

STB AND MISCELLANEOUS DESK PANEL PA8/300

Introduction

The PA8/300 is a control unit, consisting mainly of a number of keys, indicator lamps and relays, designed for use in continuity desk DK2/17 and forming part of continuity equipment EP10/17^{1,2,3}, in which the PA8/300 provides a means of setting up an STB* mode of operation. The unit also carries controls for bypassing the continuity presenter's main fader and for switching the G.T.S. source into the programme chains.

One lamp, intended to indicate when the presenter's fader is not fully up, is made to flash by a multi-vibrator which is incorporated in the unit.

The PA8/300 belongs to the Type-D series of sound control equipment and is constructed on a CH1/37G chassis, 7 inches high and 2.25 inches wide, fitted with two 32-way McMurdo plugs.

* The term STB (an abbreviation of 'single transmitter broadcast') applies to a switching and mixing arrangement that causes the main network programme to be withdrawn from part of a network distribution system, which then carries other material to a particular transmitter (or group of transmitters). For example, this mode of operation is used in the Radio 2 network when the Droitwich transmitter is required separately to radiate weather information to shipping.

Circuit and Facilities (Fig. 1)

A 12-volt d.c. input, for the operation of transistors and most of the indicating lamps, is supplied to the unit via PLA16 (negative) and PLA32 (positive). A 50-volt d.c. input for the relay energising circuits is supplied via PLA9 (negative) and PLA25 (positive). The positive side of each supply is normally earthed externally to the unit.

Keys K1 and K2, labelled STB Stereo and STB Mono respectively, are intended to allow a technical operator to route fader-controlled main programme, and the continuity studio output, in stereo and mono, to a separate transmitter or group of transmitters, while the main programme continues to be passed to network. These may be preliminary operations and the final establishment of an STB state may be performed by the continuity presenter operating a key, on his studio desk, connected in series with K1 and K2 via PLA20. When current flows through K1 or K2, and the external circuit which connects PLA20 to PLA24, this energises relay ABS or ABM respectively. Each of these relays has four sets of contacts, performing various functions as follows:

1. Normally-closed contacts on both relays, connected in series. When either set opens, Network lamp LP2 is extinguished (as is a pilot lamp in the studio which is fed via PLA10 and PLA11).
2. Normally-open contacts on each relay. Depending on which contacts close, the Stereo lamp LP3 or Mono lamp LP1 is lit (as is one of the two studio pilot lamps which are fed via PLA10 and PLA12 or PLA13).
3. Normally-open contacts on each relay, connected in parallel. When either set closes, it completes a circuit from PLA4 to PLA20. This circuit is used to operate a further relay or relays, external to the PA8/300, which take the main programme signal for network transmission from a point preceding the presenter's fader (so excluding the presenter's fader and continuity contributions), while the fader remains effective in the path of the main programme signal available for STB transmission.
4. Normally-open contacts on each relay. Depending on which contacts close, these complete circuits from PLA21 to PLA5 or PLA6. These circuits are used to operate relays, external to the PA8/300, which route the stereo or mono signals for STB transmission from a mixing point fed by the fader (carrying the main programme) and the continuity studio output.

In practice, when relay ABS or ABM is used to switch such an arrangement of circuits to an STB condition as described, this allows both the STB output and the network output of the continuity to consist initially of the main programme, which can be faded down on the STB output to permit the introduction of live speech or recorded material from the continuity studio.

For STB operation to take place as described, PLA24 must be connected to the positive (0 volts) input of the 50-volt supply. For this purpose there may be a strap between PLA24 and PLA25. If this strap is omitted, an alternative low-impedance path is provided via the collector and emitter of TR5 if the appropriate bias is applied to PLA22, or TR5 can be biased off if it is necessary to inhibit STB operation.

The 12-volt negative supply, fed out of the PA8/300 via R10 and PLA31, is returned via PLA7 to power the multivibrator which includes TR1 and TR2. In the EP10/17, the external circuit between PLA31 and PLA7 is completed by a changeover switch on the presenter's fader which functions when the fader is moved off the fully-up position, and this causes the multivibrator to operate. Through TR3 and TR4, the multivibrator drives the Annncrs Fader Off Norm lamp, LP7, and an external lamp connected to PLA14, so that they flash on for about one second in every two. When the fader is fully up, the changeover switch feeds steady current to the Annncrs Fader Up lamp, LP6, via PLA15.

The Annncrs Fader Bypass switch, K4, is operated by a push button containing pilot lamp LP8. The switch completes a circuit from PLA25 to PLA3 and PLA2. Closing the switch lights LP8 and, in the EP10/17, causes external relays to be energised via PLA3 and an external lamp to be operated via PLA12. The external relays bypass the continuity presenter's fader. This enables the technical operator in a continuity cubicle to bypass the presenter's fader if it is unintentionally left off the fully-up position.

