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# H.R. 3197, SECURITY HANDLING OF AMMONIUM NITRATE

## HEARING

BEFORE THE

## SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK

OF THE

## COMMITTEE ON HOMELAND SECURITY HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

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# H.R. 3197, SECURITY HANDLING OF AMMONIUM NITRATE ACT OF 2005

**Wednesday, December 14, 2005**

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK,
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:05 a.m., in Room 2237, Rayburn House Office Building, Hon. John Linder [chairman of the subcommittee] presiding.

Present: Representatives Linder, Simmons, Dent, Weldon, Langevin, Norton, Christensen and Thompson (Ex Officio).

Mr. LINDER. The subcommittee will come to order.

The Committee on Homeland Security Subcommittee on Prevention of Nuclear and Biological Attack is here today to hear testimony on H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005.

[The information follows:]

I

109TH CONGRESS
1ST SESSION

# H. R. 3197

To authorize the Secretary of Homeland Security to regulate the production, storage, sale, and distribution of ammonium nitrate on account of the prior use of ammonium nitrate to create explosives used in acts of terrorism and to prevent terrorists from acquiring ammonium nitrate to create explosives.

---

IN THE HOUSE OF REPRESENTATIVES

JUNE 30, 2005

Mr. WELDON of Pennsylvania (for himself, Mr. THOMPSON of Mississippi, Mr. ETHERIDGE, Mr. BROWN of Ohio, Mrs. CHRISTENSEN, and Mr. KING of New York) introduced the following bill; which was referred to the Committee on Homeland Security

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# A BILL

To authorize the Secretary of Homeland Security to regulate the production, storage, sale, and distribution of ammonium nitrate on account of the prior use of ammonium nitrate to create explosives used in acts of terrorism and to prevent terrorists from acquiring ammonium nitrate to create explosives.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the "Secure Handling of Ammonium Nitrate Act of 2005".

**SEC. 2. FINDINGS.**

Congress finds the following:

(1) Although ammonium nitrate is an important fertilizer used in agricultural production, in the wrong hands, ammonium nitrate can be used to create explosives and was so used in terrorist attacks conducted in Oklahoma City, Bali, and Istanbul.

(2) The production, importation, storage, sale, and distribution of ammonium nitrate affects interstate and intrastate commerce.

(3) It is necessary for the Secretary of Homeland Security to regulate the production, storage, sale, and distribution of ammonium nitrate on account of the prior use of ammonium nitrate to create explosives used in acts of terrorism and to prevent terrorists from acquiring ammonium nitrate to create explosives.

**SEC. 3. DEFINITIONS.**

In this Act:

(1) ACT.—The term "this Act" includes regulations issued under this Act.

(2) AMMONIUM NITRATE.—The term "ammonium nitrate" means solid ammonium nitrate that is chiefly the ammonium salt of nitric acid and contains not less than 33 percent nitrogen, of which—

(A) 50 percent is in ammonium form; and

1 (B) 50 percent is in nitrate form.

2 (3) FACILITY.—The term "facility" means any
3 site where ammonium nitrate is produced, stored, or
4 held for distribution, sale, or use. The term in-
5 cludes—

6 (A) all buildings or structures used to
7 produce, store, or hold ammonium nitrate for
8 distribution, sale, or use at a single site; and

9 (B) multiple sites described in subpara-
10 graph (A), if the sites are—

11 (i) contiguous or adjacent; and

12 (ii) owned or operated by the same
13 person.

14 (4) HANDLE.—The term "handle" means to
15 produce, store, sell, or distribute ammonium nitrate.

16 (5) HANDLER.—The term "handler" means
17 any person that produces, stores, sells, or distributes
18 ammonium nitrate.

19 (6) PURCHASER.—The term "purchaser"
20 means any person that purchases ammonium ni-
21 trate.

22 (7) TERRORISM.—The term "terrorism" has
23 the meaning given that term in section 2(15) of the
24 Homeland Security Act of 2002 (6 U.S.C. 101(15)).

1 (8) SECRETARY.—The term "Secretary" means
2 the Secretary of Homeland Security.

3 **SEC. 4. REGULATION OF HANDLING AND PURCHASE OF AM-**
4 **MONIUM NITRATE.**

5 (a) IN GENERAL.—The Secretary may regulate the
6 handling and purchase of ammonium nitrate to prevent
7 the misappropriation or use of ammonium nitrate in an
8 act of terrorism.

9 (b) REGULATIONS.—The Secretary may promulgate
10 regulations that require—

11 (1) handlers—

12 (A) to register facilities;

13 (B) to sell or distribute ammonium nitrate
14 only to handlers and purchasers registered
15 under this Act; and

16 (C) to maintain records of sale or distribu-
17 tion that include the name, address, telephone
18 number, and registration number of the imme-
19 diate subsequent purchaser of ammonium ni-
20 trate; and

21 (2) purchasers to be registered.

22 (c) USE OF PREVIOUSLY SUBMITTED INFORMA-
23 TION.—Prior to requiring a facility or handler to submit
24 new information for registration under this section, the
25 Secretary shall—

1 (1) request from the Attorney General, and the
2 Attorney General shall provide, any information pre-
3 viously submitted to the Attorney General by the fa-
4 cility or handler under section 843 of title 18,
5 United States Code; and
6 (2) at the election of the facility or handler—
7 (A) use the license issued under that sec-
8 tion in lieu of requiring new information for
9 registration under this section; and
10 (B) consider the license to fully comply
11 with the requirement for registration under this
12 section.
13 (d) CONSULTATION.—In promulgating regulations
14 under this section, the Secretary shall consult with the
15 Secretary of Agriculture to ensure that the access of agri-
16 cultural producers to ammonium nitrate is not unduly bur-
17 dened.
18 (e) DATA CONFIDENTIALITY.—Notwithstanding sec-
19 tion 552 of title 5, United States Code, or the USA PA-
20 TRIOT ACT (Public Law 107–56; 115 Stat. 272) or an
21 amendment made by that Act, the Secretary may not dis-
22 close to any person any information obtained from any fa-
23 cility, handler, or purchaser—

1 (1) regarding any action taken, or to be taken,
2 at the facility or by the handler or purchaser to en-
3 sure the secure handling of ammonium nitrate; or
4 (2) that would disclose—
5 (A) the identity or address of any purchase
6 of ammonium nitrate;
7 (B) the quantity of ammonium nitrate pur-
8 chased; or
9 (C) the details of the purchase transaction.
10 (f) EXCEPTIONS TO DATA CONFIDENTIALITY.—The
11 Secretary may disclose any information described in sub-
12 section (e)—
13 (1) to an officer or employee of the United
14 States, or a person that has entered into a contract
15 with the United States, who needs to know the infor-
16 mation to perform the duties of the officer, em-
17 ployee, or person, or to a State agency pursuant to
18 an arrangement under section 6, under appropriate
19 arrangements to ensure the protection of the infor-
20 mation;
21 (2) to the public, to the extent the Secretary
22 specifically finds that disclosure of particular infor-
23 mation is required in the public interest; or
24 (3) to the extent required by order of a Federal
25 court in a proceeding in which the Secretary is a

1 party, under such protective measures as the court
2 may prescribe.

3 **SEC. 5. ENFORCEMENT.**

4 (a) INSPECTIONS.—The Secretary, without a war-
5 rant, may enter any place during business hours that the
6 Secretary believes may handle ammonium nitrate to deter-
7 mine whether the handling is being conducted in accord-
8 ance with this Act.

9 (b) PREVENTION OF SALE OR DISTRIBUTION
10 ORDER.—In any case in which the Secretary has reason
11 to believe that ammonium nitrate has been handled other
12 than in accordance with this Act, the Secretary may issue
13 a written order preventing any person that owns, controls,
14 or has custody of the ammonium nitrate from selling or
15 distributing the ammonium nitrate.

16 (c) APPEAL PROCEDURES.—

17 (1) IN GENERAL.—A person subject to an order
18 under subsection (b) may request a hearing to con-
19 test the order, under such administrative adjudica-
20 tion procedures as the Secretary may establish.

21 (2) RESCISSION.—If an appeal under para-
22 graph (1) is successful, the Secretary shall rescind
23 the order.

24 (d) IN REM PROCEEDINGS.—The Secretary may in-
25 stitute in rem proceedings in the United States district

1 court for the district in which the ammonium nitrate is
2 located to seize and confiscate ammonium nitrate that has
3 been handled in violation of this Act.

4 **SEC. 6. ADMINISTRATIVE PROVISIONS.**

5 (a) COOPERATIVE AGREEMENTS.—The Secretary
6 may enter into a cooperative agreement with the Secretary
7 of Agriculture, or the head of any State department of
8 agriculture or other State agency that regulates plant nu-
9 trients, to carry out this Act, including cooperating in the
10 enforcement of this Act through the use of personnel or
11 facilities.

12 (b) DELEGATION.—

13 (1) IN GENERAL.—The Secretary may delegate
14 to a State the authority to assist the Secretary in
15 the administration and enforcement of this Act.

16 (2) DELEGATION REQUIRED.—On the request
17 of a Governor of a State, the Secretary shall dele-
18 gate to the State the authority to carry out section
19 4 or 5, on a determination by the Secretary that the
20 State is capable of satisfactorily carrying out that
21 section.

22 (3) FUNDING.—If the Secretary enters into an
23 agreement with a State under this subsection to del-
24 egate functions to the State, the Secretary shall pro-

1 vide to the State adequate funds to enable the State
2 to carry out the functions.
3 (4) INAPPLICABILITY.—Notwithstanding any
4 other provision of this subsection, this subsection
5 does not authorize a State to carry out a function
6 under section 4 or 5 relating to a facility or handler
7 in the State that makes the election described in sec-
8 tion 4(c)(2).

9 **SEC. 7. CIVIL LIABILITY.**

10 (a) UNLAWFUL ACTS.—It is unlawful for any per-
11 son—
12 (1) to fail to perform any duty required by this
13 Act;
14 (2) to violate the terms of registration under
15 this Act;
16 (3) to fail to keep any record, make any report,
17 or allow any inspection required by this Act; or
18 (4) to violate any sale or distribution order
19 issued under this Act.
20 (b) PENALTIES.—
21 (1) IN GENERAL.—A person that violates this
22 Act may only be assessed a civil penalty by the Sec-
23 retary of not more than $50,000 per violation.
24 (2) NOTICE AND OPPORTUNITY FOR A HEAR-
25 ING.—No civil penalty shall be assessed under this

1 Act unless the person charged has been given notice
2 and opportunity for a hearing on the charge in the
3 county, parish, or incorporated city of residence of
4 the person charged.

5 (c) JURISDICTION OVER ACTIONS FOR CIVIL DAM-
6 AGES.—The district courts of the United States shall have
7 exclusive jurisdiction over any action for civil damages
8 against a handler for any harm or damage that is alleged
9 to have resulted from the use of ammonium nitrate in vio-
10 lation of law that occurred on or after the date of enact-
11 ment of this Act.

12 **SEC. 8. STATE LAW PREEMPTION.**

13 This Act preempts any State law that regulates the
14 handling of ammonium nitrate to prevent the misappro-
15 priation or use of ammonium nitrate in an act of ter-
16 rorism.

○

Mr. LINDER. I would like to thank and welcome our witnesses for appearing before the subcommittee today.

On April 19th, 1995, the world looked in horror at the images of the Alfred P. Murrah Federal Building in Oklahoma City, which was destroyed when nearly 5,000 pounds of ammonium nitrate, mixed with motor fuel, was delivered in a rental truck and detonated in the building's parking lot. On that day, 167 lives, including the lives of 19 children at the building's daycare facility, were lost in what was at the time the worst terrorist attack on American soil.

The ammonium nitrate used in that attack is an inexpensive and easily accessible fertilizer used around the world and is very popular with farmers due to its high nitrogen content. In fact, 2.7 million tons of agricultural ammonium nitrate alone was traded internationally in 2001. It is also utilized as an explosive agent by miners looking to blast coal out of rock. Ammonium nitrate is also used, unfortunately, as a popular compound for terrorist bombings, including Oklahoma City, the 1998 East African Embassy bombings, the November, 2003, bombings in Istanbul, Turkey, and was suspected in the October, 2002, Bali bombing.

Countries with histories of terrorism, including the Philippines, Colombia and Ireland, have banned the use of ammonium nitrate completely. A number of European Union countries have either banned or restricted its use. Turkey joined the EU in regulating sales of ammonium nitrate in 2004 in the wake of ammonium nitrate bombings there.

There appears to be no doubt as well in the minds of Australian officials in the wake of the Bali bombings and the bombing of the Australian embassy in Jakarta that if al-Qa'ida were able to acquire and deploy any weapon to cause mass devastation it would do so. Considering this, they have also agreed to place restrictions on ammonium nitrate fertilizers within Australian borders.

Here at home, New York, New Jersey, Michigan, Oklahoma, South Carolina, California and Nevada have implemented their own regulations of ammonium nitrate.

Ten years after Oklahoma City, however, the United States Government has done little to prevent the repeat of this horrific tragedy. It is still too easy to acquire ammonium nitrate for terrorist use in this country.

Later today, the subcommittee will mark up H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005, which authorizes the Secretary of Homeland Security to regulate the purchase of ammonium nitrate by registering sellers and buyers of this potentially dangerous material. This represent the first serious effort on the part of the Federal Government to prevent future attacks of this nature on the American people.

I look forward to the testimony of our witnesses on the implications of this regulation, whether they agree that we should regulate ammonium nitrate fertilizer and whether this bill represents a positive step to our preventing future terrorist acts.

I am hopeful that these and other questions will be answered as we review this important U.S. homeland security issue; and I yield to my friend from Rhode Island, the ranking member of the subcommittee, Mr. Langevin.

Mr. LANGEVIN. Thank you, Chairman Linder.

I would like to take this opportunity to welcome our panel. I look forward to their input on the legislation that is before us today.

In particular, I am pleased that Dr. Jimmie Oxley is among our distinguished witnesses this morning. Dr. Oxley is not only a world-renowned explosives expert but a very well regarded chemistry professor at the University of Rhode Island, an institution that I have the great privilege of representing in Congress. Welcome, Dr. Oxley.

I have had the opportunity to visit Dr. Oxley in her lab to learn about the land mine detection technology research that she is undertaking through the URI forensic science partnership. Certainly she is an asset to URI, and I know that she is going to be a great asset to today's hearing as well.

To many of us, the 1995 Oklahoma City bombing was our first introduction to the devastating impact ammonium nitrate can have in the hands of a terrorist. Since that time, fertilizer bombs have been used to deadly effect, in 2002, by the Islamic group linked to al-Qa'ida outside the nightclub in Bali, Indonesia, and in 2003 by an al-Qa'ida cell in Istanbul, Turkey.

The risks that ammonium nitrate-based fertilizer, so critical to the agricultural operation of many of our Nation's farmers, will be used by a terrorist in an improvised explosive device must be confronted and reduced.

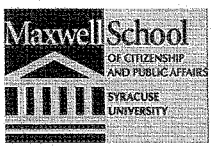
A June, 2005, analysis conducted by Syracuse University's Institute for National Security and Counterterrorism makes clear why Federal leadership is so vital. The authors of this report, entitled Legal Controls on Explosive Materials, found that only four States—Nevada, Oklahoma, South Carolina, and New Jersey—had established security regulations for ammonium nitrate.

Mr. Chairman, with your permission I would like to ask that we include that report in the record.

Mr. LINDER. Without objection.

Mr. LANGEVIN. Thank you.

[The information follows:]




# LEGAL CONTROLS ON EXPLOSIVE MATERIALS

**Report for the United States House of Representatives Committee on Homeland Security Democratic Staff**

**JUNE 9, 2005**

**Leah Kane**
**Andrew Lee**
**Yuta Maeda**
**Chrissy Okereke**
**Matt Scott**

INSCT INSTITUTE FOR NATIONAL SECURITY AND COUNTERTERRORISM
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## Executive Summary [1]

Nuclear, biological and chemical weapons are not the only tools in the terrorist arsenal. Less complex devices, filled with materials legally available for sale throughout the United States, have been and continue to be used to horrible effect against government and civilian targets worldwide. This report provides a summary of federal, state and international laws regulating the importation and domestic handling of military-style and fertilizer-based explosives.

State laws on military-style explosives vary widely, but recent federal legislation compensates for the differences. Well-regulated states require all potential users of explosives to obtain a permit or license and submit to a criminal background check. Poorly-regulated states require no government oversight. Federal law, since passage of the 2002 Safe Explosives Act, requires interstate and intrastate distributors and users of explosive materials to apply for a handling permit and to undergo a criminal background investigation through the Department of Justice. International law, in the form of treaties already entered into force through federal legislation, currently applies narrowly to the identification of specific chemical compounds.

Explosive materials included in the Department of Justice's definition of "explosives" appear to be well-regulated. The federal definition, however, does not include substances whose primary purpose is not to explode, but can be made to explode through steps found readily on the Internet. The most well-known of these substances is ammonium nitrate-based fertilizer, which terrorists have combined with fuel oil to produce violent and deadly bombs. Fertilizer bombs detonated outside the Oklahoma City Federal Building in 1995, outside a night club in Bali, Indonesia in 2002, and in Istanbul in 2003. Despite repeated use by terrorists, ammonium nitrate-based fertilizer can still be purchased in the U.S. without identification in all but four states.

The conclusion of this report includes three courses of action the federal government could take to lower the risk of fertilizer-based attacks in America: (1) amend U.S. law to define ammonium nitrate fertilizer as an explosive; (2) adopt at the federal level existing state laws and regulations requiring identification for purchases of potentially dangerous fertilizers; or (3) promote technology-based solutions using different formulas or coatings for ammonium nitrate-based fertilizer to reduce the material's utility in bomb making.

[1] This report was written as part of the MPA Workshop, a required capstone course in the Master's in Public Administration program at the Maxwell School of Citizenship & Public Affairs. Direction and supervision were provided by William C. Banks, Professor of Law and Public Administration and Director of the Institute for National Security and Counterterrorism at Syracuse University.

## Recent Terrorist Attacks Using Conventional Explosives

Conventional explosives and the materials necessary to construct them are easier to acquire than nuclear, biological, and chemical weapons. The conventional explosives most commonly used in recent terrorist attacks are military-style explosives, including plastic explosives such as Semtex and C-4, and fertilizer-based explosives, primarily those constructed with ammonium nitrate-based fertilizer. Attacks using explosive materials have inflicted devastating losses on human life, commerce, and governmental and military interests.

*Attacks Using Military-Style Explosives*

In December 1988, a Libyan intelligence officer killed 270 people aboard Pan Am Flight 103 using approximately 350 grams of plastic explosives.[2] Scientists determined that residues left by the explosion showed traces of PETN and RDX, two components of Semtex, the plastic explosive favored by terrorists because it was, until recently, extremely difficult to detect, easily obtained, and as little as 250 grams could destroy an airliner.[3] Semtex is a general purpose plastic explosive used in commercial blasting and demolition and in certain military applications.

Reportedly, 400-700 pounds of C-4, a military plastic explosive, were used by Al-Qaeda in the October 2000 attack on the USS Cole, which killed 17 people and injured 39 others.[4] C-4 was also suspected in the 1996 bombing of the Khobar Towers military housing complex in Saudi Arabia, in which 20 people were killed and 372 injured.[5] C-4 is more expensive and harder to obtain than Semtex.[6] Although C-4 is primarily manufactured in the U.S., forms of C-4 are made in Austria, Iran and other countries.[7] Authorities have not confirmed that C-4 was in fact used in these attacks, but the explosives used were likely military-style.

