REVIVING THE QUAD 22/11 VALVE AMPLIFIER.

Designed by the founder of QUAD, Peter Walker, the 22/11 offers an attractive alternative to modern amplifiers, says Haden Boardman.

The Acoustical Manufacturing Company Q.U.A.D. II (Quality Unit Amplifier Domestic Mk II) is possibly the best known and loved 'classic' hi-fi amplifier in Britain. With around 120,000 units sold, they are also reasonably common.

Introduced in 1954 with the matching 'QCII' pre-amplifier, it was an instant hit and remained basically unchanged throughout 15 years of production.

When stereo records and equipment started to creep on to the scene, the QUAD 22 control unit became available. This has about the most comprehensive set of controls imaginable but by modern standards, the pre-amp is not quite up to the mark. It is a little too flexible, possessing input matching 'pods' on the rear for a wide range of the different playback characteristics, all of which tend to dull the overall sound. On the plus side, this must be the first stereo pre-amp to have defeatable tone controls.

Another negative aspect of the 22 is that it scavenges power from just one II power amp., compromising the balance. To make matters worse, all of the tuner's H.T. rails are switched on and off from the pre-amp also. As the entire ensemble is powered from just one poor old QII power amp, it tends to fry the mains transformer.

A Quad II is rated at 15 watts output for an input of 1.4 volts. This makes the QUAD a pretty insensitive power amplifier by the standards of today. If you intend to use a more modern pre-amp bear this in mind; unity gain cathode followers and passive pre-amps are totally out. Also if you like to disturb the neighbours, high sensitivity loudspeakers are the order of the day.

Sonically, the QUAD II is a peach. Warm, lush and extremely romantic. It suits Mozart more than Mahler, flatters 'Fitzgerald over 'Franklin. For some it can sound too soft, with not enough fire in the performance.

Technically, it's a very interesting amplifier. It was one of the first to use a version of the so called 'Ultra Linear' output stage. Mr Walker's circuit differed from Hafler & Keros circuit by connecting the cathodes of the output valves to the output transformer, instead of the screen grid; it also predated Hafler & Keros. If you want more on what P.J.W. describes as 'Super Ultra Linear' read the article he wrote with D.T.N. Williamson in the September 1952 'Wireless World'.

One other unusual detail is that this is only a two stage amplifier. Two EF86 pentodes act as both an efficient phase splitter and driver, supplying the two KT66 tetrodes with the appropriate signal. Most circuits of the day used three stages, the famous Williamson four. Overall negative feedback is quite low compared with any other design from the period, and the circuit very neat and simple.

On the service side, all electrical parts are still available from QUAD's world leading service department. How many companies will even look at products they started to make nearly 40 years ago - and do it for pin money prices as well. No one can even approach QUAD for the quality of back up service.

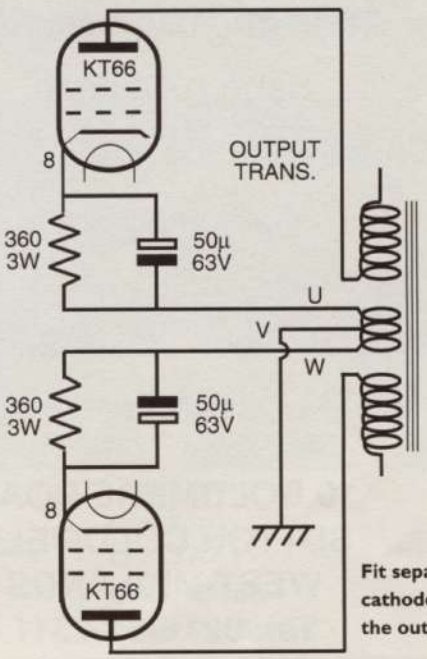
If buying a set, look very carefully at the under side. Check that the mains transformer has not melted all over the inside. Don't worry about a tiny bit of wax, that's quite normal. But too much could in the long term spell trouble. All of the passive components are pretty cheap. The handful of components that usually give trouble are the coupling capacitors (C2 & C3 -1µF/350vdc), the cathode resistor bypass capacitor (C5, 25µF/50vdc) and the anode resistors of the EF86's go high value with age (R5 & R6, 180kΩ).

Needless to say, you must avoid 'modified' QIIs like the plague. A handful of companies in the past have persuaded people to fit voltage doubler power supplies, EL34 output pentodes, anything they can do to boost the power output.

I'm afraid it's all a load of cobblers. Watch these vandals, Mr Walker knows best. QUAD IIs were designed for 15 watts output - not fifty.

The only tiny hole I can pick in a QUAD II is the fact that P.J.W. chose to use a common cathode resistor of 180Ω for the output valves. This allows a slightly 'leaky' output valve to 'turn off' the other good valve; it was very difficult to get wirewound resistors of high tolerance in the 1950s. The voltages on the cathodes must be as close as possible for perfect push-pull operation. These days, of course, you can get high tolerance wire wounds and for increased reliability, without changing the sound quality, try fitting individual 360Ω cathode resistors (see circuit). It's the only mod you should ever consider executing on a QII. Happy listening ●

By Haden Boardman
Audio Classics. Tel: 0942 57525



Fit separate (360Ω) cathode resistors to the output valves