

Russian Targets for U.S. Nuclear Weapons

by

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Background

On December 7, 1997, it was reported in *The Washington Post* that President Clinton had approved a Presidential Decision Directive (PDD) providing new guidelines for targeting U.S. nuclear weapons, replacing a directive signed by President Reagan in 1981.¹ According to the Robert G. Bell, senior director for defense policy at the National Security Council (NSC), the new PDD, “removes from presidential guidance all previous references to being able to wage a protracted nuclear war successfully or to prevail in a nuclear war. . .”² The new directive “nonetheless calls for U.S. war planners to retain long-standing options for nuclear strikes against military and civilian leadership and nuclear forces in Russia,” and “the directive’s language further allows targeters to broaden the list of sites that might be struck in the unlikely event of a nuclear exchange with China.”³

As strategic forces decline in number, and the United States and Russia implement a variety of confidence building measures (e.g., detargeting) to reduce the risk of nuclear war, the new directive obviously raises the question: What substantively has changed as a result of the new guidance? One could argue that the elimination of the requirement to fight a protracted nuclear war merely has the effect of focusing greater attention and effort on the initial period of nuclear war scenarios. More accurate, destructive and reliable strategic nuclear forces may have an enhanced rather than diminished first strike counterforce capabilities, unbounded from broader Cold War targeting schemes. What is more, the continuation of high levels of alert—unchanged by the new guidance—codifies this hair trigger highly provocative capability, at least on paper.

As discussions proceed on a START III force make-up and even lower levels, the capacity and emphasis of strategic nuclear forces takes on greater importance. Much attention has recently been focused on the high level of alert and the adequacy of command and control measures to prevent unauthorized or inadvertent nuclear war. However, in contrast, there has been scant attention to the deliberate posture and employment of nuclear forces to prepare for the possibility of nuclear war. Despite the end of the Cold War and the emergence of the new Directive, we know little about the actual plans for how nuclear forces fulfill their day-to-day deterrence requirements, or the targeting and nuclear war options that are set in place should deterrence fail.

The U.S. intelligence community has developed a list of some 150,000-160,000 military targets worldwide, called the Integrated Database (IDB) (replacing the Cold War Target Data Inventory (TDI)). Based on current presidential guidance, the Secretary of Defense issues Nuclear Weapons Employment Guidance (the NUWEP), which the Joint Chiefs of Staff amplifies in the form of the Joint Strategic Capabilities Plan (JSCP), which contains targeting and damage criteria for the use of nuclear weapons.

¹ R. Jeffery Smith, “Clinton directive Changes Strategy on Nuclear Arms,” *The Washington Post*, December 7, 1997, pp. A1 and A8.

² Ibid.

³ Ibid.

Based upon this guidance, the Department of Defense's (DOD's) Strategic Command (STRATCOM) in Omaha, Nebraska, selects as potential targets for nuclear weapons various subsets of the IDB targets—called the National Target Base (NTB). This National Target Base contained from 16,000 targets in 1985 and 12,500 at the end of the Cold War. According to our sources, as a consequence of President Clinton's guidance the number of targets in today's National Target Bases is reported to be closer to 2500, with some 2000 of these targets in Russia, 300-400 in China, and 100 to 200 located elsewhere.

The target categories in the current NTB can be broken down as follows:

1. Nuclear Forces
 - A. ICBM Bases and Individual Silos
 - B. SLBM Bases and At-Sea Dispersal Areas
 - C. Strategic Bomber Air Bases
 - D. Nuclear Storage and Stockpiles
 - E. Strategic Forces Research, Development and Production
 - F. Land-Based Missile Dispersal Areas
 - G. ABM Sites

2. Command and Control
 - A. National-Level Civilian Support Facilities
 - B. National-Level Military Support Facilities
 - C. Nuclear-Dedicated Command and Launch Control Facilities
 - D. Communications Nodes
 - E. Early Warning Facilities.

3. Conventional Military Forces
 - A. Airfields (medium bomber and supporting dispersal)
 - B. SAM Sites
 - C. Naval Bases (supporting dispersal)

4. Urban/Industrial
 - A. Electricity Production and Distribution
 - B. Transportation (supporting dispersal)
 - C. Nuclear Weapons Support (other than strategic forces specific)

Based upon the selection of targets, STRATCOM also develops the Single Integrated Operational Plan (SIOP), which sets forth detailed plans for attacking Russia with nuclear weapons. The SIOP is not one attack option, but a series of options. Not all targets are to be hit under every option, and many targets are so geographically close together as to allow them to be destroyed by a single nuclear weapon. Some targets, because of their hardness, however, such as missile launching silos or underground facilities, are also assessed as requiring attack by more than one weapon. The damage criteria developed by the Secretary of Defense and Joint Chiefs of Staff determines the requirement for the level of probability of damage (e.g., 90 percent) of a

given target. The proximity of the detonation to the target and the number of detonations is equalized with the desired damage, taking into consideration the timing of attack (fratricide).

