



## **WHITE PAPER**

### **Nuclear Terrorism: Local Effects, Global Consequences**

Saga Foundation  
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#### **Introduction: High-grade Threat, Low-grade Concern**

Nuclear terrorism represents the most serious existential threat to the security of the United States and the world. Yet the issue has all but disappeared from view. A number of reasons underlie the lack of discussion of nuclear terrorism in the 2008 presidential campaign. It may be it has yet to draw focused attention because of the absence of any further terror attacks on the U.S. homeland since 9/11. It may be due to a belief in some quarters that a nuclear act of terrorism is a remote possibility because of the inherent difficulty of surreptitiously assembling or acquiring a nuclear weapon. And it may be that since we agree it's a serious problem, what is there to argue about, the assumption being we must be doing everything possible to prevent it. During the 2004 presidential campaign, both President Bush and Senator John Kerry said that nuclear terrorism was the leading threat to national security. Little has changed since, except that the public's focus has turned elsewhere. This lack of controversy is a pronounced obstacle confronting those seeking to energize the issue. Just about everyone agrees: an act of nuclear terror would be a terrible thing; it would devastate the community attacked and psychologically terrorize the rest of the nation. But there has been relatively little public and media

attention to this threat – a threat that could profoundly and permanently change our way of life.

The basic features of a nuclear terrorist attack are so self-evident that very little time and energy has been put into understanding just how terrible such an attack would be. Much good work has been done, but much more needs to be done in this area to ensure that the public understands the stakes involved in the effort to prevent nuclear terrorism. Understanding the dynamics of both an act of nuclear terrorism and its likely aftermath drives home the conclusion that a nuclear terrorist attack anywhere will affect everyone everywhere. In this report, the Saga Foundation seeks to redress the shortcomings in the dialogue about nuclear terrorism and consider in some detail the possible consequences and aftershocks – physical, psychological, economic – that would flow from the detonation of a nuclear weapon in an American city. A better understanding of these likely consequences, we believe, will help energize the political community, from the grass roots to our national leaders, to take the steps necessary to seriously and comprehensively address this threat. While Saga strongly advocates further research, including comprehensive war-game exercises into the dynamics of a nuclear terrorist attack, our analysis and research already in existence enable us to reach a basic understanding of the widespread impact of an attack in a single location.

## **Key Finding**

Our principal conclusion is that the economic aftershocks flowing not only from a nuclear terrorist attack itself but from a predictable set of decisions a U.S. president could be expected to make in the wake of such an attack would inflict extraordinary economic damage on the nation stretching far beyond the point of attack. Beyond responding with aid to the scene of an attack, the first order of business for a president following a nuclear terrorist strike would be to determine if another strike was about to occur and to do everything possible to prevent it. Virtually all the important presidential decisions in the wake of the September 11 attacks – the suspension of all air travel; mandates to secure cockpit doors; the redesign of airport security; the dispatch of U.S. forces to Afghanistan; the institution of surveillance of terror suspects – were designed to prevent follow-on attacks. Punishing the aggressors was an important but secondary issue. In a nuclear attack scenario, presidential decisions revolving around this imperative would be taken regardless of whether another attack was planned or actually took place. Among the post-attack presidential decisions we deem highly likely:

- **Shutdown of freight commerce/border closures.** The likelihood that a nuclear weapon would be clandestinely brought into our country would in all likelihood prompt a national initiative to seal the borders and freeze and search virtually all freight conveyances, whether trucks, ships or planes, delivering a major shock to the economy and bringing home to the entire populace the enormity of what has occurred, as stocks of basic supplies vanished almost overnight.

- **Retaliation.** The president would be under enormous pressure to respond swiftly and forcefully to such an attack, even if the geographic or geopolitical point of origin was uncertain. The science of ‘nuclear forensics,’ which can enable specialists to identify the source of nuclear material used in a bomb even post-explosion, would provide some key clues as to the source of the attack. As a consequence, there would be tremendous pressure to hold someone—terror groups and their state sponsors—responsible, engendering immediate and forceful retaliation.
- **Suspension of civil liberties.** Extraordinary concern about further nuclear attacks following an initial attack would drive a series of decisions restricting freedom of movement and conferring extraordinary powers on government agencies charged with preventing another strike.

