

*LITHIUM BATTERIES*  
AND  
*Hazardous Materials*  
***PCC Workshop-in-a-Box***

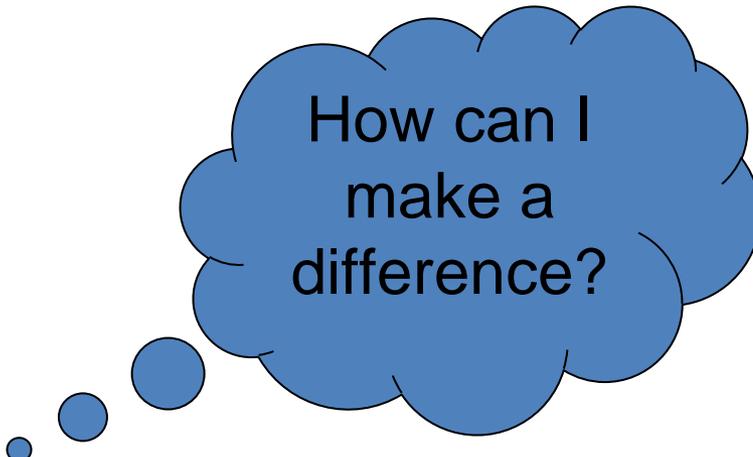


# Overview

- *Lithium batteries – Recent Developments*
  - *DOT Regulations*
- *Firearms*
- *Common Household Products*
- *International*
- *Resources*

# Make a Difference

- Front line information resource to your local offices and businesses.
- Be knowledgeable and familiar with the regulations for mailing hazardous, and restricted materials.
- Educate, educate, educate.



How can I  
make a  
difference?

# Lithium Batteries

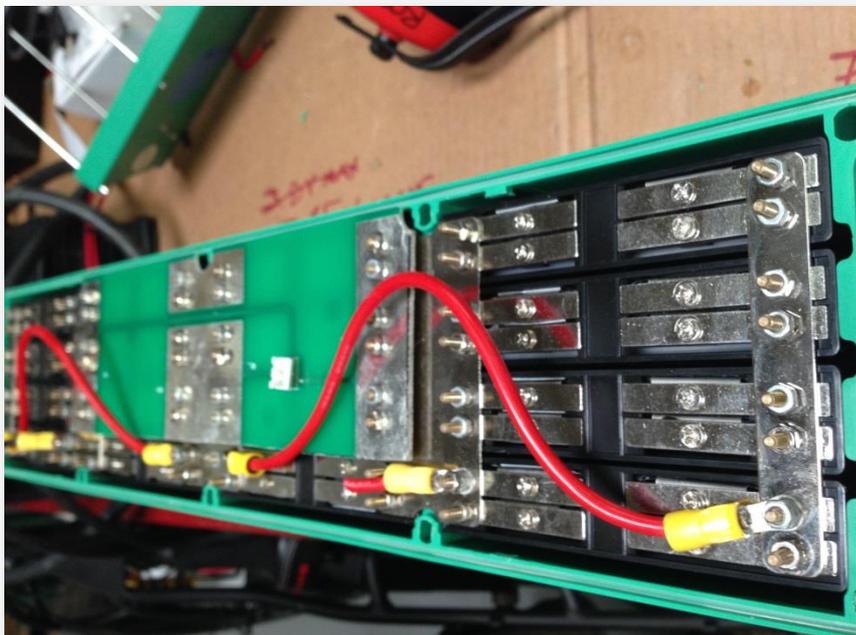


# UPS - Dubai, United Arab Emirates Sept. 3, 2010



# August 2014

Returned by customer using  
a Priority Mail flat rate box



Shipped from manufacturer to  
customer via commercial  
carrier



# September 2014

Separate lithium battery sent by  
online retailer



**An individual battery was mailed in a padded bag with no other padding or packaging.**



# January 2015

Sent by an online retailer



**Package addressed to an APO address – individual lithium batteries are prohibited in international and APO/FPO/DPO mailings**

# Department of Transportation Rulemaking

- PHMSA (Pipeline & Hazardous Materials Safety Administration) writes the requirements for surface and air transportation for the United States.
- Recent revisions to lithium battery standards, now harmonize the United States Postal Service with the UN, ICAO (International Civil Aviation Organization), and IMDG (International Maritime Dangerous Goods Code) standards for consistency throughout the world

# USPS Rulemaking

- Terminology aligns with PHMSA and the shipping industry
- Adopted new UN number & expanded descriptions for lithium batteries
- Added a new category for very small lithium batteries installed in equipment
- Adopted new quantity limitations
- Provided new marking/documentation requirements
- See Pub 52, section 349

# Very Small Batteries

Have the same rules as lithium metal or lithium-ion

## *Domestic*

- No limit on the number of cells/mailpiece
- Each lithium-ion cell or battery must have a watt-hour rating of not more than 2.7 Wh
- Each lithium metal cell or battery cannot exceed 0.3 gram of lithium content
- Must be **installed in**, or **packed with** (in original packaging) equipment
- Weight limit of 2.5 Kilograms (5.5 lbs.)

