

First a Revelation!

'Metal-less' cables have arrived — but do they bring benefits which justify their cost?

by Martin Colloms

"Such was the improvement heard that I was diverged from urgent work to play record after record, both black and silver disks. Each held new surprises in terms of detail, depth, purity, dynamics, bass drive and focus."

Reporting briefly on initial trials of The First ['Potpourri' section, hi-fi news & record review, January 1993], I expressed the opinion that the sound of this new van den Hul product is likely to change your thinking about the influence of cables on the performance of better quality audio systems. The aptly named 'First' is the starter

product — a coaxial interconnect cable for audio and digital line use which uses no metal conductor whatsoever save for the necessary phono plug terminations at its ends. In AJ's words, it is a 'metal-less' cable!

It is generally agreed that different metals contribute to the characteristic sound of cables. For example, the purity of the most common and most economical conductor, namely copper, is influential, hence the move to OFC and long crystal grades of copper.

Many experienced practitioners have also worked with silver as an alternative to copper despite its very much higher cost. Silver is now seen in many moving-coil pickup cartridges, in the output transformers of valve amplifiers despite its high inductance and in top-quality audio cables.

Good as silver is, there remains a fundamental coloration with metal which van den Hul describes as a 'brightness and glare'.

For example, when you design an amplifier, one problem which often arises concerns the required tonal balance, a sweet natural sound with one which also has lifelike attack and dynamic contrasts in the transients.

However, with the carbon cable, from purity and natural sweetness to excellent dynamic contrast, both appear 'right'; so it seems carbon has an obvious aural effect.

The Products

We used The First interconnect to complete the chain from a digital decoder to the power amplifier via the Audio Synthesis Passion line controller. To give The First the best shot in the test system, we supplemented it by the use of a set of The Revelation speaker cables, the latest and most costly design from van den Hul.

The relevance of The Revelation cable lies in its hybrid conductor technology which includes linear structured carbon. This forms a thick, high-density conductive jacket between the outer and inner conductor sets. We carried out preliminary tests to establish the performance of this new speaker cable, and assess its suitability for exploring the sound quality of The First.

The First

AJ van den Hul believed that a metal-less cable would sound better than one with metal. New developments in conductive carbon fibre were the basis for the product which was specially processed for best results.

The First is a coaxial cable with an inner core of Litz construction taken to the practical limit in order to reduce skin effect to negligible proportions, even into the high-frequency radio bands. 12,000 individually insulated 7µm thick micro fibres make up this 1mm diameter conductor resulting in an effective surface area or 'skin' 143x that of an equivalent single strand.

Malcolm Hawksford has calculated that with 1mm solid conductors some differential delay encroaches on the audio band. If we take 10kHz as a notional 'break' frequency for the beginning of audible effects due to wire diameter alone (borne out by specific tests comparing diameters) then The First will not begin to reach this threshold until 1.43MHz. This is in the medium-wave band, way beyond the audible range.

The shield and return conductor of this cable comprises 38,000 7µm fibres, again of Litz construction and has less than one-third of the resistance of the centre core, which may be helpful in view of possible ground return hum currents between various items of equipment. The dielectric between the conductors is a very low loss foamed-air polyethylene.

A silicone-based polymer is used for the outer jacket, characterised as halogen free (unlike PVC) and free of plasticisers

or other contaminants.

The fibres have to be chemically de-insulated before termination and electrical connection is made mechanically by crimping as soldering is not possible.

Due to the significant resistance long runs are not advised for this cable. For longer lengths we must wait for The Second which will be a balanced LSC cable with a low resistance metallic shield/ground return (*).

(*) Note: The SECOND[®] nowadays is available.

The FIRST[®] now is only sold in lengths up to 1m, rendering its loop resistance of 50 ohms/m to be insignificant.

Furthermore, currently The FIRST[®] Ultimate (a low shield resistance version of our The FIRST[®]) and The FIRST[®] Metal Screen (a metal shielded version of our The FIRST[®] which allows long runs to be made) are available. —**A.J. van den Hul B.V.**

The Revelation

Without a doubt, this design belongs to the thick end of loudspeaker cable engineering! It was supplied ready-terminated in huge gold-plated copper spade terminals which are capable of 200A plus and are little too large for most hi-fi equipment. In fact some binding posts are either too inaccessible, or else cannot be wound out sufficiently to fit them. The possibility of an unwanted short circuit is also present due to their size; they may have been designed for binding posts of standard 3/4" in US spacing. The UK market really needs a smaller size of spade to be fitted (*).

