



Acoustics Australia

Acoustics Australia

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FROM THE OUTGOING PRESIDENT



This marks the end of my second period of President of the Australian Acoustical Society. It is timely to pass the baton on to up-coming professionals in the society. I would like to take this opportunity to publicly thank all past and present Federal councillors for their support and encouragement. The encouragement and respect are highly valued and makes the taking on public leadership roles more viable.

At this time, I would particularly like to acknowledge the diligent workmanship of Richard Booker who has retired from the General Secretaryship. A role he has taken since 2010. His knowledge and application to the task has been exemplary in assisting to steer the

Society though many issues. His previous knowledge has also been brought to bear in streamlining many of the tasks of the General Secretary to the benefit of the Society.

Thank you, Richard, for your friendship and integrity and I trust you will take the time now to fully pursue your delights and dreams. With Richard’s retirement, I would like to welcome our new General Secretary Julie Sobolewski. The Society will continue to evolve and I am sure that the General Secretary’s role will evolve as well.

The importance of new skills, knowledge and technology will as always be important in keeping the Society abreast of contemporary issues. The future leadership and leadership team will be well positioned to keep driving the Society ahead and keeping it relevant to its membership.

Terrance McMinn, Outgoing President, AAS

FROM THE INCOMING PRESIDENT



Firstly, I’d like to thank Terrance for his leadership of the society over the past two years. Terrance has done a fantastic job as leader and has left some big shoes for me to fill. I’m grateful for the opportunity to be the incoming President of the Australian Acoustical Society, and I hope that I can do as good a job in leading the society for my term as President.

I would like to thank our outgoing General Secretary, Richard Booker. Richard’s efforts over the past eight years in this role have been quite significant and have not gone unnoticed; he has really gone over and above in his service to the society and has set the bar quite high for our new incoming General Secretary, Julie Sobolewski. For those of you that don’t know, Julie is based in Brisbane and joins the society with over 25 years’ experience in similar roles. Welcome Julie.

As I write this, the South Australian division is in the final throws of organising the 2018 conference, Hear to Listen. I’d like to acknowledge the support of the conference organisers, who volunteer their time each year to organise these fantastic events. Without their voluntary support, these events would not be possible. I would also like to note that it is not easy trying to juggle the organisation of events such as these, along with work, family and social commitments. I know that as a consultant, work commitments at the end of each year tend to consume us all, and sometimes this can result in neglecting our family and friends. So as we approach the Christmas and New Year holiday period, I encourage everyone to take some time off to reconnect with family and friends, recharge the batteries and be prepared for what is looking like an exciting year ahead in 2019!

Simon Moore, President, AAS

AUSTRALIAN ACOUSTICAL SOCIETY ENQUIRIES

NATIONAL MATTERS

- * Notification of change of address
- * Payment of annual subscription

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GENERAL SECRETARY RICHARD BOOKER RETIRES

Since assuming the role of General Secretary in July 2010, Richard has demonstrated a commitment above and beyond the normal duties expected of the General Secretary. Inheriting an outdated membership management system that relied on spreadsheets and manual preparation of invoices, Richard used his experience in Information Technology and Project Management to streamline the invoicing process for our members. Liaising with different software developers over a period of several years, Richard has been able to create a system that greatly simplifies how the Society keeps track of its members and how memberships are paid. This is a proven success and is of great benefit to the Society, and its membership. It has greatly simplified the task allotted to those having the duty to chase up on overdue membership accounts, pending suspensions and related matters, with much of this largely automated.

The time taken to develop the database was additional to the time Richard required to undertake the usual duties of the General Secretary. Often working five days per week, and sometimes more, Richard has made himself available to respond to the queries provided by Federal Council, State Divisions, the general membership and members of the public.

Richard has been the public face of the Society for eight years and has greatly contributed to the objectives of the Society by his diligence. Using his knowledge of the Articles of Association, By-Laws and Procedures, Richard has assisted prospective and incoming members and has responded professionally to enquiries and complaints involving the Society and its membership. In such tasks his calm demeanour, urbane and good-humoured approach to duty have shone through.

He has attended the annual conference and, ex-officio, Federal Council and Annual General Meetings of the Society, both of which have greatly benefited from his consistent organisation and diligent and professional manner. In Queensland, Richard has been a regular attendee of the Queensland Division's technical meetings, AGM and Christmas Party.

Over the past eight years he has formed friendships with many members of the Society. His integrity, attention to detail and persistence has benefited every member of the Society. By his service he has greatly assisted the cause of Acoustics in Australia. The Council and membership of AAS wish Richard all the best for the future.

FROM THE EDITOR



This issue of Acoustics Australia is the third issue for Volume 46 of Acoustics Australia. It was fully published by the Society from 1972, (called The Bulletin of the Australian Acoustical Society from 1972 to 1984) until 2015 when it became a Springer publication. All articles for review are submitted to the Springer Editorial Manager system which keeps track of the progress, the reviewer responses

and the final editor decision. If that decision is to accept then the article proceeds to the publication pipeline for final processing into the correct style, the all-important indexing and allocation of a DOI and then made available in an on-line first version. Three times a year these completed articles are paginated and collated into an issue which includes the 'front matter'. This section is the compilation of items relevant to the AAS, such as the news and notes, forum articles and advertising and as well as appearing on the Springer site as open access, is distributed directly to all members and those on the mailing list of the AAS.

The role of the editor involves reading each manuscript, deciding if it should go the next step for review, selecting reviewers, reading the reviews and making the final decision. As well, the editor is responsible for the production of the 'front matter' - and it is for this task that the assistance and experience of Truda King in gathering the bulk of the material and Leigh Wallbank in dealing with the advertising are much appreciated.

Understanding the increasing task load for the editor with the current large number of submissions to be processed and the

responsibilities for the journal production, the AAS Council has agreed to a plan for the appointment of Chief Editor that involves a transition period into and out-of the role. What has been an open-ended appointment now becomes a planned process of 1-2 years as associate editor, 2 years as chief editor and 1-2 years as past editor. In late 2017, a call for expressions of interest for consideration as a future Chief Editor led to a number of responses. Following assessment of these, the Council has appointed Con Doolan, currently a Professor based in the School of Mechanical and Manufacturing Engineering at UNSW. Con not only has experience with publishing himself but has direct experience with Acoustics Australia. Con and his colleague Danielle Moreau worked on the special issue on wind turbines which had an excellent selection of articles. Con takes up the role as associate editor officially in 2019 with a view to becoming Chief Editor in 2020/21 and I welcome his assistance.

This issue is a somewhat slender issue with a small number of articles on a range of topics, but more articles are working their way through the system for the next volume. One article is from an Australian research group and we welcome more Australian articles as well as suggestions for special or focussed issues.

In conclusion, I would like to thank Richard Booker for his outstanding support to all aspects of the operation of the Australian Acoustical Society, including the journal Acoustics Australia. His guidance and experience were particularly valuable during the transition to Springer publishing. On behalf of all those involved with Acoustics Australia, I wish him all the best for his time '*after the AAS*'.

Marion Burgess, Editor in Chief

ACOUSTICS AUSTRALIA 46(3), 2018 ABSTRACTS

The full papers for these abstracts can be found in the online version of *Acoustics Australia*.

Members of the Australian Acoustical Society should access via the member login of the AAS website. Access for all others is via <http://link.springer.com/journal/40857>

GENERAL SUBMISSIONS

ORIGINAL PAPERS

COMPARISON ANALYSIS AND OPTIMIZATION OF COMPOSITE MICRO-PERFORATED ABSORBERS IN SOUND ABSORPTION BANDWIDTH

Chi-Hua Lu^{1,2}, Wan Chen^{1,2}, Ya-Wei Zhu^{1,2}, Song-Ze Du^{1,2}, Zhi-En Liu^{1,2}

¹ Hubei Key Laboratory of Advanced Technology for Automotive Components, Wuhan University of Technology, Wuhan, China

² Hubei Collaborative Innovation Center for Automotive Components Technology, Wuhan University of Technology, Wuhan, China

Micro-perforated panel (MPP) absorber with a single uniform air cavity is regarded as a promising sound-absorbing structure; however, MPP absorption performance remains unfortunately limited due to the Helmholtz resonance mechanism, which results in more and more attention being placed on composite MPP absorbers. This study focuses on acoustic properties of different composite MPP absorbers, including three types of composite MPP absorbers which are coupled in serial, parallel and serial-parallel modes. Their mathematical models of the normal absorption coefficient are established by utilizing the acoustic electric analogy method. The single-cavity MPP absorber and three composite MPP absorbers are preliminarily designed to verify the equivalent circuit models and perform a pilot analysis of their sound absorption characteristics. Moreover, the particle swarm optimization algorithm is selected to optimize the absorbers so that optimal combination of structure parameters within a prescribed frequency range can be obtained. In addition, the absorbers are made based on the optimized parameters for experimental investigation. The results show that a wider absorption bandwidth may be achieved by composite MPP absorbers through introducing additional absorption peaks with reference to that for the conventional single-cavity MPP absorber, and there are more absorption peaks for the serial-parallel-coupled MPP absorber rather than the simply serial- or parallel-coupled MPP absorber so that better sound absorption effect may be achieved.

