



Mechanical Fitting Failures

Reporting and Data Analysis

MFFR Reporting

- **§ 191.12 Distribution Systems: Mechanical Fitting Failure Reports.** Each mechanical fitting failure, as required by § 192.1009, must be submitted on a MFFR Form PHMSA F-7100.1-2.
- Must submit for previous calendar year.
- May elect to submit its reports throughout the year.
 - (Developing tool for batch uploads)
- Must also report this information to the State pipeline safety authority if applicable.



Reporting and Data Analysis

- Communication of Performance Data through DIMP web page
- The MFFR instructions have been revised.
- Failures resulting from a construction or installation defect should be identified with the “Incorrect Operations” leak cause and not the “Material or Welds/Fusions” leak cause category (as is described in PHMSA F 7100.1-2 and the Instructions).
- See Advisory Bulletin (ADB-2012-07) [77 FR 34457] pages 34457 -34458



General - 2011 Mechanical Fitting Failures

- Total number of reports – 8199
- Total number of Operators – 191
- The state of origin includes 48 states and DC
- Total number of manufacturers – 71
- Records missing manufacturer – 51%



Time of Manufactured and Installed

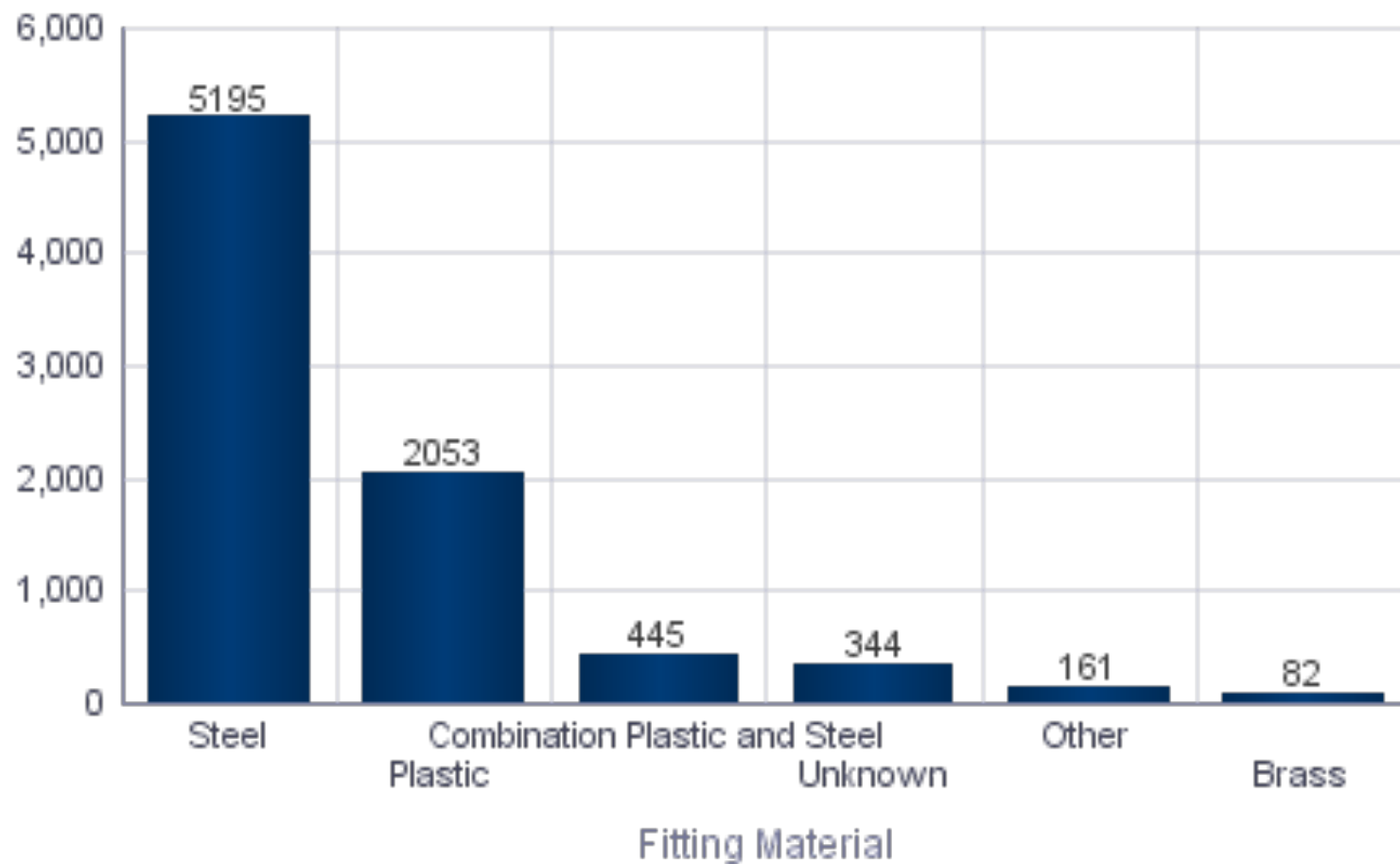
- Year of Manufacture is missing 89%
- Year of Installation is missing 42%
- 81% of the fittings were manufactured and installed in the same year
 - Range (0-89 years)
 - Average (0.8 years)
- Time to failure for both year of manufacture and installed
 - Range (0 – 124)
 - Average (33 years)



