Letters to the Editor

CIRCULAR INSERT GENERATOR

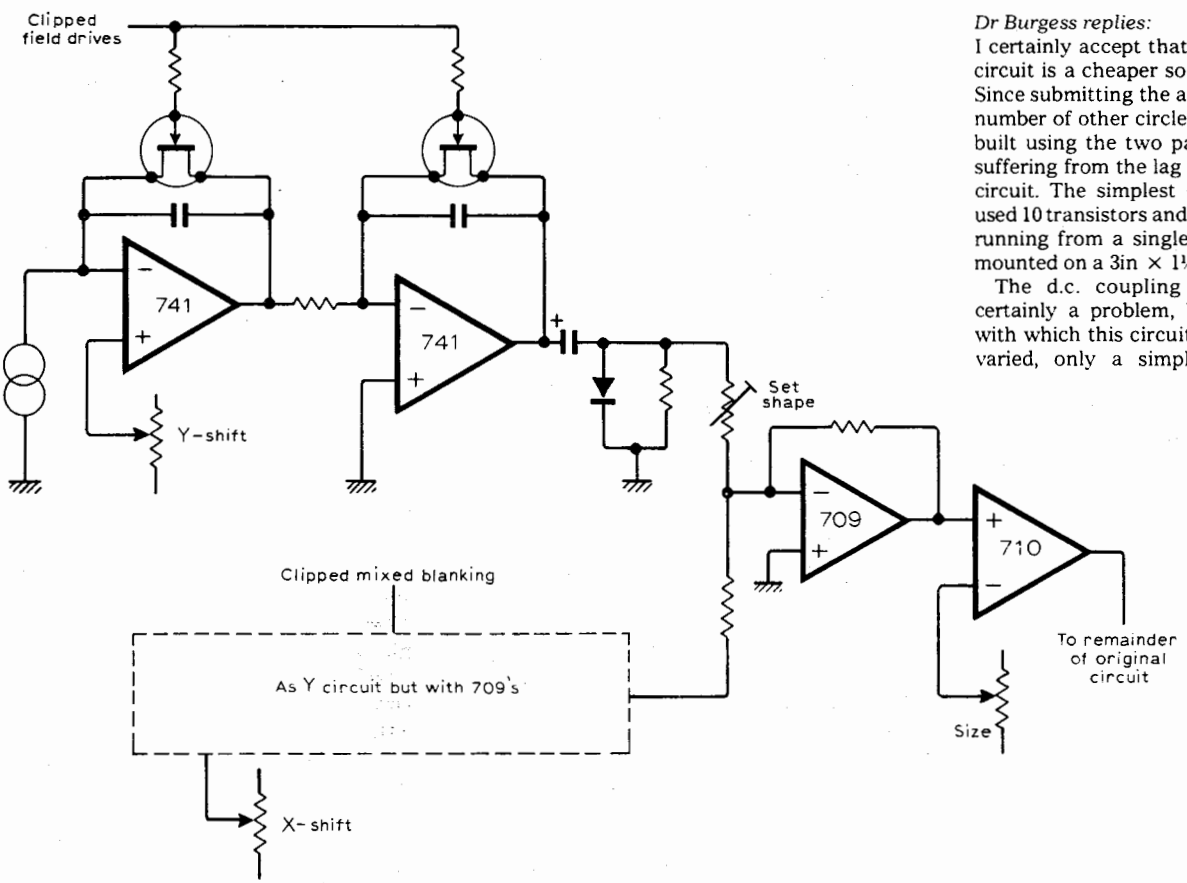
I read the article by D. E. Burgess in your January issue, entitled "Circular insert generator for television" with interest but feel that the use of two multiplier/divider circuits is rather extravagant.

The circuit of Fig. 1 outlines a cheaper and simpler solution, eliminating the multipliers and using a single rather than a dual comparator. The circuit generates the functions $(x-a)^2$ and $(y-b)^2$ by integrating the sawtooth waveforms of the original design and d.c.-restoring the resultant parabolae to prevent the shape of the circle varying as its position is adjusted. The parabolae are added and compared to a constant giving the circular area $(x-a)^2+(y-b)^2 \leqslant c^2$.

There is a possible disadvantage in that the field rate d.c.-restorer will cause slight lag on the action of the Y shift control. In most applications this would not be serious.

I also note that the video input signals are d.c.-coupled. Unless the black levels of both have been fixed (e.g. by clamping) immediately prior to the unit the black level of the circular insert will be uncontrollable and will depend on the average levels of the two input signals. This problem is commonly found on inexpensive commercial units and is extremely frustrating when producing tv programmes.

J. Borin,
Student Television of Imperial College,
London, SW7.



Dr Burgess replies:

I certainly accept that Mr Borin's suggested circuit is a cheaper solution to the problem. Since submitting the article for publication a number of other circle generators have been built using the two parabolas idea, but not suffering from the lag problem of Mr Borin's circuit. The simplest solution found so far used 10 transistors and a 709 as a comparator, running from a single 9-volt power supply, mounted on a 3in × 1½in p.c.b.

The d.c. coupling of video signals is certainly a problem, but since equipments with which this circuit might be used are so varied, only a simple video circuit was

described, to be used as a guide for potential users.

Could I point out an omission from the circuit diagram, as published? The junction of R_{15}, R_{45} and R_{46} should be connected to earth.

Mr Canning's article in the December issue of *Wireless World* draws attention to one of the more scandalous aspects of modern scientific-engineering but I wonder why he limits his comments to the resuscitation of forgotten ideas? Many have innocently made reputations and money from re-invention right alongside the originals.

Perhaps the best example of this is the super cathode-follower which, worldwide, operates happily in the same equipment as its prototype the stabilized power supply.

But we are all fallible and Mr Canning falls into his own trap of non-recognition when he talks of two-terminal negative-resistance tube oscillators. A basic proposition of oscillator theory is that any frequency-selective device can oscillate when its losses are zero. Electronic oscillators consist of a frequency-selective circuit (which, in practical form, has losses) and an active device which provides an effective negative resistance to cancel those losses. The circuit configuration is irrelevant to an oscillator except that, in the completed device, it determines the desired performance characteristics.

K. H. Green,
Tintagel,
Cornwall.