FUEL MANAGEMENT FOR FLEETS:

MILEAGE IMPROVEMENT AND FUEL THEFT AND FRAUD PREVENTION

by Christopher Hammer

energie · fuel

PURPOSE

Hello Fleet Manager and/or Curious Reader:

I wrote the below article due to conversations that I've had with customers that desire to find a methodology to maximize fuel management for their business.

99.9% of the time business owners and fleet managers, have a wealth of experience in the 'Art of Trucking', where many of their *feels* are accurate, and based on YEARS of experience, but, they struggle in relaying their experience to their administrative staff.

The intent of the following content is to act as a catalyst and help business owners, fleet managers, and administrative staff participate in productive discussions, and most importantly, *employ potential tools and practices that will help eliminate unwanted fuel consumption, being fuel theft, fraud, or mechanics.

*Employ = Take Action 👍

Hoping you enjoy this guide,
Chris Hammer

1) MILES PER GALLON (*MPG) ANALYSIS

a. Create a matrix or spreadsheet where you list the average MPG per VEHICLE.
   - Classify the MPG's by type of Vehicle (and/or engine model-year).
   - Create a subclassification of MPG by ROUTE -if routes are consistent-. (i. e., a route at sea level vs. a route in a mountain area)

b. Audit/Analyze the MPG regularly. Once a week, once every 15 days, or at the least once per month.

c. If a Vehicle is out of the calculated tolerable MPG, please research it.

2) ROUTE ANALYSIS

a. Research -before driver drives out- the ORIGIN and DESTINATION that the Vehicle is about to travel.
   - Identify fueling locations on route.
   - Communicate to your driver the authorized locations on route (to help your drivers' culture, work with them on choosing the best fueling spots. Considering fuel quantity purchased, driving time, and distance).

b. Involve your drivers in the decision-making process to help increase willingness of participation with the new operation.
   - The development of a driver recognition program connected to MPG and Fueling metrics could be a great tool to incentivize overall participation.

c. Calculate distance between ORIGIN and DESTINATION to obtain the Fuel Gallons that will be needed to cover the trip distance.

3) FUEL TANK CAPACITY CONTROL

a. Create a matrix or spreadsheet where you keep a registry of the precise Tank Fuel Capacity by VEHICLE.

b. Program your fuel cards to ONLY dispense the exact fuel gallons per transaction and in relation to the size of the fuel tank.

c. Program your fuel card system to notify you (and your team) if a Vehicle attempts to consume gallons exceeding the fuel tank's capacity.

4) HEALTHY RATIO 'DIESEL & DEF'

a. Create a matrix or spreadsheet where you classify by VEHICLE the DEF consumption.
    - Ideally, this will be a column (or row) on the same workbook where you are analyzing Diesel consumption. The idea is to create a formula to help you calculate the precise COMPSUMPTION RATIO between DEF and DIESEL.

b. This analysis will help you by developing a precise standard of Ratios and will quickly help you detect if there's a negative consumption of DEF and/or Diesel.

c. As a point of reference, the average ratio is 2% to 3% of DEF consumption in relation to Diesel fuel. (For every 100 gallons of Diesel, typically the vehicle will consume 2 to 3 gallons of DEF. In your analysis, the increase in precision of ratio consumption, the better!)

5) THOROUGH GALLON ANALYSIS

a. By following the first four recommendations (or as many as possible of the four), this fifth step will help you to create (or improve an existing one) a matrix or spreadsheet of Fuel Gallons pumped and consumed.

b. The objective is to accurately calculate by VEHICLE the AVERAGE GALLON COMPSUMPTION.

c. Furthermore, regular consistency of calculation (systemic calculation) is also critical. I recommend generating this analytical report on a weekly, bi-weekly, monthly, by trip, or by delivery basis. It will depend on your type of operation. The key is to be consistent.

d. Any anomaly detected because of this analytical report will help the customer to self-audit, find and quickly comprehend a negative fuel consumption.

6) ANTI SIPHON LOCKS

a. Invest in equipping the fuel tanks of your fleet with anti-siphoning devices. These will prevent the siphoning of fuel using a hose down the fueling hole of the fuel tank.

