




U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

A collage of transportation-related images including a worker in a hard hat, a forklift, a cargo ship, a train, a tanker truck, and an airplane. A red diamond-shaped sign with the number '12033' is visible in the top right corner.

Performance Packaging Program Update

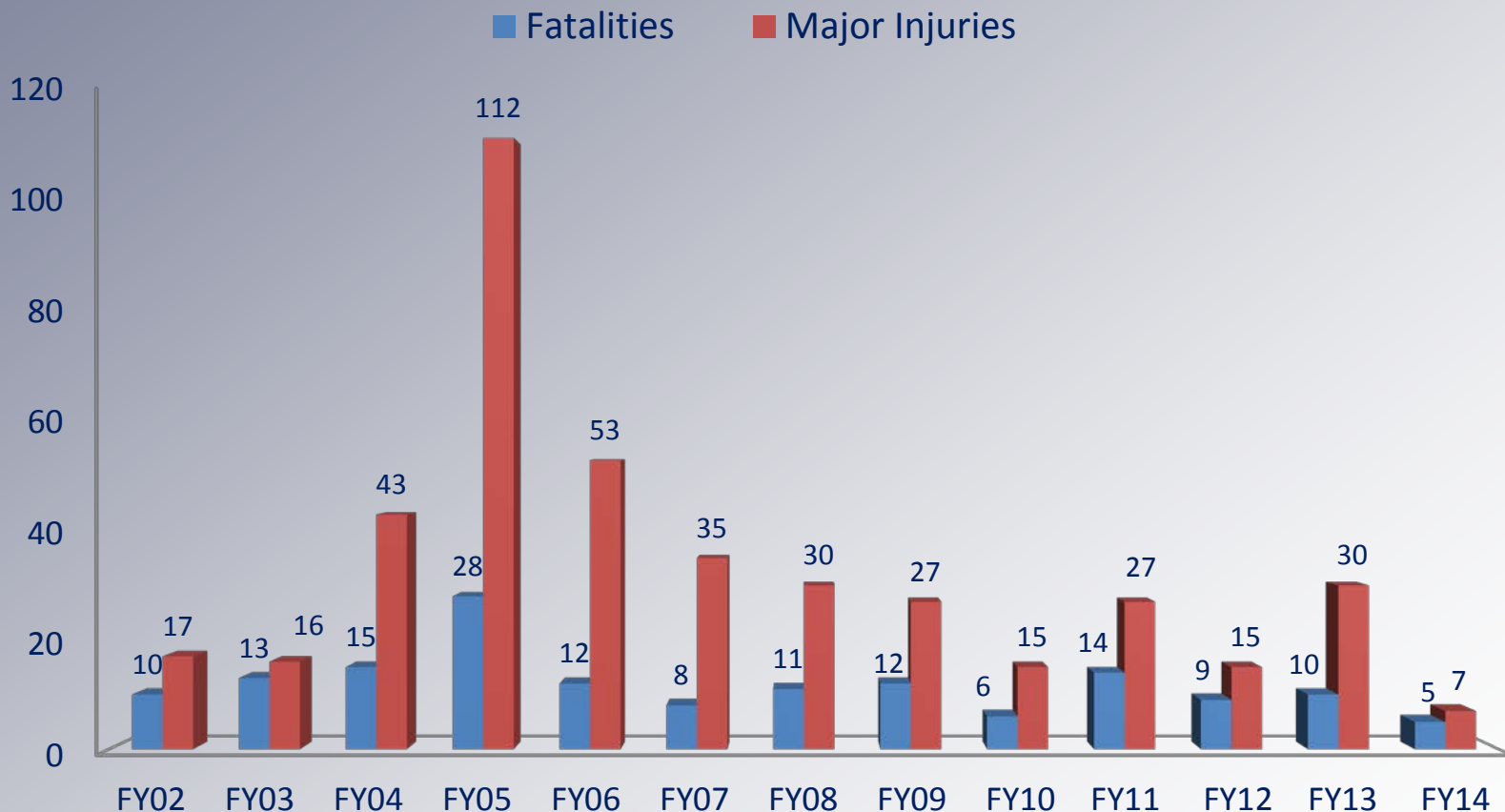
Plastic Shipping Container Institute

April 7, 2014

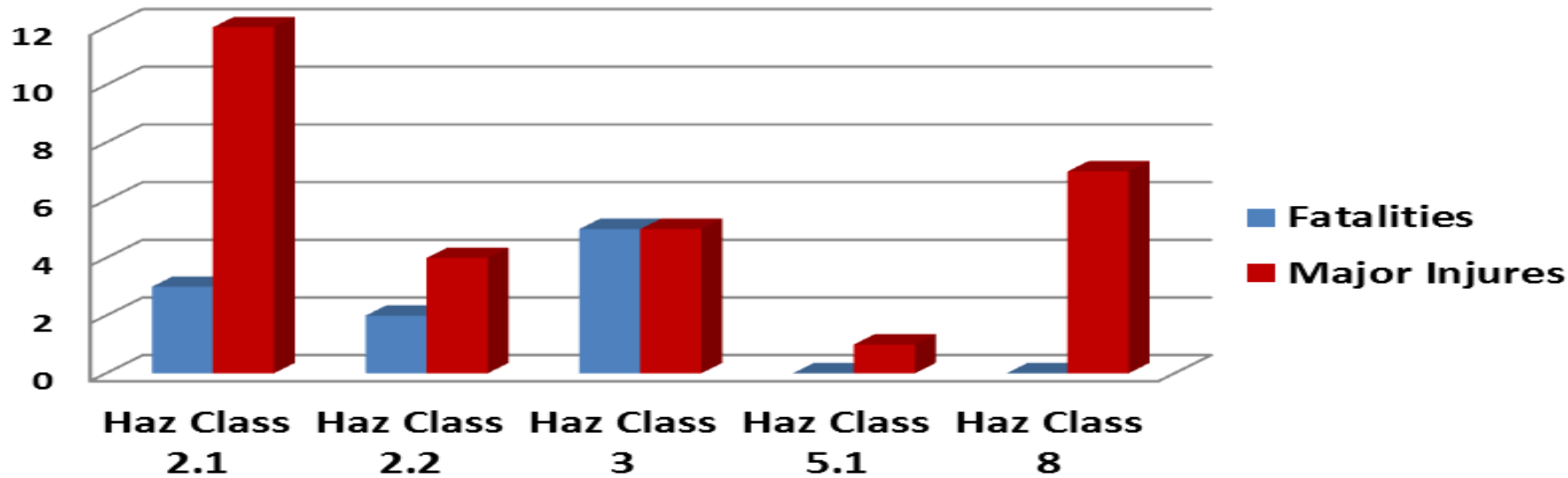


Incident Data Analysis

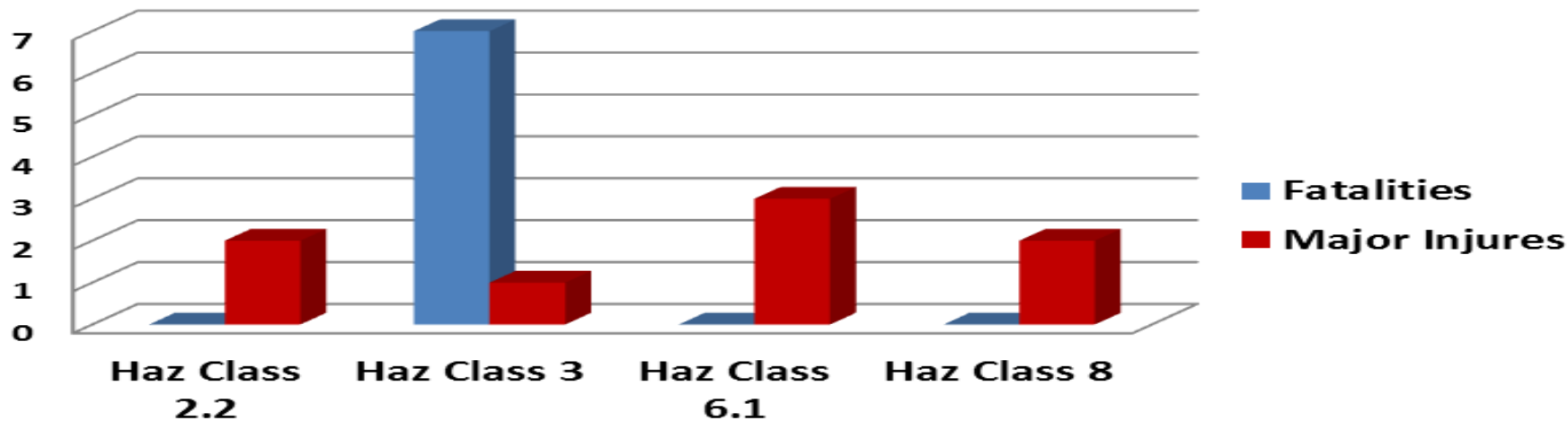
Number of Deaths or Major Injuries (FY02 – FY14)