In March 2004, 191 people were killed and 1,800 injured in ten explosions aboard commuter trains in Madrid, Spain. Forensic analysis of unexploded devices indicated the explosive used was Goma-2 ECO,[8] a nitroglycerin-based explosive manufactured for industrial use by the Union of Spanish Explosives of Paramo de Masa in northern Spain.[9]

*Attacks Using Fertilizer-Based Materials*

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[2] BBC News, *High Explosives "Missing in Iraq"* (October 26, 2004), *available at* http://news.bbc.co.uk/1/hi/world/middle_east/3950493.stm; BBC News, *Lessons from Lockerbie* (December 21, 1998), *available at* http://news.bbc.co.uk/1/hi/special_report/1998/12/98/lockerbie/235632.stm.
[3] Rodney Wallis, Lockerbie: The Story and the Lessons 43 (Praeger 2001).
[4] CNN, *C-4 Explosive Used in USS Cole Attack* (November 1, 2000), *available at* http://archives.cnn.com/2000/US/11/01/cole.investigation/.
[5] CNN, *Flight Forced To Land; Explosives In Shoes Suspected* (December 23, 2001), *available at* http://archives.cnn.com/2001/US/12/22/plane.diverted/index.html.
[6] CNN, *C-4 Quantity May Be Clue in USS Cole Bombing* (November 3, 2000), *available at* http://archives.cnn.com/2000/US/11/03/c-4.cole/.
[7] CNN, *C-4 Explosive Used in USS Cole Attack* (November 1, 2000), *available at* http://archives.cnn.com/2000/US/11/01/cole.investigation/.
[8] CNN, *Bombs Were Spanish-Made Explosives* (March 13, 2004), *available at* http://www.cnn.com/2004/WORLD/europe/03/12/spain.blasts/index.html; CNN, *Suspected Madrid Bombing Ringleader Killed* (April 4, 2004), *available at* http://edition.cnn.com/2004/WORLD/europe/04/04/spain.bombings/.
[9] Sydney Morning Herald, *Feud May Hinder Madrid Bombing Investigation* (March 19, 2004), *available at* http://www.smh.com.au/articles/2004/03/18/1079199367607.html.

Ammonium nitrate-based fertilizers are cheap, widely unregulated, readily available, and become powerful weapons when combined with fuel oil. In April 1995, Timothy McVeigh used a truck bomb composed of ammonium nitrate and nitromethane, a highly volatile motor-racing fuel, to kill 168 and wound 800 in the Alfred P. Murrah Federal Building in Oklahoma City.[10] McVeigh's bomb consisted of approximately two tons of ammonium nitrate-based fertilizer purchased from a farmers' cooperative in Kansas in late 1994.[11]

Traces of ammonium nitrate and fuel oil were also found at the scene of the 1998 U.S. Embassy bombing in Nairobi, Kenya, in which 213 people were killed and 4,000 injured.[12] However, early speculation claimed Semtex was the explosive material employed in the Embassy bombings, and conclusive findings have not yet been made available to the public.

In October 2002, Jemaah Islamiyah, an Islamic group reportedly linked to the Al-Qaeda, killed 202 people and injured 209 others outside nightclubs in Kuta, on the Indonesian island of Bali. Investigators determined fertilizer-based explosives were used in the Bali attack.[13]

In November 2003, an Al Qaeda cell killed 57 and wounded 700 in four bombings in Istanbul, Turkey. Each of the four pickup trucks used was packed with an estimated 5,060 pounds of explosives[14] that were reportedly ammonium nitrate-based.[15]

Ammonium nitrate is not the only potentially dangerous agricultural material. For the February 1993 bombing of the World Trade Center, which killed 6 and injured 1,040, Islamic terrorists constructed a 1,500 pound urea-nitrate bomb.[16] Urea-nitrate is another commonly used, inexpensive commercial fertilizer.

## Federal Legal Controls

Under federal law, the Attorney General is empowered to issue user permits and licenses to import, manufacture, or deal in explosive materials, which are defined at least annually by the Department of Justice.[17] The Attorney General is responsible for issuing the appropriate authorizations after applicants submit the proper information and fees.[18] The Attorney General is also authorized to revoke any permit or license if the user is determined to be in violation of any Department of Justice regulation or U.S. law pertaining to explosives.[19]

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[10] Tony Clark for CNN, *The Worst Terrorist Attack on U.S. Soil: April 19, 1995* (December 30, 1995), *available at* http://www.cnn.com/US/OKC/daily/9512/12-30/index.html.
[11] Spencer S. Hsu & Sari Horwitz, *Truck Bombs Remain Threat Despite Efforts*, Journal – Gazette (August 8,2004), 2004 WLNR 15201499.
[12] CNN, *Traces of Ammonium Nitrate, Fuel Oil Found at Nairobi Bomb Site* (August 14, 1998), *available at* http://www.cnn.com/WORLD/africa/9808/14/embassy.fbi.01/.
[13] Maria Ressa for CNN, *Uncovering Southeast Asia's Jihad Network* (February 26, 2004), *available at* http://archives.cnn.com/2002/WORLD/asiapcf/southeast/10/29/asia.jihad.1/index.html.
[14] CBS News, *Fertilizer Used in Terror Bombs* (April 14, 2004), *available at* http://www.cbsnews.com/stories/2004/04/14/world/printable611898.shtml.
[15] BBC News, *Terror Police probe "Bomb Plot"* (March 31, 2004), available at http://news.bbc.co.uk/go/pr/fr/-/1/hi/england/3584009.stm.
[16] Phil Hirshkorn for CNN, *New York Remembers 1993 WTC Victims* (February 26, 2003), *available at* http://archives.cnn.com/2002/WORLD/asiapcf/southeast/10/29/asia.jihad.1/index.html.
[17] 18 U.S.C. § 841(d); 27 C.F.R. § 555.23.
[18] 18 U.S.C.A. § 843(b). 31A AM-JUR § 9.
[19] 18 U.S.C.A. § 843(d), referring to 18 U.S.C.A. § 842(d). 31A AM-JUR § 9.

The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is the primary body governing the sale, distribution, storage, and use of explosives.[20] Among the ATF's chief responsibilities are regulating interstate and foreign commerce in explosive materials, issuing licenses and permits, and marking plastic explosives.[21]

Federal law defines explosives as any substance or combination of substances which, upon rapid decomposition or combustion, cause an explosion.[22] Generally, the term applies to any chemical compound mixture or device, the primary purpose of which is to function by explosion.[23] The ATF further defines the following categories annually.[24]

- *High Explosives*, such as dynamite, flash powders and bulk salutes, are detonated by blasting caps when unconfined.
- *Low Explosives*, such as black powder, safety fuses, igniter cords, fuse lighters, and display fireworks, ignite when confined.
- *Blasting Agents* include most materials and mixtures consisting of fuel and oxidizer intended for blasting and not otherwise defined as an explosive. Ammonium nitrate-fuel oil mixtures and certain water gels are considered blasting agents.
- *Detonators* include any device containing a detonating charge that is used for initiating detonation in an explosive.
- *Explosive Materials*, for the purpose of federal criminal statutes, means explosives, blasting agents, and detonators.

Pure ammonium nitrate is included on the ATF's list of high explosives, but ammonium nitrate-based fertilizers are not.

Any individual interested in purchasing and using explosives must submit an application, photo identification, and an FBI fingerprint card to the ATF. An applicant may request a limited permit, which allows six purchases and uses over the course of twelve months, a user permit, which allows unlimited purchases over three years, or a user-limited permit, which allows one purchase and use. Licenses and permits generally take 60 to 90 days to process.

In 2002, Congress passed the most recent major amendment to U.S. law on explosives. The Safe Explosives Act transferred supervision of the ATF from the Treasury Department to the Justice Department, and expanded the jurisdictional reach of federal authorities to include all activities "affecting" interstate commerce. This expansion allows the Department of Justice to require permits of all explosive handlers, including those operating solely within one state's borders.[25] The Safe Explosives Act also: requires employers to list employee information on applications for permits, and instructs the ATF to conduct background checks on both employers and

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[20] 27 C.F.R. § 555.
[21] 27 C.F.R. § 555.1.
[22] *Com. v. Bristow, 185 Pa. Super. 448, 138 A.2d 156 (1958).* 31A AM-JUR § 2.
[23] 18 U.S.C.A. § 841(d), referring to 18 U.S.C.A. § 844(d) to (j). 31A AM-JUR § 5.
[24] 27 C.F.R. § 555.202.
[25] Implementation of the Safe Explosives Act, Title XI, Subtitle C of Public Law 107-296, 68 Fed. Reg.13769 (March 20, 2003) (to be codified at 27 C.F.R. pt. 555).

employees; increases ATF inspections; stiffens penalties for not reporting the theft of explosives; and adds to the list of persons prohibited from obtaining explosives.[26]

It is unlawful for:

- Any person to transport, ship, or receive explosive materials in interstate or foreign commerce without a user permit, or receive explosive materials within his state of residence without a limited permit;[27]
- Any person to store any explosive material in a manner not in accordance with regulations by the Attorney General;[28]
- Any person to manufacture or deal in explosive materials without a license;[29]
- Any person to knowingly withhold information or to make any false or fictitious oral or written statement or to furnish or exhibit any false, fictitious, or misrepresented identification for the purpose of obtaining explosive materials or a license, permit, exemption, or relief from disability;[30]
- Licensed importers or domestic manufacturers of explosive materials to fail to identify by marking all explosives for sale or distribution with the identity of the manufacturer and the location, date, and shift of manufacture;[31]
- Any licensee or permit holder to willfully purchase or distribute explosive materials without keeping the records required by the Attorney General or to make false entries in such records;[32]
- Any licensee to knowingly distribute any explosive materials to any person who the distributor has reason to believe will transport the materials to a state where the purchase, possession, transport, or use of explosive materials is prohibited;[33]
- Any licensee or permit holder to fail to report thefts of explosives within 24 hours of discovery;[34]
- Any person to possess any stolen explosives which have at some point been involved in interstate or foreign commerce;[35]
- Any person to knowingly transfer any explosive materials, knowing or having reasonable cause to believe that such explosive materials will be used to commit a crime of violence;[36]
- Any person to knowingly distribute explosive materials to any individual who:
    - is under twenty-one years of age,
    - has been convicted or is under indictment in any court of a crime punishable by imprisonment for a term exceeding one year,
    - is a fugitive from justice,
    - is an unlawful user of or addicted to any controlled substance,

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[26] *Id.*, 13768, 13772, 13773, 13776.
[27] Implementation of the Safe Explosives Act, Title XI, Subtitle C of Public Law 107-296, 68 Fed. Reg.13769 (March 20, 2003) (to be codified at 27 C.F.R. pt. 555).
[28] 18 U.S.C.A. § 842(j). 31A AM-JUR § 174.
[29] 18 U.S.C.A. § 842(a)(1). 31A AM-JUR § 175.
[30] 18 U.S.C.A. § 842(a)(1); 18 U.S.C.A. § 842(a)(2). 31A AM-JUR § 186.
[31] 27 C.F.R. pt. 555.
[32] 18 U.S.C.A. § 842(f); 18 U.S.C.A. § 842(g), referring to 18 U.S.C.A. § 847. 31A AM-JUR § 186.
[33] 18 U.S.C.A. § 842(c). 31A AM-JUR § 186.
[34] Implementation of the Safe Explosives Act, Title XI, Subtitle C of Public Law 107-296, 68 Fed. Reg.13,776 (March 20, 2003) (to be codified at 27 C.F.R. pt. 555).
[35] 18 USCA § 842(h). 31A AM-JUR § 177.
[36] U.S.C.A. § 844(o), referring to 18 U.S.C.A. § 844(h); 18 U.S.C.A. § 924(c)(3), (4). 31A AM-JUR § 185.

  - has been adjudicated a mental defective,
  - is an illegal alien (with limited exceptions),
  - has been dishonorably discharged from the military, or
  - has renounced their United States citizenship;[37]
- Any person to teach the making or use of an explosive or destructive device or to distribute information pertaining to the manufacture or use of such items with the intent that the information be used in furtherance of an activity that constitutes a federal crime of violence;[38]
- Any person, with some exceptions, to possess any plastic explosive that does not contain a detection agent.[39]

Federal law generally exempts from regulations on explosives:

- The use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopeia, or the National Formulary;
- Small arms ammunition and components thereof;
- Commercially manufactured black powder in quantities not to exceed fifty pounds, percussion caps, safety and pyrotechnic fuses, quills, quick and slow matches, and friction primers, intended to be used solely for sporting, recreational, or cultural purposes in antique firearms, or in antique devices; and[40]
- The manufacture, distribution or storage of explosive materials for the military or naval services or other agencies of the United States under the regulation of the military department of the United States; or to establishments owned by, or operated by or on behalf of, the United States.[41]

In addition to the ATF, several other federal agencies regulate the manufacture, transport, use, and trade of explosives. Within the Department of Labor, two primary divisions govern explosive materials. The Occupational Safety and Health Administration (OSHA) has jurisdiction over ensuring the safety of workers who manufacture explosive material[42] and the Mine Safety and Health Administration (MSHA) reinforces safety standards for workers who use explosives in mining.[43]

Two divisions of the Department of Transportation oversee the transportation of explosive materials. The Pipeline and Hazardous Materials Safety Administration (PHMSA) gives approval for interstate transportation of explosives.[44] The Federal Motors Carrier Administration (FMCA) is responsible for transporting and routing of explosive materials.[45]

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[37] 18 U.S.C.A. § 842(d)(1-6); Implementation of the Safe Explosives Act, Title XI, Subtitle C of Public Law 107-296, 68 Fed. Reg. 13,769 - 13,774 (March 20, 2003) (to be codified at 27 C.F.R. pt. 555).
[38] 18 U.S.C.A. § 842(p)(2)(A); 18 U.S.C.A. § 842(p)(2)(B). 31A AM-JUR § 193.
[39] 18 U.S.C.A. § 842(n)(2). 31A AM-JUR § 177.
[40] Black powder, a low-order explosive also known as gunpowder, is sold mainly for the reloading of ammunition and for use in muzzle-loading firearms. Black powder, although used by the Unabomber and in the bombing at the 1996 Atlanta Olympics, accounts for a relatively small number of injuries and deaths and less destruction of property when compared with high explosives[40]. Black powder is also easily detectable by specially trained dogs, and the thick container walls necessary to make black powder bombs effective can be seen by X-ray devices.
[41] 18 U.S.C.A. § 845(a)(2-6). 31A AM-JUR § 198.
[42] 29 C.F.R. pt. 1910.109.
[43] 30 C.F.R. pts. 15, 56, 57, 78, 77; 30 C.F.R. pt. 1910.109.
[44] 49 C.F.R. pts. 106, 107, 110, 171-180.
[45] 49 C.F.R. pt. 397.

The Department of Homeland Security is responsible for ensuring the safety of Americans and their property within the United States. The Transportation Security Administration (TSA) coordinates with the Department of Transportation in ensuring safety and security during transportation of explosives. The Coast Guard has jurisdiction over the transportation of explosive materials in U.S. waters.[46]

The Environmental Protection Agency (EPA) sets environmental standards for manufacturers of explosive materials,[47] ensures safety in the transportation of dangerous and hazardous materials,[48] and regulates the use of substances that may harm the environment.[49]

The Department of Commerce regulates the importation of explosive material.[50]

## International Legal Controls

The only treaty on conventional explosives to which the United States is a State party is the Convention on the Marking of Plastic Explosives for the Purpose of Detection, done at Montreal on March 1, 1991, and entered into force June 21, 1998. The United States and fifty other countries have signed this treaty. The Convention requires nations that produce plastic explosives to mark them at the time of manufacture with a substance to enhance their detectability by commercially available mechanical or canine detectors, and to ensure that controls over the sale, use and disposition of marked and unmarked plastic explosives are implemented.

The agreement defines explosives as "explosive products, commonly known as 'plastic explosives,' including explosives in flexible or elastic sheet form." Each State party must take measures to prohibit and prevent the manufacture, import, and export of unmarked explosives (those that lack detection agents), and to destroy stockpiles of unmarked explosives. The Convention does not establish international criminal provisions for its violation.[51]

Congress passed the Antiterrorism and Effective Death Penalty Act of 1996 to comply with the Convention. The Act changed federal law to define "detection agent" and "plastic explosive" exactly as they are defined in the Convention. It is unlawful to manufacture, import, export, ship, transport, transfer, receive or possess unmarked plastic explosives. Violation of the law is punishable by a fine, up to 10 years in prison, or both. The Act allows the same exceptions to the law that the Convention provides, such as the use of unmarked plastic explosives for duly authorized research purposes.[52]

## State Laws and Regulations

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[46] 33 C.F.R. pts. 6,126; 46 C.F.R., pts. 146-148.
[47] 40 C.F.R. pts. 1500-1517, 1700.
[48] 40 C.F.R. pts. 260-265, 271.
[49] 40 C.F.R. pts. 1-799, 1500-1517, 1700.
[50] 15 C.F.R pts. 700-799.
[51] Convention on the Marking of Plastic Explosives for the Purpose of Detection, March 1, 1991, S. Treaty Doc. No. 103-8
[52] Antiterrorism and Effective Death Penalty Act of 1996, Pub. L. No. 104-132, 110 Stat 1214.

States vary considerably in their guidelines regarding explosives. Almost all states require dealers of explosives to apply for licenses. The 25 most highly regulated states also require all purchasers of explosives to apply for a license from the state:

- California
- Colorado
- Connecticut
- Delaware
- Florida
- Georgia
- Hawaii
- Illinois
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- New Hampshire
- New Jersey
- New York
- Oklahoma
- Oregon
- South Carolina
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin

The middle tier of states require licenses only of those who use explosives industrially, primarily construction and mining blasters, or require sellers of explosives to keep records of transactions to varying degrees of thoroughness:

- Alabama
- Alaska
- Arizona
- Indiana
- Iowa
- Kentucky
- Mississippi
- Montana
- Nebraska
- Nevada
- North Carolina
- North Dakota
- Ohio
- Pennsylvania
- Rhode Island
- South Dakota
- Tennessee
- Texas
- Utah

The least regulated states do not require licenses of those who purchase explosives, nor do they require sellers of explosives to keep records of transactions:

- Arkansas
- Idaho
- Kansas
- Missouri
- New Mexico
- Wyoming

California's certification process appears to be the most stringent in the country: licenses are issued only for the particular purpose requested by the applicant, only for a specific time period, and expire as soon as that purpose is achieved.

The purchase of ammonium nitrate-based fertilizer, which is not included in the federal definition of explosives, is unregulated in 46 states. States require manufacturers of fertilizers to register their product and submit samples, and to report the tonnage of fertilizer sold in the state on a regular basis. A few states include pure ammonium nitrate on their list of defined explosives, but many explicitly exclude from that list ammonium nitrate-based fertilizers. Only in New Jersey, Nevada, South Carolina and Oklahoma is the purchase of ammonium nitrate-based fertilizers regulated. California has pending legislation that would require dealers of ammonium nitrate-based fertilizers to keep the same transaction records required in those four states.

*Summary of the 50 States*

**Alabama**
The state's Fire Marshal regulates the storage, sale and use of explosives.[53] Licensing requirements for using explosives apply to blasters.[54] The state has no laws regarding ammonium nitrate. In *State v. Bankhead Min. Co.*, 279 Ala. 566, ammonium nitrate was found to be a chemical compound of multiple uses, and therefore could not be classified as a fertilizer or an explosive.[55]

**Alaska**
The state Department of Labor and Workforce Development issues certificates of fitness to those who work with explosives in construction projects.[56] The Department of Natural Resources has authority to adopt regulations regarding the use of explosives in surface coal mining operations.[57] The Department of Natural Resources also has authority to regulate fertilizers.[58] Though it is illegal to possess[59] or furnish[60] explosives for criminal purposes, no limitations exist on the individual purchase of explosives or fertilizers. No statutes or administrative code mention ammonium nitrate specifically.

