

# RAPP Notes

*(Reserve & Portable Power)*

- **I would like to know more about the gas savings calculator for fleet operators using ODYSSEY® batteries.**

The Microsoft Excel-based calculator was designed to show fleet operators the true cost of ownership gains they can get when they switch to ODYSSEY® batteries from conventional starting, lighting and ignition (SLI) batteries. The calculator can be accessed on our website by clicking on <http://www.odysseybattery.com/calc/#> or you may request your own copy from your local EnerSys representative.

The calculator is a simple but powerful tool that allows the fleet manager to input data that are specific to his particular situation. These data include the price paid for gas, the life expectancy of batteries the fleet is currently using, fleet size and the labor cost incurred for maintenance work. Thus the calculator is fully customizable

for each fleet operator's particular situation.

Another unique feature of this calculator is its ability to demonstrate how the fleet operator can leverage the deep cycling capability of ODYSSEY® batteries by shutting off the engine (no-idling mode) but still have essential loads running on battery power. This sharply cuts down on the emission of greenhouse gas (carbon dioxide or CO<sub>2</sub>) and makes the fleet environmentally friendly.

An example will help illustrate how the calculator works. Feel free to work with your own numbers on our website, using the hyperlink given earlier. The assumptions for the results shown below are:

- 1. The ODYSSEY® Group 65 battery costs about 75% more than a conventional Group 65 battery*
- 2. The electrical load supported by the battery during the no-idling period is 25 amps (the calculator allows you to choose between 25A, 50A and 72A)*

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3. *The fleet operator buys gasoline at \$1.95 per gallon and each vehicle consumes ¾ gallon of gas per hour of idling*
4. *The average number of stops made per day per vehicle is 5*
5. *There are 20 vehicles in the fleet*
6. *The cost of labor is \$65.00 per hour*
7. *It takes 30 minutes to install each battery and 45 minutes per routine maintenance check*

Based on the numbers and assumptions in items 1 through 7 above this hypothetical fleet of 20 vehicles will save over \$83,000 per year in battery related costs and reduced gasoline consumption. Moreover, by adopting a no-idling policy made possible by ODYSSEY® batteries the fleet emits 2,037 fewer pounds of greenhouse gas per day.

Now, that is a win-win situation!

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- **What is thermal runaway and is the thin plate pure lead (TPPL) battery better than standard AGM batteries?**

Thermal runaway (TR) occurs when the battery generates more heat than it can dissipate. The battery gets hotter and hotter until its plastic housing literally melts and may even catch fire if it is not a flame retardant plastic.

Typically TR is an issue with outdoor (uncontrolled temperature) applications or with chargers that are not compensated for temperature. A temperature compensated charger will automatically reduce the charge voltage as the surrounding temperature gets warmer; conversely the charger will raise the voltage if the temperature drops significantly below 25°C (77°F).

To compare how TPPL batteries standard AGM behave when they are severely overcharged, we ran a series of tests on similarly sized TPPL and standard AGM batteries.

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While the details of the test can be found by clicking on <http://www.enersys.com/defense/pdfs/Thermal%20runaway%20paper%20for%20BATTCON%202005.pdf> the results were nothing short of startling.

The standard AGM battery showed signs of going into TR in just over 2 days; in comparison it took over 15 days for the TPPL battery to exhibit similar signs of going into thermal runaway.

The message that these results convey is very simple. If your customer plans to install batteries in an uncontrolled temperature environment such as outdoor, thermal runaway should be a serious consideration and the TPPL battery is a far superior choice. This is particularly true in geographical areas such as Arizona, Florida and Texas that routinely experience high temperatures.

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## What's new from Warrensburg?

EnerSys has recently upgraded and reintroduced the ODYSSEY® Ultimizer

line of state-of-the-art high frequency chargers. They are custom designed to quickly and safely charge your high



performance ODYSSEY® batteries.

The upgrade involves both software and hardware enhancements that make these sophisticated chargers an even better product. For example, all Ultimizer chargers now have an auto start feature that turns on the charge cycle even if the user forgets to push the start button to initiate the charge.

Also, should there be an interruption of the charge cycle due to a power outage, for example, the auto start feature will ensure the charge cycle resumes when power is restored.

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## ODYSSEY® success stories.....

- Imagine expecting your Group 31 battery to consistently fire up heavy duty diesel engines after they have been soaked overnight at a bone

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chilling -15°F (-26°C) to -20°F (-29°C), without the benefit of a jumpstart. That is pretty much what batteries in the buses of the Burlington Transit Authority (BTA) in Ontario, Canada are expected to do in their winters. BTA jumpstarts their flooded (wet) Group 31 or 8D size batteries to get their buses going each winter day. Not having to jumpstart ODYSSEY® batteries in the winter is one of the reasons why BTA has been testing these high performance batteries in 10 buses. Stay tuned for future updates.

- A leader and innovator in the tracking, monitoring and controlling of refrigerated trailers has selected the CYCLON® cylindrical cell that uses the same high performance TPPL design as the ODYSSEY® battery. Since these trailers can be left unattended for extended time periods, extreme temperature performance and low self discharge

are critical requirements that the chosen battery must demonstrate. It just so happens that CYCLON cells have an operating temperature range of -65°C (-54°F) to 80°C (176°F) and low self discharge (they can be stored for up to 2 years at room temperature).

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We plan to publish this newsletter once a quarter and invite our readers to send in their battery application questions and concerns. Please send them in to [kalyan.jana@enersys.com](mailto:kalyan.jana@enersys.com).

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