ABSORPTION PERFORMANCE OF AN ANECHOIC LAYER WITH A STEEL PLATE BACKING AT OBLIQUE INCIDENCE

Fulin Zhou^{1,2}, Jun Fan^{1,2}, Bin Wang^{1,2}, Zilong Peng^{1,2,3}

¹ Collaborative Innovation Center for Advanced Ship and Deep-Sea Exploration, Shanghai Jiao Tong University, Shanghai, China

² State Key Laboratory of Ocean Engineering, Shanghai Jiao Tong University, Shanghai, China

³ School of Energy and Power Engineering, Jiangsu University of Science and Technology, Zhenjiang, China

The sound absorption of steel-plate-backed anechoic coatings at oblique incidence is investigated theoretically and numerically. An analytical expression for the absorption coefficient is derived using elasticity theory. A 2D numerical periodic model suitable for inhomogeneous coatings under oblique incidence is built using the finite-element method. To interpret the absorption mechanism, the dispersion curves for guided elastic waves in a uniform coating and a steel plate are calculated using the spectral method. The absorption coefficients are analyzed with respect to the incident angle and frequency using elastic plate resonance theory. The effects of the steel plate backing and the attenuation of the coating are investigated. For the Alberich anechoic coating with a steel plate backing, the absorption coefficients are calculated numerically, and the absorption mechanism is investigated by structural displacement vectors and deformations. The following absorption characteristics can be found. In the frequency-angle spectra for absorption coefficients, the bright areas resulting from low-order Lamb waves in the coating are recognizable at low frequencies. A broad, strong anechoic area appears at large incident angles and low frequencies; under these conditions, the displacements of the steel plate and the 2D cavity are the main components of structural vibration. The resonance moves to low frequency when the thickness of the steel plate is incorporated and the cavity height is increased. At relatively high frequencies, some new absorption areas result from the resonance of periodic cavities and cover the contribution from the high-order Lamb waves in the coating caused by attenuation. The corresponding absorption coefficients decrease with an increasing angle of incidence.

EMPIRICAL STUDY OF ROOM ACOUSTIC CONDITIONS AND NEUROPHYSIOLOGIC STRAIN IN STAFF WORKING IN SPECIAL OPEN-PLAN BANK OFFICES

Masoud Shafiee Motlagh¹, Rostam Golmohammadi¹, Mohsen Aliabadi², Javad Faradmal³, Akram Ranjbar⁴

¹ Center of Excellence for Occupational Health, School of Public Health and Research Center for Health Sciences, Hamadan University of Medical Sciences, Hamadan, Iran

² Center of Excellence for Occupational Health, Occupational Health and Safety Research Center, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran

³ Modeling of Noncommunicable Diseases Research Center & Department of Biostatistics and Epidemiology, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran

⁴ Department of Toxicology and Pharmacology, School of Pharmacy, Hamadan University of Medical Sciences, Hamadan, Iran

Noise in open-plan offices induces psychological stress and fatigue in staff. Focusing on workstations and noise exposure, this study investigated acoustic conditions in special open-plan offices and their relationship with neurophysiologic strain. Twenty banks and 104 participants were randomly selected.

Acoustic properties of banks and workstation partitions were assessed using the ISO criteria and speech transmission index (STI). Equivalent noise level (LAeq) of the staff was measured in three 30-min intervals, and skin conductance level (SCL) and respiratory rate (RR) of staff were assessed in three 5-min intervals at the beginning, in the middle, and at the end of the work hours. The intelligibility of speech between staff workstations (SW) was better than that between staff and clients (S&C). The observed condition should be reversed to ensure speech privacy for the staff and speech intelligibility between the staff and clients. The findings indicated that with increasing LAeq of the staff, the SCL and RR, i.e., the stress of staff increased too. Yet, the staff with more work experience showed a lower increase in SCL. The correlation between STI and staff strain was not statistically significant; however, with increasing STI between SW and with decreasing STI between S&C, the staff strain increased. With increasing noise exposure, psychological stress of the staff increased too. Because of the acoustic condition and partitions used in the banks, the acoustic comfort of staff was not desirable. Since many other banks use such partitions, any improvement in partitions between workstations can enhance acoustic comfort in the banks.

EFFECTS OF DIFFERENT LUNG VOLUME CONDITIONS ON CLOSED QUOTIENT, VOCAL FUNDAMENTAL FREQUENCY AND RELATIVE INTENSITY IN VOCALLY UNTRAINED FEMALE SPEAKERS

Sylvia Yeo, Rachel Lee, Patricia McCabe, Catherine Madill
Voice Research Laboratory (Speech Pathology), The University of Sydney, Lidcombe, Australia

The objective of this study was to determine the relationship between lung volume (LV) conditions and vocal fold vibratory patterns using measurements of closed quotient (CQ), fundamental frequency (F0) and relative vocal intensity. Forty-three healthy and vocally untrained females were asked to produce the vowel /a/ following breathing instructions that cued for higher, habitual, or lower LV conditions. Closed quotient was measured by electroglottography (EGG) and analyzed using criterion-level method of 25%. An average of CQ, F0 and relative vocal intensity were obtained. No significant difference was observed in CQ between cued LV conditions; however, there was a trend for CQ to increase in the cued high LV condition. Relative vocal intensity and F0 differed significantly across all conditions with higher F0 and relative vocal intensity observed at the high LV condition. These findings suggested that the use of different cued LVs did not have a significant impact on CQ. This may have been due to (1) the phonatory task, (2) variability in responses to the breathing instructions between individuals, and (3) the measurement of CQ. However, F0 and relative vocal intensity were significantly influenced by the LV. This offers a possible alternative approach in cueing pitch and loudness in singing and voice therapy.

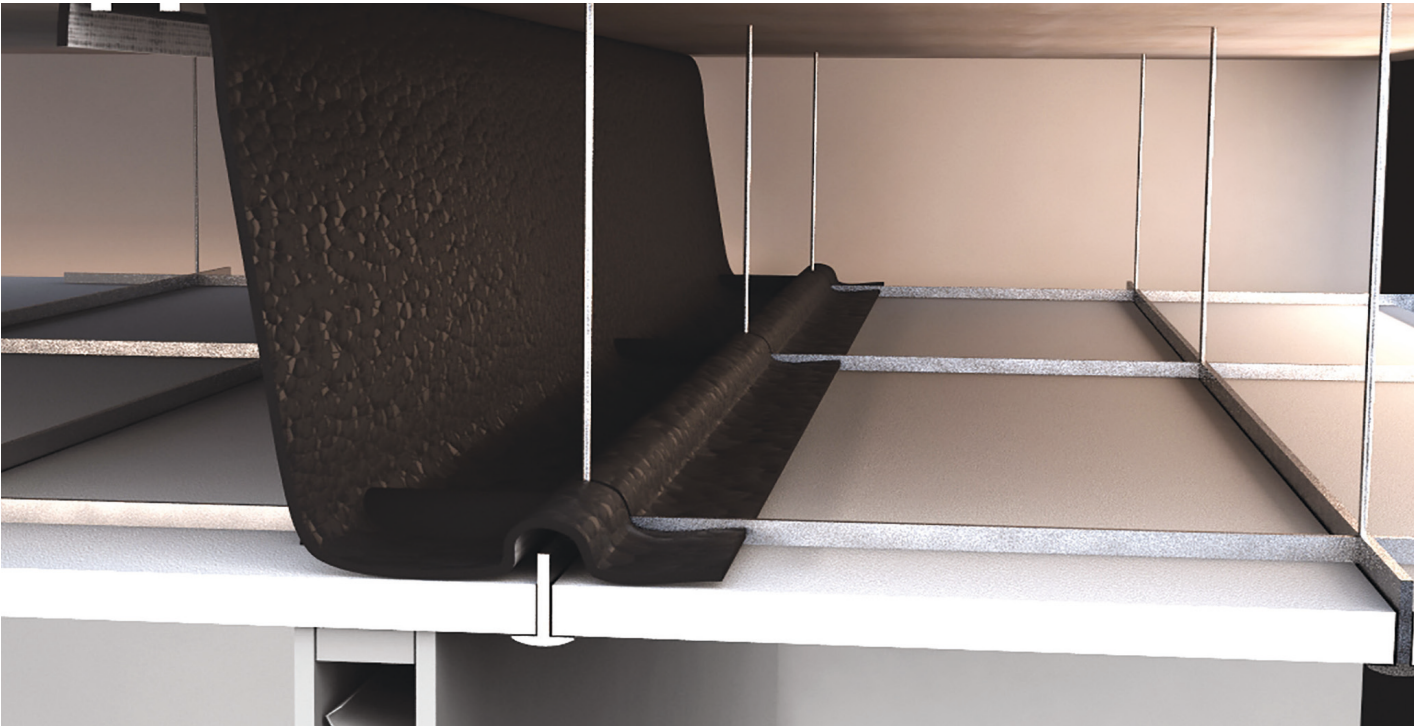
TECHNICAL NOTES

A CASE STUDY OF RECORDING SOUNDWALK OF MIYAJIMA AND ITSUKUSHIMA SHRINE USING SMARTPHONE

Heow Pueh Lee, Kian Meng Lim, Saurabh Garg

Department of Mechanical Engineering, National University of Singapore, Singapore

