

## INDUSTRY SPOTLIGHT

### Emergency Rescue (ERV)

Having an emergency vehicle start every time is critical. Lives could depend on it. The problem is, these vehicles are potential "battery killers".

Imagine the power drain on emergency vehicle batteries. These vehicles use light bars, sirens, radar guns, radios, onboard computers and more. All that electronic equipment would tax any type of lead-acid battery. That's why every one of these vehicles needs *ReNew-IT Pulse Technology* products from PulseTech.

There are several models available for this industry, including **PowerPulse**, **Solargizer** and **RediPulse**. These scientifically-proven systems are ideal for emergency rescue vehicles and equipment. They improve performance by maximizing battery power and reliability while reducing downtime and maintenance. Plus, batteries last up to three times longer and perform stronger every day.



## TESTIMONIAL

"I've had a Solargizer on my four-wheel drive for over two years. The vehicle is used on search and rescue work and it's important that it be ready when the need arises. Since using Solargizer I haven't had any starting problems due to low or dead batteries."

James Reed  
Tucson, Arizona

## SUCCESS STORY

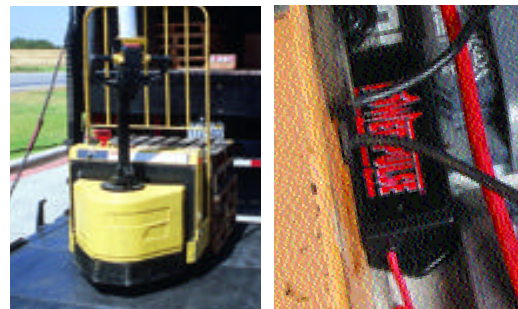
### Major Bottling Company Improves Battery Reliability

The soft drink industry is doing incredible business, and so are the bottling companies that are responsible for delivering soft drinks to stores, restaurants and other vendors across the country. One of the largest of these bottling companies is working hard to meet the demand. But, until recently, one thing has been making their job very difficult...dead batteries. Then they learned about PulseTech and everything changed.

**PROBLEM:** Like other transportation companies, their delivery trucks and pallet jacks used for transporting and delivering bottles to stores suffered from severe battery-related problems due to sulfation buildup. The delivery truck batteries had to be jump started or replaced on a regular basis. At the same time, the pallet jack batteries weren't capable of lasting a full 8-hour shift. They would die and the delivery people would be forced to use manual jacks which are much harder to operate and take longer to use.

**SOLUTION:** In 1998, the company installed PulseTech Industrial 12-Volt Solargizers on two delivery trucks and one used for long haul service to determine if the technology would help solve their battery problems. They also installed a 24-Volt PowerPulse on one of the pallet jacks to see if ReNew-IT Pulse Technology would actually help improve battery performance. This particular pallet jack was chosen for the test because the batteries were over two years old and suffered from heavy sulfation buildup. In fact, the batteries were set to be replaced, but were left on to see what affect PowerPulse would have on them.

**RESULTS:** In just six weeks the PulseTech products removed the sulfation buildup in the truck and pallet jack



A major soft drink bottling company is using Solargizer and PowerPulse Battery Maintenance Systems to improve battery performance and reliability on delivery trucks (top) and pallet jacks (bottom).

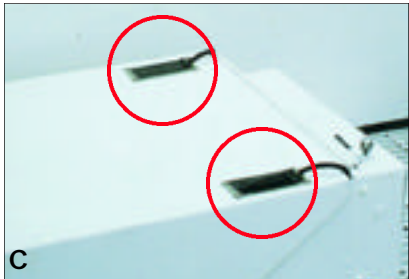
batteries. As a result, Cold Cranking Amps (CCA) on all the truck batteries were up. Plus, the trucks started easier and more often.

At the same time, PowerPulse greatly extended the pallet jack usage time so they didn't have to be recharged as often. Plus, when they were recharged, recharge time was a lot less. They started accepting a full charge so they could once again work a full 8-hour shift.