The point cannot be emphasized enough: Not the attack itself but the *fear* of a follow-on attack and the *response* to that fear would drive a set of decisions that would almost certainly bring all freight traffic to a halt, shut down the nation’s ports, empty the nation’s grocery shelves, and bring most manufacturing to a virtual standstill. Even if this shut-down were temporary, our economic system of “just-in-time inventory” would mean that basic staples would very quickly become unavailable, delivering a psychological blow to the populace and a devastating shock to national and international financial markets. We live with the possibility of a nuclear terrorist attack today, but the possibility of a future attack once the

first attack occurred would be deemed so much greater as to create an entirely new reality in terms of the political and economic functioning of the nation.

Although preparation for disaster is an important part of any homeland security plan, we contend that the point of studying and understanding the full range of consequences of an act of nuclear terrorism is to motivate the government and the people to ensure that such an attack never happens. We are not seeking a better civil defense plan or trying to revive a “duck and cover” strategy. We are trying to clearly lay out the consequences of failure so that the necessary steps are taken with the necessary energy and urgency.

### **New Nuclear Danger**

Nearly two decades after the end of the Cold War, America needs a refresher course in the dangers of nuclear weapons. Jonathan Schell, author of *The Seventh Decade: The New Shape of Nuclear Danger*, pointed out in a recent interview that “People thought that when the Cold War ended, nuclear danger ended, too. ... We have a whole generation having grown up without having been told the ABCs of this issue.” That the Cold War-era nuclear scenario – a life ending spasm of attack and counter-attack that would entomb the globe in a nuclear firestorm – has faded with the easing of superpower rivalry in no way has eliminated the nuclear threat from our world. The threat remains, but changed or transformed. This is because of the rise of an extremely violent form of terrorism, whether operating independently or with clandestine state sponsorship, which

may not fall subject to the traditional strictures of deterrence, has removed the largest historical barriers to nuclear attack.

Neither the Soviet Union nor the United States *wanted* to unleash their nuclear weapons on the other; they were prepared to do so in the extremely unlikely event that it became necessary, and both sides were well aware that an attack by one side on the other would bring about a certain and devastating response. In his book, *At the Abyss*, former Secretary of the Air Force Thomas C. Reed writes of the impact the Cuban missile crisis had on U.S. and Soviet leaders who contemplated the catastrophe that could have resulted from a nuclear exchange. From that point forward, according to Reed, “the possibility of nuclear war changed from a policy option to a dreaded disaster.”

In contrast, terror groups have made it clear they see no moral constraint to using such weapons against the ‘infidel’ West in general and the United States in particular. As a shadowy, non-state entity, a terror group would not have to worry about massive retaliation, since there is little in the way of terrorist infrastructure, military might or population to retaliate against. This invulnerability to traditional deterrence might change should we be able to determine that a state sponsor provided the nuclear material or weapon, or otherwise supported a terrorist nuclear attack. But a nation so implicated could always claim such weapons were stolen or lost, undermining the justification for a massive U.S. and allied military response. Proof might be very difficult to establish.

The major constraint confronting terror groups is access to nuclear weapons themselves. The standard view that a terrorist group would be hard pressed to steal an intact nuclear weapon may need to be revisited in light of the incident last year in which a half dozen U.S. thermonuclear weapons were inadvertently strapped to the wings of an Air Force B-52 bomber and flown from North Dakota to Louisiana. An internal Pentagon investigation concluded that Air Force security systems protecting the nuclear weapons under its guardianship need to be significantly enhanced. In response, Defense Secretary Robert Gates ordered a top-to-bottom revamping of nuclear weapons security procedures and, eventually, replaced the Air Force senior leadership. Overseas, there are concerns about hundreds of small, easily transportable tactical nuclear weapons deployed by the Soviet Union and never fully accounted for since the end of the Cold War. Pakistan's nuclear arsenal is seen as particularly vulnerable to the possibility of theft or diversion through an insider job.