(*) Remark: Currently our The REVELATION HYBRID comes fit with our new Bus type Universal Speaker Connectors which spade version has been optimized to minimize the risk of causing an unwanted short circuit. —**A.J. van den Hul B.V.**

The cable comes as separate insulated conductors 12.5mm diameter which are used in pairs per channel. A twist of three turns/metre is suggested to help hold them together mechanically and control the loop inductance.

The construction is complex and comprises a multistrand core of copper, each strand clad in a thick extruded silver layer. This core comprises 296 0.15mm conductors which are jacketed in a thick, black conductor polymer which is heavily loaded with linear structured carbon. Surrounding this partially conductive interlayer are 16 separately insulated conductors, each comprising 42 strands of 0.15mm OFC, again silver-clad using an extrusion process. The insulation is of clear polyethylene, while the outer jacket is orange-red Hulliflex, a non-corrosive, halogen-free flexible. Per 5-metre loop, the DC resistance of this massive cable is very low at 0.054 ohms, wholly negligible. DC resistance in speaker cables is a more critical factor than you might suppose, notwithstanding the simple engineering involved in connecting an amplifier to a loudspeaker. Surprising differences in bass slam and dynamics may be correlated with specific changes in the low resistance region, for speaker cable, e.g. the range 0.2ohm to 0.5ohm loop, where you might expect the connection to be wholly dominated by the impedance of the speaker itself.

Sound Quality

Wilson Watt III/Puppy II speakers figured strongly in these tests as they are quite demanding in terms of loading while their high resolution aids analysis of all components in the audio chain.

Initially the Tail linking the woofer to the Watt was replaced by Revelation and this argued well for the results of further testing. Depending on the overall system I used, I alternated between Siltech silver ribbon and the custom Tail supplied by Wilson for the 'Tail' connection. Compared with these two references The Revelation sounded more dynamic and more open, and yet it was also sweeter and more relaxed. Clarity was improved too.

Next in line was the link to the power amplifier. Here the name of the cable was found to be a pretty fair description of the subjective result, a revelation indeed! First impressions were of a significantly deeper soundstage, with better ambience and greater low-level information. Stereo focus was sharper while perspectives were exemplary, the plane of focus extending from just in front of the speakers to a considerable degree behind that defined forward location.

As before the tonal quality was sweeter and more natural and yet dynamics were more explicitly rendered. Transients were defined more precisely with superior attack. No loss in treble air was detected. Orchestral brass had a more accurate 'blatty' sound while orchestral strings were better differentiated.

Finally we come to the bass. The system was no slouch before The Revelation was fitted but afterwards the extra degree of slam, extension and attack was quite unexpected. This improvement transcended any simplistic view of engineering matching, particularly as the previous cables had low DC resistance.

In the longer term the high degree of subtlety heard in quiet musical passages continued to satisfy while the exceptional dynamic and rhythmic capability retained the ability to surprise as I explored more of my disc library. Another virtue was this cable's ability to hold onto detail in a balanced manner no matter how complex or demanding the programme. Interestingly it proved possible to play the system at higher levels without aural fatigue which to me is always a good sign.

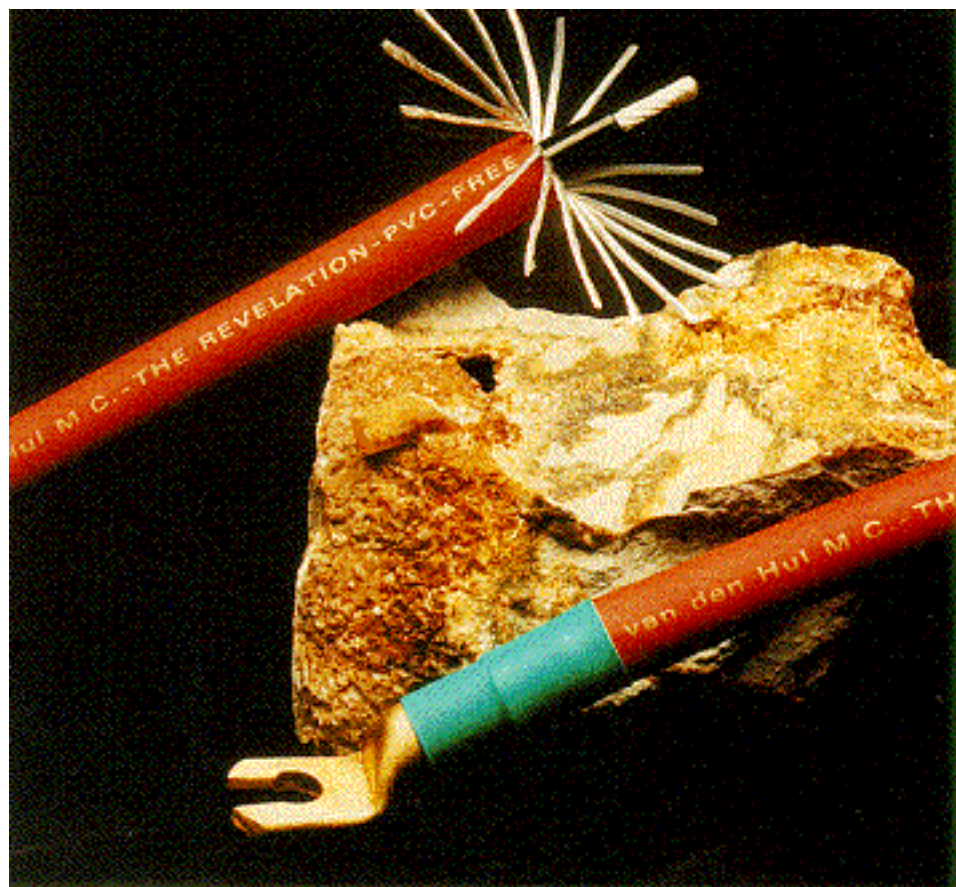
In order to gain a full understanding of the abilities of The First I fitted the Revelation speaker cable first — although it must be noted that The First's great qualities are apparent in a great degree in almost any system. Completing the chain with The Revelation does involve a serious investment though the rewards are considerable.

