



Aggressive, Unsafe Driving & Its Impact On Maintenance Costs

Did you know?

- EXCESSIVE SPEED -- Will reduce fuel economy, accelerate tire wear and reduce engine life:
 - ✓ On a large bore diesel engine, every 5 MPH above 55 MPH will waste an additional gallon of fuel per hour.
 - ✓ One gallon of fuel per hour during a standard 10 hour work day equals 10 additional gallons a day -- at \$2.00 per gallon this is \$20.00 a day, \$400 per month and \$4800 per year (times the number of trucks being driven in this manner).
- TAILGATING -- This driving behavior impacts both tire and brake wear. Consistent tailgating and speeding (i.e. "Aggressive Driving") will reduce tire life & brake life by about 20%. Depending on the types of tires and brakes this can translate into very substantial costs.
- Maintenance studies have validated that aggressive and unsafe driving habits can add as much as \$.01 to \$.015 per mile in accelerated tire, brake and engine wear on a large bore diesel tractor.
 - ✓ If a tractor operates 100,000 miles a year that could be as much as \$1,500 in additional maintenance costs.
 - ✓ This heavy "wear and tear" could also prematurely age the unit, reducing resale values and/or lease termination fees.
- There is also the possibility that aggressive and unsafe behavior may be a factor in costly breakdown of vehicles on the road. There is no empirical on data that validates this situation, only a logical conclusion.

Attached to this coversheet is an "in depth" support document that more fully explores these concepts and how our program can help you identify these costly behaviors and help you maintain your company's profitability!

Aggressive Driving and Maintenance Costs: Why SafetyFirst Makes Sense

In the attached case study, a company with 50 vans and 15% turnover can save thousands of dollars in maintenance costs and fuel savings.

Measuring the Costs of Aggressive Drivers

Unsafe driving behaviors lead to accidents. Lost productivity, repair costs, and higher insurance rates are only three of many expenses resulting from collisions. Many management teams fail to factor the cost of aggressive driving in their measurably higher **fuel, tire and maintenance costs**.

Underestimating the impact of these increased costs can devastate profits.

Aggressive drivers push their vehicles hard. Typically, they:

- accelerate hard -- adding stress to the engine and transmission, and wasting fuel
- speed -- driving up fuel consumption and increasing tire wear from tire heating
- tailgate -- which leads to a greater frequency of heavy brake applications & wears out brake system parts and tires more quickly

This aggressive behavior costs companies a significant amount over drivers who follow the speed limit, maintain proper distance between vehicles and slow down more gradually.

Studies?

There have been a few studies done on fuel economy; tire wear and resale value of vehicles that have been driven "hard" by their operators. One study looked specifically at aggressive driving and its effect on maintenance costs. Some of these studies are summarized below.

- A. In 2002, a supplier in the redi-mix concrete industry developed a program of early detection of unsafe driving habits. Why? Inherent in the redi-mix industry are driver safety and truck rollover issues, which have a critical impact on equipment operating costs and profits.

The program looked at the accelerations exerted on the truck during various driving maneuvers (turns, starts, stops, etc.) and compared these measurements to the average for the study group fleet or to the industry as a whole. Scores were calculated for several categories of maneuvers, and the individual scores plus a composite score was reported.

The findings? The sheer weight of the loaded truck, if not handled properly, creates tremendous stress on all operating components and prematurely ages a truck. Maintenance costs and reduced truck life span are significant costs to consider. Higher fuel, tire and maintenance costs were also cited as primary opportunities to recapture lost profits.

- B. As a District Manager at Ryder, Dan Lessnau had Profit and Loss (P&L) responsibility and he feels that their "...biggest expense area was maintenance costs. Therefore, we spent a lot of time examining how we could reduce the operational expenses of a vehicle." Since his location leased predominately heavy class 6, 7 and 8 vehicles (heavy and extra heavy duty trucks) most of the analysis was directed to those types.

1. For instance on a tractor with a 350 Cummins engine for every 5 miles of speed over 55 MPH you would burn an extra gallon of fuel an hour. This equates to 8 to 10 gallons a day and at today's cost of fuel (\$1.90 per gallon) that would mean from \$15.20 to \$19.00 per day. Let's just say the \$15.20 per day X 245 days of operation a year = \$3,724 per year in just fuel expense. This type of analysis would hold true (with slightly different numbers) for smaller engines in smaller vehicles like vans, pickups and sedans.

2. Speed also reduces engine life. There is a correlation between the number of pounds of fuel put through an engine and overall engine life.
3. Speed and hard braking (tailgating) also have an effect on tire and brake wear. Again, on a large bore diesel tractor a vehicle operated safely will get about 200,000 miles on a set of tires located on drive axles. However, excessive speed generates additional heat, which reduces tire life. We did studies that showed unsafe drivers got only about 165,000 miles on a set of tires located on drive axles. This is about 17.5% less tread life. At that time, a new drive tire cost about \$300, therefore, an unsafe driver cost an additional \$52.50/tire from reduced tread life. If we took a tandem tractor with 8 drive tires, an unsafe driver would cost us $\$52.50 \times 8 = \420 in excessive tire cost every 165,000 miles.
4. Moreover, drivers that exhibit excessive speed also have harder braking (because of tailgating) which also has an effect not only on tire wear but also on brake wear. The same principles outlined for measuring the cost of tire wear held true for brake wear, about a 20% in their life cycle.

