BATTERY CHARGING & MAINTENANCE

Small (Parasitic) drains on the battery will require Battery Maintenance when our Hot Rods are parked for extended time periods ***and*...**
When recharging a low battery SLOW RATE is the most thorough and gentle method.

High Powered alternators on modern Hot Rods can be abusive to partially discharged batteries. / And the partially discharged battery can cause alternator overheating too.

Most all of us have a few vehicles in our stables that are not all are driven frequently, and as with any car equipped with modern equipment, **small "parasitic drains" kill the batteries** when a vehicle is parked for extended time periods.

SMALL DRAINS WHEN PARKED

In the many years of testing and servicing cars, I have found that cars equipped with modern electronics will have small drains when parked. Not that there is any electrical system defect, and the drains are of such a small amount that they would never be noticed if the car was driven significant distance at least a couple of times per week.

Even a small "entry level" radio with a station memory and clock will cause a small drain. Add an alarm system, and more drain will be added. Add a computer for electronic engine management (modern fuel injection) and the amount of the drain will grow larger yet.

BCI used to publish in their battery service manual that "a drain of more than 0.1 amps is a problem, and should be fixed." **B**attery **C**ouncil **I**nternational is the organization that gives us industry standards for battery sizes and levels of electrical power, as well as practical guidelines for testing and servicing batteries. BCI gives us "group sizes," and electrical specs such as Cold Cranking Amps to measure starting power, and Reserve Capacity rating to judge how far we might drive if the alternator fails. The recommendations and standards of rating given to us by the BCI are in general very practical and useful.

However, in the "real world" the amount of drain that is "normal" and can be tolerated is a gray area–It's not practical to draw a steadfast line for acceptable amount of small drain on the battery when a car is parked and shutdown. An amount that is normal for one car might be excessive for another. And the amount of drain that will be a problem largely depends upon how frequently the car is driven. In example, a drain measured at between 0.02 and 0.03 amps might be normal and not a problem for a well equipped, late model, daily driven car. But the same 0.02 to 0.03 amp drain will soon take its toll on a battery in a Hot Rod, if the car is only used for short drives on an occasional basis.

Therefore, we must use a little judgment and logic where drains on batteries are concerned. We could disconnect the battery every time the car is parked, and reconnect the battery every time we go for a drive. And if the battery is hidden, we could even install a "main battery switch" to make it simple to disconnect the battery. But, expect that we will have to reset the radio stations, and the clock too (if we want the time set), and we cannot use the on board alarm system. With modern factory electronic engine management

systems, constantly disconnecting the battery may be worse yet. Various systems will behave differently, but expect that any diagnostic codes will be erased. And the "history of driving memory" which helps the engine perform well will also be erased. (And it can take up to 20 warm-up/cool-down cycles for the "history" to become embedded in the computer.)

And also, you should consider that a battery lasts the longest and performs the best when stored in a fully charged condition. Occasional charging at least a small amount helps to keep the lead surfaces within the battery clean, which helps a battery to keep its full level of power rating a lot longer.

All factors considered, a special maintenance battery charger can be a very good investment. Ordinary, small "trickle" chargers can be dangerous when left unattended, and they can also destroy a battery by overcharging when they are forgotten. Ideally, a maintenance type charger will have special electronics to prevent overcharging when in use for long time periods. And the latter is the special and sensitive part of designing and building the maintenance charger. The good maintenance charger will also be fully protected from overloads to prevent fire. Most small battery chargers have overload protection, although the automatic-reset circuit breakers can get dangerously hot after cycling for a while. A fusible device would be a better choice with the maintenance charger, because it may be left unattended for long periods of time.