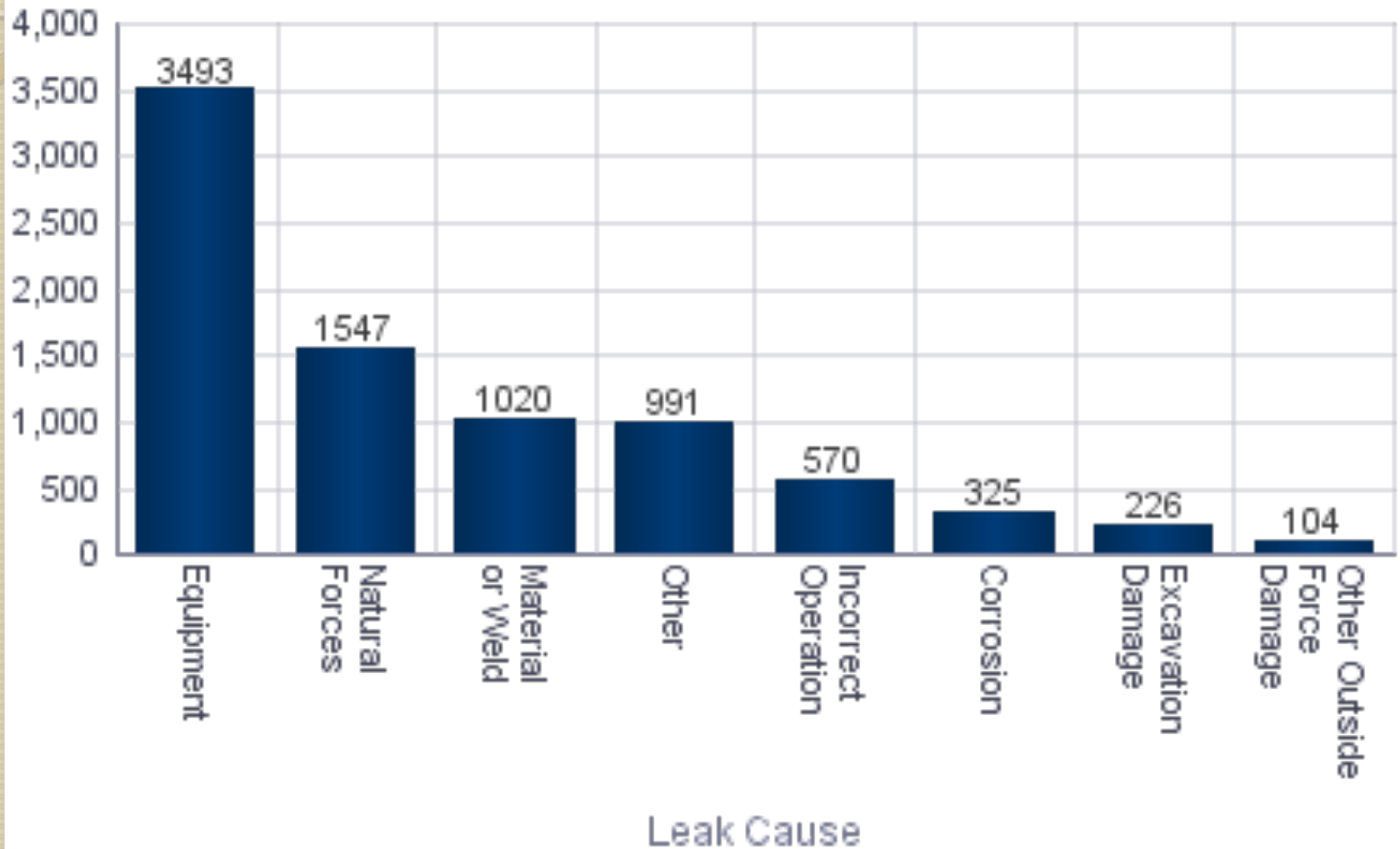
INSTRUCTIONS FOR COMPLETING FORM PHMSA F 7100.1-2

- Make an entry in each block for which data are available. Some companies may have very old pipe for which installation records do not exist. Estimate data if necessary. **Avoid entering “Unknown” if possible.**