Of substantially greater concern is the possibility that terrorists could obtain through theft, bribery or diversion a critical mass of plutonium or highly enriched uranium – most likely the former – and use the material to fashion a crude but devastating homemade nuclear weapon. Research reactors in dozens of countries around the world, on hospital grounds and university campuses with inadequate security, use highly enriched uranium which, if stolen, would be safe for terrorists to transport and difficult for security officials to find because it puts off almost no radioactive signal.

The experts continue to debate the question of how easy it would be for a terror group, once it obtained this fissile material, to engineer a nuclear weapon. Some say it would be relatively easy, citing the simple “gun type” bomb used in the U.S. attack on Hiroshima in August 1945. The weapon design was sufficiently simple and reliable that it was used in the attack without having been tested. The more complex “implosion type” bomb dropped on Nagasaki used a design tested in the New Mexico desert earlier that year.

There is also a debate about the chances of a so-called rogue state turning over a complete nuclear weapon to a terror group. Some consider this possibility highly unlikely, pointing out that these states seek nuclear weapons for their own power and prestige, and as a deterrent to more powerful adversaries. Leaders of these states would be unlikely to give up control of a nuclear weapon to an unpredictable terror group whose use of it in an attack might hold dire consequences for the state that provided the weapon. Nevertheless, the possibility of such a deliberate or unauthorized diversion, or of the theft of a complete weapon through an ‘inside job’ in a state where security procedures are more lax than in the United States and Russia, cannot be ruled out.

In June 2008, new concern about the availability of bomb designs surfaced when a report by David Albright of the Institute for Science and International Security disclosed that U.S. and allied intelligence officials had traced computerized blueprints of a compact, portable nuclear weapon to the nuclear technology-smuggling network of Pakistan’s Abdul Qadeer Khan,

designer of Pakistan's nuclear weapon and leader – until his arrest – of a black market arms technology smuggling operation. The blueprints have been traced to the computers of Khan allies in Switzerland, Dubai, Malaysia and Thailand, and an investigation continues to determine who may have received copies of these weapons designs. Because of their small size, the weapons are regarded as highly desirable for terrorists.

Albright told the Associated Press that the design found on the Khan network's computers had previously been thought to be the exclusive province of nuclear powers. The intelligence discoveries raise the possibility that a sophisticated weapons design was leaked to unknown parties. "It is a very different category of information, and it's very dangerous," Albright told AP. "There are no other designs out there. There is very little information of this quality out there outside of the nuclear weapons states." The storage of this bomb design in easily distributed computer files raises a particular concern about whether and with whom these blueprints were shared.

The relative security of U.S. nuclear material has led experts to conclude that the most likely scenario for a terrorist nuclear attack on the United States would be for the weapon, or the weapon components, to be smuggled in to the United States from overseas. The International Atomic Energy Agency reports that since 1993 there have been some 1,900 nuclear-related smuggling incidents. Of those, about 19 involved attempts to smuggle fissile material that could be used to fashion a nuclear weapon or a radiation dispersion device. That

is one reason behind the growing concern about the security of U.S. ports and it was the reason behind Rand's decision to use the port of Long Beach, Calif., as the setting for a 2004 war game exercise posing a hypothetical terrorist nuclear weapon exploding in a shipping container at dockside. To date, this report represents the most detailed publicly available examination of the consequences – physical, psychological, economic – of a terrorist nuclear attack. But Rand itself acknowledged that much more needs to be done:

A devastating attack would send social and economic aftershocks cascading through multiple sectors long after the initial strike was over. While much analysis has been done on the possible short-term effects of an attack of this magnitude, no work has investigated longer-term implications. Exploratory efforts to do so are needed. Over time, the economic effects of the catastrophe are likely to spread far beyond the initial attack, reaching a nationwide and even international scale. Dislocation would face two particularly difficult challenges: keeping the global shipping supply chain operating and restoring orderly economic relationships.

Rand's Charles Meade, who participated in the Long Beach scenario study, strongly urges the next administration to launch a detailed study of what he calls the "system-wide impacts" of nuclear terrorism. "The problem is large and uncertain," Meade says, "and it's not clear who has ownership over finding a solution."

