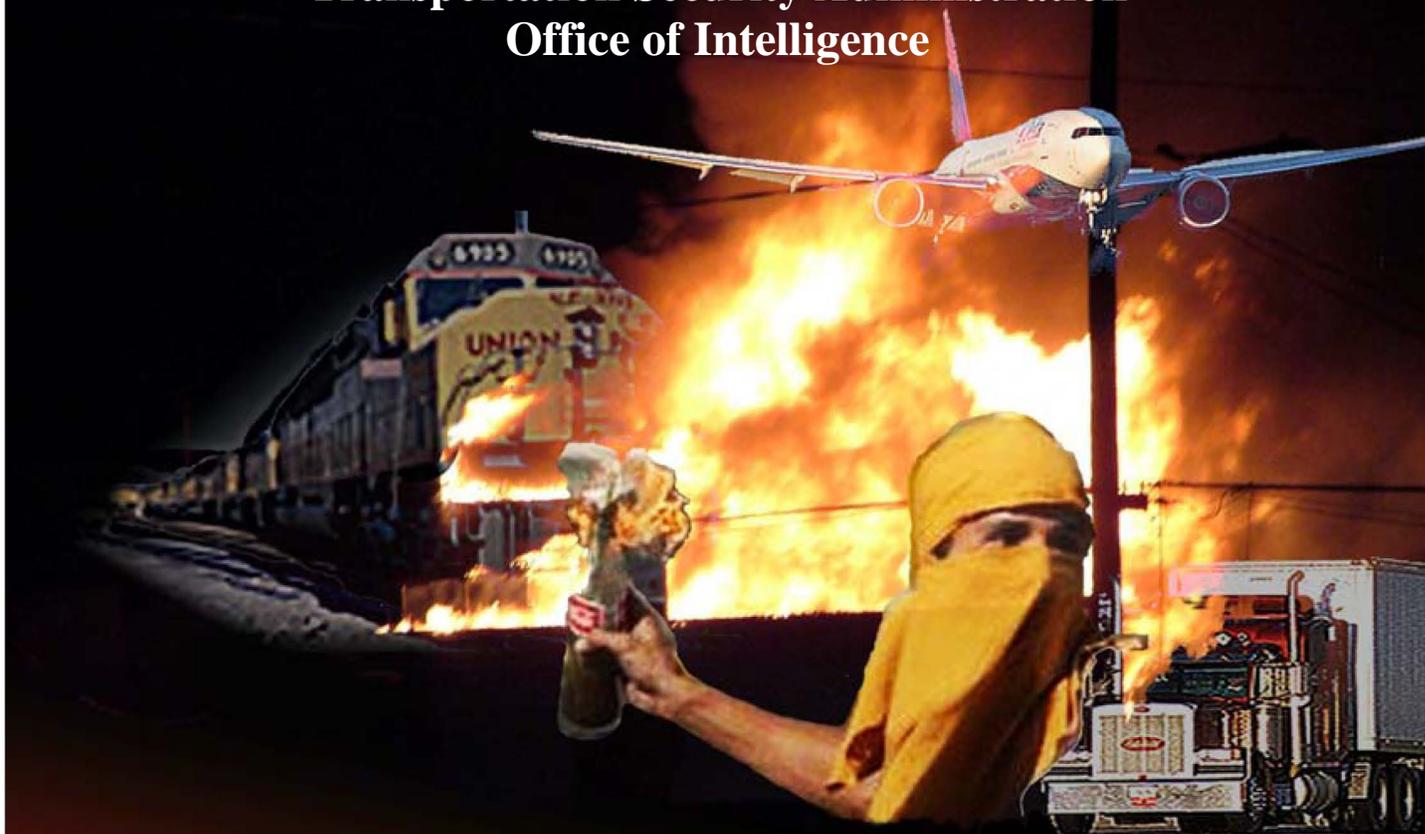


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Transportation Security Administration Office of Intelligence



27 June 2008

(U) Terrorist Weaponization of Fire: Improvised Incendiary Devices (IID) and Arson



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(U) Scope

(U//FOUO) This assessment focuses on the potential for terrorists to use fire as a weapon in attacks against transportation modes and reviews historical use of this tactic overseas. Improvised incendiary devices (IIDs) can be extremely dangerous in the confines of transit systems. Fire accelerated by a flammable material could provide terrorists an alternative attack scenario when faced with transportation security restrictions that typically focus on explosives or other weapons. While fires are routinely associated with lone arsonists or unintentional incidents, this paper speculates on the advantages of IIDs as a potential tool for terrorists.¹

