ERRATA AND ADDITIONS FOR "ENGINEERING NOISE CONTROL"
3nd Edn., 1st printing.
June 10, 2022

Note: these corrections are for the first printing.
Some may have been corrected in the second printing

p xi, Change “Noise Reduction Index (NRI)” to “Noise Reduction Coefficient (NRC)”

p xv, change “FWHA” to “FHWA”

p xviii In line 19, change “Noise Reduction Index” to “Noise Reduction Coefficient”

p16, In line 3, change the equation to $(1/hf)\sqrt{E/\rho} > 2$

p16, line 10, change $D_P = 1.346E$ to $D_P = 1.099E$

p16, two lines under Equation (1.2), change “static” to “absolute”

p16, Change Eq. (1.3) to

$$D_C = \frac{D_F}{1 + \frac{D_F}{E_W}\left(\frac{2R}{t} + \frac{\rho_w}{\rho}v^2\right)}$$

p18, In Eq. (1.5), change “332” to “331”

p27, Change Eq. 1.40a to $\varphi = \frac{f(k(ct \pm r))}{r}$

p29, 3 lines above Eq, (1.50), change “1.36” to “1.41”

p34, Change the reference just above Eq. (1.69) to “Fahy, 1995”

p34, First line under Eq. (1.67), change “1.65” to “1.64”

p41, 4 lines above Section 1.10.1, replace “pet” with “per”

p45, 2 lines under Eq. (1.89) and in Eq. (1.90), remove the subscript, “ t ” from p_t

p51, Table 1.3, line 3, replace “U” with “u”

p51, Table 1.3, line 5, replace “Z_d” with “Z_A”

p51, Heading 1.12.2, replace “Z” with “Z_s”

p66, In Equation (2.14), change K to C, where C is the viscous damping constant and define κ as the segment stiffness p72, line immediately below the figure, add "is the" after the word, "ordinate"

p76, Line 13, change "sound" to "sounds"

p87, 2 lines above Example 2.1, the text should read, "Figure 2.10(b) is an alternative representation of Figure 2.10(a)"

p110, 8 lines below Section 3.10 heading, change "type II" to "class 2"

p111, line 4, change "1252" to "61252".

p117, In Equation (3.23), remove the "−"sign following the "=" sign

p134, 3rd line, replace H with $H^{/}$

p134, Line above table 4.1 caption, change L to L_0

p134, Table 4.1 caption, change $N_{0,50}$ to N_{50} and change L to L_0

p142, The number "3" and "0.3" should be replaced by "3.01" and "0.301" respectively in Equations (4.37) to (4.41) inclusive

p143, Replace equation 4.43 and the 2 lines preceding it with:
The daily noise dose (DND), or "noise exposure", is defined as equal to 8 hours divided by the allowed exposure time, T_a with L_B set equal to 90. That is:

