

AAR NAR Reduction Committee

- Mission = to decrease and eliminate NARs
- What is and NAR?
- Results of NARs
 - Employee injuries
 - Environmental damage
 - Service disruptions
 - Regulatory
- Four Teams: Data, Communications, Process and Equipment



Data Breakdowns Through 1st Half 2013

Source of data: AAR/BOE Hazardous Materials
Release Reporter Database
& Annual Hazmat Reports

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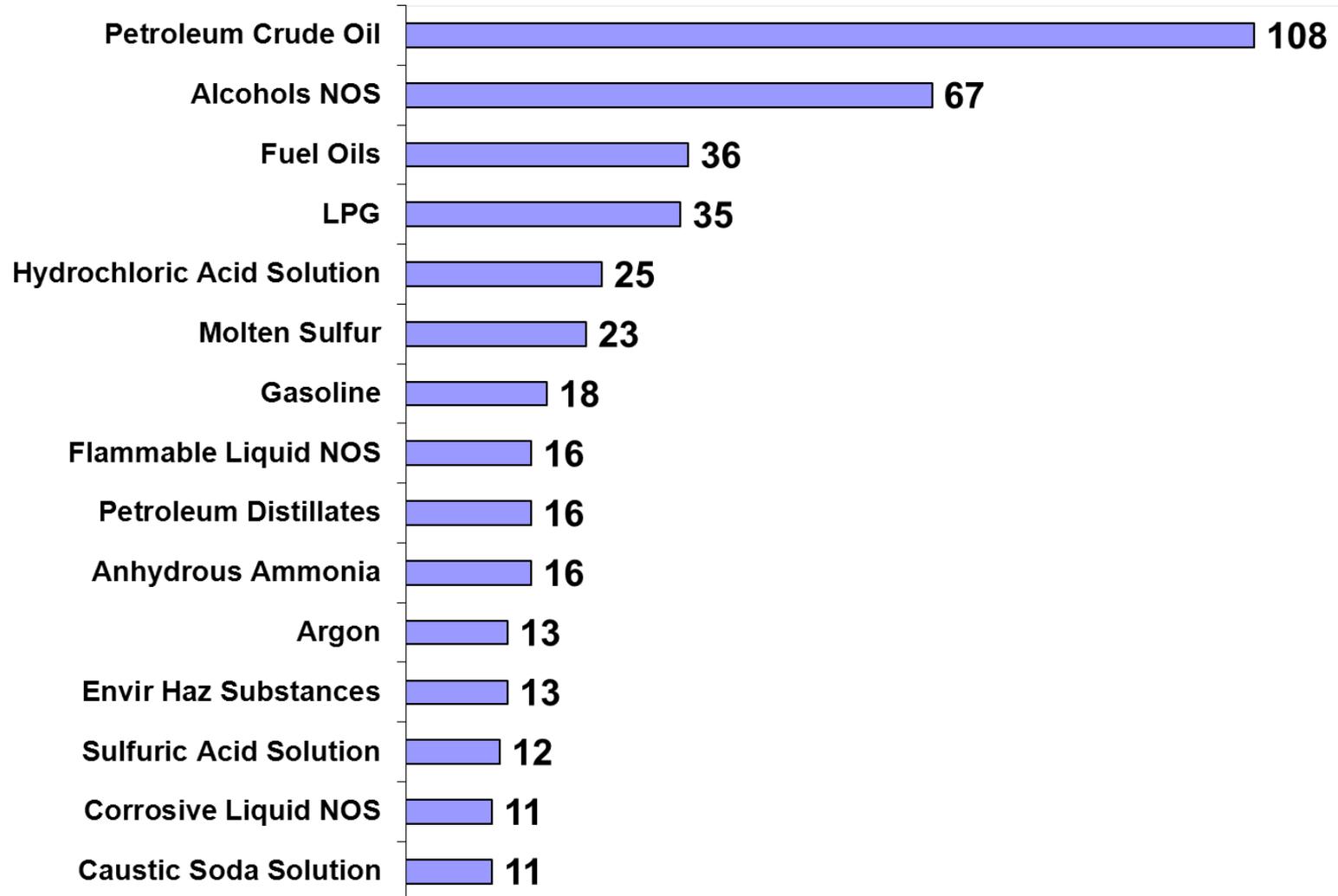


Source for the NAR Data

- The source is AAR/BOE's Hazardous Materials Release Reporter database (aka Rail Reporter)
- Not the same as PHMSA's 5800.1-based data
 - Includes incidents occurring in Canada
 - Excludes incidents with no lading released
 - e.g., precautionary evacuations
 - Uses BOE cause codes, not DOT's
 - Includes NAR Risk Index (NARRI) scores
 - Formula measures severity, actual and potential
- Data subject to slight changes if revised reports come in

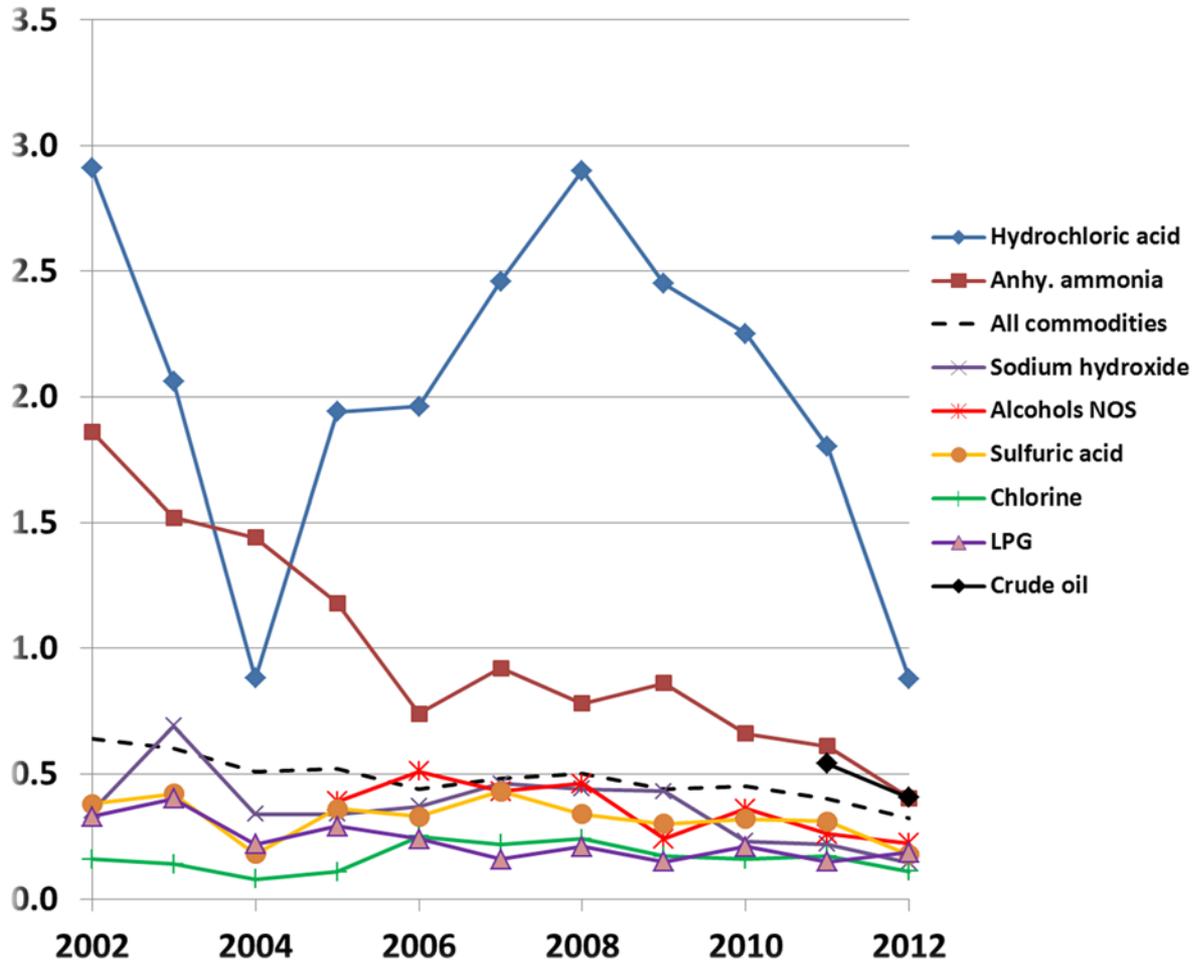
Top Commodities for NARs 2012

US & Canada



Source: AAR/BOE NAR data

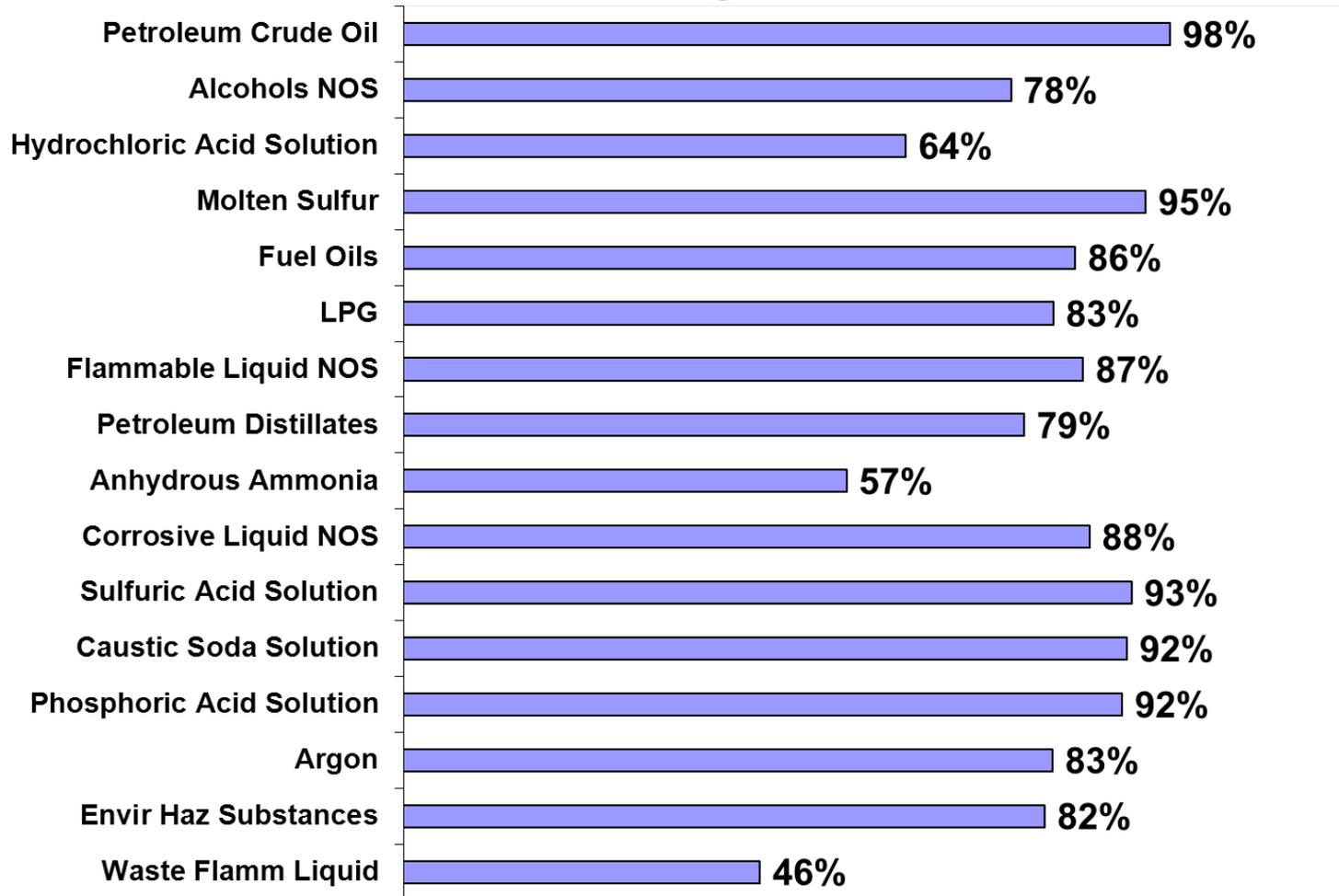
NARs per 1,000 Originations Selected Commodities



Source: AAR/BOE Annual Hazmat Reports

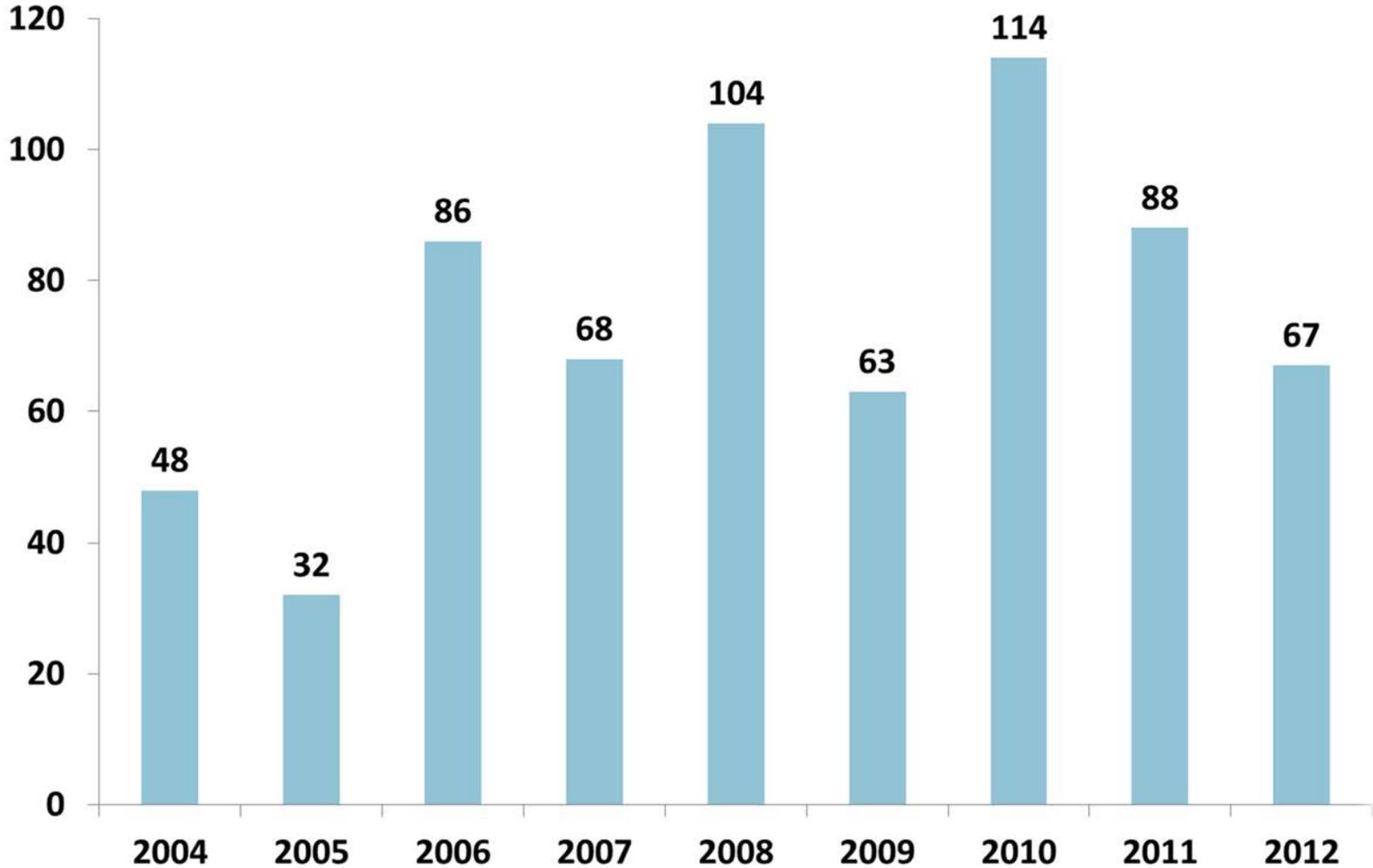
Percent of NARs Occurring on Loaded Trips