In this paper, we present soundwalk of Miyajima and Itsukushima Shrine which was captured with a smartphone's built-in microphone calibrated against a typical type 1 sound level meter using NoiseExplorer our in-house developed Android app. Itsukushima Shrine (Itsukushima-jinja) is a Shinto shrine on the island of Itsukushima (popularly known as Miyajima), best known for its "floating" or "Half submerged" torii gate. It is in the southern part of Hatsukaichi in Hiroshima Prefecture in Japan. The shrine complex was listed as a UNESCO World Heritage Site in 1996. NoiseExplorer app records the audio from microphone as WAV files and the current location of the smartphone to log files. The WAV files were used to analyze sound pressure level and generate frequency spectrums and spectrograms where as log files were used to generate noise maps. These two capabilities of smartphones make them cheap and versatile means of recording and describing soundwalk or soundscape of any site in the world. We discuss the unique soundscape of the cross-channel ferry, the Shrine itself, the footpath going up to the nearby mountain and the sound walk captured using a smartphone. The overall noise level of 64.1 dBA is well below the typical noise level of other Japanese tourist attractions.



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NEWS FROM THE DIVISIONS

SA Division

The SA division has been busy in recent months preparing for this years' AAS Conference, held in Adelaide from 6th to 9th of November. As a result, we've not organised many technical talks, and will make sure we hold more of these next year.

The SA divisions AGM was held on 12 October. It was followed by a really interesting talk by Orddom Leav, of the University of Adelaide, who spoke on the radiation of sound from exhaust stacks. His research focused on stacks which emit high temperature high speed gas, such as those from open cycle gas turbine power stations. Orddom spoke about the interaction of sound with the exhaust plume, which cause noise levels at downwind receivers that are 10-20 dB higher than would normally be expected.

Jon Cooper

QLD Division

The Queensland Division AGM was held on Wednesday 19th September 2018. The AGM provided an opportunity to present the \$2,500 RJ Hooker Bursary to Bennett Hugall from The University of Queensland. Bennett's research was an industry collaboration between The University of Queensland and AECOM that looked at the removal of continuous extraneous noise from exceedance levels. Louise, we may have a photo to include here, please leave a small space

A presentation along with a card filled with well wishes from members was also made to outgoing General Secretary Richard Booker to thank him for his service over the past eight years.

A technical presentation was made after the AGM by Lloyd Cosstick of Embelton on "Lightweight Gym Flooring Systems to Prevent Structure-borne Noise and Vibration". Techniques used to isolate impact noise and vibration associated with boxing bags and the dropping of weights was covered. Several case studies were presented that highlighted the difficulty of providing the right amount of acoustic isolation whilst preserving adequate floor rigidity to ensure the stability of weightlifters during exercise.

On 13th October, Queensland Committee Member Ian Hillock judged entries to the Science Teachers Association of Queensland's Queensland Science Contest. The Queensland Division of the Society has been a long-term bursary sponsor of this event. Of the 380 entries in the 2018 Contest, 11 submissions had an acoustic theme. Four Acoustic Bursaries valued at \$300, \$250, \$150 and \$100 were awarded to the top four submissions. Ian reported that the contest was hard to adjudicate as there were many excellent submissions that covered a range of topics. The top three bursary winners were submitted by year 12 students and were of a high order technical standard, consisting of "Measuring the Acceleration of Free-fall using the Doppler Effect", "Guitar Strings and Mersenne's Law" and "Doppler Shift". The 4th place submission, "Harmonics", was prepared by a year 4 student and was a stand-out project for primary school level entries.

On Wednesday 31st October, Dr Kym Burgemeister from ARUP presented a talk titled "The Philosophy of Acoustic Design practice: Why it's OK to use the Sabine Equation" to an interested audience. Based on his paper presented at ACOUSTICS 2017, Kym explored the fundamental ways that acoustic engineers design things and how the 'engineering method' affects design outcomes. Kym's talk was well received by those in attendance and prompted a lively discussion regarding the different approaches to acoustic engineering design.

Planning for the Christmas party is well underway, with a visit to The University of Queensland's Centre for Hypersonics followed by drinks and canapes, scheduled for the 5th December.

Michael Hayne

WA Division

The WA Division held its annual State Seminar at the Swan Yacht Club, East Fremantle on 17 October 2018, with 12 technical presentations and 3 workshops for a record 42 attendees.

The event featured interesting discussion on a wide range of current topics which included monitoring whale migration and population using sound only; wavepark noise impacts; improving submarine communications; the natural benefits of shipwrecks; transformer vibration mitigation; the acoustic design of Perth Stadium; improving transport noise policies; and entertainment noise planning.

The WA Division has also committed a record \$4,500 to support 5 students presenting at Acoustics 2018, all representing the University of Western Australia: Lingzhi Li, Peter Du, Liping Zhu, Bin Wu and Shane Chambers.

The WA Division Christmas Lunch will be held on Wednesday December 5, at The Camfield. Festivities will kick off at 12 noon, and will be a great opportunity to catch up with fellow members before the end of the year. There is no charge for the lunch for AAS members. Further details can be found on the AAS website under Divisional Notices.

Ben Farrell

NSW Division

There have been plenty of acoustic events to attend in NSW recently with a total of 7 held in the calendar year. Since August, we have had great talks by Dominique Estival on 'The Challenges of Aviation Communication' and by Rauf Osterman on 'Low Impact Excavation through Drill & Blast'.

The NSW Division also provides awards to outstanding students in the field of acoustics and vibration. Recipients for the 2nd half of the year have included Benjamin Curtis from the Western Sydney University for his work in Mechatronics & Robotics and Esther Lee from Macquarie University for her Masters in Clinical Audiology. These have been very worthwhile recipients and I would encourage any potential employers to strongly consider these students.



Left to Right: Senior Lecturer, Structural Control & Dynamics, Dr Helen Wu with Benjamin Curtis from Western Sydney University and Angus Leslie (NSW Division).



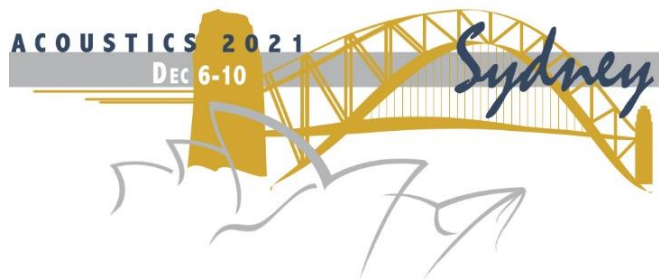
Left to Right: Executive Dean, Faculty of Human Sciences, Prof Simon Handley with Esther Lee from Macquarie University and Jeff Parnell (Chair NSW Division).

Jeff Parnell

VIC Division

Embelton held a technical presentation on lightweight gym floors at their new presentation space at Bakers Road, Coburg in early August. The focus of the presentation was on the development of systems to control vibration from free weight drops using various floor build-ups. The systems were trialled in the Embelton test suite which comprises a 20 Hz, 150 mm thick isolated slab with receiving room below. Members were taken on a tour of the lab and a demonstration of the test method with four key floor systems. Embelton has provided floor isolation installations at over 25 gyms in the last year, so they bring a wealth of practical experience as well as committed research and development to the issues. They took us through two very interesting installations, a boxing gym and a gym with a dedicated deadlift area, in detail. The theory, the practice and the take home lessons from these case studies were shared with the Vic Div.

