USDOT Finds Higher Crash Rates for Heavier Trucks, Recommends No Changes in Current Truck Size and Weight Limits
Prepared by CABT, August 2015

The U.S. Department of Transportation (USDOT) publicly released its series of technical reports and summary document as part of its MAP-21 Comprehensive Truck Size and Weight Limits Study. In conclusion, USDOT recommends no changes in current truck size and weight limits. Heavier trucks with six axles—both 91,000-pound and 97,000-pound configurations—were found to have alarmingly higher crash rates in the three states studied:

- **Idaho** - 99-percent higher crash rates for six-axle trucks up to 97,000 pounds
- **Michigan** - 400-percent higher crash rates for six-axle trucks up to 97,000 pounds
- **Washington** - 47-percent higher crash rates for six-axle trucks up to 91,000 pounds

USDOT concluded: “In the three States where data could be analyzed, the crash involvement rate for the six-axle alternative configurations is consistently higher than the rate for the five-axle control vehicle. This consistency across States lends validity to this finding.”

NOTE: Crash rates off of Interstates and in more population-dense areas could be expected to be even higher and, in turn, the number of crashes, injuries and fatalities could also increase. Despite limited operations of six-axle trucks, the most recent national database statistics publicly available, 2005-2009, shows an average of 131 fatalities per year in crashes involving six-axle trucks (TIFA).

**Truck Inspection Violations**

USDOT Finding:

- Trucks weighing over 80,000 pounds had higher overall out-of-service (OOS) rates compared to those at or below 80,000 pounds.
- Trucks weighing over 80,000 pounds had an 18-percent higher brake violation rate compared to those at or below 80,000 pounds.

NOTE: Out-of-service violations are a key indicator of truck safety. In fact, trucks with these violations are required to be taken off the highway because they are deemed to be a danger to the motoring public. A 1989 study found that, “Tractor-trailers with defective equipment were twice as likely to be in crashes as trucks without defects” (Jones, I.S. and Stein, H.S.; *Defective equipment and tractor-trailer crash involvement*, Accident Analysis and Prevention).
Bridge Damage

USDOT Findings:

- **Substantial projected bridge costs.** USDOT found that thousands of Interstate and other National Highway System bridges could not accommodate heavier trucks. These bridges would require posting, reinforcement or replacement, costing billions of dollars. USDOT estimates the following:
  - The 91,000-pound, six-axle configuration would negatively affect more than 4,800 bridges, costing $1.1 billion
  - The 97,000-pound, six-axle configuration would negatively affect more than 6,200 bridges, costing $2.2 billion

NOTE: USDOT only studied 20 percent of the nation’s bridges for this analysis. The remaining 80 percent are likely to be the most vulnerable to heavier trucks. In fact, only 1,360 of the bridges considered by USDOT are currently “structurally deficient” (i.e., likeliest to need repair and/or replacement with heavier truck weights), while 70,427 of total bridges are classified as “structurally deficient.”

Freight Diversion

USDOT Finding:

- The 91,000-pound, six-axle configuration would negatively affect rail-bound freight by diverting more than 2.3 million tons of freight every year.
- The 97,000-pound, six-axle configuration would negatively affect rail-bound freight by diverting more than 4.9 million tons of freight every year.

NOTE: The Technical Reports incorrectly assume that railroads, to preserve market share, will simply reduce rates to a marginal cost level. This ignores the fact that railroads are both high fixed-cost businesses and highly capital-intensive. In fact, railroads typically reinvest 17 to 19 percent of operating revenues back into track, structures and equipment. This re-investment, which is a key driver of significant gains in safety and customer service, cannot be sustained by prices equal to marginal costs. If competitive markets required pricing at marginal cost, railroads would be forced to choose between two unsustainable courses of action: Either (i) voluntarily exit markets through noncompetitive pricing, or (ii) reduce prices to marginal cost levels to compete in the short term, foregoing the ability to reinvest in the assets necessary to provide the services customers demand. Either way, the outcome will eventually be the same: a depleted rail industry and more freight diverted to our nation’s highways.

ADDITIONAL NOTE: According to a 2007 study by Dr. Carl Martland (“Estimating the Competitive Effects of Larger Trucks on Rail Freight Traffic”), an increase in truck weight from the current 80,000-pound limit to 90,000 pounds—1,000 pounds lighter than one of the proposed configurations—could divert 10-15 percent of short line and regional railroad freight. Further, Dr. Martland’s 2010 follow-up study concluded that an increase in truck weight to 90,000 pounds could divert more than 33 percent of general merchandise in rail freight traffic.
Need for Future Research and Data Collection

USDOT Recommendations:

- The Department identifies two alternatives that would solve the problems with this study
  - UMTRI survey- and GPS-based exposure data over multiple years; or
  - An analysis plan that utilizes case-control framework, where crashes involving LCVs can be the cases, while other non-LCV travel can be the controls.

CABT Recommendations:

- Implement a uniform crash report form that accurately collects the number of trailers and axles, truck weight and length, and road type where the crash occurred.

- Study the impacts of bigger-truck operation on local communities and infrastructure. Allowing longer double-trailer trucks would spill over into local communities and affect not only infrastructure, but also motorists who spend the majority of their VMT on local roads. USDOT found federal-aid roads, about 5 percent of U.S. public roads, account for around 35 percent of truck crashes. These means 65 percent of large-truck crashes occur on nonfederal-aid roads where the public spends the majority of their VMT.