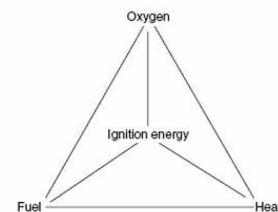
(U) Executive Summary

(U//FOUO) International terror organizations, affiliated individuals, and like-minded or inspired persons have declared their intent to employ improvised incendiary devices (IIDs) in attacks against the U.S. homeland, a tactic nation-states in battle have employed in the past with success. Transportation modes may be a particularly attractive target for IID attacks because they tend to operate with large crowds in confined spaces. Groups employing fire as an asymmetric weapon against transportation have the potential to cause as much or more catastrophic loss of life and destruction than the more popular improvised explosive devices. Firebombing, a simple and common tactic among domestic terrorists and criminals, could produce mass casualties and destruction, and create intense fear and anxiety in the public. IIDs are generally improvised more easily and are less expensive than improvised explosive devices.

(U) Defining the Improvised Incendiary Device

(U//FOUO) Improvised incendiary devices (IIDs) are items constructed with the sole intent of creating fire. Some examples of types of IIDs include: fire bombs, Molotov cocktails, flammable liquids in tanker trucks, etc. *In the past these devices may not have been viewed as a serious threat to the transportation sector, but innovative terrorists may consider their use in future attacks.*

(U) An incendiary device requires only an ignition source, a flammable or combustible fuel, and some type of housing or container. Some of the components used to assemble a device can include flares, motor fuels such as gasoline or diesel, electric light bulbs, electrical appliances and components, fireworks, reactive chemicals, propane and butane cylinders, and plastic pipes, bottles, and cans.²



(U) IIDs can be as simple as placing fuel in a bottle and lighting a rag in the top to create a Molotov cocktail, igniting black powder with a broken flashlight bulb, or as complicated as using a sodium mixture with an acid to create a timed device.³

(U) Improvised Incendiary Devices as a Weapon

(U//FOUO) There is well-documented evidence of the use of IIDs by nation-states in wars and battles in recent history. Terrorists may see many benefits in the employment of IIDs, as well, to accomplish their goals of mass casualties and widespread fear and panic.

- (U//FOUO) Generally, IIDs are improvised more easily and are less expensive to make than improvised explosive devices (IEDs), according to a joint ATF-DHS-FBI Special Assessment.⁴

The materials needed to construct an IID can be readily obtained from any hardware, grocery, or department store. Even with heightened public awareness, purchase of these dual-use items are even less likely to invite scrutiny from store



(U) Improvised Incendiary Device

(U//FOUO) One gallon milk jug filled with a flammable liquid (main accelerant); a fuel-soaked sponge serves as the igniter; two incense sticks serve as the fuse.

employees than would many of the “classic” homemade explosive (HME) precursors.

- **(U//FOUO)** Incendiaries require little training to prepare and use. Overall, flammable materials are not as volatile as explosives; therefore, a person using these materials does not require the same level of knowledge and experience as someone handling explosives. Flammable materials are also less likely to cause accidents or serious injury to those handling them.⁵
- **(U//FOUO)** Properly used and strategically placed incendiary devices can cause extensive property damage over a widespread area—even greater damage than caused by a similarly sized explosive device. Unlike explosives, firebombs have the potential to cause even more damage than explosive devices because the fuel may create a rapidly growing fire that is difficult for first responders to contain, causing an ever increasing amount of property damage over time.⁶
- **(U//FOUO)** Fire weapons provide a greater opportunity for destroying any remaining evidence via fire and inadvertent destruction through firefighting efforts. Fire events are also guaranteed to draw attention including media coverage.⁷

(U) Tanker Truck Concern

(U//FOUO) Terrorists could employ a variety of IIDs against their targets. Of particular concern is the use of flammable materials in tanker trucks turned into surrogate bombs. Over the years, at least three senior al-Qa’ida members have contemplated using such tactics.

- **(U//FOUO)** A senior al-Qa’ida planner considered using gasoline or chemical tanker trucks for either fire or explosive attacks in the Homeland. The planner speculated about several different chemical mixtures that could be used in a hypothetical attack.¹
- **(U//FOUO)** A senior al-Qa’ida facilitator suggested that a truck, preferably a fuel tanker truck, was a good choice for attacking fixed targets like large buildings.²
- **(U//FOUO)** A senior al-Qa’ida operative stated that using large trucks—such as those carrying gas or chemicals—was generally very likely, and that the material being carried by the truck could amplify the impact of the explosion.³



