ISAAC

White Paper

Team Up with Drivers to Save Fuel

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Team up with drivers to save fuel

Diesel prices constantly fluctuate. It's part of the business, but this fact always brings about a degree of uncertainty for the future. Whenever there is a fuel spike, it raises the question: are high fuel prices a bump in the road or are these sky-high prices the new normal for the coming years?

Dealing with higher diesel prices

The fuel price spike of spring 2022 made that question more relevant than ever. Always on fleet managers' radars, diesel prices urgently came back to the forefront of their preoccupations. They were looking for ways to stop their finances from bleeding in the short term as the prices at the pump broke new records.

A typical response in these situations is for carriers to carry the cost over to the shipper as fuel surcharges. As ATA's chief economist, Bob Costello, pointed out, even this may not be enough: "Fleets generally have to pay for their fuel on the spot, but they don't get reimbursed from the shippers for 30 days. Some fleets may have to tap their lines of credit now to fill that gap."[1] There's also a limit to how much a fleet may bill as a surcharge to their clients. After a point, they even need to assume the extra costs themselves.

Fleet managers are continuously working to improve fuel efficiency to gain a competitive edge. That was true even without the added pressure of very high prices.

The race to greater fuel efficiency

Fuel prices were a fleet's largest expense at the beginning of the 2010 decade, making up 39% of the average cost per mile[2]. A few years later, with the driver shortage, the price of fuel dropped in relative importance all the way to 2020, when it reached its lowest mark during the pandemic. Then, in 2022, it sprung back to record heights at over $5 per gallon. This shows that diesel isn't always the largest expense for a fleet, but it's certainly one of the most volatile.

[1] Dan Ronan (March 1, 2022) "Diesel Skyrockets 74.5¢ in One Week to All-Time Record High", https://www.ttnews.com/articles/price-gas-has-climbed-45c-past-week.

[2] ATRI, (November 2021) "An Analysis of the Operational Costs of Trucking: 2021 Update", p.24.

To curb this volatility, fleets invested in various eco-driving strategies:

- Mechanical means like more fuel-efficient engines and technologies like idle reduction and speed limiters
- Aerodynamics upgrades to tractors and trailers
- Alternative power sources like compressed natural gas-powered engines and electric tractors
- Improved operations to cut down on out-of-route and empty miles
- Driver training and eco-driving awareness

Of all these strategies, training drivers often brings the best results for the least investment. Is there a way to go even further than providing a classroom training session?

What can make drivers care enough to put their training in more fuel-efficient driving to use?

One answer is using in-cab technology that boosts drivers' fuel efficiency performance like the ISAAC Coach solution. Before looking into solutions, it's important to understand how driving behavior affects fuel consumption.

How drivers affect fuel consumption

It's no secret; some drivers perform better than others. All truck drivers are professionals, but some benefit from more training, experience, or just have better reflexes behind the wheel.

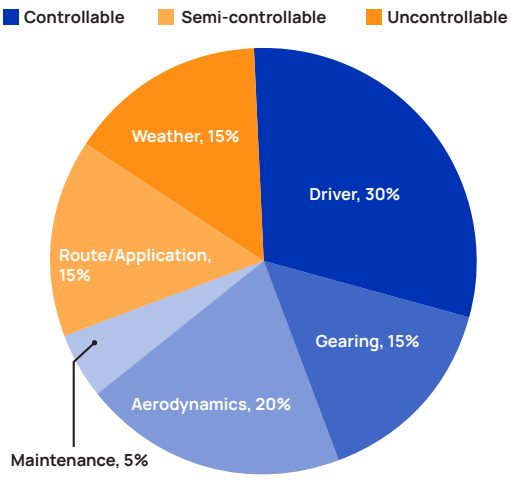
Measuring drivers' impact on fuel

The Technology Maintenance Council (TMC) put a number on the average range of driver performance in fuel usage. It found that fuel efficiency between the most and the least efficient driver fluctuates by 35%.[3] In the same truck, under the same conditions, one truck driver may burn about a third more diesel than another driver. That makes a huge difference when looking at the costs at the end of each trip.

When researching factors affecting fuel economy, ATRI discovered similar numbers. Of all factors, drivers' actions behind the wheel had the most direct impact at 30%.[4] Drivers even have some influence on the next two factors: gearing (15%) and aerodynamics (20%).

Drivers and dispatchers can also intervene on factors where, at first sight, they seem to have little to no control, like route selection and weather. For example, if two routes with a similar timeframe are possible for the same destination, one of them may be more fuel efficient if it has fewer stops, or avoids traffic congestion and steeper slope inclines.

Drivers have a lot of direct control on fuel consumption through their driving habits, but also through their planning and consideration of external factors.



[3] Technology and Maintenance Council (2008) "A Guide to Improving Commercial Fleet Fuel Efficiency." American Trucking Associations, Arlington, VA.
[4] ATRI (April 2022), "Part 1, The Role of Truck Drivers in Sustainability", https://truckingresearch.org/sustainable-driving-practices/

Best eco-driving practices

How can drivers change their habits on the road to reduce fuel consumption?

ISAAC has studied the question from the moment it became involved in the trucking industry in 2008, and has improved its expertise on the subject even further since it became 100% dedicated to trucking.

