



Hazmat Awareness: Identifying Hazmats (Dangerous Goods) in Your Aircraft Parts Inventory

2020 ASA Webinar



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Terminology

- Hazardous Materials (hazmat) – normally used in the US
- Dangerous Goods (DG) – normally used in the rest of the world
- Both terms mean materiel and substances that have been identified as dangerous to people, property, or the environment; despite minor legal differences, the terms can be used interchangeably for our purposes
- We will use “hazmat” in this webinar



Aviation Businesses as Hazmat Employers

- FAA says “all air agencies [repair stations] are hazmat employers”
HBAW 99-10
 - Many aircraft parts are hazmats
 - Customers can send parts without prior identification
 - This same logic applies to many aircraft parts distributors
- AC 00-56B requires hazmat training
- Since 2010, FAA has required existing repair stations to certify hazmat training records
 - FAA has directed inspectors to inspect for hazmat training records. FAA Order 8900.1



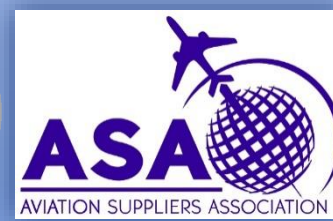
U.S. Hazmat Training Rule

- Non-US training standard is typically every two years
- U.S. air carrier training requirement has been harmonized with international standard of two year recurrent training
- *U.S. training standard for others remains every three years*
- Anyone who affects the safe transport of dangerous goods must meet the training standards (*even if located outside the U.S.*)
- THIS SESSION IS NOT THE SORT OF TRAINING YOU NEED TO SHIP HAZMAT



Want to Get Certified?

- Two-day live, online, classes provide certification to ship hazmat (including aircraft parts) by air under the U.S. DOT and ICAO (IATA) standards
 - May 6-7, 2020
 - September 30 – October 1, 2020
- Sign up by Wednesday, April 15 for an early registration discount! Trade Association Members can get a discounted tuition of \$200
- <http://www.WashingtonAviation.com/hazmat.html>



Why Identify Hazmat?

1. It can injure you, so you need to be careful
2. You need special training and certification to ship hazmat under the laws of most jurisdictions
 - a. Shipping without proper certification can yield a civil penalty of up to \$600,000 or more!
3. Identification training allows you to properly identify hazmat
 - a. Store it properly
 - b. Avoid shipping by untrained persons
 - c. Refer hazmat to properly trained persons – as needed



What do hazmat packages look like: what sort of indicators should I look for?

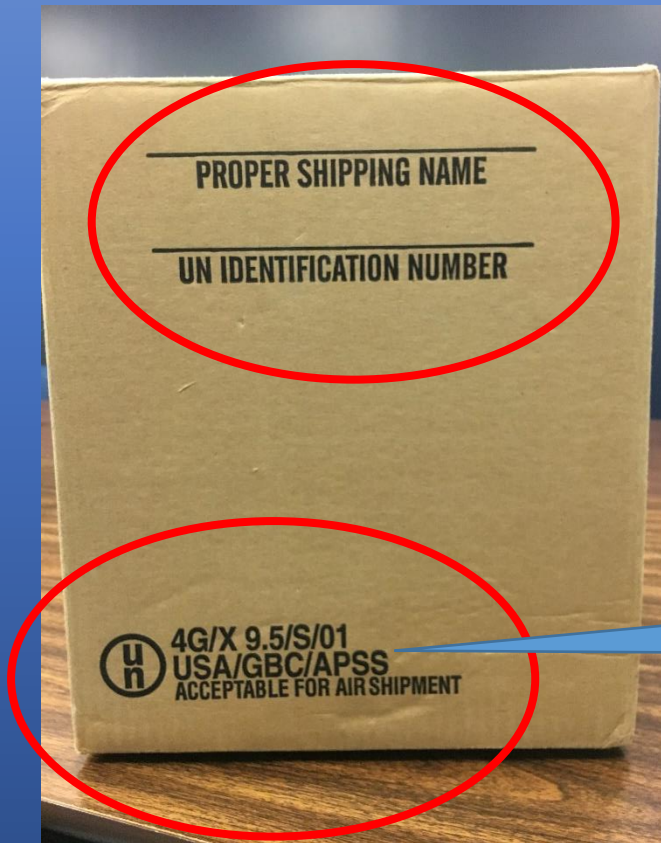


Look For ...

- To identify hazmats, look for packaging, markings, labels, and/or shipping papers

Look For ...

- To identify hazmats, look for UN specification packaging
- But note that UN specification packaging can legally be used for non-hazmats

