



How Effective are Compliance Reviews

Analysis Division

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The on-site compliance review (CR) is perhaps the single greatest resource-consuming activity of the Federal Motor Carrier Safety Administration (FMCSA). Thousands of CRs are conducted each year. In calendar year 2002, Federal and State enforcement personnel conducted over 12,000 CRs on individual motor carriers. FMCSA expects that through education, heightened safety regulation awareness, and the enforcement effects of the CR, motor carriers will improve the safety of their commercial vehicle operations, and, ultimately, reduce the number and severity of crashes in which they are involved.

FMCSA, in cooperation with the Volpe National Transportation Systems Center, has developed an analytic model to measure the effectiveness of the CR in terms of crashes avoided, injuries avoided, and lives saved. This tool will provide FMCSA management with the information it needs to address the requirements of the Government Performance and Results Act (GPRA) of 1993, which obligates Federal agencies to measure the effectiveness of their programs as part of the budget cycle process. It will also provide FMCSA and State safety program managers with a quantitative basis for optimizing the allocation of field safety resources. This analytic tool is known as the CR Effectiveness Model. The model has been implemented for carriers with CRs in 2002.

The CR Effectiveness Model succeeds the CR Impact Assessment Model, which was used to produce estimates of the benefits for carriers with CRs in 1998, 1999, 2000, and 2001. Due to differences in the methodology and data employed, the results of the two models are not directly comparable. The initial estimates of benefits produced by the CR Effectiveness Model are for CRs conducted in 2002. They will establish new benchmarks for measuring the benefits of the Compliance Review program.

The CR Effectiveness Model shows the direct impact of compliance reviews on carrier safety, but not the "deterrent" effects (i.e., the effect on a carrier's behavior due to the potential of having a CR). The model is based entirely on "before and after" changes in the safety performance of carriers that received CRs. The model compares a motor carrier's crash rate in 12-month periods after a CR to its crash rate in the 12-month period prior to that review. To make this comparison, the model uses (1) crash data reported by the states and (2) power unit data reported by carriers or obtained during CRs.

The table below shows the number of estimated crashes (and associated fatalities and injuries) avoided in the immediate 12 months following the 2002 CRs. These are the initial benefits

and occurred during 2002 and 2003. Analysis done on prior year CR results has shown that there continue to be comparable benefits in succeeding 12-month periods, suggesting that a "permanent" change in behavior (and therefore, crash rate) occurs as the result of the CRs. The model can also be used to make projections of these benefits for the carriers with CRs in 2002. Those projections are provided in the full report.

Initial Benefits of CRs Conducted in 2002

There were 9,172 carriers that received CRs in 2002 and were still active 12 months after their CRs. The model estimated that the average crash rate of these carriers decreased 12.6 percent as a result of the CRs. As a result of this crash rate reduction, the model produced the following estimates for the immediate 12 months following the 2002 CRs:

Table 1: Compliance Review Program Effectiveness - CRs Conducted in 2002

Benefits Estimated For	2002-2003
Crashes Avoided	1,426
Injuries Avoided	1,087
Lives Saved	62

What else can the Model tell us?

Certain carriers respond more to CRs (i.e., lower their crash rates more) than other carriers do. With Analysis Division assistance, FMCSA managers can use the model to determine which carriers do or do not improve after receiving CRs, and the extent of the improvement of those that do improve. For example, the results of the implementation of the model can be further analyzed by size of carrier, as measured by number of power units. These results show that small carriers reduce their crash rates more than large carriers.

The results of this analysis will reveal the types of carriers that will most likely respond positively to CRs. By focusing on carriers that are likely to respond positively to CRs, the effectiveness of the compliance review program may be improved. Alternative (to the CR) treatment approaches may be suggested for carriers that are at risk, but will most likely not respond positively to CRs.

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