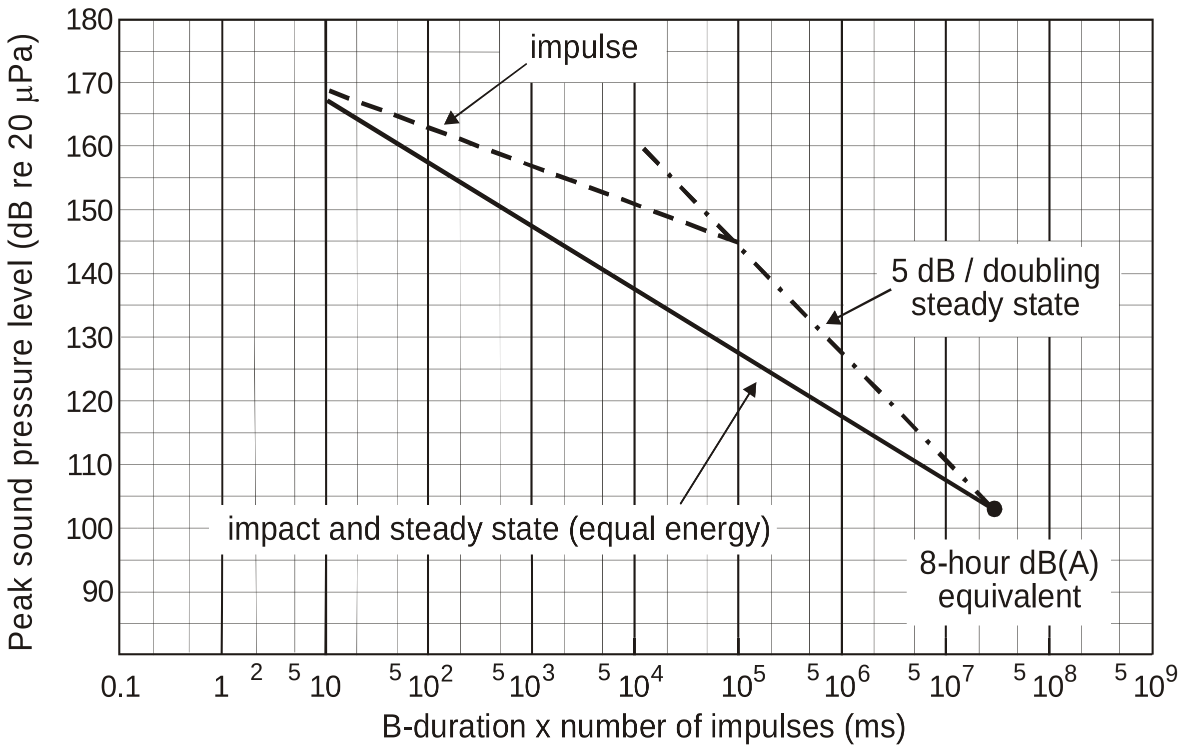
$$DND = 2^{(L^{/}_{Aeq,8h} - 90)/L}$$

p143, Replace the sentence following equation (4.42) with: "If the number of hours of exposure is different to 8, then to find the actual allowed exposure time to the given noise environment, the "8" in Equation (4.42) is replaced by the actual number of hours of exposure."

p144, 3rd equation down should be:

$$T_a = 8 \times 2^{-(91.2 - 90.0)/3} = 8/2^{0.39} = 6.1 \text{ hours}$$

p147, Replace Figure 4.6 with the more accurate figure below.



p147, 4 lines under Figure 4.6, change “1414” to “1474”.

p149, 5th and 6th lines from the top, change “645” to “60645” in four places.

p150, 13 lines from the bottom, change Figure 4.6 to Figure 4.7.

p153 Line above Table 4.6, replace “AS2107 - 1987" with “AS2107 - 2000"

p153, First line after the headings in Table 4.6, change “0.06” to “0.6”.

p153, Replace table 4.6 with the following table

Recommended ambient sound levels and reverberation times (average of the 500 Hz and 1000 Hz octave bands) for different areas of occupancy in buildings (space furnished but unoccupied, data from AS/NZS 2107 (2000))

Types of occupancy/activity	Recommended sound level (dBA)	Recommended reverberation time at 500 to 1000 Hz (sec)
Lecture rooms, assembly halls, tutorial rooms	30–35	0.72 for 50 m^3 to 1.0 for 10 000 m^3 varying linearly with $\log_{10}$ (room volume in m^3)
Audio-visual areas	35–45	0.6–0.8
Churches	30–35	—
Computer rooms (teaching)	40–45	0.4–0.6
Computer rooms (working)	45–50	0.4–0.6
Conference rooms, seminar rooms	35–40	0.6–0.7
Corridors and lobbies	45–50	0.6–0.8
Drama studios	25–30	10% to 20% higher than lecture rooms above
Libraries (reading)	40–45	0.4–0.6
Libraries (stack area)	45–50	0.6–0.8
Music studios and concert halls	30–35	1.05 for 50 m^3 to 1.6 for 5 000 m^3, varying linearly with $\log_{10}$ (room volume in m^3)
Professional and admin. offices	35–40	0.6–0.8
Design offices, drafting offices	40–45	0.4–0.6
Executive offices	35–40	0.4–0.6
Open plan office areas	40–45	Low as possible
Reception areas	40–45	0.6–0.8
Hospitals, Doctors surgeries	40–45	0.4–0.7
Airport terminals	45–55	Low as possible
Restaurants	40–50	Low as possible
Hotel bar	45–50	0.6–1.0
Private house (sleeping)	30–35	0.4–0.5
Private house (recreation)	35–45	0.4–0.5

p157, Fig 4.9 caption, add "MAF" = minimum audible field.

