025 - Present:** Reduce American overseas commitments to augment protection of the Western Pacific and homeland regions