Getting a hum-free sound with The First requires some reorganisation of the power amplifier grounds ([see remark 1](#)). In my four monoblock bi-amped arrangement all the chassis grounds were linked together to nullify circulating hum currents. With different amplifiers and systems some trial and error may be required; a dealer with experience of medium

impedance interconnects may be able to advise.

If this all sounds like a lot of work, believe me, it is worth it. The First is the best line cable I have used to date and its superiority over well-known references — including van den Hul's own current and much more costly MC Silver Mk2 — is apparent.

Such was the improvement heard that I was diverted from urgent work to play record after record, both black and silver discs. Each held new surprises in terms of detail, depth, purity, dynamics, bass drive and focus. The rhythm and sheer musicality of the sound reduced aural fatigue, with both the desire and the ability to play the system louder than before. Substantially greater satisfaction and involvement resulted.



The Revelation: a copper/silver cable with a conductive jacketed core. Despite its thickness it's still pliable — but are needed two per speaker.

I am no stranger to high performance audio cables and yet the quality lift obtained with these designs was unexpected. Often cables show a fascinating variety where different flavours and qualities are manipulated to achieve various effects, some of these usefully beneficial in specific system layouts.

Without having auditioned this cable it would be hard to imagine just how 'right' it would sound. It successfully addressed sound quality on many fronts simultaneously. Transients positively startled in their attack and precision and yet the rendition of vocals, strings and acoustic guitar reminded one of a good electrostatic speaker driven by a valve amplifier. That sense of ease in the midrange was complemented by enhanced perspectives in the sound-stage, and by more depth and ambience. Previously unsuspected low-level detail was extracted from already familiar sources.

Set against this spacious acoustic is a remarkable 'speed', one where bass, mid and treble elements contributed strongly to the overall sense of pace, upbeat, well-synchronised rhythms being clearly defined.

Conclusions

The strong recommendation for The First interconnect cable is confirmed for virtually all price levels of system provided it does not hum ([see remark 1](#)) in the chosen arrangement. It sets the new reference standard.

The revelation speaker cable is another matter since its price is in another league. Accepting the relevant comparisons at its price level it also comes out as an excellent design and again a reference standard is set. While not as neutral (tonally) as The First, its other qualities are comparable, confirming its strong compatibility with The First.

Remark 1: Some (mainly power) audio equipment exhibits relatively large audio-ground leakage currents, whose balancing-out along interconnects shields can cause hum. We have a POLARITY CHECKER available, using which you can annihilate these effects, which (note!) also hiddenly interfere with the audio signal in all metal interconnects.

We however wish to add that the samples of The FIRST[®] Martin Colloms tested here were our first production samples; The later production version of our Linear Structured Carbon[®] interconnect cable The FIRST[®] exhibits a lower resistance and is not sold in lengths longer than 1m; The slight hum problems mentioned in this article therefore nowadays are very rare, but if existent can be easily dealt with.

Furthermore, currently The FIRST[®] Ultimate (a low shield resistance version of our The FIRST[®]) and The FIRST[®] Metal Screen (a metal shielded version of our The FIRST[®]) are available. Their respective susceptibilities to hum are extremely low and non-existent. They are therefore applicable in the most demanding analog and digital audio applications.

Please note: For transport of weak signals (for instance from phono cartridges or microphones) and/or over longer distances we advise to use our metal shielded The FIRST[®] Metal Screen or its balanced version The SECOND[®]. —A.J. van den Hul B.V.

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