In late August, Dan Griffin from Marshall Day Acoustics presented on the MDA modelling program 'INSUL'. The presentation was hosted by MDA at their Melbourne office. INSUL has been around for many years now, and has become the default package for modelling the impact and airborne sound transmission properties of both simple and complex systems in many acoustical consultancies. Dan, a member of



The Acoustical Society of America (ASA) and the Australian Acoustical Society (AAS) are joining together to co-host **Acoustics 2021, Sydney** which will also incorporate the Western Pacific Acoustics Conference (WESPAC) and the Pacific Rim Underwater Acoustics Conference (PRUAC).

The conference will be held at the International Convention Centre, Darling Harbour, Sydney. This Convention Centre has been completely rebuilt and opened in late 2017 so it features state of the art facilities along with the magnificent views of Sydney.

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INSUL's development team, discussed its evolution, its intended uses, its strengths and limitations. Modelling accuracy was investigated in the context of INSUL predictions for Cross Laminated Timber panels. Predicted and measured one third octave band sound transmissions loss curves were compared for single, double and triple panel systems incorporating CLT. The correlation between the measured and predicted data, particularly for the triple panel system, was impressive. The presentation was followed by a question and answer session.


The AAS Victorian Division held its annual general meeting early in October this year, followed by the technical meeting "Virtual Reality and Acoustics" presented by Daniel Castro from Wood & Grieve Engineers (WGE). The presenter started noting that the inspiration to his research laid in the current gap in the market for an acoustic modelling software that is able to marry a pleasant 3D visualisation of architectural spaces (generally required from the Acoustic Consultants by Clients and Architects) with 3D audio reproduction that is faithful to the principles of the Acoustics (paramount to Acoustic Consultants to demonstrate the outcomes of acoustic advice given, particularly, for large, complex or expensive Projects).

In the current digitally-driven environment, captivated with new technologies such as Virtual Reality (VR), and after much experimentation with different acoustic test systems, the implementation of a software based on a VR gaming plug-in combined with spatial auralisation based on measured or calculated ambisonics room impulse responses was chosen to proceed. After that, the presentation summarised the technology behind the WGE's acoustic VR software development journey. This research will be also presented as a paper at the Institute of Acoustics Reproduced Sound Conference in November 2018 in Bristol, UK.

Following the technical talk, a live demonstration of a VR Acoustics Plugin - based on the Oculus Rift VR gaming platform/system and developed in-house by WGE - was offered to all attendants. The

software under trial allowed the users to freely move in two different VR scenarios – a classroom and a multipurpose space - while listening to the real acoustics of the space chosen. Additionally, the users could experience the results in real-time of changing the acoustic properties of the materials of the room they were immersed in, all that while experiencing real-time 3D audio spatialisation when walking through the space. It can be said that this presentation proven to be a very popular one with attendants, both for the ground-breaking topic and the hands-on demonstration.

Dianne Williams and Laura Lapena



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- ◆ Logging Kits
- ◆ Data Recorders
- ◆ Amplifiers



Ngara Noise Logger
 Full audio and 1/10th second data recording

FIREFLY

- ◆ Ngara post-processing software
- ◆ Creates 1/1 and 1/3 octave statistics
- ◆ Data in graphical format.
- ◆ Play audio
- ◆ Export WAV to MP3



HIRE

- ◆ Loggers
- ◆ Sound Level Meters
- ◆ Octave Analysers
- ◆ Acoustic Calibrators
- ◆ Vibration Loggers



NATA CALIBRATION

- ◆ Sound Level Meters
- ◆ Noise Loggers
- ◆ Octave Band Filters
- ◆ Acoustic Calibrators
- ◆ Conditioning Amplifiers



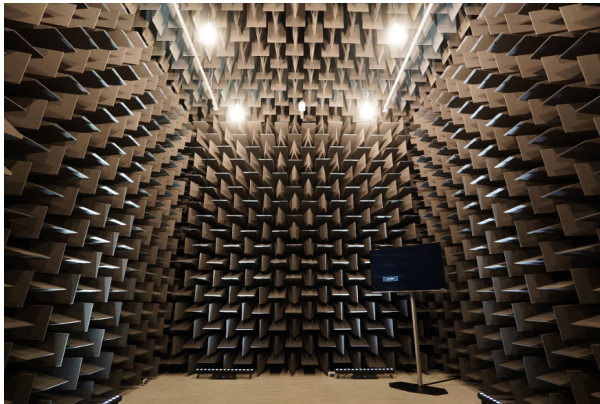
NATA
 WORLD RECOGNISED ACCREDITATION



ACOUSTICS NEWS

New acoustics facilities at UTS Tech Lab nearing completion

The University of Technology, Sydney (UTS) has recently built a brand new acoustics facility to support a dedicated research team in acoustics. The team belongs to the new Centre for Audio Acoustics and Vibration (CAAV) and is based at UTS Tech Lab. Tech Lab is a brand new engineering and information technology facility that has been built in Botany, Sydney. Tech Lab represents an investment of \$60m by UTS, and provides over 9000 m² of brand new laboratory and office space that includes the acoustics labs, but is also home to many other engineering facilities.



The acoustic facilities at Tech Lab are unique to Sydney and New South Wales. The facilities will be NATA accredited and include: anechoic chamber; semi-anechoic chamber; reverberation room and sound transmission suite; listening room and hearing test room; and will be supported by Brüel & Kjær measurement systems including a 64-channel microphone array.

UTS Tech Lab aims to transform the way universities partner with industry, and so the new acoustics facilities will be available for hire by companies, or for undertaking consultancy work. The laboratories will focus on undertaking collaborative research projects with industry, and Tech Lab is now welcoming enquires from interested parties.

The new acoustics facilities are in their final stages of completion and the commissioning and accreditation testing is expected to take place over December and January, with a full opening of the laboratories expected to be in February 2019. In the meantime, the staff in CAAV are happy to show interested parties around the new acoustics facilities and to discuss future collaborative projects. A meeting of the NSW branch of the AAS is also expected to be held at Tech Lab in February or March, where a full tour and demonstration of the laboratories will take place.

More information:

UTS Tech Lab, CAAV

Ray Kirby: ray.kirby@uts.edu.au, Director Tech Lab, CAAV Member

Xiaojun Qiu: Xiaojun.Qiu@uts.edu.au, CAAV Director

WHO/Europe Environmental Noise Guidelines

On 15 October 2018 WHO/Europe published the WHO Environmental Noise Guidelines for the European Region as a regional update. These guidelines provide an important replacement to the 1999 Guidelines and the Night Noise Guidelines for Europe in 2009.

There have been significant advancements in our understanding of

the health effects of noise since then, and although many areas of uncertainty remain, this comprehensive study based on 400 health effects studies between 1999 and 2015 provides valuable insights into the potential impact of noise on health. The health outcomes for which the evidence has been systematically reviewed include: sleep disturbance, annoyance, cognitive impairment, mental health and wellbeing, cardiovascular diseases, hearing impairment and tinnitus and adverse birth outcomes. Although published by the WHO/Europe, in terms of their health implications, the recommended exposure limits can be considered applicable in other regions and suitable for a global audience. Separate guideline levels are provided for the main noise sources: Road traffic noise, Railway noise, Aircraft noise, Wind turbine noise and Leisure noise.

The guidelines have sparked considerable interest in the media and featured on ABC Radio Life Matters on Wed 31 October. This item featured interviews with Lex Brown (Griffith University) who had been involved in reviewing the document and presented the acoustics aspect. Gary Howsley, from UNSW provided the ‘public health’ side of the guidelines. You can listen to the interview at

<https://radio.abc.net.au/programitem/pe0D46Po8Q?play=true>

The Guidelines can be accessed at: <http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2018/environmental-noise-guidelines-for-the-european-region-2018>

Women’s Leadership Australia

AAS members Sam Fard and Meisha Stevens were recipients of a grant for AAS members to participate in the Accelerated Leadership Performance Program, now called Leading Edge, funded by Women & Leadership Australia (WLA). The program is delivered part-time over five months, and is designed to enable the transition of aspiring and early career female managers into confident, capable and motivated leaders.

The organisation will continue to provide special grants for members of the Australian Acoustical Society in 2019. So, watch out for the promotion for the next round of training and below are comments from one of the two undertaking the training in 2018.

More information:

<https://www.wla.edu.au/leadingedge.html>



Meisha Stevens who currently is employed by Wood & Grieve

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Engineers has provided these comments on the program.

