

Shipping Things that Go BOOM!



Today we will cover:

- What is an EXPLOSIVE?
- Why the ATF won't help!
- Why the Bomb Squad may not help!
- DOT Approval Process
- Wrapping it all together







Tetrazine

SO...I've got this "Stuff"

- "My waste vendor told me they can just add water."
- "Bob from the maintenance area said they used to..."
- "Call the Bomb Squad"
- "Can't we just take it out back?"



Explosives

- Energetic substance
 - Burn rate faster than speed of sound (Detonation)
 - Burn rate slower than speed of sound (Deflagration)



- Device/Article
 - Contains Detonating Substance(s)
 - Contains Deflagrating Substance(s)
 - Contains Flammable liquid/solid



Explosives

- ATF Definition
 - Compound, mixture or device; primary purpose of which is to function by explosion
 - Regulates manufacture, usage, storage
 - FEL for possession, shipment, or receipt
 - Employee Possessor (BG checks)
 - No exceptions for wastes



<http://www.atf.gov/explosives/how-to/become-an-fel.html>

Explosives

- DOT Definition 49CFR173.50
 - Substance, article or device; chemical reaction, function by, or function similar to
 - Regulates transport as Hazard Class 1
 - Requires testing, classification, “Approval” (EX#), HazMat Security Plan, and training
 - PHMSA Registration, FMCSA HMSP for 1.1-1.3
 - No exceptions for wastes



Explosives

- EPA (RCRA) Definition
 - D003 and other waste codes – Well...
 - “Imminent and Substantial Endangerment” clause (Section 7003) – Well...
 - Open Burning/Detonation
 - Long term liability

Big reason why Bomb Squads may not want to touch it anymore...you may not want them to anyways

[See RO 11363, 11370, 13237, 13574](#)

First Steps

- For heaven’s sake don’t touch it.
- Get its history (Who, what, when, where, why, and how?)
 - Who brought it onsite? Who manufactured it?
 - What is it (is it FORBIDDEN)? What’s the Approval #?
 - When was it brought onsite? (or opened)
 - Where does it need to go?
 - Why me?
 - How did we manage it in the past?

First Steps

- How did it get to your location in the first place, do your homework?
 - Check original shipping doc (EX# from manufacturer?)
 - Check with experienced employees, retirees
 - History of location? aka. Military research, etc...
- Problem #1:
 - Explosives require ATF license to possess
 - Must register for FEL (admitting to possession, dicey)
 - Storage requirements (magazines, distances, etc)
 - Federal crime, No-Fly-List, etc...
 - “But but but...I just FOUND IT....!”

First Steps

- Problem #2:
 - Explosives require DOT Approval to ship
 - No “magical” Special Permits, few exceptions
 - FORBIDDEN EXPLOSIVES (nom nom nom nom)
- Problem #3:
 - Most waste disposal companies might not take it

Hint: If its older than ~1970's, pretty good chance its NOT "Approved"

Forbidden Explosives

49CFR173.54

- 1) Unapproved Explosives
 - 2) Other specific explosives (unstable propellants, neat nitroglycerin, anything specifically “Forbidden” in HazMat Table 172.101, etc. etc. etc.)
 - 3) Explosive articles with means of initiation/ignition installed
- Only option is likely the Bomb Squad for 2 & 3
 - #1, get it Approved!

Hey! What makes an explosive "Approved"?!!?!!?

DOT Approval Process

- In order to ship any explosives (Class 1 Material), the DOT must issue an "Approval" (EX#)
- Explosives **MUST NOT** be shipped without an EX#.
- EX#'s are **VERY** product, manufacturer and packaging specific!
- Exception for testing and evaluation purposes, with **VERY SPECIFIC** requirements.

Currently no exception for waste disposal.



DOT Approval Process

- Explosives not previously "Approved" = NEW Explosive

New Explosive (per 49CFR173.56):
(a) Definition of new explosive. For the purposes of this subchapter a new explosive means an explosive produced by a person who:
(1) Has not previously produced that explosive; or
(2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive.