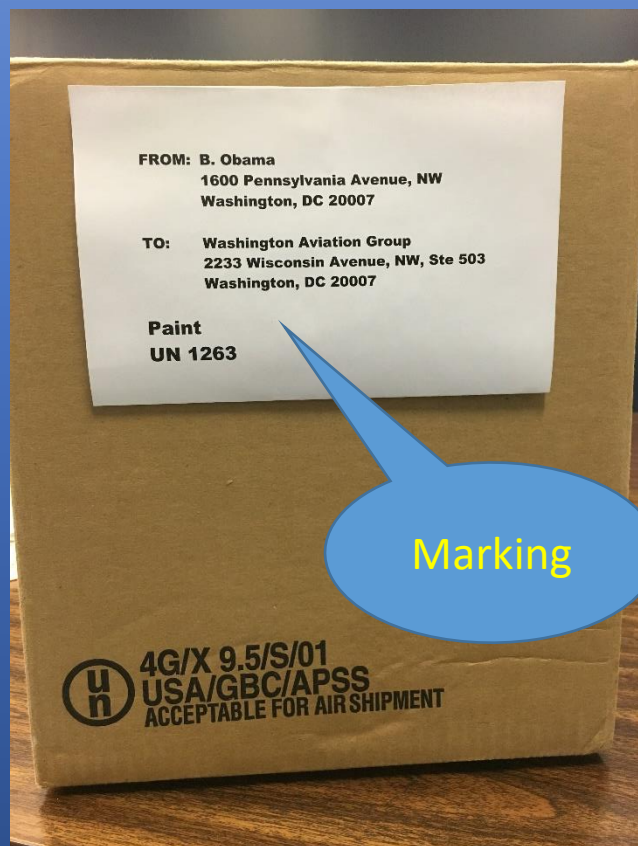
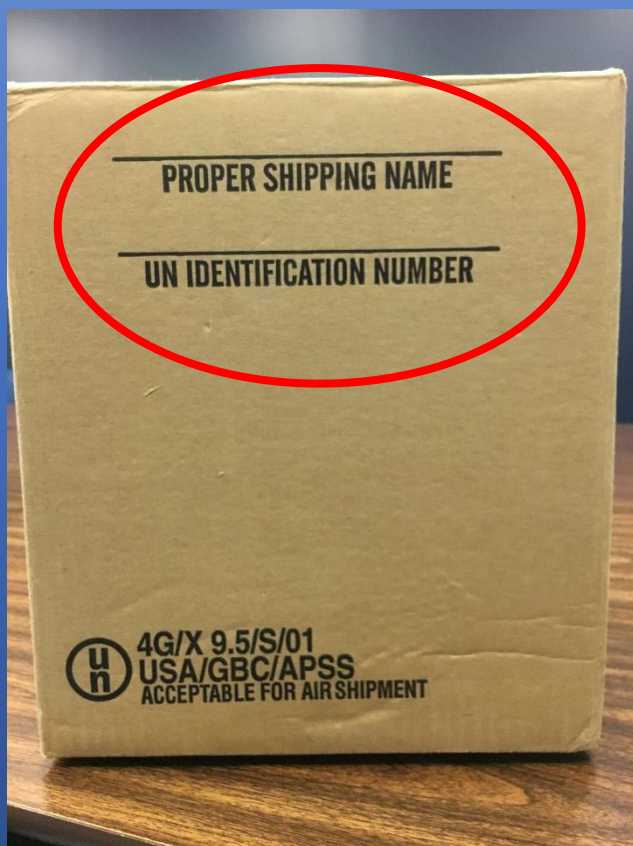


UN Packaging
Specification



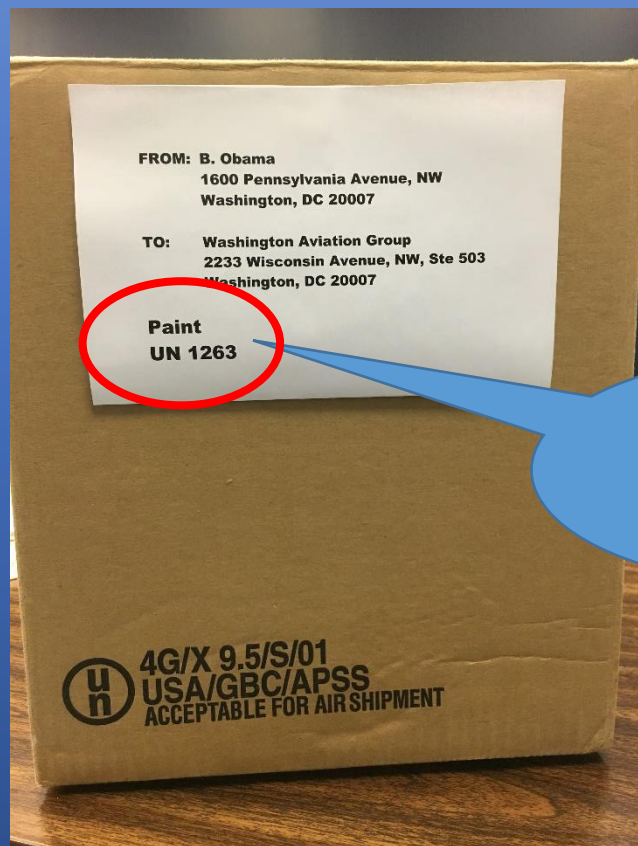
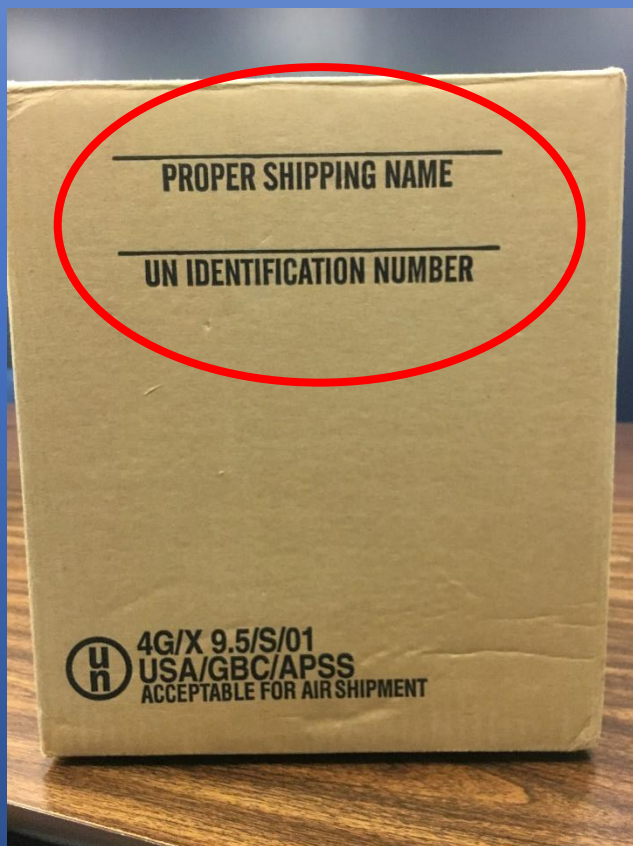
Look For ...