Also fleets that permit aggressive drivers to wear out their vehicles need to maintain a greater number of “spares” – spare vehicles to use while the main vehicle is out for repairs and maintenance. Spares waste capital on a truck that might otherwise be productive. The ratio of spares is highest among fleets with aggressive scheduling, salesmen as drivers and operations that earn revenue based on the number of service calls crammed into a single day. These hectic operations give the appearance of high productivity, but often at very low efficiency and high hidden costs such as brake, tire and fuel costs.

C. The US Government has created a web site – www.fueleconomy.gov - to educate the public of the waste of fuel from improper driving. Here are some of their statements:

1. You can improve your gas mileage by around 3.3 percent by keeping your tires inflated to the proper pressure. Under-inflated tires can lower gas mileage by 0.4 percent for every 1 psi drop in pressure of all four tires. Properly inflated tires are safer and last longer.

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|-------------------------------------|----------------------------|
| Fuel Economy Benefit: | up to 3% |
| Equivalent Gasoline Savings: | up to \$0.05/gallon |

2. Aggressive driving (speeding, rapid acceleration and braking) wastes gas. It can lower your gas mileage by 33 percent at highway speeds and by 5 percent around town. Sensible driving is also safer for you and others, so you may save more than gas money.

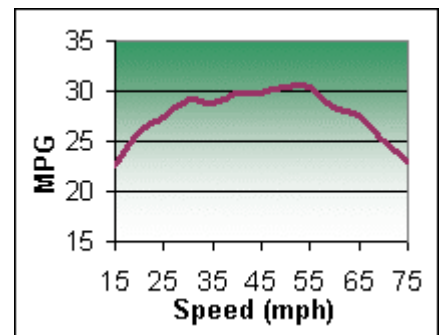
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|-------------------------------------|-----------------------------|
| Fuel Economy Benefit: | 5-33% |
| Equivalent Gasoline Savings: | \$0.07-\$0.49/gallon |

3. Gas mileage decreases rapidly at speeds above 60 mph. Each 5 mph you drive over 60 mph is like paying an additional \$0.10 per gallon for gas. Observing the speed limit is also safer.

| | |
|-------------------------------------|-----------------------------|
| Fuel Economy Benefit: | 7-23% |
| Equivalent Gasoline Savings: | \$0.10-\$0.34/gallon |

D. The California Energy commission lists the following information at their web site:

1. All vehicles lose fuel economy at speeds above 65 mph. Driving 65 instead of 75 mph reduces fuel cost 13%.
2. Some overlooked maintenance items, such as a dirty air filter and under inflated tires, can increase your fuel cost up to 13%.



Tying Costs to Specific Drivers

Over time, fuel, tire and maintenance costs become very significant. Some fleets may be tempted to look at these costs as “uncontrollable” or simply part of “the cost of doing business”. Why?

It can be difficult to track these costs back to specific drivers since many fleets do not assign particular vehicles to specific drivers.

The Safety Hotline program identifies drivers who are aggressive behind the wheel. The system spots tailgating, excessive speeding, weaving in traffic and pushes reports directly to the supervisor as it happens. The reports are focused on specific behaviors, offer training materials to help coach the driver, and give managers the clues to discover how aggressive drivers are pushing up maintenance costs within their operation.

If you look at the maintenance records for vehicles that are normally operated by the drivers highlighted by our safety hotline program, you will see higher than average maintenance costs.

Additionally, fuel costs for these drivers will typically be much higher than the average when auditing credit card or fuel card bills.

Sample Scenarios to Illustrate the Concept

Scenario 1: Joe’s HVAC (Heating Ventilation & Air Conditioning) company with 50 vans and a 15% turnover rate runs **all** drivers through a comprehensive driver-training program every two years (based on anniversary date alone), and trains all new hires within the first 15 days on the job. They publish a safety policy, but drivers are actively encouraged to get as many service calls done as possible in any given day. “Rushing is rewarded” is how one supervisor characterized their approach to motivating drivers.

This company has an in-house maintenance program. The mechanics complain that their efforts to maintain the scheduled maintenance program are hindered because of unpredictable breakdowns that need to be fixed immediately and placed back into service.

The parts inventory is growing in order to be able to keep the rapidly aging vehicles on the road – this parts inventory represents a hidden drain on profitability and represents greater overhead costs to the business.

Fuel costs are alarmingly high for their operation. Several managers see the cash crunch, but celebrate that they are busy and productive; therefore, the costs are justified. In reality, the aggressive driving is wasting fuel from “jack rabbit starts” and excessive speeding on highways to “make up time”. Additionally, the wear and tear of the rough handling is also decreasing the fuel efficiency as engine parts wear out.

If they only knew who was “at-risk” of becoming involved the next crash that might happen, they could intervene and actually help those drivers who are “at-risk” prior to crashes.

