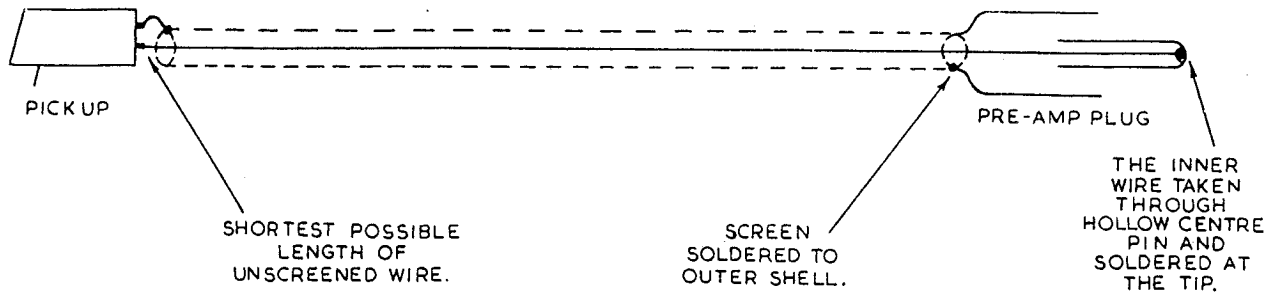


(e) Acoustic feedback. If a loudspeaker is placed in the same cabinet as a pickup, then vibration from the movement of the loudspeaker can be transmitted to the stylus of the pickup. As the volume is increased a stage is reached where a sustained roaring noise is set up. At volume levels considerably below this point distortion is noticeable. Acoustic feedback disappears when the pickup is lifted from the record.

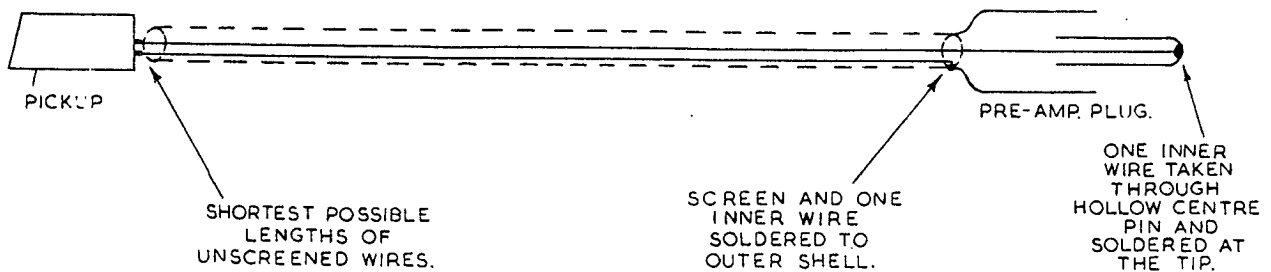
(f) **Connecting pickups having a single wire within a screen.**



If hum is to be kept to a minimum the outer screening should either have an insulated covering, or it should be prevented from touching any metal on the motor, motor-board or anywhere else. The outer screening *must not* be used for earthing any part of the motor and turntable assembly, which should be earthed by a separate wire taken to the \ominus terminal on the TL/10 amplifier. If the "tone-arm" is of metal and the outer screening is connected to it, then the arm must not make metallic contact through its bearings with a metal turntable and motor assembly.

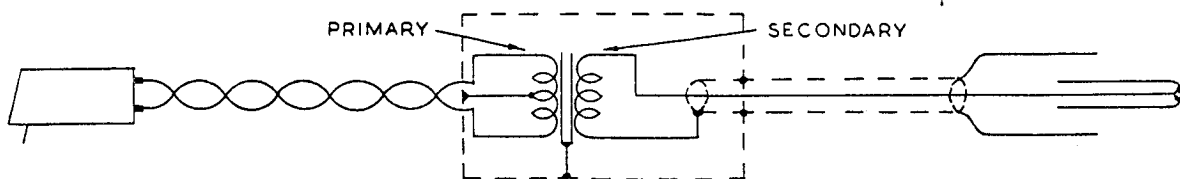
Unfortunately, some record-players and record-changers are wired with a single conductor within a screen, the screen then being connected to the body of the motor mounting plate. This is bad practice on the part of the makers, and is very likely to cause hum, particularly when using a low output pickup. If you have this type of wiring, you are most strongly urged to replace it with the system (g) below.

(g) **Connecting pickups having two wires within a screen.**



Again, as in (f) above, the outer screen should either have an insulated covering, or it should be prevented from touching the motor, motor-board or anywhere else. If, however, the screening does touch, then hum is less likely to be caused than by using the single-wire system of (f).

(h) **Connecting low impedance pickups using a transformer.**



NOTE WELL :

The transformer *must* be enclosed in a screening can of high-permeability metal, i.e. mu-metal or permendur. The primary winding *must* be balanced, the centre-tap being taken to chassis.

The primary terminals are to be as small as possible and to be as close as is practicable, in order to obviate a loop in the wiring. The primary leads to be tightly twisted for the same reason.

The "live" secondary terminal to be screened and to be as small as possible.

The above precautions are *essential* to obviate hum.

(i) The "Point One" pre-amplifier has an extraordinarily low hum level, which can be checked by removing the pickup plug and turning up the volume control. The connection of any input device to the pickup terminals will lower the input impedance and should, therefore, reduce the hum level. If the hum level increases on connecting the pickup the cause of the hum must lie outside the pre-amplifier and our instructions on the choice and connection of pickups should be carefully read in an attempt to locate the cause of the hum.