“The Accelerated Leadership Performance Program through WLA has been fantastic so far and is teaching me things I can already see changing the way I manage my team and my projects, as well as my interactions with my internal and external industry peers.

Working in acoustic engineering, like any field of engineering, can be a difficult space to navigate as a woman, particularly when you are alone or have no female role models. I am inspired to take every piece of my own experiences, to learn everything I can, and to help other young women see what kind of path a career in acoustics, and in engineering more broadly can offer them. What I have learnt from the WLA program, is that you cannot ‘try to inspire people’ instead, you can only be the best leader you can be, and in effect, your potency will transfer across to those you surround yourself with.

In my profession, I deal with architects, project managers and builders and give acoustic design into projects including hospitals, schools, commercial and residential buildings. The difficulty I face in justifying the cost of my design to my clients who are not technically savvy in the field of acoustics, is something I pride myself in explaining simply and with transparency. I find most people can relate to personal experiences with sound, and very few can relate to metrics and formulas. My research into psychoacoustics is something I find very useful when explaining complex acoustic issues to audiences with a non-technical background. I have published 2 papers with the AAS on the human perception of unpleasant sound, and find that this understanding of the human side of sound is something my clients can relate to in incorporating good acoustic design into their buildings.”

Call for Contributions from ASA

Acoustical Society of America is pleased to announce the upcoming publication, *Rooms for the Learned Musician: A 30-Year Retrospective on the Acoustics of Music Education Facilities*. This book will provide a historical and technical perspective on the acoustics of music education facilities designed in the last ~30 years. It will be a full-colour, hardbound book with in-depth technical content that will appeal to a wide audience, from acousticians and architects to music education facility directors and musicians. The publication is a follow-up to the recent ASA publications *Acoustical Design of Theatres for Drama Performance: 1985-2010* and *Worship Space Acoustics: 3 Decades of Design*.

The deadline for submission to this book is December 4, 2018. We request the following: all data should be as accurate as possible; textual information should be copy edited and in clear, concise English; and images should be of high quality, taken by professional photographers or produced by professional graphics software (feel free to include photos with unusual or creative perspectives of the music education facility). We reserve the right to reject submissions that do not follow these guidelines.

The book will be published through Springer and there is a contributor fee for each music education facility of \$350 USD. The projected book price is \$52.49 for ASA members, and contributing firms will receive a credit for at least one free book at the time of publication. Publication is set to coincide with the ASA spring 2020 meeting. Follow this process to submit your contributions:

1. Login to your google account and go to <https://goo.gl/forms/DCI0rJ7O0zhgA8Z92> to submit your venue information.
2. To remit your contributor fee go to <https://acousticalsociety.org/musiceducationbuildings/>. Your music education facility data and images will not be processed until your contributor fee has been received.

More information: acousticsbook@gmail.com

Scientists capture eerie seismic howl of Antarctic ice shelf

Researchers have recorded the Antarctic's natural soundtrack — usually inaudible to the human ear — and it may help them predict when ice shelves collapse in future.

Scientists buried 34 extremely sensitive sensors under the snowy surface of the Ross Ice Shelf to monitor vibration and study its structure and movement between 2012 and 2017, according to a study published in the *Geophysical Research Letters*. But they noticed something odd — the snow blanketing the shelf was almost constantly vibrating. Weather conditions can change the frequency of the vibrations, thereby changing the tune.

First published at:

<https://www.abc.net.au/news/2018-10-19/scientists-capture-eerie-seismic-howl-of-antarctic-ice-shelf/10396280>

Wind farm chief urges tighter rules for noise monitoring

Noise monitoring of wind farms must be tightened to ensure they never exceed new guidelines set by the World Health Organisation, Australia's wind farm commissioner has said.

A WHO investigation highlighted a lack of quality research into wind farm noise and health and said because of its special characteristics, existing measurements might not be adequate. It made a conditional recommendation that a level be set for average noise exposure of below 45 decibels. “Wind turbine noise above this level is associated with adverse health effects,” the WHO said. Australia's Wind Farm Commissioner Andrew Dyer said the recommendations were similar to Australian regulations, which ranged from 35dB to 45dB. Mr Dyer said he would prefer to see a uniform noise level set in all states. “The important thing is to ensure that the WHO guidelines were not exceeded at any premises,” Mr Dyer said.

Extracted from:

<https://www.theaustralian.com.au/national-affairs/health/wind-farm-chief-urges-tighter-rules-for-noise-monitoring/news-story/c69fd3b8969ae1b53ddf4a2173d9a64a>

Wind farms attract new rules governing noise in Victoria to 'give community confidence'

Effective from October 4, 2018, the Victorian Government changed the rules around the testing of wind turbine noise at all new wind farm developments. Now, all new wind farm developments must have noise levels checked by an independent auditor approved by the Environment Protection Authority (EPA).

Noise levels will be audited twice — before and after construction of the turbines. The Victorian Government said new planning permits must now include audits of predictive noise before a wind farm permit would be granted. In addition, once a developer had built a wind farm, noise levels would be checked by an EPA-approved auditor. The outcome of all future audits will be made public on the EPA Victoria website.

First published at: <https://www.abc.net.au/news/2018-10-05/wind-farm-noise-rules-to-be-reviewed-by-victorian-government/10334752>

Hong Kong construction noise symposium

The Hong Kong Institute of Acoustics and the Hong Kong Construction Association recently hosted the third bi-annual Symposium on construction noise - “Smart Construction for Quiet” – on October 25, 2018 at Asia World Expo, Hong Kong. NSW EPA's Paul Maddock presented at the symposium.

The symposium covered a wide range of areas including quieter construction machinery and methods, construction noise control and policies, and innovative noise mitigation measures. Local consultants and construction industry speakers were joined by consultants, industry and regulators from the UK, the Netherlands, Japan, Singapore, and Australia to share knowledge on construction noise management. The program included policy developments, noise management practices, innovative quiet construction and demolition methods, and the promotion of environmental-friendly construction technologies. The Symposium was complemented by Eco Expo Asia organized by the Hong Kong Trade Development Council to showcase innovative and quiet construction and demolition methods, practices, equipment and tools.

With over 250 participants in attendance from the from construction field, consultant companies, project proponents, and regulatory authorities, the Symposium was an opportunity to enhance technical knowledge on best-practice construction noise management.

More information: www.hkioa.org

Australian Standards developments

Over the last 12 months, Standards Australia has consulted with a wide range of stakeholders and specialists in the sphere of acoustics on the close to 60 standards currently ‘aged’ across the entire ‘acoustics-related’ catalogue. It has been identified that many aged Australian standards can be superseded by Australian identical adoptions or adoptions with modifications. This move to international adoption is considered highly beneficial for Australia as they help stakeholders, industry etc. to adopt and work to the latest versions of ISO and IEC standards, ensuring they remain consistent with broad international practice.

These international ISO and IEC standards cover the methods and procedures for the technical measurements and calculations, which are used internationally regardless of where the equipment is manufactured. Australia predominantly imports manufactured equipment so its adherence to international standards helps to harmonise it with global markets.

Using international best practice demonstrated by these standards ensures the unnecessary burden of remeasuring or reassessing to Australian standards are avoided - assuming common metrics or descriptors are used then these methods are relevant and applicable in Australia. Adoption also provides opportunity for greater participation and development of International Standards by Australian acoustics experts.

There are currently 27 standards proposed for identical direct text adoptions (IDT). Of the Australian Standards being replaced, many were originally identical to their ISO or IEC counterparts. Eight are ‘new’ but replace some former standards. These are expected to be shortly available on the Standards Australia website. The table below has the proposed adoptions.