p158, 2 lines under Figure 4.10, change 70 to 65.

p160, On y-axis, change label from "dB re 20 mPa" to "dB re 20 μPa"

p165, First paragraph in section 4.9, replace "1995" with "1995, 1999".

p165, 1 and 2 lines above Section 4.9 heading, change 30 to 35, change the reference to ASHRAE (2015) Handbook, Applications, Chapter 48 and change the table reference to 4.9.

p169, Table 4.11 caption should read,
``Estimated public reaction to noise when the measured sound pressure level exceeds

the adjusted base sound pressure level (see Table 4.10 for adjustments to the base level of 40~dBA)"

p172, First dot point, remove the text, "(regulation usually)"

p176, Line above Eq. (5.6), change "r" to "$r = a$"

p176, In Eq (5.6), change "r" to "a"

p177, In Eq. (5.7), change "r" to "a"

p179, 2 lines under figure 5.2, replace "(x,y)" with "O" and label the observer as O in Figure 5.2

p192, 2 lines above Eq. (5.71), add "each of which has a radius of a_i" immediately after "sources"

p192, 2 lines above Eq. (5.72), change "a" to "a_i"

p192, Line above Eq. (5.72), change "ka" to "ka_i"

p192, In Eq. (5.72), change "a" to "a_i" in 5 places

p192 Eq. 5.71 and below, change Q to $\bar{Q}$ in 4 places

p192 last line add "amplitude" immediately after "velocity"

p193 Eq 5.73 and below change Q to $\bar{Q}$ in 2 places

p213, add the following notes for Equation (5.133). As Equation (5.133) in this form is provided in Attenborough's paper, which uses negative time dependence, the result is actually the complex conjugate of the spherical wave reflection coefficient used in this book. In addition, to be consistent with the use of negative time dependence in Equation (5.133), it is also necessary to use the complex conjugate of R_p in place of R_p in Equation (5.133).

p214, In Eq. 5.142, replace (1-j) with (1+j)

p215, Replace Equation (5.144) and the two lines preceding it with:
where $g(w)$ is the scaled complementary error function, erfc( ) is the complementary error function (Abramowitz and Stegun, 1965), and w, which is given by Equation (5.140), is a complex number.

The calculation of $g(w)$ in the equations to follow is only valid if the imaginary part of w is greater than 0. So any calculation begins with adjusting the value of w to w_a so that the the imaginary part is greater than 0. As w_a is complex, we can write,$w_a = w_r + jw_i = \text{Re}\{w_a\} + j\,\text{Im}\{w_a\}$. The calculation of $g(w_a)$ is then undertaken using Equations (5.144) to (5.146). If the original value of w did not need be adjusted to make the imaginary part of w positive, then $g(w) = g(w_a)$. If the original imaginary value of w before adjustment, was negative (almost always is) then $g(w)$ is calculated from $g(w_a)$ using $g(w) = 2\exp(-w_a^2) - g(w_a)$, where $g(w_a)$ is calculated using Equations (5.144) to (5.146).

For small w_r and w_i, where w_r is less than or equal to 3.9 and $|w_i|$ is less than or equal to 3:

$$g(w_a) = g(w_r, \mathrm{j}w_i) = K_1(w_i, w_r) + \mathrm{j}K_2(w_i, w_r) \tag{5.144a}$$

where,

$$\begin{aligned} K_1(w_i, w_r) = {} & \frac{hw_i}{\pi(w_r^2+w_i^2)} + \left[\frac{2w_i h}{\pi}\sum_{n=1}^{\infty}\frac{\mathrm{e}^{-n^2h^2}(w_r^2+w_i^2+n^2h^2)}{(w_i^2-w_r^2+n^2h^2)^2+4w_r^2w_i^2}\right] - \frac{w_i}{\pi}E(h) \\ & +P \qquad \text{if } w_i<\pi/h \\ & +0.5P \qquad \text{if } w_i=\pi/h \\ & +0 \qquad \text{if } w_i>\pi/h \end{aligned} \tag{5.144b}$$

