

CHELMSFORD AMATEUR RADIO SOCIETY
Newsletter Number 79

Club Meeting

The next meeting of the Society will take place on Tuesday, 1st August at the Marconi College, Arbour Lane, Chelmsford, commencing at 19:30. Following the success of an "open house" meeting last year we have booked the Chairman for this month to present "Chairman's Folly".

Committee Meeting

The next meeting of the Committee will take place on Wednesday, 16th August in the Saloon Bar of the "Wheatsheaf", New Street, Chelmsford, commencing at 19:30.

Raffle

There will be a large selection of tools and books etc..

Editorial

"709's" - You may be interested to know of two applications mentioned on pages 348/9 of the July 1972 Wireless World - a square/triangular wave generator and a high-pass filter.

Signal Generators - Two of a kind were sold at the June meeting, together with one handbook. Enclosed within the handbook was a circuit diagram for yet another signal generator - type 888. Would the member holding this diagram kindly return it to the Chairman for distribution to the purchaser of the 888.

June Equipment Sale - Some disquiet has been expressed by at least one member concerning the amount of equipment bought by some people in attendance at the meeting. I have neither the space nor inclination to indulge in semantic, procedural or moral arguments. Suffice to say that to my knowledge all attendors were either members or very welcome guests invited by members and as such, were entitled to buy whatever their pockets could afford and to use, or dispose of, their purchases in whatever manner they wished.

73's
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Our recent lecturing "efforts" (June 1972 Club meeting - Editor) have produced a considerable amount of feedback, which has encouraged us greatly; it shows that we stimulated some interest, and we are relieved to find that we are not after all in the wrong profession. The small number of questions after the event suggested that either all had been so crystal clear that no problems would arise, or that we had lost everyone at an early stage. We were on the point of retiring to a cloistered haven somewhere away from the 'Real World', there to teach future generations of engineers when the first problems began to filter back. So, before we describe the Bug-Key modification, ref. Figure 1, (this is logically correct as you will discover! - Editor), a few words of clarification are necessary.

Supply Voltage

The nominal supply voltage for these Digital Circuits is 5.0 Volts. This can vary by 0.25v and the circuits are guaranteed to work still. In practice, however, wider variations are possible as the margin is much greater and supplies of 4.5v or 6v will often prove satisfactory. Voltages greater than 6v may damage the circuits. It is recommended that a mains supply of the type described for the calibrator is built, if many logic circuits are being built, as it eliminates one source of trouble.

Perhaps the above remarks will explain why we referred to a "HIGH" or "LOGIC 1" state as +5v. The terms are often interchanged.

Pin Numbering

Unlike many transistor and valve-base diagrams, IC's are usually drawn as seen from the top. In this series of circuits pin 1 is identified on the top of the pack by a dimple in the plastic encapsulation. If the circuit is turned so that this dimple CS in the top left-hand corner, ref. Figure 2, then pins 1 to 7 are down the left hand side and pins 8 to 14 are up the right hand side (with pin 8 in the bottom right hand corner). This numbering was not explained on the Bug-Key circuit diagram.

The ST828 and 8859 (and many of the other circuits available) have pin 14 as +5.0v and pin 7 as 0 Volts.

Constructional Suggestions

The mention of 'plain' or 'trackless' Vero-board has confused would-be constructors. Most of you will have come across Vero board with copper tracks as an aid to interconnection. The sort of Vero we used is a piece of Paxolin type material with a matrix of holes spaced at 0.1 inches, but without the copper. The integrated circuits fit the 0.1 matrix, being 0.3 inches by 0.7 inches. At first sight, the tracked Vero-board might appear more useful, but in practice, the time spent cutting the unwanted connections, searching for solder blobs causing short-circuits and repairing damaged tracks far surpasses the time taken to individually wire the packs.

Layout is not particularly critical. Packs should be inserted in 'rows and columns' for convenience, with three or four lines of holes between each pack. These leave room for the interconnections to be run between packs. If you look at the pin connections for the Dual D-type or the Dual 4-input gate, you will find that each half occupies one side of the package, i.e. pins 1-6 and pins 8-13 with 7 & 14 for power supplies. In both the calibrator and keyer circuitry is repetitive in that a Bistable output connects to the next Bistable input. This makes wiring easy if done systematically.

Well, we hope you have fun and manage to get some results with the circuits.