DOT Approval Process

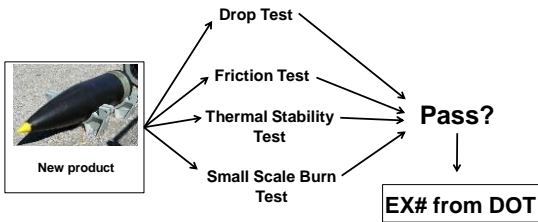
- (1) Has not previously produced that explosive



=
**New
DOT
Approval
Required**

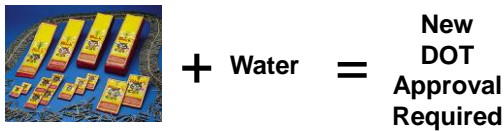
DOT Approval Process

- (1) Has not previously produced that explosive



DOT Approval Process

- (2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive.



DOT Approval Process

- (2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive.



DOT Approval Process

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+ Gallons and gallons of water = New DOT Approval Required

You cannot "dilute" an Explosive enough to remove its Explosive Classification

DOT Approval Process

- Basically...



Existing "Approved" Class 1



= NEW DOT Approval Required

DOT Approval Process

- Basically...



Existing "Approved" Class 1

+ New clothes, covering, casing, application, etc...

= NEW DOT Approval Required

Soooooo complicated....this is why I said try doing your homework first.

DOT Approval Process

New Explosive (per 49CFR173.56):

(a) Definition of new explosive. For the purposes of this subchapter a *new explosive* means an explosive produced by a person who:

- (1) Has not previously produced that explosive; or
- (2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive.

An explosive will not be considered a "new explosive" if an agency listed in paragraph (b) of this section has determined, and confirmed in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved.

What's this?
A
LOOPHOLE???!?!?

DOT Approval Process

An explosive will not be considered a "new explosive" if an agency listed in paragraph (b) of this section has determined, and confirmed in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved.

Means: We (as a manufacturer) already had an explosive similar to this one classified by a lab and Approved by DOT, we may not have to perform additional expensive testing.

This is called "classification by analogy". It's not a "loophole".

Oooohh oooooh
What about the
"testing" exception?

DOT Approval Process

Exception for testing and evaluation:

173.56(e):
(e) Transportation of unapproved explosives for developmental testing. Notwithstanding the requirements of paragraph (b) of this section, the owner of a new explosive that has not been examined or approved may transport that new explosive from the place where it was produced to an explosives testing range if—
(1) It is not a primary (a 1.1A initiating) explosive or a forbidden explosive according to this subchapter;
(2) It is described as a Division 1.1 explosive (substance or article) and is packed, marked, labeled, described on shipping papers and is otherwise offered for transportation in conformance with the requirements of this subchapter applicable to Division 1.1;
(3) It is transported in a motor vehicle operated by the owner of the explosive; and
(4) It is accompanied by a person, in addition to the operator of the motor vehicle, who is qualified by training and experience to handle the explosive.

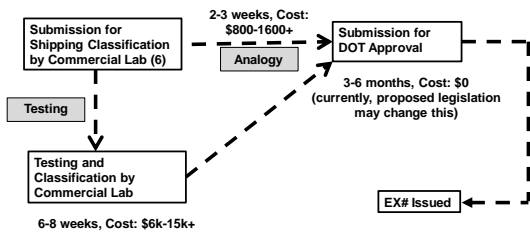
DOT Approval Process

- Exception for testing and evaluation:

173.56(e) – Summary:
 (e) You can transport an unapproved explosive for testing purposes:
 (1) Can't be a 1.1A or a forbidden explosive
 (2) Package and describe it as a 1.1 on a shipping paper. Mark, label and placard 1.1 (dang)
 (3) The company making the explosive has to own or lease the transport vehicle
 (4) 2 people have to escort the load, 1 of whom is a subject matter expert

DOT Approval Process

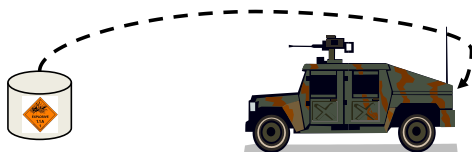
- Timeline



There are currently (9/2013) 6 Approved DOT Testing Labs for Explosives in the US.