### **Life and Death at Ground Zero**

A great deal of work has been done on the probable impact of a terrorist attack involving a nuclear weapon with an explosive force of about ten kilotons,

or somewhat less than that of the Hiroshima bomb. Most assume that a terrorist nuclear weapon would be detonated at ground level. The good news in such a scenario is that the interference of buildings and terrain would reduce the diameter of the area of total devastation compared to an air-burst weapon of the kind used on Japan in World War II and posited for military attacks on population centers ever since. The bad news is that a ground-level detonation would kick up an enormous amount of dust and debris irradiated by the blast, greatly increasing the amount of fallout resulting from the explosion. Much discussion has focused on port inspections and on solving the difficult technical problem of how to automate the scanning of all incoming cargo, since today less than 10 percent of cargo arriving on U.S. shores is physically inspected or electronically scanned. The U.S. Department of Energy has devoted much effort to its Nuclear Emergency Support Teams, or NEST, trained to arrive rapidly at the scene of a nuclear threat event, such as the discovery of a smuggled nuclear weapon. While we support these efforts, it is important to understand that once a nuclear weapon arrives on U.S. shores, it can devastate a city without the cargo even leaving the ship or passing through inspection. In the Long Beach scenario performed by Rand, the war game posited that inspectors had searched and discovered a terrorist nuclear device aboard a container ship, but the weapon detonated before it could be disarmed.

A number of organizations and individual experts have studied the likely impact of a nuclear detonation on an American City. The scenarios vary in their

particulars. Harvard Professor Graham Allison described blast effects of a 10 kiloton device, somewhat smaller in explosive force than the bomb dropped on Hiroshima, on several U.S. cities. Rand's Long Beach scenario posited the same size bomb. Former Senator Sam Nunn has described the impact of an attack on New York's financial district. The University of Georgia examined the effects of a 20 kiloton bomb on New York, Chicago, Washington and Atlanta. The Pacific Northwest National Laboratory studied the effects of a 13 kiloton device. A private group called the Atomic Archive studied effects of much larger nuclear weapons. All of the studies were depressingly similar in their descriptions of catastrophic destruction and immediate fatalities running into the tens of thousands and beyond. Here, based on this and other research, is a rough sketch of the findings:

**Midtown Manhattan:** A ten kiloton weapon detonated in Times Square would devastate much of midtown Manhattan, including the theater district, Grand Central Station, Rockefeller Center, Carnegie Hall, the Empire State Building and Madison Square Garden.

**Wall Street:** Had the 9/11 terrorists detonated a nuclear weapon instead of crashing airplanes into the World Trade Center, Lower Manhattan and the entire financial district would have been reduced to ash and rubble, according to former Senator Nunn, head of the Nuclear Threat Initiative. Survivors would be without clean water, shelter, or safe food.

**San Francisco:** A bomb detonated in Union Square would vaporize buildings as far as the Museum of Modern Art and would devastate with fire and destruction sections of the city including the Transamerica Building, Nob Hill, Coit Tower and the San Francisco-Oakland Bay Bridge, according to Allison's analysis.

**San Jose:** A bomb detonated in or near this city would devastate much of the physical infrastructure and plant floor space of Silicon Valley, one of the main engines of the U.S. economy, to say nothing of the human devastation wrought in one of the most densely populated areas of the country.

**Sacramento, Calif.:** An attack in the area of the levees along the Sacramento-San Joaquin River Delta could compromise the system that supplies fresh water to most of Northern California.

**Long Beach, Calif.:** Rand, in its scenario study, estimated that 5,000 people would be killed immediately by the blast and that as many as 100,000 fatalities could result from fallout. Destruction of the power grid in the area would lead to widespread blackouts in the Los Angeles region. The local health care system would collapse due to damage, the overwhelming number of injured, and government-mandated evacuations.

**Washington, D.C.:** A bomb going off at the Smithsonian Institution would destroy the White House and reduce the U.S. Capitol and Supreme Court to rubble. U.S. government officials who survived the attack would have to relocate to emergency government centers at pre-designated sites where deliberation and

decision-making could continue. Within a two-mile diameter circle of a nuclear detonation – a distance the length of the Washington Mall – little could be done. For those further away, the urge to evacuate immediately would be overwhelming, even though this might be a fatal choice, since radioactive fallout would be most intense in the initial hours and days after a detonation. Without a highly proactive government response plan, panic could well overwhelm the populace, they argue.