- To identify hazmats, look for markings and labels



Look For ...

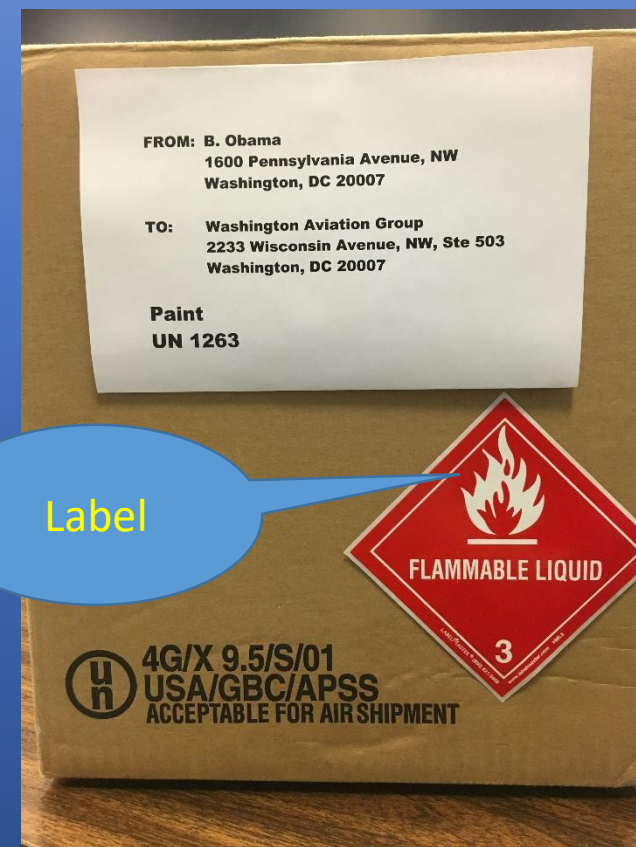
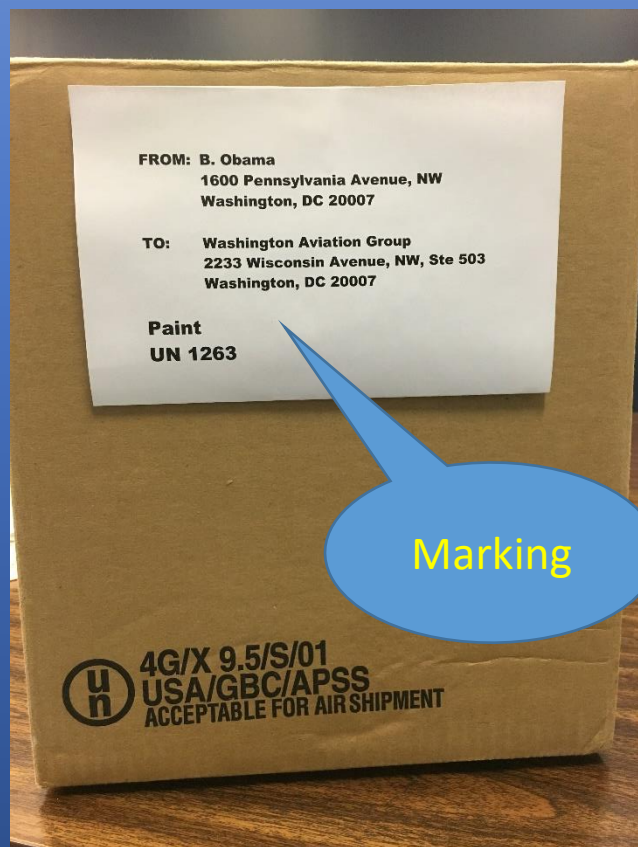
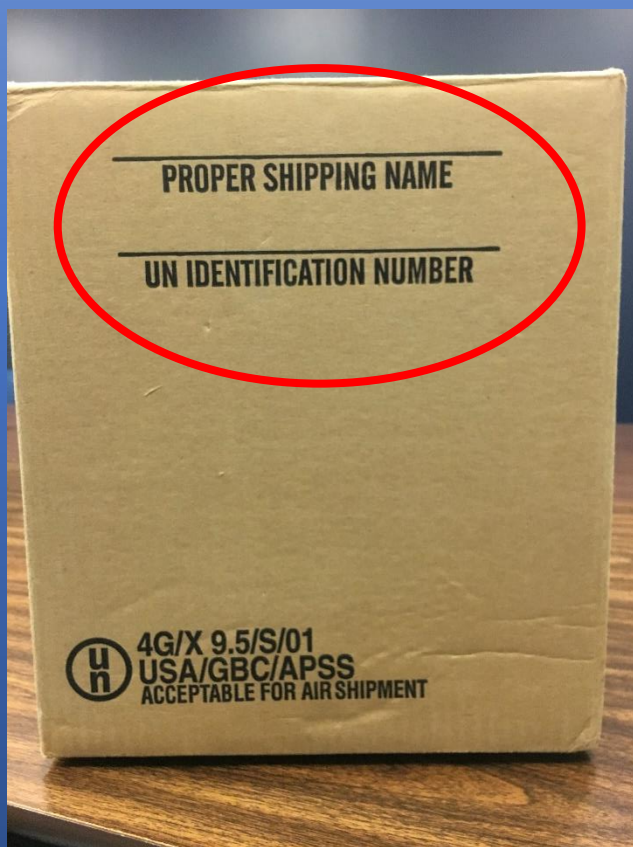
- To identify hazmats, look for markings and labels



