



SUPPLEMENT SECTION

FOH INHIBITOR UNIT - Ref.939

1. SUMMARY

This unit, in conjunction with an associated FOH ('Front of House') fader, is used in installations where the response of a group of pre-selected channels (up to 40 per unit) is to be inhibited by the manual operation of the above Fader. The circuit comprises the d-c supply to the FOH fader, and four emitter-followers used to apply the potential at the FOH fader slider to sets of 10 gating and clamping diodes.

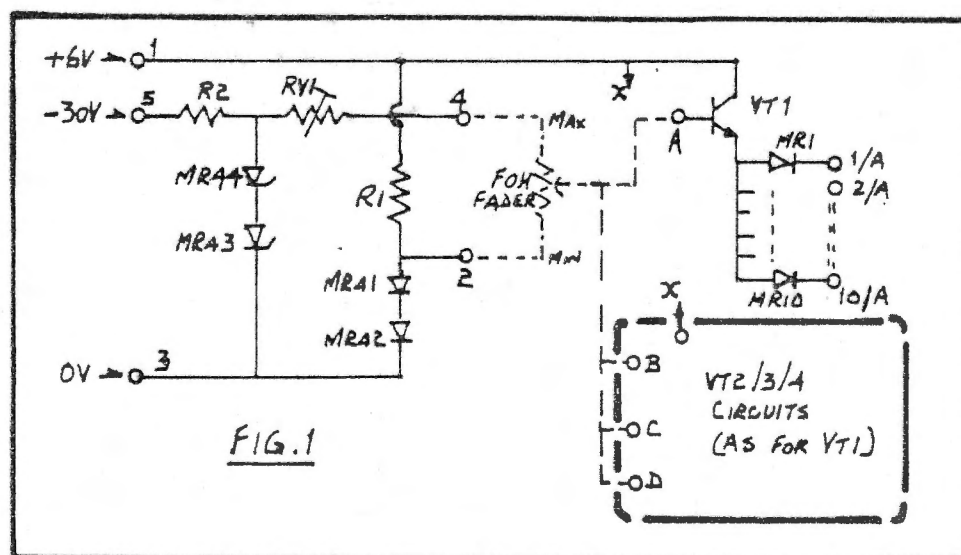
2. CIRCUIT DESCRIPTION

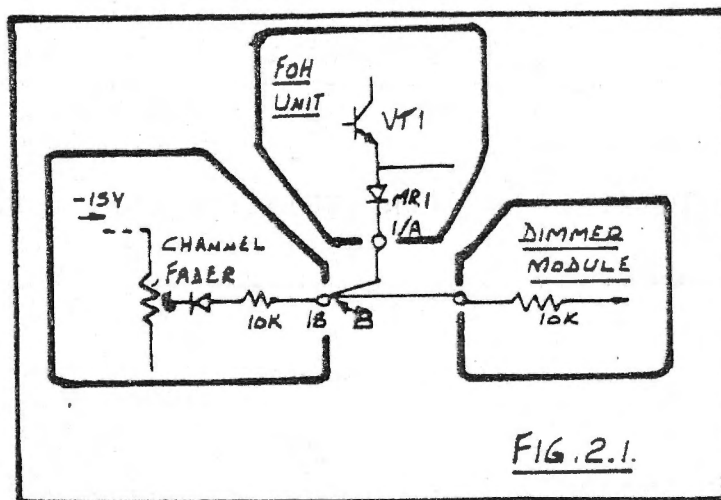
Note: All voltages are referred to terminal 3. Fig. 1 is reproduced from Rank Strand Electric drawing T867B and shows in detail the circuit of VT1 only.

Resistor R2 and zener-diodes MR43/44 serve to develop - 15V stabilised supply at R2-MR43 junction, this being used to supply the FOH fader via RV1. The diodes MR41/42 serve to bias terminal 2 slightly positive (+0.8V nominal) to compensate for the base-to-emitter voltage-drop in emitter-followers VT1-to-VT4 and diodes MR1-to-MR10.

Taking the circuit of VT1 and diode MR1, for example, the external connection to pin 1A is shown in Fig. 2.1.