¹ (U) TD-314/31575-04 (U//FOUO) - Tearline approved 06 February 2008

² (U) TD-314/33352-04 (U//FOUO) - Tearline approved 06 February 2008

³ (U) TD-314/35651-04 (U//FOUO) - Tearline approved 06 February 2008

(U) Transit Systems' Susceptibility to Attack

(U//FOUO) Transit systems are vulnerable to IID and arson attacks by perpetrators hoping to inflict mass casualties, destroy transit property or urban areas, or simply create public fear, and cause disrupted service. A terrorist's familiarity of a transit system could be the factor which transforms the consequences of an attack from a relatively low-level or minor event to a catastrophic incident. *Terrorists are likely to use flammable liquids or, in response to restrictions on liquids, highly flammable solids or powders.*

(U//FOUO) Although attacks on or against aircraft garner the majority of attention—weaponized fire has proven to be successful against passenger rail and other ground-based transportation assets abroad—as highlighted in the Overseas and Homeland Attacks/Plots of Note insert (page 7).



(U//FOUO) Stations and terminals may be considered prime targets for attack because their facilities serve large numbers of people in relatively small enclosed spaces that are easily accessible and often centrally located. While stations and terminals are designed to be fire resistant, they are still vulnerable to arson attacks ignited from accelerants (flammable substance used to increase the spread of fire) brought into the station or from incidental materials such as garbage, vendor goods, and passenger baggage within the station.

(U//FOUO) In addition to the potential casualties and the inherent damage caused by arson to a transportation system, surrounding structures or support facilities may be impacted by the fire and smoke, or may also be targets of attack. Attacks against administrative buildings, maintenance and storage facilities for transit vehicles, elevated structures, tunnels, right-of-way signals, remote equipment and other unmanned structures may cause a loss of service.

(U) Effects of an IID Attack Against Transportation

(U//FOUO) The potential hazards of an intentionally set fire in a transit facility include the destruction of assets within the facility, structural damage to the facility itself, and injuries or fatalities from exposure to fire, smoke, and fumes.

(U//FOUO) An IID attack may be particularly dangerous in areas that are enclosed or underground where people may become trapped. Burning fuel, oil, plastics, and paints can cause dense smoke and toxic fumes; presenting a serious health threat or even death by asphyxiation. In addition, smoke can reduce visibility, obscuring exit pathways and hindering rescue and egress.

(U) Overseas IID Attacks/Plots of Note

- (U) May 2008, China: An ethnic Uyghur woman aboard a China Southern Airlines domestic flight bound for Beijing, attempted to ignite a flammable liquid that had been syringed into a beverage can in an attempt to set the plane on fire. She aroused suspicions when she came out of the toilet to pick up a second can after the first failed to ignite, smelling of petrol.¹
- (U) June 2007, United Kingdom: Two cars containing gasoline, compressed-gas cylinders, and mobile phone triggering devices were discovered in Central London. The next day a burning Jeep Cherokee was driven into the main terminal building at Glasgow Airport.²
- (U) February 2007, India: Kashmiri extremists placed six suitcase IIDs in three cars of the "Friendship Express" passenger train traveling from India to Pakistan. Four of the six IIDs ignited and caused fires in two passenger cars, killing 68 people and injuring 13.³
- (U) July 2006, Germany: Two men plotted to simultaneously attack two trains. The plan was only averted because the homemade devices did not work. Prosecutors in Karlsruhe said the trains would have become "balls of fire" had the butane and gasoline-loaded suitcases functioned as planned.⁴



(U) IID recovered on the "Friendship Express"

¹ www.atimes.com, "(U) China Confronts Its Uyghur Threat," 18 April 2008, (U)

² Timesofindia.timesofindia.com, "(U) NRI Doctor Admits Role in Glasgow Airport Attack," 11 April 2008, (U)

³ (U) TSA-OI, "(U) Mass Transit System Threat Assessment," 29 February 2008, (U//FOUO)

⁴ (U) TSA-OI, "(U//FOUO) Perspectives on Late June Terrorist Attacks in the United Kingdom," 3 July 2007, (U)

(U) Homeland Usage and Plots

(U//FOUO) Domestic extremist groups have used IIDs in Homeland attacks. While al-Qa'ida and other international terrorist organizations garner most of the attention, domestic terrorists are also a threat to the Homeland. Since 1990, animal rights and environmental extremists have claimed responsibility for more than 1,200 criminal incidents, including bombings, acts of sabotage, arsons, and vandalism resulting in hundreds of millions of dollars in damage.⁸ In 2006, an estimated 31,000 persons intentionally set structure fires, which claimed 305 civilian lives and caused \$755,000,000 in property loss, according to the National Fire Protection Association.⁹

