

Don't take battery life for granted

Taking battery performance for granted can be frustrating and ultimately costly. Poorly or inefficiently managed battery maintenance can lead to early battery failure and unnecessary replacement costs, observes Rick Miller, vice president of sales for PulseTech Products Corporation, the world leader of military and commercial 12- to 24-volt battery desulfation and maintenance solar battery chargers and testers (www.pulsetech.net).

Premature battery related failure takes away from a vehicle's daily schedule and ability to perform, he adds. Downtime is money lost and it makes for dissatisfied customers.

The main reasons for pre-mature fleet battery failure, says Miller, are:

- Sulfate buildup on battery plates (the leading cause).
- Battery self discharge (capacity loss during storage due to the internal leakage between a battery's metal plates).
- Key off parasitic drain (electrical load that draws current from the battery when the ignition is turned off).
- Insufficient run time.
- Corroded battery terminals and cables.
- Intermixing of unmatched batteries.
- Faulty electrical systems.
- Physical damage to the battery.

SULFATION BUILD UP

As good as today's lead-acid battery batteries are, 80 percent of them will fail due to the damaging effects of sulfation build up," notes Miller. "If left unmanaged, sulfates found in the electrolyte will crystallize and root onto the battery plates and eventually result in premature battery failure."

As a battery ages through use, or sits unused for periods of time, lead sulfate crystals can enlarge and build-up excessively to the point where a physical barrier is created across the surface of the battery plates. This build-up can become so dense that a battery is no longer able to accept or release energy.

In addition to regular, routine maintenance,

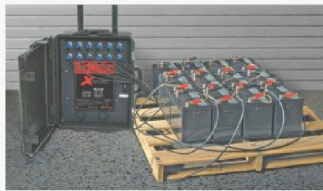
he says it is important to find charging systems that combine scientifically validated desulfation technologies, such as PulseTech's Pulse Technology, which is designed to reduce the buildup of sulfation on battery plates, thus improving the batteries' ability to create, store and release energy.

SOLAR SOLUTIONS

There are solar-powered battery charging systems to continually charge, maintain and extend the normal lifecycles of any 12- or 24-volt battery and typically come in 2-, 5-, 6- and 25-watt versions, says Miller. The best results from these systems come from choosing the right solar panel for the amount of power needed and the size and place of the mounting location.

He recommends using a solar system that utilizes higher efficiency, higher quality crystalline silicone cells as these pack more power per square inch than standard amorphous "thin film" solar cells and have a longer life. Typically crystalline, solar cells have a footprint that is 50 percent smaller than the amorphous cells that are commonly used.

The better systems are protected with a clear, polyurethane plastic coating mounted on a laminated aluminum



PulseTech's Xtreme portable charging system charges, recovers and maintains one to 12 12-volt batteries simultaneously using independent charging channels to profile the condition of each battery.

Photo courtesy of PulseTech Products Corporation

vehicles in the fleet, Johnson counsels.

Vocational trucks used in off-road applications are subject to different types of wear and stresses compared to their on-road counterparts. Failure points depend on type of equipment, operating environment, duty and drive cycles and overall quality of maintenance.

Typically, the most neglected items on vocational trucks are the work equipment installed to adapt the vehicle for a specific job, he says. All too often, maintenance on this equipment, if performed at all, is limited to servicing easily visible or accessible grease fittings.

Look for common failure patterns to see if there are areas where vehicle specifications may need to be upgraded, he advises.

Going through this process can also alert you to other potential issues within your operation. If

a particular truck has higher maintenance costs than similar vehicles in the fleet, that truck's driver may be responsible. A high incidence of repeat repairs within a short period of time may indicate poor maintenance and repair.

STEP 8

Johnson suggests performing a final weight distribution and capacity analysis, incorporating all of the options and accessories added to the vehicle. This will ensure that the completed truck still has the necessary payload capacity and that the individual axles are not overloaded.

If the original chassis selection was marginal, you may have to go back to the initial chassis selection process and make changes in the foundation components or even select a larger truck, he says. **FMX**

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