Synchronous-Motor Speed Control

I have an important suggestion for those who build the April 1981 cover project ("Synchronous Motor Programmable Control"). In 1959, I built what I think was the first variable-frequency power source for telescope clock drives. Like the author of your article, I tried to use a standard filament transformer as an output transformer, but I found that it failed dismally because its core losses were too high.

I found that I had to rewind the transformer to have twice the original number of turns per volt. This brought the losses down from 5 watts to about 1 watt, making 4 watts of useful output power available to the motor. Hence, I suggest a transformer with a 220-volt primary rating and a 40-volt center-tapped secondary rating.

The last I heard, the MM5369 programmable counter IC was readily available in its 60-Hz output version only, and it is my understanding that programming could be done only at the time of manufacture. Where can the 100-Hz version be obtained?—*George W. Ginn, San Jose, CA.*

Readers who built the project and who are having trouble getting their motors to run below 60 Hz might want to try Mr. Ginn's suggestion. Actually, the project was designed with transformer losses in mind—that is why the author specified the Signal Transformer Company's product.

Anyone who has had trouble obtaining the National Semiconductor MM5369 EST/N integrated circuit should try Circuit Specialists, Box 3047, Scottsdale, AZ 85257. That company sells the MM5369-EST/N for $2.85 postpaid and the MM74C90N for $1.82 postpaid. —Ed.