**Arizona**
The state Mine Inspector has authority to prescribe and promulgate rules pertaining to storing, transporting and using explosives and blasting agents in mining operations,[61] and requires those manufacturing, storing, selling, transferring or in any manner disposing of explosives or blasting agents to keep an accurate record of all such transactions.[62] Arizona's administrative code contains numerous prescriptions for how ammonium nitrate should be stored and handled, but none limiting its purchase.

**Arkansas**
Arkansas does not regulate the manufacture, sale, transportation, and possession of explosives. The Director of the Department of Labor establishes minimum standards for the qualifications of those individuals performing blasting,[63] except in surface coal mining operations and seismic operations.[64] The state does not limit the purchase of ammonium nitrate fertilizers.

**California**
Without permission from an issuing authority under the authority of the state Fire Marshal, no one may manufacture, sell, furnish, give away, receive, store, possess, transport or use explosives.[65] A permit shall remain valid only until the time when the act or acts authorized by the permit are performed, and permits do not constitute authorization for the performance of any

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[53] Ala. Code § 36-19
[54] Ala. Code § 8-17-240
[55] *188 So.2d 527 (Ala.1966)*
[56] Alaska Stat. § 08.52.010 et seq.; Alaska Admin. Code tit. 8, § 62.020 et seq.
[57] Alaska Stat. § 27.21.940
[58] Alaska Stat. § 03.05.010
[59] Alaska Stat. § 11.61.240
[60] Alaska Stat. § 11.61.250
[61] Ariz. Rev. Stat. § 27-323
[62] Ariz. Rev. Stat. § 27-321
[63] Ark. Code Ann. § 20-27-1102(a)
[64] Ark. Code Ann. § 20-27-1103
[65] Cal. Health and Safety Code § 12101

act not stipulated in the permit; in no event shall a permit remain valid beyond one year from its date of issuance.[66] Permits are generally not to be issued before a one-week period elapses,[67] and a copy of each permit issued is forwarded to the State Bureau of Criminal Identification and Investigation in Sacramento.[68] State law does not mention ammonium nitrate. However, Assembly Bill 924, introduced on February 18, 2005, would require manufacturers and distributors of ammonium nitrate fertilizer to obtain a license from the Secretary of Food and Agriculture. Licensees would be required to maintain specific information about each sale of ammonium nitrate-based fertilizers.

**Colorado**

To manufacture, sell, purchase, store, transport, or use explosives, a permit from the division of Oil and Public Safety in the state Department of Labor and Employment is required.[69] Applicants must submit fingerprints to the Department, which conducts criminal history record checks.[70] No permit is required for the occasional purchase of explosives for normal agricultural purposes, if the buyer is personally known by the seller.[71] No laws regulate the purchase of ammonium nitrate fertilizers.

**Connecticut**

A license from the Department of Public Safety is required to procure, transport, use, manufacture, keep, store, sell, or deal in explosives.[72] Applicants must submit to a criminal background check. Connecticut's definition of explosives does not include manufactured articles containing explosives in such limited quantity, of such nature or in such packing that it is impossible to produce a simultaneous or a destructive explosion by fire, friction, concussion, percussion or detonator.[73] Fertilizers containing ammonium nitrate meet the exclusionary requirement.

**Delaware**

It is unlawful to purchase, receive or possess explosive materials without obtaining a license from the State Fire Marshal.[74] Criminal background checks for licenses are required. Fertilizers are specifically exempted from the state's definition of explosives.[75]

**Florida**

The state's definition of explosives includes pure ammonium nitrate.[76] Each manufacturer, dealer, distributor, and user of explosives must obtain a license or permit from the state Fire Marshal.[77] Applicants must pass a competency exam.[78] All sellers and users of explosives must keep accurate records of the explosives sold or used.[79] No person may transport explosives into

[66] *Id.*
[67] Cal. Health and Safety Code § 12105.1
[68] Cal. Health and Safety Code § 12105.2
[69] Colo. Rev. Stat.Ann. § 9-7-106(1)
[70] Col. Rev. Stat. Ann. § 9-7-108(2)
[71] Col. Rev. Stat.Ann. § 9-7-106(5)
[72] Conn. Gen. Stat. Ann. § 29-349
[73] Conn. Gen. Stat. Ann. § 29-343
[74] Del. Code Ann. § 7104
[75] Del. Code Ann. § 7102
[76] Fla. Stat. Ann. § 790.001
[77] Fla. Stat. Ann. § 552.091
[78] Fla. Stat. Ann. § 552.093
[79] Fla. Stat. Ann. § 552.111 – 552.112

or within the state without a license or permit.[80] Licensed fertilizer distributors may not distribute to nonlicensees.[81]

**Georgia**
State law lists 227 materials that qualify as explosives, including ammonium nitrate explosive mixtures and ammonium nitrate-fuel oil (ANFO).[82] Persons manufacturing, selling, transporting, using or storing explosives must obtain a license.[83] Fertilizer distributors are required to file a quarterly report of tonnage of fertilizer sold to nonlicensees.[84]

**Hawaii**
It is unlawful to use, store, or deal in explosives without a certificate of fitness from the state Department of Labor and Industrial Relations. Certificates of fitness may be limited to specific explosives or the use of explosives for specific purposes.[85] Hawaii has no statutes, administrative code, or pending legislation that mention ammonium nitrate.

**Idaho**
Aside from laws limiting the sale of explosives to youth and prescribing the marking of explosives,[86] Idaho places no limitations on the purchase of explosives. Pure ammonium nitrate is included in the state's list of explosive substances.[87] Though Idaho has passed many laws concerning fertilizer, none mention or limit the sale of ammonium nitrate-based fertilizers.

**Illinois**
The state's list of explosives does not include ammonium nitrate.[88] State residents must apply for a license to sell, use, dispose of, and purchase explosives.[89] Applicants must submit fingerprints for background checks by the Department of the State Police and must submit to an oral and written examination by the Department of Natural Resources.

**Indiana**
The state's list of regulated explosive materials includes pure ammonium nitrate.[90] Residents must apply to the State Fire Marshal for licenses and continuing education is required for relicensure.[91] Indiana does not regulate the purchase of fertilizer.

**Iowa**
The state's definition of explosives does not include ammonium nitrate. The state Fire Marshal is responsible for issuing commercial licenses for the use of explosives.[92] Training, examination, and certification of blasters is required and blasters must submit a blasting plan.[93] Pending

[80] Fla. Stat. Ann. § 552.12
[81] Fla. Stat. Ann. § 576.021
[82] Ga. Code Ann. § 16-7-81
[83] Ga. Code Ann. § 25-2-4.1
[84] Ga. Code Ann. § 2-12-8
[85] Haw. Rev. Stat. § 396-9
[86] Idaho Code § 39-2101 et seq.
[87] Id. APA § 11.11.01.241
[88] 225 Ill. Comp. Stat. 210/1003
[89] 225 Ill. Comp. Stat. 210/2000
[90] Ind. Code § 35-47.5-3-1
[91] Ind. Code § 35-47.5-4-4.5
[92] Iowa Code § 101A.2
[93] Iowa Code § 207.6

legislation would require sellers to record personal information for every sale of ammonium nitrate-based fertilizers.

**Kansas**
The state fire marshal regulates the keeping, storage, use, sale, handling, transportation and other disposition of explosives.[94] Although all contractors operating in the state must obtain explosive storage site permits before moving, storing or using any explosives or blasting agents at any job site within the state, there are no restrictions on the sale or purchase of explosives.[95]

**Kentucky**
Explosives are not regulated except for their manufacture and use for blasting in mines, which is regulated by the Department of Mines and Minerals.[96] The state has no laws on ammonium nitrate.

**Louisiana**
State law requires a license issued by the Department of Public Safety and Corrections to acquire, sell, possess, store, or engage in the use of explosives.[97] Manufacturer-distributors and dealers must keep accurate accounts of all sales of explosives.[98] Manufacturers and sellers of fertilizer must submit reports indicating the tonnage and kind of fertilizer sold prior to sales.[99]

**Maine**
No one may possess, use, store or transport explosives without a permit.[100] The Commissioner of Public Safety issues permits to individuals who, among other requirements, must maintain liability insurance in an amount not less than $500,000.[101] A criminal background check for permits is required. The state's definition of explosives excludes ammonium nitrate.[102]

**Maryland**
The state's definition of a "destructive device" includes petroleum-soaked ammonium nitrate, and "explosive material" includes ammonium nitrate.[103] The State Fire Prevention Commission regulates the storage, sale, and use of explosives.[104] A license is required to manufacture, sell or possess explosives.[105] Each manufacturer and dealer must keep records of the names and addresses of every buyer, the dates of purchases, and the amounts and descriptions of explosives sold.[106] The state legislature recently repealed legislation authorizing an Explosives Advisory Council composed of explosive experts and members of the public who advised, assisted and recommended explosives regulation to the Department of State Police and reviewed new developments in the explosives industry. The repeal takes effect October 1, 2005. The Maryland

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[94] Kan. Stat. Ann., § 31-133(a)(1)
[95] Kan. Admin. Regs. 22-4-2(a)
[96] Ky. Rev. Stat. Ann. § 351.310
[97] La. Rev. Stat. § 1472.2.(6.1), § 1472.3.A.(1)
[98] La. Rev. Stat. § 1472.5.B
[99] La. Revised Stat. § 1313.C.(2)(a)
[100] Me. Rev. Stat. Ann. tit. 25, § 2471
[101] Me. Rev. Stat. Ann. tit. 25, § 2473
[102] Me. Rev. Stat. Ann. tit. 25, § 2471
[103] Md. Code, Criminal Law, § 4-501
[104] Md. Code, Public Safety, § 6-305
[105] Md. Code, Public Safety, § 11-105
[106] Md. Code, Public Safety, § 11-112

Port Administration may regulate the storage, handling and transportation of explosives in its jurisdiction.[107] The state does not limit the sale of fertilizer.

**Massachusetts**
No person may keep, store, mix, manufacture, use, handle, or sell explosive material without a license granted by the State Fire Marshal, which requires proof of at least $1,000,000 in liability insurance.[108] A criminal background check for permits is required. The state's definition of explosives does not include ammonium nitrate.[109]

**Michigan**
The state's definition of explosives does not include ammonium nitrate.[110] Applications for explosives permits are handled by the Department of the State Police[111] and require a written statement of intention for the use of explosives. Mining explosives permits are issued by the Department of Environmental Quality and require a blasting plan.[112]

**Minnesota**
The Commissioner of Public Safety in the Office of the Fire Marshal distributes licenses and permits to individuals who handle, use, sell, store, or transport explosive devices.[113] Issuing authorities may require a certificate from applicants proving knowledge of safety procedures, use, and handling of explosives. Prior to use, applicants are required to notify local officials.

**Mississippi**
Sellers of explosives must keep accurate records of all purchasers' names and addresses, the quantity of explosives sold and the purposes for which they were bought, and it is unlawful to sell explosives to a person the seller does not know.[114] All sales of explosives must be reported to the county sheriff within 24 hours, and every person transporting explosives into the state must report to the sheriff at the county of entry and tell the sheriff his identity, destination and inventory.[115]

**Missouri**
The state does not regulate the manufacturing, sale, purchase, or transportation of explosives. However, owners and operators of facilities where one hundred pounds or more of explosives are stored shall file reports whenever explosive materials are stored in a particular facility for more than fifteen days and each time explosive materials are relocated to a new site for storage of more than fifteen days' duration.[116] The law also prohibits the storage of more than one day's

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[107] Md. Code, Transportation, § 6-206
[108] Mass. Regs. Code tit. 527, §13.04
[109] Mass. Regs. Code tit. 527, §13.00, 13.04
[110] Mich. Comp. Laws § 29.42
[111] Mich. Comp. Laws § 29.43
[112] Mich. Comp. Laws § 324.63516
[113] Minn. Stat. Ann. § 299F.73
[114] Miss. Code Ann. § 45-13-101
[115] Miss. Code Ann. § 45-13-103; Miss. Code Ann. § 45-13-109
[116] Mo. Ann. Stat. § 292.617.1

supply of explosives by those engaged in mining.[117] There are no limitations on the individual purchase of fertilizer.

**Montana**

Montana only regulates explosives used in construction blasting. No one may engage in the practice of construction blasting unless licensed or under the supervision of a person licensed as a construction blaster by the state Department of Labor and Industry.[118] In order to obtain a license as a construction blaster, an applicant must complete a department-certified training program and have at least two years of experience with construction blasting.[119] Montana's Administrative Code specifies storage requirements for anhydrous ammonia and nitrogen fertilizer solutions, including ammonium nitrate-based fertilizers, but does not limit sales of fertilizer.[120]

**Nebraska**

Permits are issued by the Nebraska State Patrol for the purchase, storage and use of explosive materials only by business enterprises.[121] Applicants must pass a qualifying examination and demonstrate adequate knowledge, training, and experience in the use of explosive materials.[122] Applicants' fingerprints are submitted to the Nebraska State Patrol for a criminal history record check.[123] Permit holders must maintain an accurate inventory of all explosives in his or her possession and maintain records of transfers of explosives to other persons.[124] Permits are required for transportation of explosive materials into this state or within the boundaries of this state.[125]

**Nevada**

Dealers of dynamite, nitroglycerine, gunpowder and other high explosives must keep a record of all sales, showing the purpose for which the explosives sold are to be used and to whom sold.[126] The state Fire Marshal is responsible for issuing certificates of registration for blasting, and applicants must pass a background check and a written or oral test.[127] Nevada has extensive laws prescribing the storage of explosives, particularly ammonium percholate.[128] The Nevada Department of Agriculture requires those who sell ammonium nitrate-based fertilizers to record the name, address and government-issued identification number of each purchaser along with information about every sale.[129]

**New Hampshire**

It is unlawful to purchase, store, or transport, or attempt to purchase, store or transport any high explosive without first obtaining a license from the Director of State Police.[130] A criminal check

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[117] Mo. Ann. Stat. § 293.270
[118] Mont. Code Ann. § 37-72-101 et seq.
[119] Mont. Code Ann. § 37-72-302
[120] Mont. Admin R. 4.12.701 et seq.
[121] Neb. Rev. Stat. § 28-1229(1)
[122] Neb. Rev. Stat. § 28-1229(5)(d)
[123] Neb. Rev. Stat. § 28-1229(5)(e)
[124] Neb. Rev. Stat. § 28-1233(1)
[125] Neb. Rev. Stat. § 28-1235
[126] Nev. Rev. Stat. 476.010
[127] Nev. Admin. Code ch. 477, § 710
[128] Nev. Admin. Code ch. 618, § 5279
[129] Nevada Restricted Fertilizer Guidance (January 19, 2005). Available at http://agri.nv.gov/fdealfaq.pdf.
[130] N.H. Rev. Stat. Ann. § 158:9-a

for licenses is required. Ammonium nitrate is not considered an explosive unless it has been mixed or stored with any substance which, when mixed with ammonium nitrate, creates an explosive.[131]

**New Jersey**

Any person wishing to deliver, give away or otherwise dispose of any explosives, or manufacture, sell, store or transport explosive materials must obtain a permit from the state Department of Labor.[132] A criminal check is required for a blaster's license/permit. The state's definition of explosives is restricted to materials "commonly used or intended for the purpose of producing an explosion."[133] Ammonium nitrate-based fertilizer, while not regulated as an explosive, is sometimes considered a "restricted commercial fertilizer." Restricted commercial fertilizers have been determined by the State Chemist, in consultation with the Domestic Security Preparedness Task Force, as having the potential to be used in a "destructive device."[134] All distributors and manufacturers of such fertilizers must record information on every buyer of potentially dangerous substances and may refuse sale to suspect customers.[135]

**New Mexico**

New Mexico does not regulate the manufacturing, sale, or purchase of explosives. The state does, however, require that explosives be properly marked.[136] Sellers of commercial fertilizer must report sales to the state Department of Agriculture[137] which may issue "stop sale, use or removal" order when it finds the commercial fertilizer is being offered for sale in violation of the law.[138]

**New York**

New York requires every person who purchases, owns, possesses, transports, uses, manufactures, sells, deals in, gives away, or disposes of explosives to obtain a license from the State Department of Labor.[139] Fingerprints and a criminal background check are required of applicants.[140] Ammonium nitrate is not included in the state's definition of explosives. The Port Authority of New York and New Jersey, however, includes ammonium nitrate in its list of dangerous substances regulated under Traffic Regulations.[141]

**North Carolina**

Sellers of explosives must be satisfied with the identity of the purchaser or the person receiving the explosives, and the purchaser or his agent must fill out a written application explaining how the explosives will be used. Sellers must retain a record of the quantity of explosives sold and delivered, the names of all purchasers, and the dates of all sales for 12 months.[142] The state has no laws on ammonium nitrate.

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[131] N.H. Rev. Stat. Ann. § 158:30
[132] N.J. Stat. Ann. § 21:1A-132
[133] N.J. Stat. Ann. § 21:1A-129
[134] N.J. Stat. Ann. §:9-15.3
[135] N.J. Stat. Ann. 4:9-15.43
[136] N.M. Stat. Ann. § 30-7-7
[137] N.M. Stat. Ann. § 76-11-11.
[138] N.M. Stat. Ann. § 76-11-16.
[139] 59 New York Jurisprudence, Second Edition § 11
[140] N.Y. Laws 2003, Ch 164, § 2
[141] N.Y. § 6808, 6831 (McKinney)
[142] N.C. Gen. Stat. § 14-284.1

**North Dakota**
The state Fire Marshal has jurisdiction over rules for storage, use, and sale of explosives.[143] Those who use explosives in mining must be trained and certified by the state.[144]

**Ohio**
The state's definition of explosive devices includes sensitized ammonium nitrate.[145] Permits and licenses for the manufacture, use, and sale of explosives are under the jurisdiction of the sheriff of the county, safety director, or police chief of the municipality.[146] Individuals applying for surface mine blaster certificates must be able to read and write English, have at least one year of experience, and have knowledge of safety precautions.[147] Blasting in construction was banned [148] in 1989.[149]

**Oklahoma**
State law regards mixtures of ammonium nitrate and fuel oil as a blasting agent.[150] The state requires any person who manufactures, stores, uses, or purchases explosives to obtain a permit from the Department of Mines.[151] In addition, any person who manufactures, sells, transports for hire, or stores for resale explosives must obtain a permit from the State Fire Marshal.[152] However, the State Fire Marshal shall waive the state permit requirement where a valid federal license or permit has been issued.[153] Any person who wishes to purchase, receive or obtain explosives must furnish to the seller a statement of intended use.[154] An administrative rule requires buyers of ammonium nitrate to show identification and sellers to keep records of all sales, and permits sellers to refuse to sell ammonium nitrate under suspicious circumstances.[155]

**Oregon**
A person may not possess an explosive in Oregon without a valid certificate of possession issued by the state Fire Marshal, or a manufacturer's or dealer's license from the Bureau of Alcohol, Tobacco and Firearms.[156] Certificates are only issued by the state Fire Marshal after the completion of a criminal background check, which includes the submission of fingerprints to the FBI.[157] The state does not regulate purchases of fertilizers.