Scenario 2: Jane’s HVAC Company with the same number of drivers and same turnover rate installs the SafetyFirst safety hotline service on all vehicles. This costs \$17 per vehicle per year; therefore, the total cost is \$850/yr.

Jane’s HVAC receives Motorist Observation Reports about aggressive risk taking of some drivers (those who are “at-risk” of becoming involved in the “next crash”). In fact, 80% of all drivers never receive a complaint about their driving. **Of the 20% that do get complaints, only half ever receive a second or repeat complaint about an ongoing habit or behavior that needs attention. In this company, that equates to about 14 drivers identified in 12 months.**

Jane’s HVAC, trains all new hires, and any driver who gets more than one Motorist Observation Report about their driving behaviors. This company invests in the same, top-line training program as Joe’s HVAC. However, the costs for training are four times less since training is more focused.

Any driver who receives a Motorist Observation Report has their maintenance records and fuel records audited for excessive fuel consumption or wear and tear. If they are above the average for the fleet, additional coaching and counseling is provided with a follow up audit of records in 45 days.

The management team monitors fuel efficiency throughout the fleet and sets and publishes goals to all drivers. By focusing drivers on the costs of fuel, they also encourage safer driving and more route planning. Efficiency reduces rushing, missed appointments and helps satisfy customers.

Bottom Line?

If Joe's and Jane's companies were directly compared, we'd see a difference in maintenance and fuel costs of at least 20% - a distinct competitive advantage.

Aggressive driving pushes operating costs up. These costs can be tied back to specific drivers and management policies.

Incorporating a safety hotline service to "target" the "aggressive driving" of those who are truly "at-risk" can maximize your efforts and help preserve your overall expense resource.

Safety Hotline Programs and Aggressive Driving - Summary

The SafetyFirst program helps companies to:

1. Spot new hires and existing employees who demonstrate behaviors that place them "at-risk" of becoming involved in a collision. Reducing collisions by 20% or more will yield an immediate payback on the cost of the program and help moderate insurance costs over time.
2. **Relate aggressive driving to issues beyond crash rates and crash costs – aggressive driving takes a measurable toll on equipment life, maintenance costs and reliability. By properly coaching aggressive drivers, equipment maintenance and replacement costs will improve.**
3. Identify whether systems such as driver screening programs, new hire orientation and dispatch of new drivers are working properly or are in need of management's attention
4. Increase the effectiveness of safety training by tying it to a demonstrated, documented need for additional assistance based on behavioral inputs and observation reports
5. Cut overall training costs by refocusing efforts on those drivers who need help regardless of hire date or anniversary alone. (Eliminate training for drivers who would not likely improve their performance based on the training alone.)
6. Improve communications and coaching practices by discussing Motorist Observation Reports as a behavioral safety input. This demonstrates management's commitment to safety results and to offering help to drivers who may be "at-risk" of becoming involved in a collision.

To learn more about SafetyFirst's "Best In Class" safety hotline program, please see our web site at www.safetyfirst.com, or call us toll free at 888-603-6987

| Details | Joe's HVAC Company | Jane's HVAC Company |
|---|--|--|
| Number of Vans/Pickups | 50 | 50 |
| Uses Safety Hotline To Screen for Aggressive Driving? | NO | YES |
| Cost of Safety Hotline (one year) | 0 | \$850 |
| Turnover is same rate for both companies – 15% | 58 drivers cycle though the company Total Number of Drivers each year – 50 base + 8 from turnover | 58 drivers cycle through the company, of which 6 are identified as “aggressive drivers” who are coached on their behaviors. (10% of total) |
| Trains all drivers? | New hires and all drivers once every other year (58 students, cost of workbooks, videos, <u>lost production time</u> , <u>lost supervisory time</u>) At total cost of training = \$1000 per student, \$58,000 | New Hires and only those drivers who get behavior safety reports from safety hotline service (14 students, cost of workbooks, etc.) At total cost of training = \$1000 per student, \$14,000 |
| Maintenance Program? | In house mechanics, but: <ul style="list-style-type: none"> • unpredictable break downs interrupt planned maintenance • sends surplus work out to shops at higher cost • spending money on a growing parts inventory needed to keep the vehicles roadworthy • steeply increasing costs as fleet grows | In house mechanics, featuring: <ul style="list-style-type: none"> • minimal breakdowns • limited parts inventory costs • cost of program in line with expectations as fleet grows |
| Cost of wasted fuel from speeding, sudden accelerations, etc. | 25% more fuel consumed by those aggressive drivers (about 10-15% of the drivers) 7.5 gallons/week wasted for each aggressive drivers @ \$2.00/gal = \$780/truck/year extra cost over those who drive normally. If there are seven aggressive drivers in the fleet – this costs the company \$5,460 in wasted fuel costs alone. | Assume both companies' drivers use an average of two tanks of fuel per week. If the vans are equipped with 15 galloon tanks, this is 1500 gallons per week for the fleet of 50 vehicles. @ \$2.00/gal = \$156,000/yr. |
| Cost of brakes, tires and ongoing maintenance | 20% higher costs from tire wear and early brake replacements | |