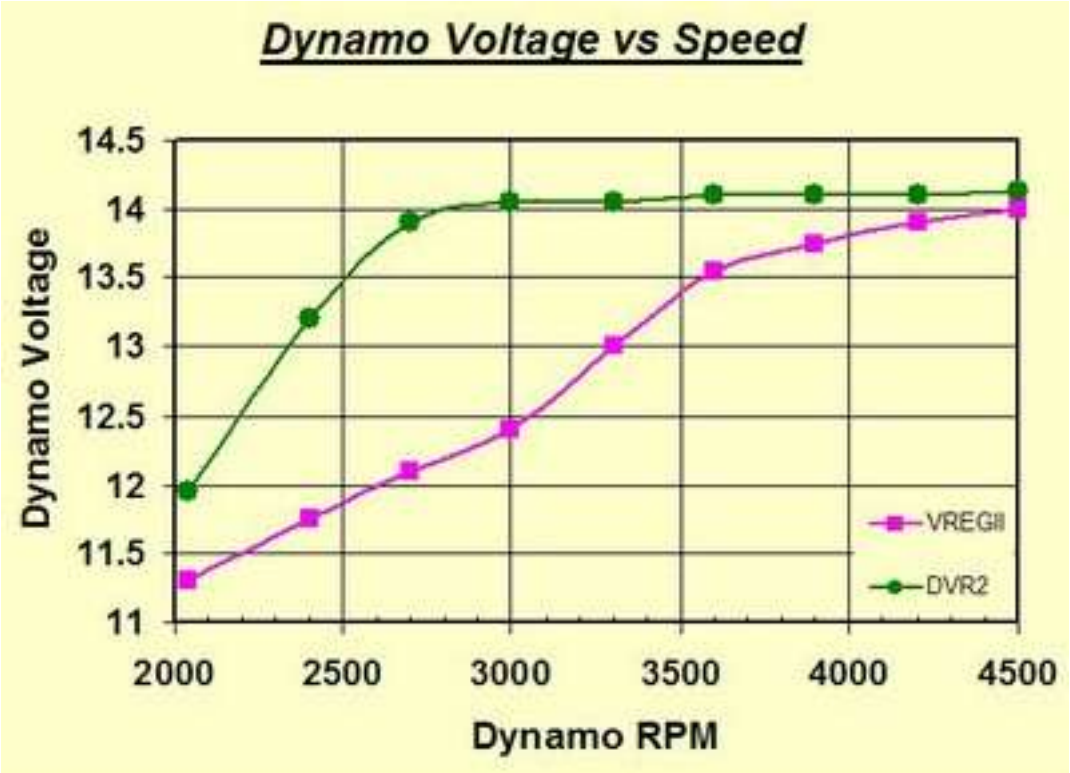
Why another solid state regulator?

Dynamo Regulators Designer Mike Hutchings:

"Some years ago I converted to a 12 Volt electrical system on my 1960 BSA A10, employing a commonly available electronic regulator. At the same time I fitted electronic ignition to replace a worn out auto advance unit and tired magneto. With the updated ignition now dependant upon battery charge the efficiency of its charging system became critical. The regulator I had chosen struggled from the start to maintain a decent charge rate. At one stage I ended up with a flat battery during daytime riding. No lights, just the ignition drain of about 2 Amps (plus the low speed redundant 2A field current) was a problem following much local bimbling around. Fitting a belt drive kit to increase the dynamo speed by 25% or so helped. But as an electronics designer I realised that a better regulator solution should be possible."

"Following some serious development effort the first DVR was produced and proved very effective on the A10, and then on a number of other machines. Charge balancing speeds were a good 20% or more lower, and regulation across the rev. range improved. Headlight drain balanced at 10 mph slower in top gear on the BSA....a real result! The improved charge can clearly be observed at the ammeter. A refined unit has subsequently been designed which uses highly reliable Surface Mount components, and with added circuit protection against mis-connections and overload. This design is the version now available as the DVR2."

Mike is an active member of the BSA Owners' Club, and has owned and ridden BSA's (and other bikes) all his adult life. He is a Chartered Engineer (Electronics) with an industrial background in Aero industry product development (engine accessories), sensor design and Condition Monitoring (oil analysis).



The graph shows the output voltage from a Lucas E3L dynamo (unmodified '6V' unit with 60 Watt rating) across a range of speeds for the DVR2 and another common regulator. A 40 Watt bulb was used as a test load. The much higher output from the DVR2 between 2,500 and 3,500 makes a huge difference in the effective battery charging at modest dynamo speeds. (Typically equating to road speeds of 35 to 50 mph on many popular classics.)