

## SECTION 18

### KEYING PULSE GENERATOR GE2/518

#### Introduction

The GE2/518 accepts a line-frequency keying waveform, a key blanking waveform and a field sawtooth waveform: it produces a blanked keying waveform and a reversible and adjustable d.c. output for a field-control potential divider.

The GE2/518 is constructed on a CH1/12A chassis with index peg positions 2 and 21.

#### Circuit Description

The circuit of the GE2/518 is given in Fig. 18.1. The line-frequency waveform is fed to one input of a long-tailed pair which is used as a gate. The field sawtooth waveform is fed to the other input of the long-tailed pair via a Schmitt trigger circuit which includes transistors TR8 and TR9. The trigger circuit squares the sawtooth waveform at a voltage level determined by its d.c. component. The sawtooth also contains a line-frequency component so that the trigger circuit switches at the ends of successive lines instead of during the active part of the lines.

The output of the long-tailed pair is fed to a second long-tailed pair (transistors TR3 and TR4) which is used as a phase splitter. A relay contact CP-1 selects an output of the required polarity which is fed to the base of transistor TR5, one input of a blanking mixer stage.

The key blanking waveform is amplified, clipped

and increased in duration in a three-stage amplifier which includes transistors TR10 to TR12. The collector load of transistor TR11 is a delay network DNI terminated at one end and fed at an intermediate point. The terminated part of the delay network can be regarded as a resistance equal to the characteristic impedance of the network. The remainder of the network is open circuited. The current pulse from the amplifier divides equally between the terminated and open circuit portions of the network. The open circuit portion of the network reflects the pulse after a short delay. The direct and reflected pulses overlap as shown in Fig. 18.1. The tap on the delay network is adjusted so that the end of the stretched key blanking pulse occurs just before the end of the mixed blanking component of the video signals being wiped; see PA1/512, Instruction V.13.

The keying waveform and the key blanking waveform are mixed in the common collector load of transistors TR5 and TR13. This mixed waveform is clipped in an output long-tailed pair amplifier. This amplifier has an output impedance of 75-ohms provided by resistor R16.

Relay CR is used to reverse the d.c. control output.

#### Test Procedure

The GE2/518 is tested as part of its parent unit.

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*See overleaf for Fig. 18.1*

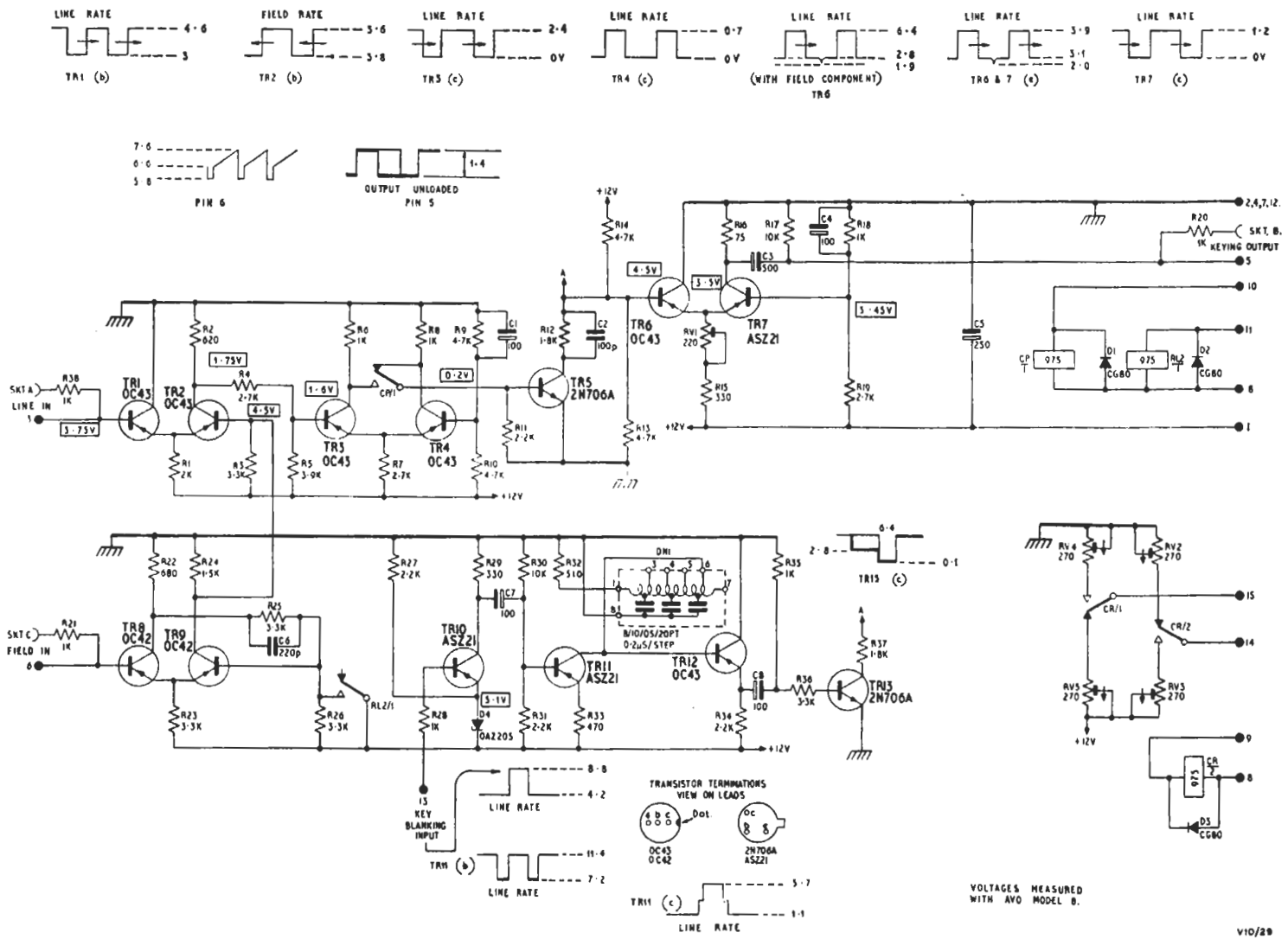


Fig. 18.1 Circuit of the GE2/5/18