



A Study on Nuclear Weapons of Mass Destruction Option for India

The chemical weapons are somewhat easier to develop (although they represent a significant challenge to most terrorist groups), biological ones more difficult but potentially far more lethal, and nuclear weapons practically impossible. Moreover, we found that while chemical weapons are probably the easiest to develop, they are not likely to be more effective in terrorists hand than high explosives, this view replaces exaggerated assessments of terrorist capability with more realistic perspective, it does not, however address the important case of a country providing chemical, biological or nuclear weapons to sponsored organisations. That such transfers have not occurred is encouraging m but is not a guarantee for the future.

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Ironically, nuclear weapons by far the most destructive weapon remain legitimate, while biological and chemical weapons, with more limited and problematic effectiveness, have been outlawed, Non-state actors, of course, are not bothered by these legal restraints. The three types of weapon differ greatly in their ease of productions, potential lethality and destructive power, and effectiveness of protection and defence against them. Nuclear weapons certainly deserve the appellation “weapons of mass destruction” (WMD). Grouping them together into the new inclusive category of WMD, however, elevates the status of biological agents that are difficult to disperse and control, and chemical weapons whose much lower lethality has been demonstrated in military combat. It is assumed that because the essential ingredients for biological and chemical weapons are easily available, any group of terrorist having access to modern biochemical technology and some scientific expertise could produce them. It is now widely understood that terrorist access to weapons of mass destructions represents the single most substantial portent of nuclear terrorism. This assumes serious dimensions only when coupled with four additional conditions :

(i) Terrorist's orientations to nuclear violence. (ii) Terrorist' insensitivity to traditional threats of deterrence. (iii) Cooperation between terrorist groups. (iv) Tolerance and support of terrorism.

Nuclear weapons : The widespread use of nuclear fission of uranium and plutonium for the release of large quantities of energy either in a relative slow, controlled fashion, via a nuclear reactor or in short bomb like bursts referred to as a “nuclear explosive device” has given rise to a very broad spectrum of possibilities of some terrorist group resorting to such violence. Terrorist may secure radioactive or fissionable material capable of being fabricated into a nuclear explosive device. Possession

of nuclear explosive device by a terrorist group and its threat to explode it in a populated area, would provide the group with a fantastic lever for extortion concessions including weapons, money release of imprisoned comrades, transport of a safe haven, alterations of government policies and so on.

Category of terrorist resorting to nuclear terrorism: Those who can resort to nuclear terrorism can be divided into three categories :

Politically motivated terrorist: Ironically, the group with political motivation is perhaps the easiest to deal with as these are the most likely groups to actually possess the atomic devices. The PLO is an example of such a group. Similarly terrorists operating in jammu & Kashmir are being sponsored by Pakistan, which is having nuclear capability and expertise. The possibilities of terrorist being provided with nuclear device, though remote, however, cannot be ruled out.

Criminal motivation: the nuclear terrorist with the criminal motivation generally indulgences in black mailing. While groups seeking to blackmail a government, city, or corporation are less likely to actually possess a bomb, they are most likely to use it if they do have it.

Psychopath : This type of individual may carry out such attack with no outwardly visible motivation other than the desire to destroy. It is now possible for one person to construct low level atomic device. Should this happen and the device falls into a hands of a psychopath, there will perhaps be no threat notes or demands, but just and explosion.

Access to nuclear weapon : Determined terrorist groups might acquire nuclear weapons from the following sources :

Theft : to acquire an assembled weapon, terrorist operatives might aim at any of the tens of thousands of nuclear weapons now deployed in the national or alliance arsenal of the USA, Russia, France, England, India, china

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and Pakistan. CAR nations provide another source of readily available expertise as well as nuclear device. Such terrorists are likely to have an enlarged arena of opportunity in the future. This is because the number of states possessing nuclear weapons may grow and because new members of the nuclear club may waive essential safeguards. Reports of nuclear smuggling, especially since the collapse of the Soviet Union, appear to lend added weight to the idea. Between January 1991 and December 2001, there were 643 cases of illicit nuclear trafficking. Till 2000, however the largest seizure was three kilograms of highly enriched uranium. Some 20 kilograms are required for a uranium implosion weapon.

Self-Development : To manufacture their own nuclear weapons, terrorists would require both strategic special nuclear material and the expertise to convert them into bombs or radiological weapons. As is now widely revealed, both requirements are well within the range of terrorist capabilities. Pilot processing plants to extract weapons-usable plutonium from spent reactor-fuel rods signal dangerous conditions. Unless immediate and effective steps are taken to inhibit the spread of plutonium reprocessing and uranium enrichment facilities, terrorist opportunities to acquire fissionable materials for nuclear weapons purposes could reach very high levels.

Sabotage : Another path to nuclear capability by terrorist might involve the sabotage of nuclear reactors, reprocessing and enrichment plants, nuclear power stations, and spent fuel cooling ponds. It is now apparent that such acts could pose monumental problems for any responsible government. This is especially apparent in the aftermath of the Soviet nuclear accident at Chernobyl in the spring of 1986.

Radiological Device : There is a possibility of a crude radiological device using radioactive sources, generally needed for industrial, medical, and other purposes, not involving fission. A large number of such sources (those used only in radiotherapy are about ten thousand) often remain outside of any regulatory control. If conventional explosives shroud these materials, a radiological dispersal device, popularly called a "dirty bomb" could be produced. It would, not cause a nuclear explosion, but would scatter radioactive material over a populated area causing panic and terror. The perpetrators of the attack themselves would be exposed to significant radiation hazard.

Effect of nuclear explosion : The nuclear explosion leads to following effects :

Flash : This is luminous bright light which is several times more intense than the sun which can dazzle personnel, cause temporary loss of vision or produce permanent retinal burns. During day time the effects do not persist for more than two minutes, however at night it may last for up to 15 to 30 minutes.

Heat : High amount of thermal radiation is generated which is observed by target elements causing heat, injury and ignition of combustible material, it can cause secondary fire like forest fire or burns occurring from ignition of clothing.

Blast : It is continuously propagating pressure pulse in surrounding medium initiated by quick expansion of hot gases. Blast waves are distinguished by two phases: positive and negative phase, where initial pressure rises and subsequently falls below ambient pressure. This causes destruction of structures. It is followed by indirect blast wind drag forces which cause strong winds thus causing destructions of structure. It is followed by indirect blast wind drag force which causes strong winds thus causing injuries due to missile or physical displacement of human bodies against objects in environment.

Radiation : These are harmful rays emitted after detonation.

Type of Rays : Following types of rays are emitted:

Alpha Particles : They are highly ionising to cells, but are least penetrating. Protection is only by clothing unless ingested.

Beta Rays : They are more penetrating than alpha particles but have limited ionisation power.

Gamma rays : They are highly penetrating therefore most damaging. There is a requirement for shielding for protection.

Conclusion :

We found that chemical weapons are somewhat easier to develop (although they represent a significant challenge to most terrorist groups), biological ones more difficult but potentially far more lethal, and nuclear weapons practically impossible. Moreover, we found that while chemical weapons are probably the easiest to develop, they are not likely to be more effective in terrorists' hands than high explosives, this view replaces exaggerated assessments of terrorist capability with more realistic perspective, it does not, however address the important case of a country providing chemical, biological or nuclear weapons to sponsored organisations. That such transfers have not occurred is encouraging but is not a guarantee for the future. It should be stressed; however that the potential threat of non-conventional terrorism is real and even the perpetration of relatively minor or limited lethal attacks could have enormous psychological, political and social consequences for the countries involved and for international society.

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