Based on these results, the company implemented a program to begin installing PulseTech battery maintenance systems on pallet jacks less than four-years old. They also committed to ultimately equipping all pallet jacks across their 77 locations.

**LEARN MORE:** See your local PulseTech dealer to see how our products can help increase your battery reliability. For a dealer near you, call 1-800-580-7554. Or visit [www.pulsetech.net](http://www.pulsetech.net).

## SAMPLE INSTALLS



Installing PulseTech products is easy and well worth the time. Shown above are examples of actual customer installations:

- A. Maintenance personnel installing a 24-Volt Solargizer (735X150) on grader.
- B. 12-Volt PowerPulse (735X012) units on an over-the-road truck in British Columbia.
- C. Solar panels for two 12-Volt Solargizer (735X130) units mounted on ground support equipment for a major airline in Dallas, Texas.
- D. A passenger van using a 12-Volt PowerPulse (735X012) to maintain battery reliability.

## TECHTALK FAQ

Presenting a series of frequently-asked questions regarding the benefits of PulseTech products and how they can help your customers:

### How much longer will the battery last with ReNew-IT Pulse Technology?

It's difficult to determine an exact length of time because service life of a battery varies depending on usage. By using ReNew-IT Pulse Technology, though, the life of your batteries will be extended dramatically.

Keep in mind that there is actually enough reactive material in a battery to perform the energy transfer process for many, many years, but sulfation buildup has always prevented that from happening. Now, by preventing, and even removing, sulfation buildup, PulseTech products enable batteries to fulfill their true potential in performance and life cycle.

Our products have been evaluated by several sources, including NASA, Stennis Space Center, Management Equipment Evaluation Program (U.S. Air Force) and the Army Research Lab. The answer from all is the same—"This product does exactly what you say it does!" One source even stated that "we estimate (Solargizer) will add at least eight to ten years of life".

### Will PulseTech products benefit other electrical components on my vehicle?

Yes. By maintaining your batteries in peak condition, your alternator does not have to work as hard at recharging your vehicle.

The battery will accept a charge more readily and faster so alternator life should be extended. Plus, by maintaining available cranking amps, there will be more available energy going to your starter. The engine will turn over faster, so your starter should last longer, as well.

### What are other common causes of battery failure that PulseTech can help?

It's interesting to note that other common causes of battery failure (buckled plates, shedding, overcharging, mossing, etc.) are directly related to sulfation buildup. For example, according to a leading battery service manual buckled plates may be caused by "being overcharged while sulfated or stored in a deeply discharged state." Sulfate buildup weakens the plates to a point where batteries must be overcharged to accept energy. This will then overheat and warp, or "buckle", the plates.

This service manual also relates shedding of the plates to sulfation buildup. It states that "if material has shed from the plates in small chunks, high charging rates on sulfated plates can be the cause."

All in all, each of these and other common causes can be avoided in most cases through the use of ReNew-IT Pulse Technology products. 🛠️

## Scientifically-Proven Technology

Independent studies by researchers at Oakland University and Ohio State University recently confirmed that ReNew-It Pulse Technology increases battery efficiency and battery life dramatically. These two-year studies showed that our technology allowed a more even distribution of lead-sulfate crystals over the surface area of the battery plates. It also revealed a significant reduction in the size of crystals. These changes greatly improve a battery's ability to store and provide energy.

Our technology also prevents sulfate-induced corrosion that is the primary cause of shedding of active material on the plates. As a result, the life span of the battery is increased dramatically.



*(Left) A battery plate covered in heavy sulfation buildup which reduces the battery's ability to accept, store and release energy. (Right) ReNew-It Pulse Technology™ cleans these lead-sulfate deposits off the plates and converts them to active electrolyte. This process exposes the active material on the battery plates which means batteries are stronger so you get up to three times longer life and maximum performance.*



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