12 Months Ending June 2012



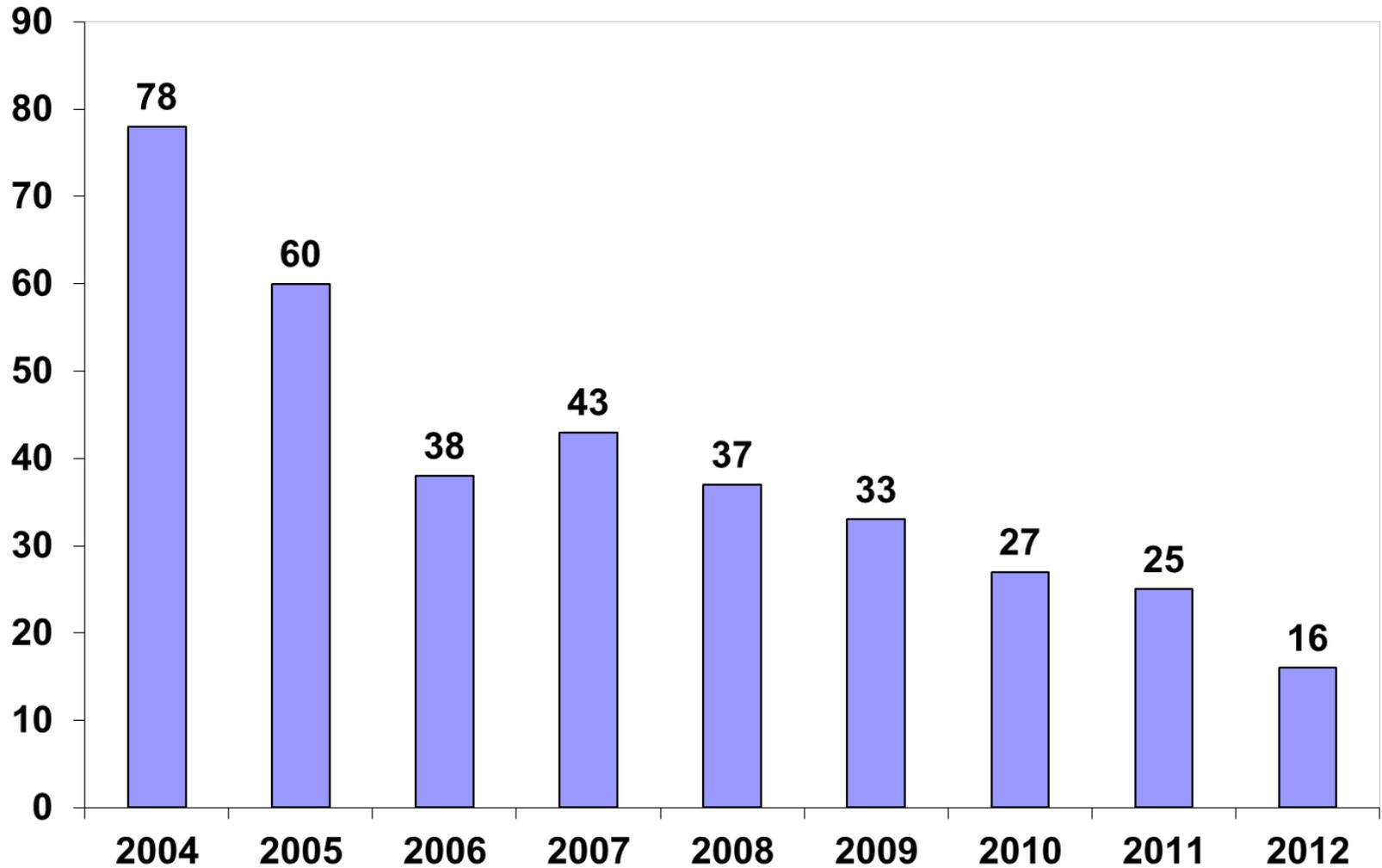
Top 16 commodities, in order of total NARs

Alcohols NOS Trend



Source: AAR/BOE NAR data

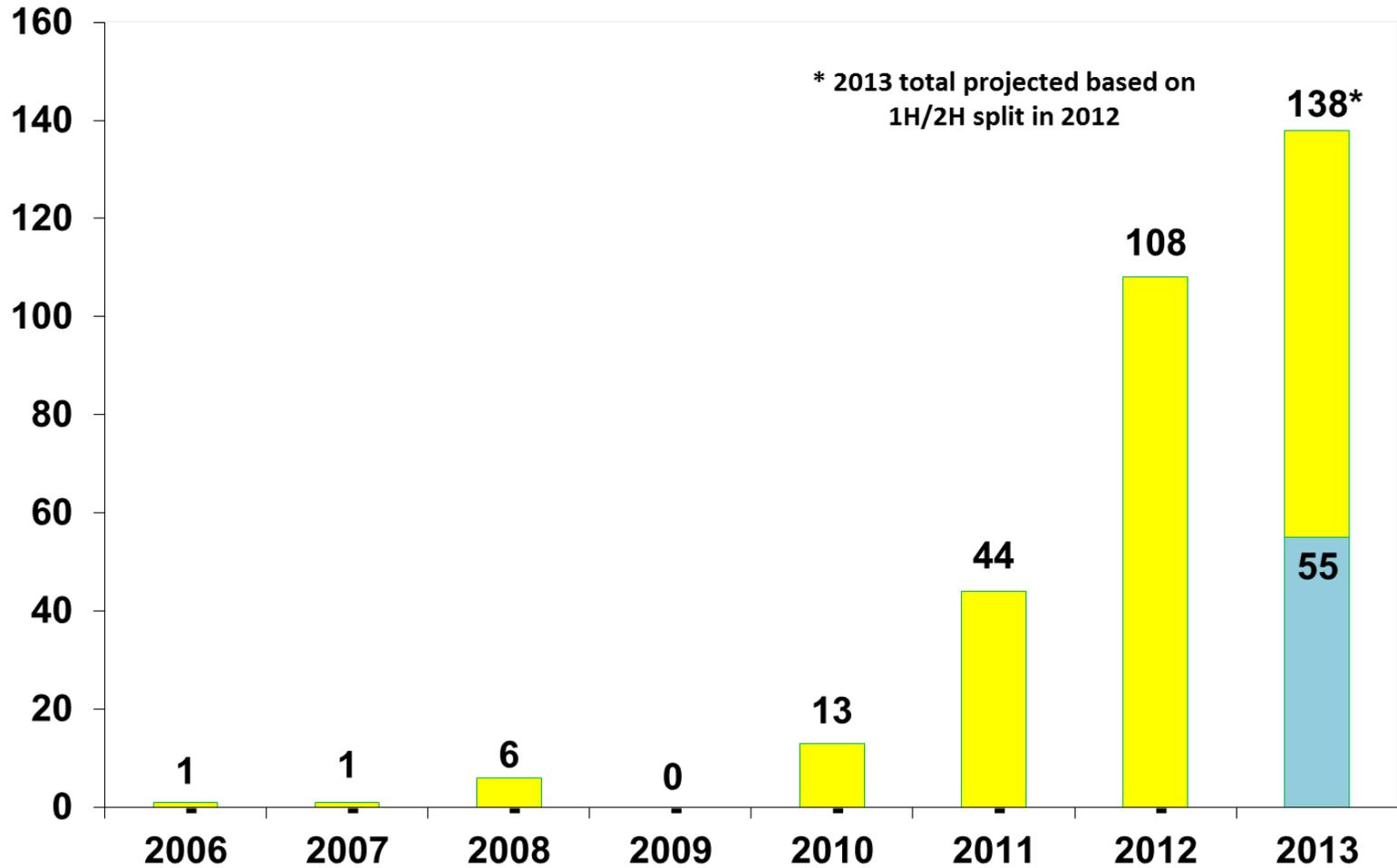
Anhydrous Ammonia Trend



Source: AAR/BOE NAR data

Crude Oil Trend

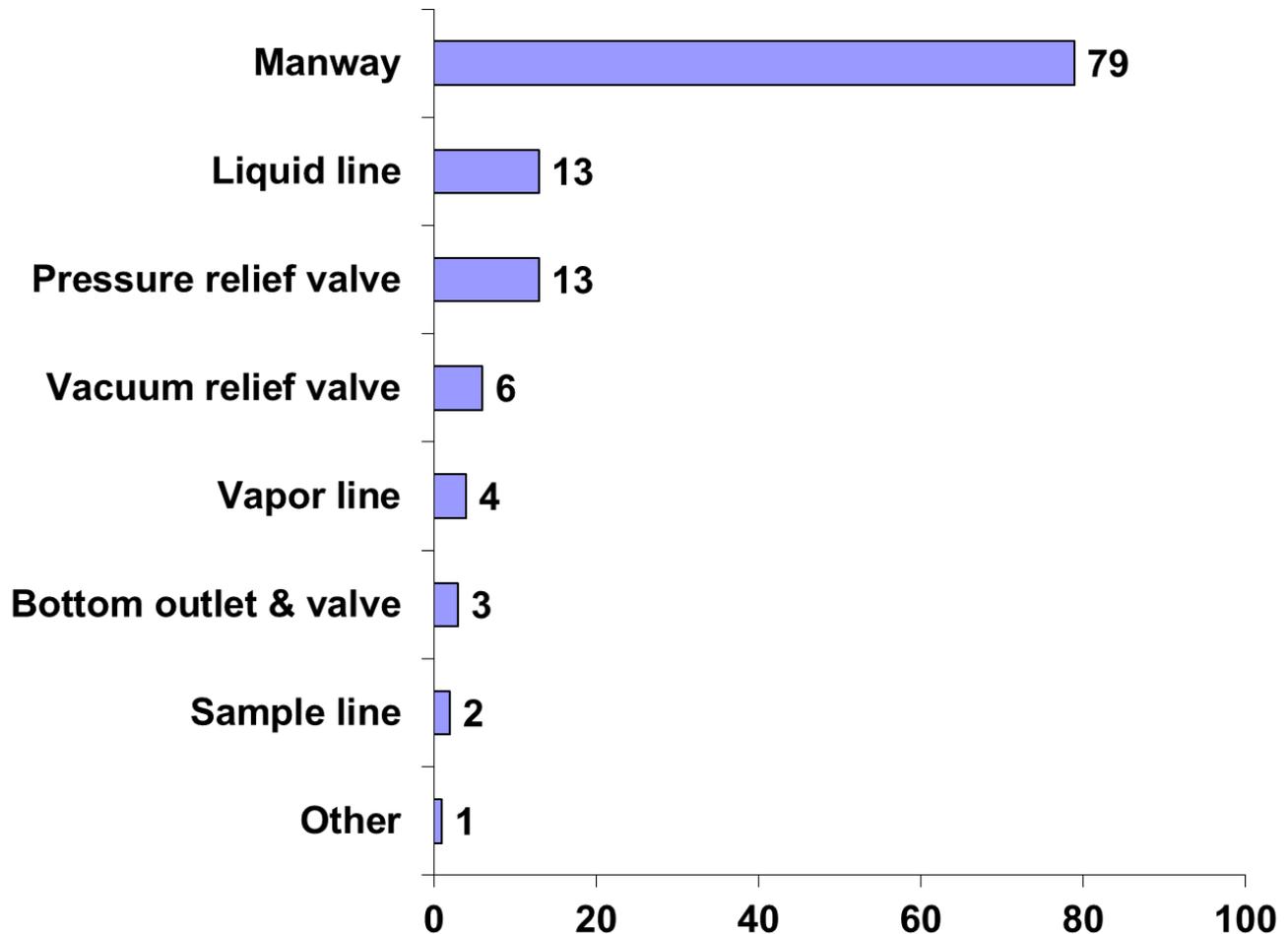
PRELIMINARY



Source: AAR/BOE NAR data

NARs for Crude Oil By Component

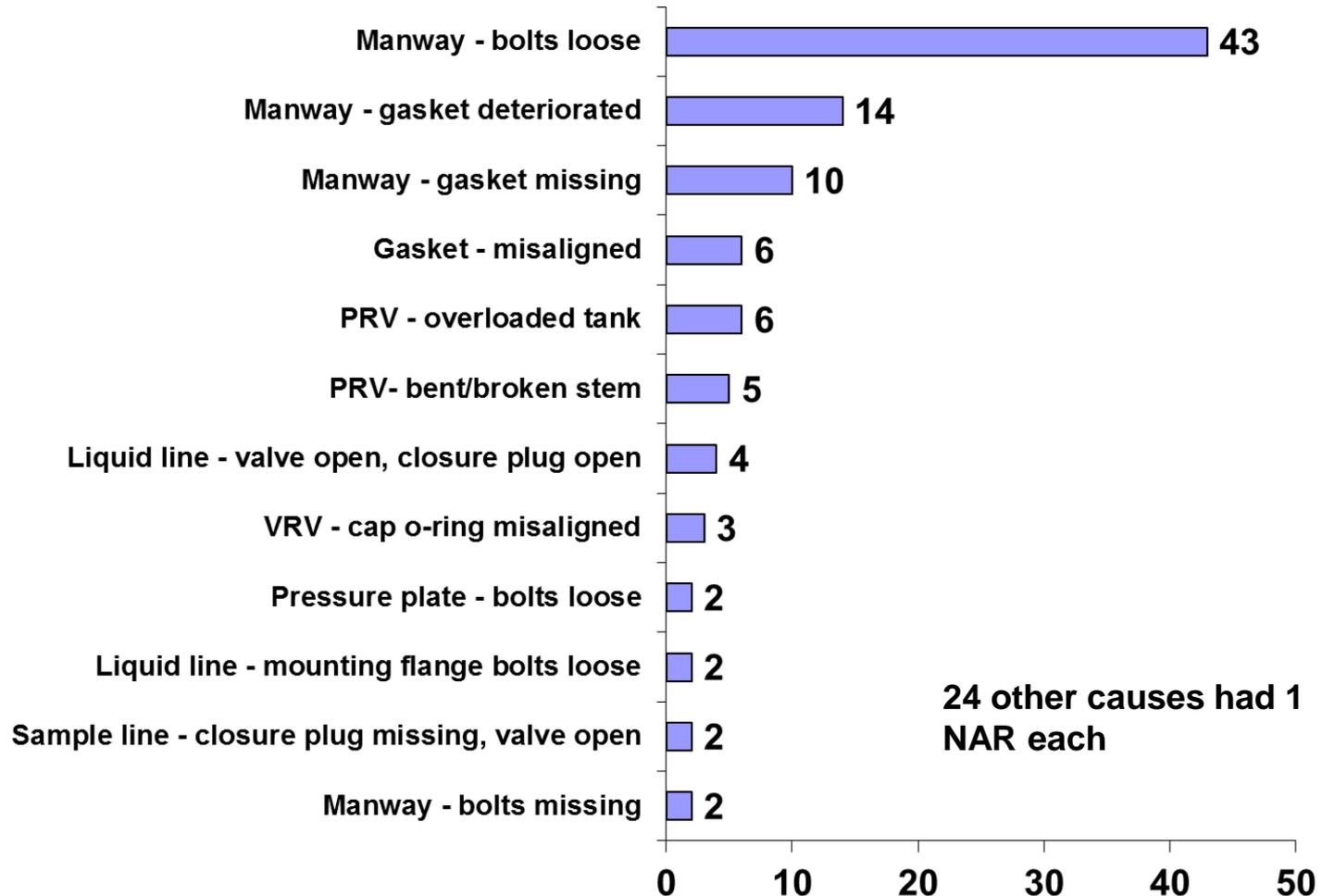
Last 12 Months Ending June 2013 - Preliminary