Four general areas allow drivers to save fuel:

- Engine efficiency
- Vehicle speed
- Brake use
- Driver behavior

Engine efficiency

The first way drivers save on fuel is through their usage of the transmission. Overall, lower engine speed (RPM) results in lower fuel consumption. This rule is true for any combustion vehicle, and it's even more important for diesel engines. At low RPM, a diesel engine already generates close to its maximum torque. When the engine's on the wrong gear, pushing the pedal consumes more fuel for the same horsepower.

For that reason, shifting gears at low RPMs is more efficient. On the open road, drivers should look to reach their top gear quickly.

Vehicle speed

Reaching top gear doesn't mean reaching excessive speeds. Truck drivers save more fuel when keeping a steady pace short of the top speed limit. The reason is simple. Because of aerodynamics, a truck at high speed needs to generate more power just to keep its cruising speed while fighting off the resistance and the headwind. At a lower speed, wind resistance is much lower.

Brake use

Although this may seem unrelated to fuel efficiency, brake use is a factor that gives a good indication of a driver's fuel consumption. Brake use on its own doesn't determine fuel consumption, but drivers who brake suddenly and frequently will need to constantly re-accelerate to regain speed.

In comparison, a driver who anticipates traffic conditions and gives plenty of room to other vehicles will have an easier time keeping a constant fuel-efficient speed, not to mention the fuel they will save thanks to coasting.

Driver behavior

Fleet managers have everything to gain from paying attention to driver behavior and focusing on engagement. Your drivers are likely aware of the best practices mentioned. They were probably taught these principles when getting their commercial driver license and again during various training sessions. But why should they care about fuel consumption?

On the road, drivers must already be watchful of their surroundings while working long hours. Their job isn't just about driving because drivers also have to do all kinds of administrative work too. What's in it for them if they manage to save on diesel on every trip?

That's where fuel incentive programs based on reliable data come in. When sharing fuel savings with drivers, they have a reason to pay attention because some of the savings will go straight into their pockets. Training also matters. The TMC recommends holding regular training sessions, and ATRI notes that more than half of fleets include eco-driving as part of their fuel-saving strategy.[5] But if drivers don't see a reason to put in the extra effort, there's a good chance all this training will go to waste.

[5] ATRI (2022) "Part 1, The Role of Truck Drivers in Sustainability", https://truckingresearch.org/sustainable-driving-practices/#_edn5/

Sharing the same goals

The foundation of a successful incentive program includes reliable information and fair performance evaluation. The program should not penalize drivers who are driving an older tractor, in adverse conditions, or with a heavier load. In fact, it should measure the *driver's* performance and not the vehicle.

Real-time driver coaching

ISAAC's real-time driver coaching differs from other fuel-saving solutions on the market because it's able to measure–and factor out–elements outside the driver's direct control, like aerodynamics, wind, load, slope, and engine type. Instead, the ISAAC Coach looks at how efficiently the driver operates the truck.

This distinction gives the right information to fairly rate two drivers carrying different types of loads, on different routes, and with different vehicles.

The ISAAC Coach is an integral part of ISAAC's in-cab technology solution, so it doesn't run as a different application. It provides easy-to-use, real-time indicators and alerts for drivers on the tablet screen, including:

- How much margin is left to stay within eco-driving limits
- When to ease off the accelerator to better fuel consumption
- When to upshift for better gear usage
- When to disengage cruise control, because conditions are not optimal for using it

At the end of the trip, drivers can see their ISAAC Coach score and compare it to their individual targeted objectives. The on-screen prompts and self-serve scoring reports help drivers improve fuel economy performance.

With this feature, managers have reliable data about their drivers' performance and the means to put into place a fair and attractive reward system for drivers.

Real-world fuel savings

Fleets who use the ISAAC Coach have seen improvements in their overall fuel consumption. The most successful are those that have leveraged their drivers' performance through incentive programs.

The results are impressive.

Trimac, one of the North America's largest oil carriers, ran a pilot project of over 150 trucks over nearly a year. They observed an improvement in fuel efficiency of 7 to 11% on some trucks. On average, across their fleet, they attribute about 2 to 3% of the total percentage to the in-cab coaching.

Tucker Freight Lines, a dry van and flatbed carrier based in Iowa, saw a fuel efficiency improvement of one mile per gallon, which amounts to nearly $10,000 in savings per truck per year.

"The ISAAC Coach really works. We haven't seen anything like it. We were able to improve on safety scores, fuel efficiency and maintenance costs, all while having a positive impact on driver and asset utilization."

– A.J. Tucker, President, Tucker Freight Lines

More than just an eco-driving coach

Beyond fuel savings, fleets also get unexpected benefits from real-time driver coaching, like fewer high-risk drivers. There's a clear link between eco-driving and safety because fuel-efficient driving discourages dangerous driving behavior like speeding, tailgating, and harsh braking.

The beauty of the ISAAC Coach is that the fuel savings generated by this feature can pay for the entire ISAAC solution over a short period of time. The entire solution includes a complete in-cab installation with a rugged ELD, advanced telematics with a fleet management portal for optimizing operations, and integration with top transportation management systems (TMS) that simplify driver workflow even further.

On top of getting paid more, your drivers will appreciate a tool that makes their job easier every day.

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Together, we simplify trucking

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