HAZARDOUS MATERIALS TRAINING!

What do we do with this stuff, it looks dangerous?!?
• A hazardous material is any solid, liquid, or gas that can harm people, other living organisms, property, or the environment. Hazardous materials (hazmat) may be radioactive, flammable, explosive, toxic, corrosive, biohazardous, an oxidizer, an asphyxiant, a pathogen, an allergen, or may have other characteristics that render it hazardous in specific circumstances.
Every hazardous material is assigned to one of nine hazard classes as defined in 49 CFR 172.101 and 173. The nine hazard classes are as follows:

- a. Class 1: Explosives.
- b. Class 2: Gases.
- e. Class 5: Oxidizing Substances, Organic Peroxides.
- g. Class 7: Radioactive Materials.
- h. Class 8: Corrosives.
Hazard Classes Definitions

• 1.1 = Explosives with a mass explosion hazard
• 1.2 = Explosives with a mass projection hazard
• 1.3 = Explosives with predominately a fire hazard
• 1.4 = Explosives with no significant blast hazard
• 1.5 = Very insensitive explosives; blasting agents
• 1.6 = Extremely insensitive detonating substances
Hazard Classes Definitions

• 2.1 = Flammable gas

• 2.2 = Non-flammable compressed gas

• 2.3 = Poisonous gas

• 3 = Flammable liquid
  – (Boiling Point/Flash Point)
Hazard Classes Definitions

• 4.1 = Flammable solid
  – (ignites through friction)
• 4.2 = Spontaneously combustible material
  – (ignites when exposed to air)
• 4.3 = Dangerous when wet
  – (ignites when contacted with water)
Hazard Classes Definitions

- **5.1 = Oxidizer**
  - (causes or enhances combustion of other materials)

- **5.2 = Organic peroxide**
  - (chemical group that is reactive, with an extra -0-)
Hazard Classes Definitions

• 6.1 = Poisonous materials
  – (oral, dermal, inhalation)

• 6.2 = Infectious substance
Hazard Classes Definitions

• 7 = Radioactive material

• 8 = Corrosive material
  – (rate of skin destruction-exposure/observation time)

• 9 = Miscellaneous
PLACARDS & LABELS

EXPLOSIVE 1
FLAMMABLE GAS 2
NON-FLAMMABLE GAS 2
INHALATION HAZARD 2
POISON GAS 2
FLAMMABLE LIQUID 3
FLAMMABLE SOLID 4
DANGEROUS 4
SPONTANEOUSLY COMBUSTIBLE 4
OXIDIZER 5.1
ORGANIC PEROXIDE 5.2
INHALATION HAZARD 6
POISON 6
TOXIC 6
RADIOACTIVE 7
CORROSIVE 8
MISCELLANEOUS DANGEROUS GOODS 9
General Guidelines on use of HAZMAT Labels

1. The shipper must attach the appropriate label(s) to each package of hazardous material offered for shipment unless excepted from labeling requirements (172.400)
• 2. If the material in a package has more than one hazard classification, the package must be labeled for each hazard
• 3. When two or more hazardous materials of different classes are packed within the same packaging or outer enclosure, the outside of the package or enclosure must be labeled for each class of hazardous material involved (172.404)
• 4. Radioactive materials requiring labeling, must be labeled on two opposite sides of the package. (172.404)
6. No one may offer or transport a package bearing any marking or label which by its color, design, or shape could be confused with a hazardous materials label. (172.401)
SECURITY PLANS

- Persons that offer or transport hazardous materials are required to develop and implement written plans to assure the security of hazardous materials shipments.
5. A label should only be applied to a package containing hazardous material if it represents the hazard inside.
• A security plan should focus not only on the potential threats posed by the material, but on personnel, facility and en route security issues.

• Copies of the security plan must be available to the employees who are responsible for implementing it.
Criminal Penalties!!!!!

• A person who knowingly violates or willfully violates a provision of the Federal hazardous material transportation law or an order or regulation issued thereunder shall be fined under title 18 United States Code, or imprisoned for not more that 5 years. Or both.
TRAINING

• Any person who in the course of their employment directly affects hazardous materials transportation MUST be trained and tested in general awareness.
• NCAR will train selected employees every two years.
Shippers Responsibilities

• The Hazardous Materials Regulation apply to each person who performs, or causes to be performed, functions related to the transportation of hazardous materials in commerce.
Articles MUST be Properly

- Identified
- Classified
- Packed
- Marked
- Labeled
- Documented
- Registered, if necessary
- Placarded
Packing Groups

• Packing Group I
  – GREAT DANGER

• Packing Group II
  – Medium Danger

• Packing Group III
  – minor danger
UN Specification Packing

- UN 4G/X/25.0/S/06/A/MANME

- 4G = fibreboard box
- X = Packing group II
- 25.0 = max weight in kgs the package has been tested for
- S = single package for solid or combination package
- 06 = year of manufacture
- A = state (country) of manufacture
- MANME = symbol of manufacturer
UCAR

• Was caught shipping hazardous materials from a field experiment IMPROPERLY packaged.

• No fines were levied at that time

• UCAR has made HAZMAT training a priority.