Localizing these nuclear terror scenarios helps people envision and comprehend the unthinkable but it also creates a misleading perception that the damage from such an attack would be confined to the site of the attack itself. In considering these scenarios, former Senator Sam Nunn, who has worked for two decades to secure the world's nuclear material, has observed that these ground-zero narratives provide only the physical impact of nuclear terrorism.

If you were trying to draw a circle to mark the overall impact of the blast – in social, economic, and security terms -- the circle would be the equator itself. No part of the planet would escape the impact. People everywhere would fear another blast. Travel, international trade, capital flows, commerce would initially stop, and many freedoms we have come to take for granted would quickly be eroded in the name of security. The confidence of America and the world would be shaken to the core.

### **Economic Chain Reaction**

Echoing the nuclear chain reaction that sets off an atomic explosion, an economic chain reaction would follow a nuclear terrorist attack. In the immediate aftermath there would be staggering clean-up costs that would dwarf the costs involved in the post-9/11 clean-up. The Pacific Northwest National Laboratory

study of post-attack economic impact calculated not only physical clean-up but medical care for the wounded, the cost of lost economic activity due to destruction of businesses and to fatalities, evacuation, decontamination and reconstruction costs, and impacts to the affected region such as lost tourism revenue. The study concluded that a 13 kiloton attack on New York City would bring total costs approaching the entire U.S. gross domestic product for 2005. And the impacts would extend far beyond the region hit in an attack. The precise profile of this economic impact would depend on the attack profile and would surely involve elements that are impossible to predict. Through war-gaming and the exploration of likely decisions that would follow such an attack, however, we can arrive at an approximate understanding of what might be in store for the United States and world economies. The Saga Foundation strongly urges detailed government-funded research into this question and offers this post-attack profile to stimulate discussion and to encourage more effective preventive government measures.

**Assurance:** The first order of business for the president would be to assure the public that everything that can be done to aid the victims of the attack is being done and that everything that can be done to prevent another attack will be done.

**Action:** Immediate post-attack security measures to prevent a potential second nuclear terrorist attack could prompt the president to order closing of all U.S. ports and borders, inspection of all inbound foreign cargo, freeze and inspection

of most freight rail and truck cargo, and mobilization of all national, state and local security personnel to assist with this massive effort.

**Mitigation:** The shock to the economy of even a short-term freeze on commerce would bring about a temporary halt to most if not all manufacturing and would quickly empty shelves across the country of basic food supplies and other life necessities. This would then require rapid mitigation moves to enable the resumption of production and very limited importation under close inspection scrutiny.

**Curfews:** The need to fully mobilize to respond to the scene of the attack and to take all steps necessary to avert a follow-on attack would likely require the imposition of curfews on air and ground transportation, at least for the initial days and weeks following the attack. Such restrictions would impose an economic cost of their own, beyond the cost of temporarily shutting down normal commerce.

**Retaliation:** A tidal wave of national anger would flow from a terrorist nuclear attack, a reaction easily understandable but also dangerous in the pressure it would impose on decision-makers to take rash and possibly counterproductive action. Even if a terror group claimed responsibility for the attack, some effort would be required to determine its origin and rule out hoax claims. A significant part of this effort would entail nuclear forensics to determine the geographic origin of the fissile material used in the attack. Connected to this effort would be a sweeping effort by the U.S. National Command Authority to determine if a foreign government directed and aided the responsible group in mounting the attack.

Any firm conclusions along these lines would bring about swift and devastating retaliation. It is also likely that the president would be under overwhelming domestic pressure to respond even in the absence of absolute certainty as to responsibility for the attack.

**State of War:** A nuclear terrorist attack would be of such magnitude as to do something that did not occur in the wake of 9/11 – place the country on an unambiguous war footing. The last time such a society-wide mobilization occurred was World War II. Today, a sudden shift to society-wide mobilization would impose major shocks on the economy whose impact would be difficult to predict.

