

## Reader Project Updates

• I enjoy the construction projects presented in *Modern Electronics* and sometimes see ways to improve on a published project. A case in point is the "Two-Line Telephone Answering-Machine Interface" that appeared in the February 1990 issue. In the article, the author noted that polarity of the phone lines is critical. I submit here a modification that creates a bridge circuit for seizing the line that is

not in use. The original circuit equivalent is shown in Fig. 1. By adding three diodes per phone line, as shown in Fig. 2, the full-wave bridge circuit created makes polarity a non-issue.

If the top line in Fig. 2 is positive, as required in the original circuit, when  $Q_a$  and  $Q_b$  conduct, current flows through D1,  $Q_b$  and D2. Conversely, when the top line is negative (no current flows in the original circuit), current still flows

through D3,  $Q_b$  and D4, thus seizing the phone line and causing a busy signal to be received by a caller on that line.

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• We have two telephone lines and one answering machine in my home. We've looked in the past for a device that would enable us to have the answering machine pick up either line, to no avail. I gave up looking for a solution long ago. Then the "Two-Line Telephone Answering-Machine Interface" that appeared in the February 1990 issue came along to solve the problem. However, while building the project I discovered two errors. One is that mention of C4 and R9 was omitted from the Parts List. The other is that J1 and P2 on the wiring guide were transposed. Unless this is corrected, phone line voltage from Line 2 will be fed into Line 1.

Thanks for an interesting solution to my problem. Keep the useful projects coming.

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