SPEECH RESEARCH AT THE UNIVERSITY OF ATLANTIS ## [3 LINES FOR TITLE, SOME MAY BE EMPTY, STYLE, LEFT JUSTIFIED 16 POINT ARIAL BOLD UPPERCASE]

B. Long	Underwater Listening Devices, Newtown, Michigan, USA
G. G. Small	Underwater Listening Devices, Newtown, Michigan, USA
R. U. Little	South West Coast Associates, Atlantis City, Lost Islands
M. W. Short	Underwater Listening Devices, Newtown, Michigan, USA

(Authors style, 10 point Arial, Use 6 lines, of which some may be empty)

1 INTRODUCTION

##[*heading 1, 14 pt Arial, upper case, 10 cm from top margin, 10 pt blank line below*]

##[Please ensure that the paper size is set to A4 and not letter size, especially US delegates. Normal text is 10 pt Arial, fully justified left and right, normal text style, leave 2×10 point lines spaces before next heading. The page margins are left 27 mm, right 27 mm, bottom 25 mm and top 40 mm].

This paper describes recent speech research activities at the University of Atlantis. The practical application of these requirements can however cause a number of problems due to the very nature of the agent that has to be investigated. This follows from the two basic facts that most voices generate levels that vary with time and that sound waves attenuate as the distance from the source increases. Consequently, the noise climate in which any individual vocalises is determined by both the noise output of any appliances in their vicinity and how they move relative to them. It is a prerequisite for an accurate assessment of any given situation therefore, to take account of the variation of noise levels in the locality.

2 RESEARCH PRIOR TO 1974

##[*Outlined numbered, text starts 1.25 cm from left margin*]

2.1 Speech Analysis Research

##[*Heading2 Capitalised 12 pt bold Arial, 10 pt blank line below*]

The regulations identity noise exposure (also known as noise dose) as the parameter of the risk and this in turn is a function of both the noise level in dB(A) and exposure time. $^*h'$ is the product of these two variables that has to be contained if the risk is to be controlled, hence as noise level increases the exposure duration must be reduced to balance the risk. Strictly speaking the deafness risk is proportional to the noise energy emission into the ear, with a doubling of the energy level being an increment of 3 dB(A) on the logarithmic decibel scale. For every 3 dB(A) change in the noise level therefore, there must be a corresponding halving or doubling of the exposure duration. ##[One 10pt blank lines between paragraphs].

These variations with time are dealt with by the use of the “equivalent continuous” noise level. As it’s name suggests this is a method of calculating a single steady level that has both the same noise energy level and duration as the varying time pattern under consideration. It is given the symbol LAq,t, Level of the A weighted equivalent continuous sound averaged over a specified time, and refers to the level at any one particular location. The LAeq,t value can therefore be read as a steady level and compared against the permitted exposure times given in Figure 1.

The regulations[a] identity noise exposure (also known as noise dose) as the parameter of the risk and this in turn is a function of both the noise level in dB(A) and exposure time. $*h'$ is the product of these two variables that has to be contained if the risk is to be controlled, hence as noise level increases the exposure duration must be reduced to balance the risk. Strictly speaking the deafness risk is proportional to the noise energy emission into the ear, with a doubling of the energy level being an increment of 3 dB(A) on the logarithmic decibel scale. For every 3 dB(A) change in the noise level therefore, there must be a corresponding halving or doubling of the exposure duration. ##[One 10pt blank lines between paragraphs].