**Pennsylvania**
Pennsylvania requires permits for the sale, storage and most uses of explosives, but not by agricultural users.[158] The State Department of Environmental Protection does not conduct its

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[143] N.D. Cent. Code 18-01-33
[144] N.D. Cent. Code 38-14.1-02
[145] Ohio Rev. Code Ann. § 2923.11
[146] Ohio Rev. Code Ann. § 2923.17
[147] Ohio Rev. Code Ann. § 1561.20
[148] Ohio Rev. Code Ann. § 715.60
[149] *Northeast Ohio Regional Sewer Dist. v. Brooklyn 64 Ohio App.3d 57, 580 N.E.2d 796*
[150] Okla. Admin. Code § 460:25-1-5.
[151] Okla. Stat.Ann. tit. 63 § §123.2.A , 123.2A.A
[152] Okla. Stat.Ann. tit. 63 § 124.3.A
[153] Okla. Stat.Ann. tit. 63 § 124.3.A
[154] Okla. Stat.Ann. tit. 63 § 124.3.C
[155] Okla. Admin. Code § 35:30-29-37.1
[156] Or. Rev. Stat. § 480.210
[157] Or. Rev. Stat. § 480.235
[158] Pa. Stat. Ann. tit. 73 § 159

own background checks of permit applicants but does reference ATF checks. Ammonium nitrate is not regulated as an explosive.

**Rhode Island**
Rhode Island requires permits for any person possessing or having explosives under his or her control.[159] The state Fire Marshal is responsible for issuing permits. The state has not codified a definition for the term "explosives," and does not regulate ammonium nitrate.[160]

**South Carolina**
All persons who acquire, sell, possess, store or engage in the use of explosives must obtain a license or permit from the state's Fire Marshal.[161] Explosives dealers must keep accurate records of all inventories and sales of explosives.[162] Ammonium nitrate-based fertilizers are considered restricted fertilizers, and sellers must record personal information about every purchaser.[163]

**South Dakota**
It is unlawful to sell explosives or dynamite unless the buyer is known by the seller or the buyer has been introduced to the seller by someone the seller knows.[164] The seller must keep records regarding sale, quantity, and use. The state Fire Marshal has jurisdiction.[165]

**Tennessee**
The state Fire Marshal regulates explosives,[166] except those used for blasting, which are regulated by the Department of Commerce and Insurance.[167] Fertilizer distributors are required to keep records for three years.[168] The state has no laws on ammonium nitrate.

**Texas**
The Texas explosives law applies only to the four counties in the state with a population of one million or more.[169] The Commissioners Courts in those counties may authorize their county sheriffs to issue and enforce rules regulating the production, distribution, transport, transfer, use, and possession of an explosive,[170] but may not adopt a rule that authorizes the county fire marshal to regulate the transportation of explosives if the point of origin and the destination are outside the county.[171] Rules proposed by the county fire marshal must include the requirement that a person obtain a permit from the county fire marshal before the person may produce, distribute, transport, use, or possess an explosive.[172] Persons who produce or transfer explosives are required to keep records.[173]

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[159] R.I. Gen. Laws § 23-28.28-2
[160] R.I. Gen. Laws § 23-28.28-1
[161] S.C. Code Ann. § 23-36-40
[162] S.C. Code Ann. § 23-36-60
[163] S.C. Code Ann. § 46-25-210
[164] S.D. Codified Laws § 34-36-2
[165] S.D. Codified Laws § 34-36-3
[166] Tenn. Code Ann. § 68-102-113
[167] Tenn. Code Ann. § 68-105
[168] Tenn. Code Ann. § 43-11-106
[169] Tex. Local Government Code Ann. § 235.001.(a)
[170] 7 Tex. Jur. Pl. & Pr. Forms 2d § 114:2
[171] Tex. Local Government Code Ann. § 235.003.(b).(1)
[172] Tex. Local Government Code Ann. § 235.003.(c).(1)
[173] Tex. Local Government Code Ann. Code § 235.003.(c).(5)

**Utah**
Included in Utah's definition of an "explosive, chemical or incendiary device" are ammonium nitrate-fuel oil mixtures.[174] In 2002, Utah added to its criminal code a section on weapons of mass destruction which prescribes penalties for use but not restrictions on the purchase of explosives.[175] Only blasters are required to obtain certification prior to the use of explosives. The state Department of Natural Resources provides strict guidelines for the training, examination and certification of blasters.[176]

**Vermont**
Vermont requires any person wishing to possess, purchase, store, use, transport, give, transfer or sell explosives to first receive a license from the Commissioner of Public Safety.[177] Vermont conducts criminal background checks before issuing licenses for explosives. Ammonium nitrate is not regulated as an explosive.[178]

**Virginia**
The Board of Housing and Community Development, under the Statewide Fire Prevention Code, promulgates regulations for the manufacturing, handling, storage, sale and use of explosives.[179] The Board issues annual permits to persons and businesses dealing with explosives and conducts criminal background checks on applicants.[180] Any person selling explosives must keep records of the types and quantities of all explosives sold, the names and addresses of all purchasers, and the dates of all sales.[181] No state laws mention ammonium nitrate.

**Washington**
The state Department of Labor and Industries has authority to issue licenses for users of explosives.[182] Applicants must demonstrate that they are sufficiently experienced in the use of explosives.[183] Fingerprints and background checks are required of every applicant.[184] The state does not regulate the purchase of fertilizers.

**West Virginia**
Permits and licenses for explosive materials are issued by the state Fire Marshal.[185] The Office of Explosives and Blasting within the Division of Environmental Protection has jurisdiction over the use of explosives in mining[186] and is responsible for education, training, and certification of all mining blasters. Blasters are required to submit a written notice of explosive activities to local government and nearby owners and occupants. Ammonium nitrate is not included in the state's definition of explosive materials.

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[174] Utah Code Ann. § 76-10-306
[175] Utah Code Ann. § 76-10-401
[176] Utah Admin. Code R645-105
[177] Vt. Stat.Ann. tit. 20 § 3072
[178] Vt. Stat.Ann. tit. 13 § 1603
[179] Va. Code Ann. § 27-97
[180] Va. Code Ann. § 27-97.2
[181] Va. Code Ann. § 59.1-138
[182] Wash. Rev. Code § 70.74.380
[183] Wash. Rev. Code § 70.74.135
[184] Wash. Rev. Code § 70.74.360
[185] W. Va. Code § 29-3-12
[186] W. Va. Code § 22-31-1

**Wisconsin**
The state's definition of explosives does not include ammonium nitrate. Applications for the use, storage, and purchase of explosives must be submitted to the Department of Commerce's Safety and Buildings Division, and permits must be presented to law enforcement or the fire department two days before use.[187] Users and possessors of explosives must also have a federal explosives license. All blasters, welders, and inspectors who use explosives must be certified by the Department of Commerce.[188]

**Wyoming**
Wyoming does not regulate the sale, manufacturing, transportation, and use of explosives. However, the state imposes storage requirements.[189]

## Courses of Action

The sale of ammonium nitrate-based fertilizer is not monitored by the federal government or the vast majority of states because it is not included in the federal definition of "explosives." To lower the risk of domestic terrorist attacks using fertilizer-based explosive materials, the federal government may take one or a combination of three courses of action.

*1. Ammonium Nitrate Security Act*

Rep. Maurice Hinchey of New York and co-sponsors John Conyers, Jr. of Michigan and Edward Markey of Massachusetts have introduced H.R. 1389, the "Ammonium Nitrate Security Act," which would designate ammonium nitrate as an explosive under 18 U.S.C. § 841. The bill would make it unlawful for any person to import, manufacture, receive or deal in ammonium nitrate compound materials without a license. The Attorney General would be responsible for promulgating regulations regarding the storage of ammonium nitrate compounds. The bill was introduced on March 17, 2005 and has been referred to the Subcommittee on Crime, Terrorism, and Homeland Security of the Committee on the Judiciary.

Including ammonium nitrate in the list of federally defined explosives would help prevent terrorists from easily acquiring the material. Farmers, however, would then be required to submit applications to the Department of Justice and undergo background investigations, which would likely increase the administrative burden on the ATF and agricultural workers.

*2. Implement Oklahoma and New Jersey legal controls at the federal level*

The laws governing sales of ammonium nitrate-based fertilizers in Oklahoma and New Jersey are more stringent than existing federal requirements. In Oklahoma and New Jersey, anyone who sells ammonium nitrate-based fertilizer is required to record the date of sale, quantity purchased, driver's license number or other photo identification, name, address and phone number of every purchaser, and records must be kept. Retailers have the right to refuse to sell ammonium nitrate-based fertilizer out of season, in unusual quantities or under other suspect purchase patterns.[190]

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[187] Wis. Stat. § 167.10
[188] Wis. Stat. § 101.19
[189] Wyo. Stat. Ann. § 30-2-604(c)
[190] Okla. Reg. 35:30-29-37.1; Email from Larry Rudebusch, Oklahoma Department of Agriculture, to Yuta Maeda (June 7, 2005).

Implementation of these legal controls at the federal level would require fertilizer sellers to keep substantially better records than are currently required, without significantly increasing regulatory costs to the government. Though improved record-keeping alone might deter terrorists from purchasing explosive materials legally, the record-keeping requirement would be more effective in deterring terrorism if the ATF also monitored records and investigated suspicious transactions. However, monitoring would likely increase regulatory costs significantly.

*3. Technology-Based Solutions*

Specialty Fertilizer Products, a company based in Belton, Missouri, developed a polymer coating that may prevent granules in ammonium nitrate fertilizer from absorbing fuel oil. The company claims the coating prevents hydrocarbons from infiltrating ammonium nitrate, making it more difficult for ammonium nitrate-based fertilizers to be used in bombs. The coating dissolves in water and soil and reportedly does not affect ammonium nitrate's functionality as a fertilizer.[191] Specialty Fertilizer Products has applied for U.S. and international patents for the technology.[192] The potential cost of the technology is a drawback.

The European Union lowers the risk of terrorist attacks using ammonium nitrate-based explosives by regulating the formulation of fertilizer. EU rules require that ammonium nitrate fertilizers with more than 28 percent nitrogen be produced with large, dense granules to prevent them from absorbing diesel fuel. While reducing the quantity of nitrogen can help reduce the fertilizer's potency in bombs, limiting the amount of nitrogen may also undermine the fertilizer's agricultural value.

## Conclusion

Federal and state legal controls provide a strong framework for preventing terrorists from acquiring military-style explosives, but do not adequately oversee purchases of ammonium nitrate-based fertilizer. The federal government does not regulate ammonium nitrate fertilizers and only four states require sellers to record customer information.

Including ammonium nitrate in the federal list of "explosives," adopting Oklahoma and New Jersey legal controls at the federal level, or promoting technology that reduces the explosiveness of nitrates would help close the regulatory loophole which at present allows terrorists to purchase explosive materials legally. The burden of ensuring that explosive materials stay out of the hands of terrorists would then fall on state and federal law enforcement.

Given their resourcefulness, terrorists would likely then turn to other explosive materials. In Europe, where military-style explosives are more readily available than ammonium nitrate-based fertilizers, terrorists have used military-style explosives. In Asia and the United States, where ammonium nitrate-based fertilizers are more easily obtained than military-style explosives, terrorists have used fertilizer-based explosives. Adaptive security measures, vigilant law

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[191] *Coating May Thwart Fertilizer Bombs*, Green Markets 28, 13 (March 29, 2004), available at http://www.specialtyfertilizer.com.

[192] Anil Ananthaswamy, *Making Bomb-Building Harder for Terrorists*, New Scientist (March 20, 2004), *available at* 2004 WLNR 3360.

enforcement and quick-responding legislation will continue to be important in safeguarding the U.S. homeland.

## Bibliography

Anil Ananthaswamy, *Making Bomb-Building Harder for Terrorists*, New Scientist (March 20, 2004), *available at* 2004 WLNR 3360.

BBC News, *High Explosives "Missing in Iraq"* (October 26, 2004), *available at* http://news.bbc.co.uk/1/hi/world/middle_east/3950493.stm

BBC News, *Lessons from Lockerbie* (December 21, 1998), *available at* http://news.bbc.co.uk/1/hi/special_report/1998/12/98/lockerbie/235632.stm.

BBC News, *Terror Police probe "Bomb Plot"* (March 31, 2004), *available at* http://news.bbc.co.uk/go/pr/fr/-/1/hi/england/3584009.stm.

CBS News, *Fertilizer Used in Terror Bombs* (April 14, 2004), *available at* http://www.cbsnews.com/stories/2004/04/14/world/printable611898.shtml.

Tony Clark for CNN, *The Worst Terrorist Attack on U.S. Soil: April 19, 1995* (December 30, 1995), *available at* http://www.cnn.com/US/OKC/daily/9512/12-30/index.html.

CNN, *Bombs Were Spanish-Made Explosives* (March 13, 2004), *available at* http://www.cnn.com/2004/WORLD/europe/03/12/spain.blasts/index.html

CNN, *C-4 Explosive Used in USS Cole Attack* (November 1, 2000), *available at* http://archives.cnn.com/2000/US/11/01/cole.investigation/.

CNN, *C-4 Quantity May Be Clue in USS Cole Bombing* (November 3, 2000), *available at* http://archives.cnn.com/2000/US/11/03/c-4.cole/.

CNN, *Flight Forced To Land; Explosives In Shoes Suspected* (December 23, 2001), *available at* http://archives.cnn.com/2001/US/12/22/plane.diverted/index.html.

CNN, *Suspected Madrid Bombing Ringleader Killed* (April 4, 2004), *available at* http://edition.cnn.com/2004/WORLD/europe/04/04/spain.bombings/.

CNN, *Traces of Ammonium Nitrate, Fuel Oil Found at Nairobi Bomb Site* (August 14,1998), *available at* http://www.cnn.com/WORLD/africa/9808/14/embassy.fbi.01/.

*Coating May Thwart Fertilizer Bombs*, Green Markets Fertilizer Market Intelligence Weekly 28, 13 (March 29, 2004), *available at* http://www.specialtyfertilizer.com/media.asp.

Phil Hirshkorn for CNN, *New York Remembers 1993 WTC Victims* (February 26, 2003), *available at* http://archives.cnn.com/2002/WORLD/asiapcf/southeast/10/29/asia.jihad.1/index.html.

Spencer S. Hsu & Sari Horwitz, *Truck Bombs Remain Threat Despite Efforts*, Journal – Gazette (August 8,2004), 2004 WLNR 15201499.

Institute of Makers of Explosives, State Explosives License/Permit and Fee Directory, *available at* http://www.ime.org/site/statepermitform.asp.

Lucas D. Martin. *Explosions and Explosives*. 31A AmJur 2nd 374 et seq. (2004).

Edwin P. Przybylowicz, Opening statement to National Research Council on report entitled *Black and Smokeless Powders: Technologies for Finding Bombs and the Bomb Maker*, October 8, 1998.

Maria Ressa for CNN, *Uncovering Southeast Asia's Jihad Network* (February 26, 2004), *available at* http://archives.cnn.com/2002/WORLD/asiapcf/southeast/10/29/asia.jihad.1/index.html.

Sydney Morning Herald, *Feud May Hinder Madrid Bombing Investigation* (March 19, 2004), *available at* http://www.smh.com.au/articles/2004/03/18/1079199367607.html.

Rodney Wallis, Lockerbie: The Story and the Lessons 43 (Praeger 2001).

Mr. LANGEVIN. Since the time of the report, New York, California, and Michigan, have passed ammonium nitrate laws of their own.

I look forward to hearing from Mr. McMahon, New York's homeland security director, how the rollout of New York's law is going; and I understand that it took effect on November 30th.

While I commend these States for taking the initiative, I cannot help but think that the job of securing ammonium nitrate should be a Federal concern. Specifically, I believe it could be a Department of Homeland Security concern. It is my understanding that the legislation that will soon be considered in the committee, H.R. 3197, puts the Department in charge of this effort to ensure that ammonium nitrate is still available to farmers, even as we try to keep it away from terrorists. I think that is important.

I commend Ranking Member Thompson as well as Mr. Weldon for authoring this legislation. I certainly look forward to hearing the testimony of our witnesses.

Thank you, Mr. Chairman. I yield back.

Mr. LINDER. Thank you.

The Chair will now recognize the gentleman from Pennsylvania for an introduction.

Mr. WELDON. I thank the distinguished chairman and ranking member for this hearing and mark-up.

It gives me great pleasure to introduce a constituent of mine who actually brought this issue in legislative form to me. It is rare that an industry group brings an issue to Congress for regulation. In this case, it was an industry who did exactly that.

I have a special interest in this issue, because a year after the Murrah Building bombing I chaired a hearing where the lead witness was Chief Morris. Chief morris is the fire chief of Oklahoma City and a personal friend of mine, and Chief Morris give us the lessons that he learned and the need for us to support people like the Oklahoma City Fire Department to respond to disasters like the one that occurred with the Murrah Building.

So I was very happy when Tip O'Neill came to me and said, Curt, we have got an area that the industry will support, an issue that needs to be dealt with at the Federal level. Tip is a personal friend of mine. He is an international fertilizer business leader, a member of the Fertilizer Institute. He is a Wharton School grad from the University of Pennsylvania and is also a graduate and was an instructor for the U.S. Army Artillery Officers Candidate School, and he served as executive officer of an artillery battery in Vietnam.

Tip is a distinguished American, in my opinion hero and role model. And so, Tip, I want to thank you personally and let you know that we are pleased that you brought this to our attention; and I know with John's leadership and Bennie's support and Jim's support, we will move this legislation quickly in the Congress.

Thank you.

Mr. LINDER. Thank you.

Our guests today are Dr. Jimmie Oxley, a professor of Chemistry at the University of Rhode Island and a recognized expert in explosives. She has worked with the FBI simulating the 1993 actions. I want to thank Professor Oxley.

Mr. James McMahon is the Director of the New York State Office of Homeland Security, which was created after the attacks of September 11th and charged with coordinating and enhancing anti-terrorist efforts.

Gary Black is President of Georgia Agribusiness Council, the State's trade association for the entire food and fiber industry. He also serves as the Chairman of the Economic Development Committee on the Governor's Rural Development Council. He is also a friend of too many years and hopefully will be the next commissioner of agriculture in Georgia a year from today.

Mr. William O'Neill, Tip O'Neill, a name we well know, is a member of the Agriculture Retailers Association Board of Directors and President of International Raw Materials Limited in Pennsylvania.

Carl Wallace is a Plant Manager of Terra Mississippi Nitrogen, Inc. He is testifying on behalf of The Fertilizer Institute. Thank you, Mr. Wallace.

Mr. LINDER. Dr. Oxley— Ms. Oxley, please proceed.

**STATEMENT OF DR. JIMMIE C. OXLEY**

Ms. OXLEY. Thank you for that kind introduction and for the opportunity to speak to you today. I am a Professor of Chemistry at the University of Rhode Island, and I have been working with explosives for almost 20 years, starting with ammonium nitrate, and that is one of the few that I have been able to study through detonations on the ton scale.

Let me make a few remarks about explosives. One of the hardest problems I have is looking at a chemical and predicting whether it will be explosive or not. The requirements to be an explosive is that the material must release gas and heat very rapidly when initiated. It is that "very rapidly" that is hard to predict.

DOT has regulations that say if a material has certain groups like NO2 in it and releases a certain amount of heat, then you must go through Series 1 testing. Series 1 testing is now codified in a U.N. book on how to do the testing. But because you cannot make tons of a new material safely, you test on a couple of pounds scale and therefore many materials pass on the pound scale that would not pass on the ton scale. That is simply a fact. The ammonium nitrate test is not a nonexplosive.

Now in terms of this legislation, I think we need to consider availability. Terrorists use the material that is available. In the U.S. and in Ireland, ammonium nitrate is available. Many other parts of the world, for example, Israel, where solid ammonium nitrate is not allowed for sale, the terrorists use urea nitrate; and indeed in World Trade 1, in 1993, you saw urea nitrate used. You saw the millennium bomber in 1999 attempt to use urea nitrate bombs. Shining Path in Peru, urea nitrate. Bali bomb, sodium chlorate. It depends on the availability in the region.

So one of my recommendations to you is if you stop and restrict ammonium nitrate, think ahead to where the terrorists and criminals are going to be going next. By thinking ahead to that, I mean, think about materials that are available in large quantities. We are not worried about small bombs. Indeed, materials like ammonium nitrate for fuel oil or ammonium nitrate sugar, which is what the

Irish Republican Army was using, are so insensitive that you really cannot make small bombs effectively with them.

