

Dear Sir

Amidst the published euphoria over your ETI-470 amplifier module. I wish to inject a dissenting voice. Adelaide appears to be a bad scene for the 470 with adverse comments appearing in several areas. At last, and at some extra cost, I have a module operating successfully, however my complaint centres on RV1. It appears that for most amps the trimmer is set for maximum resistance in the initial stage, but this on the 470 causes transistors to 'pop' like nobody's business. I suggest the following powering-up procedure.

1. Insert F1 and F2.
2. Set RV1 to a central position (near 12 o'clock).
3. Power-on, and off after 5 seconds. If any problem exists at least the Darlingtons will escape damage (in my experience!).
4. Replace F1 and F2 with 100 ohm resistors and adjust RV1 for 2.5V across them. (If resistors are inserted first and a fault exists, one buys another set of Darlingtons — in my experience!).

On a more euphoric note my ETI-471 is a beauty except for two small points:

1. Doesn't SWA insert a 'passive' loudness system which 'cuts' the mid-range rather than 'boosting' the extremes?
2. The Hi-Cut filter 'thumps' when switched in — may be peculiar to mine.

Apart from those points I thank you for that design.

Looking forward to your comments to help us 'home builders'.

**Bryan Wetton  
Blackwood, S.A.**

Many thanks for your comments concerning our very popular 60W low distortion amplifier module, the ETI-470, published in the May 1979 issue.

In retrospect, we should have included a warning in the construction article to the effect that the power supply should not be connected for a quick test prior to setting the bias current. In their eagerness to 'fire up', it seems a number of constructors have come to grief through doing this, according to our assessment of phone and letter enquiries.

The moral is: 'slowly, slowly catchee monkey'.

Your procedure is unsafe. If you have a fault, at first turn-on it is possible to destroy the output devices, regardless of where you set RV1. If 100 ohm resistors are inserted in place of the fuses, these will be destroyed in the event of a fault.

The absolute safest way to proceed is as follows:

- Obtain, buy, beg, borrow or steal a

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Variac (240 Vac variable auto-transformer).

■ Connect up nothing at this stage.

■ Insert 100 ohm resistors in place of F1 and F2.

■ Set the wiper of RV1 to the end connected to R11 (i.e. away from the heatsink).

■ Connect power supply ac input to Variac and set the latter to 0V output. Connect the power supply dc output to the 470 module (don't forget the 0V, or common, connection to the CT of the transformer secondary).

■ With your trusty multimeter connected across one of the 100 ohm resistors aforementioned, turn on the mains switch and slowly wind up the Variac while observing the multimeter.

■ The multimeter reading should rise to about 1V or thereabouts.

■ Adjust RV1 for a 2.5V reading on the multimeter. Check that the same is obtained across the other 100 ohm resistor.

If you don't have, or cannot get, a Variac, proceed as outlined in the article, but first set RV1's wiper to the end nearest R11.

Unless you have the output devices swapped over — and their positions can be clearly seen in the photograph on p.48 of that issue, plus they're clearly marked on the component overlay — then transistor will not "pop like nobody's business".

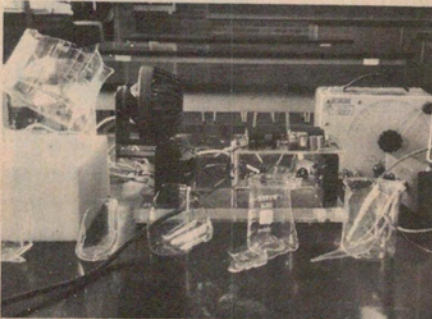
Going to the second part of your letter, concerning the ETI-471 (June 1979 issue), yes, SWA does insert a passive loudness control that puts a dip in the mid-range and rolls off the bass and treble. This filter has an overall loss, apart from 'contouring' the frequency response, so it's a matter of semantics whether you talk about boosting the bass and treble or cutting the mid-range.

It is unclear why your hi-cut switch should 'thump' when turned on. If this occurs when the low-cut filter is switched out (C10 shorted), then I would suspect C9 may be leaky. Try changing C9 in any case. Alternatively, C15 may be leaky.

Despite the difficulties you experienced, we're happy you're otherwise pleased with the design. We hope the comments prove helpful.

**Roger Harrison (Editor).**

## THE ETI-470 — A SMASHING PROJECT !



### Greetings ETI,

Recognize the ETI-470 60W amp module in the accompanying photographs? With the amp's input driven by an audio signal generator and the output driving a Toa model TU-50W throat-coupled speaker, the set-up has a devastating effect on two-litre beakers at 1442 Hz (+/- 0.1 Hz) at a range of several hundred millimetres!

This is without doubt the most dramatic demonstration of sympathetic vibration I have ever built.

The original idea came from an article entitled "Demonstrating Resonance by Shattering Glass With Sound", by W.C. Walker in the May 1977 issue of The Physics Teacher.

Now, with the ETI-466 300W amplifier module and a suitable driver — I wonder what is the fundamental mode for sympathetic vibration of plate glass windows? ...

**Kris McLean, VK2AJS  
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