$$\begin{aligned} K_2(w_i, w_r) = {} & \frac{hw_r}{\pi(w_r^2+w_i^2)} + \left[\frac{2w_r h}{\pi}\sum_{n=1}^{\infty}\frac{\mathrm{e}^{-n^2h^2}(w_r^2+w_i^2+n^2h^2)}{(w_i^2-w_r^2+n^2h^2)^2+4w_r^2w_i^2}\right] + \frac{w_r}{\pi}E(h) \\ & -F \qquad \text{if } w_i<\pi/h \\ & -0.5F \qquad \text{if } w_i=\pi/h \\ & -0 \qquad \text{if } w_i>\pi/h \end{aligned} \tag{5.144c}$$

$$P = \frac{2}{\exp[w_r^2 + (2w_i\pi/h) - w_i^2]}\left[\frac{(A_1C_1 - B_1D_1)}{(C_1^2 + D_1^2)}\right] \tag{5.144d}$$

$$F = \frac{2}{\exp[w_r^2 + (2w_i\pi/h) - w_i^2]}\left[\frac{(A_1D_1 + B_1C_1)}{(C_1^2 + D_1^2)}\right] \tag{5.144e}$$

$$\begin{cases} A_1 = \cos(2w_r w_i) \\ B_1 = \sin(2w_r w_i) \\ C_1 = \mathrm{e}^{-2w_i\pi/h} - \cos(2w_r\pi/h) \\ D_1 = \sin(2w_r\pi/h) \end{cases} \tag{5.144f}$$

The error bound can be estimated from:

$$E(h) \le \frac{2\sqrt{\pi}\, e^{-(\pi^2/h^2)}}{\left(1 - e^{-(\pi^2/h^2)}\right)} \tag{5.144g}$$

Note that h is a constant selected by the user. If h=1, then $E(h) \le 2\times10^{-4}$ and only 3 or 4 terms are needed in the infinite sums included in the expressions for K_1 and K_2. If h is reduced to 0.8, then $E(h) \le 10^{-6}$ and 5 terms will be needed in the infinite sums included in the expressions for K_1 and K_2. If h is reduced to 0.5, then $E(h) \le 10^{-15}$ and 14 terms will be needed in the infinite sums included in the expressions for K_1 and K_2. It is recommended that h = 0.8 be used.

p215, In Equations (5.145) and (5.146), replace $-jw$ with $+jw_a$ and replace w with w_a

p215, 1 and 2 lines above Equation (5.145), replace 3 with 3.9 and 2 with 3

p216, Replace the paragraph beginning with "The effect of turbulence" (including Equation (5.154) and the 3 lines following it) with the following:

The effect of atmospheric turbulence on sound over an acoustically smooth surface has been investigated by Clifford (1983) and by Raspet (1995). The presence or absence of turbulence may be included by a generalisation of their results to give the following general expression for the mean square sound pressure at a receiver located at a direct distance, r, from the source for a spherically symmetric sound source having unit far field sound pressure at 1 m:

$$\langle p^2 \rangle_t = \frac{1}{r^2} + \frac{|R_s|^2}{(r_1 + r_2)^2} + \frac{2|R_s|}{r(r_1 + r_2)} T\cos[\alpha_s - k(r_1 + r_2 - r)] \qquad (\mathrm{Pa}^2)$$

where: $\alpha_s = \tan^{-1}\dfrac{\mathrm{Im}\{R_s\}}{\mathrm{Re}\{R_s\}}$

and where the sign of k has been changed here to reflect that positive time dependence is used in this book, whereas negative time dependence has been used by Clifford (1983) and by Raspet (1995).

p225, In Table 5.3 caption, and 7 lines under the 5.11.7 heading, change "Sutherland et al., 1974" to "Sutherland and Bass, 1979"

p226, 13 lines above Eq. (5.171), change "2613" to "9613".

p226, Paragraph beginning "Note that ISO" only applies to overall A-Weighted calculations and should be deleted here. The paragraph following this one should also be deleted as the meteorological effects should not be taken into account in two separate places - either they should be included in the barrier calculations or calculated separately but not both.

p229, Interchange the 63 Hz and 2000 Hz labels on the curves in Fig. 5.19.