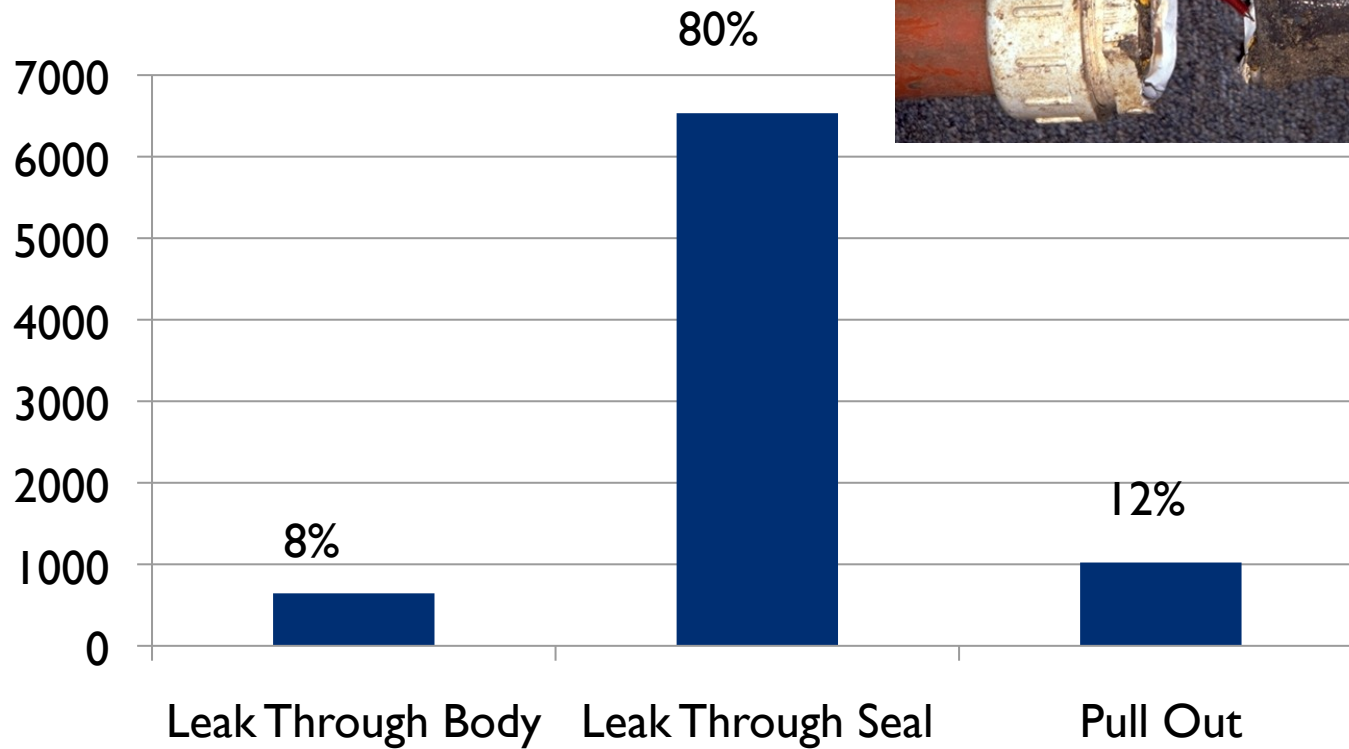
Mechanical Fitting Failures by Material



Mechanical Fitting Failures by Cause



Type of Leak That Occurred



Specify the Mechanical Fitting Involved