People do not make briefcase bombs with ANFO. They use military explosives for that. They make truck or car bombs. So you are interested in ton scale.

I suggest that on the legislation you have a lower quantity limit simply to facilitate seeing the data of what you are really interested in, which is where thousands of pounds are going, or hundreds of pounds. But certainly you are not interested in the pound scale on this material. It would take an incredible effort to make any kind of effective bomb.

The British in their legislation have written one ton. Their legislation governs one ton or more for straight ammonium nitrate and for the 28 percent of regulated materials, 50 ton. So that is how they are handling quantity.

And while I mention that, I should suggest that consulting the international arena that is also dealing with this project would be worthwhile. I have been working with the British on their inerting project since 1995.

In mentioning the problem with testing, I am certainly not suggesting that we have to test all materials on the one-ton scale, but what we need to do is to find some methodology that allows us to tell on the small scale what is happening on the large scale.

One of the stories I like to tell comes from World War II where a famous chemist said, give me enough peanut butter, and I will blow up the world. And I like to add to that, but Skippy never funded that research. His point was, size matters. And that is important.

The last comment I understand has been fixed in markup, is to make sure that your regulation is exempting explosive grade ammonium nitrate, because that is already more strictly regulated at the present time. Thank you.

Mr. LINDER. Thank you very much, Dr. Oxley.

[The statement of Ms. Oxley follows:]

PREPARED STATEMENT OF DR. JIMMIE C. OXLEY

ABOUT THE AUTHOR

Dr. Oxley is Professor of Chemistry at the University of Rhode Island. Her field of research is the study of explosives and other energetic materials. She has studied the behavior of most explosives, but ammonium nitrate (AN) she has examined from the milligram to the ton scale. Dr. Oxley has worked with various military laboratories and law enforcement agencies in the U.S. Over the last decade, she has worked with the British Forensic Explosive Laboratory (dstl)[1] on projects ranging from attempts to inert ammonium nitrate to those examining ways to enhance its explosive potential.

GENERAL COMMENTS ON CHEMICAL EXPLOSIVITY

For a chemical to be an explosive it must undergo a rapid, self-contained, chemical reaction that releases energy and heat. Most explosives achieve this by oxidation. Oxidation produces heat and gas, generally carbon dioxide or monoxide and water. The detonation gases do the work of an explosive. Explosive power comes from the rapidity of the reaction that supports the detonation wave. Although burning is also oxidation resulting in heat and gas, the reaction is too slow to create a detonation wave. Explosives can sustain rapid oxidation because they contain their own oxygen—either as part of the molecule, as in military explosives (TNT, RDX,

[1] dstl is a British government at Fort Halsed—Defense Science and Technology Laboratory.

PETN)[2] or in intimate mixtures of oxidizers and fuels, as in composite explosives such as ammonium nitrate (AN) with fuel oil (FO).

The number of potential oxidizers for use in composite explosives is large, but practical considerations, i.e. availability, limit the potential threat. The number of potential fuels, however, is nearly limitless—combustible non-explosives, e.g. rosin, sulfur, charcoal, coal, flour, sugar, oil, paraffin as well as fuels that are explosive in their own right, e,g, nitromethane and hydrazine. To date terrorists have used fuel oil (ANFO) or icing sugar (AN/S) in combination with AN.

While chemical make up is important, the configuration of the explosive device is also critical. Rapid energy release is necessary to "support" the detonation front, much like a piston; therefore, the configuration of the chemical must be such that the wave is not quenched by dissipation at the edges of the device.[3] The concept of "critical diameter" addresses the limit where the explosive charge is too small to support a detonation wave. Thus, 200g of a military explosive in a cylindrical configuration is probably detonable; but the same amount of that material sprinkled across a table top is probably not.

Most military and composite explosives require a detonator, made of highly sensitive explosive, to initiate a detonation. In addition, composite explosives, being particularly insensitive, often require a booster and a detonator to initiate.[4] In the past, these requirements restricted who could make explosive devices to those who could acquire detonators and boosters by theft or good black-market contacts. Nowadays, most terrorists and some teenagers are aware that the solid peroxide explosives can be readily used in this capacity.

CONCLUSIONS AND RECOMMENDATIONS

**1. Availability of a material is a major factor in its use by terrorists.** Creating a bomb from military explosives requires theft of the explosive; black-market connections to purchase the explosive, or a skilled synthetic chemist and lab facility. Composite explosives require as little as stirring the oxidizer and fuel together. Either type of bomb requires acquisition of detonators, and composite explosives usually require boosters, as well. The availability of all these factors dictates the nature of the explosive device.

Fuels are ubiquitous, and oxidizers are widely available, having major roles in purification and bleaching. It is likely that a number of oxidizers, on a sufficiently large-scale, could be formulated into composite explosives. The terrorist choice is, to a large degree, governed by regional availability.

Terrorist use of ammonium nitrate (AN) began in the bombing campaign of the Provisional Irish Republican Army (PIRA) (1969 to 1994). During that period there were 14,000 bombing incidents, most involving commercial explosives or sodium chlorate/nitrobenzene. At the peak of the campaign in the early 1970's, the British government issued a ban on the sale of chlorate, nitrobenzene, and pure AN in Northern Ireland. Nevertheless, large AN fertilizer bombs were used in the City of London. Approximately 1000 pounds were used at St Mary le Axe (April 1992) and about 3000 pound at Bishops Gate (April 1993). In other countries, AN has been used less frequently in terrorist bombings; a notable exception were the African embassy bombings (Aug. 7, 1998). In the United States (U.S.) about 18 billion pounds of AN are produced annually. Of that, about 5 billion pounds are made and used for commercial explosives; the rest goes to the fertilizer market. Because the preparation of AN explosives is straightforward and well-known and because the bombing of the Murrah Federal building (Oklahoma City, April 1995) was devastating, the U.S. followed the British in funding research attempting to desensitize AN. No out-

[2] TNT 2,4,6-trinitrotoluene; AN ammonium nitrate; PETN pentaerythritol tetranitrate; HMX octahydro-1,3,5,7,-tetranitro-1,3,4,5-tetrazocine; RDX hexahydro-1,3,5-trinitro-s-triazine; HMTD hexamethylene triperoxide diamine; TATP triacetone triperoxide. RDX is the active ingredient in C4; PETN is the active ingredient in sheet explosive and most detonating cord.

[3] A shock wave traveling through an explosive charge will be reflected at the edges of the charge where it hits a high-density region (much like water hitting the wall of a swimming pool). The reflected waves (rarefaction waves) degrade the shock wave, so that at such edges the wave is slowed and an overall curvature of the wave develops. If the diameter of the explosive is narrow, the rarefaction waves may be sufficient to kill the shock wave. The minimum diameter at which an explosive can support detonation is termed the "critical diameter."

[4] To detonate an explosive charge, a detonator containing a "primary" explosive, sensitive to mild stimulation (impact, friction, heat), is used to create a shock wave. This shock wave is directed into the "secondary" explosive, the main charge. In military devices the secondary explosive (e.g. TNT, RDX, HMX, PETN or formulations thereof) is sufficiently insensitive that it can be initiated only by such a shock wave. Most AN formulations are even more insensitive than military explosives. They require an amplification of the shock wave from the detonator; thus, a booster, a secondary explosive, is placed between the detonator and the AN charge.

standing successes have been reported from that effort though, at a modest level, research continues.

In Israel, where sales of solid AN are prohibited, rather than evaporate the water from commercially available AN solution, terrorists have chosen to use urea nitrate. For a number of years, urea nitrate has been a favorite of Arabic terrorists. It was used in the bombing of the World Trade Center (Feb. 1993). Urea intended to be made into urea nitrate was brought across the U.S.-Canadian border by the would-be millennium bomber Ahmed Ressam. The Shining Path used urea nitrate so frequently in bombings that in 1992 sales of urea were banned in Peru.

Potassium chlorate, like AN, is one of the few oxidizers readily available in bulk. In the U.S. 1.2 billion pounds of chlorate salt are used annually by the pulp and paper industry and agriculture. Before AN became the oxidizer of choice in large charges, chlorate was used. Replaced by AN for large devices, it continued to be recommended in the "do-it-yourself" literature for use in small, anti-personnel devices. The Bali bombing (Oct. 12, 2002) once again demonstrated its explosive potential on a large-scale.

Dozens of peroxide compounds are used as free-radical initiators by the polymer industry or in bleaching processes. Although a degree of hazard is associated with the handling of most peroxides, TATP and HMTD are unusual in that their three peroxide functionalities give them explosive potential. TATP has about 88%, and HMTD, about 60% of TNT blast strength.[5] The unusual danger in these peroxides is not their blast strength; it is their ease of initiation (due to the peroxide linkage) and the ease with which terrorists have acquired and used the materials for their synthesis. Richard Reid, the would-be shoe bomber, intended to use TATP to initiate a PETN charge (Dec. 2001). HMTD was prepared and carried into the U.S. by Ahmed Ressam with the intention of using it to initiate urea nitrate bombs (Dec. 1999). Peroxide explosives have also been used as the main charge (e.g. the London bombings of July 2005 and countless suicide vests and car bombs in Israel). These solid peroxides require a special degree of skill to synthesize successfully and safely. In contrast, concentrated hydrogen peroxide can be used without synthesis. The aborted bombing in Karachi (Mar. 15, 2004) suggest that terrorists are well aware of its potential.

Recommendation: **There should be a worldwide survey of availability of oxidizers, and methods of tracking purchase and transport of large quantities of oxidizers should be developed.** Such information would highlight unusual patterns of activity and aid in predicting and preventing incidents.

**2. Only large-quantities of oxidizer need be considered a threat.**

Because AN formulations tend to be insensitive a fair amount is required to support detonation.[3] Briefcase bombs of ANFO have not been used, rather AN is formulated into effective car or truck bombs. To make an AN-based device, the formulator must have large quantities of AN and also means to initiate and boost it. It is wasted effort and masks the important data to track every small sale of AN. The British in their various regulations[6] have addressed the quantity issue in terms of "sufficient material to have an explosive effect" or in quantities greater than "1 tonne."

Recommendation: **There should be a lower limit on the amount of oxidizer of concern in this legislation.** Not only does it require Herculean effort to detonate AN on a small-scale, but in the U.S. the widespread availability of smokeless and black powders makes them more likely candidates for small bomb construction.

**3. Tracking purchasers of bulk oxidizer is a modest step toward restricting illegitimate use.** Countermeasures are obvious. Credit card companies already have a start on the problem of fraudulent use.

Recommendation: **Require credit card purchase for large quantities (e.g. 1 ton) of oxidizer.** This makes use of some of the built-in checks and information found in credit cards.

**4. International collaboration should be sought.**

Recommendation: **The British have faced a serious AN threat for over two decades. Open dialog between all levels working on this problem.**

**5. Consider other potential threat materials.** Once one material becomes harder to obtain, others may be substituted.

Recommendation: **Consider the explosive potential of large quantities of oxidizers and other energetic, non-explosives. Develop better methods to**

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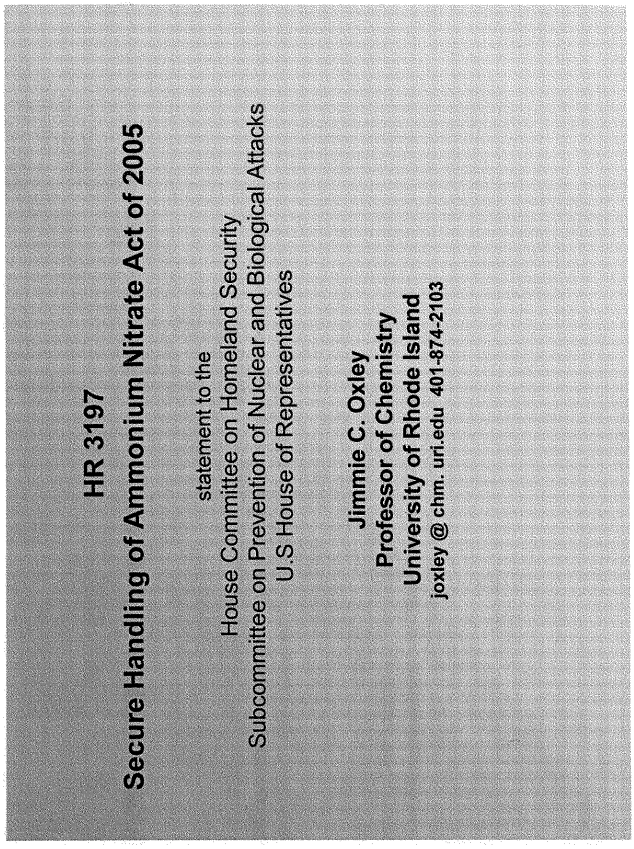
[5] "TNT equivalence" is a rough method of comparing explosive power. Often, it is obtained by comparing the blast pressure of an explosive charge to that of the same amount of TNT with all other factors being held equal.

[6] See documents at Internet site http://www.hse.gov.uk/explosives/ammonium.

**indicate potential explosivity of large quantities.** The Department of Transportation (DOT) Test Series 1 is used to classify chemicals as explosive or non-explosive for purposes of transportation.[7] However, the DOT test series uses no more than 2 pounds of the candidate material. Tested on that scale, AN and other materials pass as non-explosives. Tested on a larger scale, some detonate. In general, materials which require ton-quantities to detonate do so at low (30–40%) TNT equivalencies.[5] Nevertheless, many such chemicals with one third TNT equivalence of 3000 tons is 1 kiloton TNT equivalence.

**6. Exempt explosive-grade AN from this legislation.** Some grades of AN are classified as explosives under DOT regulations because of their specific chemical and physical properties.

Recommendation: **The bill needs a clause to specify that any grades of AN that are classified as explosives under DOT regulations will continue to be controlled under the existing and stricter explosives regulations** rather than this new law aimed at control of fertilizer-grade AN.Folio

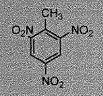



[7] "Recommendation on the Transport of Dangerous Goods: Manual of Tests and Criteria," 3rd ed. United Nations, N.Y. 1999.

# Properties of a Chemical Explosive

Explosives undergo oxidation to create heat, light and gas.

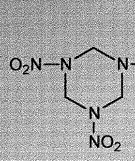
*a thousand fold expansion in milliseconds!*

4 TNT 

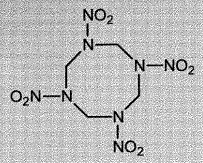

$[C_7H_5N_3O_6] \rightarrow 10\ H_2O + 7\ CO_2 + 6\ N_2 + 21\ C$

The rapidity of the reaction makes detonation powerful and differentiates it from combustion.

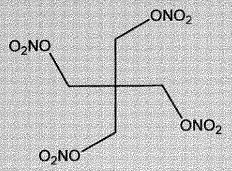
Explosives react quickly because they use self-contained oxygen in oxidation.




RDX




HMX




PETN

## U.S. DOT requires screening for explosive potential.

If a compound contains certain chemical groups, e.g. $NO_2$
AND if it has enough oxygen for self-oxidation,

OR if it decomposes to release exothermic energy greater than 500 J/g

Then DOT Test Series 1 must be performed to determine explosivity.

## Size is important!

DOT series is relatively small-scale.

Explosives require a certain volume to support detonation. The more powerful the explosive the smaller the volume (or critical diameter) required to support detonation.

Thus, AN formulations are used in car and truck bombs; military explosives are used in briefcase bombs.

Making a bomb from military explosives requires theft, blackmarket purchase or a skilled chemist. Composite explosives require as little as stirring oxidizer and fuel together.

Potential Inorganic Oxidizers

| | | | | | |
|---|---|---|---|---|---|
| nitrate | $X\ NO_3$, | nitrite | $X\ NO_2$ | permanganate | $KMnO_4$ |
| perchlorate | $X\ ClO_4$, | chlorate | $X\ ClO_3$, | hypochlorite | $Ca(OCl)_2$ |
| chromate | $X\ CrO_4$, | dichromate | $XCr_2O_7$ | iodate | $X\ IO_3$ |

X = Na, K, or $NH_4$

Potential Fuels

| | | |
|---|---|---|
| nitrobenzene | petroleum | sawdust |
| nitrotoluenes | turpentine | hydrocarbons |
| nitronaphthalene | naphtha | halogens |
| nitrocellulose | oil | powdered metals |
| picric acid | sugar | carbon disulfide |
| | glycerin | phosphorus |
| | acetylene | sulfur |
| | wax, paraffin | |

## Items of Concern

Acids:

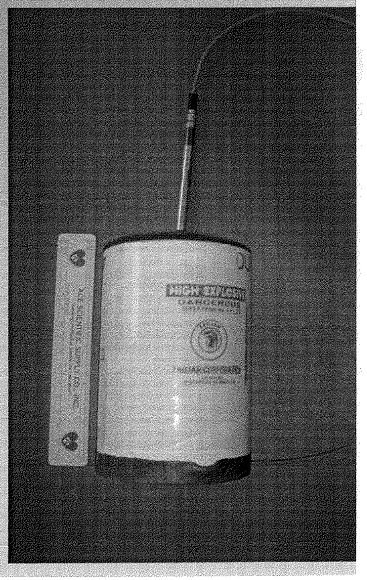
| | |
|---|---|
| nitric | $HNO_3$ |
| sulfuric | $H_2SO_4$ |
| hydrochloric | $HCl$ |

oxidizers

| | |
|---|---|
| ammonium nitrate | $NH_4NO_3$ |
| other nitrate salts | $KNO_3$ $NaNO_3$ |
| chlorates | $KClO_3$ $NaClO_3$ |
| perchlorates | $KClO_4$ $NaClO_4$ |
| hydrogen peroxide | $H_2O_2$ |

high-energy fuels: hexamine; sulfur; aluminium; finely divided metal powder nitromethane

the obvious →
Initiators –detonators, electric matches



## Conclusions & Recommendations

1. ***Availability of a material is a major factor in its use by terrorists.***

AN: PIRA bombing campaign;
East African embassies, 1998
Murrah federal building, 1995

urea nitrate: Israel
Shining Path, Peru
World Trade Center, 1993,
millennium bomber, Washington state, 1999

chorate: Indonesian bombs, 2002

peroxides
TATP & HMTD: Israel
London, 2005

hydrogen peroxide: Karachi, 2004;

***There should be a worldwide survey of availability of oxidizers, and methods of tracking purchase and transport of large quantities of oxidizers should be developed.***

## Conclusions & Recommendations

2. ***Only large-quantities of oxidizer need be considered a threat.***

A certain amount of material is required to support detonation.

British regulations addressed the quantity issue:

"sufficient material to have an explosive effect"

or in quantities greater than "1 tonne."

***There should be a lower limit on the amount of oxidizer of concern in this legislation.***

Small quantities of AN are difficult to detonate; more likely candidates are readily available.

3. ***Tracking purchasers of bulk oxidizer is a modest step toward restricting illegitimate use.***

***Require credit card purchase for large quantities (e.g. 1 ton) of oxidizer.***

## Conclusions & Recommendations

4. ***International collaboration should be sought..***

***The British have faced a serious AN threat for decades. Open dialog between all levels working on this problem.***

5. ***Consider other potential threat materials.*** Once one material becomes harder to obtain, others may be substituted.

. ***Consider the explosive potential of large quantities of oxidizers and other energetic, non-explosives***. D***evelop better methods to indicate potential explosivity of large quantities.*** Such protocols cannot be created without more research tying small-scale tests to large-scale results.

6. ***Exempt explosive-grade AN from this legislation.*** It is already more tightly regulated than this bill proposes.

Mr. LINDER. Mr. McMahon.

