Getting the most out of your auxiliary batteries…

Travelling throughout North America is truly an awe-inspiring experience, from the inland extremes to the coastal marvels; it is fast becoming ever so popular for couples and families to get out and explore this vast land. Getting off the beaten track is by far the only way to touch, feel, smell and taste what this country truly has to offer.

Pickup Trucks, Trailers and Motorhomes go hand in hand with the overland adventure, so too affording you to maintain a number of the creature comforts we so enjoy at home. Everything from mobile phones and other necessary communication equipment required to stay in touch with loved ones in case of an emergency, you can forget about remaining in touch with your place of employment and other business-related contacts... you're on holiday!

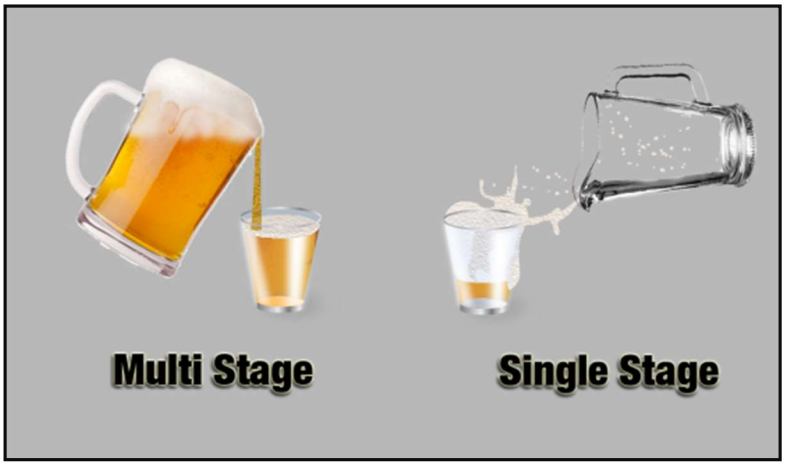
Together with the phones etc comes fridges, lighting, cooking equipment, air-compressors, radios (music) and whatever else the little ones require to allow you to enjoy the serenity of the outdoors. Unfortunately, these various gadgets we become so reliant on require a power source and this most commonly comes in the form of a battery, be it an auxiliary battery in your Pickup Truck and/or in your Trailer.

Using the power stored in your batteries is the easy part, the fact we have plugs and sockets everywhere making access to this caged energy even easier is, from what I can see, common place. It's the replacement of energy back into these auxiliary batteries that has complicated the home away from home experience.

There's a huge misconception out there about vehicle alternators and their ability to recharge a flat battery. What I refer to in particular is the vehicle alternators ability to recharge a discharged auxiliary battery, for example when we've ran our fridge and lights overnight.

The facts are that vehicle alternators were never designed to fully charge a battery from flat. They are however, utilised to maintain the fully charged vehicle start batteries and run the vehicle electrical loads whilst driving. An alternator when charging a flat battery, in most cases will only ever recover approximately 70 – 80% charge within an average drive time. Even adding a larger or heavier duty alternator won't mean you're necessarily charging your battery more but rather reaching to 70 – 80% level a little faster. This maintenance charge from the alternator is just to keep the main battery topped up and was never intended to be able to recover a flat battery to 100%.

More often than not your auxiliary batteries are a different type, size and or make to the original start battery. This combined with the limitations of the vehicle alternators makes it near impossible to effectively maintain a start battery before even thinking of the auxiliary battery. But, don't assume for a minute that driving for hours will get you back to 100% either!



So, what is the answer? Multi-Stage Smart Battery Charging is the only way to successfully fully charge and maintain an automotive auxiliary battery at 100%. A good way to explain this theory is to think of your battery as an empty beer glass and your alternator as a full jug of beer. There is more than enough beer in the jug to fill the glass however it's the manner in which we pour the beer that can drastically affect the end result. For example, if we pour the beer in too fast we run the risk of too much froth. We may have filled the glass but only a small percentage is drinkable. However we can overcome this by carefully pouring the beer into the glass and increasing the percentage of drinkable beer. Smart Multistage charging is quite simply filling your batteries in a controlled manner ensuring 100% charge back into your batteries.

Getting the most out of your auxiliary batteries…

To achieve 100% charge requires regularly maintaining your auxiliary batteries with a quality 110VAC Smart Charger that offers battery type specific charging algorithms designed for your particular battery type i.e. Gel, AGM, Calcium, Standard Lead Acid or even Lithium batteries. Unfortunately, this isn't always practical, especially if we're off the road down some track and don't have access to 110VAC power.

A number of years ago REDARC introduced the BCDC range of DC/DC In-Vehicle Chargers that take the energy from the vehicle alternator and converts that energy, boosts it if you like, into the correct charging requirements for your auxiliary battery. This enables the auxiliary batteries to be charged correctly whilst you're on the move i.e. travelling to and from destinations enabling you to arrive with an auxiliary battery that is 100%, like brand new! Now REDARC offers a number of different models all offering similar features however with varying degrees of output performance. Most of the models available here in the USA even allow you to capture some free energy from the sun by connecting a solar panel or two!

So, what needs to be considered when choosing one of these BCDC Smart In-Vehicle Chargers? REDARC features models ranging in output from 20, 25, 40 and 50Amps however it is strongly suggested to check-in with the battery manufacturer for recommended 'maximum' charge currents. However, normally I would suggest 20 – 25Amps for a singular auxiliary battery and 40 – 50Amps for 2 or more auxiliary batteries.

Installation also plays a big part in the product performance. Not skimping out of quality cables, terminals and fuse holders will ensure you get the most from your investment. Remember to keep in mind, the success of the installation can have huge effects on product performance and nobody likes arriving at camp with spoilt food and more importantly warm beer! I also highly recommend having your batteries checked before leaving on that great adventure or at the very least annually at your local auto parts and/or battery expert.

By Mark Bruce
Technical Training and Development Manager – North America
REDARC Electronics

'Mark is a qualified Auto Electrician with over 35 years' experience in the trade and wholesale automotive electrical industry. He represents Australia's leading automotive electronics manufacturer, REDARC Electronics'.