(U//FOUO) Over the past 20 years, activists affiliated with the Animal Liberation Front (ALF) and the Earth Liberation Front (ELF) have conducted arson attacks throughout the United States as part of a persistent domestic terrorism campaign.¹⁰

(U//FOUO) Two underground manuals serve as the primary resources from which ALF/ELF activists learn arson-related tactics are two underground manuals. These manuals provide step-by-step instructions and detailed diagrams on how to prepare highly flammable chemical compounds and how to construct IIDs.¹¹

- (U//FOUO) Terminology in both handbooks appear to indicate the author(s) maintain an above-average level of knowledge and understanding of electronics, chemistry, and physics. Examples of terms used in the manuals include spontaneous combustion, delay mechanism, incendiary system, incendiary materials, initiator, igniter, fuse, and primary and secondary accelerants. In addition, activists are instructed to follow two strict rules: (1) tell no one of the plan and, (2) leave no evidence at the scene. Adhering to both rules ensures operational security and decreases chances of being caught.¹²

(U) Homeland IID and Arson Plots

(U//FOUO) International terror organizations, affiliated individuals, and like-minded or inspired persons have previously indicated an interest or explored the possibility of conducting IID or arson attacks in the Homeland; however, TSA is not aware of any credible plots to carry out IID attacks by these groups.

- (U//FOUO) A November 2007 jihadist posting on a Chechen website called Jihadists to set forest fires in “Crusader” countries. This “forest jihad” was to be carried out by Muslims in the United States, Australia, Europe, and Russia. According to the author of the posting, these countries were identified as targets because they were “at war with Muslims.”¹³
- (U) According to April 2007 testimony provided during a Combatant Status Review Tribunal hearing for al-Qa’ida operative Khalid Shaikh Mohammed, Mohammed admitted to participating in the 11 September 2001 attacks and numerous other plots including: a plan to destroy the Sears Tower in Chicago by burning fuel trucks in the parking garages beneath or around it.
- (U//FOUO) In January 2004, U.S. intelligence learned that al-Qa’ida had entertained a plan, entitled “Rough Presentation for Gas Limo Project.” It presented a scenario for using three limousines, each carrying compressed-gas cylinders, to “vent flammable gas into a confined space and then ignite it.”
- (U) In June 2003, a high-ranking al-Qa’ida detainee told investigators that he developed a plot to set forest fires in Colorado, Montana, Utah, and Wyoming,

using timed explosives that would detonate in forests and grasslands after the operatives had left the country.¹⁴

- (U) According to testimony provided during a Combatant Status Review Tribunal hearing for al-Qa'ida operative Abu Zubaydah, a 2002 diary entry was uncovered indicating that he stated he would wage war against the United States using several tactics such as instigating racial wars, timed explosive attacks, attacking gas stations and fuel trucks, and starting timed fires. In another diary entry, dated in 2000, he described plans against America consisting of explosions and burning cities and farms.¹⁵

(U) Summary

(U//FOUO) IEDs and bombings are currently the most effective means for terrorist groups to attack transportation; however, as counterterrorism measures improve, terrorists may adjust their current strategies and tactics to employ IEDs as an alternative weapon.

¹ Fire Analysis and Research Division, National Fire Protection Association, Michael J. Karter, Jr., "(U) FIRE LOSS IN THE UNITED STATES DURING 2006," September 2007, (U)

² (U) Robert Burke, Counter-Terrorism for Emergency Responders (Boca Raton, Fla.: Lewis Publishers, 2000), p168, (U)

³ (U) St. Petersburg College - National Terrorism Preparedness Institute / Department of Justice, "(U) IED Awareness for First Responders - Module 1: Introduction to IEDs," September 2007, (U)

⁴ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

⁵ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

⁶ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

⁷ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

⁸ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

⁹ Fire Analysis and Research Division, National Fire Protection Association, Michael J. Karter, Jr., "(U) Fire Loss in the United States During 2006," September 2007, (U)

¹⁰ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

¹¹ (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

¹² (U) JSA, "(U) Arson-Related Tactics, Techniques, and Procedures of the Animal Liberation Front and Earth Liberation Front," 12 September 2005, (U//FOUO)

¹³ (U) GMP20071204488001, "(U) Chechnya Website Urges Jihadists to Start Forest Fires in 'Crusader' Countries, 4 December 2007, (U//FOUO)

¹⁴ www.usatoday.com, "(U) FBI: Al-Qaeda Detainee Spoke of Fire Plot," 11 July 2003, accessed 23 April 2008, (U)

¹⁵ (U) DoD, "(U) Verbatim Transcript of Combatant Status Review Tribunal Hearing for ISN 10016," p. 5, 27 March 2007, (U)