AS being replaced	Proposed Designation
AS ISO 389.1:2007	AS ISO 389.1:2018
AS ISO 389.3:2007	AS ISO 389.3:2018
AS 2012.1-1990 (equivalent)	AS ISO 6393:2018
AS 2012.2-1990 (equivalent)	AS ISO 6394:2018
AS 3657.2-1996	AS ISO 532.1:2018
AS 3657.2-1996	AS ISO 532.2:2018
ISO/DIS 3740 (under revision)	AS ISO 3740:2018
ISO 3741:2010 Rec 2015	AS ISO 3741:2018
ISO 3743-1:2010 Rec 2015	AS ISO 3743.1:2018
ISO 3743-2:2018	AS ISO 3743.2:2018
ISO 3744:2010 Rec 2015	AS ISO 3744:2018

ISO 3745:2012 and Amd1:2017	AS ISO 3745:2018
ISO 3746:2010 Rec 2015	AS ISO 3746:2018
ISO 3747:2010 Rec 2015	AS ISO 3747:2018
AS 3756-1990	AS ISO 9225:2018
AS 3757-1990	AS ISO 9296:2018
AS/NZS 3817-1998	AS ISO 10843:2018
IDT to supersede AS/NZS 4476-1997	AS ISO 61260.1:2018
AS/NZS 4476-1997	AS ISO 61260.2:2018
AS/NZS 4476-1997	AS ISO 61260.3:2018
AS ISO 7029-2003 (R2014)	AS ISO 7029:2018
AS ISO 8253.1-2009	AS ISO 8253.1:2018
AS ISO 8253.2-2009	AS ISO 8253.2:2018
AS ISO 8253.3-2009	AS ISO 8253.3:2018
AS IEC 61672.1-2004	AS IEC 61672.1:2018
AS IEC 61672.2-2001	AS IEC 61672.2:2018
IEC 61672.3:2013 new	AS IEC 61672.3:2018

Colin Tickell provided this Standards Australia update

Amendments to NSW Infrastructure SEPP

State Environmental Planning Policy (Infrastructure) Amendment 2018, under the Environmental Planning and Assessment Act 1979 has introduced important changes to the assessment of noise and vibration for the development of land in or adjacent to road corridors.

Clause 102 of the State Environmental Planning Policy (Infrastructure) 2007 requires the assessment of the impact of road noise or vibration on non-road development where there is an annual average daily traffic volume of more than 40,000 vehicles based on data published by the Roads and Maritime Services. The 2018 Amendment has revised this from an average daily traffic volume of 40,000 to 20,000.

More information:

<https://www.planning.nsw.gov.au/policy-and-legislation/infrastructure/infrastructure-sepps>

<https://www.legislation.nsw.gov.au/2018-507.pdf>

WORKPLACE NOISE & VIBRATION

A report is now available online on the February 2018 WHO-ITU consultation on the "Make Listening Safe" initiative relating to personal audio systems: http://www.who.int/deafness/make-listening-safe/mls_consultation_Feb2018/en/

The objectives were to review progress made in the different areas of work as part of this initiative, further the process of standards' development for personal audio systems, develop a health communication strategy and research protocol and outline the process for development of a regulatory framework for the control of sound exposure in entertainment venues. Global standards for personal audio devices which facilitate safe listening are expected to be finalized by the end of 2018.

One of the background papers for the above meeting (by Roberts and Neitzel) may have particular relevance for those interested in the effects of recreational noise on children's hearing. It recommends an LAeq,8h limit of 80 dB(A) and gives recommendations for reducing noise exposure. See: <http://www.who.int/deafness/make-listening-safe/Monograph-on-noise-exposure-limit-for-children-in-recreational-settings.pdf>

In July 2018, WHO also held a meeting on the prevention of all types of hearing loss and announced the setting up of the World Hearing Forum to further this aim <http://www.who.int/deafness/world-hearing-forum/en/>. A powerpoint on global estimates on prevalence of hearing loss can be viewed here: <http://www.who.int/deafness/Global-estimates-on-prevalence-of-hearing-loss-Jul2018.pptx>

Canadian IRSSST researchers have published a very useful report on the extent of and recommendations for hearing aid use in noisy workplaces. See:

<http://www.irsst.qc.ca/en/publications-tools/publication/i/100904/n/hearing-aid-use-noisy-workplaces>

They have also made a breakthrough in the understanding of tinnitus: <http://www.irsst.qc.ca/en/headlines/id/705/a-breakthrough-in-understanding-tinnitus-the-entire-hearing-system-studied>

French researchers have published a detailed hypothesis modelling the mechanisms underlying the symptoms that can follow an Acoustic Shock. This is an important step in getting wider recognition of Acoustic Shock Injury around the world. See:

<http://journals.sagepub.com/doi/full/10.1177/2331216518801725>

A new Australian review article has been published on Possible Perceptual and Physiological Effects of Wind Turbine Noise <http://journals.sagepub.com/doi/full/10.1177/2331216518789551>

UK researchers have published a new questionnaire instrument for estimation of lifetime noise exposures. It includes useful tables on speech communication levels, personal listening device levels and hearing protector attenuation. See: <http://journals.sagepub.com/doi/full/10.1177/2331216518803213>

Researchers at Curtin University have published a systematic review of the literature on full-shift noise exposures for construction workers in 10 countries. Concerningly, they have found no decrease in exposures over the 36-year period reviewed with most trades having exposures above the LAeq,8h exposure standard of 85 dB(A). See: <https://doi.org/10.1093/annweh/wxy051>

An article in The Conversation by Bond University A/Prof Sander: <http://theconversation.com/a-new-study-should-be-the-final-nail-for-open-plan-offices-99756> summarises the pros and cons of open-plan offices. It includes recent research results from the Harvard Business School that show detrimental impacts of open workplaces on human collaboration: <http://rstb.royalsocietypublishing.org/content/373/1753/20170239>

NIOSH-funded research in the USA has shown how to reduce noise, vibration and dust hazards in concrete drilling: <https://www.cdc.gov/niosh/research-rounds/resoundsv4n4.html#b>. Electric drills were shown to be less hazardous than pneumatic ones and keeping drill bits sharp also reduced hazards.

Swedish researchers have published a paper providing evidence for forceful hand-grip work, with and without vibration, as a risk factor for ulnar nerve entrapment surgery in a large cohort of construction workers. See: http://www.sjweh.fi/show_abstract.php?abstract_id=3757

Canadian researchers from Saskatchewan are researching whether there are any health and cognitive effects from WBV from agriculture machinery at levels below those thought to cause lower back problems. See: <https://doi.org/10.1093/annweh/wxy043>

Pam Gunn has contributed these Workplace Noise and Vibration items.

Pam Gunn Retirement

After 42 years in the Western Australian Public Service, Pam Gunn retired in October. Pam has always been a strong advocate for measures that will protect the hearing of workers and more generally in life and in particular leisure noise. As a Senior Scientific Officer Noise in the Occupational Health, Hygiene and Noise Team, WorkSafe Service Industries and Specialists Directorate she has been well placed to support education programs and to contribute to committees working to ensure that Australian standards, legislation, regulations and codes of practice actually endorse world's best practice. She has kept up-to-date by not only following the literature but also attending conferences and meetings around the world. And she has been always willing to share what she finds. Not only has she been providing this update on Workplace Noise and Vibration but also has a network around Australia that appreciate her emails with advice on latest findings. I have been fortunate to have been on that network and have a special folder for 'Pam Gunn emails' so that I can refer to the content easily.

Pam has also been a keen supporter of the AAS activities, not just in WA Division but has been called upon as session organiser for the international conferences held in Australia. She has been a special editor for a bumper issue of Acoustics Australia on workplace noise and vibration.

While Pam will still continue her lifetime interest in acoustics she is no longer able to provide the content for this section in the journal so we are seeking a volunteer to take on this task. To demonstrate her

dedication to the task Pam has provided a 'hand over' listing of some of the sources that she has used in the preparation of the content for each issue of the journal so the next person already has a head start. But in case we cannot find a replacement here is the listing:

<http://www.hear-it.org>

<http://www.noiseandhealth.org>

<http://www.irsst.qc.ca/en/>

<http://news.hse.gov.uk/category/topic/noise/>

<http://news.hse.gov.uk/category/topic/vibration/>

<http://www.invc.com/profile/newsletters/>

<https://www.actiononhearingloss.org.uk/finding-cures/our-biomedical-research/research-news/>

<https://www.acousticbulletin.com/>

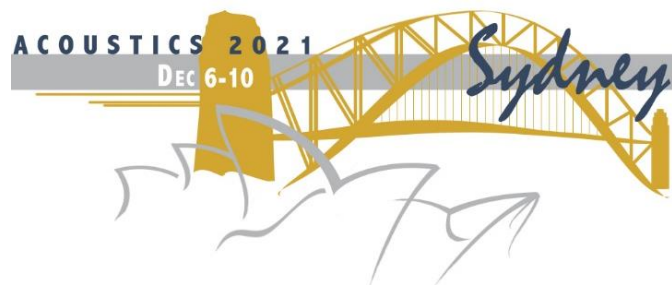
<http://journals.sagepub.com/home/tia>

As well as dealing with Pam in her professional role, I have enjoyed a

personal friendship with Pam over the decades and have fond memories of our experiences while at overseas conferences. Pam does have many other interests and I am sure she will have a very full and enjoyable life into the future.

Thank you for all your assistance to the AAS and to Acoustics Australia.

Marion Burgess



The Acoustical Society of America (ASA) and the Australian Acoustical Society (AAS) are joining together to co-host **Acoustics 2021, Sydney** which will also incorporate the Western Pacific Acoustics Conference (WESPAC) and the Pacific Rim Underwater Acoustics Conference (PRUAC).

