



FREIGHT RATE CALCULATOR - COST ANALYSIS FOR A TRUCKING BUSINESS

This instructional and freight rate calculator was created by Mr. Tilden E. Curl Jr. Owner of Tecco Trucking, OOIDA Board Member, and a Former Goodyear Highway Hero. It is presented by the REAL Women in Trucking with a one-of-a-kind online calculator that was developed by Mr. Myroslav Gusyak.

The purpose of the calculator is to help new owner operators understand how to determine a fair rate in a rapidly changing market as fuel prices fluctuate. As a professional driver, it is important to know how to calculate a fair freight rate before you begin to negotiate with freight brokers and sign rate contracts to haul their freight. These instructions will help you understand how to find the correct fuel price variable for your calculations. Once you study and learn this system it will help you understand profitability for your trucking business.

Too often these days new drivers are becoming involved in lease programs at major trucking carriers in their first few years in the industry. Most will fail because they have not performed an accurate cost analysis to determine what a fair rate would be to haul freight. I prepared this instructional to help drivers understand how to evaluate factors they should consider before they accept a freight rate. I've used my personal method to show you an example of how I determine a fair rate. Once you understand which factors you need to consider for your personal situation, you can plug them into the **online freight calculator** to develop your own trucking business cost analysis.

It is important to me that new drivers or anyone considering becoming an owner operator know how to calculate a fair rate in order to be successful and preserve the integrity of industry standards.

~ Tilden Curl



Mr. Tilden E. Curl



EXAMPLE ON HOW TO GATHER THE FIGURES TO USE THE ONLINE FREIGHT CALCULATOR

The following is based on an average month of 10,000 miles driven. While some of the figures in this example may vary from driver to driver based on the areas of operation, etc...., the analysis remains the same. I work primarily on the I-5 corridor between Seattle, WA, and Angeles, CA and will use that as the basis for this example.

- ➊ First, establish the time involved in an average month:

10,000 miles divided by 55 mph. = 182 hours of driving.

That is about 3.5 trips. Each trip has about 2 hours for each load up and each unload. That is approximately = 28 hours of load/unload time.

Each day is required to have equipment inspections of at least $\frac{1}{4}$ hour and usually, contains another $\frac{1}{4}$ hour per day doing small maintenance or fueling. Based on an average work day month of 22 days, inspections and fuel = 11 hours.

- ➋ Second, combine all the hours involved from the first step.

$182 + 28 + 11 = 221$ hours/mo. avg. 221 hours divided by 22 days = 10 hours per day

That equals about 63 hours a week. (221 divided by 3.5 = 63 hrs.)

While these are the numbers given in this example, you must consider most drivers average more than this per month. The law allows 11 hours per day driving and a maximum of 14 hours on duty per day. A driver can accumulate up to 70 hours in 8 days, but this 70-hour total can be reset to zero (0) with 34 consecutive hours off duty.

Here are most of the average costs an owner/operator will encounter on a monthly basis using the 10,000 miles per month baseline.

- ❖ (Use this method and adjust values for current rate conditions if necessary)



Costs	Price
Fuel @ 5.4 mpg. x \$3.00 gal avg.	\$5,556
Truck payment/month	\$2,000
Trailer payment/month	\$575
Insurance & licenses	\$1,100
Service, maintenance, and 2 truck washes/month	\$650
Repairs	\$500
Meals, showers, & personal needs @ \$35/day	\$770
Tax: Oregon based on 2160 mi./month	\$285
Estimated Federal and self-employment tax	\$2,100
Telephone and office supplies	\$500
Administrative costs (finding freight, billing, paper processing, accounting, etc.)	\$600
Administrative costs (finding freight, billing, paper processing, accounting, etc.)	\$600
Business savings to replace used equity of equipment	\$1,000
Grand total:	\$15,636

The preceding covers the expenses of the truck and its operation with the exception of driver pay. To determine driver pay you have to look at what is reasonable to expect from an average of almost 11 hours a day labor. The following is based on a family of four and a collection of estimates for that cost of living.