The GTS key, K3, is provided as a means of feeding the G.T.S. source into the main and STB programme chains. Operating the key, which is non-locking, in the On direction, energises relay TS. One set of contacts on this relay then closes to hold the relay energised, two sets of contacts connect the G.T.S. source via PLB1, 2, 3 and 4 to the programme chains, and another set of contacts passes current to the GTS On lamp, LP5. Pressing the GTS switch momentarily to the Off position diverts the energising current away from relay TS and this relay, then released, disconnects the G.T.S. source (substituting a short-circuit between PLB3 and PLB4) and also routes current to LP4, the GTS Off lamp, instead of LP5.

References

1. EP10/17 Control Circuit, Designs Department Drawing No. D32906A1.
2. EP10/17 Programme Circuit, Designs Department Drawing No. D32907A1.
3. Continuity Equipment EP10/17, Designs Department Technical Memorandum No. 3.109 (to be issued early in 1973).

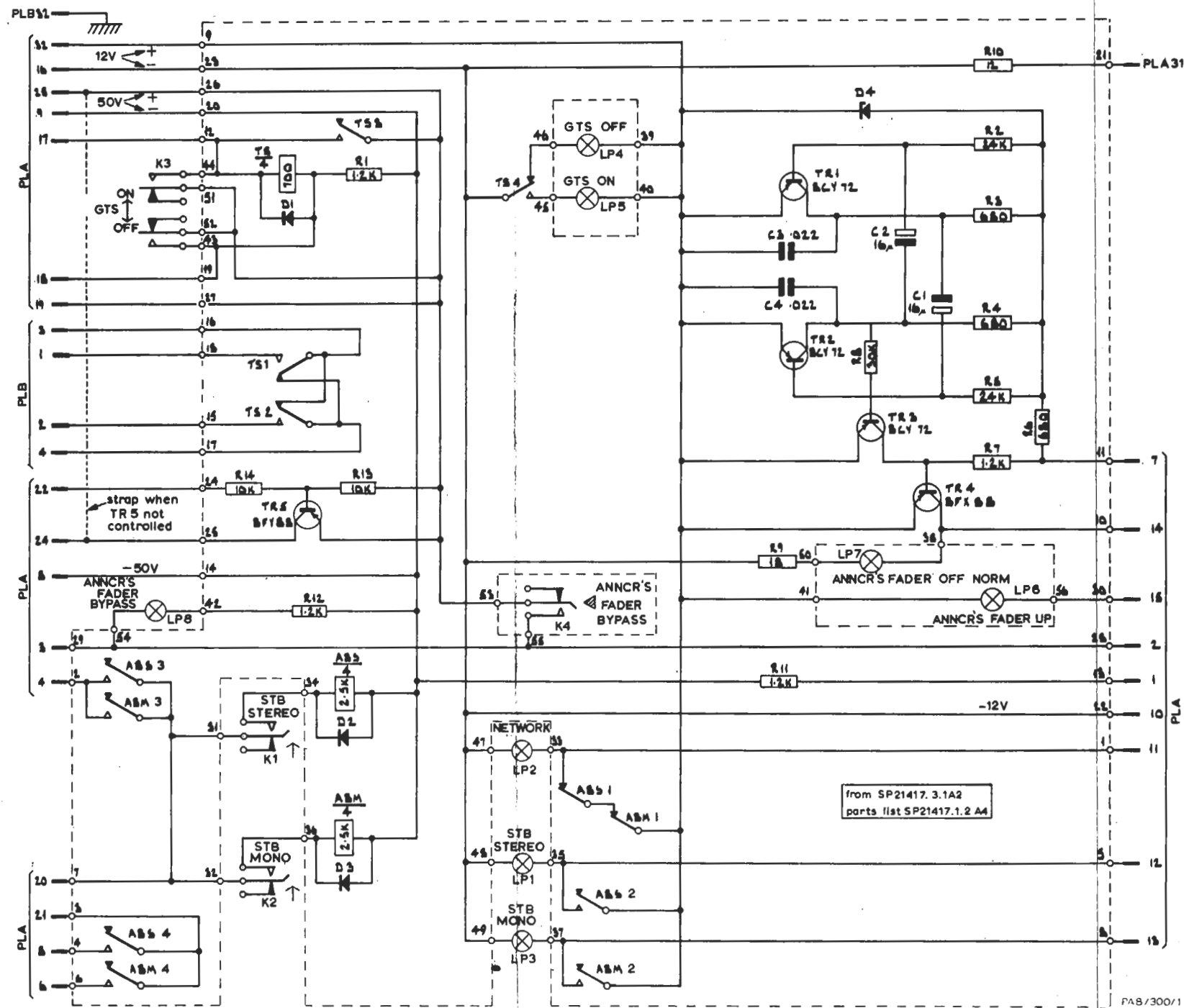


Fig. 1. Circuit of the PAB/300