The 'on' or 'off' state of diode MR1 will be determined by the value of voltage at VT1 emitter relative to that at terminal B

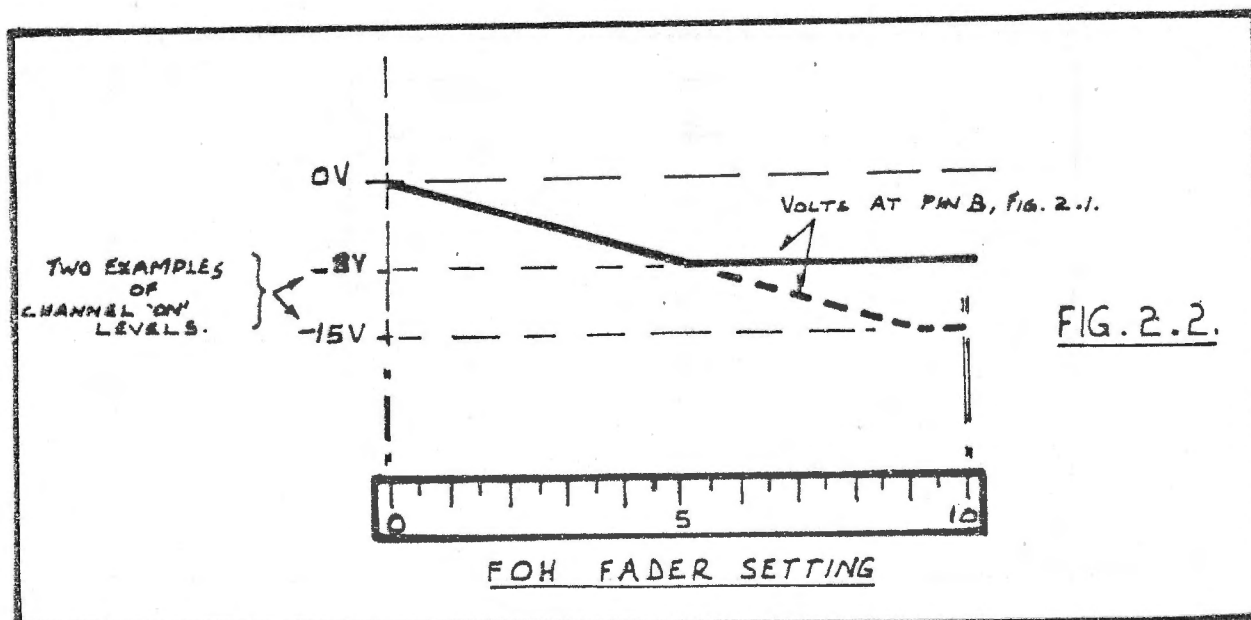


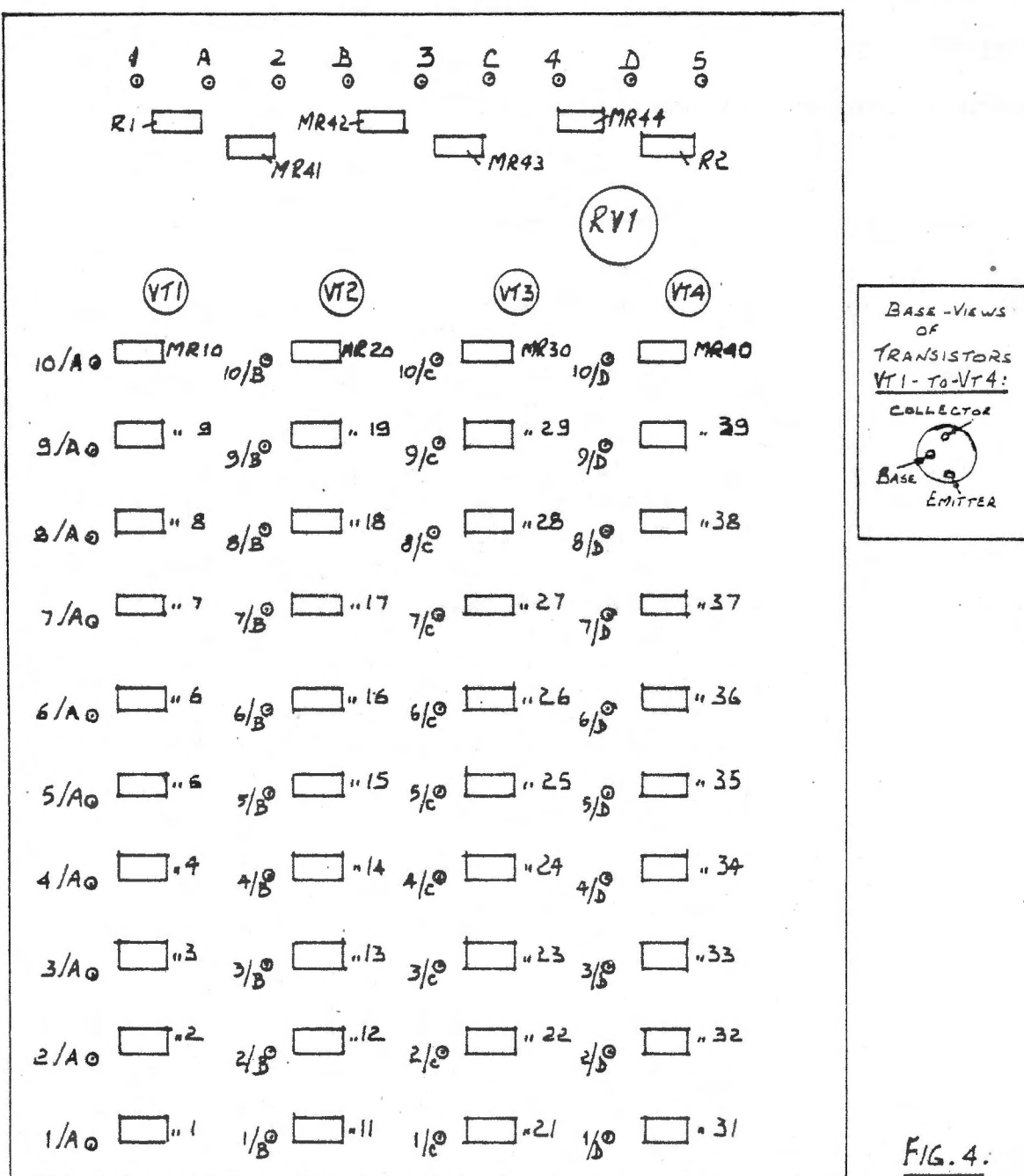


(in Fig.2, assuming this terminal is not connected to output pin 1A). This latter voltage will be some negative value (up to -8V or so maximum), depending on the channel intensity required when FOH inhibition is removed.

With the FOH fader set at its minimum, VT1 emitter will be at about zero; hence MR1 will conduct and clamp terminal B at 0V, ensuring that the channel output to lamp is zero.

As the FOH fader setting is increased, VT1 emitter will become progressively more negative; diode MR1 will continue to 'clamp', rendering terminal B more negative and increasing the channel output gradually, until VT1 emitter becomes more negative than terminal B. At this point, diode MR1 will be back-biased, effectively disconnecting terminal B from VT1 emitter and allowing the voltage at B to remain at the normal 'on' value of negative volts preset by its channel fader. Fig.2.2 illustrates the variation of voltage at pin B as the FOH fader is moved from minimum to maximum, and