Readers comment

Limiting engine rpm

To The Editor: There is an error in "Sure-fire ignition system safely limits engine rpm" [*Electronics*, April 4, p. 121]. In Mr. [L.G.] Smeins's Designer's casebook on a CDI system for autos, he states that to limit an auto engine to 6,000 revolutions per minute, the spark must be limited to 6,000 pulses per minute. That's untrue.

If the sparking rate of a normal engine is limited to 6,000 rpm, the engine would rev to 12,000 rpm because the four-cycle engines fire every other revolution. I'll bet not many auto engines would make it to 12,000. Mine wouldn't.

Tom Swanson
ITT
Cape Sarichef, Alaska

■ *Mr. Smeins replies: Mr. Swanson is correct in pointing out an error. The original draft stated that capacitor C_1 charges to 4.55 volts at a repetition rate equivalent to 6,000 rpm. I apologize for missing the deletion of "equivalent" in the rewritten manuscript.*

On the other hand, Mr. Swanson is incorrect in his analysis of the correct charging rate. Since the trigger operates on all cylinders, the repetition rate depends on the number of cylinders in the engine considered. For the example of an eight-cylinder, four-cycle engineer, 6,000 rpm is equivalent to 400 pulses per second or 24,000 pulses per minute—higher, not lower, than shown. A universal expression for the pulse rate is:

$$PPM = (\text{No. cylinders})(\text{rpm})/2$$

for a four-cycle engine