



**CAA Acoustical Standards Committee**  
**Hatch Office at Sheridan Park, Toronto,**  
**1:00 pm May 30, 2012**  
**Summary of Meeting**

1. Members Participating: Tim Kelsall (Chair), Dave Shanahan, Bill Gastmeier, Alberto Behar, Dave Quirt, Cameron Sherry (by phone), Stephen Keith (by phone), Lixue Wu (by phone).  
Regrets from Tony Brammer  
Tim welcomed all to the meeting.
2. Dave Quirt agreed to draft a preliminary summary of this meeting, for subsequent refinement by Subcommittee Chairs.
3. The agenda was approved as written.
4. The record of the last meeting was approved, as published in *Canadian Acoustics*. Dave Quirt agreed to draft a preliminary summary of this meeting, for subsequent refinement by Subcommittee Chairs.
5. Sponsors: The contributions by Hatch (our meeting room) and CSA (teleconferencing setup) were noted and they were thanked. It was noted that volunteer is needed to manage the standards section of the CAA website, to post meeting records and our document(s), and Bill Gastmeier agreed to seek a volunteer.
6. (a) Update on transfer of standards from CSA was presented by Tim Kelsall and Dave Shanahan. Dave Quirt created a MS-WORD version of CSA Z107.10 from the published PDF version, with approval by CSA, and an official transfer to CAA of the copyright for content from Z107.10 is expected once there is a CAA draft at balloting stage. No potential sponsor has been identified for the orphan standard Z107.9.

6. (b) CAA Voting Body for Standards (Qualifications and Procedures). The draft that was circulated before the meeting was discussed, clause by clause:

Qualification 1)	Requirement to be a Member (in good standing) of CAA was debated briefly. There are some people who would be useful in this committee, who are not currently members of CAA. This issue was referred to the CAA Board meeting for further consideration.
Qualification 2)	Edited item 2 to “Must be Chair of the committee or of one of its subcommittees.”
Qualification 3)	Accepted as in the draft, as follows: (3) The committee chair serves at the pleasure of the CAA board and proposes the subcommittee chairs, for approval by the Board. They should be reviewed and reapproved by the board every 3-5 years.
Qualification 4)	Accepted as in the draft, as follows: (4) Subcommittees may approximately correspond to CAA standards topics, including the various sections of CAA Standard 101 (formerly CSA Z107.10).
Qualification 5)	Accepted as in the draft, as follows: (5) Additional members may be designated by the chair for approval by the CAA board of directors as members at large. Such members must be re-designated every 3 -5 years.
Qualification 6)	There was concern about a) identifying a qualified and willing member from regulatory organization, and b) achieving good geographical distribution, but it was noted these are not mandatory. Thus the committee accepted this clause as follows: (6) “The voting body shall not be larger than 12 persons. The voting body should be composed of acousticians representing Canada geographically as well as by acoustic speciality. At least one member should represent the regulatory bodies of Canada.”
Qualification 7)	Edited as: (7) The membership of the committee shall be published by CAA in either their Journal or website and any appointments shall be recorded in the Minutes when voted on by the Board.
Qualification 8)	Move to first item under Voting
Voting 1)	All CAA standards must be approved at least every second year by the voting members.
Voting 2)	Ballots on the CAA guideline standard shall be initiated by the chair and balloting completed within 20 working days
Voting 3)	Voting members may vote affirmatively, affirmatively with editorial changes or negatively with positive comments on how to resolve the problem
Voting 4)	Voting may be done electronically or by mail.
Voting 5)	The CAA board of directors has the final authority on the vote.
Voting 6)	Before changes are made to the guideline standard all negatives and editorial comments must be resolved by the committee chair and the chair of the subcommittee involved.
Voting 7)	At least 75% of eligible votes must be received for a successful ballot.

7. Items from the CAA Board of Directors were presented by Tim Kelsall, who explained pertinent highlights of the last Board meeting; the terms of reference discussed above were the key item with regard to this committee.