vice-versa, for two example channels, one set for -8V for fully 'on' and the other set for -15V fully 'on'. It can be seen that the brighter channels start dimming earlier as the FOH fader setting is reduced from maximum to minimum.





VR1 is normally set to ensure that all the FOH channels are 'on' at required intensities with FOH fader at maximum.

3. PERFORMANCE & TEST DATA

(See 'Note' in para 2)

Supply voltage to terminal 5: $-32 (+3)$ V d-c.
 Supply voltage to terminal 1: $-15 (+0.5)$ V d-c.
 Voltage at R2-MR41 junction: $-15 (+1)$ V d-c.
 Voltage at terminal 2: $+0.5 (+0.2)$ V d-c.
 Voltage at terminal A, B, C or D: $+0.8 (+0.3)$ V with FOH at minimum;

-6 V to -15 V, depending
 on RV1 setting, with FOH at maximum.

4. COMPONENT LAYOUT: See Fig. 4.

5. PARTS LIST:

Complete Printed-circuit assembly: ST399(7)

<u>Circ. Ref.</u>	<u>Description</u>
MR1-to-MR40	Diode, type CG83H, AEI
MR41, 42	Diode, type BYX36/150, Mullard; type 1S920, Texas.
MR43, 44	Zener, type MR75H, AEI; type BZY88C7V5, Mullard
R1	Resistor, 330 ohms 10% 1W, Morganite type W.
R2	Resistor, 1.8K ohms 10% 1W, Morganite type W.
RV1	Potentiometer, 22K ohms, Plessey
VT1-to-VT4	Transistor, type ME6002, Micro-electronics.