Proper Shipping
Name and UN
Number

Look For ...

- To identify hazmats, look for markings and labels



SHIPPER'S DECLARATION FOR DANGEROUS GOODS



Shipper		Air Waybill No.					
		Page of Pages					
		Shipper's Reference No. (optional)					
Consignee							
Two completed and signed copies of this Declaration must be handed to the operator.		WARNING					
TRANSPORT DETAILS This shipment is within the limitations prescribed for: (delete non-applicable)		Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.					
Airport of Departure (optional): <table border="1"> <tr> <td>PASSENGER AND CARGO AIRCRAFT</td> <td>CARGO AIRCRAFT ONLY</td> </tr> </table>		PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY	Shipment type: (delete non-applicable) <table border="1"> <tr> <td>NON-RADIOACTIVE</td> <td>RADIOACTIVE</td> </tr> </table>		NON-RADIOACTIVE	RADIOACTIVE
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY						
NON-RADIOACTIVE	RADIOACTIVE						
Airport of Destination (optional):							
NATURE AND QUANTITY OF DANGEROUS GOODS UN Number or Identification Number, Proper Shipping Name, Class or Division (subsidiary hazard), Packing Group (if required) and all other required information.							
Additional Handling Information							
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.		Name of Signatory Date Signature (See warning above)					

- To identify hazmats, look for packaging, markings, labels, and/or shipping papers
- Shipper's Declaration for Dangerous Goods
- Notice the red hatching around the sides



Look For ...

- To identify hazmats, look for packaging, markings, labels, and/or shipping papers
- Sometimes hazmats are undisclosed, so look at the features of the aircraft parts you are receiving



What sort of aircraft parts are likely to be hazmats?



There are Nine Classes of HazMats

- **Class 1:Explosives**
- **Class 2:Gases**
- **Class 3:Flammable Liquids**
- **Class 4:Flammable Solids**
- **Class 5:Oxidizers**
- **Class 6:Poisons**
- **Class 7:Radioactive**
- **Class 8:Corrosives**
- **Class 9:Miscellaneous Dangerous Goods**

Class 1: Explosives

- Explosive substances
- Explosive articles
- There are six subdivisions and each explosive will have a compatibility group letter
- So the class/division of a squib may look like this: **1.6S**

* = Compatibility
Group Letter



Explosives



- Including explosive squibs and actuators
- E.g., in the fire suppression systems
- Look for markings on the box like
 - Power device



Class 2: Gasses

- Hazmats because they are pressurized
 - At 50° C (122° F) it has a vapor pressure of 300 kPa or more
or
 - Is completely gaseous at 20° C (68° F) at a standard pressure of 101.3 kPa
- *NOTE: a non-flammable gas that is below vapor pressure standards is not hazmat UNLESS it has a subsidiary hazard (e.g. O₂)*
 - If the subsidiary hazard still exists, then that hazard still exists
 - PHMSA has issued exemption letters to companies for low-levels of oxygen in tanks