Source: AAR/BOE NAR data

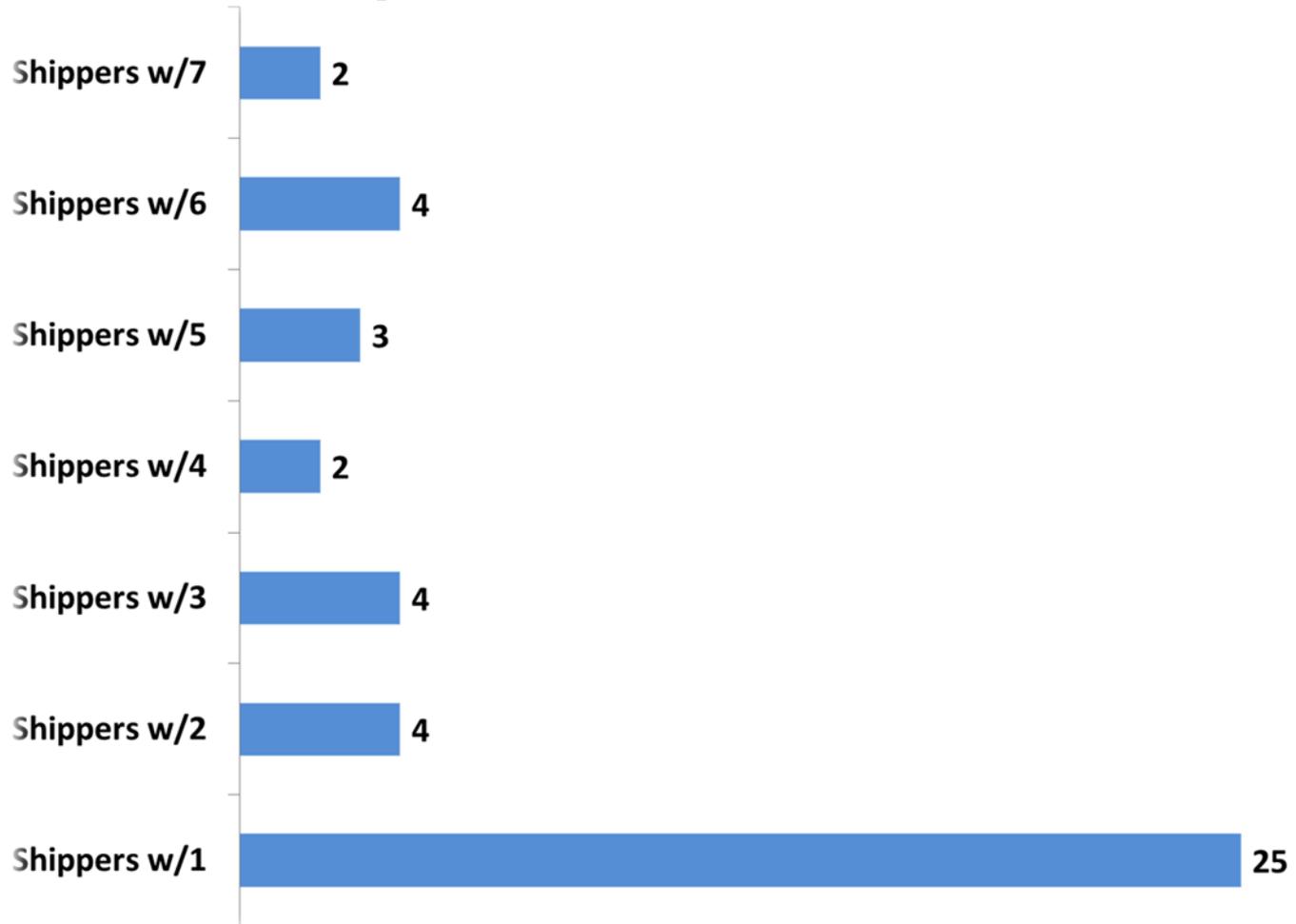
Top Specific Causes for Crude Oil

Last 12 Months Ending June 2013 - Preliminary



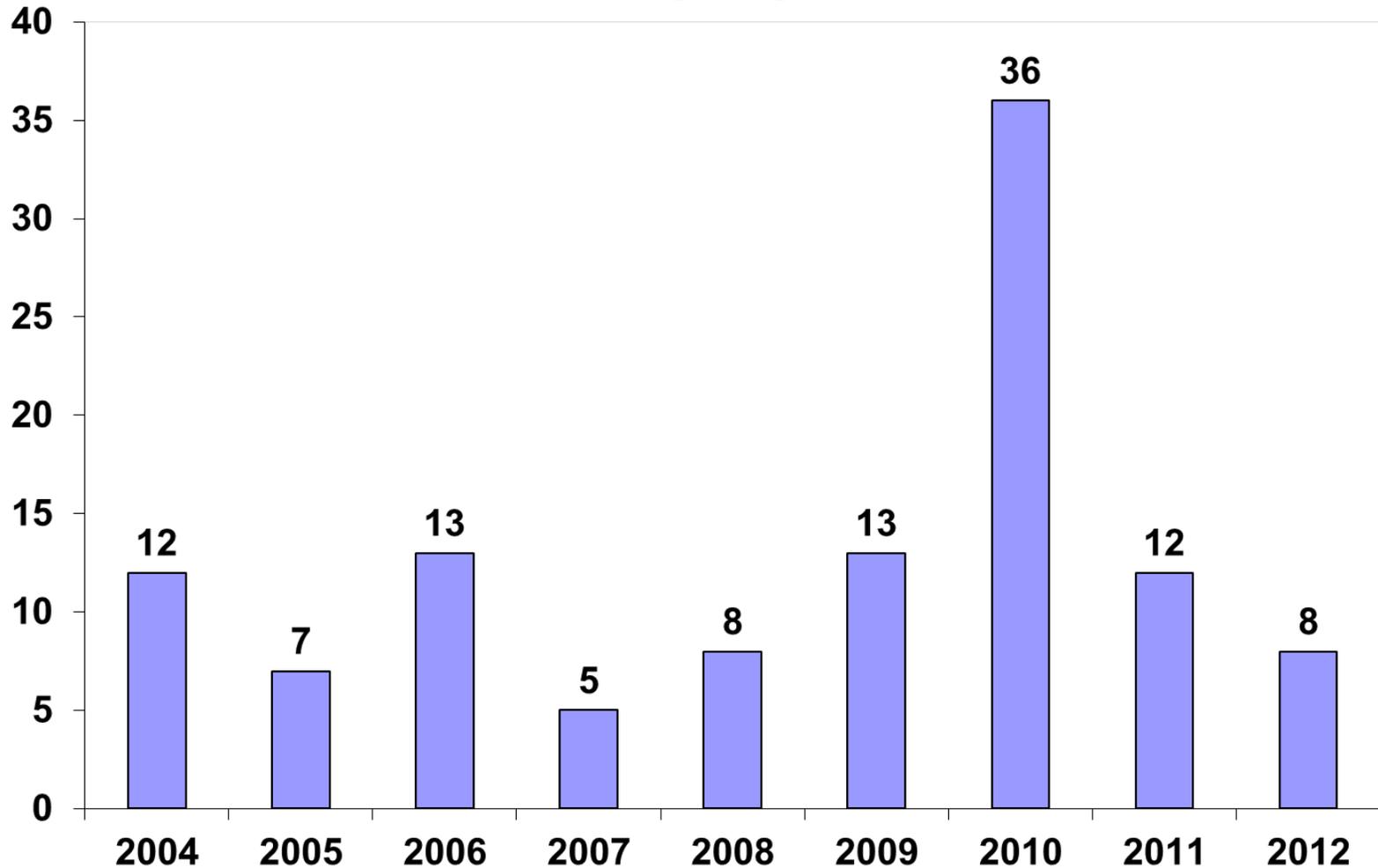
Source: AAR/BOE NAR data

Crude Oil Shippers with Multiple NARs 2012



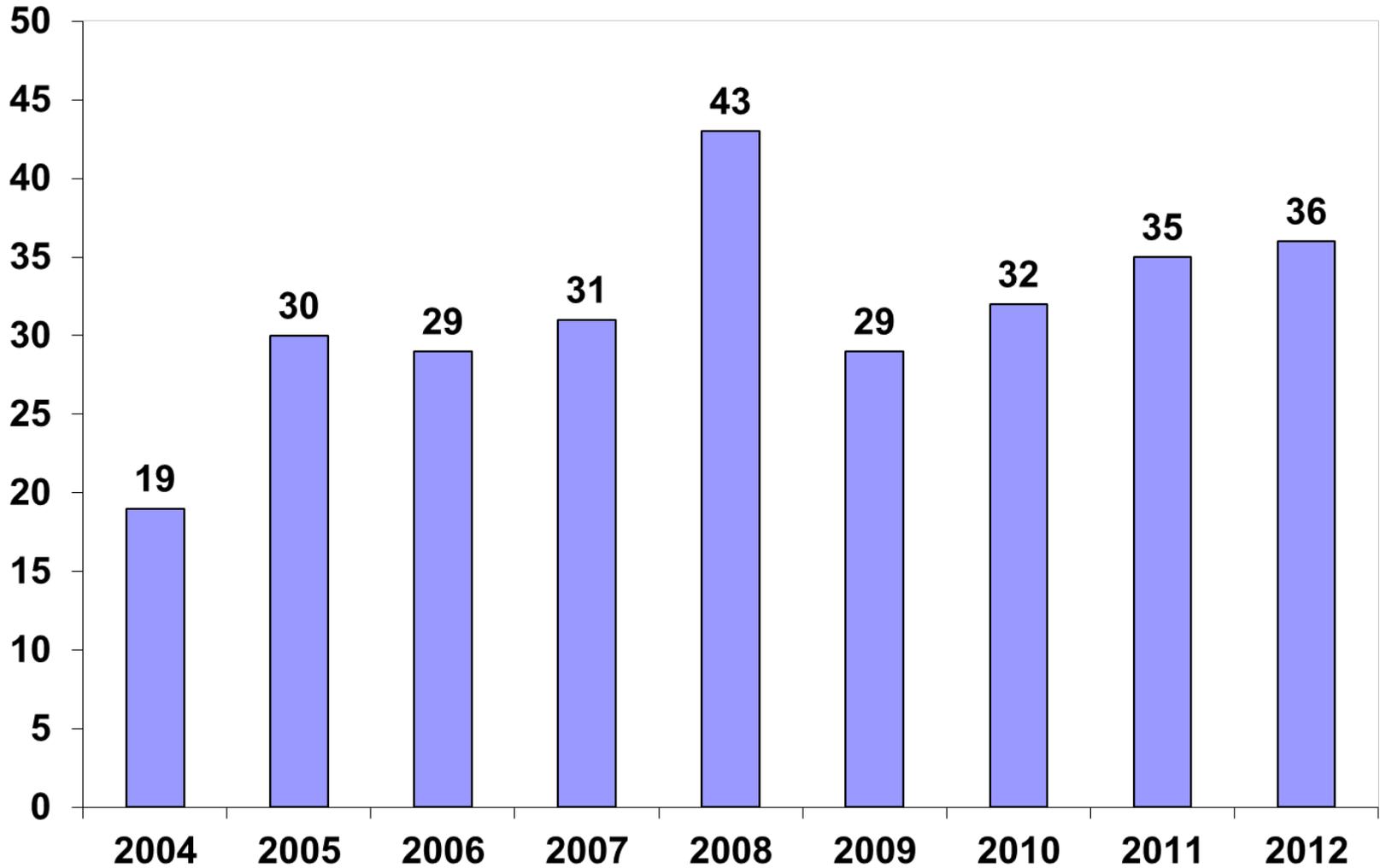
Source: AAR/BOE NAR data

Elevated Temperature Materials Trend



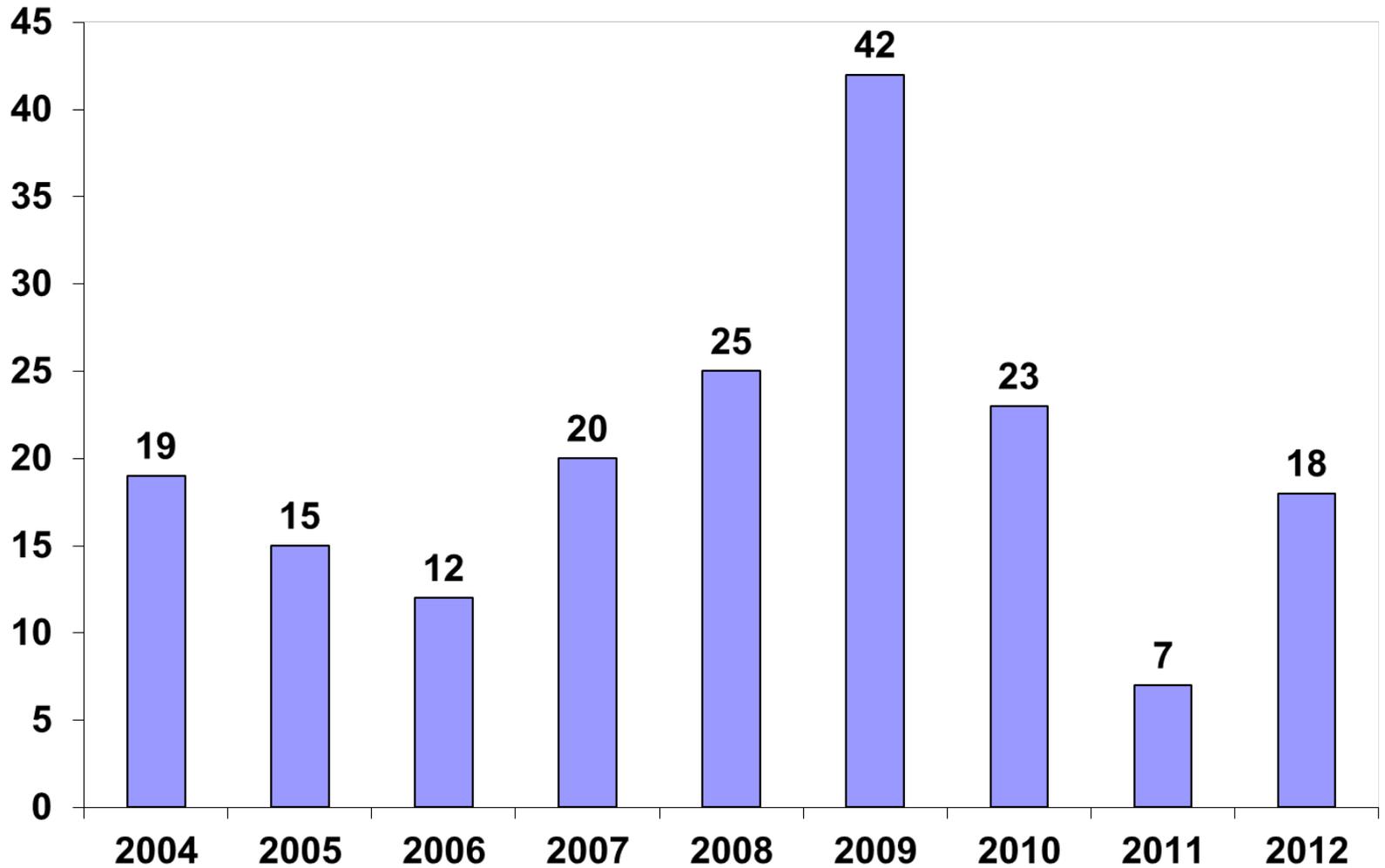
Source: AAR/BOE NAR data

