Battery Care

BUS SERVICE, INC.

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Common questions regarding battery maintenance.

This newsletter will center around maintaining and trouble-shooting your batteries. They can be the batteries that run your coach, house or the batteries that run your generator. All of the principles contained here are essentially the same, for lead acid batteries, regardless of the its size. What things should I normally do to maintain my battery? Does maintenance change as a battery ages? Why do my battery terminals quickly build up corrosion? Why won't my battery take or hold a charge? These questions and many more like them will be answered in the paragraphs that follow. We trust you will find this information helpful and you will be able to incorporate it into a general coach maintenance program.

How do I maintain my battery?

The following are guidelines to be performed every three to six months to extend the life of your battery:

1) Maintain Water Level. If your battery has removable vent caps, you should regularly check the water level and add water when it is low.

2) Keep Terminals Clean. Visually inspect the terminals and cables at least once a year, especially in hot temperatures, for signs of corrosion. If dirty or corroded, clean the connections with a wire brush. This will ensure a good connection and proper starting.

3) Keep Case Clean. Keep the top of the battery case clear of debris and oil with a cloth dampened with a 50/50 solution of baking soda and water. Then rinse with clear water and allow to thoroughly dry.

4) Keep Battery Charged. If your vehicle is not driven regularly, it may be necessary to charge your battery before use. Lack of use is hard on a battery. Any unused battery, regardless of its chemistry, will self-discharge over time and , if allowed to remain discharged, will undergo severe positive grid corrosion and battery failure. The rate of discharge is contingent on just two things. The type of battery and the temperature at which it is being stored. So, it's very important to keep your battery charged.

If you prefer to have your mechanic take care of your battery, while it should not be necessary to do so, be sure to ask him to maintain the water level and to keep the battery connections and battery case clean.

Continued on page 2

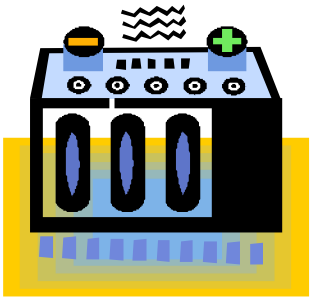
Inside this issue:

Special points of interest:

- *Maintain Water Level*
- *Keep Terminals Clean*
- *Keep Case Clean*
- *Keep Battery Charged*

Continued from Page 1

Remember that as your batteries age, their maintenance requirements change. The specific gravity usually gets higher and gassing increases due to the inevitable deterioration and/or loss of the reserve capacity of the battery. An older battery will usually require more charging.



Is my battery failing?

How do you know when your battery is failing? There are some common warning signs that may indicate that there is a problem with your battery or your charging system. Some of those signs are listed below:

1) When you start your vehicle, your motor turns over slowly or in an interrupted manner.
2) Your battery seems to lose power in cold weather more quickly.
3) Your headlights appear dim when you are idling.
4) The battery/charging system warning light on your dash stays on for longer periods of time after your engine is running.

If you have any of the above issues and think your battery may be failing, take your vehicle or the battery to a qualified mechanic as soon as possible to have your battery properly tested.

Why did my battery fail early?

Batteries sometimes fail prematurely. There are a variety of causes some of which include poor battery maintenance, hot weather, a failing alternator or hot engine temperatures. That is not to say that your battery does not have a defect. Check with a qualified mechanic for testing. In the event the failure is determined to be premature, follow-up with your point of purchase where a warranty is available.

Batteries will self discharge while sitting unused.

The drain can start within a few days of the vehicle not being used.

Why does my battery keep failing?

Batteries need regular exercise to remain healthy, just like people. Exercise to a battery is getting recharged so it can remain healthy. Batteries will self discharge while sitting unused. Some vehicles have electrical drains even when they are in an off position. Unless you have a disconnect battery switches which stops current from the battery, an electrical drain could be the source of your problem. The drain can start within a few days of the vehicle not being used. Have a qualified mechanic check your vehicle if you think this is a problem.

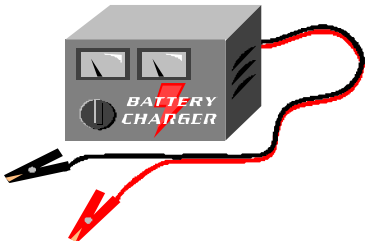
Why won't my battery always start my bus?