**STATEMENT OF JAMES W. McMAHON, DIRECTOR, NEW YORK STATE OFFICE OF HOMELAND SECURITY**

Mr. MCMAHON. Thank you, Chairman Linder, and good morning, Ranking Member Langevin, members of the subcommittee. It is a pleasure for me to be able to speak to you today about what we have recently enacted in New York dealing with ammonium nitrate.

As the chairman said, we are all well aware of the use by terrorists, both domestic and otherwise. Certainly Oklahoma City, that we are all aware of. But it goes back longer than that. I think my first introduction to it was when I was a young trooper in New York State. On August 24th, 1970, we remember seeing the pictures and the reports of a van filled with ammonium nitrate and fuel oil that was detonated next to a building on the University of Wisconsin-Madison campus that killed a physics researcher and caused massive damage to that facility.

Then since then and then certainly now, subsequent to 9/11, where people are much more interested, we have seen many instances around the world in different countries, including Great Britain and France and other areas. We always know about the attacks and the damage caused, but there has been many foiled attacks, most recently earlier in the year in Britain, Great Britain. They foiled an attack with eight terrorists who had 1,320 pounds of ammonium nitrate stored in a self-storage warehouse in West London.

Most recently, with Joel Henry Hinrichs, III, the Oklahoma University student who killed himself this year outside a stadium with 84,000 spectators in it, as publicly reported, he had unsuccessfully attempted to purchase ammonium nitrate in the days preceding the incident. So we can only think what he might have done with that.

Ammonium nitrate, as has been said, is one of the most common commercially available ingredients traditionally exploited by terrorist makers. Unfortunately, instructions for producing ammonium nitrate explosive mixtures have been incorporated in the training manuals and produced both domestically and internationally by terrorists and widely disseminated over the Internet.

In the aftermath of 9/11, New York's Governor, George Pataki, has made prevention of terrorism New York's number one priority. Our State legislature has enacted some of the most stringent antiterrorism laws in the Nation and has statutorily required the identification and reduction of vulnerabilities to terror attacks in our critical infrastructure, with specific emphasis in sectors like energy, toxic chemical sites and general aviation.

This past year, we struck a balance between commerce and security to require that ammonium nitrate is properly secured by retailers in our State and buyers of this material are properly identified, yet at the same time ensure the continued proper commercial trade in fertilizer products.

On August 28th, 2005, Governor Pataki signed into law certain measure that are now required surrounding the sale of ammonium nitrate fertilizer products. Under this law, effective only weeks ago,

on November 28th, and accompanying regulations issued by our State Department of Agriculture and Markets, the latter promulgated in consultation with New York's Office of Homeland Security, retailers of ammonium nitrate fertilizer are now required to do five basic but important things.

First, they must register with the Agriculture and Markets Department and publicly display their registration certificate. Second, ammonium nitrate retailers must comply with certain baseline security requirements that include providing reasonable protection against vandalism, theft or unauthorized access, ensuring that storage facilities are inspected daily for signs of attempted entry, vandalism and structural integrity and that they are fenced or otherwise enclosed and locked when unattended. In addition, retailers must also employ proper inventory controls for this sensitive material.

Third, retailers must obtain required forms of governmental-issued picture identification from all purchasers.

Fourth, retailers must record the name, address, and telephone number of the purchaser, along with the intended use and quantities of ammonium nitrate purchased.

And, fifth, retailers must also maintain this retail sale information for a 2-year period and make it accessible on demand to the Office of Homeland Security and to the Department of Agriculture and Markets.

A copy of the law, regulations and associated forms has been appended to my written testimony.

We did not do this in a vacuum. With the support of the New York State Office of Homeland Security, the New York State Department of Agriculture and Markets conferred with the industry and their counterparts in other States to identify ammonium nitrate materials of concern and to ascertain what successful practices have been put in place.

Input was also solicited by the Office of Homeland Security from a variety of law enforcement and explosives-related organizations in the United States and abroad, including the Federal Bureau of Investigation, the Bureau of Alcohol, Tobacco, Firearms and Explosives, the New York City Police Department, the Institute of Makers of Explosives, and members of the International Association of Bomb Technicians and Investigators from the United States, Canada and overseas. We received positive feedback on the measures we were planning and implementing.

We believe these new common-sense measures are a valuable step to not only assist homeland security at home and in our communities but to prevent criminal use of ammonium nitrate fertilizer.

I hope you will find the measures New York State has taken helpful in your deliberations in the mark-up session following this hearing which will consider H.R. 3197.

Mr. LINDER. Thank you.

[The statement of Mr. McMahon follows:]

PREPARED STATEMENT OF JAMES W. MCMAHON

***INTRODUCTION***

Good morning Chairman Linder and members of the Subcommittee on Nuclear and Biological Attack. My name is James McMahon and I am the Director of the

New York State Office of Homeland Security. I applaud and thank you and other members of Congress for addressing this critical issue.

***Use of Ammonium Nitrate As A Weapon***

The use of ammonium nitrate as a weapon by terrorists, unfortunately, is not new.

In the early morning hours of August 24, 1970, a van filled with ammonium nitrate and fuel oil was detonated next to a building on the University of Wisconsin-Madison campus housing the Army Mathematics Research Center, killing a physics researcher and causing massive damage to the facility.

We all know that on April 19, 1995, Timothy McVeigh detonated a Ryder truck containing a 4800 pound bomb of consisting of ammonium nitrate fertilizer, fuel oil and nitro-methane, in front of the Alfred P. Murrah Federal Building in Oklahoma City, killing 168 American men, women, and children.

Internationally, the picture is just as troublesome.

In October 2000, authorities in Singapore foiled an al-Qa'ida plan to drive trucks each loaded with a ton of ammonium nitrate, purchased by al-Qa'ida operatives through a Kuala Lumpur clinical pathology company, into the US, Australian, British and Israeli embassies in Singapore. On March 30, 2004, British anti-terrorism police arrested eight men suspected of planning a terrorist attack and confiscated 1,320 pounds of ammonium nitrate from a self-storage warehouse in West London. For decades, the United Kingdom has experienced numerous high consequence Provisional Irish Republican Army (PIRA) bombings involving the conversion of ammonium nitrate fertilizer into deadly and damaging high explosives. Notable bombings include attacks at the Baltic Exchange, Bishopsgate, Canary Wharf and Omagh.

Most recently, Joel Henry Hinrichs III, an Oklahoma University student, was killed in October of this year when an explosive device he built detonated as he sat on a bench 100 yards from a stadium filled more than 84,000 spectators. Of particular interest is the fact that the investigation into his apparent suicide shows Hinrichs had unsuccessfully attempted to purchase ammonium nitrate in the days preceding the incident. If he had been successful there is no telling what devastation he may have caused.

Ammonium nitrate is, of course, one of the most common, commercially available ingredients traditionally exploited by terrorist bomb makers throughout the years and continuing in the new millennium. It can be mixed with common diesel fuel to create an extremely potent and deadly improvised explosive mixture. Instructions for producing ammonium nitrate explosive mixtures have been incorporated into training manuals produced by both domestic and international terrorists and widely disseminated over the Internet.

There is considerable and heightened concern these prior attacks and plots will serve to inspire acutely isolated and unbalanced "lone wolves" to utilize relatively easy to get ammonium nitrate to carry out highly destructive attacks with virtually no indication, prior warning or affiliation to known terrorist organizations.

***New York State Ammonium Nitrate Legislation***

In the aftermath of September 11th, Governor Pataki has made prevention of terrorism New York's number one priority. Our State Legislature has enacted some of the most stringent anti-terrorism laws in the nation and has statutorily required the identification and reduction of vulnerabilities to terror attack in our critical infrastructure with a specific emphasis in sectors like energy, toxic chemicals sites and general aviation security. This past year we struck a delicate balance between commerce and security to require that ammonium nitrate is properly secured by retailers in our state and buyers of this material are properly identified, yet at the same time ensure the continued proper commercial trade in fertilizer products.

On August 28, 2005, Governor Pataki signed into law certain measures that are now required surrounding the sale of ammonium nitrate fertilizer products. These include the registration of ammonium nitrate fertilizer retailers, a requirement that certain records be created and maintained of all such retail sales, along with specific baseline security standards for ammonium nitrate retailers to safeguard this product from misuse.

Under this law, effective only weeks ago on November 28th, and accompanying regulations issued by the State Department of Agriculture and Markets, the latter promulgated in consultation with New York's Office of Homeland Security, retailers of ammonium nitrate fertilizer are now required to do five basic but vitally important things:

- First, they must register with the Agriculture and Markets Department and publicly display their registration certificate.
- Second, ammonium nitrate retailers must comply with certain baseline security requirements that include providing reasonable protection against van-

dalism, theft or unauthorized access, ensuring that storage facilities are inspected daily for signs of attempted entry, vandalism and structural integrity and that they are fenced or otherwise enclosed and locked when unattended. In addition, retailers must also employ proper inventory controls for this sensitive material.

• Third, retailers must obtain required forms of governmental-issued picture identification from all purchasers.

• Fourth, retailers must record the name, address and telephone number of the purchaser, along with the intended use and quantities of ammonium nitrate purchased; and

• Fifth, retailers must also maintain this retail sale information for a two-year period and make it accessible, on demand to the Office of Homeland Security and Department of Agriculture and Markets.

A copy of the law, regulations and associated forms has been appended to my written testimony as previously submitted for your review.

In the past, the ability to trace purchases of ammonium nitrate was a game of chance—now we have established a firm methodology for data collection and enabled an ability to develop patterns and thus "connect the dots." This system of verifying and recording identities and amounts of ammonium nitrate purchases will serve as an essential investigatory tool that did not exist before this law was signed.

We did not do this in a vacuum.

We used the pre-existing state statutory framework that already required the registration of ammonium nitrate wholesale distributors in New York with the state Department of Agriculture and Markets to enhance security with this new legislation at the point of obvious need and greatest potential exposure—where ammonium nitrate is sold on the open retail market.

With the support of the New York State Office of Homeland Security, the New York State Department of Agriculture and Markets conferred with the industry and their counterparts in other states to identify ammonium nitrate materials of concern and to ascertain what successful practices have been put into place. Input was also solicited from a variety of law enforcement and explosives-related organizations in the United States and abroad, including the Federal Bureau of Investigation, the Bureau of Alcohol, Tobacco, Firearms and Explosives, the New York City Police Department, the Institute of Makers of Explosives (IME) and members of the International Association of Bomb Technicians and Investigators (IABTI) from the United States, Canada and overseas. We received positive feedback on the measures we were planning and implementing.

We believe these new common-sense measures are a valuable first step to not only assist homeland security at home and in our communities to prevent the criminal use of ammonium nitrate fertilizer, but also in encouraging the implementation of best practices by the industry to more effectively deter the potential misuse of ammonium nitrate fertilizer and thus make us all more secure.

***Conclusion***

I hope you will find the measures New York State has taken helpful in your deliberations in the markup session following this hearing, which will consider H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005. I do however, leave you with this final thought—while New York State has recognized and begun to address the potential misuse of ammonium nitrate fertilizer—it is essential to keep in mind that evildoers, of course, do not recognize borders. National rules and standards across the board in all 50 states as a matter of federal law must be set in order to truly make this effort successful.

Thank you again.

Mr. LINDER. Mr. Black.

## STATEMENT OF GARY W. BLACK PRESIDENT, GEORGIA AGRIBUSINESS COUNCIL, INC.

Mr. BLACK. Good morning.

Mr. Chairman, members of the subcommittee, I am Gary Black. I am President of the Georgia Agribusiness Council, located in Commerce, Georgia. I appreciate the opportunity to testify before your subcommittee this morning on the House Homeland Security Committee, Subcommittee on Prevention of Nuclear and Biological Attacks, regarding H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005.

The Georgia Agribusiness Council is a chamber-like organization with a 40-year history of promoting sound policy for the breadth of Georgia's agricultural industry.

Mr. Chairman and members, today I find myself in a rare and unenviable policy dilemma. Mr. Chairman, as you know, I have met with you and your staff dozens of times over the course of our careers as a spokesman for Georgia farmers and food producers and rural business. Many of our meetings have focused on how we can work together to relieve Georgia farmers and agribusinesses of overreaching Federal regulations and the unnecessary bureaucracy and burdensome paperwork that usually follows it.

The last thing that Georgia farmers need is another regulation. The last thing Georgia livestock and food producers need is a more burdensome bureaucracy and paperwork. However, today I am here to state my support for the basic tenets of H.R. 3197. It is obvious that regulation of this vital agricultural input is on the horizon. Further, I believe the best way to institute the most amicable solution to regulatory challenges, Mr. Chairman, is to come to the table early in the process. That is my purpose for being here today.

As you may know, ammonium nitrate fertilizer is an excellent plant nutrient for Georgia's temperate climate and clay soils. More than 59,000 tons of ammonium nitrate is used annually in our State on a variety of row crop and livestock farms. Because this important plant nutrient is so effective on our crops and soils, Georgia is the tenth highest State regarding ammonium nitrate fertilizer consumption in the United States.

I believe this important legislation establishes a framework for providing the Georgia Department of Agriculture and the Federal Department of Homeland Security the important security information they need. I believe the legislation sets important guidelines for improving our Nation's security. Yet, passage of a final version, Mr. Chairman, must accomplish these goals without placing unreasonable burdens on Georgia farmers and agricultural retailers.

My greatest concern with the legislation—and I want to again commend your staff. I understand we have moved forward with different issues with the subcommittee's markup procedures here this morning, and my comments are going back to the original legislation. But I did want to point out some of those concerns that we did have.

I do support maintaining the inspection authority at the State level, since State inspectors already perform duties designed to ensure the integrity and quality of fertilizer products. The bill seeks to register ammonium nitrate fertilizer producers, sellers, purchasers and users, with the objective of keeping this necessary agriculture plant nutrient in the hands of food producers, rather than in the hands of those with criminal intent.

A totally new systemic registration plan may not be necessary. Many retailers already voluntarily record sales data, including the driver's license information of the purchaser. I believe simple actions to standardize forms and electronic reports throughout the existing system would sufficiently serve the public purpose.

My members would rather not deal with a new set of Federal regulators visiting their facilities. Federal block funding for enforcement at the State level by State departments of agricultural

would be my preference. While a subjective fine allows for situational judgments to take place, the $50,000 maximum fine looms as a daunting threat over farmers and other small businesses. Well-meaning business owners will on occasion make mistakes, and zealous enforcers sometimes seek to gain an upper hand. Please consider a more reasonable fine structure based on frequency and severity of violations.

Mr. Chairman, with amendments to accommodate the concerns I have outlined, I believe H.R. 3197 would meet the objectives of the Department of Homeland Security and help keep this valuable agricultural fertilizer in use for continued food production in Georgia and in this Nation. We in agriculture want to contribute to initiatives that continue State and Federal efforts to maintain and improve national security for the United States and its citizens.

To conclude, allow me again, Mr. Chairman, to thank you and members of the subcommittee for your leadership in addressing this critically important issue of secure handling of ammonium nitrate agricultural fertilizers. Thank you for the opportunity to testify today.

Mr. LINDER. Thank you, Mr. Black. It is my understanding that there will be an amendment in the nature of a substitute that will deal with many of your issues.

[The statement of Mr. Black follows:]

PREPARED STATEMENT OF GARY W. BLACK

**Introduction**

Mr. Chairman and members of the subcommittee, I am Gary Black, President of the Georgia Agribusiness Council located in Commerce Georgia. I appreciate the opportunity to testify before the House Homeland Security Committee, Subcommittee on Prevention of Nuclear and Biological Attacks regarding H.R. 3197, the "Secure Handling of Ammonium Nitrate Act of 2005."

Furthermore, I would like to thank you Chairman Linder for scheduling this important hearing and for your leadership in addressing the critical issue of advancing ammonium nitrate security measures, which are so vital to the U.S. plant food industry, its many local retail agribusiness outlets and the farmers and livestock producers they serve.

**Georgia Agribusiness Council**

The Georgia Agribusiness Council (GAC) is a Chamber-like organization with a 40-year history of promoting sound policy for the breadth of Georgia's agricultural industry. Our members range from farmers to input suppliers and from processors to those in transportation of food and fiber. Promoting environmental stewardship and educating the public about the importance of agriculture are the hallmark objectives of our organization.

Mr. Chairman, today I find myself in a rare and unenviable policy dilemma. As you know I have met with you and your staff dozens of times over the years as a spokesman for Georgia farmers, food producers and rural businesses. Many of our meetings have focused on how we could work together to relieve Georgia farmers and agribusinesses of overreaching federal regulation and the unnecessary bureaucracy and burdensome paperwork that usually follows it.

The last thing Georgia farmers need is another regulation. The last thing Georgia livestock and food producers need is more burdensome bureaucracy and paperwork. However, today I am here to state my support of the basic tenets of H.R. 3197, The Secure Handling of Ammonium Nitrate Act. I believe regulation of this vital agricultural input is on the horizon. Further, I believe the best way to institute the most amicable solution to regulatory challenges, Mr. Chairman, is to come to the table early in the process. That is my purpose for being here today.

As you may know, ammonium nitrate fertilizer is an excellent plant nutrient for Georgia's temperate climate and clay soils. More than 59,000 tons of ammonium nitrate is used annually in our state on a variety of row crop and livestock farms. The product is a premiere source of supplementary nitrogen when used alone. The product is also a key element in a host of prescriptive fertilizer blends. Because this im-

portant plant nutrient is so effective on our crops and soils, Georgia is the 10th highest state (see attached 2004 Commercial Fertilizer Report) regarding ammonium nitrate fertilizer consumption in the United States.

I believe this important legislation establishes a framework for providing the Georgia Department of Agriculture and the federal Department of Homeland Security the important security information they need. I believe the legislation sets important guidelines for improving our nation's security. Yet, passage of a final version, Mr. Chairman, must accomplish these goals without placing an unreasonable burden on Georgia farmers.

**H.R. 3197, The Secure Handling of Ammonium Nitrate Act**

On June 13, 2005, Representatives Curt Weldon (R–PA) and Bennie G. Thompson (D-Miss.), as well as other key members of congress, introduced H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005.

The legislation before you gives the Department of Homeland Security the authority to create a regulatory system for ammonium nitrate-based fertilizers. The bill contains the following provisions:

The "Secure Handling of Ammonium Nitrate Act" grants the Department of Homeland Security the power to regulate those who produce, sell, and store ammonium nitrate-based fertilizer. Specifically, this bill would allow the Department, in consultation with the Department of Agriculture, to develop regulations that do the following:

1. Create a registry of facilities that handle ammonium nitrate fertilizer;
2. Limit the sale and storage of ammonium nitrate-based fertilizer to facilities that register with the Department; and
3. Condition the sale of ammonium nitrate-based fertilizer on recording the name, address, telephone number, and registration number of the purchaser.

My greatest concern with the legislation centers on the proposed relationship between the Department of Homeland Security, state departments of agriculture and the regulated community. I would prefer that the states maintain the inspection authority since state inspectors already perform duties designed to ensure the integrity and quality of fertilizer products.

The bill seeks to register ammonium nitrate fertilizer producers, sellers, purchasers and users, with the objective of keeping this necessary agriculture plant nutrient in the hands of food producers rather than in the hands of individuals with criminal intent. A totally new systemic registration plan may not be necessary. Many retailers already voluntarily record sales data including the driver's license information of the purchaser. I believe simple actions to standardize forms and electronic reports throughout the existing system would sufficiently serve the public purpose.

My members would rather not deal with a new set of federal regulators visiting their facilities. Federal block funding for enforcement at the state level by state departments of agriculture would be my preference. While a subjective fine structure allows for situational judgments to take place, the $50,000 maximum fine looms as a daunting threat over farmers and other small businesses. Well-meaning business owners will on occasion make mistakes, and zealous enforcers sometimes seek to gain an upper hand. Please consider a more reasonable fine structure based on frequency and severity of the violation.

