TREBLE BOOSTER

By A. RUSSELL

A SIMPLE but effective unit for heightening the higher frequency harmonics of electric guitar sounds is a Treble Booster.

The actual sounds produced are akin to those made by the early "Rock 'n' Roll" guitarists, particularly when played near to the instrument bridge.

In addition to use as an effects unit the Booster will act as a straightforward pre-amplifier if required.

HOW IT WORKS

Basically the circuit (Fig. 1) consists of a simple pre-amplifier, using a low noise, high gain transistor.

In shunt with the input is an inductor L1. The impedance of this is less to low frequency signals and so the bass notes tend to be shunted to earth leaving the higher frequencies to be amplified and passed to the output socket JK2.

The "Boost" control VR1 is a 5 kilohm potentiometer in series with L1 and it controls the amount of bass cut applied to the incoming signal. When the wiper is rotated for maximum resistance there is almost no bass loss and all frequencies are amplified equally.

CONSTRUCTION

The prototype was built on a piece of 0·15in matrix Veroboard 1½in × 2½in as in Fig. 2. No breaks are required in the copper strips.

The primary of a small transistor output transformer is used for L1. The secondary winding and centre tap is not used and the leads from these should be cut short.

Control panel and Veroboard interwiring is straightforward (Fig. 2) and should present no difficulties. To prevent hum pick-up the input and output leads should be screened.

TESTING

With the unit completed, the wiring should be given a final check. With the battery connected you should find that the circuit will work first time since it is so simple.

A point to watch is the siting of the Booster. If it is placed near to the mains transformer of the amplifier, hum will be picked up by L1 so this should be avoided. ★

COMPONENTS . . .

Resistors
R1 1·5MΩ
R2 10kΩ
¼W 10% carbon

Capacitors
C1, C2 10μF elect. 25V (2 off)

Potentiometer
VR1 5kΩ lin. carbon

Inductor
L1 Eagle LT700 miniature output transformer

Transistor
TR1 BC169C

Miscellaneous
JK1, JK2 Standard jack sockets (2 off)
S1 On/off toggle switch, B1-PP3 9V battery, Battery connectors, Control knob, Veroboard 1½in × 2½in 0·15in matrix 2½in length of ½in × ½in plastics angle.

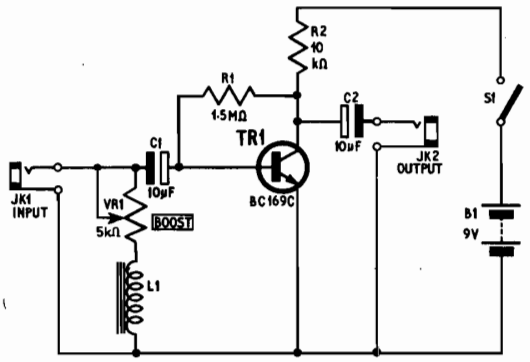

Fig. 1. Circuit diagram of Treble Booster

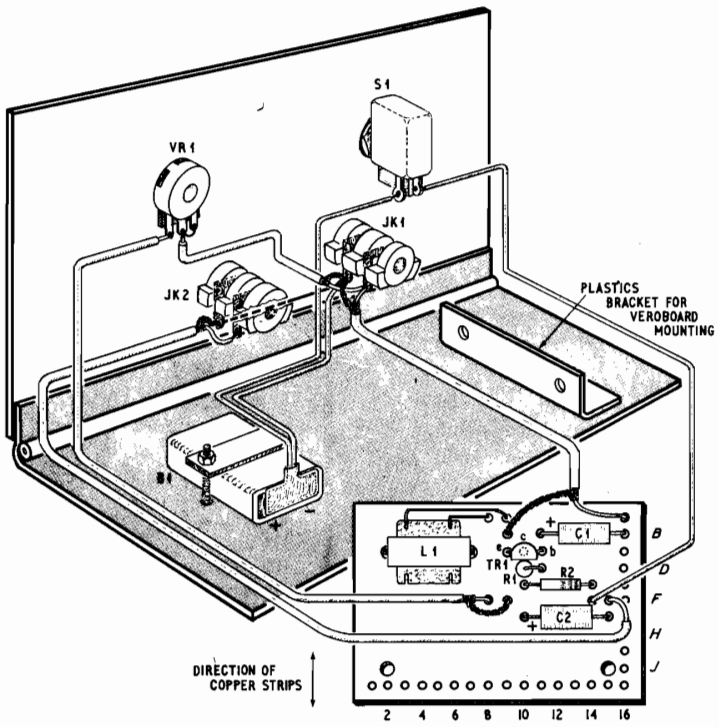

Fig. 2. Veroboard component assembly details and control panel interwiring