Gasses

- 2.1 Flammable gas
- 2.2 Nonflammable gas
- 2.3 Toxic gas



Class 3: Flammable Liquids

- Includes those liquids with a closed-cup flash point of 60° C (140° F) or less



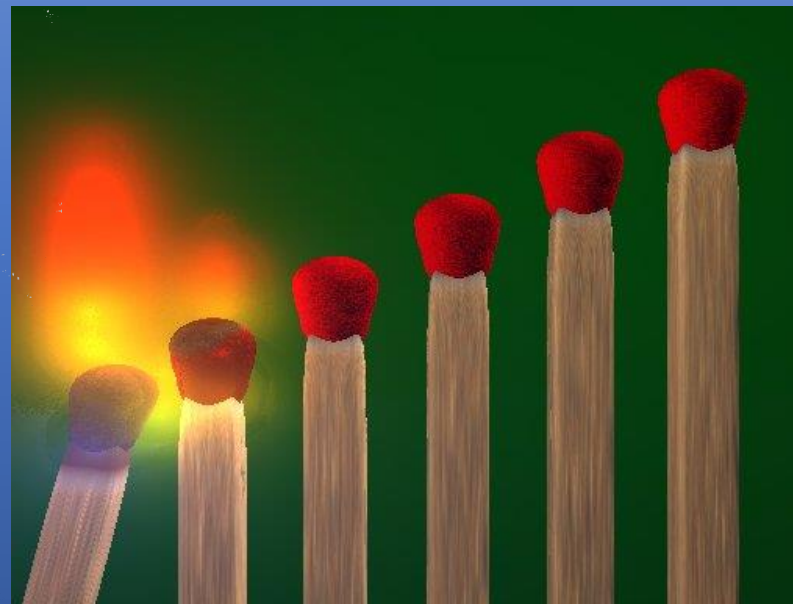
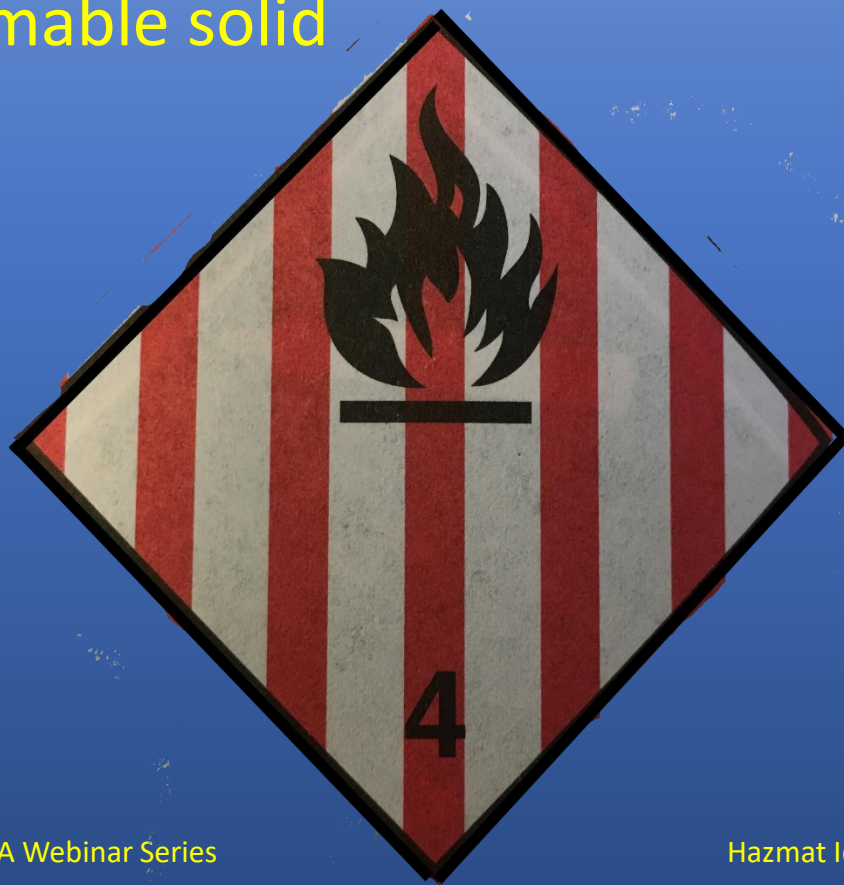


Class 4: Flammable Solids

- 4.1 – Flammable solids
 - Readily combustible solids and self-reactive substances
- 4.2 – Substances Liable to Spontaneous Combustion
 - Subject to heating under normal conditions or when in contact with air
- 4.3 – Dangerous when wet
 - Contact with water causes release of flammable gasses