**Conclusion**

Mr. Chairman, with amendments to accommodate the concerns I have outlined, I believe H.R. 3197 would meet the objectives of the Department of Homeland Security and help keep this valuable agricultural fertilizer in use for continued food production in Georgia and in this nation. We in agriculture want to contribute to initiatives that continue state and federal efforts to maintain and improve national security for the United States and its citizens.

To conclude, allow me to again thank you Chairman Linder and members of the subcommittee for your leadership in addressing the critically important issue of secure handling of ammonium nitrate agricultural fertilizers. Thank you for the opportunity to testify today.

**Top 20 Ammonium Nitrate Consuming States—2004**

| | |
|---|---|
| Missouri | 292,934 |
| Tennessee | 146,149 |
| Alabama | 105,100 |
| Texas | 103,555 |
| California | 92,352 |
| Kentucky | 74,361 |
| Oklahoma | 62,640 |
| Idaho | 60,752 |
| Kansas | 60,460 |
| Mississippi | 59,121 |
| Georgia | 47,842 |
| Louisiana | 39,341 |
| Arkansas | 36,767 |
| Oregon | 30,590 |
| Nebraska | 30,138 |
| Washington | 30,030 |
| North Carolina | 29,733 |
| Wyoming | 24,605 |
| Florida | 21,943 |
| Iowa | 21,866 |

Source: 2004 Commercial Fertilizer Report

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As you may know, ammonium nitrate fertilizer is an excellent plant nutrient for Georgia's temperate climate and clay soils. More than 59,000 tons of ammonium nitrate is used annually in our state on a variety of row crop and livestock farms. Because this important plant nutrient is so effective on our crops and soils, Georgia is the 10th highest state regarding ammonium nitrate fertilizer consumption in the United States. (2004 Commercial Fertilizer Report attached)

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My greatest concern with the legislation centers on the proposed relationship between the Department of Homeland Security, state departments of agriculture and the regulated community. I would prefer that the states maintain the inspection authority since state inspectors already perform duties designed to ensure the integrity and quality of fertilizer products. The bill seeks to register ammonium nitrate fertilizer producers, sellers, purchasers and users, with the objective of keeping this necessary agriculture plant nutrient in the hands of food producers rather than in

the hands of individuals with criminal intent. A totally new systemic registration plan may not be necessary. Many retailers already voluntarily record sales data including the driver's license information of the purchaser. I believe simple actions to standardize forms and electronic reports throughout the existing system would sufficiently serve the public purpose.

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Mr. Chairman, with amendments to accommodate the concerns I have outlined, I believe H.R. 3197 would meet the objectives of the Department of Homeland Security and help keep this valuable agricultural fertilizer in use for continued food production in Georgia and in this nation. We in agriculture want to contribute to initiatives that continue state and federal efforts to maintain and improve national security for the United States and its citizens.

To conclude, allow me to again thank you Chairman Linder and members of the subcommittee for your leadership in addressing the critically important issue of secure handling of ammonium nitrate agricultural fertilizers. Thank you for the opportunity to testify today.

Mr. LINDER. Mr. O'Neill.

## STATEMENT OF WILLIAM PAUL O'NEILL, JR., PRESIDENT, INTERNATIONAL RAW MATERIALS

Mr. O'NEILL. Chairman Linder and members of the subcommittee, thank you for inviting me to testify today on behalf of the Agricultural Retailers Association concerning H.R. 3197.

I am Tip O'Neill, the President of International Raw Materials, which is headquartered in Philadelphia. Our company is an importer and domestic wholesale distributor of fertilizer products. The ARA represents a significant majority of America's agricultural retailers and distributors in Washington, D.C.

Retail dealers provide essential crop input material to America's farmers. This is a responsibility of growing importance, because, as America develops new biosources of energy, America is going to be relying on its farmers not only to grow its crops but also to grow its fuels. We need, therefore, to make sure that we give our farmers an adequate and safe supply of agricultural inputs, including ammonium nitrate fertilizer, that they will need to accomplish these critical missions.

I currently serve on the ARA's Board of Directors and the ARA's Public Policy Committee. I am a constituent of the sponsor of this legislation, U.S. Representative Curt Weldon. We appreciate the leadership that Representative Weldon and Representative Bernie Thompson have shown on this issue by sponsoring the legislation we are discussing here today.

As we all know, plants need nutrients to grow, primarily nitrogen, phosphate and potash, each in some available form; hence the need for fertilizer in crop production agriculture. Variations in the crop, weather, temperature and soil help determine the amount and types of fertilizers utilized.

As Mr. Black mentioned, ammonium nitrate is primarily used on pasture lands and specialty crops. The principal advantage of using this product as a fertilizer is that crops can immediately utilize part of its nitrogen content in the form of nitrate. While this formu-

lation was discovered in 1659, it has only been in the last 60 years that it has significantly been used worldwide as an important plant nutrient.

Its use as an explosive was not discovered until the end of World War I and reaffirmed with the tragic explosions in Texas City in 1947. As we all well know today, both domestic and foreign terrorists have illegally used ammonium nitrate in bombings such as those that took place on April 19th, 1995, the Federal Building in Oklahoma City, and October 12th, 2002, in Bali, Indonesia. These bombings took many innocent lives.

As a personal aside, I should mention that my cousin's son, Joe Milligan, was one of the seven Americans killed in the Bali tragedy. He was a newly minted college graduate on one last surfing trip before pursuing a career.

In response to these potential threats, agriculture retailers, distributors and manufacturers have and continue to be proactive in voluntarily addressing security concerns related to the storage, handling, transportation of agricultural fertilizers, such as ammonium nitrate.

Our industry is working with the U.S. Department of Homeland Security on security related issues. Many within our industry, with the support of the ARA, the Fertilizer Institute, have utilized the security vulnerability assessment tool to obtain recommendations to improve overall security of their facilities.

ARA and others within our Nation's agricultural industry are committed to working with Congress and the administration on effective measures such as H.R. 3197 that will help prevent terrorists and other criminals from gaining access to products like ammonium nitrate fertilizers. A number of States mentioned this morning, including New York, California, Oklahoma, Nevada, and South Carolina, have enacted registration and record-keeping laws for ammonium nitrate fertilizer with the support of our industry. While these State programs are working well and to our knowledge have not placed too great a burden on retailers or their farmer customers, a national more unified approach is needed to address this matter.

It is not easy for an industry to support traditional Federal regulations. However, in this case, we believe it is necessary to help maintain ammonium nitrate's continued availability for use on agricultural operations heavily dependent on this plant nutrient.

The Weldon-Thompson bill as introduced would put in place fair and equitable Federal regulations that address security concerns related to the production, storage, sale and distribution of solid ammonium nitrate fertilizer. H.R. 3197 authorizes DHS to enter into cooperative agreements with State departments of agriculture or other State agencies that regulate plant nutrients to ensure that any person who produces, stores, or sells or distributes solid ammonium nitrate registers their facility and maintains records of sale or distribution, including the names, addresses, telephone numbers and registration numbers of purchasers. Purchasers would also be required to register this proposal.

ARA is working with the TFI in support of this important legislation, and we look forward to working on this bill with this committee and this bill's sponsors on securing its enactment.

In this context, I would like to tell a short story. Fifteen years ago I attended a lecture series given by the late Peter Drucker. At the time he observed that America does not legislate social change, America litigates social change. I would hope that today we can all rise to the late professor's challenge.

In conclusion, we would like to reiterate the Agriculture Retailers Association greatly appreciates this opportunity to testify on this important issue. We respectfully request your support for the enactment of H.R. 3197. Thank you.

Mr. LINDER. Thank you, Mr. O'Neill.

[The statement of Mr. O'Neill follows:]

PREPARED STATEMENT OF WILLIAM P. O'NEILL, JR.

Chairman Linder, Ranking Member Langevin and other members of the Subcommittee, thank you for inviting me to testify today on behalf of the Agricultural Retailers Association (ARA) regarding the "Securing Handling of Ammonium Nitrate Act of 2005" (H.R. 3197). My name is Tip O'Neill. I am the President of International Raw Materials, headquartered in Philadelphia, Pennsylvania. Our company is an importer and wholesale distributor of fertilizer products. I am here today on behalf of the ARA, which represents the interests of agricultural retailers and distributors in Washington, D.C. I currently serve on the ARA Board of Directors and the association's Public Policy Committee. ARA represents a significant majority our nation's retail dealers who provide essential crop input materials to America's farmers, including ammonium nitrate fertilizer. In this capacity ARA is vitally interested in any federal laws or regulations affecting the sale and use of key agricultural fertilizer products such as ammonium nitrate.

We appreciate the leadership shown by U.S. Representatives Curt Weldon (R–PA) and Bennie Thompson (D–MS) by sponsoring this important legislation. In this testimony, I will provide an overview of ARA, our industry, the use of ammonium nitrate as a fertilizer, how the illegal use of this product has impacted me personally, and in this context the strong need for enactment of the legislation we are discussing here today.

**OVERVIEW OF ARA AND AG RETAILERS**

From the perspective of an overview, in 2002, there were an estimated 10,586 agricultural retail outlets in the United States.[1] The overall number of retail outlets is lower today and has been declining due to a number of factors taking place within the industry including: consolidation, increased domestic and global competition, higher operating costs, and low profit margins. ARA members range in size from family or farmer cooperative owned businesses, to large companies with many outlets located in multiple states. Many of these facilities are located in small, rural communities.

As we all know, plants need nutrients to grow, primarily nitrogen, phosphate and potash, each in some available form; hence the need for fertilizers in crop production agriculture. Soils do not retain nitrogen from year to year, therefore, nitrogen fertilizer must be added during each planting season to ensure optimum growth and yield conditions. Demand for fertilizers tends to be seasonal, depending on when crops are planted. Variations in the crop, weather, temperature and soil help determine the amount and types of fertilizers utilized. It is estimated that farmers in crop production ultimately use more than 85 percent of fertilizer consumed in the United States. The remaining fertilizer is used on golf courses, landscaping, nurseries or home use.

Ammonium nitrate fertilizer is primarily used on pasturelands and specialty crops produced in the United States. The principal advantage of using this product as a fertilizer is that crops can immediately utilize part of its nitrogen content in the form of nitrate. Ammonium nitrate was first synthesized by Johann Glauber in 1659, when he combined ammonium carbonate and nitric acid, but it has really been only within the last 60 years that ammonium nitrate has been significantly used worldwide as a important plant nutrient. Its use as an explosive was not discovered until the end of World War I, and reaffirmed with the tragic ship explosions in Texas City in 1947. As we all well know today, both domestic and foreign terrorists have illegally used ammonium nitrate fertilizer in bombings such as those which took place on April 19 1995 at the Alfred P. Murrah Federal Building in Oklahoma

[1] Doane's *Ag Professional* Magazine, Summer 2003, p. 40–41

City, Oklahoma and on October 12, 2002 in Bali, Indonesia. As a personal aside I should mention that my cousin's son Joe Milligan was one of the seven Americans killed in the Bali tragedy.

**INDUSTRY WORKING TO ADDRESS SECURITY ISSUES**

In response to this potential threat, Ag retailers and distributors have and continue to be pro-active in addressing security concerns related to the storage, handling and transportation of agricultural fertilizers. It is important for Congress and the Administration to know that our nation's agricultural industry is committed to support effective measures that will prevent terrorists or other criminals from gaining access to ammonium nitrate fertilizer or other crop production materials. In fact, DHS has and continues to work with the private sector to identify risks, build systems to communicate those risks, and to prepare plans to keep those risks from becoming terrorist's targets. Our industry has taken a very proactive role in dealing with DHS and has participated in the development of the sector working groups.

ARA is a supporter of Asmark's Security Vulnerability Assessment (SVA) program. The Asmark SVA tool is licensed to ARA and is currently being utilized by member and non-member companies. ARA is working with CropLife America (CLA) and The Fertilizer Institute (TFI) under the "Agri-Business Security Working Group" and state associations to promote security measures and the SVA program. To date this SVA has been utilized by nearly 2,500 retailers. ARA and Asmark earlier this year reached agreement with Clemson University to make the SVA tool available to all Ag retail facilities in the state of South Carolina. This web-based software enables retail facilities to conduct a security vulnerability assessment of their facilities and receive recommendations to improve overall security.

ARA and its members are committed to providing increased security for solid ammonium nitrate fertilizer. Several states such as New York, California, Oklahoma, Nevada and South Carolina have enacted registration and record keeping laws for this product with the support of the state agribusiness association. It is our understanding that these state ammonium nitrate fertilizer registration programs have worked very well and not placed too great a burden on retailers or their farmer customers. While as you might expect it is not easy for us as an industry to support additional regulations, in this case we believe it is necessary to help maintain Ammonium Nitrate's continued availability for use on agricultural operations heavily dependent on this plant nutrient product.

ARA is therefore supportive of efforts by Congressmen Curt Weldon (R–PA) and Bennie Thompson (D–MS) to put in place fair and equitable federal regulations that address any security concerns related to the production, storage, sale and distribution of solid ammonium nitrate fertilizer. H.R. 3197 authorizes DHS to enter into cooperative agreements with state departments of agriculture or other state agencies that regulate plant nutrients to ensure that any person who produces, stores, sells or distributes solid ammonium nitrate fertilizer registers their facility and maintains records of sale or distribution including the name, address, telephone and registration numbers of purchasers. Also, purchasers would be required to register under this proposal. ARA is working closely with the TFI and sponsors of the Senate and House bills to ensure that the interests of agricultural retailers are represented and has a voice at the table with Congress and the Administration as this legislation moves forward in the House and Senate and any subsequent regulations that are implemented.

ARA supports a common sense, fair and simplified federal registration system for ammonium nitrate fertilizer in order to ensure the product's continued availability for sale, purchase and use by America's agricultural industry. ARA believes it is important for retailers to maintain the ability to sell ammonium nitrate fertilizer if they so desire to their long standing and known farmer customers, as well as ensuring their customers maintain the ability to purchase the product for use on their farming operations. Over the past year many domestic manufacturers and distributors have publicly announced they will no longer be producing or selling ammonium nitrate due to security and liability concerns. There are now only two domestic manufacturers making this fertilizer product, with at least some of this shortfall, being replaced by imports. We believe that enactment of H.R. 3197 will help provide increased vigilance in the handling, sale and use of this product and provide some assurances for the industry against any potential liabilities that would otherwise exist without a federal registration system in place.

We would also request support for the establishment of a security tax credit that would allow eligible agricultural businesses to use their own financial resources to take the necessary steps installing state of the art security measures that better protects ammonium nitrate and other crop production materials and the American public from the potential threat of terrorism or other illegal activities. Rep. Ron

Lewis (R–KY) introduced the "Agricultural Business Security Tax Credit Act of 2005" (H.R. 713) with the support of ARA, TFI, CLA, Chemical Producers & Distributors Association (CPDA), and the National Agricultural Aviation Association (NAAA). ARA urges committee members to also support this important legislation by co-sponsoring H.R. 713.

**CONCLUSION**

In conclusion, we would like to reiterate that the Agricultural Retailers Association greatly appreciates this opportunity to testify on this important issue. We respectfully urge this committee to pass H.R. 3197.

Mr. LINDER. The Chair would now like to recognize the gentleman from Mississippi for the purpose of introducing our final panelist.

Mr. THOMPSON. Mr. Chairman, I appreciate the courtesy.

I have, I guess, a dual distinction of introducing Mr. Carl Wallace. He is a constituent, but he is also a hunting buddy of mine. So we have real reason to have him here. He is the plant manager of one of the production facilities that we are talking about regulating, and I think he brings another perspective to the testimony here today.

He operates a plant with 220-odd employees, who also have the distinction of being the highest paid employees in this county because of this facility; and it has been around for a good number of years. So we are happy to have Mr. Wallace here as a witness and look forward to his testimony.

Mr. LINDER. Mr. Wallace.

## STATEMENT OF CARL WALLACE, PLANT MANAGER, TERRA MISSISSIPPI NITROGEN, INC.

Mr. WALLACE. Mr. Chairman, on behalf of Terra and the Fertilizer Institute, TFI, of which Terra is a member, I appreciate the opportunity to testify before this group in support of H.R. 3197, the Secure Handling of Ammonium Nitrate Act of 2005. TFI is the leading voice of the Nation's fertilizer industry, representing the public policy, communication and statistical needs of fertilizer producers, retailers and transporters.

Chairman Linder, I would like to thank you for scheduling this important hearing and for your leadership in addressing the critical issue of advancing ammonium nitrate security measures.

I would like to thank my Representative, Congressman Thompson, whose district the plant is located in, for his leadership as the chief sponsor in this important legislation and for inviting me here today to testify.

Terra Industries is a leading international producer of nitrogen products which we sell to industrial customers and agribusiness retailers for sale to farmers. Terra employs approximately 1,200 people in North America and the United Kingdom and is headquartered in Sioux, City, Iowa. Terra owns and operates seven nitrogen manufacturing facilities, four of which are in the midwestern and southern United States.

Our Yazoo City ammonium nitrate plant has been in operation for more than 50 years. This facility provides a major boost to the local economy, providing good-paying and stable job opportunities.

As the Congressman mentions, at our Yazoo facility, we employee 200 full-time employees with an annual payroll of $12.5 million. We have an additional 20 security-related contract employees

associated with the facility. Terra Mississippi Nitrogen has an annual production capacity of 500,000 tons of anhydrous ammonia, the basic ingredient for most nitrate fertilizers and many industrial products. We upgrade this ammonia to 775,000 tons of ammonium nitrate, 600,000 tons of urea ammonium nitrate, commonly called UAN, 7,000 tons of urea.

Ammonium nitrate fertilizer, the focus of this hearing, is vital to the U.S. plant food industry and many local retail agribusiness outlets and the farmers and livestock producers they serve. Ammonium nitrate is valued by our Nation's farmers for its use on pasture lands, citrus and specialty crops and for its use in no-till farming. In 2004, Mississippi farmers, like Georgia farmers, consumed about 60,000 tops of ammonium nitrate. Nationwide during that same period agricultural consumption of ammonium nitrate totaled 1.5 million tons.

After the Oklahoma City bombing in 1995, the fertilizer industry undertook several voluntary efforts to prevent ammonium nitrate from getting into the wrong hands. TFI partnered with the Bureau of Alcohol, Tobacco, Firearms and Explosives, its member companies, State fertilizer associations and the State fertilizer control officials within the State departments of agriculture to promote fertilizer security. The outreach program called Be Aware for America and Be Secure for America were aimed at securing our products, particularly ammonium nitrate, in our places of business. After the terrorist attacks on September 11th, 2001, the fertilizer industry launched America's Security Begins with You, a new program, which has been endorsed by ATF, the Department of Homeland Security and the Association of American Plant Food Control Officials who regulate fertilizer at the State level. The campaign urges retailers and producers to develop and implement security plans, record sales and alert law enforcement to any suspicious activity.

After the tragic events of September 11, 2001, TFI's board of directors endorsed a voluntary security code of management practices, which Terra has made mandatory at all of our facilities. Accordingly, our Yazoo City plant has conducted a security vulnerable assessment and developed a security plan based on that assessment. To further strengthen our product security requirements, we also require proof of delivery for all shipments of ammonium nitrate within 24 hours. We have recently had our security plan audited by an independent third party auditor.

We at Terra believe that the provisions contained in H.R. 3197 further strengthen ammonium nitrate security by providing a uniform national system for registration and recordkeeping. We do not believe this legislation would be overly burdensome to handlers of ammonium nitrate or our farmer customers. By giving the Department of Homeland Security the authority to work with State departments of agriculture to create, maintain and enforce the program, this legislation uses an existing and effective State fertilizer regulatory system to further secure ammonium nitrate.