73's

G3KRZ/C/3/1

Jim & Bill

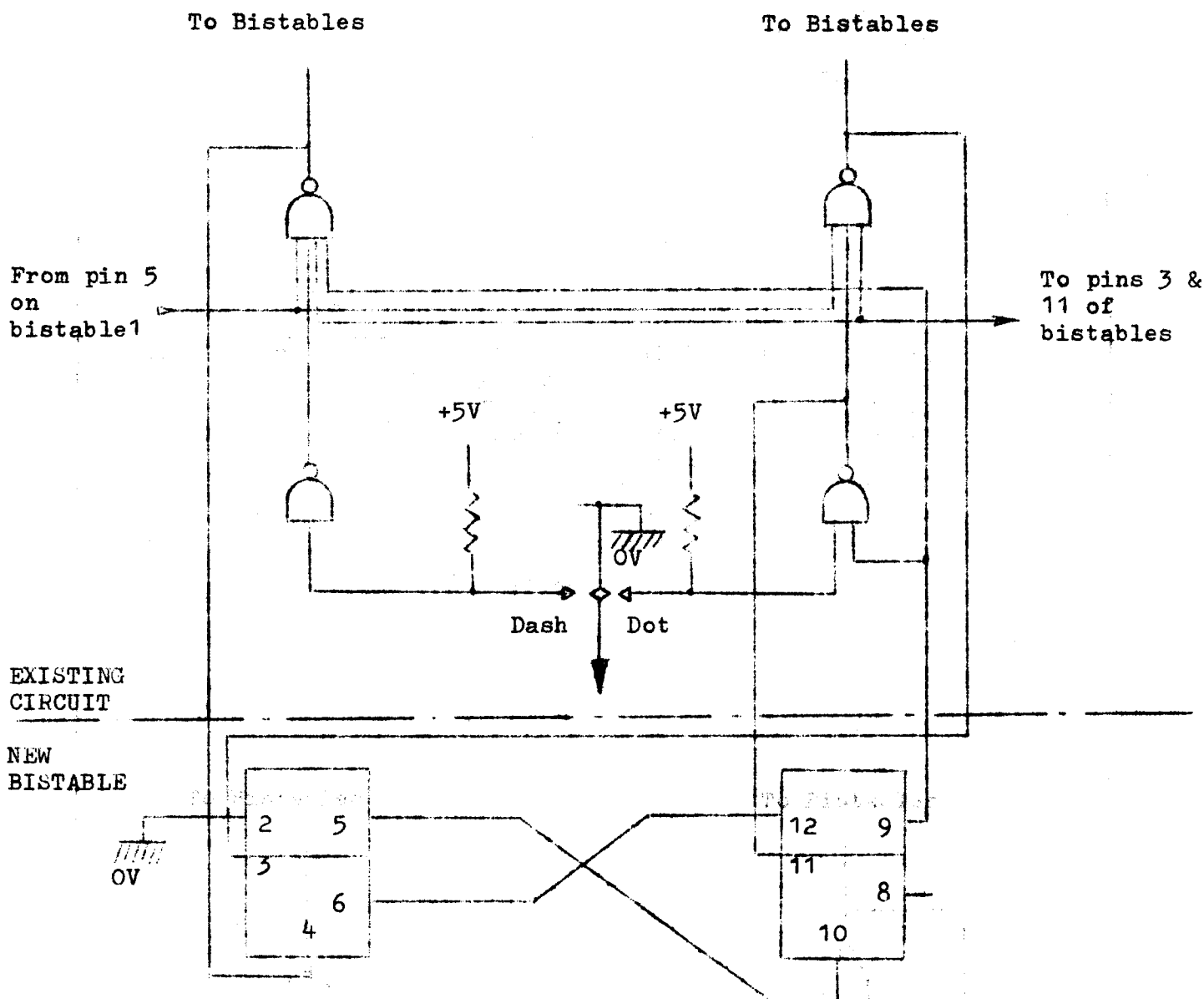
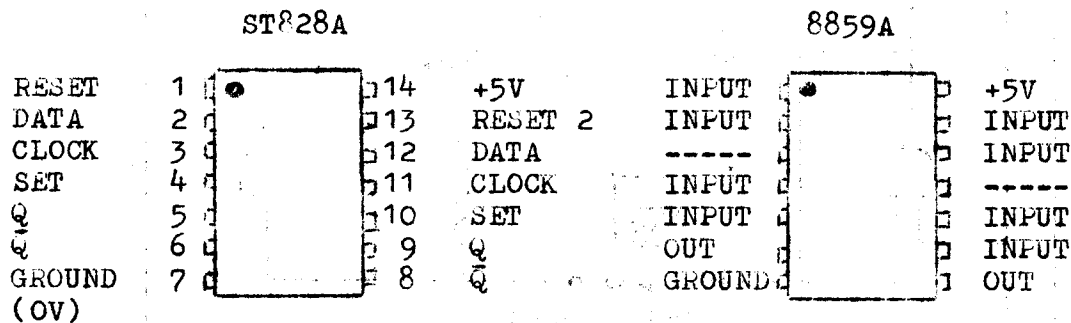


FIGURE 1



NB both are top views

FIGURE 2