8. Update From Subcommittees:

a. Environmental Noise (Bill Gastmeier)

- Current key regulatory issues across Canada: noise from wind turbines, noise from railway traffic, , and changes in the regulatory process (in Ontario and Alberta).
- For further details see report in Appendix A.

- b. CAC ISO TC43 SC1 (Stephen Keith):
- Have active CAC members in many working groups of ISO TC43 and TC43/SC1. WG 1 Threshold of hearing, WG17 Hearing Protectors, WG 22 Structure-borne sound, WG 27 Vehicle noise testing. Effect of temperature, WG 39 Pavement surface texture using a profiling method
  - Last ISO Plenary meetings in London, UK in 2011; next in Brazil in November 2012.
  - Many new standards published, more in draft stages.
  - For further details see report in Appendix B.
- c. CAC IEC TC29 (Lixue Wu)
- Some new standards published, more in draft stages.
  - For further details see report in Appendix C.
- d. CAA Guideline to Standards / Editorial (Cameron Sherry and David Quirt)
- Input was obtained from each subcommittee chair, to update existing entries in each technical area of the 2006 version of CSA Z107.10. These should now be combined and circulated for comment ASAP. The Editorial Subcommittee (CWS and JDQ) have reviewed the assembled submissions and feel that major revisions and weeding of the submissions are desirable. Therefore a set of guidelines to shape that process were circulated to the committee before the meeting.
  - The suggested guidelines were discussed and the committee reached consensus on the following framework for editing the items in each subject area:
 

- No listing for standards that have been withdrawn,
    - Combine into one listing for a standard and its amendments, and one listing for multi-part standards. Examples of possible formats for the latter are items 16 and 17 in Section 3. This leaves out some of the detail, but makes the content much clearer for users.
    - Maximum of 15 items for each section,
    - Maximum of 5 pages for each section and ½ page for any item
    - Where there are similar documents from different standards organizations our listed item should be the one recommended for Canadian practice, and the other should be noted in the text describing the recommended standard.
    - Items that fall in two categories (such as audiometers and dosimeters that are listed in Part 4 but arguably pertinent to Part 6 on Hearing) should be approved by BOTH Chairs.
    - We also need some decisions on scope – for example, are hearing aids part of our scope? If so, we will need a subcommittee on that to deal with the ANSI/IEC divide.
  - There were also suggestions for enhancements:
 

- Add an index by topics and/or structure within sections to highlight the key topics rather than listing standards numerically
    - All of the major sets of documents are available online. It is pointless for us to duplicate the listings of available standards, but in Part 1 there should be a section with links to online standards stores for ANSI, ASTM, CSA, IEC
    - Create French version of the document (issue for CAA Board and volunteers)
  - It was agreed that the Editorial Subcommittee will proceed to create a new draft for circulation in early summer. Dave Quirt was volunteered to pursue the issue of a section on hearing devices with Christian Giguere as part of this action.

- e. CAC ISO TC43 SC2, “Building Acoustics” (David Quirt)
    - Some new standards published, more in draft stages in both ASTM E33 and ISO.
    - Committee drafts for revisions for the 2015 National Building Code propose using a mix of ASTM and ISO standards.
    - For further details see report in Appendix D.
  - f. Human Vibration (Tony Brammer): no report
  - g. Loudness Evaluation (Colin Novak): no report
9. New Business:  
No items proposed.
10. Next Meeting:  
It was agreed that the next Committee meeting would take place in conference hotel (Banff Park Lodge) in conjunction with the CAA conference in Banff from 10-12 October 2012. The CAA meeting would also host those subcommittees of CSA S304 who want to join us.
11. Meeting adjourned at 3:20 pm.