**Civil Liberties:** Reaction to a terrorist nuclear attack and fear of further such attacks would be so strong as to bring about pressure to impose restrictions on civil liberties of such magnitude as to potentially undermine our constitutional system of government. Unrestricted domestic surveillance, incarceration of certain individuals without charge, summary deportation of persons of concern, exercise of extraordinary presidential powers and the eclipse of judicial and congressional power would be among the possible shifts in the wake of such an attack, and a key challenge for the government and the people would be to ensure that such shifts as occurred did not become permanent.

**Market Stabilization:** The shock to U.S. and global industrial and financial markets along with resulting off-the-scale job losses and plummeting investor confidence would require urgent presidential action even though the White

House would be confronted with the reality that its own post-attack actions were contributing to the severity of these economic problems. Government intervention in the national economy not seen since the Great Depression and World War II would likely be necessary, though it is unclear whether even dramatic government action could stand up to the enormous downward economic pressures brought on by a nuclear terrorist attack and its aftermath.

### **Nuclear Terrorism: How Likely?**

Efforts to prevent nuclear terrorism have been largely non-controversial in the sense few if anyone could object to taking reasonable steps to prevent such a catastrophe. But these efforts, while laudable in markedly improving the security of a great deal of nuclear material worldwide, particularly in the former Soviet Union, have lacked a sense of urgency and a priority level commensurate with the threat.

In a June 2008 speech at the Washington Institute, Rolf Mowatt-Larssen, the chief of intelligence at the U.S. Department of Energy, said, “We must take urgent action to scoop up any nuclear material outside state control before terrorists do.” Mowatt-Larssen said that the “continuing instances of trafficking in nuclear materials means we collectively have not done enough to keep material out of the hands of terrorists. ... We must urgently intensify efforts to acquire any materials that may be for sale on the illicit nuclear market.”

One reason underlying this lack of urgency is that there are some who believe that the possibility of a terrorist nuclear attack is extremely remote and who therefore see other government endeavors, whether in the homeland security arena or elsewhere, as more important. There are many ways to look at this issue, and it is an unavoidable fact that the statistical chances of a nuclear terrorist attack occurring can only be conjectured. But this much seems defensible: a terrorist or state-sponsored terrorist nuclear attack may be a statistically remote possibility, but it seems clear that it is the most likely *nuclear* threat that faces us today, given the end of Cold War tensions and the ever-present threat of massive retaliation as a barrier to nuclear attacks by adversary states. Billionaire investor Warren Buffett, who is handy with numbers, posits that if the probability of something catastrophic happening is 10 percent per year, that means that over a 50-year period it has a 99-and-a-half percent chance of happening. If society can reduce a threat to a 1 percent chance per year, then over that same half century there is a 60 percent chance of avoiding disaster.

Research commissioned by the Saga Foundation indicates that the public does not share the view of those specialists who consider an act of nuclear terrorism to be unlikely. Focus group research by Saga indicates that people are, in some ways, more worried about nuclear terrorism than they are about the state of the U.S. economy. Nuclear terrorism would deliver a sudden, unexpected and intense shock to the nation. At the same time, these participants in Saga's research indicated they are pessimistic about government's ability to succeed in

mounting a comprehensive defense of the homeland, whether through border security or efforts to directly combat terror groups. They also understand that the economic shocks, even to localities far from the scene of an attack, would be profound and personal, as shocks to the supply of basic necessities combined with macro-economic impacts such as runaway inflation touched individual lives profoundly. In fashioning a more robust response to the threat of nuclear terrorism, it will be necessary to take on this pessimism, to expand programs already in place that are showing results and to design new programs that will increase confidence in the ability to thwart terror groups from obtaining these deadly weapons and put an end to state-run nuclear programs that are a danger to our security.

While we cannot precisely calculate the probability of an act of nuclear terrorism, we can weigh some of the forces working toward and against this threat. Among the forces working against nuclear terrorism:

- The difficulty of obtaining fissile material
- The difficulty of a non-state group engineering a workable nuclear weapon
- Increasing security measures to protect or eliminate existing fissile material worldwide, particularly in the former Soviet Union
- Improved and expanded homeland security programs
- Progress in the ongoing war on terror and continuing efforts to weaken and degrade terror groups and their terror masters

- Indications, admittedly ambiguous, suggesting that even for a radically violent terrorist group, the use of a nuclear weapon against hundreds of thousands of civilians might be considered counterproductive to the terrorist movement and therefore beyond the pale.

