

**2016 R&D Forum – Day-2 (3/24/2016): Small Group Discussions**  
Compressed Gases Group Facilitator – Refaat Shafkey

Facilitator’s Summary:

There was only one participant in this group, Barbara Di Bacco, from Transport Canada, joining via telephone.

The following areas of research interest were identified by Barbara during the discussion:

1. Helium Dewar: This is a container for storing liquefied helium. Transport Canada has some concerns about this which Barbara will spell out in the research needs statement.
2. Modal Acoustic Emissions (MAE): This technology is being developed for evaluation of composite cylinders for fitness for continued service. PHMSA needs to be part of the technology development process so that it can be applied to the requalification of composite cylinders.
3. Pressure Relief Devices (PRDs):
  - a. Another useful way of establishing PRD safety effectiveness may be through a statistical study (using a suitable cylinder sample size) of cylinders with PRDs that are due for requalification and finding out how many turn up with problem/leaking PRDs.
  - b. An extension of PRD study could be to benefit from the experience of PRDs used on railroad cargo tank cars and the testing done on some of these cars in Germany. Although these PRDs are very different from the one’s used on compressed gas cylinders, they may still provide useful information for compressed gas industry for large or very large containers.
4. Large Composite Cylinders (>3000L Volume): The feasibility of using these very large composite cylinders as fuel tender cars for train locomotives needs to be investigated and researched as it could have significant implications for the railroad industry.
5. Cylinder Requalification Intervals: Presently 10 to 15 year intervals for cylinder requalification are being used in Europe. This was identified in one presentation and PHMSA was asked to move towards harmonization with this requalification interval. However, no technical basis for changing to 10 or 15 year requalification interval was provided. Barbara felt that perhaps, the Europeans can live with longer requalification periods because they have no PRDs on their cylinders. A study would be in order to determine if cylinders with PRDs required shorter (like 5 year) requalification intervals to address any PRD issues that may have developed during that period of use.

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