Death & Injuries By Hazard Class, FY13



Death & Injuries By Hazard Class, FY14





Incident Data Analysis

- **Premise for study was that non-bulk performance packaging that are properly designed, tested, certified, produced and prepared in accordance with HMR requirements should not fail in normal transport conditions.**
- **Identifying the common factors that contribute to failures in normal transport would benefit all parties to help drive down incidents.**



Incident Data Analysis

- **Study of 2010, 2011 and 2012 Incident Data**
- **Non-Bulk Ground and Air Shipments**
- **Shippers with x5 or More incidents**
- **Normal Transportation Failure Causes:**
 - **Human Error, Drops, Loose Closure, Improper Preparation, Defective Components, Inadequate Procedures, Too Much Weight on Package, etc.**
- **10,000+ Incident Reports After Scrub**
- **3 Months to Standardize Remaining Entries**



Incident Data Analysis

- **28 Serious Non-Bulk Incidents 2010 – 2012**
- **50% of All Injuries Attributed to Non-Bulk**
- **2% of Non-Bulk Incidents Undeclared**
- **97% of Incidents Were In Ground Transport**



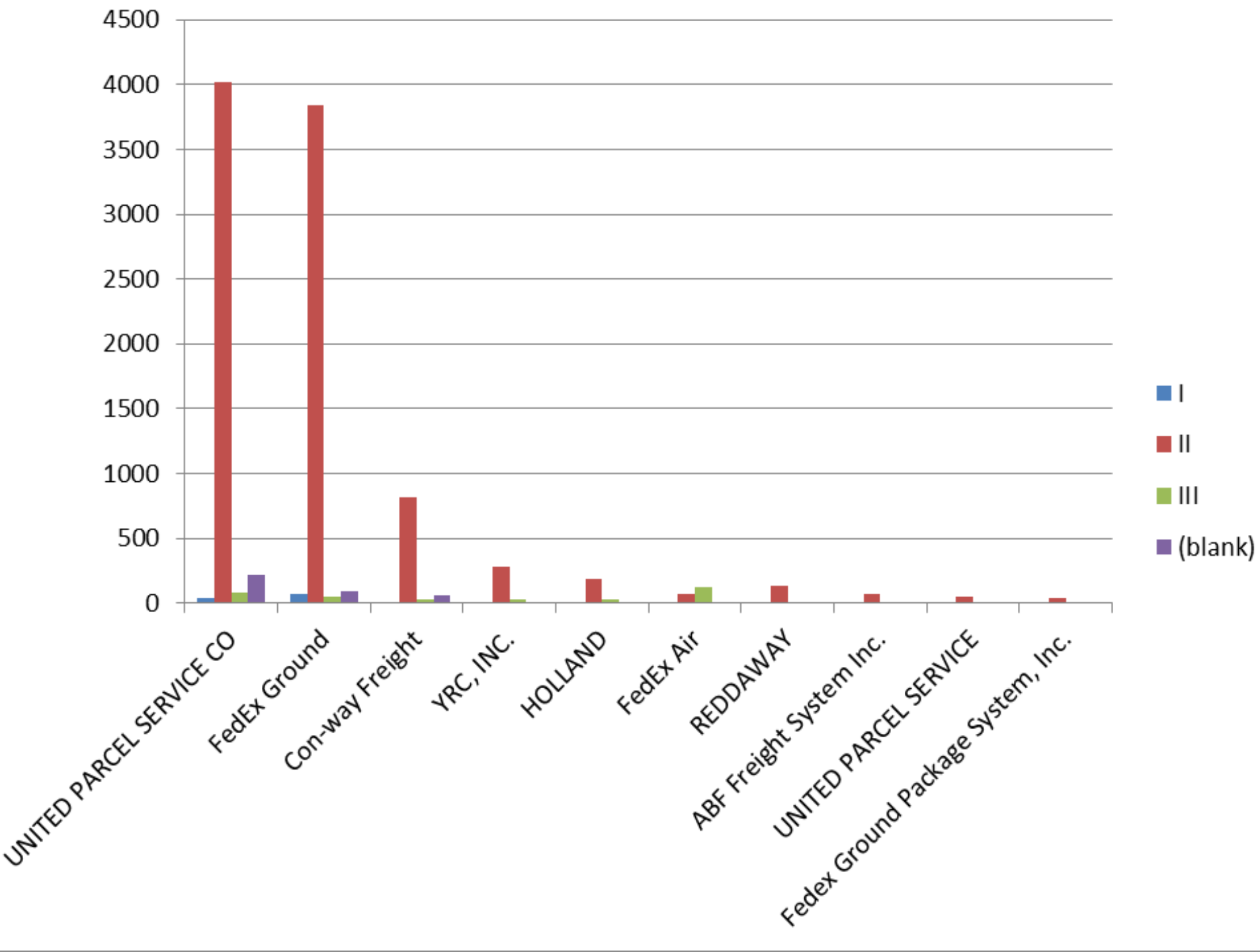
Incident Data Analysis

- **330 Shippers with 5 or More Incidents**
- **17 Shippers with 100 or More Incidents**
- **Top 15 Incident Shippers = 25% of All Incidents**
- **Top 60 Incident Shippers = 55% of All Incidents**
- **6 Air Shippers with 10 or More Air Incidents**



Incident Data Analysis

- **Small Parcel Carriers Excellent At Reporting**
- **UPS, FedEx Ground & Conway 88% All Reports**
- **UPS/FedEx About 4000 Failures Each**
- **UPS/FedEx 98% All Air Incidents (330)**
- **UPS/FedEx No PGI Air Incidents; 105 PGII Air;
150 PGIII Air; 65 Air Incidents No Packing Group**