Flammable Solids

- Matches are a good example of flammable solid



Class 5: Oxidizers

- 5.1 – Oxidizing substances
- 5.2 – Organic peroxides



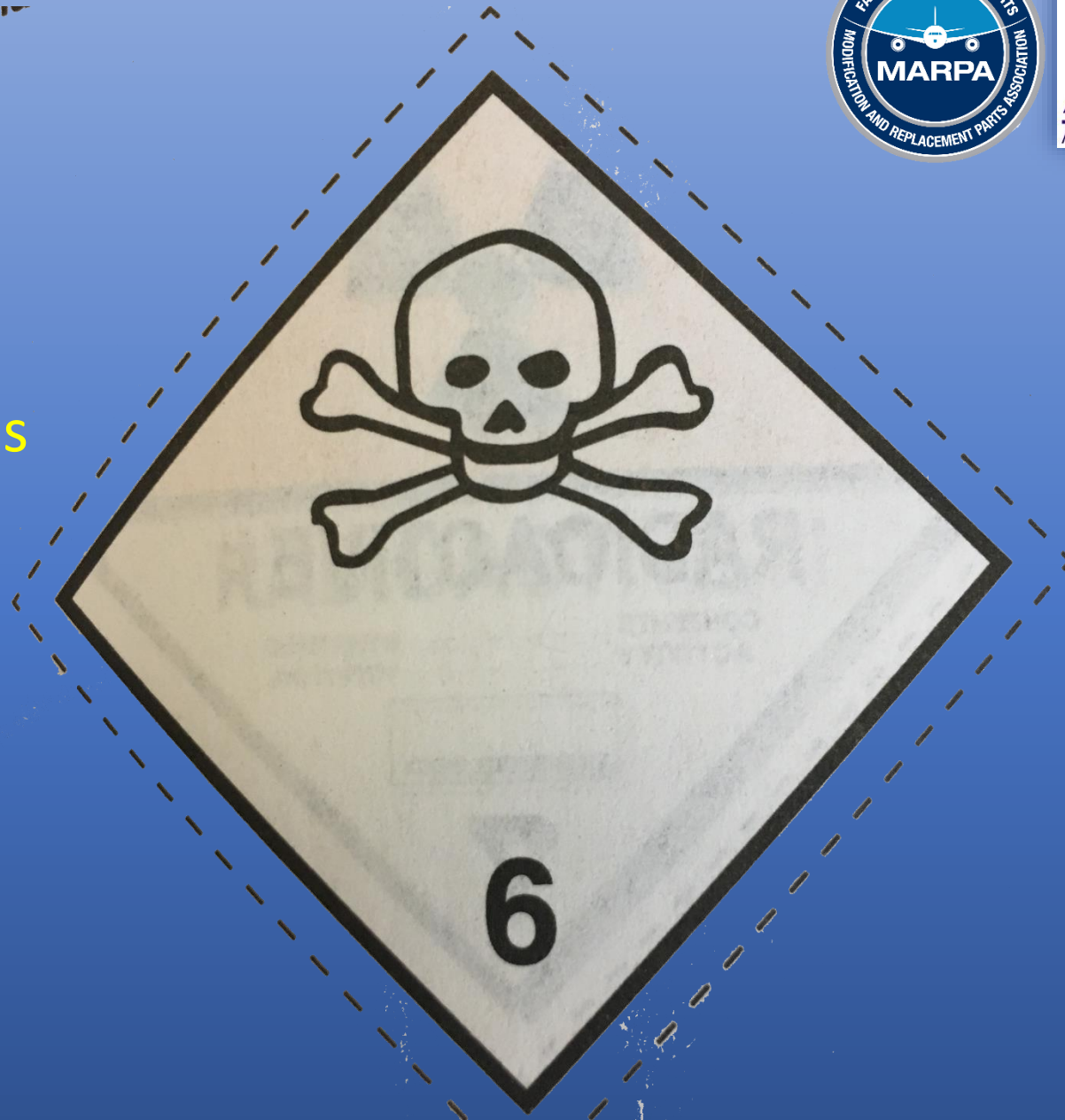
Oxidizers

- Oxygen cylinders
- Oxygen generators
- Spent oxygen generators are dangerous goods, too (US distinction – spent generators are treated as class nine)



