Keypad encoder

A simple and inexpensive solution to the problem of encoding a push-button numerical keypad can be achieved using the following circuit. Whenever an odd-value key is pressed, transistor Tr_2 saturates and provides the 2^0 output. The other outputs are pulled down as appropriate for the depressed key. When an even-value key is depressed, Tr_1 saturates and drives the strobe line low. Because the strobe line is also pulled low by Tr_2 through D_3, it indicates than any key has been pressed. Outputs 2^1, 2^2 and 2^3 are pulled low as appropriate. Keys 6 and 7 are required to pull down both 2^1 and 2^2 outputs. This is done through D_1 and D_2.

The output swing is between +V and about 1V, and will therefore interface directly with c.m.o.s. logic.

A. F. Cross,
Old Windsor,
Berks.