MICROPHONE AMPLIFIER AND MIXER PANELS PA1M/60, PA1M/60P

See also AM1/6

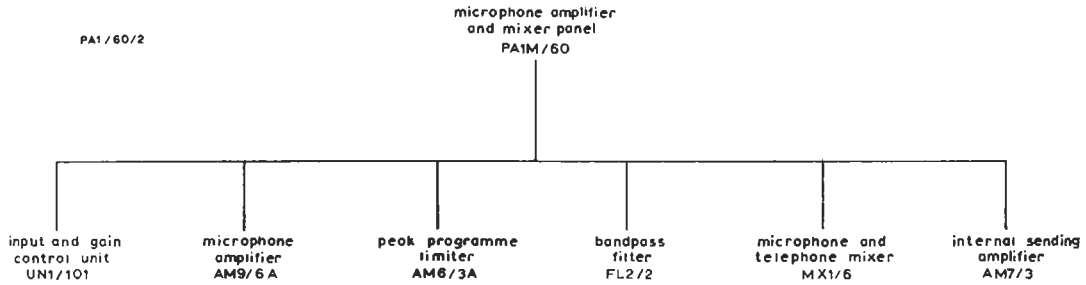

Fig. 1. PA1M/60 Subunits

Introduction

When a telephone conversation is broadcast with the near-end speaker in a studio, and it is desired to maintain studio quality at the near end, a microphone amplifier and mixer panel PA1M/60 is used in conjunction with the constant-volume speech amplifier AM1/6A which otherwise would be used by itself. The PA1M/60 allows the studio microphone to replace the near-end telephone transmitter.

Full information on the method of inserting a telephone conversation into a broadcast programme and the conditions under which the Post Office will approve this procedure are given in the Instruction on the AM1/6, which should be read in conjunction with this Instruction.

Mechanical Details

The PA1M/60 consists of a number of individual units placed in a bay-mounting chassis Type PN3/23, 19 in wide, 5¼ in high and 13 in deep.

Each unit is built on a standard CH1/18C chassis, except unit 1 of the AM6/3A, which is on a double-size chassis CH1/18D. Each unit is mechanically coded in the standard manner by means of pins projecting at the rear so that it can be inserted only into the correct position on the PN3/23 chassis. The units are shown in Fig. 1. Fig 2 shows the front of the PA1M/60 with all the units in position, and also shows how the PA1M/60 is disposed in relation to the AM1/6A with which it is used.

The PA1M/60P is similar to the PA1M/60, but is contained in a portable case CS2/11.

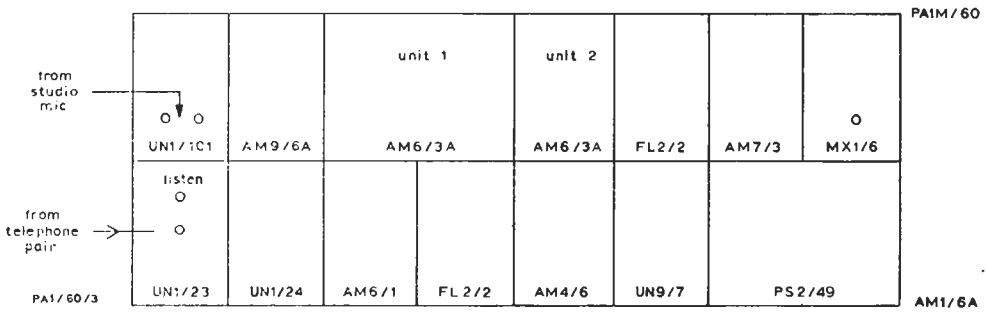

Fig. 2. Layout of PA1M/60 and AM1/6A

Power Supplies

A mains supply at 240 volts 50 Hz is required for the AM6/3A only, and enters through the lower Cannon sockets at the rear of the PA1M/60. A mains *On/Off* switch is provided on the front panel of unit 2 of the AM6/3A.

The --24-volt d.c. supply is taken from the AM1/6A via the interconnecting link (pin 1: positive earth, pin 2: negative 24 volts) and is controlled by the mains *On/Off* switch on the PS2/49 power supplier in the AM1/6A assembly.

constant-volume output of the AM1/6A therefore consists of normal telephone quality from the distant end, and studio microphone quality restricted in bandwidth from the near end, the balancing action of the AM1/6A taking place in the normal way as described in the Instruction on the AM1/6.

The output from the AM1/6A is now mixed in the panel MX1/6 with an amount of ' clean feed ' from the studio microphone, adjustable by means of the *Add Clean Feed* control, and the mixed