## *International*

- Must be **installed in** the equipment they operate
- Cell size/capacity applicable to domestic mailing applies (2.7 Wh / 0.3 gram)
- Still limited to a maximum of 4 cells/mailpiece



# Lithium Metal or Lithium Alloy Batteries



Small ***nonrechargeable*** consumer-type batteries



## ***Domestic***

***Contained in*** (properly installed in equipment) 8 cells or 2 batteries

Package cannot exceed 11 pounds

***Packed with equipment***, but not installed in the equipment

8 cells or 2 batteries

Package cannot exceed 11 pounds

***Without the equipment they operate*** (individual batteries in originally sealed manufacturer's packaging)

Package cannot exceed 5 pounds (Surface Mail Only)

## ***International***

***Contained in*** (properly installed in equipment) 4 cells or 2 batteries

Cannot contain more than 1.0g lithium content per cell or more than 2.0g aggregate lithium content per battery

# Lithium-ion or Lithium Polymer Batteries



Small *rechargeable* consumer-type batteries



## **Domestic**

**Contained in** (properly installed in equipment) 8 cells or 2 batteries

**Packed with equipment** (but not installed in the equipment)  
8 cells or 2 batteries

**Without the equipment they operate** (individual batteries in originally sealed manufacturer's packaging)  
8 cells or 2 batteries (Air or Surface Mail)

## **International**

**Contained in** (properly installed in equipment) 4 cells or 2 batteries  
Must not exceed 20 Wh per cell  
Must not exceed 100 Wh per battery

# Marking & Documentation

## *Domestic Only*

- Aligns with DOT to the extent possible
- Requires markings – unless 4 or less cells or 2 or less batteries are installed in equipment
- Except:
  - Button cells installed in equipment
  - All markings prohibited in international/APO/FPO/DPO
- Allows/requires DOT handling lithium battery label in domestic air transportation (5 to 8 cells)
- Requires a separate written document whenever markings are required

# Markings



Hazard Class 9 Label



DOT Lithium Battery Handling Label

- The labels shown here are for domestic use only.
- No lithium battery markings are permitted on international packages or to APO/FPO/DPO destinations.



# Firearms



# Firearms

There has been a recent increase in the number of Postal inquiries with regard to firearms:

- Mailability to foreign destinations
- Increased frequency of airline screening
- Private manufacture using 3-D Printers

# 3-D Printer – February 2015

**Supposedly  
manufactured  
by a 3-D Printer**



# Where Can I Find Firearm Standards?

- Domestic Mailing Standards:
  - Pub 52 – Section 43
- International Mailing Standards:
  - International Mail Manual (IMM) – 137
    - Individual Country Listings
    - 540 (Export Regulations)
- Bureau of Alcohol, Tobacco, Firearms and Explosives
  - [www.atf.gov](http://www.atf.gov)

# Firearms – General

- International shipments must also meet domestic mailing standards
- Receiver or frame = firearm
- All mailings must meet ATF and all other federal, state and local regulations

# Common Household Items



# Common Household Items

Item	Hazard Class	Pub 52 Reference	Can you Mail Domestically?	International?
Bleach	8	348	Restricted quantity, packaging & markings	Prohibited
Alcoholic beverages	3	42	Prohibited	Prohibited
Nail Polish	3	343	Surface only with restrictions	Prohibited
Aerosol sprays	2	342	Surface only with restrictions	Prohibited
Perfumes	3	343	Consumer Commodity only for air	Prohibited
Cigarette lighters	3	343	Surface only with written permission	Prohibited
Cigarettes	n/a	47	Restricted to mailers with permission	Prohibited
Cremated remains	n/a	451	Restricted packaging, markings, and class of mail	Restricted

# Hazard Classes

<b>Hazard Class</b>	<b>Type</b>
1	Explosives
2	Gases
3	Flammable & Combustible Liquids
4	Flammable Solids
5	Oxidizing Substances, Organic Peroxides
6	Toxic / Infectious Substances
7	Radioactive Material
8	Corrosives
9	Miscellaneous Hazardous Materials

# International Mail



# Permitted in International Mail

- 6.2 Infectious Substance: with restrictions via First-Class Package International Service with Registered Mail service only.
- 7 Radioactive Materials: with restrictions via First-Class Package International Service with Registered Mail service only.
- 9 Misc. Hazardous Materials: prohibited except for certain magnetized materials and lithium (metal) or lithium-ion batteries (the batteries may only be shipped if they are **installed in** the equipment they operate).

# Individual Country Listings

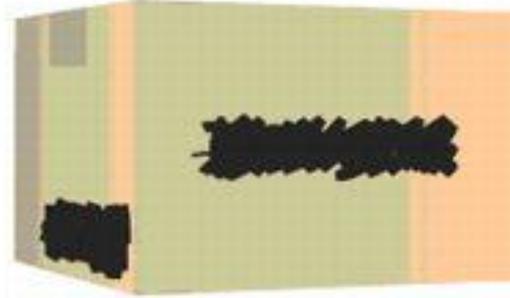
Each country has its own listing in the IMM where mailers can find prohibitions and restrictions or general observations. Here is just a short sample of prohibitions from Great Britain:

- Aerosols.
- Ammunition
- Animals, live
- Arms and parts of arms
- Coins
- Frozen food
- Human and animal remains (cremated remains/ashes)
- Lottery tickets
- The list goes on and on

# Old Markings and Labels



Incorrect Procedure



Correct Procedure

# Resources

- Postal Explorer at: *<http://pe.usps.com/>*
  - Publication 52, *Prohibited, Restricted, and Perishable Mail*
  - *International Mail Manual (IMM)*
- USPS Poster 138, Keep the Mail Safe
- USPS Poster 701, Check First! (Dangerous Goods in International or APO/FPO/DPO Mail)
- UPU – list of prohibited articles found at:
  - *<http://www.upu.int/en/activities/customs/list-of-prohibited-articles.html>*