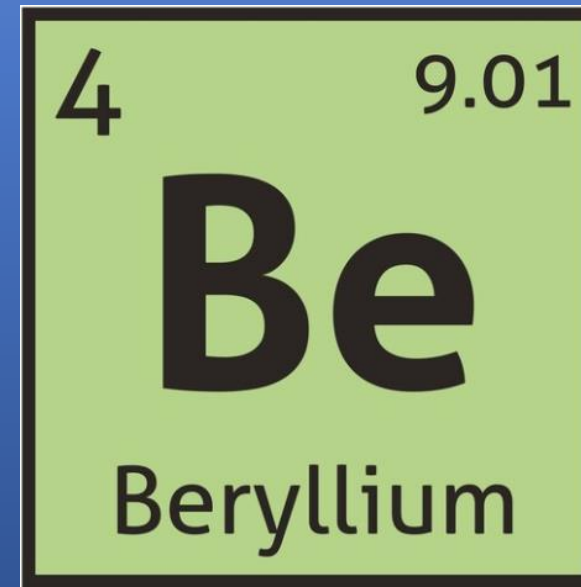
Class 6: Toxics

- 6.1 – Toxic substances
- 6.2 – Infectious substances



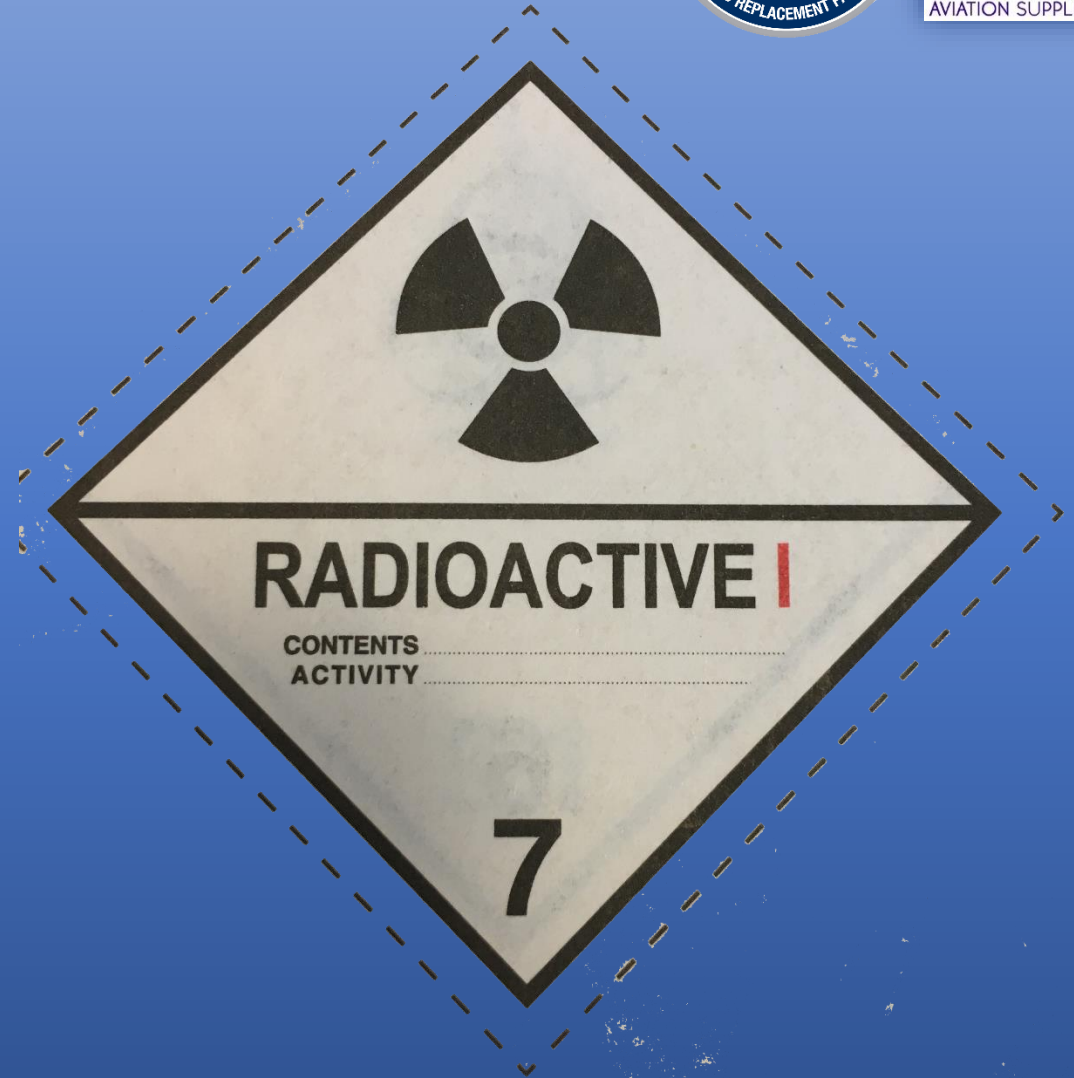
Toxics

- Certain coatings (e.g. rust-inhibiting coatings containing strontium chromate)
- Beryllium used in aerospace manufacturing
- Certain greases
- Some chemical films and coatings, like older configurations of Alodine
- Many aviation toxics have been phased out or re-engineered in favor of non-toxic formulations



Class 7: Radioactives

- Anything that contains radionuclides where the activity concentration and total activity exceed certain values (found in chapter IATA 10 and the US regulations)
- It is important to check the actual activity level!



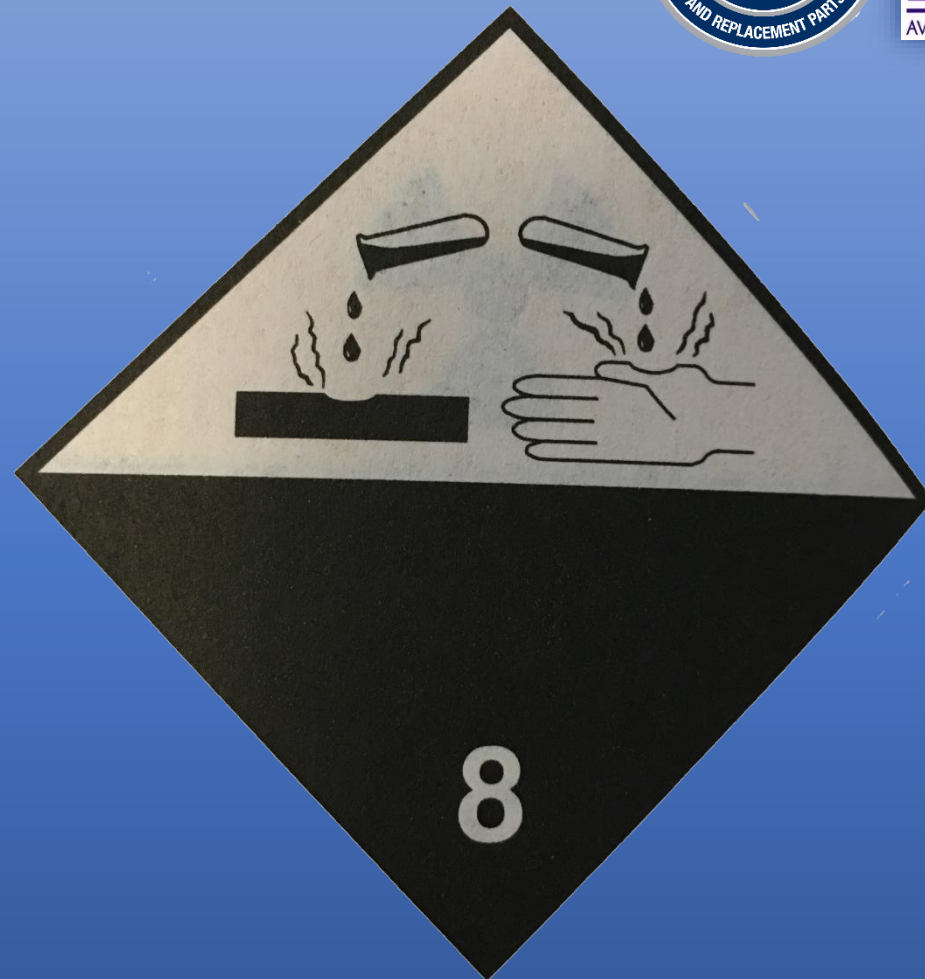
Radioactives

- Depleted uranium counterweights may be found in some control surfaces, particularly older ones
- Radium, used in older instrument dials
- Check carefully – many articles are specifically manufactured to fall below the regulatory threshold



Class 8: Corrosives

- Substances that, by chemical action:
 - Cause severe damage to living tissue (full thickness destruction of intact skin tissue after exposure)
 - Cause aluminum or steel corrosion