Incident Data Analysis

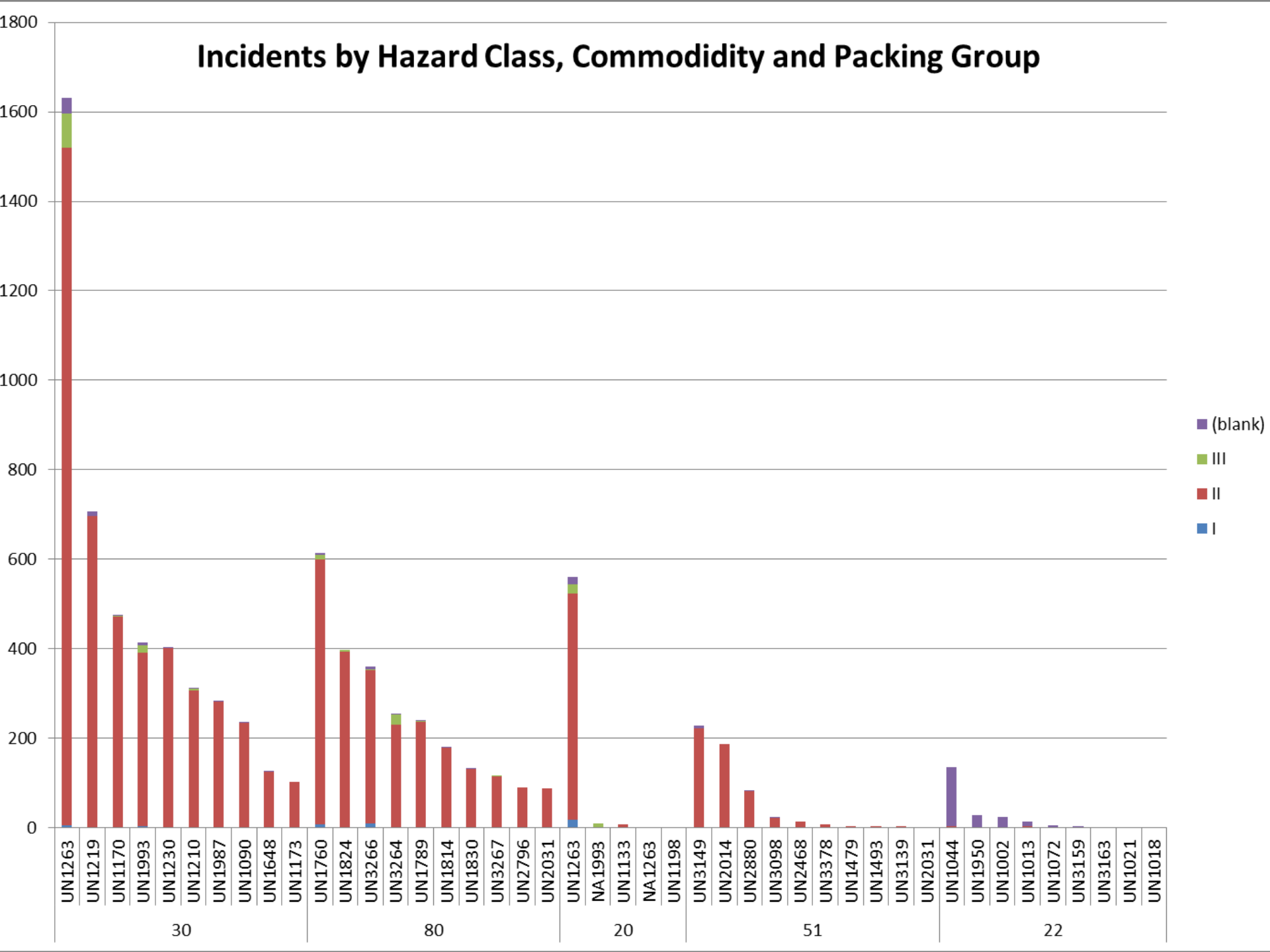
- **PGI = 1% of All Non-Bulk Incidents**
- **PGII = 91% of All Non-Bulk Incidents**
- **No PG for 19% of Air Incidents**
- **Class 3 and 8 Materials = 82% of All Incidents**
- **PGII = 95% of Paint and Corrosive Liquid Basic...**
- **Class 3 = 48% Incidents Class 8 = 34% Incidents**
- **20 Commodities with x100 or More Incidents**



