

Yorkshire Ambulance case study

Save carbon footprint, fuel, money and the environment



How important are systems solutions?

ANTARES
engineering with answers

...is proud to partner with Yorkshire Ambulance to help them:

- ♻️ reduce carbon footprint
- ♻️ improve fleet efficiency
- ♻️ reduce operational costs

let us solve your battery, charging, or other power challenges - just contact:

www.antares.co.uk tel: 01628 535440
serving the specialist vehicle industry for 20 years

Antares and Yorkshire Ambulance Trust go back a long way together, and whenever YAS have a vehicle electrical challenge, the Fleet Engineering Manager Richard Smith has no hesitation in contacting Antares.

The most recent challenge was to convert a doctor's car to become a Rapid Response Vehicle (RRV), which meant that it needed to have additional on-board battery charging capability, traditionally provided by a mains powered charger and associated auto-eject plug and socket.

Smith contacted Antares and asked for a kit for the job and was very intrigued when Antares suggested the idea of a fuel cell.

SYSTEM FEATURES

- Save over £17k per Rapid Response Vehicle to pay for system and base vehicle*
- Reduce Corporate Carbon Footprint by up to 10,000kg per vehicle per year
- Balanced System comprising:
 - VA charger
 - VA contactor set
 - Deep cycle gel battery
 - Fuel cell
 - Fuel cartridge
- Safe, easy to change fuel cartridge
- Text-message alert when fuel runs low
- Includes Assured start (on-board jump-start)
- Aux batteries receive boosted charge from standard vehicle alternator
- Priority split charge for engine start battery
- Easy to fit system

Overview

The system consists of three main parts: the auxiliary battery, the fuel cell itself, and the Virtual Alternator. The **deep-cycle gel battery has the best service life of any auxiliary battery** but only if correctly charged-up between uses. The **Virtual alternator System** optimises the alternator output to charge the aux battery much faster and better than the alternator alone could do. The fuel cell means that the RRVs can be left safe, secure and unattended, with their radio systems on but without the engine running, and the Antares Power cell steps in as

*based on 3 year vehicle life, £1.40/litre pump price, 13 hours per day on runlock, 0.2 gallons diesel per hour, 350 days/year



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Partnership, innovation and a bespoke solution.

The challenge - how to fit a battery charger that would work anywhere, anytime, automatically and safely.

required to ensure that the batteries are always fully charged and the engine WILL start!

These specialist vehicles have an almost unique usage pattern, with no two days being the same: The RRV has to be always available, within 8 minutes of any potential need anywhere within a 6,000 sq mile territory. So they are often parked next to a busy junction, or at a local GP practice where no mains connection is available.

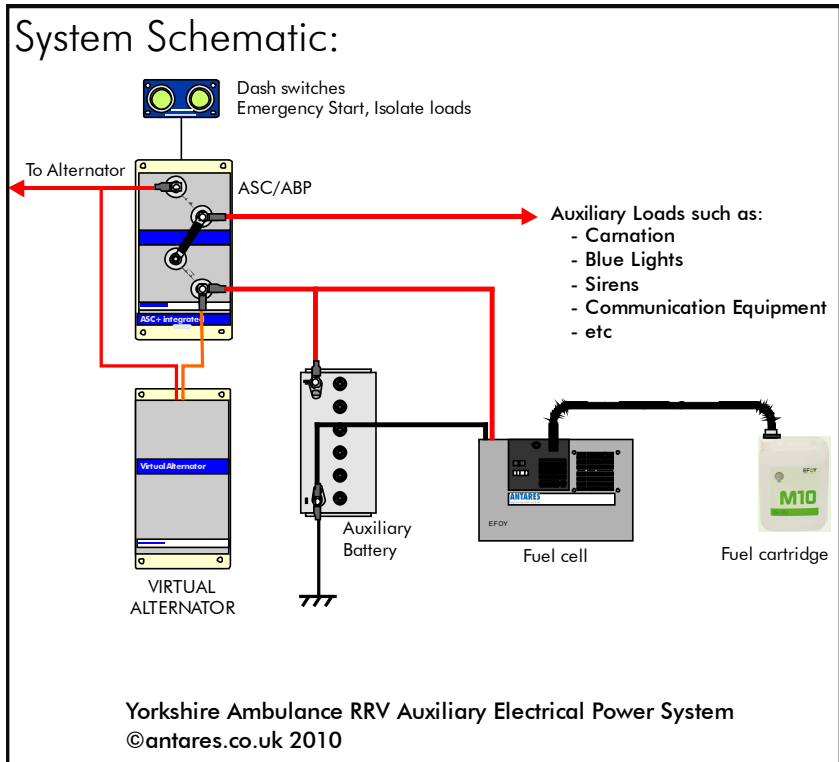
On top of these challenges the batteries must always be fully charged. For that particular vehicle type this has previously been achieved with a keyless-running-system/runlock, (where the door is locked but the engine remains on) using up to 12,400 litres of diesel over its life.

So the options are to run the engine, **or come up with something new**, and a **fuel cell** is exactly that.

The Solution

The Antares Fuel Cell (AFC) solution is a complete solution to ensure that that **adequate power** is supplied to the lights, or to the tetra radio systems, **indefinitely**, and also re-charge the auxiliary back to the maximum at all times: in an enclosed garage or workshop, or parked at the roadside, and **without running the engine**.

In addition the vehicle has been fitted with Antares Virtual



Alternator, which maximises the battery charging when the vehicle is being driven, thus minimising the run-time of the fuel cell.

Operation

Fit and Forget!

Once installed into the RRV it becomes invisible for most of the time.

Low fuel SMS Warning

The fuel cartridge has an optional GSM remote sender that will automatically text out a reminder alert message to the appropriate workshop staff to

In addition

At Antares we pride ourselves on our approach - partnership supply, fully engineered, integrated, reliable and long lasting systems, with life-of-vehicle technical support. We would be pleased to help you with the best power solution for your vehicle.

advise them that the fuel cartridge should be swapped out for a full one. It takes about 30 seconds, and requires no tools.

Data Logging

The YAS system can be interrogated and provide data on battery voltage, charging current, "on-time", "off-time" hours run which can easily be graphed and used to calculate fuel savings.

Frost protection

Another benefit of the system is that it will automatically switch itself on to protect itself from frost damage - so the driver gets into a warm car that does not need to be scrapped!