p232, Eq. 5.181, change "-0.09" to "-0.9"

p232, Replace Equation (5.182) with:

$$A_g = -10\log_{10}\left[1 + \left(\frac{r}{r_1+r_2}\right)^2 |R_s|^2 + \left(\frac{2r}{r_1+r_2}\right)|R_s|\, T\cos\left[\alpha_s - k(r_1+r_2-r)\right]\right] \quad \text{(dB)}$$

p234, 4 lines under Equation (5.184), Z_s should be Z_m

p235, 2nd line, change “diffracted” to “refracted”

p235, Table 5.6 caption, change "empirical constant, ξ " to "wind shear coefficient, ξ "

p236, In Eq. (5.188) change “10.3” to “10.0”

p240, Table 5.9, Footnote *a*, add “10 m above the ground” after “m/s”

p241, Table 5.9, $-3.0<v<+0.5$ should be replaced with $-3.0<v<-0.5$

p244, ISO 9613-2 procedures for calculating ground effects and shielding effects are based on an assumption of downwind propagation from the sound source to the receiver. Thus the only correction term (Equation (5.193)) that is offered by ISO for meteorological effects is a term to reduce the A-weighted calculated sound pressure level for long time averages of several months to a year. Thus section 5.11.12.4 should be deleted and replaced with the paragraph above.

p250, Delete the sentence beginning 17 lines from the top of the page.

p251, In Figure 6.1, in the centre on the right hand side replace $\gamma = 1/\kappa$ with $\gamma = \kappa$

p253, 2 lines above section 6.6, change “1989” to “1995”.

p259, The equation numbered “6.12” should be numbered “6.11”

p264, The equation numbered “6.25” should be numbered “6.24”

p264, 2 lines below Eq. 6.20, replace S_1 with $1/S_1$

p264, 3 lines below Eq. 6.20, replace S_2 with $1/S_2$

p267, Replace the first sentence in the second paragraph following Table 6.4, with "A more accurate method of determining Δ_1 is to measure the average sound pressure level on two imaginary test surfaces surrounding the machine, which correspond roughly to the shape of the machine."

p267, The first equation should be numbered "6.26"

p267, In Fig 6.3, there are two curves labelled "4". The lower curve should be labelled "5"

p278, Equation (7.6), k^2 should be k_z^2

p292, 3 lines above Eq. 7.52, change $\langle p_k^2(t)\rangle$ to $\langle p_k^2(0)\rangle$ and add "at time t=0" after "mode k"

p292, 2 lines above Eq. 7.52, change $\langle p_k^2(t)\rangle$ to $\langle p_k^2(0)\rangle$

p292, In Eq. 7.52, change $\langle p_k^2(t)\rangle$ to $\langle p_k^2(0)\rangle$

p293, 3 lines above Eq. 7.55, change p_k to $p_k(0)$

p293 6 lines from the bottom, there should be a minus sign before $\log_e$

p294, 5 lines from the bottom, change (2000) to (2001)

p294, Eq. (7.59), replace $\dfrac{0.16V}{S}$ with $\dfrac{0.16V}{S^2}$

p295, Eq. (7.64), multiply each of the three terms in brackets by -1

p295, 2 lines beneath Eq. (7.62), add "energy" before "reflection"

p295, 2 lines above Equation (7.64), change "2001" to "2000"

p296, lines 2 and 3, change "S_x, S_x and S_x" to , "S_x, S_y and S_z"

p301, In each of the top two lines of the table, add "(m^2)" after $S\bar{\alpha}$

p303, Section 7.7.2, change "NRI" to "NRC" in three places and change "Noise Reduction Index" to "Noise Reduction Coefficient" in two places. Also change Eq. 7.76 to:

$$NRC = \frac{\left(\bar{\alpha}_{250} + \bar{\alpha}_{500} + \bar{\alpha}_{1000} + \bar{\alpha}_{2000}\right)}{4} \tag{7.76}$$

p303, 2 lines from bottom, change "20 mm" to "20 μm"

p304, Caption of Figure 7.6, line 1, change "porous surface" to "rigidly backed porous material" and in the last line, change "L" to ℓ

p310, Immediately following Equation (7.88), add the following: "Note that for square, clamped-edge panels, the fundamental resonance frequency is 1.83 times that calculated using Equation (8.21). For panels with aspect ratios of 1.5, 2, 3, 6, 8 and 10 the factors are 1.89, 1.99, 2.11, 2.23, 2.25 and 2.26 respectively."

