

Accuphase MC Phono Cartridge AC-5 and Stereo Phono Amplifier C-27

Bubbly Mood

by Holger Barske

If this is not a good reason for celebration: the Japanese manufacturer Accuphase, whom we already considered a bit lost for the analogue cause, has returned with an impressive plea for vinyl. And the brand-new MC pick-up is a very particular comeback.

When we speak about pick-ups, it's not really so that the AC-5 is the first mighty deed of the engineers from Yokohama. Accuphase has built one dubbed AC-1 already in 1979 which was later followed by the AC-2 and AC-3. As is known, the Asians are not very fond of the number "4". Hence, the AC-5 is at least a logic step with respect to nomenclature. Not so long ago such a product would have been regarded a veritable sensation, in particular if one is aware that over the years Accuphase has fully set its priorities on digital sources. Well, there were and are dedicated phono boards to be optionally employed in various pre- and integrated amplifiers from this maker, yet the focus was apparently somewhere else: Accuphase was and still is one of the most fervent advocates of SACD. However, as the acquisition of foreign high-quality CD/SACD drive mechanisms became more and more problematic, Accuphase eventually decided to have them developed and built in-house. These proprietary drives were then to be employed in various integrated SACD/CD players and a drive/converter combination which to this date have accomplished an excellent reputation all over the world.

Yet Accuphase wouldn't be the enterprise it is, namely one driven by music enthusiasts, had it lost sight of the analogue profession. Not so long ago, Accuphase launched the phono amplifier C-27 which has already received quite a favourable acceptance in the market. It goes without saying that the next logical step was to complement this amp with a new pick-up cartridge and therefore it made sense to us having both reviewed in one go.

The AC-5 is a moving-coil pick-up in the classic sense. The distinctive features however begin already with the choice of materials for making the body: Pewter is an alloy consisting of tin, antimony and copper and it is said to have excellent damping properties. The mounting plate has been furnished with an additional layer of rhodium and the main body with a layer of gold. In view of the rather heavy "building materials" I was actually a bit astonished to see the moderate weight of merely 11.5 grams. Still, this figure puts the AC-5 into the average "weight range" of what one is to get these days.

Another characteristic is the boron cantilever. Well, other makers are also employing boron at this point, however quite commonly the crystalline variety thereof. The cantilever used by Accuphase is made of solid amorphous boron. Apart from the extremely high inherent propagation velocity, amorphous boron also offers a

considerably enhanced rigidity as opposed to crystalline boron. The renowned Japanese specialist Namiki supplies the diamond stylus with “Microridge” cut of which the tiny bottom radius takes care of its precise tracking deep in the grooves. The wedge-shaped design of the stylus also guarantees a rather long service life. As to the arrangement of the coils inside, the goal was to design the best possible symmetry in order to have identical signal currents - and thus sonic balance - generated by the coils for the left and right channel. For the coils Accuphase decided to go for very pure, oxygen-free, long-crystal copper wire with merely 0.003 mm in diameter. Despite of the low internal impedance of 4.5 ohm, a fairly high output voltage of 0.24 mV (at 1 kHz, 5 cm/sec) could be achieved.

A glance at the damping array is also quite interesting. It consists of synthetic rubber in a circular arrangement whereby the ring is radially divided into eight equally sized segments. According to Accuphase this construction is to ensure a quick response to vibration velocity changes and to neutralise elastic deformation stress between the channels. As to the material of the magnets we learn that noble Samarium has been employed, however a variety with an inherently very high Curie temperature of 700 to 800 °C. This is said to have excellent thermal characteristics also at normal, i.e. room temperatures. So, let's recall our school classes in physics: the Curie temperature of a magnetic material is the one above which the material is to lose its magnetism.

Owing to the body's clear shape and straight edges the AC-5 is easy to mount. Its weight and compliance of 12-15 mm/N suggest the use of medium-heavy pick-up arms which however are common standard these days. But this is actually not really an issue to worry about because MC cartridges are generally rather forgiving in this respect. Personally, I would have appreciated a colour-coding of the output pins because I usually fail to remember their correct polarity. Nevertheless, the supplied instructions will in any case assist you to connect them properly.

As far as I know the C-27 is the first “real” external phono amplifier from Accuphase. In the past, there was indeed an MC pre-preamplifier from this maker which however was still to require an MM phono-equaliser input stage to make it a complete phono amplification section. Now, the C-27 is embracing all this in one cabinet, like quite a few other such devices being offered today. In the best of Accuphase tradition the C-27 is an absolute feast for the eyes. It's built with artisan perfection that hardly any other manufacturer can keep up with. I think there really is no alternative to the champagne-coloured front and the deeply grained, polished wooden side panels. It goes without saying that a component from Accuphase must look exactly like that because otherwise it would be an unjustifiable clashing with the style.

