EDITORIAL / ÉDITORIAL

Ah - The beauty of QuarkExpress or its conflict with Microsoft! Yours truly was very proud in learning the industry standard publishing software and producing an archival record of the journals by laying out each issue in QuarkExpress. I was even able to convince the CAA Executive to buy in to my line of thinking. Alas, all is not well in the land of e-mails, file links, font lists and what have you. The number of screw-ups that graced the lead paper in the March 2000 issue of Canadian Acoustics was too numerous that we decided to hide behind Monk's robes and reprint the article, "Binaural technology for application to active noise reduction communication headsets: Design considerations," by C. Giguere et al. We have conveyed our sincere regrets to the authors for creating this mess! Hope we have learnt from this experience. We have also started to revamp and upgrade the "Instructions for Authors" and we hope to publish the revised guidelines soon.

We had solicited responses to the article on the use of decibels, published in Volume 106, pp. 3048, 1999 of JASA. We include the responses below. Hope this creates further discussion on this elusive quantity.

Ah - La beauté de QuarkExpress ou de son conflit avec Microsoft! J'étais très fier d'apprendre à utiliser le logiciel d'édition QuarkExpress qui est le standard dans l'industrie, et de pouvoir reproduire des archives des journaux en incorporant chaque issue dans le logiciel. Je pouvais même convaincre le directeur de CAA d'être en accord avec moi. Hélas, tout n'est pas aussi bien dans cette terre du courrier électronique, liens de fichier, liste de fontes et bien d'autres. Les erreurs qui ont entaché l'article principal de l'édition de mars 2000 du journal d'acoustique canadienne étaient tellement importantes que nous avons décidé de nous cacher derrière de longues robes de moines et ré-édité l'article, "Binaural technology for application to active noise reduction communication headsets: Design considerations," par C. Giguere et al. Nous avons envoyé nos excuses aux auteurs pour ce désordre! Espérant que cette expérience nous a appris quelque chose. Nous avons également commencé à améliorer la rubrique "instructions pour les auteurs" et nous espérons éditer les nouvelles directives révisées bientôt.

Nous avions sollicité des réponses à l'article sur l'utilisation des décibels, éditée dans le volume 106, pp 3048, 1999 de JASA. Nous icluons les réponses ci-dessous. Nous espérons que ceci crée davantage de discussion sur cette quantité insaisissable

MAIL

Decibels, SI Units, and Standards

by David M.F. Chapman
(Defence Research Establishment Atlantic, PO Box 1012, Dartmouth, Nova Scotia, B2Y 3Z7, Canada)
dave.chapman@drea.dnd.ca

Recently, the *Journal of the Acoustical Society of America* published two opinion articles in its Forum section advocating the abolition of the decibel measure in acoustics[1]. The following article was submitted to accompany the first two articles, but has not yet appeared in JASA (although this is promised!). In response to the invitation of the Editor of *Canadian Acoustics*, the *verbatim* article is offered as a contribution to a discussion on the topic of decibels in these pages.

* * * * * * * * * * * *

Provided they are used correctly, decibels provide a convenient centigrade scale of sound levels in air that nicely matches human auditory experience: 0 dB re 20 μPa is about the smallest sound a human can detect and 100 dB re 20 μPa is about as loud a sound that we will tolerate for a short duration. The rationale for using decibels in other fields is not so well established, but decibel use has spread to applications in underwater acoustics, radio wave communications, and electronics in general. For acoustical measurements in liquids, the standard reference pressure has been chosen to be twenty times lower, at 1 μPa. Using different reference pressures in gases and in liquids is confusing, especially when considering cross-disciplinary acoustic issues that involve dissimilar acoustic media (mammal hearing in air and in water, for example). However, this dichotomy is entrenched in an ANSI standard and it is unlikely to change soon [2]. Many guidelines, regulations, and laws are written in the language of decibels, and it would take time to expunge the decibel from these, even if all the acoustical experts in the world woke up tomorrow sharing the conviction that the decibel had outlived its purpose.

The general public, most journalists, and even some scientists have difficulty with decibels. Non-experts use the decibel as if it were a physical unit itself, rather than a logarithmic measure of the ratio of like physical quantities. Perhaps they imagine that sound comes in decibels in the same way that cheese is sold by the pound. "Unadorned" decibels make sense only when reporting truly dimensionless ratios such as the gain of an amplifier or the attenuation of a filter. When decibels are used to represent absolute quantities having