Forces pushing us toward the possibility of an act of nuclear terror include:

- A stated declaration by jihadist elements that obtaining nuclear capability is a religious duty for Islamists and clerical findings that use of such a weapon against the enemies of Islam could be justified
- Continuing gaps in security of some nuclear material, particularly at research reactors
- The availability of rudimentary nuclear weapon designs through open sources, growing concern that more sophisticated designs may have become available on the black market, and the possible transfer or sale of such weapons or technology directly from nuclear armed states to terror groups
- Ready access by radical groups to large funding sources in the Middle East, enhanced by the rapid rise in the price of oil
- Continued gaps in port and border security, both at home and abroad, exemplified by the continuing easy flow of illegal people and drugs into the United States

- The ‘needle in a haystack’ difficulty of tracking down and seizing nuclear material once it has been stolen or diverted
- Growing pressure toward the proliferation of nuclear weapons, bringing with it the increased chance of nuclear material theft, sale or diversion
- The unworkability of traditional deterrent models against terror groups contemplating a nuclear attack.

These lists are only partial but, on balance, suggest an overall tilt in favor of the serious possibility that an act of nuclear terrorism could occur.

### **Motivating a Response**

That threat of a major nuclear exchange between the United States and the former Soviet Union receded with the end of the Cold War. In its place has arisen the threat of nuclear terrorism. It is true that the physical destruction wrought by a single terrorist nuclear attack would pale in comparison to a massive nuclear exchange. But it is also true that a terrorist nuclear attack is a more probable event than the kind of global nuclear war that so concerned America during the 1980's. The possibility of a terrorist nuclear attack is an underlying motivating factor for much of what the U.S. government is doing around the world. Whether the issue is reducing U.S. and Russian nuclear arsenals, preventing the proliferation of nuclear weapons, securing fissile material worldwide, converting weapons-grade uranium to commercial-grade

uranium, collecting intelligence on terrorism and waging war on terror groups and their allied state sponsors, adopting divestment measures, instituting new maritime and port security codes, implementing cooperative efforts with the Proliferation Security Initiative, or adopting the US and Russian led counter nuclear terrorism cooperative efforts – all of these endeavors have as an underlying element the imperative of preventing or reducing the chances of nuclear terrorism. But the goal – preventing nuclear terror – has not been put sufficiently ‘up front’ so that the benefit of these and other policy endeavors is clear to the public.

As demonstrated in this report, the impacts of an act of nuclear terrorism would be catastrophic and not confined to the area of attack. Our preventive efforts, therefore, must be comprehensive. Countering the threat of nuclear terrorism requires combining elements of “soft power” such as arms control, sanctions, securing nuclear material and border security, with “hard power” such as a credible threats of force, interdicting nuclear smuggling, pressure on proliferators, continued improvements to missile defense technology, and offensive action against foreign terrorist elements. Key elements of our efforts must include:

### **An overseas outlook**

- Keeping terrorist nuclear material off our shores is vital. Once a weapon enters the country we are in a needle-in-a-haystack situation.
- Within 24 hours of the arrival of a container ship at the U.S. port of Charleston, S.C., for example, a smuggled nuclear weapon, hauled by

truck, could be anywhere in the eastern U.S. as far west as Omaha, Nebraska.

- Key elements of the strategy must be foreign-oriented: securing nuclear material; divestment; deterring state sponsors of terrorism; arms control; interdicting nuclear smuggling; tracking terrorist financing; law enforcement.
- Work to secure foreign ports, airfields and borders to prevent terrorist nuclear weapon from ever reaching our shores. Securing overseas ports is just as important to our security as is securing our own ports.

