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Fruehauf Corporation/Jacksonville Shipyards Case History

ElectroLube Devices, Inc. Public Relations and Branding

As part of the branding of ElectroLube, Emerson Brantley redesigned the company's logo, revised all of their sales collateral, created a multimedia presentation that showed how the product cleaned engine oil, and began an ongoing public relations campaign to industry publications. The product had a certain sex appeal: it was environmentally good and it saved money. And for companies with fleets of trucks, the money saved meant more than a few oil changes. They could save millions in equipment downtime and repairs, and the new environmental fees meant they had to pay to dispose of the old oil.

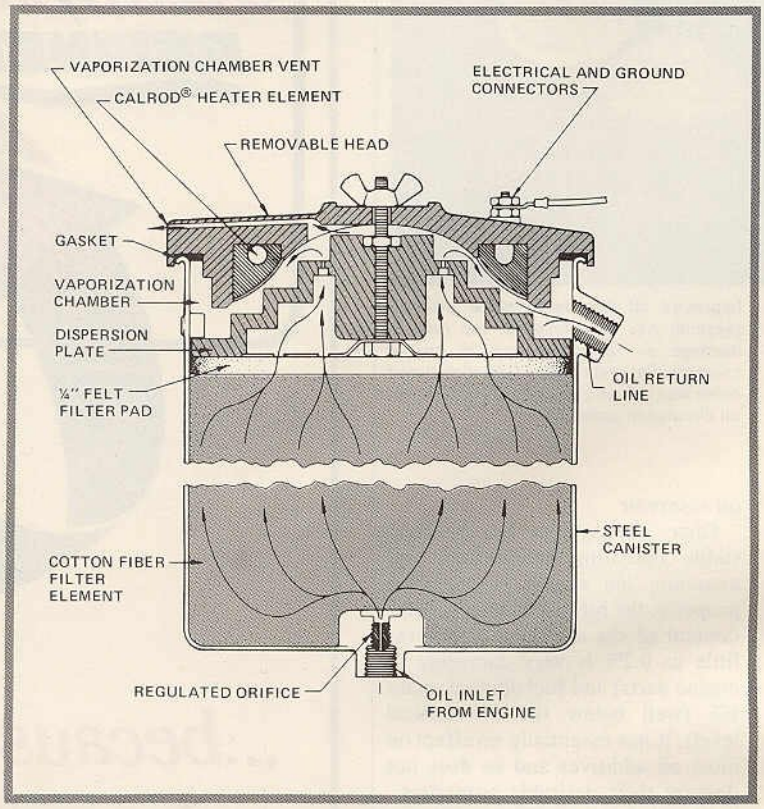
One of the first publications to respond to Emerson's press campaign and pick up the story was the widely-respected Design News. Their market was made up primarily of engineers and project managers, exactly the niche that he felt would respond the most to the breakthrough ElectroLube Refiner. He followed this article with a postcard campaign to all of their subscribers, and the reprinted flyers were used until at least 1992, a period of 15 years.

Filter/still eliminates need to change engine oil

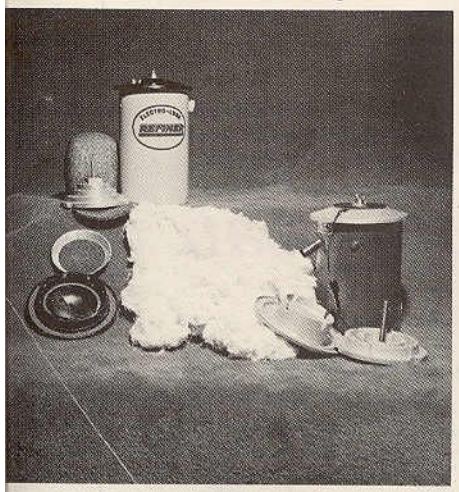
Jacksonville, FL—National Bureau of Standards research indicates the lubricating value of oil does not deteriorate because of the mechanical beating it takes within an engine; its lubricant properties can even improve. It must be changed in conventional engine systems because it becomes contaminated and diluted with solids and semi-solids and with the liquid and gaseous by-products of combustion.