Stab Type



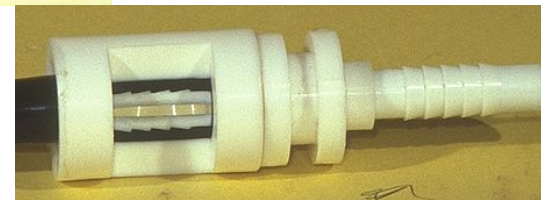
Nut Follower



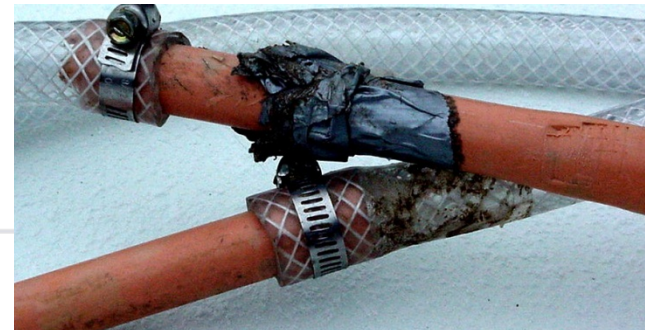
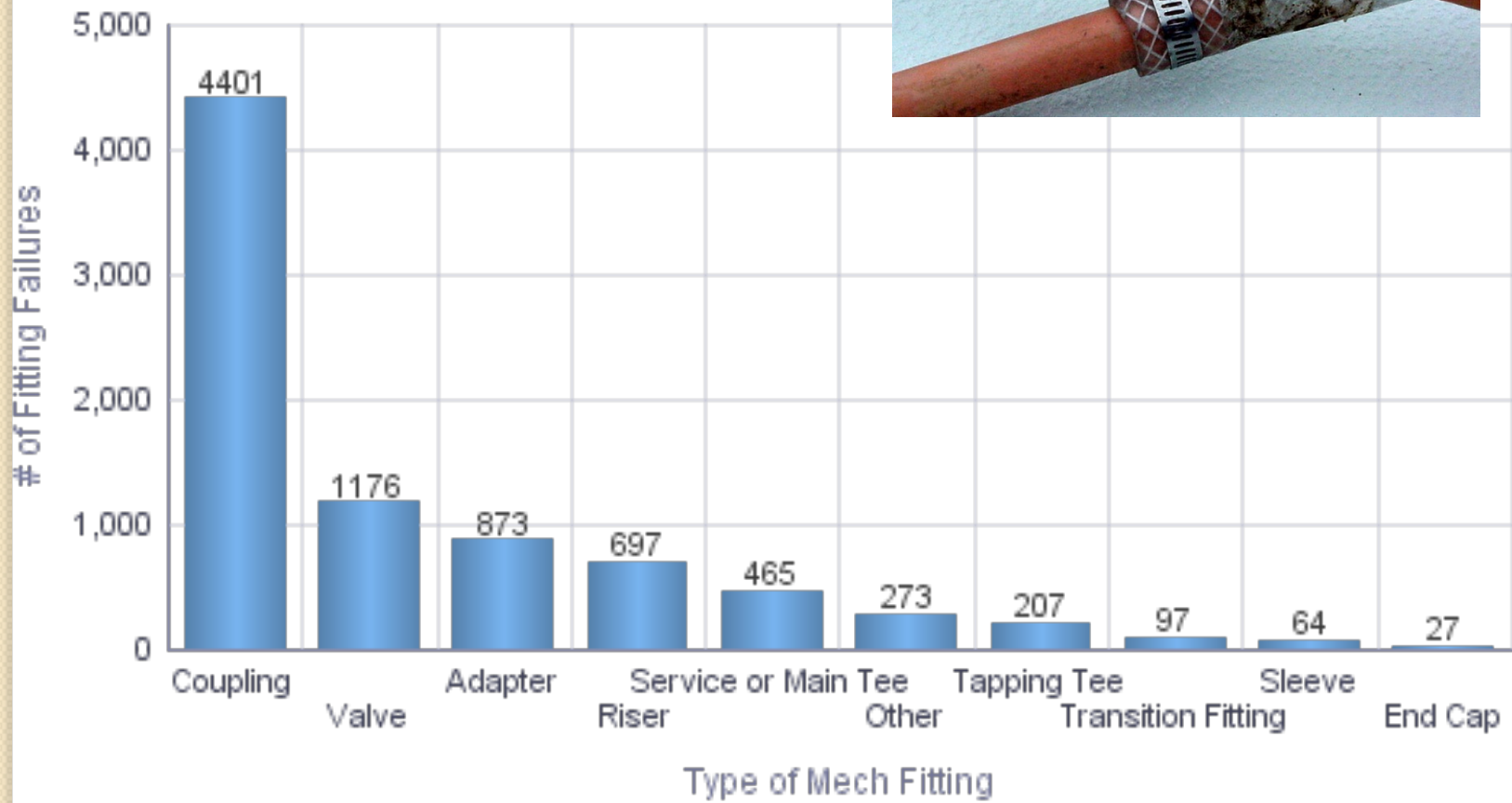
Bolt Type