This is probably not a battery problem. If the problem occurs only after the vehicle sits overnight or for a day or more before starting, the problem is often a low state of charge. If the battery starts the vehicle once the vehicle has been started recently, test your battery to determine its actual state of charge. It is also prudent to make sure that the alternator is adequately charging and that all your connections are good. If the problem continues, check with a qualified mechanic.

Why won't my battery hold a charge?

A battery may not accept a charge for many reasons. Your battery my have an internal short or bad cells. Both of those situations are not repairable. It can also be severely discharged and require a professional charger to charge it. Most non-professional chargers have minimal voltages that are well below what is exhibited by a battery that appears to be dead.

Often the battery is not given a adequate amount of time to accept a charge. It is important to observe the charger's ammeter needle during the charging process. After the charger is connected to the battery and is on, the needle should deflect to a high amperage level if the battery is partially discharged. If the battery is severely discharged, the needle only deflects slightly away from zero. In both cases, the needle should be observed. In the case of a normally discharged battery, the needle will start to move back toward zero, usually in less than five minutes. This reduction usually indicates that the battery is accepting a charge. In the case of a severely discharged battery, the needle will start very low and then begin to rise. This rise of the needle is an indication that the battery is accepting a charge. Charger capabilities vary with the manufacturer.



When doing any of the above, be sure to observe safety procedures as recommended by the charger's manufacturer. Always determine the state of charge of the battery both before and after the recharge. The most accurate method for a battery with removable caps is to check the specific gravity with a hydrometer. If the battery still won't hold a charge, see a qualified mechanic.

Why does my battery build up corrosion quickly?

Although all batteries contain highly corrosive sulfuric acid, corrosion should not occur under normal conditions without spillage or one of the following:

".....corrosion should not occur under normal conditions……"

1) Overcharging/overheating: Overcharging by the alternator or normal charging at an extreme battery temperature can result in excessive gassing of the battery, which may produce increased corrosion.
2) Inadequate metal contact: When current passes through poor or loose electrical connections, a form of corrosion may form.
3) Overfilling: Add distilled water to the electrolyte of a fully charged battery if it is lower than 1/8" to 1/4" below the vent well at a full charge. If the battery requires charging, only add water if the electrolyte is at or below the plates.
4) Metallic exposure: When an electrical wire is exposed to salt particles in the air, corrosion will eventually occur. Remember to keep connections clean, tight and sealed with protectors. Do not overfill the battery or allow it to become overcharged or overheated.

Why does my voltage jump back and forth from high to low?

The above scenario typically indicates a charging system or cable connection problem. Take your vehicles to a qualified mechanic to have the charging system, cables, connections and battery tested. This will help determine what type of problem you are having and how to have it repaired.

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Organization

Part of maintenance of your battery is adding water. Here are some important key notes to remember.

- *Add distilled or ionized water only!*
- *Never add acid! Adding acid will alter the chemical composition of the electrolyte and will cause the battery to fail more quickly.*
- *Aspirin or other additives have not been proven to extend the life of a battery. It may actually decrease the battery life.*
- *Perform a specific gravity test, using a hydrometer, on each cell of your battery to get an accurate evaluation of the state of the battery.*
- *Make sure the water in the battery covers the lead plates inside the battery and are no higher than 1/8" below the bottom of the vent wells. Be careful not to overfill the vent wells.*
- *Always check the water level in the battery before charging it.*

****Food for thought……*

A discharged 8D battery will require a minimum "input charge" of 500 amp hours. So, at a charging rate of 20 amps per hour this 8D battery will require 25 hours on constant charge. Have patience and take the time.

Upcoming items…

Our latest catalog has been printed and being sent upon request. In this catalog, we have added many new items, several at very special prices.

We also have a summer special geared toward air conditioning. In it, we are offering a catalog special on hub mount Carrier compressor seals and air conditioning system dryers.

Our next newsletter will focus on the coolant system and the importance of antifreeze and the new type of coolant additives which are necessary in the high heat engines offered by Detroit Diesel in the Series 50 and 60.

We are diligently working to provide information which can easily implemented into your current maintenance program. We welcome suggestions for future issues. Feel free to send an e-mail or fax with any written suggestions you might have.