Fuel Oils Trend



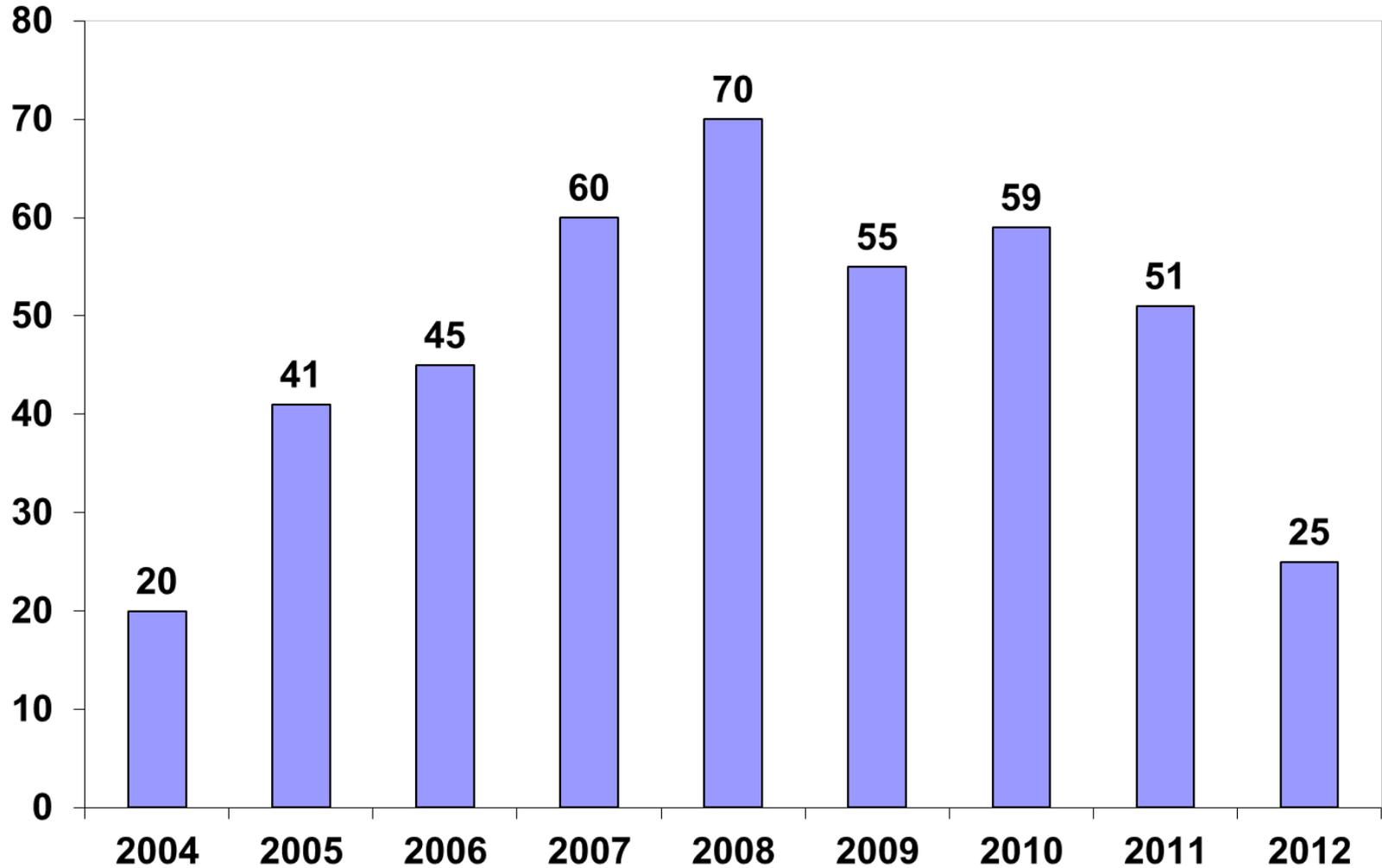
Source: AAR/BOE NAR data

Gasoline Trend



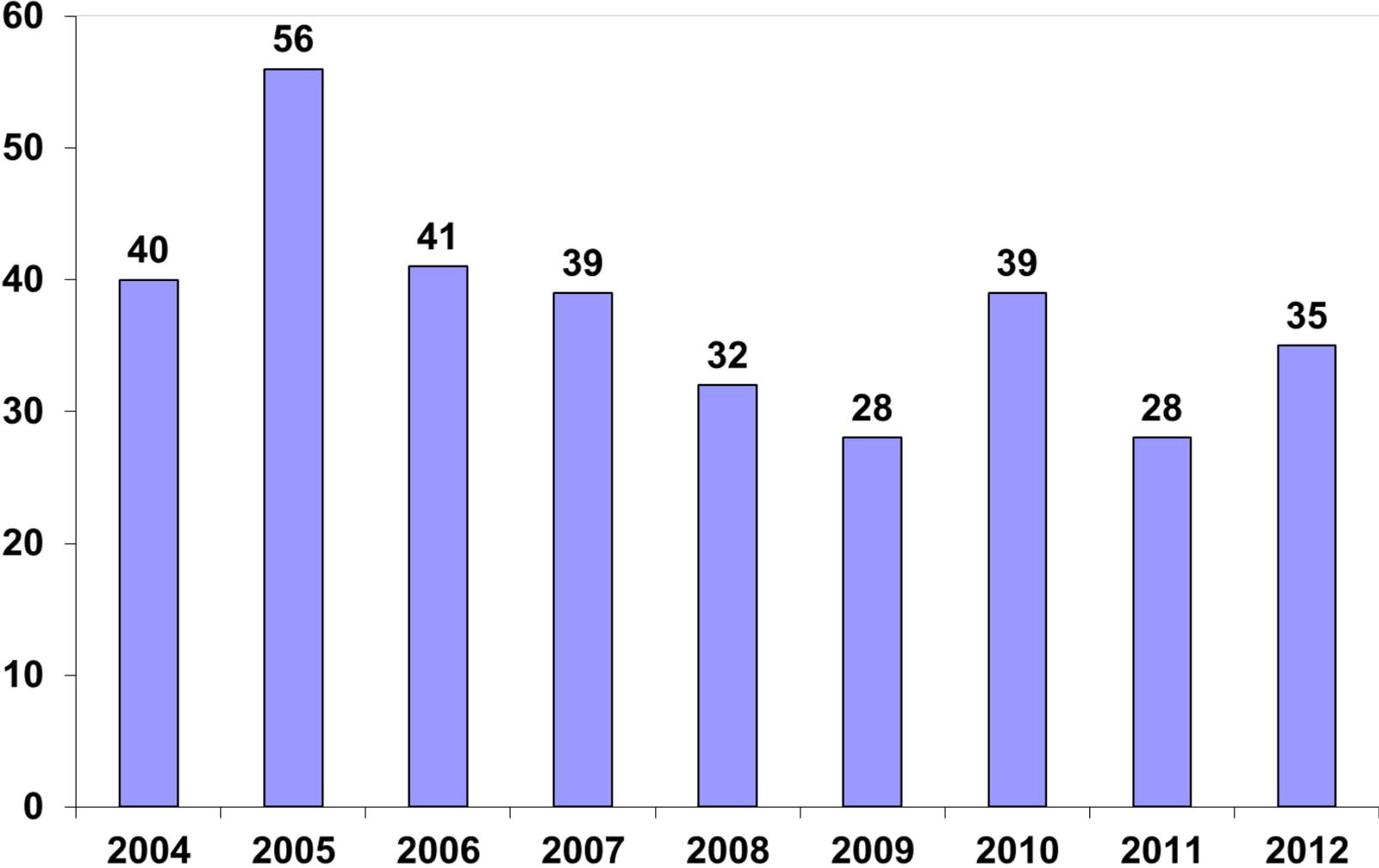
Source: AAR/BOE NAR data

Hydrochloric Acid Solution Trend



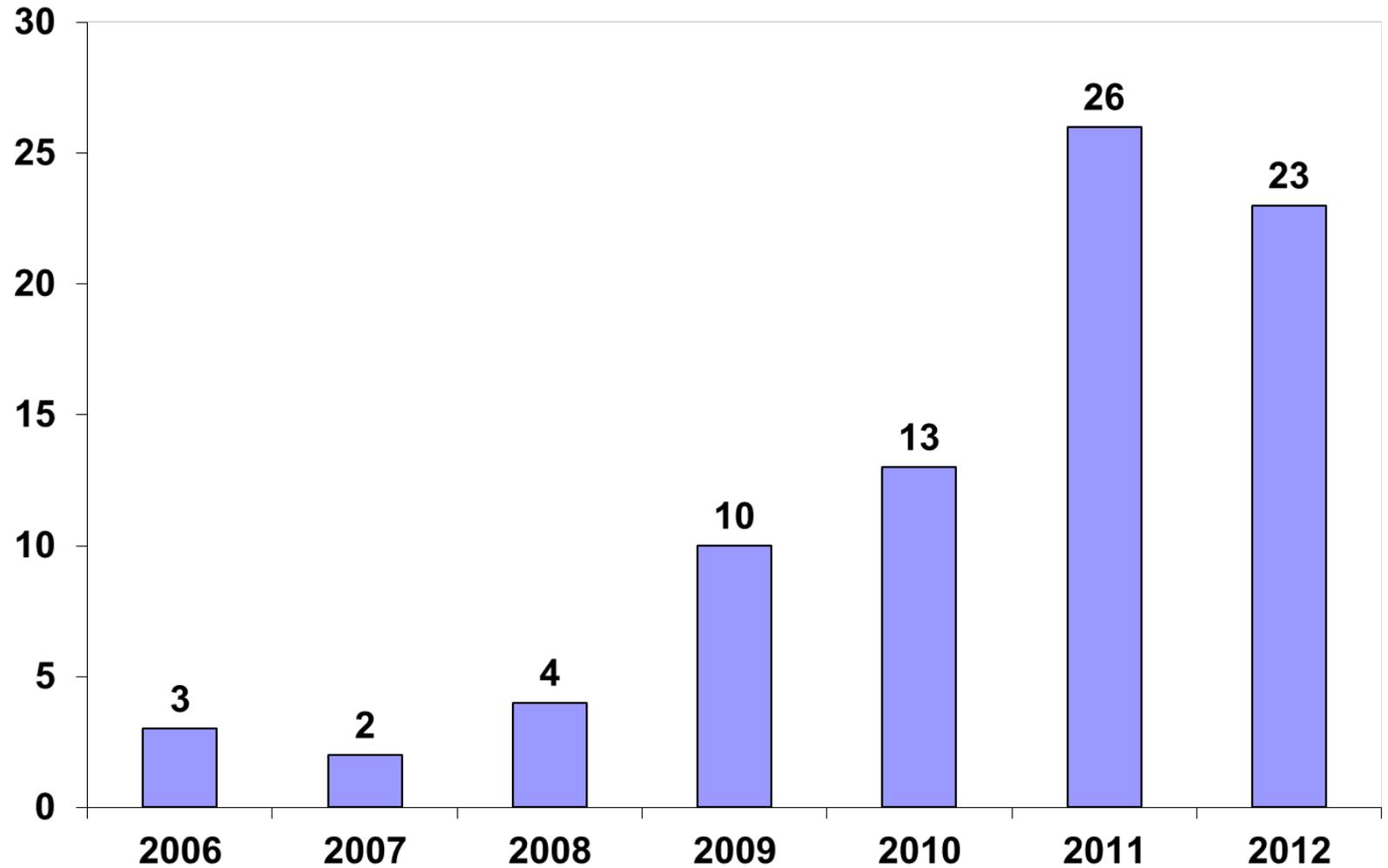
Source: AAR/BOE NAR data

LPG Trend



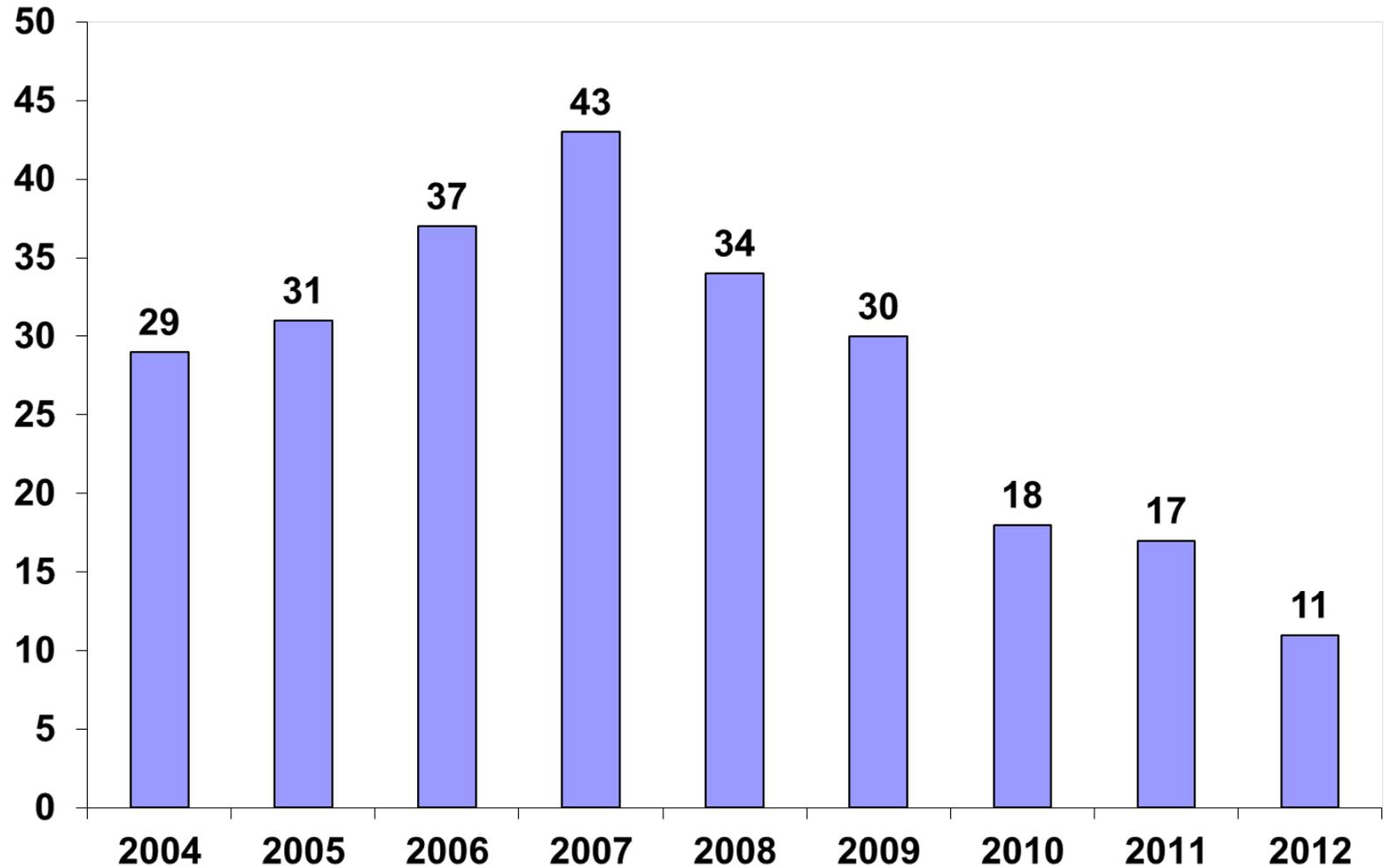
Source: AAR/BOE NAR data

Molten Sulfur Trend



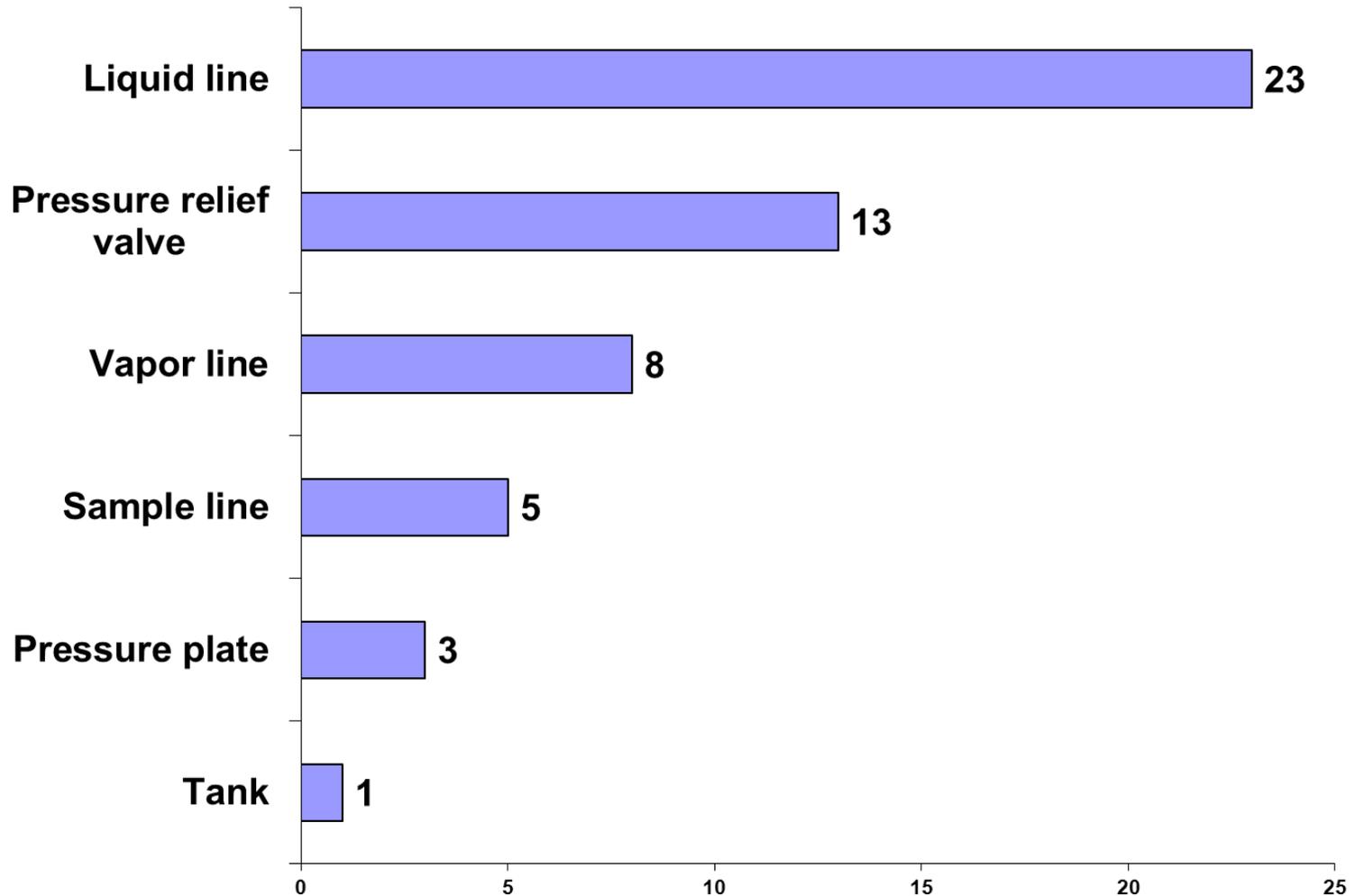
Source: AAR/BOE NAR data