p310, Equation 7.85 should be: $\xi_c = \left(\frac{f}{f_c} \right)^{1/2}$

p311, End of second full paragraph, change “Elbert” to “Elfert”

p313, Equation (7.94), remove “2" from the second term in brackets.

p321, In Equation (7.111), replace Γ_1 with Γ, where Γ is defined in Equation (7.100).

p329, Eq. (7.122), replace T_{60u} with $\dfrac{1}{T_{60u}}$

p330, 10th line, change “2000” to “2001”

p338, Replace Equation (8.8) with $\dfrac{E_1 h_1^2 + E_2 h_2 (2h_1 + h_2)}{2(E_1 h_1 + E_2 h_2)}$

p339, 12th line from the bottom, change “1973” to “1988”

p340, Replace Equation (8.11) with $B = \dfrac{Eh^3}{12(1 - \nu^2)}$

p343, 5 lines above the figure, change “ASTM E90-66T” to “ASTM E413-87”

p346, In the the top line add “curvature of” immediately before “500"

p346, fig 8.5, the horizontal part of the IIC 50 curve should extend down to 100 Hz

p347, replace the line immediately above section 8.2.4 and the last word in the line above that with “contour value at 2000 Hz is increased by 1 dB.” and add “Note that *IIC*, R_w and *STC* values are all reported as integers.”

p348, In Equation (8.22), the last term in brackets should be multiplied by 2

p352, 3 lines under Equation (8.36), change “below” to “above”.

p353, change x-axis label to f (Hz) (log scale)”

p353, In Figure 8.8 caption change (= *mh*) to (= m/h)

p353, Figure 8.8 caption, second line, remove “f_c, ”

p353, In part (b) of the caption, replace the sentence beginning with “For a well damped panel”, with the following, “For a well damped panel, see the discussion in the last paragraph preceding Section 8.2.5 on page 356."

p354, In Equation (8.39a), replace $\left[1-\left(\dfrac{f}{f_{ci}}\right)^2\right]$ with 1

p354, 2nd and 3rd lines from the bottom, replace “8.37” with “8.38”

p355, 2nd line after Eq. 8.44, replace $f_{c2}/2$ with $f_{c1}/2$

p355, 2nd line following the equation, replace “8.37” with “8.38”

p355, line 3, replace “8.37" with “8.38"

p359, In Eq. 8.50, replace $10\log_{10} m_1$ with $20\log_{10} m_1$

p360, change x-axis label to “frequency (Hz) (log scale)”

p360, on the x-axis of the figure, change "$0.5 f_{c2}$" to "$0.5 f_{c1}$"

p360, The existing equation for TL_{B1} is only valid for $f_{c1} < 2\pi f_\ell$.
For $f_{c1} \geq 2\pi f_\ell$, we use: $TL_{B1} = TL_A + 20\log_{10}(f_{c1}/f_0) + 20\log_{10}(f_{c1}/f_\ell) - 22$ (dB)

p360, first line of item (b) in the caption, change to “Line–point support (f_{c2} is the critical frequency of the point supported panel)”

p360, Under "Point B", item (a), replace "$30\log_{10} f_{c2}$" with "$20\log_{10} f_{c1} + 10\log_{10} f_{c2}$"

p360, Under "Point B", items (b) and (c), replace "$40\log_{10} f_{c2}$" with "$20\log_{10} f_{c1} + 20\log_{10} f_{c2}$"

p360, Eq (a) under "Point C", add the term, "$20\log_{10}(f_{c2}/f_{c1})$" to the RHS of the equation

p360, last Eqn., change f_1 to f_ℓ

p361, To reflect Davy’s latest model, beginning the paragraph above Equation (8.53) on page 361, and ending 5 lines below the top of page 362, replace everything with the following.
The transmission loss is found by calculating the transmission coefficients due to airborne sound, τ_{Fa}, and structure borne transmission, τ_{Fc}, respectively and then substituting those values into Equation (8.53a).

