HAZARD CLASSIFICATION

CAD/PAD Technical Exchange Workshop
Ed Walseman
NOSSA
Hazard Classification

- Background
- Types
- UN Test 6(d)
- SSEC
Hazard Classification - Background

• Identifies munitions’ damage potential during transportation and storage
  • Evaluate munitions' behavior to a variety of stimuli
  • Assignment of Hazard Class/Division, Compatibility Group, Proper Shipping Name, UN #, NEW, NEWQD, MCE, and Sensitivity Group
Hazard Classification - Background

Classes
1 - Explosives
2 - Gases
3 - Flammable Liquids
4 - Flammable Solids
5 - Oxidizing Substances & Organic Peroxides
6 - Toxic & Infectious Substances
7 - Radioactive Materials
8 - Corrosive Substances
9 - Miscellaneous Dangerous Substances and Articles

Class 1 Divisions
1.1 - Mass explosion
1.2 - Fragment producing
1.3 - Mass fire
1.4 - Moderate fire
1.5 - Very insensitive explosive substance
1.6 - Extremely insensitive explosive article

Subdivisions of HD 1.2
1.2.1 – NEWQD > 1.6 lbs.
1.2.2 – NEWQD ≤ 1.6 lbs.
1.2.3 – Unit Risk
Hazard Classification - Background

• Joint Service Regulation – NAVSEAINST 8020.8C

• Applies to the transportation and storage configuration

• Transportation
  – Code of Federal Regulations, Title 49
  – UN Recommendations on the Transport of Dangerous Goods

• Storage
  – NATO
    • STANAG No. 4123
    • AASTP-3
Hazard Classification - Types

- DoD Interim
  - Shipment/Storage
  - RDT&E

- DoD Final
  - Shipment/Storage
  - Inventory

- DOT/DOE*
  - Shipment/Storage
  - RDT&E

- Local/Storage*
  - Storage
  - RDT&E

*If Service implemented

Distribution Statement A
Hazard Classification – Types - Interim

- Authority granted by DOT via DOT-SP 15448
- Approved by Service (Navy accepts Army and Air Force IHCs)
- Requires some planning but can be assigned quickly
- Based on material tests and evaluation
- Most have 1 year expiration date (Navy storage exclusion)
- IHC paperwork must accompany shipment
- Transportation and Storage in CONUS (Can be used for OCONUS in limited scenarios)

*Army/Air Force Offices

Distribution Statement A
Hazard Classification – Types - Interim

Subj: INTERIM HAZARD CLASSIFICATIONS FOR AIRCRAFT FIRE EXTINGUISHER CARTRIDGE

5. Items that contain lithium batteries are intended for use, storage, or transportation on Navy facilities, submarines, ships, vessels, or aircraft must be reviewed in accordance with reference (a). For additional information regarding this issue, please contact:

XXXXXXXXX
XXXXXXXXXXXX
Email: XXXXXXXXXXXXX
DSN XXXXX or commercial XXXXXXX

6. Consult reference (b) for specific exemptions from the hazardous material requirements of reference (f). This classification does not relieve the shipper from complying with any other requirements of reference (f), including, but not limited to, packaging, electromagnetic radiation, and electrostatic requirements. For information regarding these issues, please contact the following persons:

Packaging:
XXXXXXXXXXXX
XXXXXXXXXXXX
Email: XXXXXXXXXXXXX
DSN XXXXX or commercial XXXXXXX

Hazard of Electromagnetic Radiation to Ordnance (HERO):
XXXXXXXXXXXX
XXXXXXXXXXXX
Email: XXXXXXXXXXXXX
DSN XXXXX or commercial XXXXXXX

Electrostatic Discharge (ESD):
XXXXXXXXXXXX
XXXXXXXXXXXX
Email: XXXXXXXXXXXXX
DSN XXXXX or commercial XXXXXXX

7. For further information or assistance regarding hazard classification, please contact XXXXXXX on commercial XXXXXXX, DSN XXXXXXX, or email: XXXXXXXXXXX.

XXXXXXXXXXXX
By direction

Copy to:
XXXXXXXXX
Hazard Classification – Types - Final

- Approved by DoD/DOT
- Requires long range planning
- Based on full-scale testing on the munition
- DOT Approval (EX letter) signifies completion
- Lasts for the life of the munition
- Published in JHCS, OIS, and NAVSEA SW020-AC-SAF-010
- Transportation and Storage DoD-wide
Most EX letters for DoD AE are available in the JHCS (https://jhcs.deskes.dod-esb.army.mil)

All recent EX letters are available on the DOT website (https://www.phmsa.dot.gov/approvals-and-permits/hazmat/approvals-search)
Hazard Classification – UN Test 6(d)

- 2009 - UN added Test 6(d) and recommended its addition to the test protocol of 8 HD 1.4S UN numbers
- 2010-2014 - Adopted by the transportation regulations (ICAO, IMDG, 49 CFR)
  - 377 items affected in JHCS
- 2016 - UN recommended Test 6(d) be added to the test protocol of 4 more HD 1.4S UN numbers
- 2018-2021 - Adopted by the transportation regulations (ICAO, IMDG, 49 CFR)
  - 2518 items affected in JHCS

<table>
<thead>
<tr>
<th>UN Number</th>
<th>Proper Shipping Name</th>
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<tbody>
<tr>
<td>0323</td>
<td>Cartridges, Power Device</td>
</tr>
<tr>
<td>0349</td>
<td>Articles, Explosive, N.O.S.</td>
</tr>
<tr>
<td>0366</td>
<td>Detonators for Ammunition</td>
</tr>
<tr>
<td>0367</td>
<td>Fuzes, Detonating</td>
</tr>
<tr>
<td>0384</td>
<td>Components, Explosive Train, N.O.S.</td>
</tr>
<tr>
<td>0441</td>
<td>Charges, Shaped</td>
</tr>
<tr>
<td>0445</td>
<td>Charges, Explosive, Commercial</td>
</tr>
<tr>
<td>0455</td>
<td>Detonators, Non-electric</td>
</tr>
<tr>
<td>0456</td>
<td>Detonators, Electric</td>
</tr>
<tr>
<td>0460</td>
<td>Charges, Bursting, Plastics Bonded</td>
</tr>
<tr>
<td>0481</td>
<td>Substances, Explosive, N.O.S.</td>
</tr>
<tr>
<td>0500</td>
<td>Detonator Assemblies, Non-Electric</td>
</tr>
</tbody>
</table>
Hazard Classification - SSEC

- Situation Specific Explosive Classification (SSEC) – During explosives operations other than transportation and storage, the hazard division and other associated hazard classification parameters (e.g. subdivision, NEWQD) that apply to an individual set of explosives configurations such that QD may be established for the operating location.

- SSEC definition and application still in draft

- Current proposal: Creation of a DDESB Technical Paper that provides SSEC resource information, update Defense Explosives Safety Regulations (DESR) 6055.09, SSEC execution at the DoDC level
Ed Walseman
Hazard Classifier

gayland.e.walseman.civ@us.navy.mil
301 744-6021 (office)
240 435-1272 (cell)