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### **Appendix A: Environmental Noise (Bill Gastmeier)**

- 1) The subcommittee participated in updating the revision and publication of the document formerly known as CSA Z107.10, “Guide for the Use of Acoustical Standards in Canada”.
- 2) The subcommittee participated in the proposed approval of BSR/ASA S12.62-201x / ISO 9613-2:1996 (MOD) Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation as a modified International Standard in the USA. This standard is in common use in Canada and our input assisted in the deliberations. The content of our input was around the resolution of some rather loose interpretation of the calculation of barrier shielding and ground effect.
- 3) A number of additional items are presented for informational purposes.
  - MOE (Ontario) NPC 300 which is proposed to merge Land Use Planning Guideline LU-131 with Noise Pollution Control Guideline NPC 205 seems to have dropped off the map. It has not unexpectedly been challenged by industrial interests including aggregate and concrete among others. Municipalities seem not to have significant issues. Part of the delay may relate to the issue that Ontario already is a fairly highly regulated jurisdiction w.r.t noise compared to many in North America.
  - As far as I can tell Alberta is in the process of changing their original focus on noise; which to my knowledge was originally crafted in response to complaints against the energy industry. The outcome with respect to wind farms at least is to rely on audits to confirm approvals, a direction towards which Ontario seems to be headed. Lots of grassroots opposition in Ontario and BC. Other industrial approvals in Alberta continue to proceed under the old regime.
  - Ontario studies have shown that there is no perceptible infrasound generated by wind turbines.
  - A study prepared to give guidance around new rail projects (including light rail transit) is still under review by the MOE in draft form.
  - The Railway Association of Canada in association with the Federation of Canadian Municipalities is looking closely into means to deal with ground borne vibration from rail operations on a retrofit basis. This is in response to the FTA ruling around complaint response responsibility.

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## Appendix B: CAC ISO TC43 SC1 (Stephen Keith)

### ISO standards under revision that have Canadian working group members:

TC43 Technical Advisory Panel – Member S. Keith

ISO532-x Method for calculating loudness level (Cambridge, Moore, Glasberg, and Zwicker methods)  
Members C. Novak (project leader), H.Ule

ISO1996-x Measurement and assessment of environmental noise - Members S.Keith, T.Kelsall

ISO4869 Attenuation and fitting of Hearing Protectors- Members A. Behar, J.Voix

ISO16254 Measurement of minimum noise emitted by hybrid or electric vehicles Members  
C. Novak, H.Ule

ISO 12913-1 Perceptual assessment of soundscape quality – Members C. Guastavino, M. Schafer; B.  
Truax

ISO3740, ISO11200 Selection of appropriate machinery noise emission standards. These standards are  
similar to CSA Z107.58 for machinery noise declarations (which also must be updated) Members  
S.Keith, T.Kelsall

ISO 3743-1, measurement of sound power in special reverberation rooms Members S.Keith, T.Kelsall

ISO 3745 Annex A, qualification of anechoic rooms Members S. Keith (project leader), T.Kelsall

ISO 6926 calibration of reference sound sources, Members S.Keith, T.Kelsall

ISO 9295 determination of high frequency noise (12.5 kHz to 20 kHz) emitted by machinery and  
equipment, Members S.Keith, T.Kelsall

### Active ISO working groups without Canadian participation:

WG 1 Threshold of hearing, WG 22 Structure-borne sound and sound power, WG 23 IT equipment noise,  
WG 27 Effect of temperature on tire noise, WG 33 Measurement of road surface noise, WG 39  
Pavement surface texture profiling, WG 40 – Impulse sound assessment, WG 51 –shooting range  
noise, WG 52 –civil airport noise,

\*New\* WG 56 Quality assurance of noise calculation methods implemented in software:  
is a new working group developing test cases and methods for evaluating environmental noise  
calculation software such as CadnaA, IMMI, Predictor-LimA, or SoundPLAN

### Standards Council of Canada, SCC, Travel assistance to Canadian delegates

Based on the requirements in the SCC publication Can-P-2018:2012, the SCC divides our acoustical  
standards into two subcommittees. The larger of the two subcommittees, TC43/SC1 received \$5000 in  
financial travel assistance from SCC. No assistance was given to the smaller committee TC43. TC43  
currently has two Canadian members working on a new method for calculating loudness level (ISO532).

