Hi-Fi Cable NEGLEX 2803 & 2804 - Historical Review

Part No. 2803 and 2804 are difficult to manufacture and have a very low yield rate. So we can make relatively small amounts of them. These present the paradox that if they become very poplar it would take too many factory resources which could be used more profitably in making other products.Frankly most companies would discontinue them as they are too much trouble for the revenue they generate.

How they came about and why we have continued production for so many years is an interesting story. The reader must remember that for many years it was assumed that audio cable did not affect the sound of audio systems. This is taken for granted by most people even today.

Then, back in April 1974 Mr. Akihiko Kaneda of Akita University presented in the technical magazine for amateur "MUSEN TO JIKKEN" (Wireless & Experimentation) that the sound quality of any amplifier could be changed even by wire or cable. Further, sonic effect was assumed to be caused by skin effect and also made worse by the common tin plate over copper structure.

At the same time, audio critic Mr. Sabro Egawa presented his experimental results in a music magazine "Record Geijyutsu" (Record Art) in its December, 1975 issue that sound quality is different between speaker cables, and he pointed out the possibility of its relation to skin effect as well. These two statements that I called "Kaneda-Egawa prospect" were in error in the following points

- It is against common sense of electro-acoustical engineering (we knew electrical characteristic of a cable change sound and skin effect at audio frequencies is extremely low, unmeasurable in level.) Since it referred to the electrical property which caused difference in sound definitely as skin effect, it could become a verification and argument subject with non-ambiguous electrical engineering.

I started engineering calculation and experimentation, assuming at the beginning I could easily prove that skin effect could never affect sound quality. However, before long I was forced to realize that it was not so easy. In fact, I had to recognize the fact that sound is changed by cable, as a result of the very experiments by the discoverers in front of me, so that I was compelled to research it seriously. Skin effect is a part of eddy current nature, and although it is not possible to measure it at audio frequency range, it can be calculated electromagnetically and the calculated result can be verified by several methods. Therefore I did listening tests myself and asked many people for double blind tests, making many cable models that had different eddy current loss. These listening tests made me sure that skin effect has a rather large role in the sound differences. Given this result,

the next question became if we human-beings could detect such minute differences that they could not be measured by electrical measurement. On the other hand, we can identify the same sound source even though it is quite different in electrical characteristics. Therefore, it became understood that our brain percepts sound by a different mechanism from electrical measurement. What became apparent after many experiments was that "Frequency Derivative of the transfer function" (system function - magnitude and phase response) of an audio system was deeply related to this issue. If so, humans are very sensitive to the difference between close frequencies and not good at comparison between greatly separated frequencies. These are quite different characteristics from electrical measurement

The reason for this difference seems to relate to the fact that the transmission system from ear to brain is two-dimensional, and operation is done at orthotomic surface; further, total brain operation is processed three-dimensionally. However, an electrical measuring system is a one-dimensional operation, so that it becomes hard to make frequency derivative operation of the transfer characteristic. (In an optical computing system using lens and mirror with laser light, this kind of operation can be easily realized). Two products which resulted from huge amount of theoretical study, computation, measurement and experimental research by double blind test are the 2803 interconnect and 2804 speaker cable. These have been judged by countless listeners to have extremely high sound quality. Because of difficult to manufacture cable design and resulting very low yield rate, these are not "practical" products, so that we are always urged by our accountants to discontinue them. However, we think we are going to continue with the challenge of making them. We hope critical listeners continue to enjoy them. Incidentally, to this day most audio makers and electrical cable designers deny skin effect. Sadly there are many gimmicky goods on the market, with marketing suggesting countless "voodoo" factors that simply cannot be understandable by science and engineering, for example purity of conductor material. Of course, there are some upright and serious makers like Panasonic that are indifferent to those gimmicks. We salute the latter, while recalling the often cited advice to "let the buyer beware."

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Excerpt taken from the official MOGAMI catalogue – pg73
http://www.mogamicable.com/pdf/Mogami_Tech_cat2014.pdf
Please note the above is a Japanese translation hence there may be grammatical errors