The conference will be held at the International Convention Centre, Darling Harbour, Sydney. This Convention Centre has been completely rebuilt and opened in late 2017 so it features state of the art facilities along with the magnificent views of Sydney.

Register your interest now and plan for your participation

Sydney2021@acoustics.asn.au



SPECIFIERS AND ACOUSTIC CONSULTANTS CAN FORM A PROTECTIVE PARTNERSHIP

Bruce Hermes and Danielle Moore
 Pyrotek, Sydney, Australia
 bruher@pyrotek.com

Introduction

Compliant pipe and duct lagging is a combination that works collectively to reduce disruptive noise transfer between apartments and floors in our modern high-density living environments.

However, the infiltration of non-conforming building products (NCBPs) and substandard products into the building sector has been of an increasing health and safety concern. Several notable incidences, including a fire fuelled by non-fire-resistant cladding on a high-rise apartment in Melbourne, provoked the Australian Government to initiate the Building Ministers Forum (BMF) in 2014 to address the compliance crisis. Comprised of National, State and Territory Ministers, the BMF's task is to suggest strategies to counteract further social and economic consequences in Australian constructions from the use of NCBPs. More information about the BMF and its ongoing reports can be found at: <https://www.industry.gov.au/regulation-and-standards/building-ministers-forum>

The ultimate fear is, of course, for human safety and the significant impact on the enduring quality of builds when NCBPs and substandard products are used. These are being installed as a substitute for high-quality products that are compliant with specific safety and noise emission standards. The role of soundproofing products in residential applications is, essentially, to improve quality of life for communities and individuals. Installing non-compliant acoustic wastewater and duct lagging that does not meet the legal soundproofing threshold can result in poor health outcomes for residents. For example, studies have shown noise disruptions and vibrations – such as general noise and thuds between apartment floors or from plumbing systems – can cause sleep disturbance and insomnia, and influence perceptual, motor, and cognitive behaviour. Long term, there is even evidence that the autonomic nervous system can be disturbed to the point of triggering harmful glandular, cardiovascular, and gastrointestinal changes [1].

Lagging products that exceed volatile organic compound (VOC) minimum thresholds can have grim health ramifications also. Dangerously high off-gasses from NCBPs can cause a range of symptoms, from headaches and lethargy to irritation of the eyes, nose and throat. The concern here is for both the occupants and the installers, who are both at risk [2].

Furthermore, when taking into account the replacement costs and gaining new compliance certification, the financial and legal ramifications and even damage to reputation, it becomes clear that specifiers must ensure quality and compliance takes precedence in the decision-making process.

The role and responsibility of specifiers

According to Zurich Australia's January 2013 *Strategies for managing risk of counterfeit products* report, globalisation and one-click online B2B procurement have upset the once transparent and highly regulated chain of supply from manufacturer to installer [3]. This has rendered Australia's regulatory framework worryingly full of weaknesses. It has become paramount for specifiers to be aware of the permeation of substandard products into the marketplace, to protect themselves and their reputation, and ensure the long-term safety of the building project.

According to the QBCC Act, all human links in the supply chain

carry responsibility to maintain the integrity of the build. The Act states that “in order to comply with S74AF of the Act concerning compliance with relevant regulatory provisions, you need to consider if the product meets the relevant regulatory provisions that relate to its intended use. These regulatory provisions may include links to the standards referenced in the National Construction Code (NCC)” [4]. In an industry as safety-critical as construction, this information is vital for specifiers to understand and observe.

Identifying NCBPs and substandard products

According to the NCC, there are three primary misleading claims used by substandard product manufacturers and suppliers:

Fraudulent documentation: falsified documents that claim compliance, certification or test results, which the product does not substantiate

Product substitution: a manufacturer may gain certification or compliance for a product and subsequently alter the product without gaining new compliance certification

Counterfeit products: imitations of a true and reputable product – even bearing the brand logo in some cases – created with the intention of deceiving purchasers [5].

Specifiers and acoustic consultants have a partnership that protects projects from NCBPs

Fortunately, there are ways acoustic consultants, specifiers and manufacturers can work together to ensure compliance and sustainability in Australian builds, and the long-term safety and comfort of the community. There are, after all, many parties involved in the construction process, and many high-quality manufacturers facing this same issue of inferior product substitution. To protect the Australian building industry, it's in everyone's best interest to value integrity and transparency in all dealings.

Trusted acoustic consultants can co-operate with specifiers to determine compliant and effective solutions for the project within budget and time frame. They can assist specifiers to always source soundproofing and lagging products that meet compliance in all areas without question or doubt.

Exceeding compliance to VOC emissions

Australia has stringent regulations surrounding Volatile Organic Compounds (VOC) output to protect individuals and reduce environmental impact. High-VOC building products are one of the suspected causes of Sick Building Syndrome, whereby inhabitants and workers suffer mysteriously from similar illnesses and symptoms [6].

Beware counterfeit products

Acoustic consultants are an important link of the chain and ensure that no counterfeit products are used in buildings. There are a number of reliable suppliers with a range of products that have been tested in accordance with the appropriate standards. These products provide specifiers with a guarantee that building compliance is met.

For example, Pyrotek has a range of trusted products including Soundlag 4525C. This is free from odour-producing oils and bitumen, which has been linked to respiratory conditions [7]. Its VOC impact score of 0.08mg/m²/hr is significantly lower than the Australian threshold of 0.5mg/m/hr. It has been tested in field and laboratory situations, and certified to reduce noise transmission from hydraulic and waste pipes. It is highly fire retardant and tested to AS 1530.3

with flame resistance to Australian Standards. For more information and full Technical Data Sheets, visit <https://www.pyroteknc.com/products/soundlag/soundlag-4525c/>.

It is important that trusted products are specified as imitation products will not provide the same superior level of soundproofing, fire safety, construction and performance that meets or exceeds Australian Standards.

References

- [1] <https://waubrafoundation.org.au/resources/health-effects-environmental-noise-other-than-hearing-loss/>
- [2] <http://www.yourhome.gov.au/housing/healthy-home>
- [3] https://www.zurich.com.au/content/dam/risk_features/product_liability/risk_topic_strategies_for_managing_risk_of_counterfeit.pdf
- [4] <http://www.hpw.qld.gov.au/SiteCollectionDocuments/NonConformingBuildingProductsCodeOfPractice.pdf>
- [5] <http://www.hpw.qld.gov.au/SiteCollectionDocuments/NonConformingBuildingProductsReport.pdf>
- [6] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2796751/>
- [7] <https://www.anses.fr/en/content/exposure-bitumen>

Matrix Resilient Wall Ties and Floor Mounts

The Matrix range of resilient acoustic wall ties and floor mounts are a structural connection that reduces airborne and impact noise passing through masonry and stud walls. They are suitable when discontinuous construction is required in separating walls and any specialised room that requires high acoustic isolation.



MB01 - Resilient masonry wall tie for cavity width 40mm - 100mm.



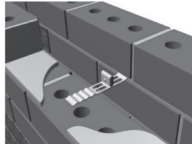
SB06 - Resilient masonry wall tie for joining stud walls.



SB08 - Universal resilient masonry wall tie for stud or stud to stud cavity 20mm to 100mm.



SB03 - Resilient stud wall tie for attaching top plate or underside of slab or masonry wall.



SB10 and MB10 HD wide cavity acoustic wall mount in 2mm x 38mm Gal or SS for 200mm to 450+ cavities.



FM01 - Resilient floor mount - reduces impact vibration passing through floors.



Shuredrive 6mm fixing pin for masonry installations.



MB08 - Universal resilient masonry wall tie for cavities 20mm - 100mm.

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NEW PRODUCTS

New Sentinel camera provides visual evidence of alerts



Sentinel Cameras by AXIS are suitable for outdoor usage in almost any weather conditions. When integrated with a noise monitoring terminal (NMT), they will expand your Sentinel system to include video documentation of what happened onsite at the time of an alert or complaint. So, you can identify extraneous noises that you're not responsible for, and can also better assess your team's performance to reduce excessive noise that you are responsible for.

Sentinel Cameras capture still images each second and store them for up to seven days. In the event of an alert, the relevant images are automatically sent to Sentinel for your reference as a time-lapse video clip.

More information: <https://emsbk.com/sentinel-camera-provides-visual-evidence-of-alerts/>

RION VX-56RT Octave Program for VM-56

Introducing the new RION VX-56RT Octave Program for VM-56, the new tri-axial vibration meter specifically designed for ground borne vibration. VX-56RT adds measurement and logging functionality of 1/3 octave acceleration levels (to ISO2631-2) simultaneously with the existing measurement of Peak Particle Velocity (PPV), Vibration Dose Value (VDV) and other relevant metrics according to DIN 45669-1 and ISO 8041. Waveform Recording Program VX-56WR also available.