Mr. Chairman, Terra Industries and TFI recommend that H.R. 3197 be passed as introduced by the subcommittee and the full House Homeland Security Committee. Similar legislation is pending in the U.S. Senate, and we hope the Senate will follow with

passage of their bill. We believe this is necessary to protect the continued use of ammonium nitrate for agricultural purposes.

Thank you today for your time and for this opportunity to have our views heard.

[The statement of Mr. Wallace follows:]

PREPARED STATEMENT OF CARL WALLACE

Mr. Chairman and members of the subcommittee, I am Carl Wallace, plant manager at Terra Mississippi Nitrogen, Inc., doing business as Terra Industries, located in Yazoo City, Mississippi.

On behalf of Terra and The Fertilizer Institute (TFI) of which Terra is a member, I appreciate the opportunity to testify before the House Homeland Security Committee, Subcommittee on Prevention of Nuclear and Biological Attacks in support of H.R. 3197, the "Secure Handling of Ammonium Nitrate Act of 2005." TFI is the leading voice of the nation's fertilizer industry, representing the public policy, communication and statistical needs of fertilizer producers, retailers and transporters.

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to handlers of ammonium nitrate or our farmer customers. By giving the Department of Homeland Security the authority to work with state departments of agriculture to create, maintain and enforce the program, this legislation uses an existing and effective state fertilizer regulatory system to further secure ammonium nitrate.

Mr. Chairman, Terra Industries and TFI recommend that H.R. 3197 be passed as introduced by this subcommittee and the full House Homeland Security Committee. Similar legislation is pending in the U.S. Senate and we hope the Senate will follow with passage of their bill. We believe this is necessary to protect the continued use of ammonium nitrate fertilizer for agricultural purposes.

Thank you for your time today and for providing this opportunity to have our views heard.

Mr. LINDER. Thank you all.

Mr. Wallace, what is the typical purchase for a farmer in a year of ammonium nitrate in terms of tonnage?

Mr. WALLACE. It can vary greatly. Because we have some farmers that might have only 100 acres, up to large corporate facilities of 10,000 acres.

Mr. LINDER. What would 100 acres require?

Mr. WALLACE. How many units of nitrogen per acre? Again, that varies greatly by crop and personal preference and the economics of the year.

Mr. LINDER. Mr. Black, do you have a shot at that?

Mr. BLACK. Well, yes, sir. If you look at a small producer, let us say a northeast Georgia producer up where we are from, 70 acres, and they do 200 pounds to an acre, maybe as a late wintertime application, preparation for the spring, so that is 70 acres times 200 pounds per acre.

Mr. LINDER. Dr. Oxley, educate us on the weight and the damage. You suggested that we should lower the quantity for reporting. How much damage does one ton do and how much damage does 10 pounds do?

Ms. OXLEY. Well, 10 pounds in this room, fragment, would probably blast a hole in that wall sitting here where I am. If we have a ton, we are going to severely damage the whole building.

The reason I am suggesting that we put a lower limit is so that we do not have to worry about the small stuff, is that if all I want to do is kill a few people, there are lots of unregulated materials, and I am thinking smokeless powder, that I can do that.

Mr. LINDER. You are not saying that is fine. You are not saying that is acceptable, I know, to kill just a few people.

Ms. OXLEY. Yes. That's right. I am saying, what is the goal? We certainly want to stop the mass destruction.

I remember after the Oklahoma City bombing that the press was being kind of quiet about reporting it, and they reported it as a fertilizer bomb. You maybe remember the Washington Post reported a fellow trying to kill his girlfriend with potting soil. That certainly was a fertilizer bomb. But with individual-type bombs, you have lots of other choices.

Mr. LINDER. If I, a passenger, brought five pounds strapped around his body on an airplane, would it do serious damage?

Ms. OXLEY. Certainly five pounds would do serious damage. The problem is that to initiate five pounds of ammonium nitrate ANFO is extremely difficult. You have to have a booster that is a commercial material. So you would probably want to have a half pound or

so of a military explosive to initiate it, and you have to have a detonator.

That would not be the choice. If you wanted to do that kind of damage, you would do something like Richard Reed, where you used a peroxide explosive or he had a military explosive, PETN.

Mr. LINDER. Mr. O'Neill, do you agree with Mr. Black that the best thing to do is to let the States continue to do the oversight, with standards set by the agencies?

Mr. O'NEILL. Yes, we do.

Mr. LINDER. And that would keep from having excess numbers of investigators coming out to each farm site?

Mr. O'NEILL. There is also the process established. What we are looking for is a minimum standard.

Mr. LINDER. Mr. McMahon, is it your judgment that this bill is sufficient to meet the tests that New York has passed on November 28th?

Mr. MCMAHON. Yes, I believe so. The thing that is important is that it gives the Secretary, only on the application of the Governor, the right to allow people, law enforcement or whoever in the individual States, to have access to the records.

Initially, most investigations or inquiries are going to be conducted by State or local law enforcement; and they have many more resources than the Federal. They deal with the fertilizer industry. They deal with the farmers in many ways. So I think that component would be critical.

I do agree that they should be standardized. Because if one State has laws and another State does not, that does not make sense either. And that is what we have seen with the chemical bills, like we have the chemical bill in New York. Surrounding States, New Jersey finally just passed one. I think you are going to see that piecemeal approach for a lot of these vulnerabilities unless there is some Federal legislation like this.

Mr. LINDER. Thank you.

The Chair would like to ask unanimous consent to allow Mr. Weldon to sit on the committee, give an opening statement if he chooses, and to question the panel.

Now I recognize Mr. Langevin for 5 minutes.

Mr. LANGEVIN. Thank you, Mr. Chairman.

I thank the panel again for your testimony today. It has been very enlightening and educational.

My first question for Dr. Oxley, in your report, you discuss efforts to eliminate the explosive properties of ammonium nitrate. First, do you have Federal support for that research? And if you could just tell us the status of those efforts.

Ms. OXLEY. The Federal funding for that came immediately after Oklahoma City, and I believe ATF got $18 million to look at inerting ammonium nitrate. They established a National Research Council Committee, which a report has now been issued; and they funded various efforts. Their line of research followed very closely the British effort, because the British had already started a program some 10 years earlier and were doing testing here in the States, because they do not have that much real estate. I don't believe that program is funded at this time. We are certainly not funded over it, and I think I would hear if other folks are.

Mr. LANGEVIN. Can you elaborate for the committee? Do you see great promise in being able to remove the explosive effects of ammonium nitrate? Is this something we should redouble our effort to do, so that ammonium nitrate would be available to farmers for commercial use but obviously we have taken steps to protect ourselves and would no longer have the explosive effect?

Ms. OXLEY. To date, I have not seen a technology with great promise. However, I have had a new technology just presented to me, and I haven't had time to evaluate it. So I would hesitate to say. But we should try.

Mr. LANGEVIN. Since your report was released in 1998, have you been disappointed with the lack of Federal response to the risk posed by ammonium nitrate?

Ms. OXLEY. Well, I guess when you turn on those NRC committees you are not really expecting a response. So I wasn't disappointed.

Mr. LANGEVIN. Mr. McMahon, does New Yorkw give you the power to compel compliance, and what enforcement powers do you have?

Mr. MCMAHON. There is no penalties involved with that. Permits could be revoked by the Commissioner of Agriculture, but there is no civil penalties or criminal penalties. We are relying on the industry's voluntary compliance, which I think we are going to have a very high rate of.

Some of our other bills dealing with the chemical assessment, our general aviation bill that deals with general aviation facilities, had no penalties. There is over 500 of those. We have got compliance with that by almost 100 percent without penalties. So we are looking at partnership with the industry.

Mr. LANGEVIN. And can you elaborate on what the New York law envisions as reasonable protections against vandalism, theft and unauthorized access to ammonium nitrate?

Mr. MCMAHON. Yes. It would be in a security area with a fence or secured building when it is unattended on it. And then we would also expect and it requires that there be a frequent inventory. Because there has been—in many instances, theft has been involved with ammonium nitrate by terrorists or criminals on that. So that is the main components of it.

Mr. LANGEVIN. Mr. O'Neill, if I could ask you, can you just walk us through the standard process for distribution of ammonium nitrate once it is produced or imported? Does it get delivered to retailers in large drums or is it in bags and bar coded for sale?

Mr. O'NEILL. I would say, Mr. Langevin, that the vast majority of this product is distributed in bulk from producers like Terra. On the domestic side, it would be delivered by rail car or by truck. Very little of it is distributed by bags. Farmers do not use bags in America. I think the industry as a whole, because of the security threat, has reduced the distribution of bags voluntarily.

The other product stream is, the reason for this serious consideration of this bill, is as some manufacturers have gone out of the business and a number of people have stopped distributing the product, the demand has shifted to imports. The imports are coming from primarily the former Soviet Union and producers beyond

the jurisdiction of the Congress, coming in by boatloads in the Mississippi River into our ports.

To put it in context, the Texas City explosion, those ships that blew up were about 2,500 tons. The ships that are coming in today are 10 times that size. 25,000 tons, 20,000 tons would be a reasonable size shipload of the ammonium nitrate coming in.

Now there is Coast Guard regulations, but those ships are soft targets to terrorists. So once the terrorists could commandeer or pirate one of these ships, then you have a whole different circumstance, because you have got a thousand tons of fuel oil on these vessels, and it is contained in their holds. So it is very quickly that we could have a very dangerous circumstance.

So it is important that the committee, you know, looks at this carefully and realizes that we have domestic producers like Terra that is very responsible, but we have a shifting in the supply chain here that needs to be looked at regularly.

Mr. LANGEVIN. Good point. Thank you.

Mr. LINDER. Mr. Weldon.

Mr. WELDON. Thank you, Mr. Chairman. I won't take the entire time.

As a sponsor of the bill with Mr. Thompson, I appreciate again your leadership and that of Mr. Langevin for supporting Bennie Thompson and I on this important legislation. To me, it is a very vital issue, one I want to reiterate here publicly, is that we have industry coming forward to government saying help us regulate this product so that in fact we can keep it out of the hands of the bad guys.

Too often, we criticize the private sector for not wanting to do the right thing; and this is probably the best example I can think of where the private sector came to Congress and said, look, we want to work with you. We do not want to harm our farmers, our distributors, our economy, but this is a problem that America has had to deal with, and we in fact want to be supportive.

So I want to just publicly thank the industry groups who have come together on this initiative, and we look forward to working together.

I would like to yield to my good friend and colleague from Pennsylvania, Mr. Dent.

Mr. DENT. Thank you, Congressman Weldon.

I, too, want to thank you gentlemen and lady for being here today; and Mr. O'Neill in particular, I want to thank you for taking such a leadership role on this very important initiative.

I have asked to have my name added as a cosponsor to the legislation that is strongly supported by Mr. Weldon and Mr. Thompson of Mississippi.

Again, I just commend you for your extraordinary leadership. It is—as Representative Weldon just said, it is not often that industry comes to us with an issue like this and is willing to work with us. For that, I thank you.

Unfortunately, I cannot stay for the balance of the hearing. I just wanted to express my thanks and gratitude to all of you.

Mr. WELDON. Mr. Chairman, reclaiming my time, you might want to consider doing something at your level or the full committee level to name this legislation perhaps in honor of some of

the victims that paid the ultimate price for this disaster in Oklahoma City. That would be a fitting tribute, maybe, to their memory. But I leave that judgment to you.

With that, I yield back.

Mr. LINDER. Mrs. Christensen.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman; and thank you for this hearing.

I do not have any questions at this point. I think many of mine have been asked by the prior members of the panel. But I want to thank you all for being here and thank you for the words of caution about the other explosives that we need to be aware of and concerned about as well and the recommendations that all of you have made in improving the legislation. I understand that many of those are incorporated in the substitute.

Thank you.

Mr. LINDER. They are.

Mr. Simmons.

Mr. SIMMONS. Thank you, Mr. Chairman.

I look forward to supporting this legislation, but I did have a couple of questions. I would like to focus a little bit on the expertise of Dr. Oxley, if you have a moment.

Years ago, during what my mother referred to as my wasted youth, I worked for the Central Intelligence Agency. I was a paramilitary operative. As a consequence of that assignment, I spent a lot of time working with explosives.

I remember on one occasion working with a bag of ammonium nitrate. We used some sort of commercially available fuel and generated a very nice explosion that did a lot of damage to a building. But we also took a bag of flour and sequenced the detonation of a bag of flour and blew out the windows in one side of a barn. The way it was done was the bag was exploded into a fine particulate material, and then the sequenced detonation came a few seconds later, ignited the flour and blew out the windows, the doors of this barn.

I notice in reading through your materials here that composite explosives require as little as stirring and oxidizer and fuel together, such as sawdust and other materials.

Clearly, ammonium nitrate works better. It combusts faster. It has got oxidizers within the material itself, which helps, but there are many other things that are commercially available that can be used for explosive purposes. So I guess what I am getting at here is, while I support this bill and I support regulation, I wonder if there are not some ways, using your expertise or the expertise of other people who are in the scientific community, of perhaps manufacturing ammonium nitrate, urea nitrate and other materials in a way that inhibits their use as an explosive from a chemical standpoint. Is that possible or is that just too complicated?

Ms. OXLEY. It is extremely difficult in terms of diluting it, which is the attempt in Ireland. That material is diluted with Dolomite, yet the Irish Republican Army continued to use it even after it was diluted. It was a matter of it was available in their hometowns so they could take it and import it to London and use it in Bishopsgate, which they had 30,000 pounds. So the dilution has not proved a solution to the problem.

There are some attempts now that I am aware of to make it a double salt. I do not if that is going to—it seems to make the material more stable.

And if you alter the materials so that instead of having to have—I mentioned that setting off 5 pounds is very difficult. But if instead of having 100 pounds before you can get a decent detonation, if you had to have 1,000 pounds, that is one more hurdle.

That is all we are doing really in our combating terrorism, is setting another hurdle. They can always figure out a way around it. I did not mean to be discouraging when I said they could figure out a way around it. I want to be ahead of them.

Mr. SIMMONS. I think that's reality. Israel, I believe, outlaws ammonium nitrate. They use urea nitrate. But that also can be used for explosive purposes in some configurations.

And so I agree with your basic premise that if we regulate one material successfully, I also agree that in my State of Connecticut I don't want a bunch of Federal regulators coming down. Set out the Federal standards; let the State enforce it.

But I also agree that people who are determined to do these things will find other ways of getting materials, so we create a regulation regime for ammonium nitrate and we may have to add to that at some future date.

Are there any agricultural countries around the world that have solved the problem?

Ms. OXLEY. The problem has not been solved, but I suggest that we do some more international dialogue. The problem that Mr. O'Neill brought up of the boatloads coming in is something I think that the United States needs to take a lead role in, tracking commodity chemicals. It is going to be a huge problem when the boatloads of ammonium nitrate change hands maybe six times while they are out in the ocean.

But if we can track variations in our stock market, certainly we can track how these oxidizers are bought and sold worldwide, because basically we can't stop the use of oxidizers. People need them for purifying their water, for doing bleaching, in this case for fertilizer. What we can do is take a role in tracking where they are going for legitimate use.

So if we control it here and we have got uncontrolled material coming in or going somewhere else, to go after U.S. interests, it is still a problem.

Mr. SIMMONS. I thank you for those questions and I thank the witnesses for coming here today. I appreciate it. I yield back.

Mr. LINDER. Mr. Thompson.

Mr. THOMPSON. Thank you very much, Mr. Chairman, ranking member. I appreciate the hearing. I have a written statement for the record.

Mr. LINDER. Without objection.

Mr. THOMPSON. In light of what Mr. Simmons talked about, we have sent DHS a request earlier in the year asking them to work with some of the major companies who develop a potential, less dangerous ammonium nitrate possibility. But we have not been able to get much movement out of that, and from what I understand, the industry doesn't really have a lot of problem with it if

it is a new technology that won't cost a lot, but we just have to prove it.

I think it would make good sense for us to kind of go on record saying, Why not look at it. And I think this would be an opportunity. I think Honeywell is one of the companies that is kind of pioneering this effort. But anything to help us be safer would be encouraged.

Two comments: Mr. McMahon, can you tell me whether or not the New York model has created any unnecessary burden on those users of the product?

Mr. MCMAHON. The law was just passed on November 28th, so it is too early to tell, but I think in the outreach that was done by our Department of Agriculture and markets to the industry, I don't think it is. The purchaser form has, I think, 21 categories on it; seven of those could be filled out by the distributor in advance. So—I think it would probably take about 2 minutes to fill out the form, so I am not sure that would be undue, but I think that is something, as you look at it, that you should consider in looking at those States that have forms in.

Now Nevada and South Carolina have had theirs—and Oklahoma—have had their laws in place a lot longer. Ours is very close. We did outreach with those. Those laws are all very similar, so they might be able to say better than us because we are just rolling ours out now.

Mr. THOMPSON. Did you do yours in consultation with industry?

Mr. MCMAHON. Yes. Department of Agriculture and Markets with industry, we did with law enforcement agencies actually on an international level as the Office of Homeland Security; and the bill calls for the Department of Agriculture and Markets and the State office of homeland security to consult with each other, which we did throughout the process on that.

Mr. THOMPSON. I think the intent of the legislation was to work with the industry, but also give us some accountability for the product and not to, if you please, add an additional layer. We are very sensitive to that. We made sure that this law did not preempt any existing State law, so that if there were States who wanted to do more, they could feel absolutely comfortable in doing that and not trying to contest that.

But we just felt the need to have some accountability built into the existing system.

Mr. Wallace, do you think the accountability that is proposed in this legislation is reasonable?

Mr. WALLACE. I do. And I think that it does not place an undue burden on the end consumer.

We voluntarily put into place many security measures, including our delivery confirmation program which requires the customer to respond with a positive delivery note. We had some concern as to how that would be received in the farming industry and were pleasantly surprised that it was well received almost unanimously.

Mr. THOMPSON. Yield back, Mr. Chair.

Mr. LINDER. Ms. Norton.

Ms. NORTON. Thank you, Mr. Chairman. I regret that I was not able to be here and hear the testimony.

I would be interested to know whether you know if the present state of regulation has left the industry vital to liability of any kind. Were there any cases that indicate that exposure?

Mr. LINDER. Anybody want to take a shot at that?

Mr. WALLACE. Well, from our standpoint, again, we have put in place measures to track our product after it leaves our gate both on a truck and rail, which would be common transport for us. From a delivery confirmation, we have security measures in place to assure that the proper person is picking up the proper product; and then also, within the rail system, the proper tracking of product from source to destination.

Mr. BLACK. I will comment just on a perceived liability.

I manage also within our group a self-funded workers compensation insurance program for agribusiness. Some of the products, we are continuing to see pressure from excess insurance market just on the potential liability or potential exposure to some of these type things, so insurance markets and the excess—the potential liability that would come of that, we have seen a little pressure from that.

Ms. NORTON. Typically—and industry is a more even playing field for industry if there is some regulation. Some will be more—perhaps because of liability, perhaps because they are more safety conscious, because they want, indeed, to do the right thing—will be more inclined than others, and of course, there are costs associated with that.

And to leave it to industry to decide whether to spend the money is one thing. When the government says, look, everybody ought to be accountable to a certain degree, some of that competitive pressure, at least it seems to me, is removed in what is responding to what is required of the industry by the Federal Government.

Thank you very much, Mr. Chairman.

Mr. LINDER. Thank you, Ms. Norton.

Thank you all for being here. We are grateful for your contributions. The hearing is adjourned.

Members of the subcommittee, we are going to, in 5 minutes, reconvene and mark up this legislation rather than this afternoon.

[Whereupon, at 11:10 a.m., the subcommittee was adjourned, to reconvene in approximately 5 minutes.]

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