Broadly, preparation of the SIOP follows the following stages:

- Target Development.
- Desired Ground Zero (DGZ) construction (the grouping installations into aimpoints for weapon allocation, and compiling of the coded aimpoints into the National DGZ List (NDL). DGZs are characterized in terms of time sensitivity, location, hardness, priority, defenses, and damage requirements.
- Weapon Allocation: Assignment of ICBM and SLBM warheads in an initial strike, and aircraft bombs and cruise missiles in a generated alert strike or follow-on strike to specific aimpoints.
- Weapon Application: Allocation and assignment of specific warheads on specific delivery systems to the DGZ, including setting timing, development of aircraft routes, consideration of defenses, etc.
- Timing and Deconfliction: The choreography of the attacks are analyzed to insure there are no conflicts among warhead detonations and flight plans.
- Wargaming.
- Consequences of Execution (C of E) Analysis: Damage assessments, including physical damage, fatalities, population at risk from prompt and delayed nuclear effects, force attrition, and the degree the plan meets guidance.

Within the SIOP there are various options available to the President, who has sole authority to launch a nuclear attack. There are reportedly four Major Attack Options (MAOs)—MAOs 1, 2, 3, and 4—that differ depending on the levels of alert of U.S. and Russian strategic forces. There are also other options for the use of nuclear weapons at lower levels: Limited Nuclear Options (LNO), Regional Nuclear Options (RNO), Directed Planning Options (DPO), Adaptive Planning Options (APO).

Actual targets and the details of the targeting plans developed by STRATCOM remain highly classified. However, with the removal of the targets that might be hit during a protracted nuclear war (and other reforms that have taken place since the end of the Cold War in reducing the emphasis of targeting on Russia conventional forces and industry), it should be possible to generate an unclassified target list that approximates the 2000 or so nuclear targets in Russia that are currently on the NTB.

Under day-to-day conditions today, more than 3000 warheads are ready for immediate launch (ICBMs on alert and SLBMs at-sea in alert status). What are the consequences if these weapons were targeted at Russia's operational nuclear delivery systems, nuclear weapon storage locations, national leadership targets, strategic command and control supporting sites, and direct support energy and transportation systems?

NRDC is attempting to assemble a Russian target database that approximates the current National Target Base. In NRDC's ACCESS database each potential target is identified by a descriptive "Target Name" and the following informational fields:

Target Category
 Longitude (degrees, minutes and seconds)
 Latitude (degrees minutes and seconds)
 Location (nearby town)
 Economic Region
 Military District (Northern, Moscow, North Caucasus, Urals, Volga,
 Siberian, Transbaikal, Far East)
 Description/Function
 Deployed Launchers (ICBMs)
 Aircraft (for airfields only)
 Deployed ICBMs
 Deployed SLBMs (for naval bases only)
 Deployed Warheads
 Non-Deployed SLBMs
 Area (sq km) (for Road-Mobile ICBMs)
 Trains/Vehicles (Road-Mobile and Rail-Mobile ICBMs)
 Capacity (MWe) (for thermal, nuclear and hydroelectric power plants)
 River (for hydroelectric power plants only)
 Capacity (1000 b/d) (for oil refineries)
 Pipelines from pipeline node
 Priority (identifies potential targeting scenarios)
 Map (a reference to particular ONC air navigation charts)
 References (the sources of the data)

The NRDC target categories (and acronyms), which are currently in the NRDC ACCESS database, are identified here as sub-categories of the NTB target categories:

1. Nuclear Forces
 - A. ICBM Bases and Individual Silos

ICBM-S	ICBM-Silo (fixed ICBM)
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 - B. SLBM Bases and At-Sea Dispersal Areas

SSBN-NB	SSBN-Naval Base
SLBM-LF	SLBM-Loading Facility
 - C. Strategic Bomber Air Bases

SBB/AF	Strategic Bomber Base/Airfield
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 - D. Nuclear Storage and Stockpiles

WHS	Warhead Storage Site
SLBM-SF	SLBM-Storage Facility
 - E. Strategic Forces Research, Development and Production