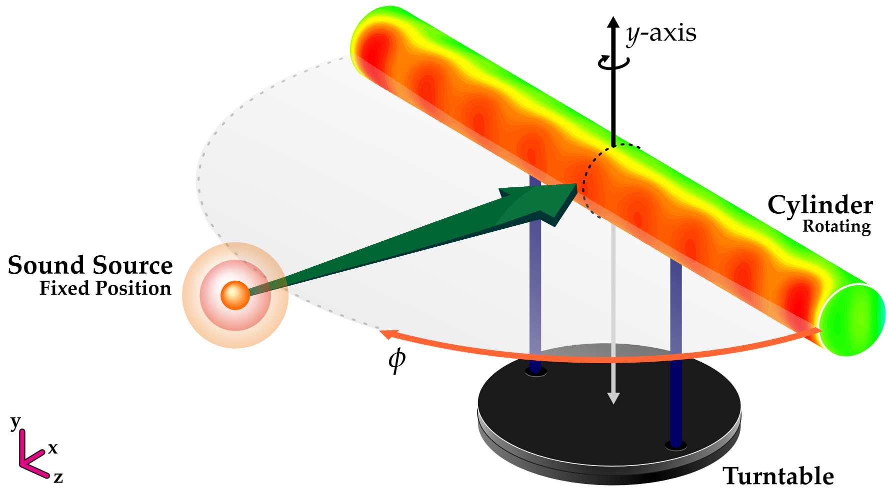

Figure 1 – Just an example of figure (extracted from Fonseca[1]).

2.1.1 Development

##[*Heading 3, 12 pt bold Arial Capitalise. Leave 1 × 10 pt blank line below*]

##[Avoid further heading levels]

##[please add the footer (do not add page numbers)]

The equation

$$p(t) = \frac{s\left(t - \frac{R(t)}{c}\right)}{4\pi R(t)(1 - M\cos[\theta(t)])^2} \cdot \int_a^b H(t)\,\mathrm{d}t \qquad (1)$$

is just for testing. When referring, it is possible to use Equation (1).

Table 1 is just another example.

Table 1 – Example of table.

Number of cores	Time spent (s)
16	5120
32	2555
64	1100

[a]This is a footnote.

3 OTHER STYLE COMMENTS

(text starts at 40 mm from top of page)

Header should read ["Proceedings of the Institute of Acoustics"]

##[Figures can be reproduced in colour or black and white but bear in mind that if they use colour, the figures may become unintelligible if photocopied in black and white.]

##[Papers will normally be 8 pages long, we will accept up to 12 pages. You should also provide an abstract to the Institute of Acoustics if you have not already done so.]

##[Papers to be emailed to linda.canty@ioa.org.uk.]

##[Figure should be numbered, e.g. Figure 1, with captions in 10 pt Arial]

##[References should be numbered in superscript and appear at the end of the paper[2–6].

4 REFERENCES

1. W. D'A. Fonseca. *Beamforming Considering Acoustic Diffractionover Cylindrical Surfaces – Original: Beamforming considerando difração acústica em superfícies cilíndricas*. Doctoral Thesis, Federal University of Santa Catarina, Florianópolis, SC, Brazil, 2013. URL: http://www.bu.ufsc.br/teses/PEMC1445-T.pdf. ISBN 978-8591677405.

2. P. H. Mareze, E. Brandão, W. D'A. Fonseca, O. M. Silva, and A. Lenzi. Modeling of acoustic porous material absorber using rigid multiple micro-ducts network: Validation of the proposed model. *Journal of Sound and Vibration*, 443:376 – 396, 2019. ISSN 0022-460X. doi:10.1016/j.jsv.2018.11.036.

3. H. J. M. Steeneken and T. Houtgast. The temporal envelope spectrum and its significance in room acoustics. In *Proc. 11th ICA*, volume 7, pages 85–88, 1983.

4. T. J. Cox, F. Li, and P. Darlington. Extracting Room Reverberation Time from Speech Using Artificial Neural Networks. *J. Audio Eng. Soc*, 49(4):219–230, 2001. URL: http://www.aes.org/e-lib/browse.cfm?elib=10197.

5. S. Haykin. *Neural Networks: A Comprehensive Foundation*. Prentice Hall, 1998. ISBN 978-0132733502.

6. ##[Reference list style, text starts at 1.25 cm, 10 pt Arial].