

## **Leading The Way In The Federal Motor Carrier Administrations Research And Technology Five Year Strategic Plan (2005-2009) To Reduce Injuries And Fatalities Involving Large Trucks**

### **A Breakthrough In Technology Has Been Developed And Tested That Solves A Long Overdue Serious Heavy Vehicle Highway Safety Problem**

Fundamentally heavy vehicle highway safety depends on the nation's truck driver's being able to keep the overwhelming dynamic forces of up to fifty tons of vehicle weight under control, while sharing the highway with the lighter weight more agile vehicles that are capable of maneuvering and stopping in a considerably shorter distance.

Optimizing heavy vehicle highway safety requires well trained alert heavy vehicle drivers, that are not overly tired and fatigued, from keeping a heavy vehicle that is lacking in directional stability going straight and under control, as well as vigilant automobile drivers who are mindful of the need to be courteous in sharing the highways with the heavy vehicles that are essential to the nation's economy. An old axiom describes directional stability as that which a sober man has that a drunk man does not have.

The breakthrough in technology that has been achieved has to do with solving the long-standing lack of heavy vehicle directional stability that is primarily responsible for excessive driver fatigue and many serious heavy vehicle accidents. Heavy over-the-road trucks and buses that are lacking in directional stability, require an inordinate amount of tedious driver steering corrections to maintain directional

vehicle control. As the hours of repetitive driver steering corrections multiply, the heavy vehicle driver fatigue factor becomes a more serious highway safety issue. It has now been proven that heavy vehicles that are made to be directionally stable, track exceptionally straight without requiring the almost constant driver steering corrections to keep the vehicle directionally under control, thereby greatly reducing driving fatigue. Considering the great technical strides that have been made in the function and reliability of heavy vehicles over the many years, it is somewhat difficult to understand why it has taken so long for the very creative heavy vehicle design community to solve the critical need to make heavy vehicles directionally stable and less fatiguing to drive. It can be reasoned that as the industry grew, the requirements for the larger more dependable heavy vehicles needed to satisfy consumer demands, were given more attention than the directionally unstable drivability problems that were accepted throughout the industry as just the way heavy vehicles were expected to drive. For going on a century, as the size and weight of heavy over-the-road vehicles dramatically increased, the basic design of the front axle and wheels that steer a heavy vehicle were increased in size and weight to accommodate the increased load. However, over the many years the

engineers that were responsible for product improvement were never able to improve the fundamental axle design enough to solve the critical lack of heavy vehicle directional stability. Therefore the countless billions of directionally unstable miles had to be dealt with by repetitive driver steering corrections from the heavy vehicle drivers. One can only imagine the untold amount of driving fatigue and related highway fatalities that were caused by the critical lack of heavy vehicle directional stability during the many years.

Some fifty years ago, heavy vehicle power steering was developed to reduce the excessive effort required to steer heavy vehicles. Power steering soon became a required item to reduce the driver steering workload. However, it was not the design function of power steering to solve the lack of heavy vehicle directional stability that would also reduce the driver's workload when going straight. To be

directionally stable, a heavy vehicle must be designed so that the steer wheels track exceptionally straight without requiring excessive driver steering corrections to keep the vehicle directionally under control. The Howard Power Center Steering Technology was developed to work in harmony with power steering technology to greatly reduce driving fatigue, wherein each steering component complements the function of the other; power steering for turning and precision power center steering for going straight.

**Now that the Howard Precision Steer Wheel Control System has been tested by millions of in-service miles of heavy buses, trucks and large recreational vehicles, as well as the test conducted by the Federal Motor Carrier Safety Administration, the critical lack of heavy vehicle directional stability should no longer be the way heavy vehicles are produced.**

- The Amazing Benefits Of The Howard Precision Steer Wheel Control System is more than paid for by completely solving the long-standing costly steer wheel tire wear problem. Heavy vehicle operators using the system verify a 75,000 mile increase in steer wheel tire life.
- The Precision Steer Wheel Control System achieves an amazing level of steer wheel tire blowout controllability, verified by an impressive number of documented steer wheel blowouts, where drivers report easy straight line control without the customary steering control problems that are caused by a blown steer wheel tire.
- The Precision Steer Wheel Control System makes a dramatic improvement in crosswind driving by preventing the steer wheels from caster steering down-wind in response to the lateral wind gusts, thereby making a considerable reduction in crosswind driving fatigue and related highway safety issues.
- Greatly reducing driving fatigue and improving highway safety, may very well be conducive for many otherwise contented professional heavy vehicle drivers from deciding life on the highway is not for them, helping significantly in keeping many thousands of qualified drivers from changing their profession.
- Regardless of the ultimate hours of service rules, the time to dramatically reduce heavy vehicle driving fatigue is now.