Costs	Price
House payment, including property tax and insurance	\$1,800
Utilities; gas, electric, garbage, cable, phone	\$450
Food	\$975
Misc. household expenses; cleaning supplies, personal needs, etc.	\$375
Transportation; car payment = \$300 x 2	\$600
Insurance = 75 x 2	\$150
Gas, oil, & servicing = \$220 x 2	\$440
Health insurance; \$ 1500 Deductible/major med. only	\$425
Dental & Optical coverage	\$300
Retirement/401k	\$500
Savings/investing	\$500
Grand total:	\$6,515



- ❖ (This doesn't include any debt such as credit cards or charge accounts. This also doesn't include any recreational toys like boats, jet skis, motorcycles, campers or R.V.s. nor does it include a 2-week paid vacation.)

Using these figures as guidelines to assess the cost of a self-sustaining business, the costs need to be combined and divided by the miles to produce a minimum cost per mile.

Costs	Price
Business costs	\$15,635
Driver needs	\$6,515
Total	\$22,150

Divided by 10,000 mi \$2.22 per mile

- ❖ This figure of \$2.22 per mile is the cost of operation if all miles are revenue-producing miles or loaded miles. If you include the empty miles or “deadhead” miles at a rate of 15%, that means you have to produce:

\$22,150. in 8500 loaded miles = \$ 2.61 per mile.

- ❖ This becomes the rate per mile you need to have on your freight to average \$ 2.22 per mile.

These numbers represent dollars needed to maintain a safe operation and pay a driver working 63 hours per week (if you include overtime pay, that is equal to 74.5 regular time hours a week) and driving an average of only 11 hours per day with only 6 days a week on duty.

Some drivers may feel they should try to get creative with their logbook 2-3 hours in a day to accommodate wait time or down time so they can allow the most to be accomplished each day. (*I want to make clear that I do not advise this practice but for the purpose of this discussion, it is important to illustrate the point*). This adds another 10 hours a week. Even after that, a driver will exhaust the maximum logbook hours at least once a month producing closer to 70 hours a week rather than 60. Each driver basically has to work 2 full time jobs to get credit for 1 job. If you also include another 10 hours per week of administrative duties, (finding freight, billing, paper processing, accounting, etc.) this adds another 40 hours per month. This creates 73 real time hours per week.



If transportation of your own freight on your own company trucks were to be considered, you would be looking at the same numbers. By paying someone else to move the freight, you are not paying the whole bill, just the portion of the time that you use the truck, thus creating a savings on your overall transportation needs. If you think this rate is too expensive, compare this cost with the total cost of in-house transportation.

- When these rates are not met there has to be a compromise on the needs of either the equipment or the driver.
- Which one do you cut to make up the shortage of revenue?

Sometimes it's the equipment which is evidenced by the number of "out of service" or "defective equipment" violations as recorded by the FMCSA. Other cuts are made to the driver forcing that driver to work longer hours to produce the needed revenue to support his/her family.

Over time, this pattern takes a toll on a driver's health and often relationships suffer as well.

A driver should expect to be paid for every hour he/she works. I'm sure your employees are not willing to work overtime without pay. These are the issues that law enforcement is attempting to address with new or updated 'Hours of Service' (HOS) rules. Tired and under experienced drivers cause accidents. Because of the seriousness of an accident with a semi-truck, every effort is being made to reduce accidents regardless of the cost to shipping.

In the industry, retirement and health benefits are usually the first to go. All the while, there are no limits to the amount of money that can be taken from the rate a customer pays to move freight before it actually gets to the driver. You as a consumer of freight services should be aware of where your freight dollars are being spent. Often times the truck and driver only receive 70% of the freight rate from the last brokered rate.

Reputable brokers will not double broker your freight. If the truck carrying your freight is a company truck, it should be leased to the broker or be an independent trucker. Much of the freight is brokered two; three, and sometimes four times before it gets to the person moving the freight. When this happens, you are paying for more middlemen and less quality on the receiving end. All of this is legal or accepted practice with no protections for the driver coming from the government. Yet the



government imposes more rules and taxes on the people who can least afford it, the driver. The most effective tool you have is to tell the driver how much you paid to have the freight moved.