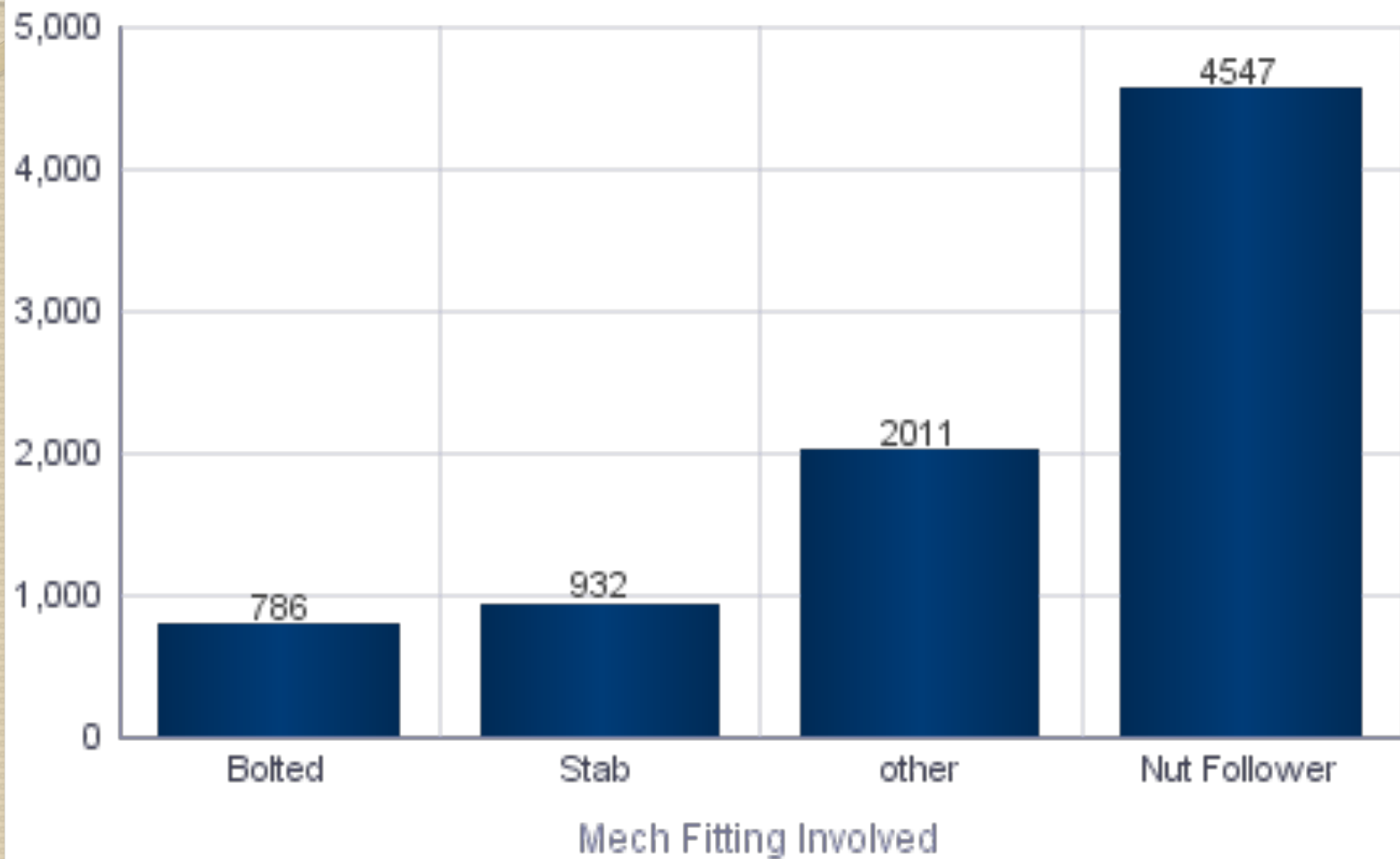
Other(s)



