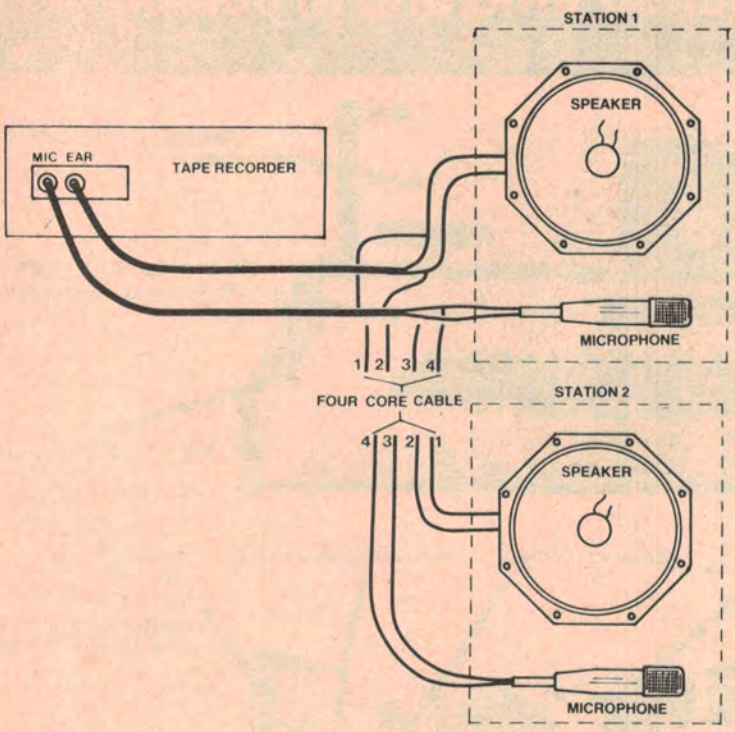
Ideas for Experimenters

These pages are intended primarily as a source of ideas. As far as reasonably possible all material has been checked for feasibility, component availability etc, but the circuits have not necessarily been built and tested in our laboratory. Because of the nature of the information in this section we cannot enter into any correspondence about any of the circuits, nor can we produce constructional details.



'Jury-rig' intercom

This intercom can be 'jury-rigged' in an instant (well, . . . almost), yet is very effective. You need a tape recorder (say, a cheap cassette deck or whatever you have on hand), two small speakers and two crystal or dynamic microphones (crystal types are best).

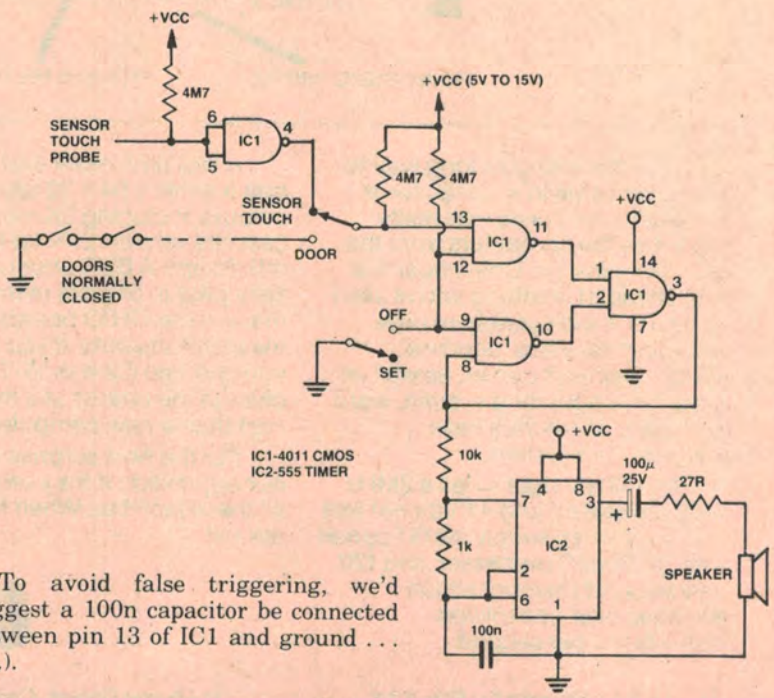
It uses the 'monitoring' function in the tape recorder in the recording mode. When a person at either station talks into the mic. the signal passes through the recorder, is amplified and passed to the speakers. To avoid feedback, levels should be kept low and the mic. and the speaker physically shielded from each other at each station. Alternatively, a DPDT slide switch could be connected to switch the mic. in and speaker out during 'talk' and vice versa during 'listen'. A 'dummy' cassette has to be inserted to 'fool' the recorder.

That's quite an ingenious idea from **Craig Forsythe of Williamtown, Vic.**

Burglar alarm cum water level detector

This circuit can be used to suit your own alarm applications and comes from **Lim Beng Cheng of Singapore.**

The 'sensor touch probe' can be used to trigger the alarm circuit from a person touching it or from a probe in a water vessel being covered by the water (or some fluid). For conventional burglar alarm operation the alarm can be triggered by normally closed contacts such as reed switches, window tape etc. A switch permits selection of the mode of operation. Another switch permits the alarm to be 'SET' or turned 'OFF'. IC1 is a 4011 CMOS quad NAND-gate while IC2 is a 555 timer used to derive an audio alarm. Three gates from IC1 are connected as a flip-flop. When both inputs are high, the output goes high and IC2 will oscillate, providing an audio alarm. The sensor touch alarm is simply one CMOS NAND-gate connected as an inverter. When the sensor touch probe is touched, the gate input will go low and the output high, activating the flip-flop.



(To avoid false triggering, we'd suggest a 100n capacitor be connected between pin 13 of IC1 and ground . . . Ed.).