Arghhhhhhhh....thats a lot of work!

“Wait, wait WAIT...this is stuff from an old military contract...can't the DoD just pick it up?”



Interim Hazard Classification/DoD Approval

- Many Explosives are only manufactured and produced for the US Military (DoD).
- DoD can conduct its own testing (TB 700-2), and issue its own Explosives Approvals.
- DoD can also issue Interim Hazard Classifications (IHC) for testing/development purposes without classification testing.
- IHC's are "Project" specific.
- Good chance "Project" may be over/unfunded by the time disposal rolls around.

Interim Hazard Classification/DoD Approval



DOT does NOT accept DoD Classification/Testing as analogy to DOT Classification.

Making a shipment

- ATF Federal Explosives License (FEL) (includes Employee Possessor)
- DOT Approval (EX#) – no expiration date unless listed (default is none)
- Packaging must match "Notes" on EX# or follow 49CFR173.62
- Hazardous Waste Manifest if RCRA Regulated.
- Proper Labeling & Marking
- Function Specific Training
- 1.1-1.3 generally require using a explosives hauler

The Approval (Document) →

REFERENCE NUMBER
EX2012091137

Approval (EX#) →

Packaging Notes →

Blind open as required by Federal Cartridge Company, 900 Ehlen Drive, Anoka, MN. United States the following items are classified in accordance with Section 173.56, Title 49, Code of Federal Regulations (CFR). A copy of your application, all supporting documentation and a copy of this approval must be retained and made available to DOT upon request.

U.S. PROPER SHIPPING NAME AND NUMBER:
Substances, explosive, n.o.s. (Smokeless powder, waste primers), UN0474

U.S. CLASSIFICATION CODE: 1.1D

REFERENCE NUMBER: EX2012091137 **PRODUCT DESIGNATION PART NUMBER:** Clear Packaging with one steel drum 55 gallon
Continued on 2

NOTES: This classification is only valid for one-way transportation from Federal Cartridge Co. facilities to a site for disposal, and when the waste is packaged as follows:
Outer Packaging - UN 1A2 steel drums or UN 1H2 plastic drums with 55 gallon maximum capacity, each containing no more than three hundred (300) pounds gross weight of waste material.

DATE: 10/19/2012

Hazmat K. Dwyer

For Dr. Hoagy St. John
Director, Administration for Hazardous Materials Safety

NOTES: This classification is only valid for one-way transportation from Federal Cartridge Co. facilities to a site for disposal, and when the waste is packaged as follows:
Outer Packaging - UN 1A2 steel drums or UN 1H2 plastic drums with 55 gallon maximum capacity, each containing no more than three hundred (300) pounds gross weight of waste material.

Proper Markings

- Approval (EX#)
- UN ID Number
- Shipping Name
- Shipper Name & Address

Proper Label (1.1D)

U.S. D.O.T. SHIPPING DESCRIPTION	
UN0474 Waste Substances,explosive,n.o.s. (smokeless powder, waste primers)	
1.1D <small>HAZARD CLASS</small>	
HAZARDOUS WASTE <small>FEDERAL LAW PROHIBITS IMPROPER DISPOSAL</small>	
<small>IF FOUND, CONTACT THE NEAREST POLICE OR</small> <small>FIRE SAFETY DEPARTMENT, OR THE</small> <small>U.S. ENVIRONMENTAL PROTECTION AGENCY</small>	
EX2012091137	
9/1/2013	9/1/2013
Federal Cartridge	
900 Ehlen Drive	
Anoka MN 55303	
MNND006156590	Reactive, Toxic
D003, D005	
CY309725	Floor Sweepings
CONTAINS HAZARDOUS OR TOXIC WASTE	



DOT Function Specific Training

- Related to explosives shipping
- On components of 173.50 – 173.63 including definitions, testing, classification, Approval, and packaging.
- Few training options (specialized field)
- Can self-certify

Questions:

- Can I quit?
- This isn't in my job description?
- Mommy?