Ordinary pleated paper oil filters remove some of the solids, mainly those with dimensions larger than 30 microns, but have no way of removing the gaseous and liquid contaminants. Thus with only an ordinary filter the liquids accumulate to destroy the viscosity and lubricating properties of the oil while the acids attack the metal parts of the engine. In the past the only way to prevent this destructive buildup was to periodically replace all the contaminated oil with fresh oil. This is a costly waste and was sometimes too late to prevent engine damage.

Now, with a new engine add-on device (which is used in addition to a conventional flow-through oil filter) the lubricating oil in the engine can be continuously refined as it is used and need never be replaced; only make-up oil need be added to replace that lost to leakage or combustion.



Oil refiner uses heated chamber to continuously strip volatile impurities from engine oil.



Initial (brown case) and final (white case) models of oil refiner; final model uses densely packed cotton filter and improved oil dispersion plate.

Here's how the "Electro-Lube Refiner" works. About 15 to 20% of the circulating engine oil is continuously by-passed through a two-stage purification process combining high quality filtration with a controlled flash-distillation process. In stage one, an improved large-area, closely-packed, long-staple cotton fiber filter element removes more than 90% of all solid and semi-solid particles with dimensions of 5 microns or larger, much more than is possible with ordinary filters.

After filtration, the oil (still under pressure) flows through relatively small orifices into a heated chamber at atmospheric pressure. The chamber may be heated by either the engine's electrical power supply or the hot engine oil itself, depending on the model. It then flows down over a stepped pyramid dispersion plate, which spreads the oil into a slow moving film over a large area. As the oil passes through this heated chamber, the more volatile gases, water and unburned fuels evaporate out of the less volatile oil and are vented to the atmosphere. Pure oil, essentially free of solids and volatile components, is then returned to the

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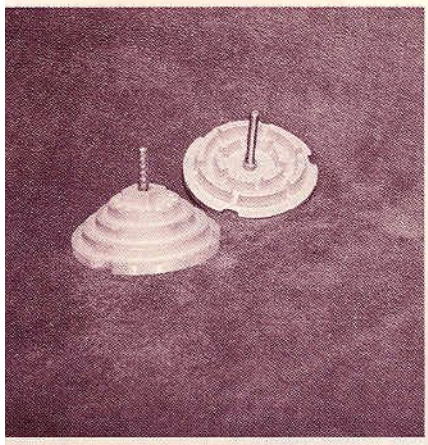

Improved oil dispersion plate (stepped pyramid) has feed holes at top only to increase oil residence time in heated chamber; flat plate model with distributed holes was less efficient because of shorter oil circulation paths.

oil reservoir.

Once the system has reached stable operating equilibrium, and assuming the engine is operating properly, the refiner will keep water content of the oil below 0.04% (as little as 0.2% is very damaging to engine parts) and fuel dilution under 1% (well below the 5% critical level). It has essentially no effect on most oil additives and so does not destroy their desirable properties.

Obviously, the device will not correct basic engine malfunctions that introduce abnormal amounts of water or unburned fuels into the oil system. Too much water will block the filter section. Similarly, the unit will not protect the engine against oil dilution and loss of lubricity if fuel is leaking into the oil.

Since solid impurities will accumulate in the filter with time, the cotton filter elements must be changed about every 25,000 miles. All other parts of the "Refiner" can be expected to last indefinitely.

Developed by Electro-Lube Devices, Inc. of Jacksonville, FL the "Refiner" is produced in sizes for use with engines having crankcase capacities from 6 to 1600 quarts. Additional details . . . Electro-Lube Devices, Inc.

—George R. Smoluk, East Coast Editor