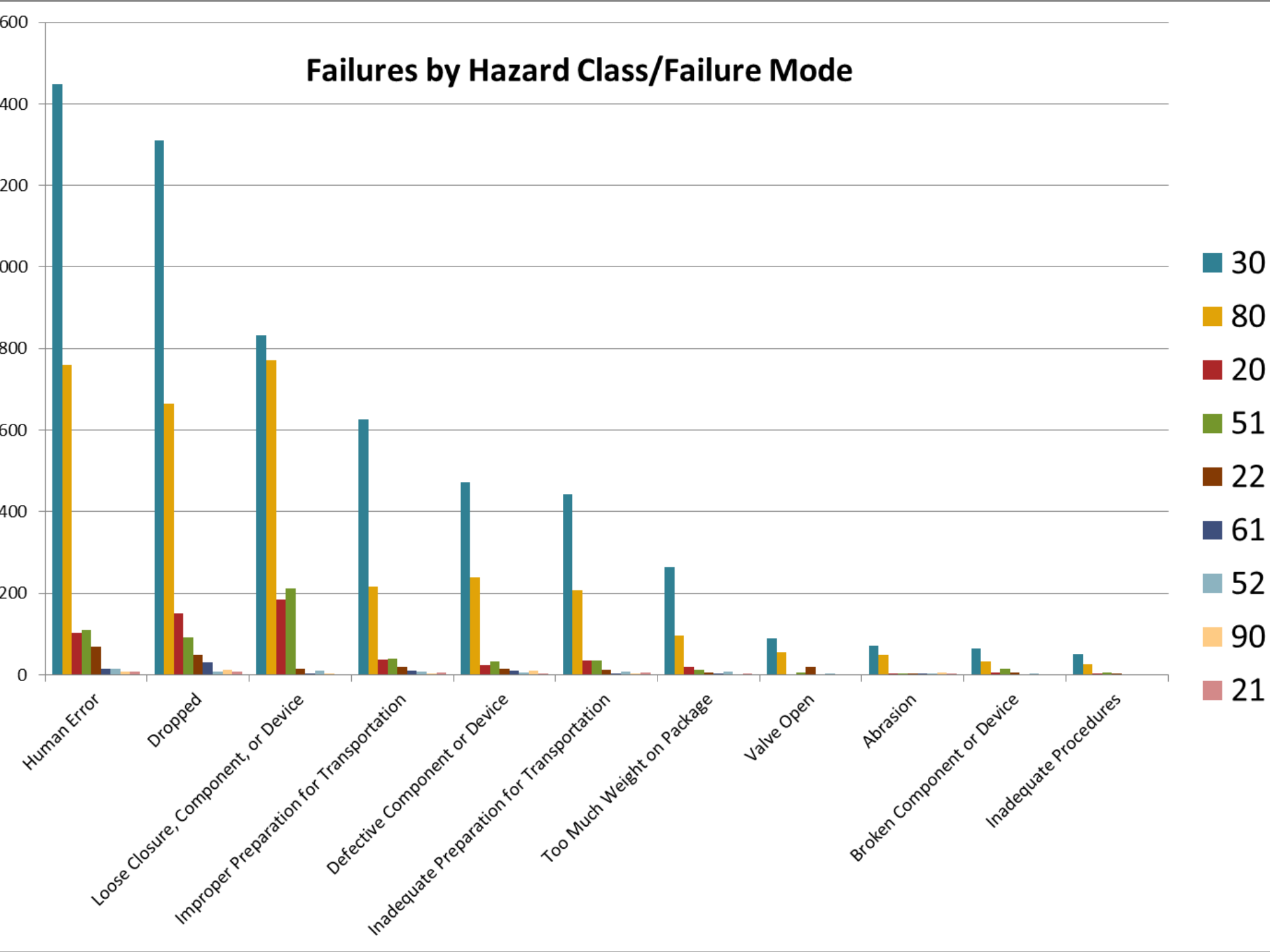
Incident Data Analysis

- **Top 10 Commodities -**
 1. **Paint (2191)**
 2. **Corr. Liq. Acidic/Basic/Organic/Inorganic (788)**
 3. **Isopropanol (703)**
 4. **Compound Cleaning Liquids (651)**
 5. **Corrosive Liquid N.O.S. (625)**
 6. **Potassium Hydroxide (478)**
 7. **Ethanol/Ethyl Alcohol (470)**
 8. **Flammable Liquid N.O.S. (457)**
 9. **Hydrogen Peroxide (417)**
 10. **Methanol (400)**