7) CALIFORNIA DIESEL CONSUMPTION VS OTHER U.S. STATES

a. Via the analysis of routes, and mileage consumption previously mentioned, we recommend the calculation of gallons needed by your vehicle by to travel the sufficient miles needed to arrive to the first fuel site located in the neighboring state with California.

b. Depending on the desired route, as you are leaving the state of California, we recommend a fill-up of your fuel tanks in ARIZONA, UTAH, NEVADA, or OREGON.
    - In California fuel the necessary gallons to travel (cover the mileage) from the California fuel site to the first fuel site outside (but neighboring) of California.
    - Fill-up the tanks either in AZ, UT, NV, OR. And Continue with your trip driving away from California.
    - This will positively impact your highway taxes/fuel taxes declarations.
    - By no means we advise to drive and fuel outside of California with the intent of immediately coming back to the state of California. (Prices per gallon will tend to be less expensive outside of the state of California due to the taxes that are built into the final prices per gallon. However, as a properly operated fleet business, any fuel consumed needs to be reported and by no means do we endorse fuel tax fraud).
    - If you fuel outside of California and return to California and you consume the foreign state fuel in the state of California, you will have to declare that on your fuel tax declaration and your business will end up owing taxes.

8) TIRE MANAGEMENT

a. Analyze and compare the options available when choosing tires. Look for low-rolling resistance tires.

b. Research which tires would be the best according to your routes and operation. For example: If your route is a local one, and the driving area doesn't require severe water traction or snow traction tires, then choose a more appropriate tire.

c. On a regular basis, and with a preventive-maintenance mentality:
    - Check proper air pressure
    - Rotate tires appropriately

9) PREVENTIVE MAINTENANCE

a. Create a matrix or spreadsheet where you can Schedule and/or consider the following:

- Motor Oil
- Transmission Oil (Hydraulic)
  (Not all oils, synthetic-blends, or synthetics are created equal.
- Good quality oils have demonstrated to significantly increase mileage and life of oil itself. Research and test which one is the best for you)
- One Box – DPF Filters
  (Develop a preventive maintenance schedule to regularly clean these filters. Doing this will greatly reduce auto-regenerations on your truck, consequently improving fuel economy, torque, life of DPF filters and One Box filters.)
- Fuel System
  (Gas and Diesel source and quality matters, and for the most part in the USA fuel will be filtered and good quality thanks to national, and/or state quality standards.

  However, accidents are inevitable, and they happen when fuel is being loaded/unloaded from the fuel rack to the fuel tanker, and from the fuel tanker to the fuel deposits at sites all over the US. Therefore, it is recommended to use fuel additives that will help in the cleaning of your fuel system fuel lines, and the fuel system of the vehicles.)

- Filters (Oil, Air, Fuel)
- Radiator/Engine Cooling System
- Tires: Tire Pressure – Rotation
- Fluids (Antifreeze, Brake Fluid, Wiper Fluid)
- Leak Visual Inspection
- Electrical System and Wiring
- Lights Inspection
- Brake System
- Engine Mounts, Transmission Mounts (& Others)
- Revision and Lubrication of axles, joints, and steering

10) AIR DEFLECTION AND RESISTANCE

a. If possible, invest in air deflectors and air spoilers for your vehicle(s), especially if you have a large mass type of vehicle, like a van or an 18-wheeler, a good air deflecting system will help reduce air resistance which will in turn benefit the vehicle's fuel economy (Plus, they look cool).

b. For flatbeds transports, if the loads are too tall (height) it is important to attempt to reorganize the load with the intention of reducing air resistance and weight distribution.

11) AUTOPILOT

a. The use of the autopilot will help regulate the acceleration and deceleration of the vehicle. In recent models, the autopilot is programmed to achieve optimal fuel economy.

ABOUT THE AUTHOR AND COMPANY

Thanks for sticking with me all the way here.

I am Chris. Bouncing from job to job in my early 20's, I kinda fell on fuel management and the Petro-industry. Got an opportunity and took it desiring I would be Scrooge by 25. I thought it would be easy (or easier than other places...) Wrong I was. *Driven by money only… the way is not! (Yoda voice)*. Life delivered a shit sandwich and got my butt handed to me, but hey, learning and awareness is half the battle. I continue to learn that one earns in proportion to problems solved and quality in action.

Currently, I enjoy helping businesses through a bunch of services, when they are wanting to properly manage their fuel expenses and some fleet related expenses.

Most importantly, I work with a good team that makes a lot of it happen.

Energie Fuel Group, with our partnership with Lakeview Petroleum, helps businesses of all sizes and industries save money on their fuel expenses through fuel card programs, bulk fuel programs, lubricant programs, DEF supply and systems, and various premium additives for all fleet applications.

Thanks again for your time.

Live and work with positive Energie.
Chris Hammer