Sodium Hydroxide Solution Trend



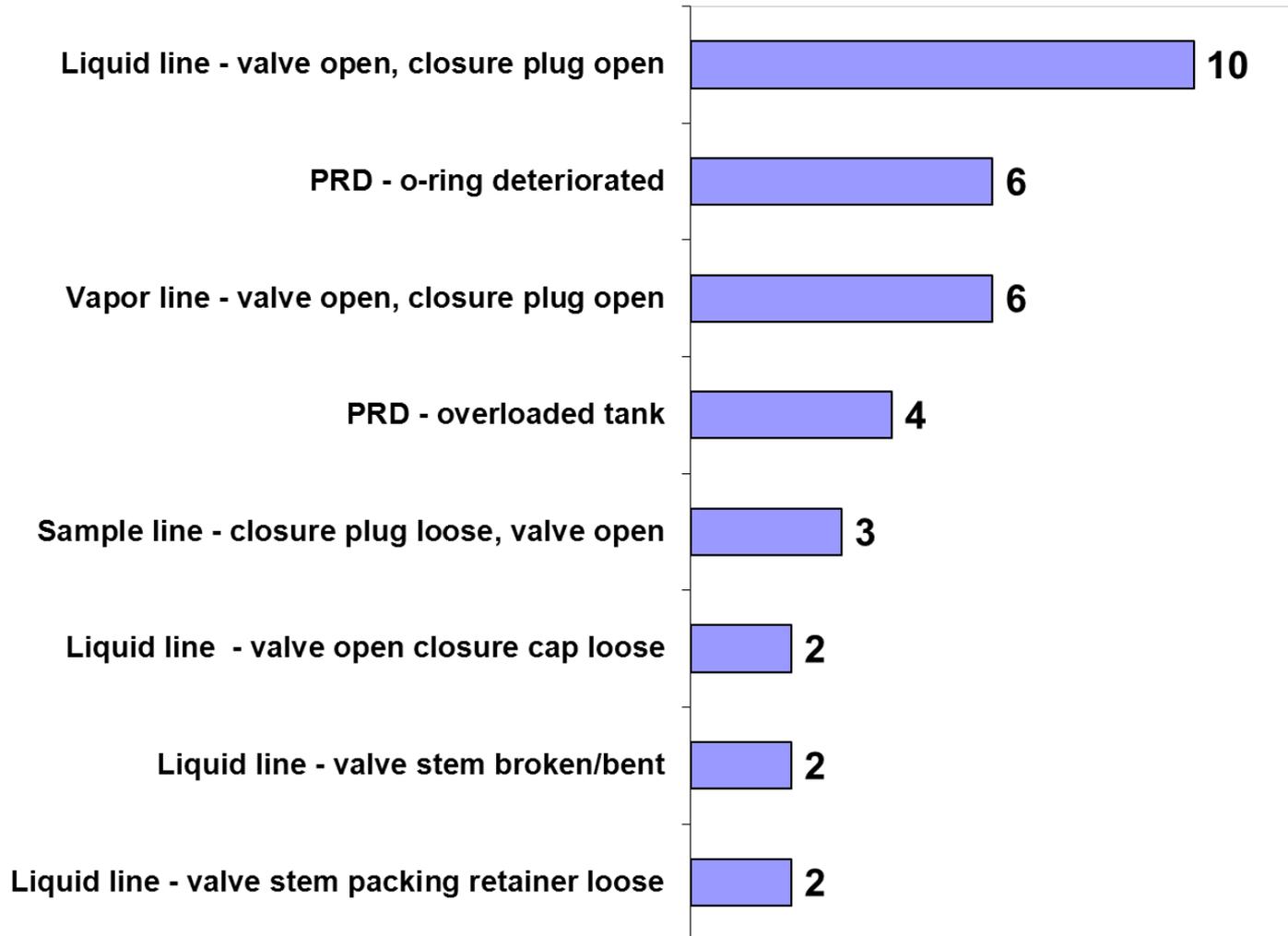
Source: AAR/BOE NAR data

Pressure Car NARs by Component 2012



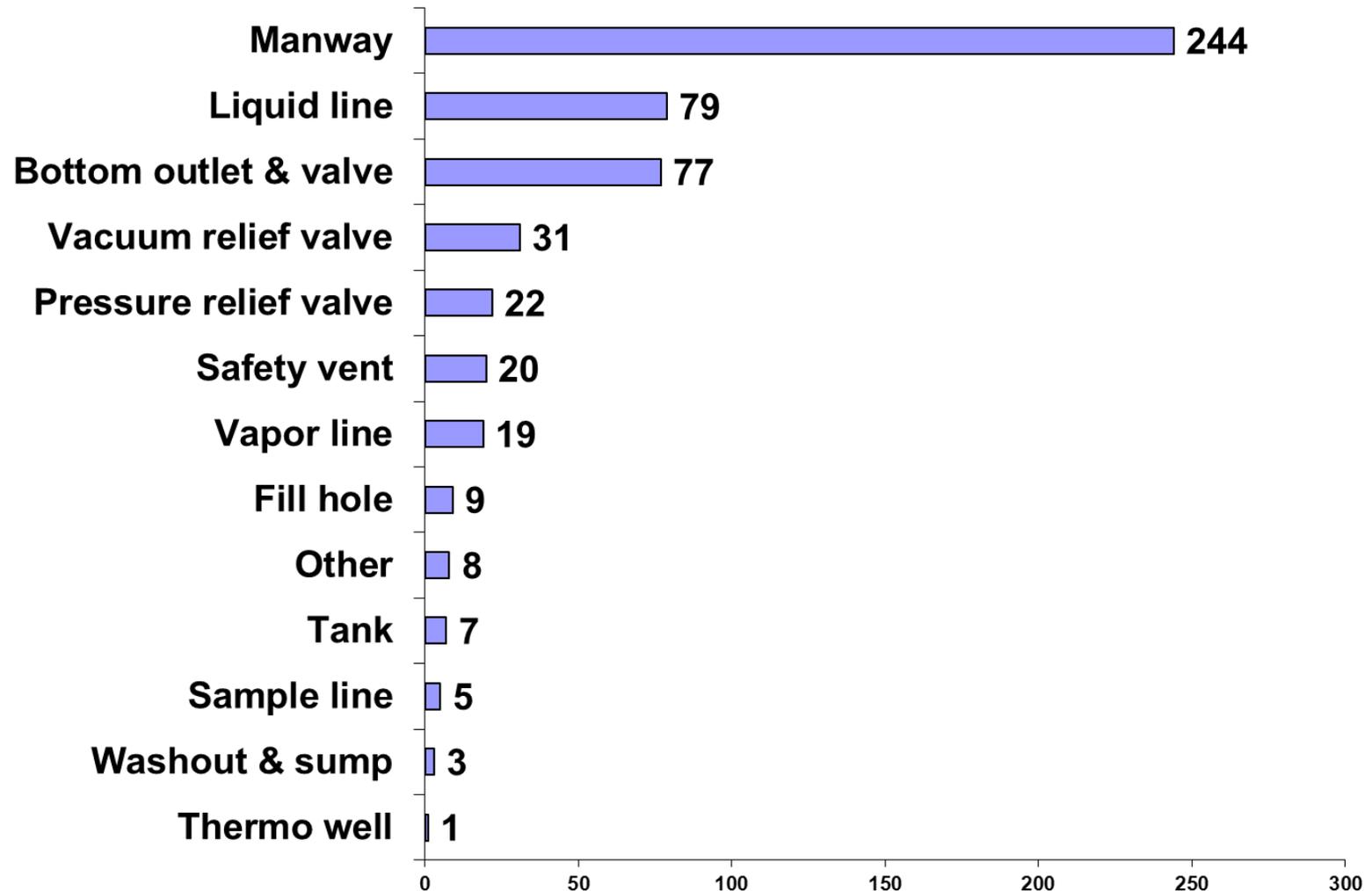
Source: AAR/BOE NAR data

Top Specific Causes for Pressure Cars 2012



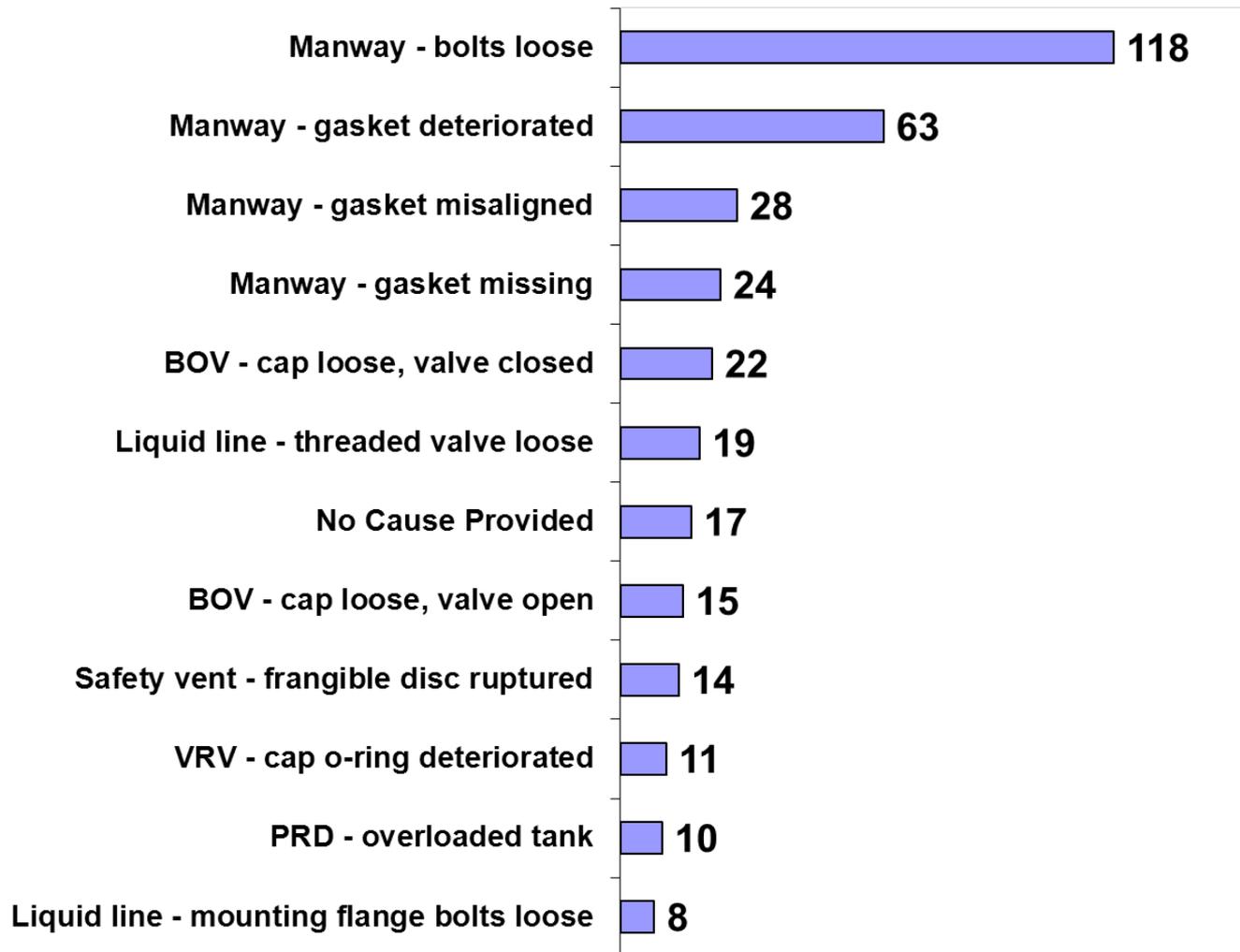
Source: AAR/BOE NAR data

Nonpressure Car NARs by Component 2012



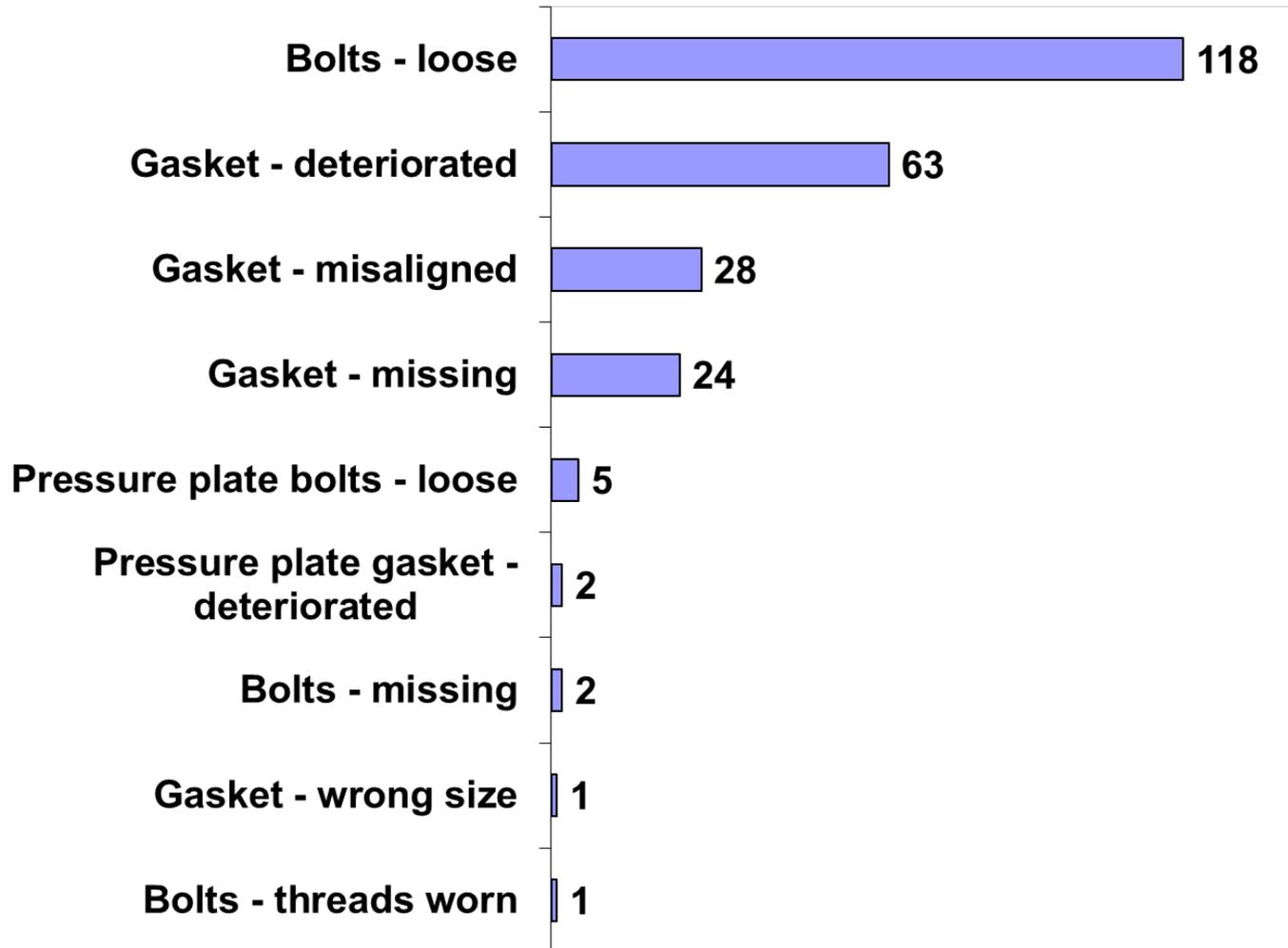
Source: AAR/BOE NAR data

