

The Costs of Maintaining a Truck

The cost of maintenance based on the kind of engine includes oil changes, replacement parts, the cost of the truck, the cost of the engine, the cost of the transmission, the cost of the rear axle, the cost of the front axle, the cost of the steering gear, and the cost of the brakes. The cost of the truck is the most important factor in the cost of maintenance. The cost of the engine is the next most important factor. The cost of the transmission is the third most important factor. The cost of the rear axle is the fourth most important factor. The cost of the front axle is the fifth most important factor. The cost of the steering gear is the sixth most important factor. The cost of the brakes is the seventh most important factor.

Table III
MAINTENANCE TIME AND VALUE OF REPLACEMENT PARTS PER HOUR OF OPERATION

Maintenance Time Hours/Year of operation	Parts \$/Hour of operation			
	Minimum	Maximum	Minimum	Average (Mean)
All Gasoline-powered Trucks:				
0.000	0.190	0.135	0.240	0.240
All Electric Trucks:				
0.070	0.001	0.035	0.050	0.090

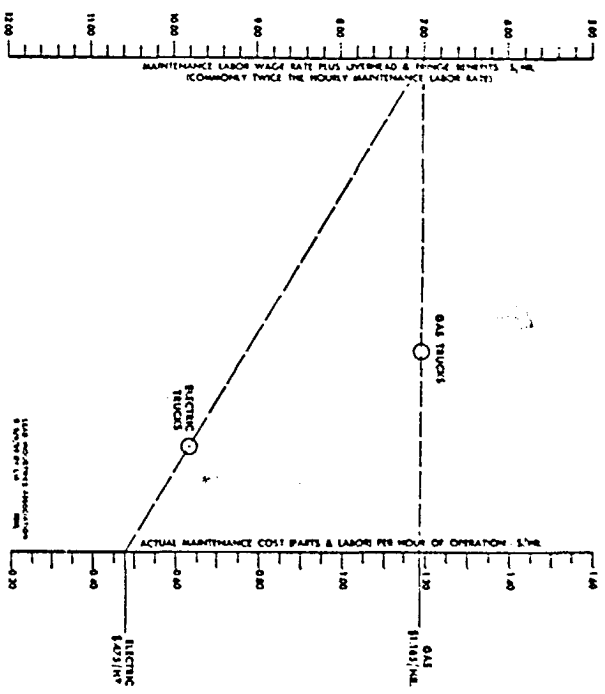
How to find YOUR Maintenance Costs

A Typical Example

Considering with the operation of the truck, the cost of maintenance is the most important factor. The cost of the truck is the next most important factor. The cost of the engine is the third most important factor. The cost of the transmission is the fourth most important factor. The cost of the rear axle is the fifth most important factor. The cost of the front axle is the sixth most important factor. The cost of the steering gear is the seventh most important factor. The cost of the brakes is the eighth most important factor.

COST TO MAINTAIN A GAS TRUCK
\$1.185 per hour of operation
8 hours/10th X 2.5 days/week X 235 days/year = 4680 hours per year
1.185 \$/hour X 4680 hours/year
\$5535 per year

COST TO MAINTAIN AN ELECTRIC TRUCK
\$4.73 per hour of operation
8 hours/10th X 2.5 days/week X 235 days/year = 4680 hours per year
4.73 \$/hour X 4680 hours/year
\$22128 per year



SO, TOTALING UP --			
	Typical Example	YOUR PLANT	
	Gas	Electric	Gas
Cost to own, \$/year	760	490	---
Cost to operate, \$/year	1285	1165	---
Cost to maintain, \$/year	4835	1938	---
TOTAL, \$/year	6880	3591	---
SAVING, \$/year	3289	in favor of electric truck	

WHAT OTHERS HAVE FOUND

While the cost comparison method described in this bulletin will let you estimate costs for gas or electric trucks in your operation, it is based on averages of costs and, tacitly, on average working conditions. What about the special working conditions and problems of your operation? How do they alter the cost picture?

If your particular operation involves one of the specific problems described in the following case histories, you may be interested in what these truck users have found.

CASE II — SAN FRANCISCO WAREHOUSE COMPANY

Operation: General warehousing of palletized grocery products.

Significant job factors: Typical of many palletized operations.

Description: In 1948 at the beginning of a study made by San Francisco Warehouse Company six electric and five gas trucks were operating in two warehouses. Operations encompassed receiving of palletized grocery products, stacking, making up shipments and loading delivery trucks. The study ran from 1948 to 1952.