More information:

Acoustic Research Labs Pty Ltd

02 94840800

www.acousticresearch.com.au

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SV100A Whole-Body Vibration Dosimeter

- Whole-body Vibration Exposure Meter complying to ISO 8041
- Wireless instrument with rechargeable battery
- Bluetooth communication
- GPS tracking
- 1/1 or 1/3 octave real-time analysis
- Motion Sickness



SV 104 & SV 104IS Noise Dosimeters

SV104IS

- Intrinsic safety in accordance to ATEX and IECEx
- Vibration and shock detection
- Option for octave real-time analysis
- Option for audio events recording
- Voice tagging



SV103

- Personal Human Vibration Exposure Meter
- 1/1 or 1/3 octave real-time analysis
- Contact force measurement
- Option for audio events recording
- Voice tagging



SV104

- Acoustic Dosimeter conforming to IEC 61252 and ANSI S1.25-1991
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FUTURE CONFERENCES

Acoustics 2019

The next Australian Acoustical Society conference will be held at the RACV Cape Schanck Resort, Mornington Peninsula, Victoria, from 10-13 November 2019. Further details to be provided closer to the time, but get it in your diary now!



INTER-NOISE 2019

INTER-NOISE 2019 MADRID, the 48th International Congress and Exhibition on Noise Control Engineering will be held on 16 – 19 June 2019.

The Congress is organized by the Spanish Acoustical Society –SEA- on behalf of the International Institute of Noise Control Engineering (I-INCE). INTER-NOISE 2019 will be held at Palacio Municipal de Congresos de Madrid (PMC) at Campo de las Naciones, Madrid, Spain.

The Technical Exhibition will enable companies and institutions to display during the Congress the latest in technology and services in the areas of noise control, acoustics and relevant fields; an attendance of more than 1000 experts is foreseen.

Key dates:

Abstract deadline: December, 2018

Manuscript Submission: 1 March

Early Registration: 15 April

More information: www.internoise2019.org



ICA 2019

The German Acoustical Society (Deutsche Gesellschaft für Akustik, DEGA) is pleased to invite you to the 23rd International Congress on Acoustics in the beautiful and historical city of Aachen from 9 to 13 September 2019.

The technical program will include plenary, distinguished, invited, contributed, and poster papers covering all aspects of acoustics. There will be an extensive technical exposition highlighting the latest advances in acoustical products.

The congress will integrate the conference EUROREGIO of the European Acoustics Association, EAA, with invited papers focusing on European projects, educational programs, standards, and legislation.

There are also following satellite meetings:

EAA Spatial Audio Signal Processing Symposium Paris, 6-7 September, EAA Summer School Leuven, 6-8 September, International Symposium Room Acoustics, ISRA Amsterdam, 13-15 September and International Symposium Musical Acoustics, ISMA Detmold, 15-17 September.

Key dates for ICA 2019:

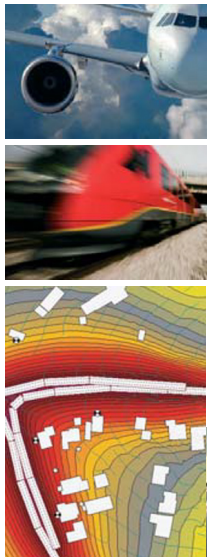
Abstract Submission: 1 February

Deadline for manuscripts seeking peer review: 1 May

Paper Submission: 1 June

Early Bird Registration: 1 June

More information: <http://www.ica2019.org/>

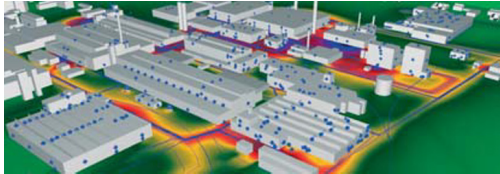


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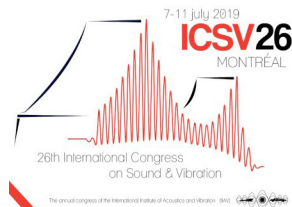
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ICSV26

The International Institute of Acoustics and Vibration (IIAV) and the Canadian Acoustical Association (CAA) are pleased to announce the 26th International Congress on Sound and Vibration (ICSV26) to be held in Montréal 7–11 July 2019.

The congress will feature a broad range of high-level technical papers from across the world: distinguished plenary lectures will present recent developments in important topics of sound and vibration and include discussions about future trends.

Montréal is an exciting, vibrating and welcoming destination. It's a city where delegates can enjoy a rich diversity of culture, museums, art galleries, night-life, gastronomy, shopping and sport, not to mention the International Jazz Festival right before the conference. Cosmopolitan Montréal offers something to suit every delegate!

Key dates:

Abstracts: 1 December 2018

Early-Bird Registration: 31 December 2018

Submissions requiring peer-review: 31 January 2019

More information: <http://www.icsv26.org>



WTN 2019

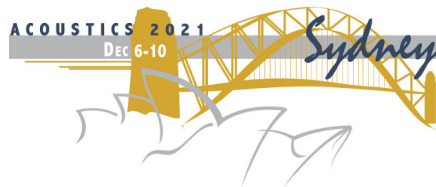
The eighth International Conference on Wind Turbine Noise will be held from 12-14 June 2019 in Lisbon, Portugal. The conference will be held at the Altis Grand Hotel, which is within walking distance of the popular areas of Baixa, Chiado and Bairro Alto. The theme of the conference is Consolidating our Knowledge on Wind Turbine Noise. Papers are particularly sought on: Propagation, Annoyance and other effects on people, Predicting background noise level, Amplitude Modulation, and Modelling Source Noise.

Key dates:

Abstracts: 12 January 2019.

More information:

www.windturbinenoise.eu/content/conferences/8-wind-turbine-noise-2019/



Acoustics 2021, Sydney

The Acoustical Society of America (ASA) and the Australian Acoustical Society (AAS) are joining together to co-host Acoustics 2021, Sydney, which will also incorporate the Western Pacific Acoustics Conference (WESPAC) and the Pacific Rim Underwater Acoustics Conference (PRUAC).

The conference will be held at the International Convention Centre, Darling Harbour, Sydney. This Convention Centre has been completely rebuilt and opened in late 2017, so it features state of the art facilities along with the magnificent views of Sydney. Register your interest now and plan for your participation.

More information: Sydney2021@acoustics.asn.au

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SUSTAINING MEMBERS

The following are Sustaining Members of the Australian Acoustical Society.
Full contact details are available from <http://www.acoustics.asn.au/sql/sustaining.php>

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DIARY

2019

12-14 June, Lisbon, Portugal

WTN2019

www.windturbinenoise.eu

16 - 19 June, Madrid, Spain

INTER-NOISE 2019

www.internoise2019.org

24 - 27 June, Toruń, Poland [ICA Endorsement]

14th School on Acousto-Optics and Applications

saoa.fizyka.umk.pl

7 - 11 July, Montreal, Canada

26th International Congress on Sound and Vibration (ICSV26)

www.icsv26.org

3 - 6 September, Bruges, Belgium

International Congress on Ultrasonics (2019 ICU Bruges)

kuleuvencongres.be/2019icu/home

6 - 7 September, Paris, France

EAA Spatial Audio Signal Processing Symposium (SASP)

<https://sasp2019.ircam.fr>

8 - 13 September, Aachen, Germany

23rd International Congress on Acoustics (ICA 2019)

www.ica2019.org

13 - 17 September, Detmold, Germany

International Symposium on Musical Acoustics (ISMA 2019)

www.isma2019.de

15 - 17 September, Amsterdam, Netherlands

International Symposium on Room Acoustics (ISRA 2019)

www.isra2019.eu

10 - 13 November, Mornington Peninsula, Victoria, Australia

Acoustics 2019

Annual Conference of Australian Acoustical Society

www.acoustics.asn.au

2020

11 - 15 May, Chicago, Illinois

179th Meeting of the Acoustical Society of America

www.acousticalsociety.org

15-18 June, Stockholm, Sweden

13th ICBEN Congress on Noise as a Public Health Problem

icben2020@akademikonferens.se

2021

6-10 December, Sydney, Australia

Acoustics 2021, Sydney

Joint meeting AAS, ASA, Wespac and PRUAC

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Meeting dates can change so please ensure you check the conference website: <http://www.icacommission.org/calendar.html>

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