NSSL	Naval Soft Site Launcher
NDB	Naval Design Bureau

- NY Navy Yard
 - F. Land-Based Missile Dispersal Areas
 - RDA Road Area (road-mobile ICBMs)
 - RPS Rail Parking Site (rail-mobile ICBMs)
 - G. ABM Sites
 - ABM Anti-Ballistic Missile Site
- 2. Command and Control
 - A. National-Level Civilian Support Facilities
 - NCL National Civil Leadership
 - B. National-Level Military Support Facilities
 - NML National Military Leadership
 - UCP Underground Command Post
 - C. Nuclear-Dedicated Command and Launch Control Facilities
 - LCC Launch Control Center (for fixed ICBMs)
 - D. Communications Nodes
 - E. Early Warning Facilities.
 - EWR Early Warning Radar
- 3. Conventional Military Forces
 - A. Airfields (medium bomber and supporting dispersal)
 - AF Airfield
 - B. SAM Sites
 - C. Naval Bases (supporting dispersal)
 - NB Naval Base
- 4. Urban/Industrial
 - A. Electricity Production and Distribution
 - HPP Hydroelectric Power Plant
 - NPP Nuclear Power Plant
 - TPP Thermal power Plant
 - B. Transportation (supporting dispersal)
 - OR Oil Refinery
 - PL Oil/Gas Pipeline
 - C. Nuclear Weapons Support (other than strategic forces specific)
 - FMSF Fissile Material Storage Facility
 - UEP Uranium Enrichment Facility
 - CSF Chemical Separation Facility
 - PR Production Reactor
 - R/TR Research/Test Reactor

These categories will be refined and filled out as we identify more targets and data sources.

To date we have entered into our database about 1000 Russian sites, three-quarters of which would likely be hit under the Major Attack Options (see attached sample printout). We do not have precise locations for all of these sites. Our most difficult task will be identifying command, control and communications targets. Whether we can identify a significant fraction of these remains to be seen. Eventually, we hope to expand our work to include U.S. targets for

Russian nuclear weapons, and to use these target lists to examine the consequences of targeting options under various strategies for reducing the U.S. and Russian nuclear arsenals.

Conclusion

NRDC supports accelerated implementation of deep reductions in the number of nuclear weapons in the U.S. and Russian arsenals, with the goal of eliminating all weapons of mass destruction. The development of target lists that approximate the actual lists used by the U.S. and Russian military establishments may provide a more effective means of demonstrating that the continued retention of huge nuclear weapon arsenals on both sides makes no sense, and is driven almost exclusively by the presence of the nuclear arsenals and the command and control structure on the other side. Moreover, we should be able to develop a clearer picture of the consequences nuclear war with today's arsenals should a first strike attack option ever be exercised. It also should be useful to analyze the effects of various proposed warhead reduction scenarios on targeting, and the consequences of the use of weapons of mass destruction under various credible targeting options at lower warhead levels. We are currently looking for feedback regarding the utility of this exercise and how the database might be improved.

Target Name	N (d)	N (m)	E (d)	E (m)	Location	Military District	Description/Function	Priority
Moscow ABM-1B Complex 1 ABM	56	22	36	44	Moscow area	Moscow MD	dismantled reloadable above-ground Galosh launcher	0
Moscow ABM-1B Complex 2 ABM	56	20	38	33	Moscow area	Moscow MD	dismantled reloadable above-ground Galosh launcher	0
Moscow ABM-1B Complex 3 ABM	56	10	36	33	Moscow area	Moscow MD	dismantled reloadable above-ground Galosh launcher	0
Moscow ABM-1B Complex 4 ABM	55	22	36	18	Moscow area	Moscow MD	dismantled reloadable above-ground Galosh launcher	0
Moscow Dog House Radar ABM	55	30	36	32	Moscow area	Moscow MD	DOG HOUSE battle management radar	1
Moscow Cat House Radar ABM	55	8	37	10	Moscow area	Moscow MD	CAT HOUSE battle management radar	1
Moscow Pushkin Phased-Array Radar ABM	56	8	38	3	Moscow area	Moscow MD	battle management radar	1
Moscow Silo Group 1 ABM	56	18	38	28	Moscow area	Moscow MD	group of Gorgon (long-range interceptor) silo launchers	1
Moscow Silo Group 2 ABM	56	12	37	48	Moscow area	Moscow MD	group of Gorgon (long-range interceptor) silo launchers	1
Moscow Silo Group 3 ABM	55	55	37	22	Moscow area	Moscow MD	group of Gazelle (short-range) silo launchers	1
Moscow Silo Group 4 ABM	55	53	37	45	Moscow area	Moscow MD	group of Gazelle (short-range) silo launchers	1
Moscow Silo Group 5 ABM	55	38	37	23	Moscow area	Moscow MD	group of Gazelle (short-range) silo launchers	1
Moscow Silo Group 6 ABM	55	37	37	58	Moscow area	Moscow MD	group of Gazelle (short-range) silo launchers	1
Moscow Silo Group 7 ABM	55	22	36	23	Moscow area	Moscow MD	group of Gorgon (long-range interceptor) silo launchers	1