Corrosives

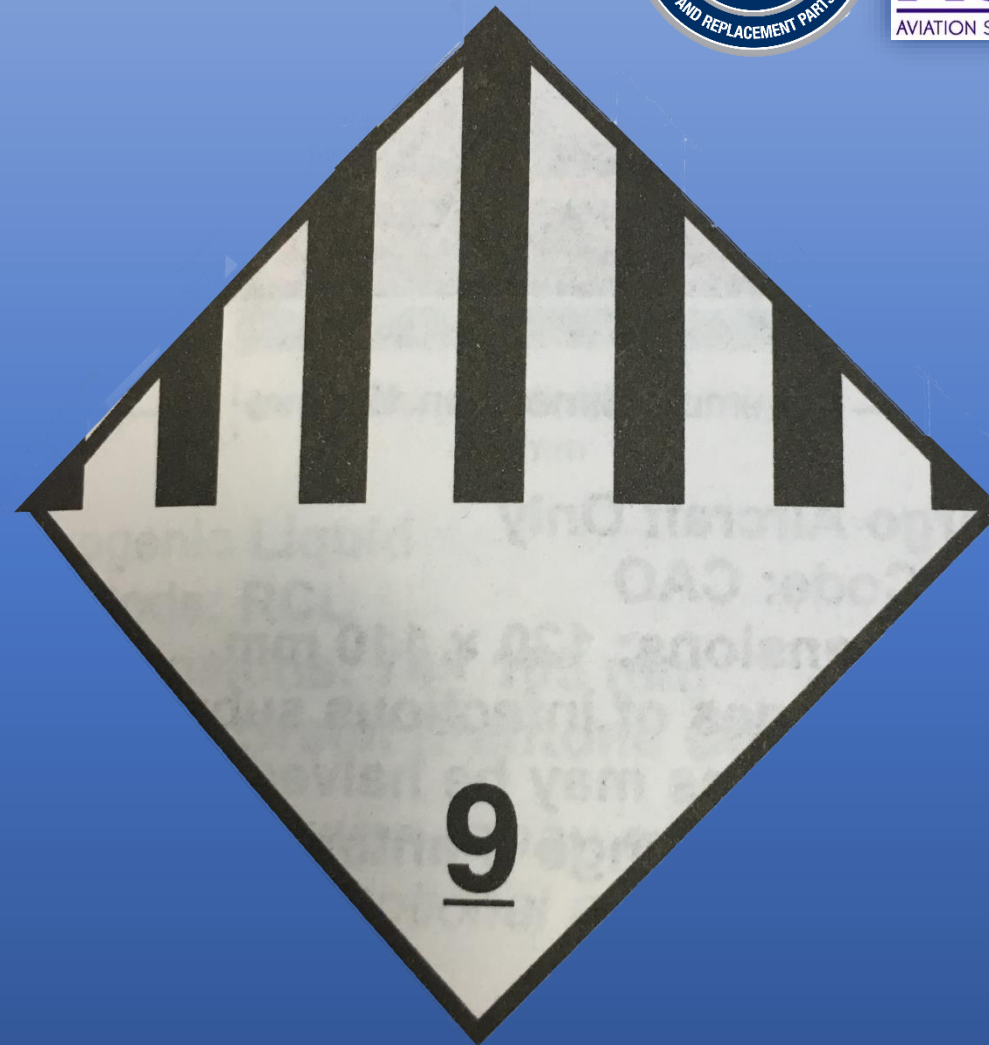
- Batteries may be dangerous goods
- Many articles with batteries in them, like flight data recorders, must be treated as class nine materials
 - Lithium batteries and sodium batteries are in a different class



Class 9: Miscellaneous Dangerous Goods

- Articles that present a hazard in transportation but that do not meet the requirements of another class, including:
 - Anesthetic, noxious or other similar materials that could prevent a flight crew member from correct performance of assigned duties
 - Elevated temperature materials, hazardous substances, hazardous wastes or marine pollutants

49 C.F.R. § 173.140





New Characterization by IATA into 12 Categories *(2018 Change)*

- Aviation regulated liquid or solid
- Magnetized materials
- Elevated Temperature Substances
- Environmentally Hazardous Substances
- Genetically Modified Organisms
- Lithium Batteries
- Asbestos
- Capacitors
- Substances Evolving Flammable Vapors (certain plastics)
- Life Saving Appliances
- Things that Form Dioxins in Fires
- Other

Class Nine Dangerous Goods Found in Aircraft

- Aircraft first aid kits
- Magnetized material
- *Environmental hazards*
- Life-saving appliances
- Parts with residual fuel
- Battery-powered equipment
- Engines
- Lithium batteries



Hazmat Identification

Lithium batteries

- Lithium batteries are class nine, but they get their own special label

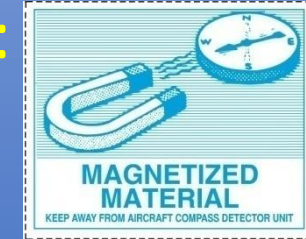


Other Handling Labels Can Also Indicate Hazmats

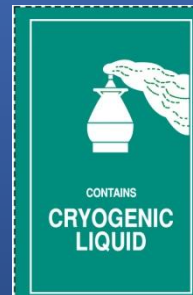
- Magnetized Material is regulated when transported by air:
- Cargo Aircraft Only
 - Old Labels no longer authorized:



New labels authorized
for use now:



- Cryogenic Liquids



Hazmat Identification



Questions?

Please feel free to ask questions

You can add your questions through the “attendee chat” function

If you think of questions later, then you can also email them to
Jason@washingtonaviation.com

You can register for the two-day hazmat certification class at
<http://www.WashingtonAviation.com/hazmat.html>



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Scott Dawson, from Core Solutions

- Thursday, April 16, 2020
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- Sign up at <https://aviationsuppliers.org/webinars>



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Thank You

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