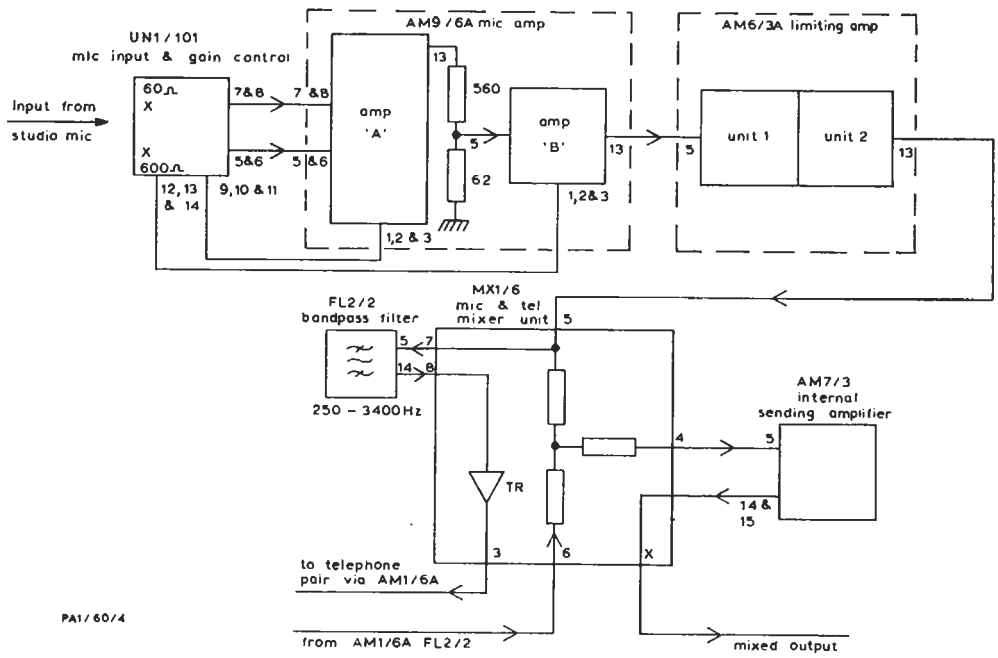

Fig. 3. Block Diagram of PA1M/60

Principle of Operation

The block diagram Fig. 3 shows the principle of operation of the PA1M/60 and the AM1/6A.

The telephone used in the studio may be either one fitted with a ' Press to Speak ' type of handset or a conventional common-battery instrument with the transmitter covered by a special inhibiting disk to stop any output from it. The near-end speaker's voice is applied to the telephone line through the studio microphone, the microphone amplifier AM9/6A, the limiting amplifier AM6/3A, the bandpass filter FL2/2, a further transistor amplifier indicated by TR contained in the mixer panel MX1/6 and thence via the AM1/6A. The output is taken, via the internal sending amplifier AM7/3, from an output jack on the MX1/6 at zero programme volume to the recording equipment or broadcast chain, as desired.

Thus, the speaker in the studio holds the telephone handset in the normal way, listening to the far end through the earpiece, but his voice is transmitted to the distant speaker via the studio microphone.

Operating Instructions

1. Place the PA1M/60 on top of the AM1/6A.
2. Connect mains to PA1M/60 and AM1/6A and insert connecting link between the two.

3. Place the telephone set and studio microphone in suitable positions.
4. If the telephone handset is of the ' Press to Speak ' type, leave the transmitter switched off. If the telephone is a conventional common-battery one, fit the special paxolin inhibiting disk under the transmitter cover and place the warning disk with the inscription, *Warning: Mouthpiece Blanked*, in position so as to be visible on the outside of the transmitter housing.
5. Connect the studio microphone to an input jack on the front panel of the UN1/101, using the 600-ohm jack for a 300-ohm microphone and the 60-ohm jack for a 30-ohm microphone.
6. Set the AM6/3A to *Limiting: 16 dB* and *Recovery: 1 dB.*
7. Switch on the PA1M/60 and AM1/6A.
8. Speak into the studio microphone at normal voice level and distance and adjust the microphone gain of the PA1M/60 by means of the UN1/101 gain control until the meter of the AM6/3A indicates 5 dB limiting.
9. Connect the AM1/6A to the telephone pair.
10. Adjust the range switch on the AM1/6A according to the level of the incoming call.
11. Set the *Adjust Clean Feed* control as required.
12. If desired, include ' top lift ' on the mixer MX1/6 by operating the *Top Lift* switch on the front panel. (This should improve intelligibility to the distant end if there is undue loss on the circuit.)
13. Take the output, at about zero programme volume, from the *Output* jack on the front panel of the MX1/6.
14. Make sure that the telephone handset is not held within 6 inches of the studio microphone, otherwise howlround may occur.

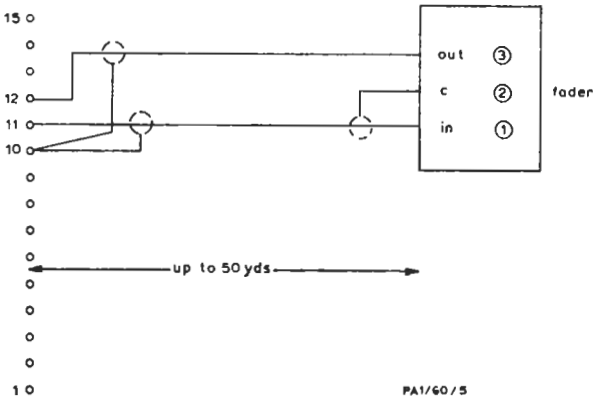

Fig. 4. Extension of 'Add Clean Feed' Control on PA1M/60

Remote Operation

Remote Operation of the PA1M/60 merely needs extension of the *Add Clean Feed* control, which is accomplished by running a PSN2/4 extension lead from tags 11 and 12 on the MX1/6 through the hole on the right-hand side of the rear cover and connected in the manner shown in Fig. 4. The normal strap between 11 and 12 is removed for this purpose.

The extension requires the use of an unbalanced 600-ohm fader Type PB/10M/45 (rotary) or PB/38Q/45 (quadrant).

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