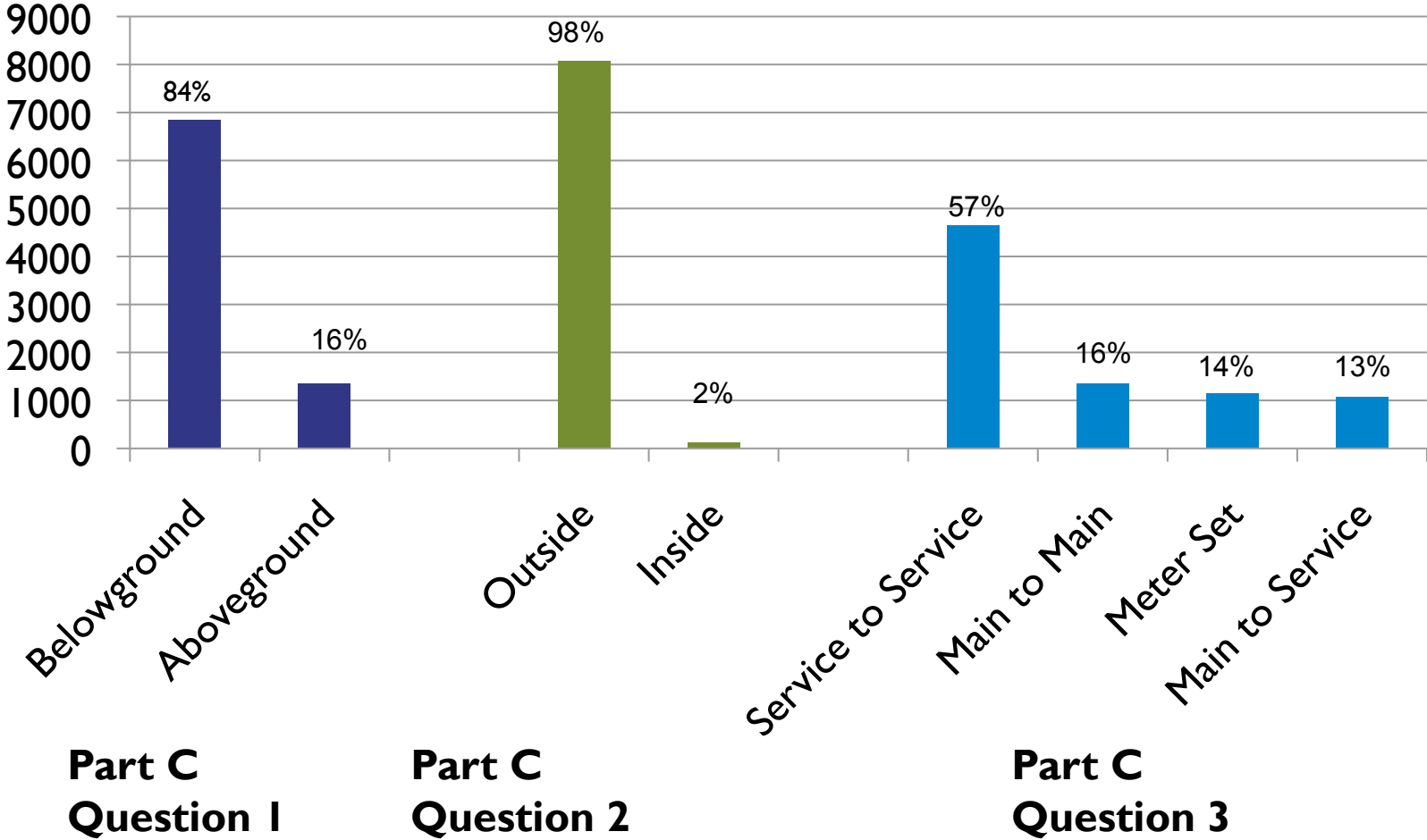
Mechanical Fitting Failure by Type



Mechanical Fitting Failures by Type



Failures By Leak Location



**Part C
Question 1**

**Part C
Question 2**

**Part C
Question 3**

State of Origin by Fitting Failure

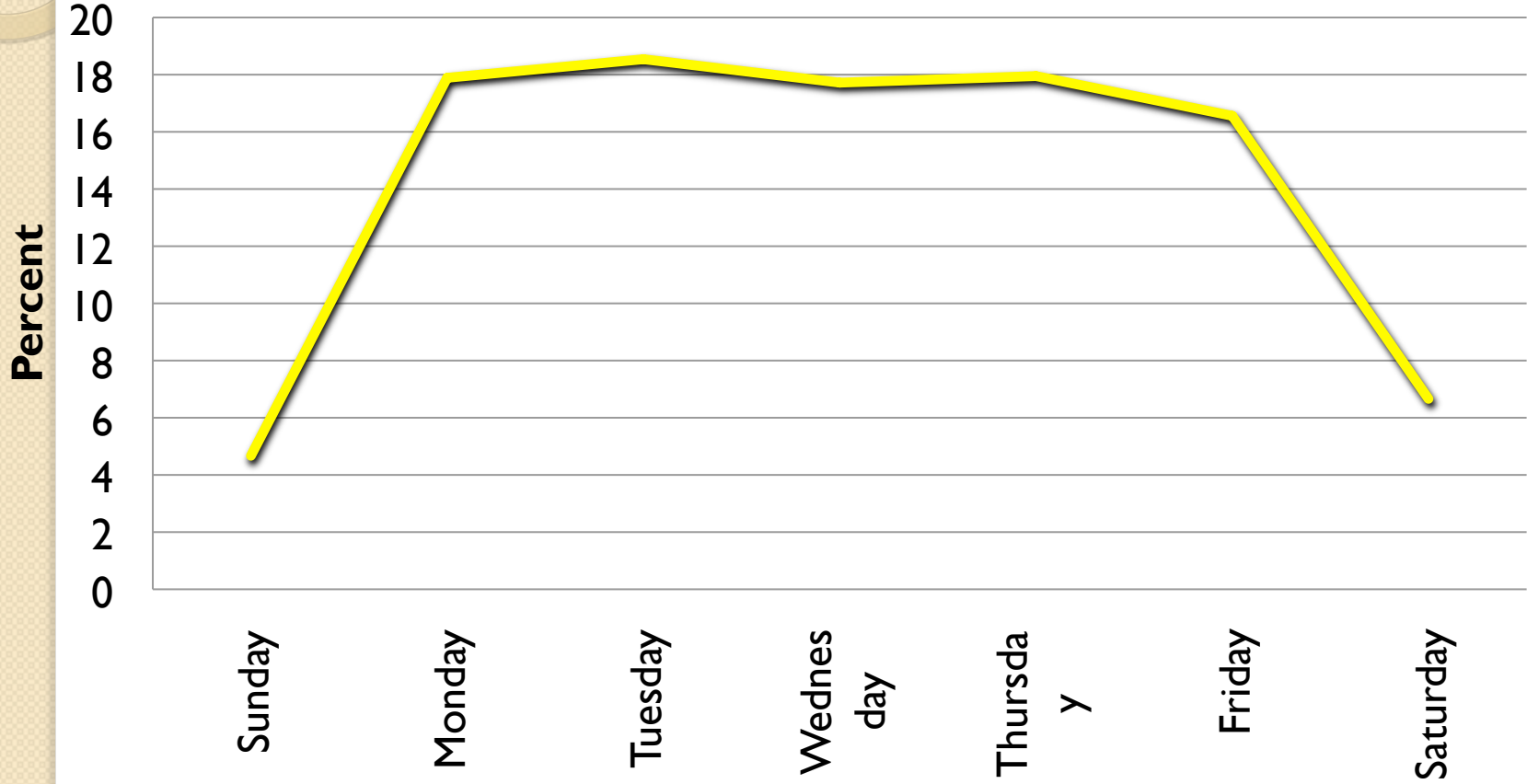
Top 10 States	Top 10 Steel States	Top 10 Plastic States
TX – 13%	TX – 18%	PA – 26%
IL – 12%	IL – 18%	OH – 11%
PA – 9%	IN – 9%	CA – 10%
OH – 7%	NY – 6%	NY – 5%
IN – 7%	OH – 6%	GA – 4%
NY – 6%	MS – 5%	CT – 4%
MI – 5%	MI – 5%	MA – 4%
VA – 3%	TN – 4%	MO – 3%
CA – 3%	CA – 3%	SC – 3%
TN – 3%	VA – 3%	AZ – 3%

Decade Installed

Decade	Total	Percentage
Pre 1940s	35	2%
1940s	22	1%
1950s	176	10%
1960s	318	19%
1970s	468	28%
1980s	354	21%
1990s	154	9%
2000s	161	10%
2010s	5	Less than 1%

Decade Installed was missing 79%

Day of Week of Failures



MFFR Data Analysis

- Raw data received by March 21, 2012 is presented here.
- MFFR Team has begun QA/QC the data and initiated analysis.
- Preliminary analysis of the data is posted on the DIMP Website.
- One year a trend does not make



Data Summary

- Confirmation of information
 - The decade of installation
 - States with the most mileage
- Majority of issues couplings
- Belowground, outside and service to service
- Plastic or combination fittings higher risk for incorrect operation or material/weld
- Steel fittings higher risk for equipment as cause