$$TL = -10\log_{10}(\tau_{Fa} + \tau_{Fc}) \qquad (8.53a)$$

In the most recent Davy model (JASA, vol. 145, page 703, 2019) the mass-air-mass resonance frequency is calculated in a different way to how it is done in the Sharp model. First, the fundamental resonance frequencies of the panels on either side of the cavity are calculated by treating the leaves of the wall as rectangular plates that are simply supported on two opposite edges (the edges attached to the studs) and free on the other two edges. The expression used for the resonance frequency of the first bending mode for leaf i is:

$$f_i = \frac{X_m \pi}{2b^2}\sqrt{\frac{E_i h_i^2}{12\rho_{mi}(1-\nu_i^2)}}, \;....i = 1, 2 \tag{8.53b}$$

where b is the spacing between the studs and X_m is a multiplier, used only for the Davy double wall TL model, where X_m = 1.7 for steel studs with a thickness greater than 0.5 mm and $X_m = 0.8 for steel studs with a thickness less than 0.5 mm.

When the two leaves making up the double wall are identical, the Davy model calculates and uses a modified value, f_0' for the mass-air-mass resonance frequency.

$$f_0' = \sqrt{\frac{\rho c^2(m_1+m_2)}{4\pi^2 d m_1 m_2} + f_1^2} \tag{8.53c}$$

When the panels are not identical, the calculation is slightly more complex. In this case:

$$f_0' = \sqrt{-0.5p + 0.5\sqrt{p^2 - 4q}} \tag{8.53d)}$$

where $p = -(f_1^2 + f_2^2 + f_{a1}^2 + f_{a2}^2)$ and $q = f_1^2 f_2^2 + f_1^2 f_{a2}^2 + f_2^2 f_{a1}^2$ and

$$f_{ai} = \frac{1}{2\pi}\sqrt{\frac{\rho c^2}{d m_i}} \tag{8.53e}$$

Davy indirectly measured loss factors for gypsum plaster board that ranged from 0.03 to 0.04. These were the factors that resulted in best agreement with his TL model in the vicinity of the panel critical frequencies.

Below the adjusted mass-air-mass resonance frequency, f_0', the double wall behaves like a single wall of the same mass and the single wall procedures may be used to estimate the TL below a frequency, $f = 2f_0'/3$. In this case, the TL is given by Equation~(8.39a) in the textbook, where m is the total mass per unit area of the double wall leaves (m_1+m_2).

$$a = \left(\frac{\pi f(m_1 + m_2)}{\rho c}\right) \tag{8.53f}$$

Between $f = 2f_0/3$ and f_0', a straight line is drawn on a plot of TL vs $\log_{10} f$ between the TL calculated at $f = 2f_0/3$ and the TL calculated at $f = f_0'$. The TL at $f = 2f_0/3$ is calculated using Equation (8.39a) in the textbook (with $m = m_1 + m_2$) and Equation (8.53f) above for a single panel, with the mass per unit area, m, being the total mass per unit area of the construction. At $f = f_0'$, the TL is calculated using Equations

(8.53a) above and (8.56) in the textbook and Equations (8.53) (or Equation (8.53i)) below.

Above f_0', the transmission from one leaf to the other consists of airborne energy through the cavity and structure-borne energy through the studs. For point connections, the structure-borne sound transmission coefficient for all frequencies equal to and above f_0' is:

$$\tau_{Fc} = \frac{16n\rho^2 c^4 QR}{\pi^5 f^2\left[(m_1 f_{c2} + m_2 f_{c1})^2 + 64 f^2 m_1^2 m_2^2 c^4 C_M^2\right]} \tag{8.53}$$

where n is the number of point connections per square metre and

$$Q = \begin{cases} 1+e & \text{if } f < f_{c1} \\ e & \text{if } f \geq f_{c1} \end{cases} \tag{8.53g}$$

and

$$R = \begin{cases} 1+r & \text{if } f < f_{c2} \\ r & \text{if } f \geq f_{c2} \end{cases} \tag{8.53h}$$

where $e = \pi f_{c1}\sigma_1/(4f\eta_1)$, $r = \pi f_{c2}\sigma_2/(4f\eta_2)$, f_{c1} and f_{c2} are the critical frequencies of panels 1 and 2 respectively, s_1 and s_2 are the radiation efficiencies of panels 1 and 2 respectively, calculated as described on page 309 in the textbook, and m_1 and m_2 are the mass per unit area of panels 1 and 2 respectively. When calculating panel radiation efficiencies, the perimeter, P is the overall length of the panel perimeter plus twice the length of all the studs. A line of point connections can be treated as a stud.