The C-27 comes equipped with unbalanced RCA inputs whereas the outputs are configured with both RCA and XLR connectors. The latter are provided with a facility to switch absolute phase, respectively polarity – worthy of praise! Up to three pick-up cartridges may be connected and a smart memory inside for each input is to store and recall the pre-set parameters. These are numerous indeed, namely MM or MC operation, two gain stages and various input impedances: 1, 47 and 100 kilohm for MMs, respectively 3, 10, 30, 100, 300 and 1000 ohm for MCs. The input capacity for MM pick-ups is evidently fixed, however I have found no information as to its value. What eventually remains is a switchable subsonic filter with a slope of -12 dB

per octave and which comes into effect below 10 Hz. Pre-setting of all parameters is done the classic way, namely by means of rotary switches and pushbuttons. As far as I'm concerned, it's very nice to see that it was feasible to get access to the memory functions also via traditional operating elements. To fumble around with arrow keys through a menu has thus become dispensable. For this reason the C-27 also doesn't need the respective monitor but resorts to a dark glass display on the front panel behind which LEDs are indicating the effective operating status.

The inside of the amp is dominated by plenty of power stage and not quite as much phono amplification – at least with respect to the surface area. Two encapsulated and absolutely silent toroidal power transformers, which have been positioned with due respect to the signal amplification, are taking care of the electric energy for this Beauty. In the centre we see the board for voltage supply and regulation in a dual-channel layout and equipped with beefy filtering capacitors. The right section holds the actual amplification/equalisation board. A closer look however reveals that there are in fact two circuit boards arranged one above the other, and for which the material Teflon® (® of DuPont/USA) seemed to be just good enough. The apparently enormous circuit complexity can be explained quite simply: Accuphase has provided two fully independent amplification/equalisation circuitries each for MC and MM pick-up cartridges. Usually, there is either just one amplification stage of which the gain can be varied within a fairly wide range or a dedicated MM amplification/equalisation circuitry to which an MC gain stage can be switched. But completely separate stages? Well, to my knowledge no one else is offering this.

By all means, on closer examination the separation does make sense. MM cartridges need only low amplification. Usually, they've got a high internal resistivity respectively impedance and they like to be combined with an amplifier stage that is in optimal harmony with such a source and furthermore is generating noise as low as possible. By comparison, MC cartridges not only deliver much lower voltages but generally have also very low internal impedance. All this requires a completely different approach with respect to the optimal circuitry for each pick-up principle. And if one prefers to get by with a minimum of amplification stages then things can only be done the way Accuphase is demonstrating here.

It is interesting to see that the circuitry of the MM section is slightly more elaborate than the MC counterpart. While on the latter eight differential amplifiers arranged in parallel-symmetrical configuration are responsible for the input amplification, the MM board has got six of them, however with an additional buffer stage consisting of FETs in – as Accuphase has dubbed it – 3-parallel configuration. A wise decision as FETs can be considered the best solution for high-impedance audio sources, owing to their low-noise properties. Equalisation on both boards is done via the negative feedback loop of the gain stage, which is likewise composed of single transistors. Chips, i.e. integrated circuits, are allowed to take over circumferential functions only. And then we spot a large number of relays of which the task is to switch the various operating modes. In view of all this I think it's superfluous to mention that layout and construction of the circuitry inside the C-27 is once again a feast for the eyes of every electronics buff.

For the listening test I had the AC-5 initially loaded with an input impedance of 100 ohm whilst gain was set to "high". Actually, that's already all you need because right from the beginning this Accuphase combination is beguiling you with a strikingly

smooth and silky rendition. It can well be argued if the AC-5 loaded with 300 ohm is a tad more airy in the upper frequency range, yet I personally prefer its more stringent and tighter pace at 100 ohm. The C-27 is an extremely transparent amplifier-equaliser without any sonic “fingerprint” of its own. For this reason it has got the absolutely perfect qualification for the AC-5. And, yes, the AC-5 is a wonderful moving coil cartridge which in no case wants to run the risk of sounding like a typical MC pick-up. It may perhaps do without the last bit of thundering dynamics in favour of an integral and complete performance. I would also speak of a perfect sonic balance if there wasn't that remarkably “analogue” midrange. In this respect I would even venture to say that as far as the rendition of male and female voices is concerned there is hardly anything around to beat it because it gives singing voices an extra boost of liveliness, expression and authenticity.

No question that an adequate companion is needed in order to fully achieve this. The C-27 however does recommend itself with distinction for exactly this purpose. Up to now I have yet to detect dynamic or tonal shortcomings from this amplifier as it is meticulously passing on what is delivered from the pick-up cartridge at the input. No matter if this is displayed by the dynamic fireworks from Clearaudio's Goldfinger, the snap and vehemence from the MFSL-Miyabi or ultimately the stunning midrange of the AC-5.

Certainly, the Accuphase AC-5 will also satisfy you when it can play in combination with other fine external phono amplifiers. However, if you are really interested in the AC-5 and do not audition it in combination with the C-27, you'd be subject to a definite sin of omission.