

# Ideas for Experimenters

## Programmable wiper controller

This simple circuit uses cheap, readily-available components.

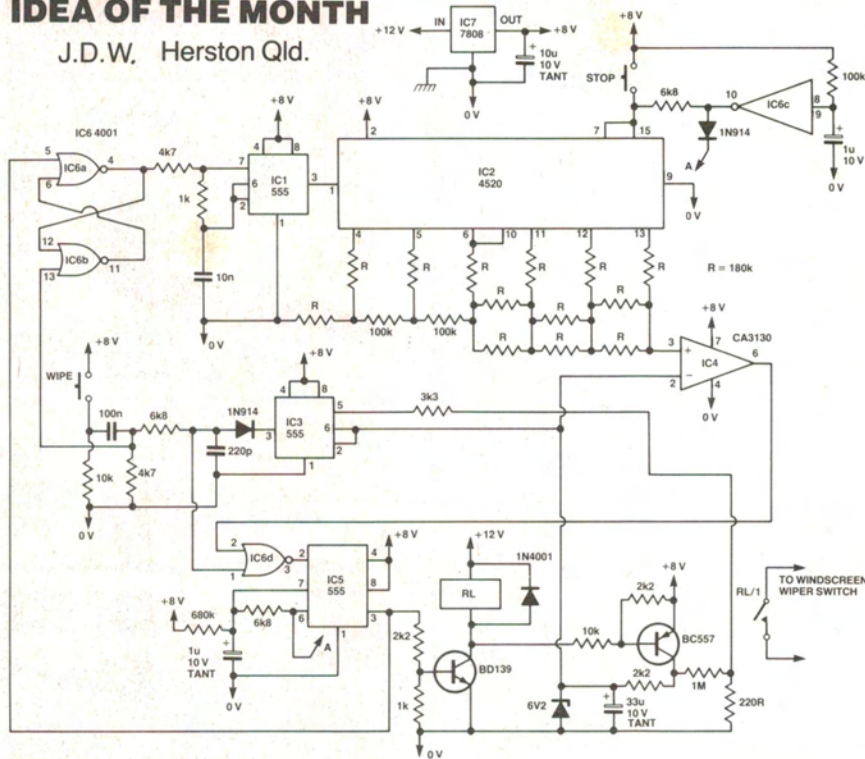
The relay contact is wired in parallel with the standard windscreen wiper switch. A single push of the WIPE button activates the relay for about one second, giving one wipe of the screen. Another push of the WIPE button within 40 seconds of the first will operate the wiper again, which then continues at the interval set by the time between the first and second presses of the WIPE button. The interval is therefore easily programmed by pressing the WIPE button twice, when the screen needs wiping at intervals. If the rainfall increases, the WIPE button is pressed again to set a shorter interval between wipes.

The STOP button may be pressed at any time to stop the wiping. However, if the WIPE button is again pressed within 40 seconds after the last wipe, an interval is again programmed. The last wipe is always remembered as long as it was less than 40 seconds ago. Programming becomes second nature once you've done it once or twice and requires no fiddling.

The circuit operation is as follows: If a wipe has not occurred within the last 40 seconds, pins 6 and 2 of IC3 are below their threshold level, so pin 3 of IC3 is high. When the WIPE button is pressed, pin 2 of IC5 momentarily goes low, allowing the one-second monostable, IC5, to work, activating the relay and the wiper. At the same time, the 33uF capacitor is charged up. This discharges slowly after the relay has again turned

## IDEA OF THE MONTH

J.D.W. Herston Qld.



off. When the WIPE button is again pressed, within 40 seconds of the first press, pin 3 of IC3 is now low (pins 2 and 6 are above the threshold) so IC6d cannot operate. The flip-flop formed by IC6a/IC6b is switched so that the oscillator formed by IC1 is enabled, thereby causing IC2 to count up, ramping up pin 3 of IC4 until the voltage on it rises to that on pin 2, thereby operating the monostable, IC5, via IC6d. IC6a is also

switched, stopping the counter. A count is thus stored in IC2, corresponding to the interval time.

The STOP button resets the counter. IC6 forms a power-on reset circuit.

The circuit was built on a 60 x 67 mm pc board and mounted in a cigarette box-sized case under the dashboard, with the two buttons on the front. The relay was mounted in the engine compartment so it could not be heard.