While these numbers may not fit your exact situation, all the numbers can be substituted with your own numbers. If you are a company driver, just use the driver portion. If you are an owner/operator that is leased to a company, adjust the expenses to fit your situation. If you have expenses not listed here, include them. The formula still works. The regulators must realize that there is a price for safety and quality drivers. If you are paid a substandard wage, you have to take responsibility and demand a living wage. The senior drivers are retiring or taking other jobs and the newer generation has not been trained in the business of the trucking business. I think you have to ask yourself, "**What are you worth?**" If you were a truck driver, would you settle for a lifestyle that offered you less than a standard living?

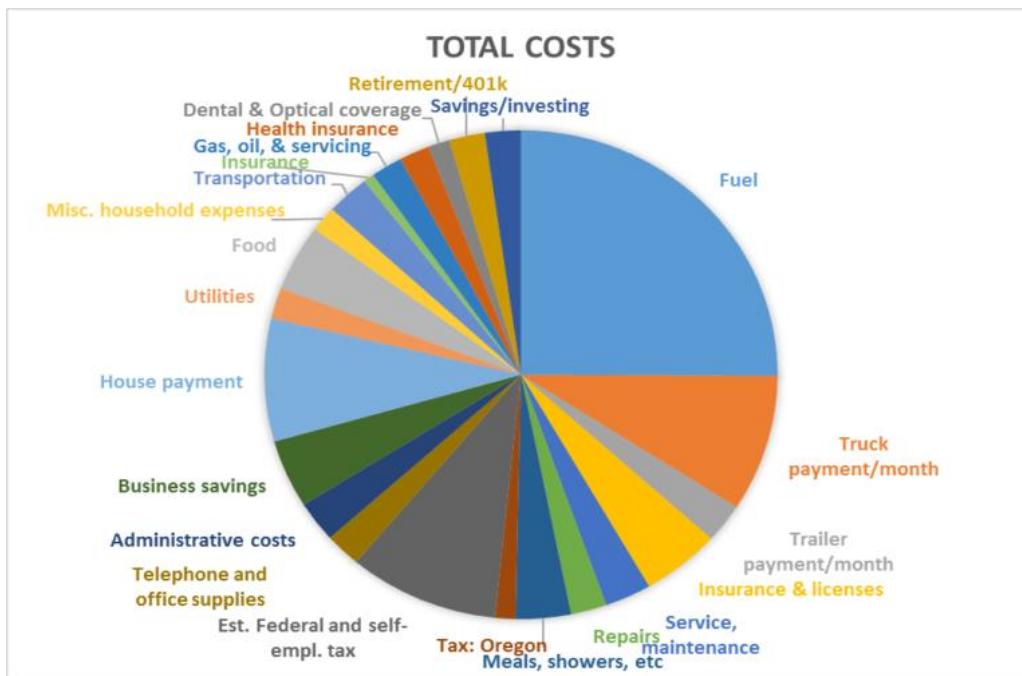
EXPENSES BY PERCENTAGES

The numbers applied to the different categories have a range that is an acceptable margin of the total expenses. Because "fuel" or "energy cost" is part of just about every expense in our lives, you can use it as an "Economic Indicator" to establish the price needed to maintain a business and a personal income that is acceptable and reasonable. If energy cost, go up you need to produce more revenue in order to simply maintain a standard of living.

As you break down and analyze the costs, you will see that fuel cost in the example is at 25% of the total cost. Ideal fuel cost of gross revenue should be between 18-22%. That allows for some discretionary spending such as recreational toys or vacations or any other interest you prefer. After 22% is exceeded, cuts start in the discretionary spending. At 25% cost, cuts in other areas must start being considered. Therefore 25% becomes the maximum fuel cost a trucking business can allow and still provide a reasonable living or lifestyle. I personally think hard working people should expect that. Please note the following is a list of amounts by percent from the example figures used.