Results: In the five years covered by the survey, the company found direct annual maintenance and repair costs to average \$122.30 for gas trucks, \$40.75 for electrics. Vice president Lloyd Swayne, Jr. believes that these figures are still valid today. On the basis of the study, the company has turned to an increasing portion of electric trucks in its fleet. Today it uses 13 electric trucks, eight gas trucks, and one gas-electric truck. Mr. Swayne explains that "the low repair cost of battery powered trucks and their ability to keep operating without downtime are the reasons why we have been converting from gasoline to electric during the past ten years."

CASE IV — AUTOMOTIVE PLANTS

Operation: Varied—handling everything from heavy castings to containers of small parts and fasteners.

Significant job factors: Round-the-clock operation and the consequent need for reliability; large fleets; close cost control.

Description: Specific details of plant operation have not been divulged but it is known that cost studies have been made at Oldsmobile and Ford.

Results: As reported in *Iron Age*, "Oldsmobile Div. in the last few years has bought almost 400 electric units after a thorough, long term cost study. This started a trend at Fisher body. Sixty electrics were included early this year in plant expansions and equipment replacements. "Ford Motor has also bought about 150 electric trucks after finding a 4 to 1 ratio on maintenance costs."

*"Industrial Trucks: Price vs. Upkeep," Dec. 20, 1956

CASE I—THE BOSTON AND MAINE RAILROAD

Operation: Baggage and mail handling at a railroad terminal.

Significant job factors: Heavy loads, fairly long runs including numerous ramps with grades up to 10 per cent.

Description: Previously, 11 gas tractors were used round the clock to load and unload baggage and mail. Though there were minor problems such as extreme heat for the drivers during the summer, gas fumes, and occasional fires, the change to electric trucks was spurred by a cold winter morning on which 16 of the trucks would not start.

The 11 gas trucks were replaced by 24 battery-powered trucks.

Results: At the end of a year of operations, the Boston and Maine was able to show a reduction of 50 per cent in fuel power costs, 75 per cent in maintenance part costs, and 60 per cent in maintenance labor. Net out-of-pocket savings for that one year were \$32,700.

CASE III—INDUSTRIAL MACHINERY MANUFACTURER

Operation: General handling in heavy machine manufacturing. Three trucks are used to receive, transfer between operations, load for shipping. Loads range from 1500 lb. parts to 6-7 lb. parts palletized.

Significant job factors: Typical of many plant operations where few trucks are involved.

Description: Switch from gasoline-powered to electric trucks was made in 1955. The three trucks are somewhat specialized: one is a high lift model, one is specifically designed for loading over-the-road trucks, one is a general duty lift truck.

Results: Management reports that exclusive of major overhauls the average monthly maintenance of the trucks has been reduced 25-28. After almost five years of service, the original batteries are still in service. Furthermore, though fumes and noise were accepted as normal with gasoline trucks, they are now noticed by their absence.

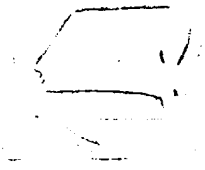
CASE V—A PAINT AND VARNISH PLANT

Operation: In-plant handling of paint raw materials, finished products.

Significant job factors: General industrial use; fire and safety factors are important to management.

Description: Prominent paint maker has had experience with both gas and electric in-plant trucks. Trucks are used throughout the manufacturing operation—receiving, transporting materials for processing, handling finished paints, warehousing, shipping.

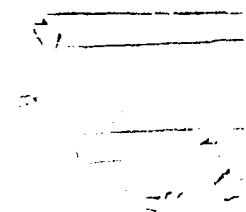
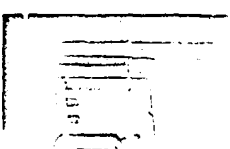
Results: Based on spot check comparisons, management finds that the use of electric trucks is at least 45 per cent cheaper than gas trucks. In commenting on such a comparison, the assistant superintendent pointed out that, "We have always felt that electric trucks are much better for inside operation and safer, too."



ELECTRIC POWER - Because of the fact that electric power is the most important and most widely used form of energy, it is the subject of a special section in this book. The chapter is a study of the various uses of electric power.

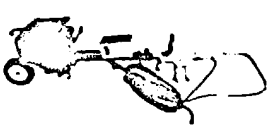


CAUSE AND EFFECT - A study of the various causes and effects of electric power. The chapter is a study of the various uses of electric power.

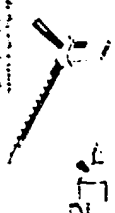


Power with no strings attached

One of the products of the age of "atomic energy" is the power of the atom. This power is a product of the atom, and it is the most important and most widely used form of energy. The chapter is a study of the various uses of electric power.



POWER TOOLS - A study of the various uses of electric power. The chapter is a study of the various uses of electric power.



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