Top Specific Causes for Nonpressure Cars 2012



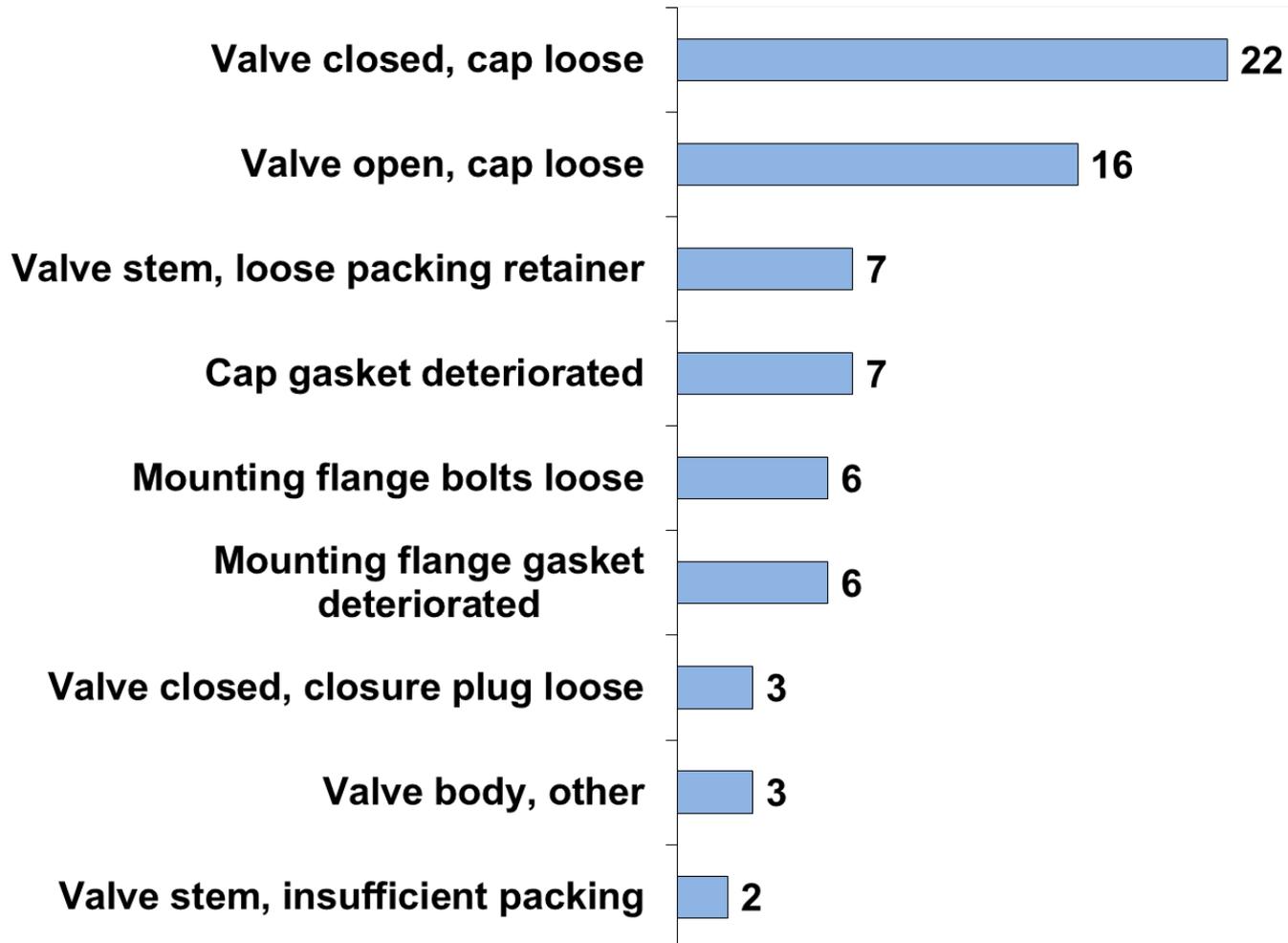
Source: AAR/BOE NAR data

Manway Causes (Nonpressure) 2012



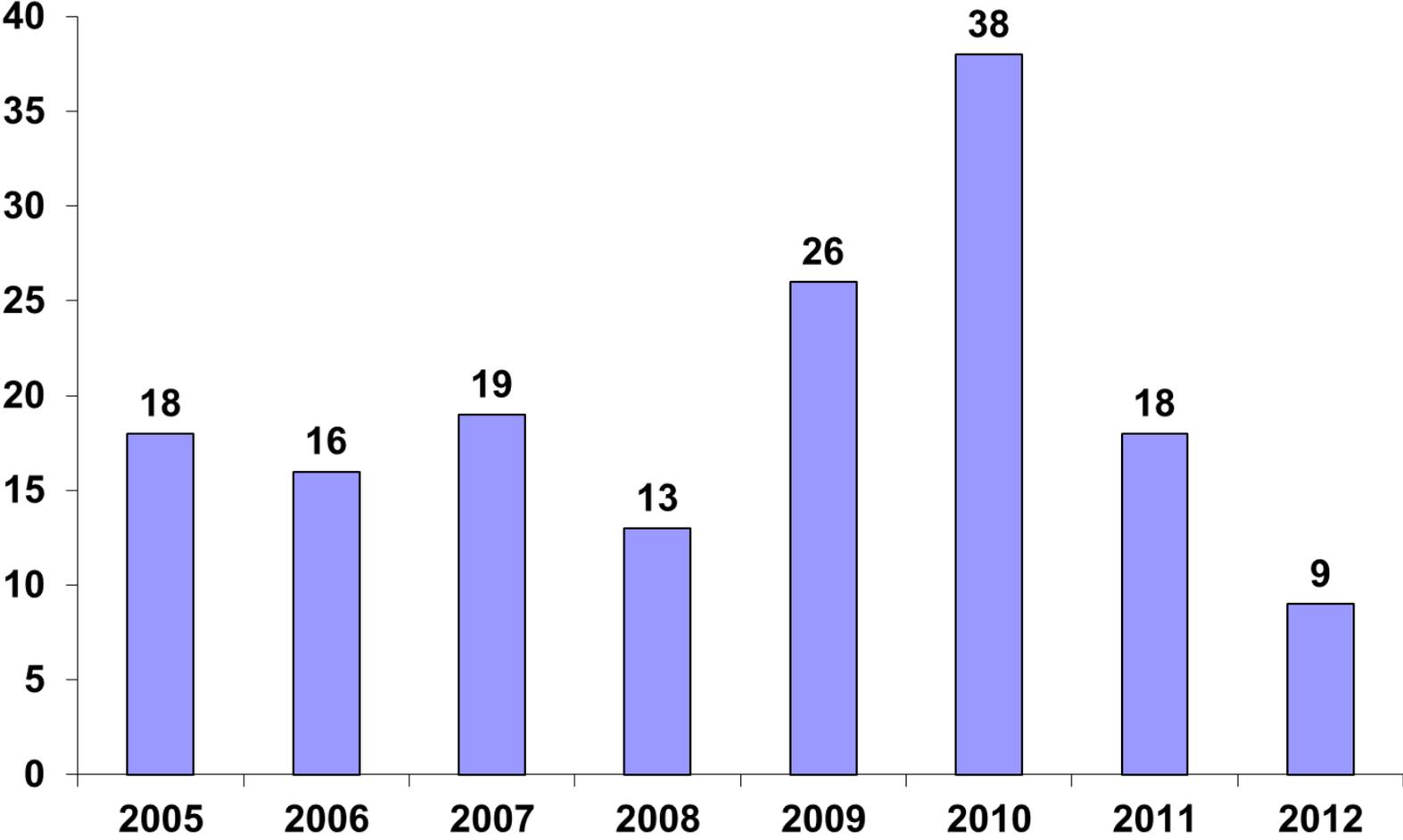
Source: AAR/BOE NAR data

Bottom Outlet/Valve Causes 2012



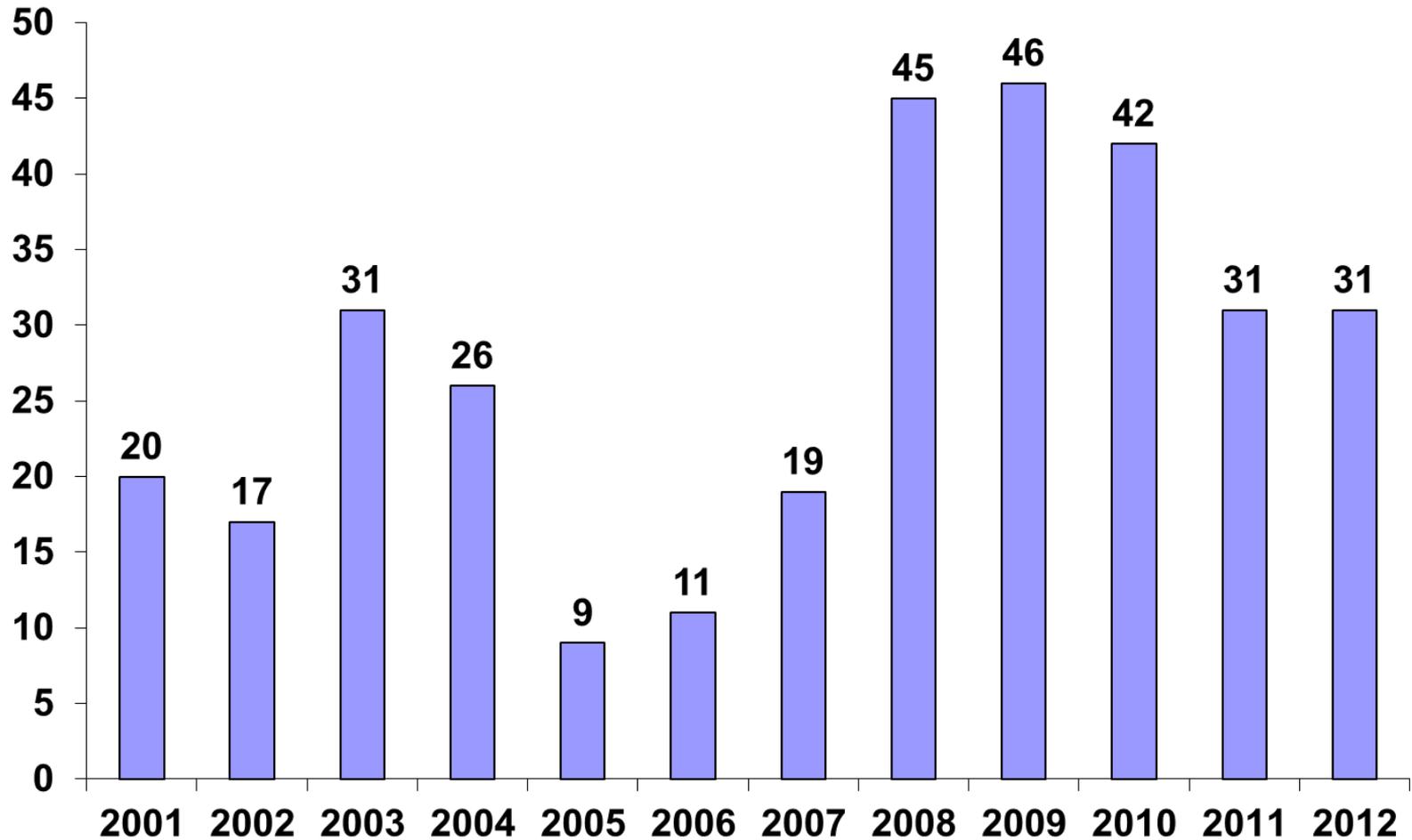
Source: AAR/BOE NAR data

Fill Hole NAR Trend



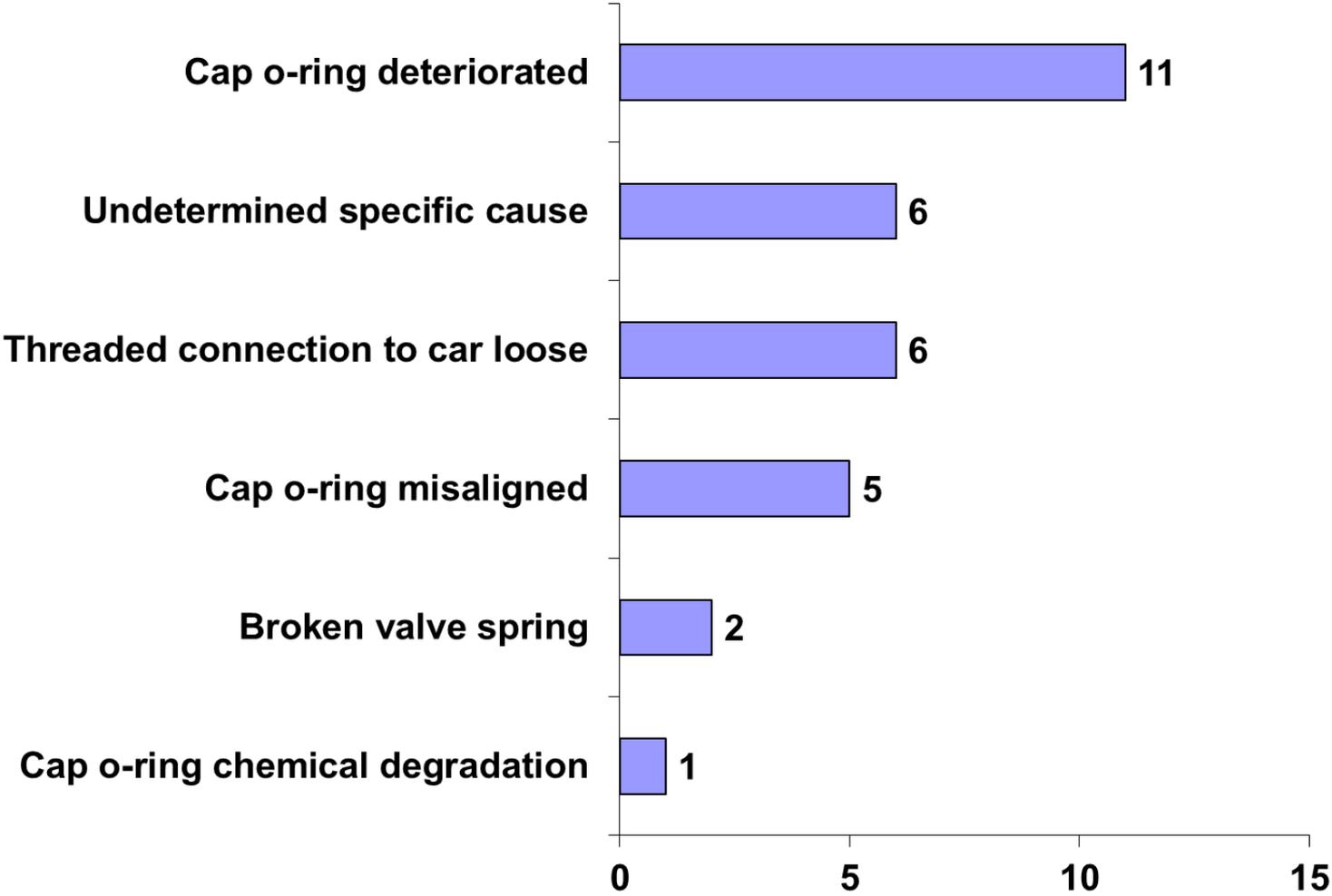
Source: AAR/BOE NAR data

Vacuum Relief Valve NAR Trend