### **Multi-pronged strategies are required.**

- Old political models of left/right no longer apply. The old pattern of arms controllers on one side and weapons advocates on the other no longer fits the global security picture, if it ever did.
- International cooperation is key. Saga's research shows that the public is not entirely convinced of this point, so policymakers must do better in articulating the need for international cooperation, and the benefits flowing from that cooperation.
- Nunn-Lugar efforts to secure former Soviet nuclear material, and "loose nukes" in other nations, must be accelerated.
- Use of force, such as the Israeli strike on the secret Syrian nuclear installation, must remain an option in a world with such real threats.

### **A successor to deterrence.**

- The impermeability of terror groups to standard threats of retaliation requires alternatives to the old deterrence models that dominated Cold War strategies.
- Proliferation and state sponsorship of terror remain critical problems, so some forms of state pressure, including credible threats of force, remain viable but will not work when applied to non-state terror groups.
- Iran and North Korea are nation-state adversaries but North Korea and especially Iran have terror links. Our policies toward these countries must keep in mind not only the state-on-state issues but the potential for Iranian

or North Korean nuclear weapons development to increase the nuclear terror threat.

- Al Qaeda is but one element of the global terror threat. Our strategies must take into account the threats posed by groups such as Hezbollah, Hamas, and FARC
- “Nuclear forensics” – the ability to identify the source of fissile material in a detonated nuclear weapon – could become a key element of a new deterrence model that holds supplier states responsible for attacks.
- Interdiction of illegal nuclear technology shipments under the Proliferation Security Initiative are a critical line of defense.

### **Follow the money**

- The global Jihad community is awash in petro-dollars, disguised as charitable contributions.
- Freezing of financial assets, divestment and denial of foreign banks’ access to U.S. monetary systems are extremely powerful sanctions which should be used as part of our terrorist prevention strategy.

### **Success is achievable. Examples to date:**

- Take down of A. Q. Khan network and Libyan nuclear program.
- Half of the former Soviet Union’s nuclear material is now secured and progress continues
- Successful intercepts of nuclear technology under the Proliferation Security Initiative
- The power of cooperation has been demonstrated most recently by Russia support of sanctions on Iran if the Tehran government continues with uranium enrichment

### **Trends of concern**

- Decline of ethnic Russian population bringing with it the potential for growing influence of radical Islamic elements in a country with a huge nuclear arsenal.

- Growing reports of attempts at nuclear smuggling
- Is our intelligence up to the job?
- Is the public sufficiently engaged?

## **Conclusion**

The consensus on the seriousness of the threat of nuclear terrorism is noticeably out of sync with the laudable but, to date, insufficient response to the problem. More public attention, greater public activism, and more energetic government action are needed. This will require more funding. Understanding in the starkest terms possible the consequences of an act of nuclear terrorism is a vital part of this effort because it will help clarify in the public mind the need to respond energetically and the payoff of doing so. It is worthwhile – but not enough – to understand what a nuclear attack would do to an American city. Such an attack would require a certain set of fairly predictable presidential decisions which would, in themselves, have the potential to devastate the national and global economies despite their well-intended purpose of preventing further nuclear terrorist attacks. Much greater effort must be expended to better understand the dynamics of presidential decision-making after a nuclear terrorist attack. A well-funded government study would help leaders and the public understand in much clearer terms the full consequences of failing to neutralize the terrorist nuclear threat. These consequences go far beyond the devastation that would be cause at the scene of an attack. The purpose of a detailed study of

these consequences and the dissemination of the results to the public is not to sow panic or engage in scare-mongering; scaring ourselves to death may very well engender paralysis and a sense of helplessness. Rather, if we awaken the public to the credible threats facing us, to the enormous stakes involved and the dangers at hand, while also conveying a realistic “can do” message that underscores the opportunities for effectively dealing with this problem, the most serious threat to our security can be defeated.

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## **About the Authors**

*David Bartoshuk has been president of the Saga Foundation since mid 2006. Under his guidance, the Saga team has conceived, developed, funded, and managed an array of programs aimed at increasing public and government awareness of the threat of nuclear terrorism. Projects have included documentary films, specialized research, and planning of regional security conferences focused on new problem-solving models. Bartoshuk comes from a business background, having spent over 20 years in commercial real estate.*

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## **For More Information**

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