

# HOBBY CORNER

I like birds, but...

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I AM NOT FASCINATED BY BIRDS, BUT I DO enjoy watching them as they cavort about my yard in the morning and evening. I could identify only a dozen or so species if the need ever arose, so it's apparent that I do not study them beyond casual observation. (But that's enough to have discovered some of their quirks, and to understand that old epithet "bird-brain.")

The reason I'm saying this up front is just to keep you from assuming that I am an enemy of our feathered friends. I do like the little things as long as they stay away from where they don't belong. One of the places they don't belong is in the gutter on my patio roof. When they start carrying nest material in there, they're asking for trouble!

Not wanting to electrocute them or shoot them (and put holes in the patio roof), I despaired of finding a solution other than waving them off from behind the sliding doors. That action, by the way, is effective for about two minutes. Lately, however, they don't care for my gutter. They've learned to steer clear of it because I used my head instead of my arms. In case you have a similar problem, here's one approach you can take to solve it.

## Scaring the birds

It's all done with an old doorbell and a timer. The doorbell—minus the bell part—is mounted so that the hammer strikes the gutter (instead of a bell) when it is activated. It both vibrates the gutter and makes a bit of noise—enough of one or the other to send the birds scooting out of there.

At first, I rang the "bell" by pressing a

momentary switch when the need arose. Later, my smarts grew, and I put a small clock-type motor in the control box. On the shaft of the motor is a cam that completes the circuit to the bell for a few seconds every five minutes. The setup is shown in Fig. 1. Now, the "scare 'em away" action takes place automatically. After a while, even birds learn that my gutter is not a pleasant place to build a nest.

Of course, the motor can be switched in and out of the circuit. It is not necessary to let the thing sound off every five minutes forever. In fact, the mechanism isn't put in its automatic mode except early in the spring, and a little bit later whenever a new crop of youngsters starts the nest-building ritual.

The wiring diagram in Fig. 1 can also be used in case you need to keep away other animals (cats or whatever) without harming them.

## Computer-tape copying

Both Paul Rittenhouse (PA) and P.J. Donnelly (NY) have written to ask about methods of copying computer programs and data that have been stored on tape. Of course, they can load the data into the computer from one tape and store it on a second one—but that is a time-consuming process. And I don't blame them for trying to find a way around it.

They would like to make copies directly from one tape machine to another but have discovered that this procedure seldom, if ever, produces a usable tape. The reason, of course, is that the signal, which, ideally, is a squarewave, goes through many distorting audio circuits. With two recorders, the signals go

through double the normal number of input and output circuits.

What you need, fellows, is a device that will actually reconstruct the signal from one recorder before it goes into the second one. There are commercial devices available, and there were a couple of circuits in the computer magazines several years ago for such a device. Be forewarned, however, that such devices are computer-specific. You know that a tape from one kind of computer cannot be read by another kind—there is no standardization of signals used. Therefore, the "black box" between recorders must be designed to reconstruct the exact type of signal needed. Perhaps you can modify one of the old circuits to match your computer. Sorry I can't be more specific, but I wish you good luck. Let me know if you are successful—I'll spread the word.

## BCD readout

Joe Czerniak up in Michigan would like to put a BCD (Binary Coded Decimal) readout on his digital clock. He figures it will be just as useful with that type of readout and it will be a conversation piece to boot. Well, Joe, the details will vary depending upon the specific clock you have but I can show you enough to get you started.

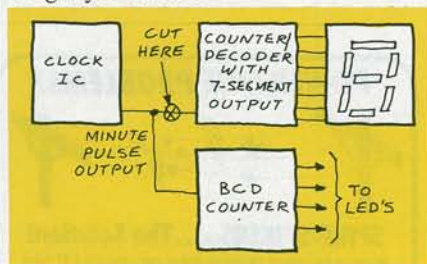


FIG. 2

Clock circuits come in at least three main types. One has the 7-segment readouts driven by multiplexed lines straight from the clock IC. If yours is of this type, the changeover can be quite complex, so I'd advise you to go out and get another one to modify!

A partial diagram of the second type is shown in Fig. 2. In this example, the minute-pulse drives a counter/decoder that has a 7-segment output. Your best bet is to connect a BCD counter to the output of the clock IC in place of the counter/decoder.

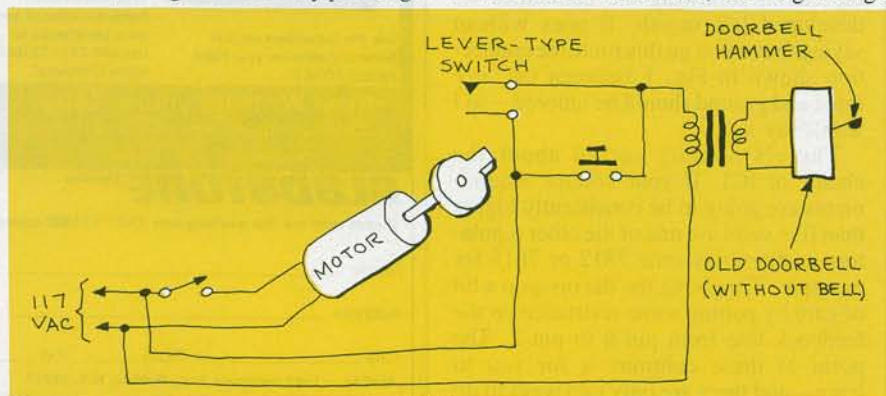


FIG. 1

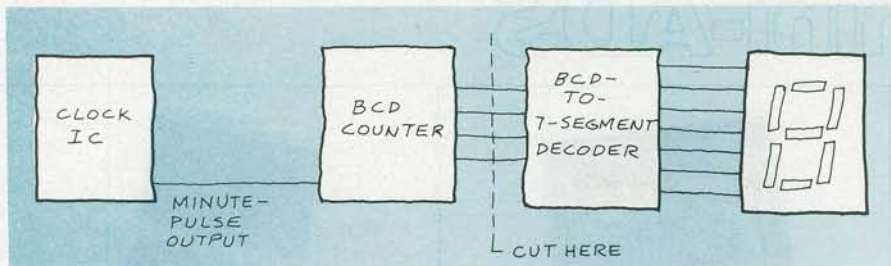


FIG. 3

The BCD counter has "1," "2," "4", and "8" output lines, and all you have to do is to hang an LED on each one. Of course, you will have to replace each of the original digits with a counter (each with four LED's). You could tie the LED's to  $\pm 5$  volts or to ground (through appropriate resistors), depending on whether you want to read LED's that are on or off. If you use the latter, you'll really have a conversation piece—even with those visitors who recognize the BCD readouts! The tens-of-hours digit can be replaced with a single LED if the clock is the 12-hour type.

The third type of clock has separate counters and decoders instead of the combination counter/decoders of the previous one. You're in luck if you have this type—it's by far the easiest to modify. Now, all you have to do is disconnect the decoders (cut the lines as is shown in Fig.

3) and hang LED's on the lines of the counters that are already there. Could anything be simpler?

That should be enough guidance, Joe, for you to get the job done. Arrange each set of four LED's in a row or column and have some fun by daring the uninitiated to read the time.

### Model speed

Rick McQuillan (Wisconsin) is looking for a way to time the runs of slot cars and pinewood derby cars. Rick, look back at "Hobby Corner" in the January and February 1981, and December 1982 issues of **Radio-Electronics** and you will find some information that should solve your problem. If you don't keep your magazines (and I can't understand why you don't), then you'll have to check with your local library.