

## **RSI-CTC Brattle Group Report**

### **Summary of Critical Review**

**January 26, 2015**

Cambridge Systematics (CS) is conducting a critical review of the Brattle Group (BG) report prepared for the Railway Supply Institute Committee on Tank Cars (RSI-CTC). The BG report makes numerous claims regarding the feasibility of implementing proposed railroad tank car safety modifications. Because of the wide distribution the BG report has received, it is important to evaluate the accuracy and completeness of the authors' claims. In addition to this critical review of the BG report, CS will be conducting a detailed quantitative analysis of the most important issues identified herein.

The key result of CS' analysis is that the BG report's findings in several important areas are not supportable based on the numbers and analysis used. Specifically, the BG report underestimates the existing and future capacity of the contract shop industry to complete the proposed retrofits, and likely overestimates the number of cars that would be retired in response to the regulations. Each of these issues is summarized below.

#### **Potential capacity of contract shop industry to undertake tank car upgrades**

This is a core element of the BG report, and includes a variety of factors from both the supply - the ability of shops to conduct car repairs and upgrades - and the demand side - the demand by car owners/operators for contract shop services.

- BG asserts that in April 2015 the entire industry capacity for Tier I modifications will be 80 cars per month increasing to a final capacity of 536 cars/month. Given that the Greenbrier-Watco Joint Venture (GBW) alone will have the capacity to perform 85 Tier I modifications, and will continue to grow capacity up to 175 cars per month by October 2015, it seems clear that *the BG estimate does not accurately reflect even the publicly announced contract shop capacity*. It is likely that other shop owners and operators will make similar increases once the regulatory time frame and retrofit requirements are finalized.
- The estimate of contract shop capacity utilized by BG and developed by Alltranstek is questionable in several respects. AllTranstek did not indicate the size or composition of the respondents, and includes only one high-volume respondent, who is singled out as an anomaly. Even with this questionable data, Alltranstek found that *over half the contract shops are capable of performing retrofits, and 70% of them are running at less than 75% of capacity*. AllTranstek generated their estimate using an average capacity of 4 cars per month for the entire set of shops, instead of using actual numbers for the sizeable sample size. A more credible approach would be to report the full capacity that the respondents gave as well as the averages.
- BG asserts that the proposed Tier I and II modification requirements will require three months for each car, and one month for Tier III. *They provide no basis for this claim, which interviews with industry professionals have called into question*. Proper resolution of this question is a critical element in determining the throughput of shops.

- The BG report is inconsistent in its handling of other, non-retrofit work by the shops. On the one hand, it asserts that non-modification inspection and repairs (including ten year inspections) will place strains on shop capacity, but it overlooks the economies of scale and opportunistic maintenance that will likely occur. Shop operators will need to determine whether to separate routine or planned maintenance from the modifications to support production efficiencies or to combine them to create opportunistic savings. Either way, however, *the claims regarding shop productivity and maintenance planning in the BG report completely miss these potentially substantial savings.*
- The BG report assumes that car and shop owners will park cars in storage yards while they await their turn for the retrofit work. *Car owners and shops are likely to work together to optimize scheduling of maintenance and modifications to reduce the out of service time spent waiting for shop spaces to become available.*

### **Potential tank car retirements resulting from the proposed rule**

The BG report makes what is essentially an unsubstantiated claim that 28% of the DOT-111 tank car fleet will be retired prematurely in response to the required modifications. There are a number of issues with BG's tank car retirement analysis, and the underlying RSI-CTC data used to support the report:

- *The basis for the projected retirement rate of 28% for the DOT-111 tank car fleet (p. 20) is never explained – the survey is not made available, nor are the data that led up to the 28% figure.*
- *It is also not clear over what time horizon the claimed premature retirements would occur, and BG simply applies the same 28% value for each year. Given the inherently “lumpy” nature of car purchases, this likely overstates the number of retirements in certain years.*
- *There is no evidence that the BG report accounts properly for retirements that would naturally occur in the absence of the modification requirements. Given that cars would not be retired until the end of the mandated implementation window, which can go as high as 4-5 years, between 12.5 and 15 percent of the fleet would be subject to “normal” retirement with a projected 35-year life. In other words, the BG report may be overstating the number of premature retirements by as much as 100%.*
- *The retirement analysis never really resolves the issue of reassignment of the cars to other service.*

Implementation of the proposed modifications will be an impetus to higher productivity in the tank car industry. Because of the aggressive timelines that the NPRM mandates, shippers, railroads and contract shop operators will have incentives to improve car scheduling, movement, storage and maintenance practices. These improved practices will last far beyond the timing of the proposed modifications.