Incidents by Hazard Class, Commodity and Packing Group



Failures by Hazard Class/Failure Mode





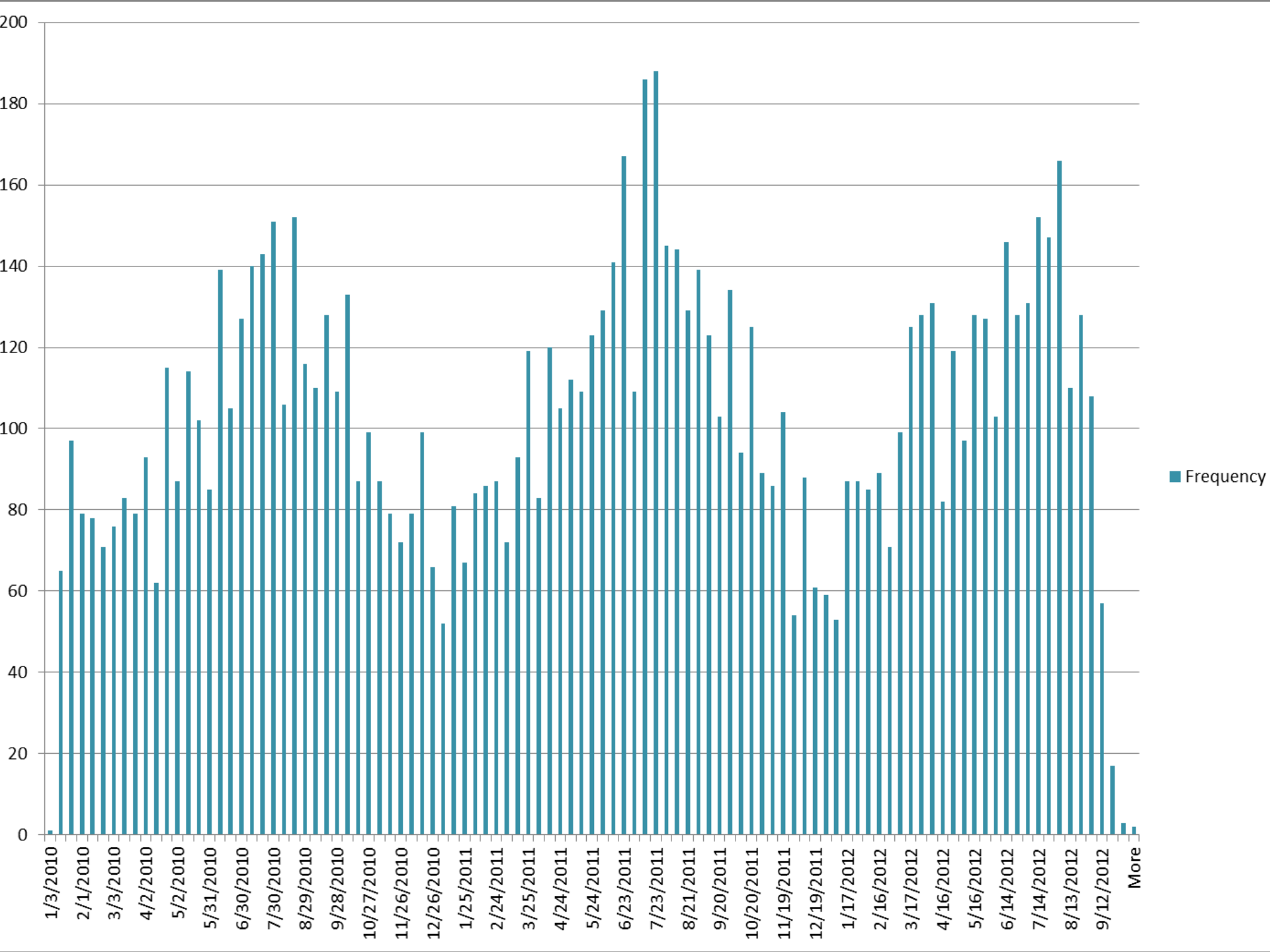
Incident Data Analysis

- **Only 40% of Ground Incident Reports Include Package Certifier - M1234, +DD0123, ABC Chem**
- **47% Air Incident Reports Include Package Cert.**
- **Many Incidents LTD QTY and ORM-D**
- **77% / 23% TPL's versus Self-Certifiers Packaging**
- **5 Self-Certifiers with x50 or More Incidents**
- **4 TPL's had 100 or More Designs Reported**



Incident Data Analysis

- **No Pkg Rating (X, Y or Z) for 60% of All Non-Bulk**
- **30% of Incidents Reported As Y Rated Packaging**
- **84% of All Incidents PG II Material In Y Rated Pkg**
- **46% of UN Pkg Failures Drops or Loose Closure**
- **86% Of All Non-Bulk Incidents In UN4G or Non-Specification Fiberboard Combination Packaging**





INCIDENT DATA

- **Data for Study - Hazmat Intelligence Portal (HIP)**
- **Data Is Available to Public On PHMSA Website**
- **Results of This Presentation are Unofficial**
- **Data and Findings Being Validated Externally**



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