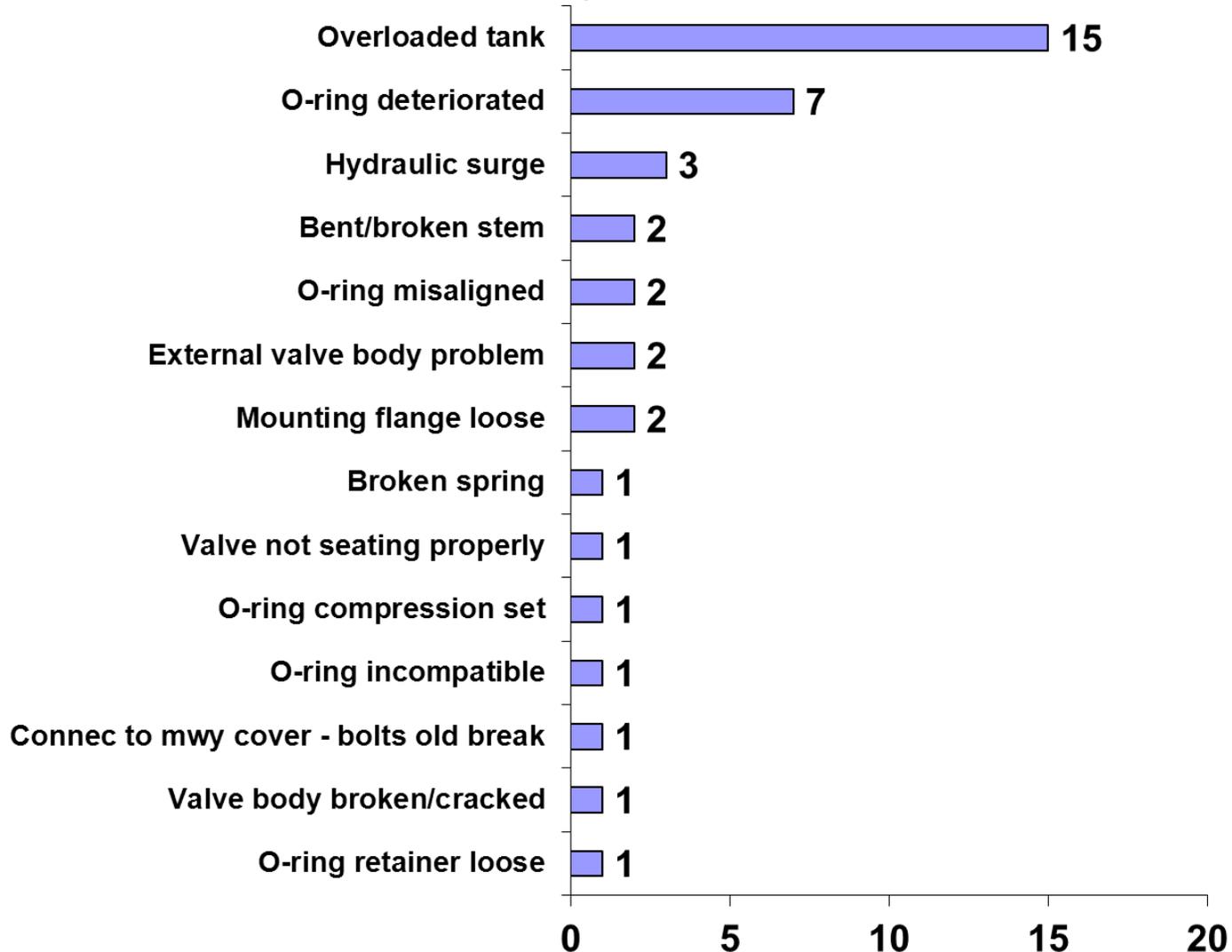
Source: AAR/BOE NAR data

Vacuum Relief Valve NAR Causes 2012



Source: AAR/BOE NAR data

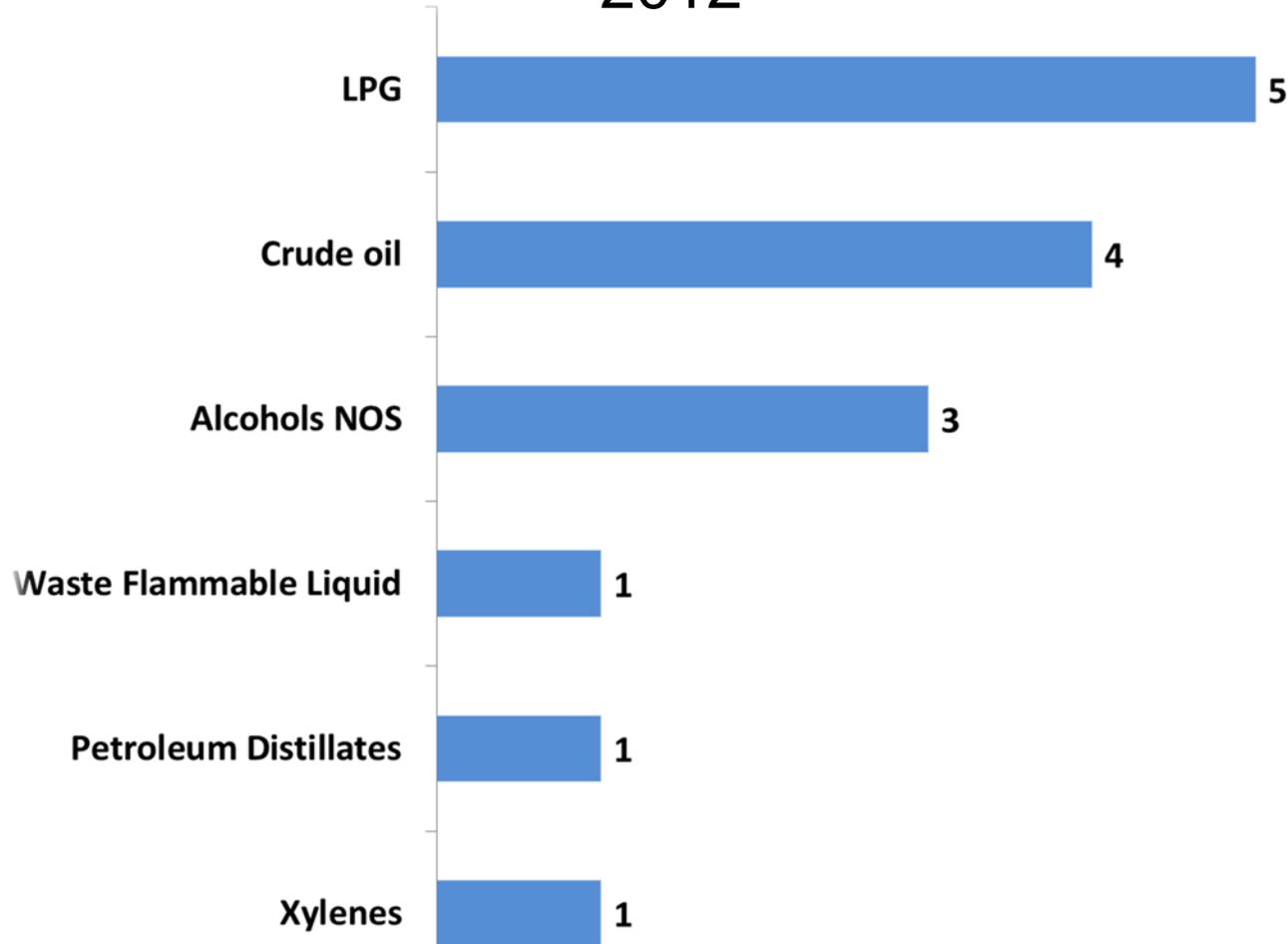
PRV NARs by Cause - 2012



Source: AAR/BOE NAR data

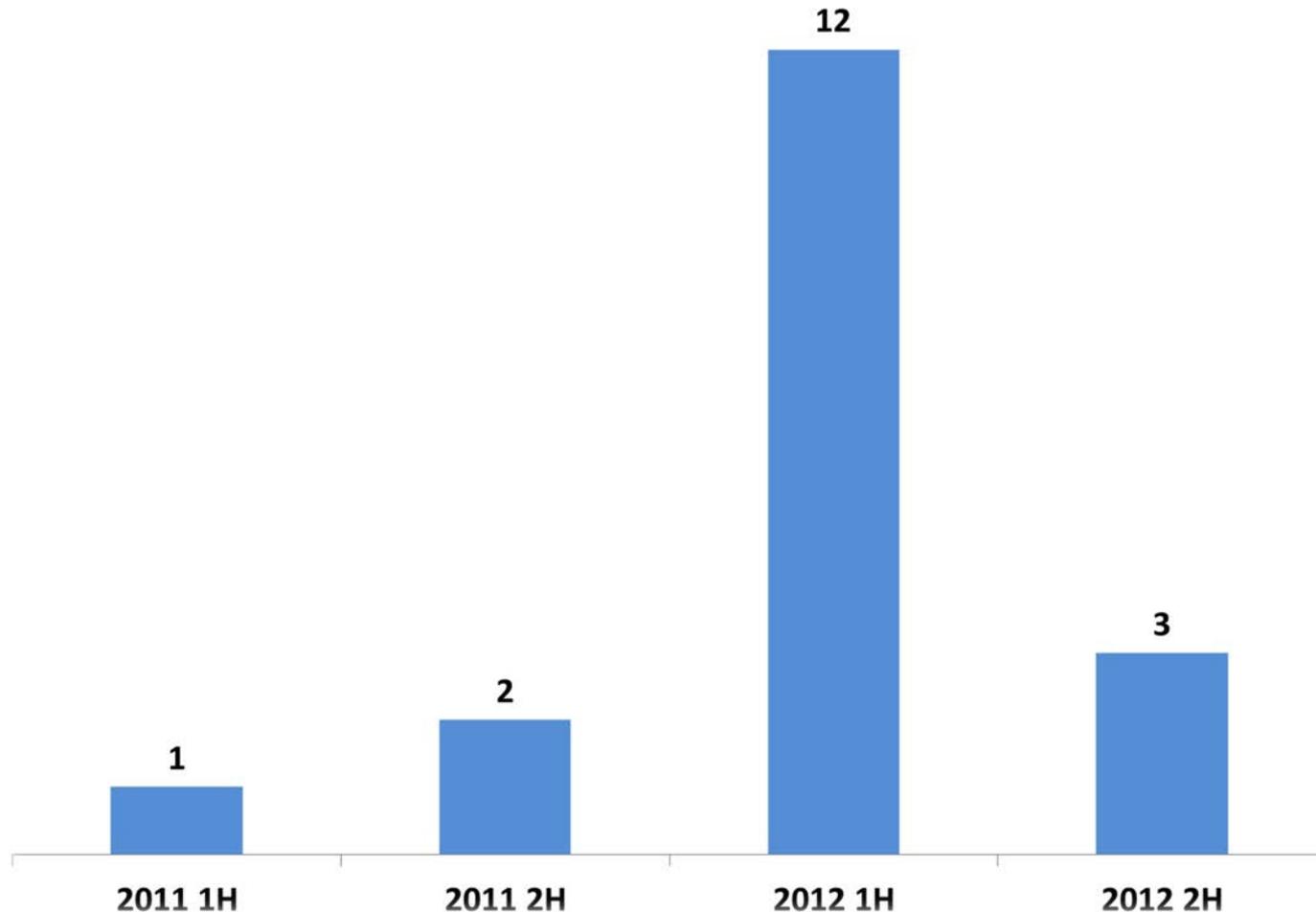
PRV NARs Due to Overloaded Tanks, by Commodity

2012



Source: AAR/BOE NAR data

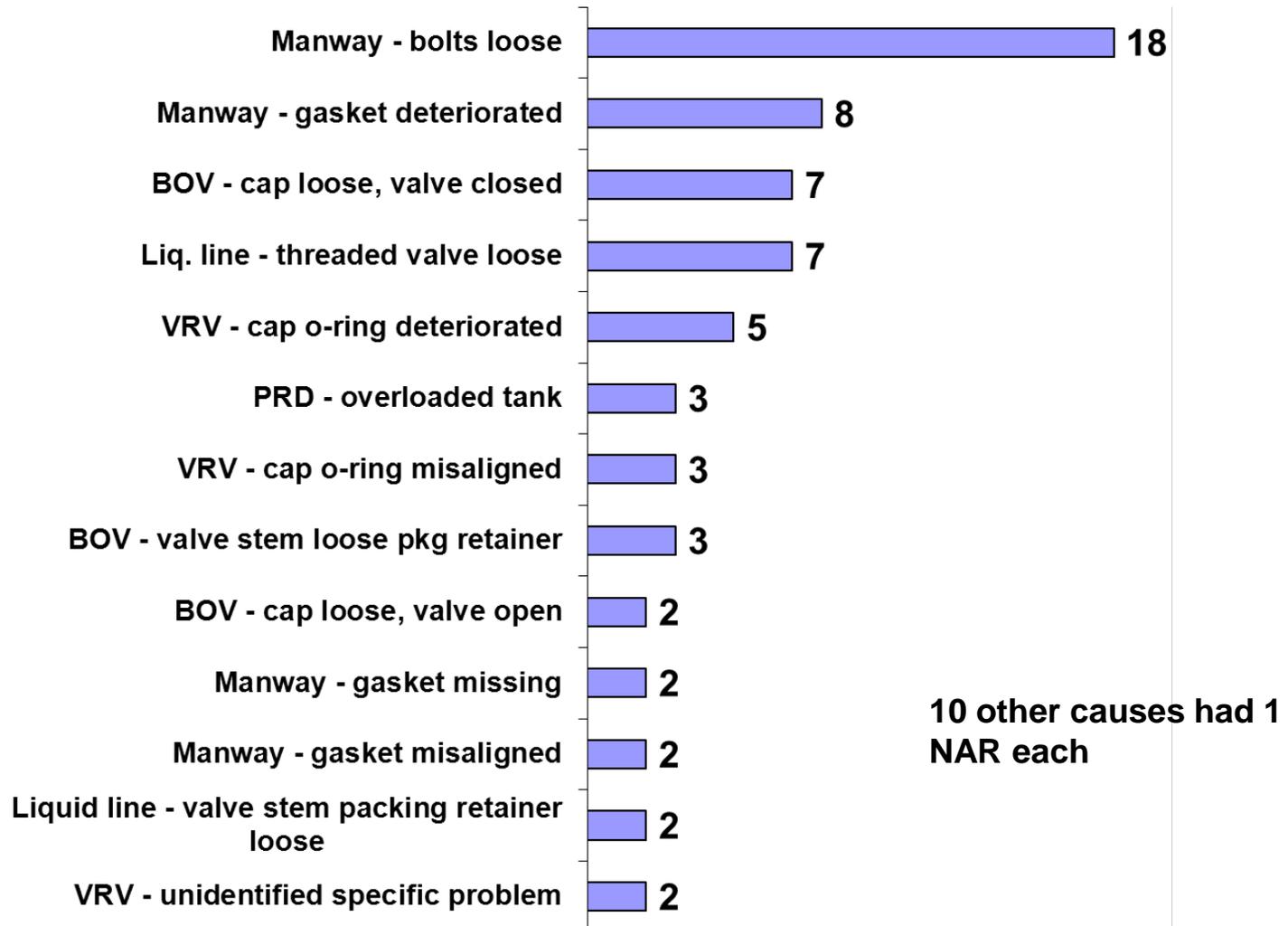
PRV NARs Due to Overloaded Tanks, by 6-Month Period



