

LETS KEEP OUR MODEL A HAPPY

By Claude Sipe, Tech Advisor

GENERATORS OR ALTERNATORS

6 VOLT OR 12 VOLT ?

Does your Model "A" really need an alternator? How about a 12 volt negative ground, electrical system instead of a stock 6 volt positive ground? How about a 6 volt positive ground system with an alternator? What is best for "my" use, and what are the advantages of each. Hopefully I can help clear up some of these questions and you can make the right choice for your particular need. First of all the "stock 6 volt positive ground system, properly maintained is still working well in a lot of Model "A's" that have been on the road for 80 years or so. That is not to say the system is the best by today's technology. But for the engineering of the day it was well designed and has served us well! Frequently, poor wiring, bad connections, especially poor grounds, frayed wiring with broken strands, corrosion on battery cables, etc. are the underlying cause of unsatisfactory performance of your charging system. So be sure all of these things are in good order before "blaming" that no good 6 volt 3 brush generator.

STOCK SYSTEM

The factory stock 3 brush generator does require the most maintenance, but if you want a "Stock Model "A" or even a mostly "stock" vehicle then this is a good choice! A stock 6 volt system in good condition should give you several years of dependable service. Probably the worst trouble spot in this system is the "cutout relay" located on the top of the generator itself. This relay disconnects the generator from the Batt. any time the Batt. voltage is greater than the generator output voltage. This keeps the Batt. from discharging through the generator when the engine isn't running. There is an after market "diode" available to replace this relay, but of course you are now "going away from stock" There is also another disadvantage to the diode—it, like all diodes, has a small "reverse leakage" and over time the battery will tend to discharge back through the diode. This takes several weeks and is not normally a problem unless you store your Model "A" for long periods and do not have a battery cut off switch. You also need to pay attention to your charge rate with a stock system and adjust the 3rd brush for your type of driving. Your battery water should be checked more often because the stock system does not adjust the out put of the generator to match the load demand. In other words it doesn't know if you are running the headlights or not, it is just providing the amount of output you have asked it to by the adjustment of the third brush! There is also an aftermarket 6 volt "Halogen Head Light" now available if you drive a lot at night— again this is not stock, of course no one will know unless you tell them, and for night time safety its an excellent up grade.

Probably the biggest disadvantage to the 6 volt system is the use of after market accessories such as, CB Radio, G.P.S. Cell Phone Chargers etc. Here again modern technology has helped us out with inverters that change 6 volt + grnd. to 12 volt – grnd. They are getting harder to find but still available last I knew. We must remember our stock system was not designed for changing loads so you will need to monitor the out put by watching the amp meter.

6 VOLT ALTERNATOR POS GRND

An alternator has several advantages over a generator. First they turn much faster at the same engine speed, [a smaller drive pulley] so they put out more current at lower speeds. A generator spins a coil of wire inside a magnetic field and this creates an A.C. voltage. This A.C. voltage is then changed to D.C. by use of the comutator and brushes. All the generator output must go thru the brushes and this is a point of heat and wear. An alternator on the other hand spins a magnetic field inside a stationary coil of wire [called the stator] that is wound to provide 3 phase A.C. This A.C. current is then rectified by use of a 3 phase diode bridge and this provides a much “cleaner” more efficient out put. Also there is less physical clearance inside the alternator and this helps make it more efficient. With a 6 volt positive ground. alternator you can simply replace the stock generator and the internal voltage regulator in the alternator will adjust the output as the load demands. You don’t need to change anything else. Remember you will still have the “12 volt accessory problem” to deal with, but your alternator will automatically adjust the out put to match the load.

12 VOLT ALTERNATOR NEGATIVE GROUND

A 12 volt negative ground system will be the most expensive and the most labor intensive system to convert your “ Model A’ to. However if you do a lot of touring and run a lot of 12 volt accessories you may want to make this conversion. First as in all electrical systems all wiring, and grounds, and connections must be in good condition. You can’t fix a poor electrical system simply by changing to 12 volts! That said you must change out your generator and mount a 12 volt internal regulator alternator. It is necessary to change all light bulbs to 12 volt bulbs. You also need to add a ballast to your coil and reverse the polarity of the coil [the negative terminal will now go toward the points]. The Starter will usually take the abuse but be sure you **do not crank a 6 volt starter on 12 volts for more than a few seconds** or you will run a very high risk of ruining the starter. The best option is to change the field coils to 12 volt coils, these 12 volt coils are available and when placed in your starter they are in series with the 6 volt armature—this makes your starter about equal to a 9 volt system. It cranks well and seems to hold up good. [I personally have used this system for 15 years without any trouble, however I make sure the engine starts readily]

In closing I will say any electrical system on your vehicle, if properly maintained and correctly installed should serve you well, as noted above the alternator has several advantages over the original generator, but if you can’t stand the thought of a bystander looking under your hood and asking “is that stock?” while he points at your shinny new alternator, then humm maybe-----I’ll paint it black!

Lets keep our Model A” happy

Your tech advisor Claude Sipe

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