

We have gotten many requests from the field to work on NSNs for replacement parts for our testers and chargers. **This makes sense, as many of you know most of our systems are repairable at the unit level.** Our 3 main charging systems, the ProHD, Pallet, and Bench Top will eventually have NSNs for all replacement parts. As NSNs are received our FSRs will push them out to the folks in the field. Here are a few of our recently assigned NSNs:

Heavy duty power cable for your ProHD, Pallet, Bench Top, or World Charger.

NSN 6150-01-618-0289



Replacement charging cable for your Pallet or Bench Top Charger.

NSN 6150-01-618-5359



Replacement NATO charging cable for your ProHD Charger.

NSN 6150-01-548-0939



**NOTE:** Many of these NSNs are being assigned by the USMC, but are open to all military units. If you are an Army (or another service) user and the required NSN info has not been loaded for your service to order please contact your supporting supply or SSA. They will have to catalogue the NSNs in the supply system. When catalogued they should be standard CLS-IX. Your local DLA rep can assist in this.

Update, for the new PulseTech 490PT+ digital battery tester. As many of you know this is a low cost, PM SKOT approved, tester that is standard on all newer SATs. It performs a fast and precise analysis of your 12-Volt battery and electrical system. **The testing algorithms differentiate battery configurations of AGM (flat and spiral plates), flooded cell, gel cell batteries and quickly displays battery voltage, cold cranking amps, condition of the battery, and state of charge.**

- GSA priced at \$340 if purchased directly from PulseTech, but can also be ordered via NSN.
- **Update:** NSNs for several items associated with the 490PT+:  
Replacement Thermal Paper: Part# 741x024, [NSN 7530-01-357-6852](#)  
Case Storage: Part# 741X030, [NSN 6625-01-617-9011](#)  
Cover Printer (clear plastic): Part# 741X031, [NSN 7045-01-617-8663](#)  
Case Protective, Flexible Rubber: Part# 741X032, [NSN 6625-01-617-7927](#)



Tester NSN 6130-01-510-9594

**Another savings success story:** GDLS on Fort Hood put a BMMP in place several years ago using PulseTech gear. Since they put their program in place they have documented **savings of \$256,692.40**, and an overall recovery rate of 60.5%.



Let's talk batteries and how weather effects them: Both heat and cold can dramatically effect how a battery performs. Today we will focus on State of Charge (SOC) and how that effects batteries in a cold environment. Specifically, how and when does a battery freeze.

You have seen in Automotive Lead Acid Batteries TM 9-6140-200-13, and VRLA specific TB 9-6140-252-13 that the SOC is directly linked to a batteries health and performance. Look at the charts on the right. You can see in the top chart that the Voltage reading on a battery can usually give you a SOC estimate. Notice at 12.3V a battery is considered 1/2 charged.

TB 9-6140-252-13 Dated: Jan. 2012

> 12.9 volts OCV: 95% - 100% SOC
12.7 volts OCV: about 80% SOC
12.5 volts OCV: about 60% SOC
12.3 volts OCV: about 50% SOC
12.1 volts OCV: about 35% SOC
11.9 volts OCV: about 20% SOC
11.7 volts OCV: about 10% SOC
11.5 volts OCV: about 5% SOC
< 11.4 volts OCV: 0% SOC

The second chart from the TM shows how as the SOC drops the specific gravity inside the battery also drops. The bottom chart then shows when the specific gravity drops a battery is much more susceptible to freezing. As you can see a fully charged battery would be extremely hard to freeze, but one that is even slightly discharged can freeze much easier.

TM 9-6140-200-13 Dated: May, 2011

State of Charge	Specific Gravity @ 80°F (27°C)
Fully Charged .....	1.280
75% Charged .....	1.250
50% Charged .....	1.220
25% Charged .....	1.190
Discharged .....	1.100

So, what does this mean for the average technician out there working on equipment in the cold?

- Do everything possible to keep batteries SOC as close to full as possible. This will eliminate most issues.
- If you suspect that a battery might be frozen do **NOT** attempt to charge, and **never** jump or slave the vehicle off. This could lead to catastrophic failure / exploding.
- When a battery freezes it can cause electrolyte expansion which can lead to cracked casings, leaks, etc. If swelling or damage to the casing is observed the battery is unserviceable.
- If not visibly damaged but freezing is suspected bring the battery inside to a warm up. This can take a couple of days for the core to fully thaw out as batteries are very dense.

Specific Gravity	Freezing Points	
	Celsius	Fahrenheit
1.000	0.0	+32.0
1.050	-3.3	+26.0
1.100	-7.7	+18.0
1.150	-15.0	+5.0
1.200	-27.0	-17.0
1.250	-52.0	-61.0
1.300	-70.0	-95.0

Reminder: On-site BMMP training and technical assistance visits are available to ALL Military organizations. If you have any questions about gear, SOP info, or would like to discuss training / assistance please contact one of our FSRs below.

FSR - Eastern US and International  
USMC – II MEF  
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FSR - Western US and USAPAC  
USMC – I MEF and III MEF  
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FYI: The latest Battery Maintenance Management Program (BMMP) training slides, previous Newsletters, and other pertinent information is available on our website: <http://www.pulsetech.net/Content/Applications/Military-LP.aspx>

Online PulseTech Military catalog: <http://read.dmtmag.com/t/12807>