Costs	Price	Precents
Fuel @ 5.4 mpg. x \$3.00 gal avg.	\$5,556	25%
Truck payment/month	\$2,000	9%
Trailer payment/month	\$575	3%
Insurance & licenses	\$1,100	5%
Service, maintenance, and 2 truck washes 1 mo.	\$650	3%
Repairs	\$500	2%
Meals, showers, & personal needs @ \$35/day	\$770	3%
Tax: Oregon based on 2160 mi. / mo.	\$285	1%
Estimated Federal and self-employment tax	\$2,100	9%
Telephone and office supplies	\$500	2%
Administrative costs (finding freight, billing, paper processing, accounting, etc. based on 40 hrs/mo. @ \$15.00/hr.)	\$600	3%
Business savings to replace used equity of equipment	\$1,000	5%
House payment, including property tax and insurance	\$1,800	8%
Utilities; gas, electric, garbage, cable, phone	\$450	2%
Food	\$975	4%
Misc. household expenses; cleaning supplies, personal needs, etc.	\$375	2%
Transportation; car payment = \$300 x 2	\$600	3%
Insurance = 75 x 2	\$150	1%
Gas, oil, & servicing = \$220 x 2	\$440	2%
Health insurance; \$ 1500 Deductible/major med. Only	\$425	2%
Dental & Optical coverage	\$300	1%
Retirement/401k	\$500	2%
Savings/investing	\$500	2%
Grand total:	\$22,151	100%



Fuel price to Freight Rate Conversion Table

Gross	18%	19%	20%	21%	22%	23%	24%	25%
MPG	5.555	5.263	5.000	4.762	4.545	4.348	4.167	4.000
5	1.111	1.053	1.000	.952	.909	.870	.833	.800
5.1	1.089	1.032	.980	.934	.891	.853	.817	.784
5.2	1.068	1.012	.962	.916	.874	.836	.801	.769
5.3	1.048	.993	.943	.898	.858	.820	.786	.755
5.4	1.029	.975	.926	.882	.842	.805	.772	.741
5.5	1.010	.957	.909	.866	.826	.791	.758	.727
5.6	.992	.940	.893	.850	.812	.776	.744	.714
5.7	.975	.923	.877	.835	.797	.763	.731	.702
5.8	.958	.907	.862	.821	.784	.750	.718	.690
5.9	.942	.892	.847	.807	.770	.737	.706	.678
6	.926	.877	.833	.794	.758	.725	.695	.667



Gross	18%	19%	20%	21%	22%	23%	24%	25%
6.1	.911	.863	.820	.781	.745	.713	.683	.656
6.2	.896	.849	.806	.768	.733	.701	.672	.645
6.3	.882	.835	.794	.756	.721	.690	.661	.635
6.4	.868	.822	.781	.744	.710	.679	.651	.625
6.5	.855	.810	.769	.733	.699	.669	.641	.615
6.6	.842	.797	.758	.722	.689	.659	.631	.606
6.7	.829	.786	.746	.711	.678	.649	.622	.597
6.8	.817	.774	.735	.700	.668	.639	.613	.588
6.9	.805	.763	.725	.690	.659	.630	.604	.580
7	.794	.752	.714	.680	.649	.621	.595	.571
7.1	.782	.741	.704	.671	.640	.612	.587	.563
7.2	.772	.731	.694	.661	.631	.604	.579	.556

Use avg.mpg for weight of freight being moved and % of gross revenue desired to find the multiplier. Use that number times the avg. fuel cost for the region freight is moving in to determine freight rate.

Example: (46K) 5.3 mpg @ 22% = .858 (multiplier)

(multiplier).858 X (Fuel price) \$3.00/gal = \$2.57 per mile

Average fuel price can be found by calling the Dept. of Energy

Hotline @ 202-586-6966

Use the average price for the region or between the regions your freight is moving. Do not use the national average or a lower priced area to find the price. This is the price that is needed to run the truck. If a broker is used reduce gross % rate by 3% to pay the broker.