### Next Meetings

Next ISO Plenary and working group meetings will take place November 26 to 30 in Florianopolis,  
Brasil.

### Underwater sound from ships

Underwater sound was formerly under CAC/ISO/TC43 SC1. It now has its own subcommittee SC3 -

This group will be responsible for standards to address all aspects of the effects of underwater sound  
on the underwater environment, humans and aquatic life. The standards could be used for power  
generation, research, surveillance, and to estimate adverse environmental effects of underwater  
acoustics. Inquiries should be addressed to David Hannay <David.Hannay@jasco.com> or Layton  
Gilroy [layton.gilroy@drdc-rddc.gc.ca](mailto:layton.gilroy@drdc-rddc.gc.ca)

### Latest published standards (five in 2012, three in 2011)

ISO 3745:2012 Acoustics -- Determination of sound power levels and sound energy levels of noise  
sources using sound pressure -- Precision methods for anechoic rooms and hemi-anechoic rooms.

This standard now needs an amendment to allow it to reference ISO 26101:2012 (see below)

ISO 5130:2007/Amd 1:2012 Measurements of sound pressure level emitted by stationary road vehicles

ISO 8253-3:2012 Acoustics -- Audiometric test methods -- Part 3: Speech audiometry

ISO26101:2012 “Test methods for qualification of free-field environments”. This standard will replace  
and extend the capabilities of the Annex in ISO 3745 that was used for qualification of anechoic

chambers. The intended purpose of ISO 3745 was to measure sound power through a control surface that is sampled at many points. A new standard was need since an anechoic chamber suitable for multi-point sound power measurement may be wholly inadequate for single point measurements (e.g., the null in a directional microphone).

ISO 28961:2012 Acoustics -- Statistical distribution of hearing thresholds of otologically normal persons in the age range from 18 years to 25 years under free-field listening conditions

ISO 10302-1:2011 Acoustics -- Measurement of airborne noise emitted and structure-borne vibration induced by small air-moving devices -- Part 1: Airborne noise measurement

ISO 10302-2:2011 Acoustics -- Measurement of airborne noise emitted and structure-borne vibration induced by small air-moving devices -- Part 2: Structure-borne vibration measurements

ISO 10844:2011 Acoustics -- Specification of test tracks for measuring noise emitted by road vehicles and their tyres

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## Appendix C: CAC IEC TC29 on Instrumentation (Lixue Wu)

This report mainly summarizes the committee work of CSC/IEC/TC 29 since October 2011.

### 1. IEC Documents under Revision

- IEC 62585: Electroacoustics - Methods to determine corrections to obtain the free-field response of a sound level meter  
SCC due date: 2012-06-13
- IEC 60118-13: Electroacoustics - Hearing aids - Part13: Electromagnetic compatibility (EMC) (Revision of IEC 60118-13:2011)  
SCC due date: 2012-07-10
- IEC 60118-4: Electroacoustics - Hearing aids - Part 4: Induction loop systems for hearing aid purposes - System performance requirements  
SCC due date: 2012-06-27
- IEC 61094-3: Electroacoustics - Measurement microphones - Part 3: Primary method for free field calibration of laboratory standard microphones by the reciprocity technique  
SCC due date: 2012-06-27
- IEC 60318-3: Electroacoustics - Simulators of human head and ear - Part 3: Acoustic coupler for the calibration of supra-aural earphones used in audiometry  
SCC due date: 2012-06-27

### 2. Voting results

- IEC 60645-1 Ed.3: Electroacoustics - Audiometric equipment - Part 1: Equipment for pure-tone audiometry  
Final Canadian Position - Support with Comments
- IEC 60601-2-66 Ed.1: Hearing instruments and hearing instrument systems - General requirements for basic safety and essential performance  
Final Canadian Position - Support
- IEC 61260-1 ed.1: Electroacoustics - Octave-band and fractional-octave-band filters - Part 1: Specifications  
Final Canadian Position - Support with Comments
- IEC 61094-8 Ed.1: Electroacoustics - Measurement microphones - Part 8: Methods for free-field calibration of working standard microphones by comparison  
Final Canadian Position - Support
- IEC/CD 60118-0 & Electroacoustics - Hearing aids Part 0: Measurement of the performance characteristics of hearing aids& (Amalgamated revision of IEC 60118-0, IEC 60118-1, IEC 60118-2, IEC 60118-6)  
Final Canadian Position - Support with Comments
- Document for Comments - Policy on measurement uncertainty in documents prepared by IEC/TC 29