Source: AAR/BOE NAR data

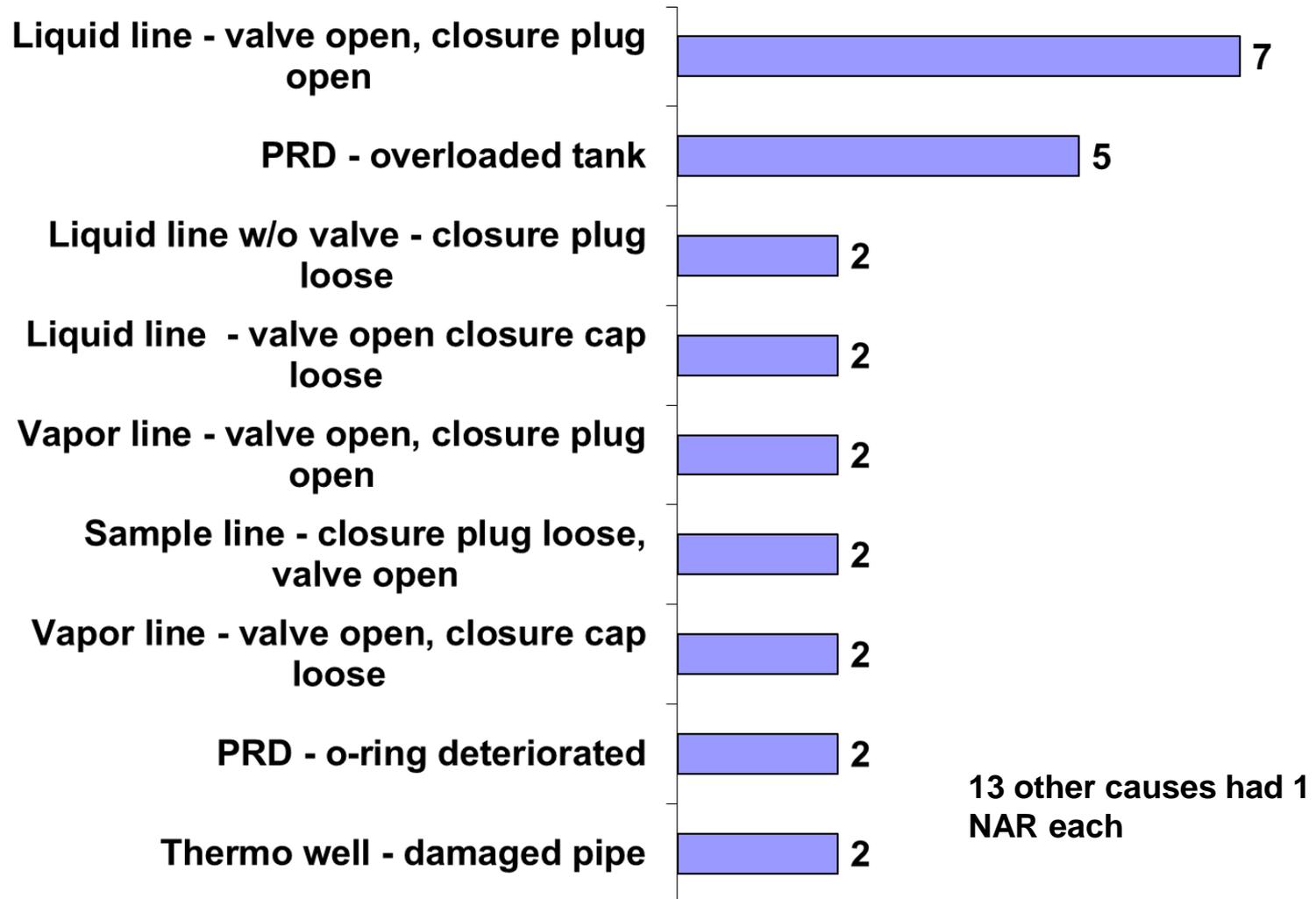
Top Specific Causes for Alcohols NOS

2012



Source: AAR/BOE NAR data

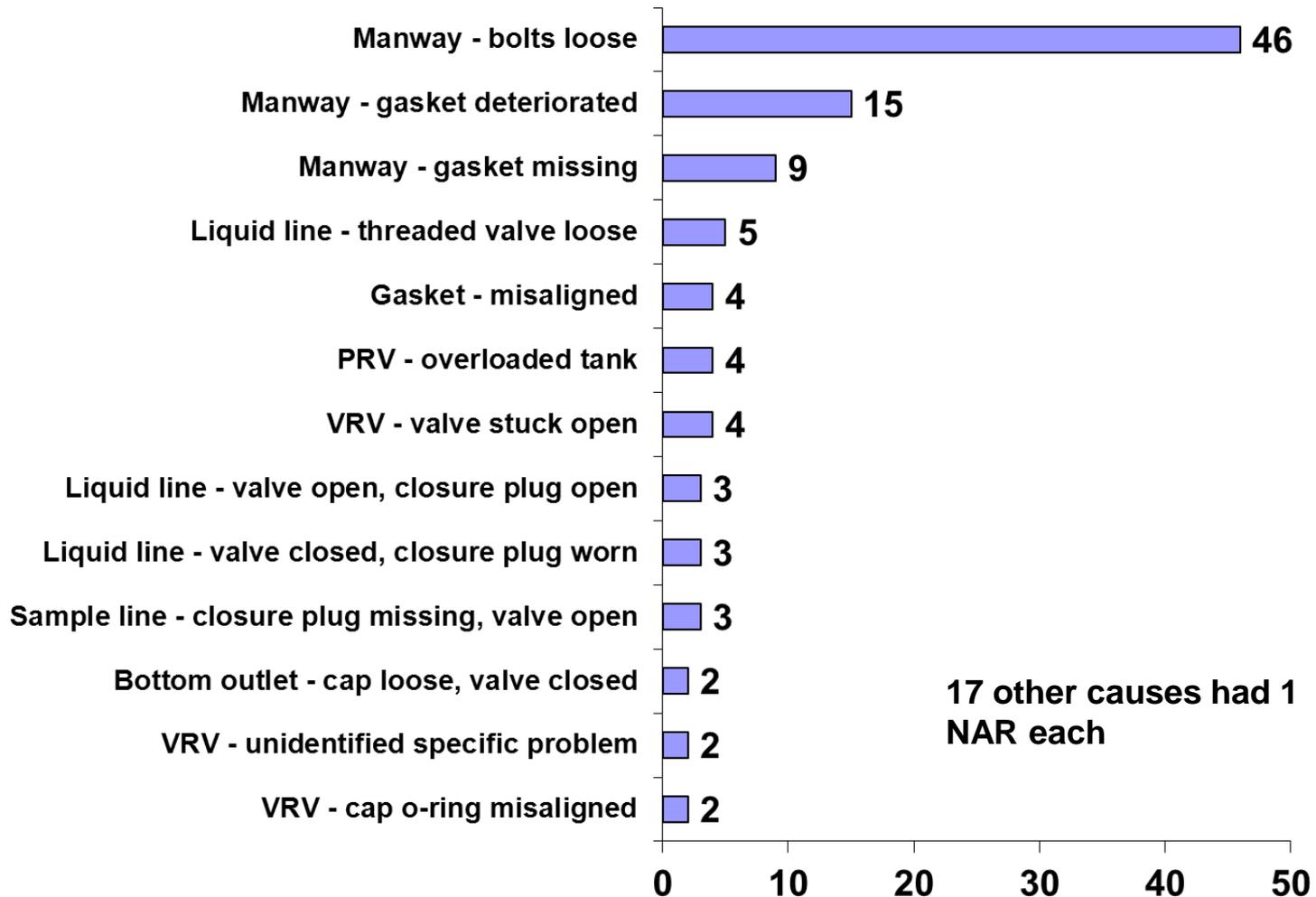
Top Specific Causes for LPG 2012



Source: AAR/BOE NAR data

Top Specific Causes for Crude Oil

2012

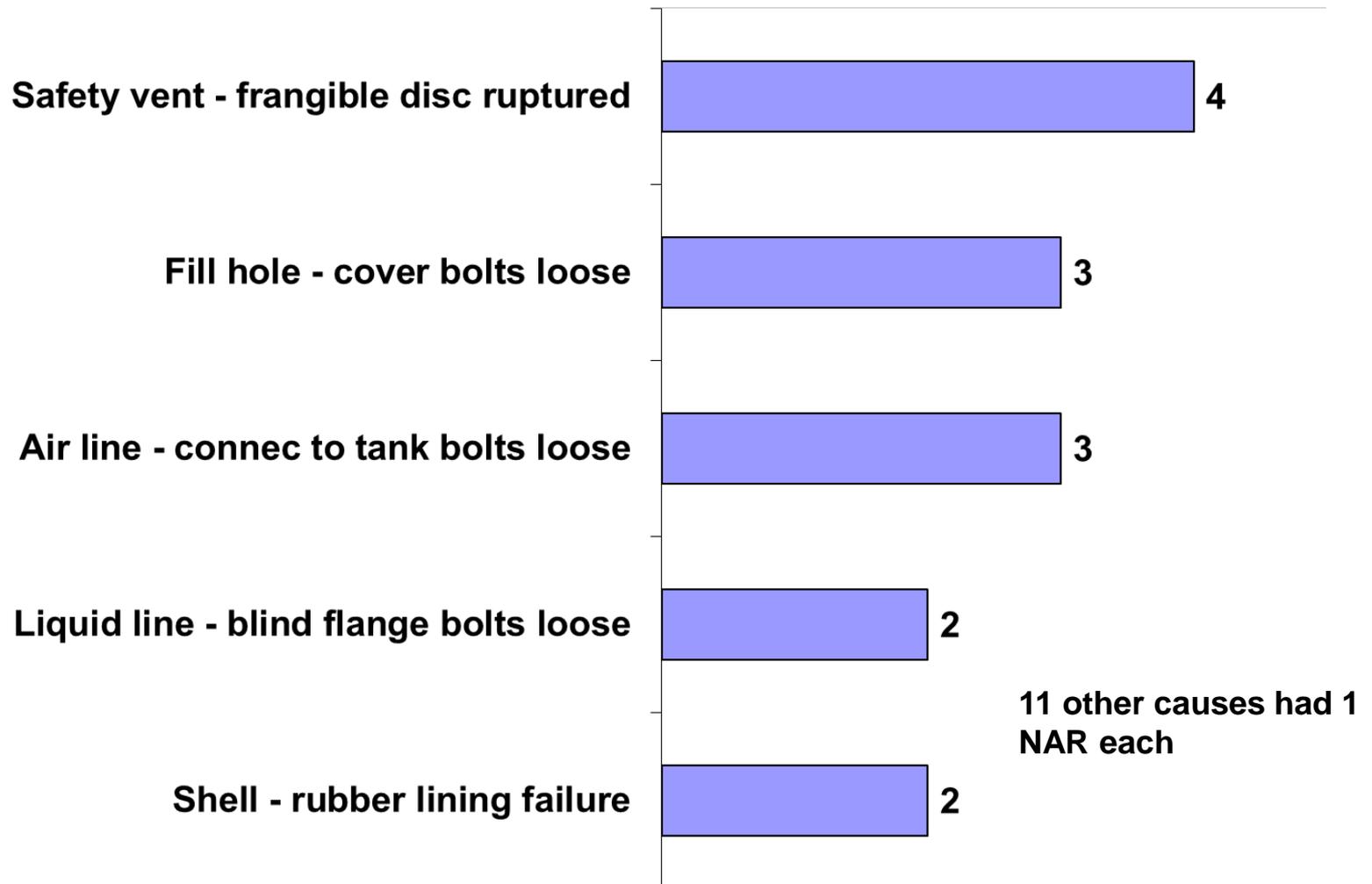


17 other causes had 1
NAR each

Source: AAR/BOE NAR data

Top Specific Causes for Hydrochloric Acid Solution

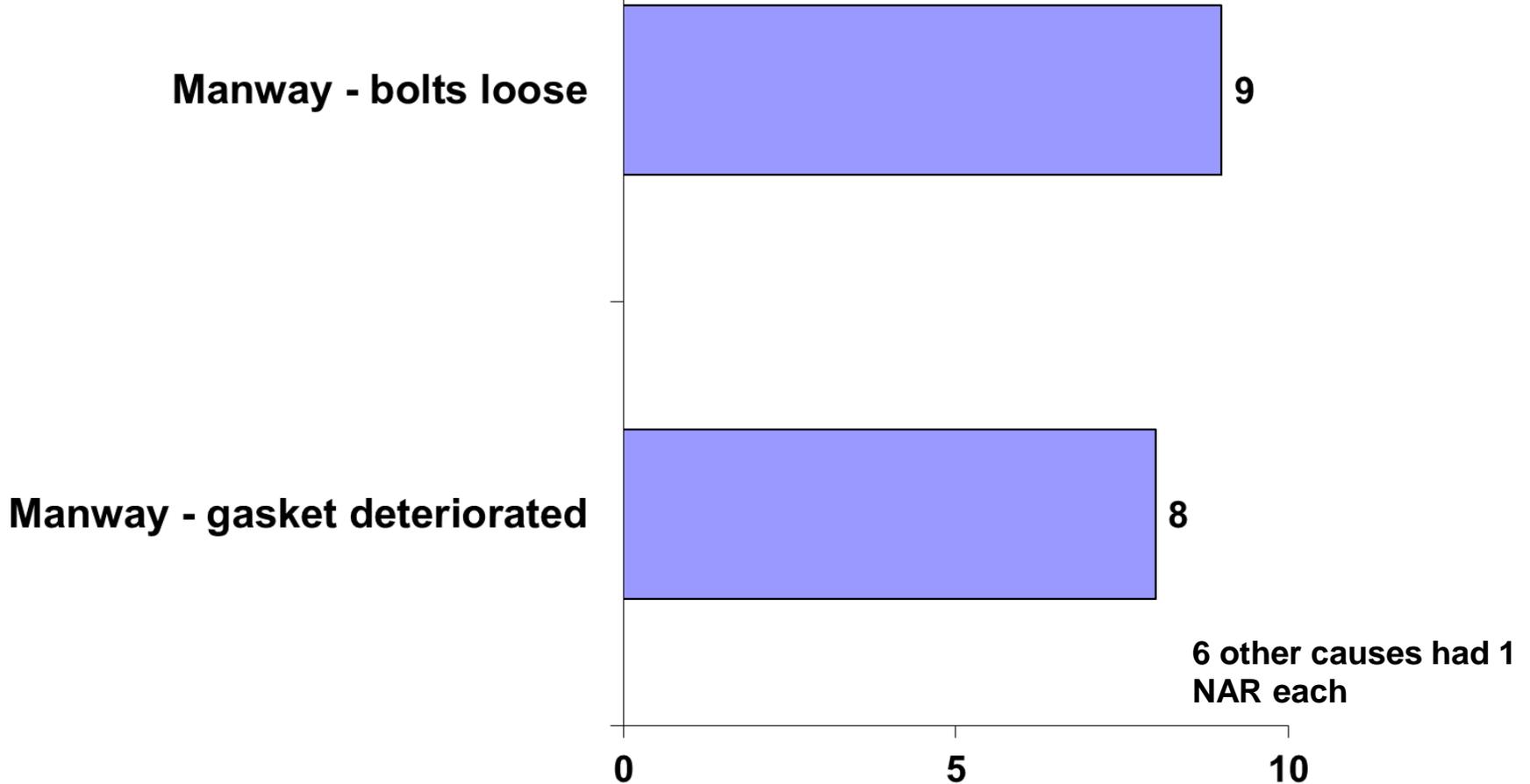
2012



Source: AAR/BOE NAR data

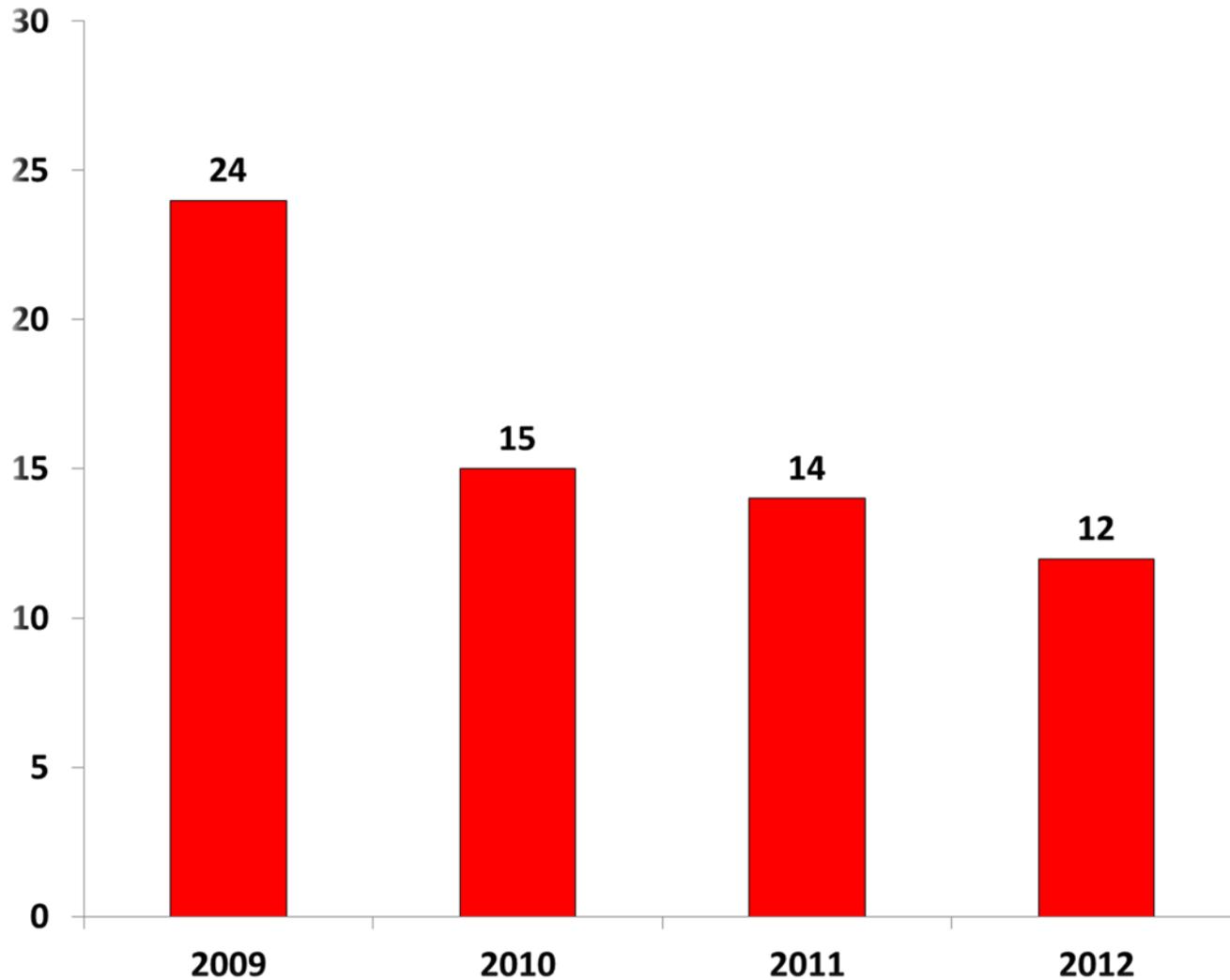
Top Specific Causes for Molten Sulfur

2012



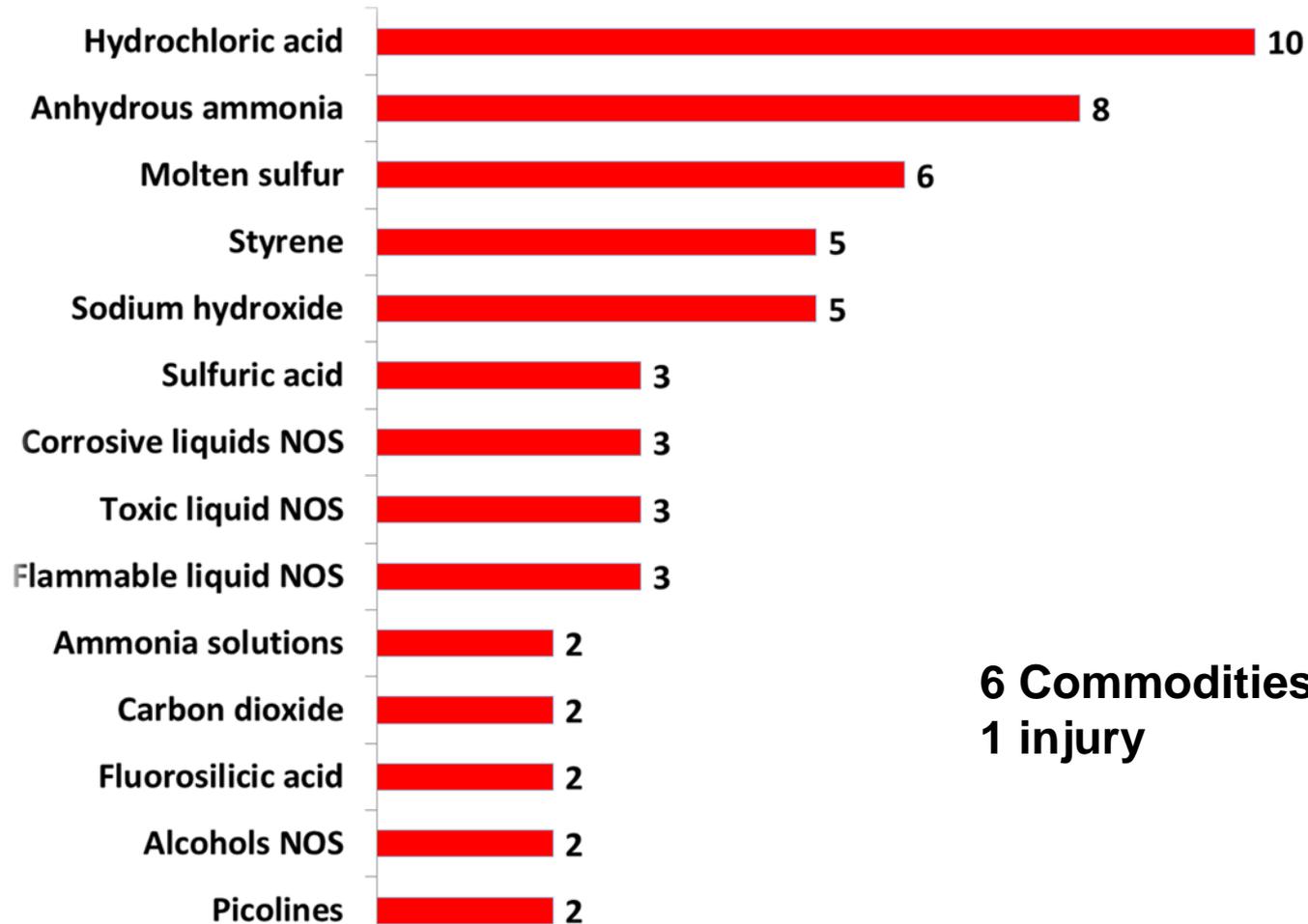
Source: AAR/BOE NAR data

Injuries due to NARs



Source: AAR/BOE NAR data

NARs Causing Injuries by Commodity 2009 – 2012



**6 Commodities caused
1 injury**

Source: AAR/BOE Annual Hazmat Reports

DOT Regulations Refresh

“Each package used for the shipment of a hazardous material shall be designed, constructed, maintained, filled and closed so that under conditions normally incident to transportation there will be no identifiable (without the use of instrumentation) release of hazardous material to the environment.”

-- U.S. Department of Transportation Hazardous Materials Regulations [49CFR 173.24]

DOT Regulations Refresh

“Closures on tank cars are required to be designed and closed so that under conditions normally incident to transportation, including the effects of temperature and vibration, there will be no identifiable release of hazardous material to the environment. In any action brought to enforce this section, the lack of securement of any closure to a tool tight condition detected at any point, will establish a rebuttable presumption that the proper inspection was not preformed by the offeror of the car.”

-- U.S. Department of Transportation Hazardous Materials Regulations [49CFR 173.31(d)(2)]

AAR NAR Reduction Committee

- **Process Team**

- NP-2005.2: Rail Industry NAR Reduction Contact Network (RINRCN)

- 117 members as of July 15, 2013

- **Communications Team**

- NC-2011.1: Revised NAR Reduction Program Website

www.nar.aar.com

- Necessary website improvements have been documented, based on industry feedback, for implementation once resources become available
 - Add information from April 2013 meeting
 - Refine NAR Cost Calculator
 - Improve TOOLS & SOLUTIONS page
 - Add NAR Q&A tool (e.g. forum, wiki, blog)

AAR NAR Reduction Committee

- **Hardware Team**
 - NH-2011.1: Hinged Manway and Hinged Fill Hole Best Practices
 - Proposal under consideration
 - Integrate the NH-2011.1 Hinged Manway and Hinged Fill Hole Best Practices effort and the T94.21.5 Task Force effort into one effort with the deliverable being possible comments on the Appendix J CPC or possible recommended changes to Appendix J at a future date. Comments or recommended changes could include images/renderings and a suggestion to allow Appendix J to also be published outside of M-1002 for wider distribution and easy implementation by tank car loading/unloading personnel.
 - Unanimous agreement so far; still awaiting responses from a few group members

AAR NAR Reduction Committee

- Data Team
 - Working to update NAR Cause Codes
 - Reviewing AAR/BOE Annual Reports