

# Preamps and amps 'en ali that

Last week we talked about turntables and cartridges. Somehow the .0003 volts from a magnetic cartridge, or .775 volts from a tape deck, must be increased to the 15 or more volts required by loudspeakers, without changing the quality and

characteristics of the original .0003 volts or whatever. This is done in two stages, by two amplifiers, since such a voltage increase is too much to ask of one amplifier. The first stage is handled by the PREAMPLIFIER. This takes the .0003 volts and boosts it to around 2-5 volts. The preamp is also the amp which has the input selector switch, the volume and balance controls, and all the tone controls. These are in the preamp stage since they represent approx. a 25% loss in amplification power. A 25% loss affecting 2 volts (output of preamp) is better than a 25% loss on 25 volts (output of power amp) The preamp also provides the

necessary EQUALIZATION (certain boosting of low frequencies and/or high frequencies to compensate for the deficiencies inherent in human ears, vinyl discs or tape). It also lets you adjust (some say tamper with) the equalization by using tone controls, filter switches, etc. adding more bass and treble as you prefer. Once your preamp has done all this, and boosted the signal to around 2 volts, the signal goes to the POWER AMP. The power amp is a seemingly docile beast whose sole function is to boost the 2 volts to 15-70 volts, without altering the characteristic of the signal.

Now that you know what happens in an amplifier let's

talk about what to look for. Most preamps and power amps are built on one chassis in one cabinet, which is practical and very convenient. Preamps and power amps are also available as separate units which lets you mix and match to get exactly the components you want. Preamps and poweramps of different brands are mostly compatible. Henceforth a preamp/power amp combination will simply be called an amp.

The power output of most amps is given in watts, often with funny letters after them. (e.g. 700 watts IHF, or IPP, etc.). The only funny letters to trust are RMS, the industry standard. A 90 watt IHF amp is really only around 12.5 watts RMS, and that's not much. Most people think that the more watts RMS an amplifier has, the louder it plays. This is not

necessarily true. Often music has instantaneous peaks 200% louder than the average volume level. Now suppose your amplifier is pumping 5 watts RMS into your speakers and one of these 200% things comes along. If your amp has only 5 watts RMS, severe distortion of the peak will result. 100 watts RMS is necessary to reproduce this peak without distortion. (Amp power and speaker efficiency are closely linked. The higher the speaker efficiency the lower power an amp is needed to handle these peaks). As a rule of thumb, thus, don't buy an amp with less than 30 watts RMS per

channel. Space does not permit us to define each of the following requirements, but make sure the following specs are at least met. Frequency response — 50 to 18 Khz preferably 20 to 20Khz  $\pm$  2db (frequency response without the corresponding db rating is useless). with tone controls at neutral position, 1M and harmonic distortion each at least .5%, power bandwidth — 20 to 20 Khz. If you don't see any of these in the spec's, ASK for them. If your choice meets the above specs, is in your price range, and you like the sound of it, buy it. If it meets the specs and you

don't like the sound keep looking. Also look for a low and high filters, and a loudness switch. Listen to the amp with tone controls in neutral to see how much natural bass and treble it has, and play with them to check their range (you should use your own speakers, or those which you plan to buy).

There are so many good brands on the market that the choice is unlimited. Some hot tips for quality on a budget — Sony TA-1150, and Dynaco SCA80Q, which is available assembled, or as a kit (much cheaper). For lots of money, Dynaco's better stuff, Marantz or Crown are

excellent and expensive.

Once you've made your choice, before you do anything. READ THE MANUAL.

Just remember that next year's column will explain EVERYTHING in detail, so be patient. If you want advice drop a letter to the Gazette (leave at Enquiry Desk), and if your stereo hums, it probably doesn't know the words.

And now for something completely different — loudspeakers.

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