3. Past Meeting  
None in this period
4. Future Meeting  
Next TC 29 meeting to be held in Charlottenlund, Denmark, 17 to 21 September 2012.

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## Appendix D: Building Acoustics (Dave Quirt)

This report presents an overview of activity to revamp CSA Z107-10, together with updates on key standardization activity in ISO/TC43/SC2 and ASTM E33, the two standards committees of obvious relevance for Canada.

### 1. ***Building Acoustics in “document formerly known as CSA Z107-10”:***

Summaries for 13 ASTM standards were in CSA Z107-10, as published in 2006; most of these standards have since been revised or reapproved. A set of 18 revised entries have been prepared (including several new items) and circulated to the subcommittee for approval as the building acoustics section of the new CAA Guide to Acoustics Standards. These include some ISO standards, to offset the absence of activity or expertise in ASTM E33 relating to flanking transmission, and hence the absence of ASTM measurement or prediction standards to deal with the complexities of sound transmission between spaces in real buildings.

### 2. ***Issues in ISO/TC43/SC2:***

Steady advance of the ISO standards beyond their ASTM counterparts invites serious consideration of eventually basing the noise control provisions in the National Building Code on ISO standards, but meanwhile they provide technical content for ASTM to use. More members joining Canadian Advisory Committee to ISO/TC43/SC2 would be nice, but there has been limited response to recruiting efforts. Voting by current members has been erratic. Those interested in participating in the building acoustics CAC are urged to contact Dave Quirt (JDQ).

Next meeting of ISO TC43/SC2 is in Lancaster PA in July 2012. The meetings in England in April 2011 (which JDQ attended) advanced ISO drafts and added useful new work items:

- Laboratory sound transmission standards The new series of laboratory standards for airborne and impact sound insulation (ISO 10140) has 5 parts (test codes for products, airborne transmission, impact transmission, measurement procedures, laboratory & equipment). JDQ is the Canadian participant, with Brad Gover (BNG) as alternate. These were approved in 2010 and corresponding parts of ISO 140 have been withdrawn; the next stages include refining some procedures and adding extra procedures for transmission through slits, and rainfall noise. These are becoming the required standards for testing products for noise control in buildings in Europe. To help Canadian exporters, these should be referenced in the new CAA standards guide document.
- Field sound transmission standards (remaining parts of ISO 140) are being revised; JDQ is acting as formal Canadian participant (with staff from NRC attending some meetings). If the National Building Code changes from its current simplistic focus on the separating wall or floor assembly, then these standards (and their ASTM counterparts) will become a more significant focus for noise control in buildings.
- Ratings for sound transmission: Revision of ISO 717 is underway; BNG has been nominated as a Canadian participant, with JDQ as alternate. A parallel technology development project to establish international consensus on these ratings is underway (COST TU0901) and NRC is participating.

3. ***Issues in ASTM E33:***

Members of our CAC have leading roles within ASTM Committee E33, which is responsible for standards in “Building and Environmental Acoustics”. The committee meets twice each year. Brad Gover is now Chair of Subcommittee E33.03 which is responsible for all ASTM standards pertinent to sound transmission in buildings, and hence building codes. BNG also leads several task groups in E33.03, and Chairs E33.05, which is responsible for special initiatives such as statements of precision & bias.

Activity to maintain and revise ASTM standards is presented on the ASTM website, and for building acoustics, this is at <http://www.astm.org/COMMIT/SUBCOMMIT/E33.htm> . For each current standard, there is a brief summary of significance and use, plus the scope, and an outline of the issues for any current revision.