For line connections, the structure-borne sound transmission coefficient for all frequencies equal to and above f_0' is:

$$\tau_{Fc} = \frac{8\rho^2 c^3 QR}{\left[g^2 + \left(8\pi f^{3/2} m_1 m_2 c C_M - g\right)^2\right] b\pi^3 f^2} \tag{8.53i}$$

where b is the spacing between the studs, $e = \dfrac{\sigma_1}{2\eta_1}\sqrt{\dfrac{f_{c1}}{f}}$, $r = \dfrac{\sigma_2}{2\eta_2}\sqrt{\dfrac{f_{c2}}{f}}$, $f_{c1} \leq f_{c2}$ and

$$g = m_1(f_{c2})^{1/2} + m_2(f_{c1})^{1/2} \tag{8.54}$$

Davy has found that for wooden studs, the point connection model works best in all cases and the line connection model should not be used. For steel studs where the leaves are screwed to the studs, the line connection model should be used at frequencies for which the screw spacing is less than one-quarter of the leaf bending wavelength and the point connection model should be used at frequencies for which the screw spacing is greater than one-quarter of the leaf bending wavelength. The leaf bending wavelength may be calculated using $\lambda_B = c_B/f$, where c_B is defined in

Equation (8.1) in the textbook.

Based on all of his work on developing empirical compliance models, Davy recommends that the model described in his 2019 JASA paper is the one that should be used for all steel studs, even though the model was derived only using steel C-section studs, 92 mm wide. There are two different models provided; one for point connections and one for line connections.

For the line connection model, the compliance, C_M is given by:

where $m_r = \dfrac{m_1 m_2}{m_1 + m_2}$, m_1 and m_2 are the mass per unit areas of leaves 1 and 2,

$$C_M = A f^{x_f} m_r^{x_m} b^{x_b} g^{x_g} S^{x_S} \tag{8.54a}$$

respectively, b is the stud spacing, g is the gauge of steel used in the stud and S is the area of one side of the wall.

For the point connection model, the compliance, C_M, is given by:

$$C_M = A f^{x_f} m_r^{x_m} n^{x_n} g^{x_g} S^{x_S} \tag{8.54b}$$

where n is the number of point connections (number of screw connections) per square metre, Values of the constant, A and exponents corresponding to Equations (8.62a) and (8.62b) are listed in the following table for TC (channel section) type studs.

Coefficient	Line connection		Point connection	
	63 Hz–250 Hz	250 Hz–5000 Hz	63 Hz–250 Hz	250 Hz–5000 Hz
A	6.07×10^{-4}	2.58×10^{-4}	4.06×10^{-5}	4.94×10^{-7}
x_f	−1.04	−1.52	−0.76	−1.16
x_m	−1.4	−1.12	−1.96	−1.18
x_b	0.0	−0.257	0.0	0.0
x_n	0.0	0.0	0.0	0.747
x_g	0.666	1.52	1.68	2.49
x_S	0.0	0.0	0.0	0.355

Davy also investigated the effect of using different steel stud sections (see Figure~7.12 in the 5th edition textbook). They concluded that the compliance corresponding to these stud types can be obtained by multiplying the value of C_M for TC type studs by the factors listed in Table~7.4 in the 5th edition textbook, which indicates that AWS section studs will result in the highest TL values.

p362, In Equation (8.57), remove $\left[1 - \left(\dfrac{f}{f_{ci}}\right)^2\right]$

p362, Add a revised definition for the limiting angle, θ_L, as follows:

$$\cos^2\theta_L = \begin{cases} 0.9 & \text{if } \dfrac{\lambda P}{8\pi A} > 0.9 \\ \dfrac{\lambda P}{8\pi A} & \text{if } \cos^2 61^\circ \le \dfrac{\lambda P}{8\pi A} \le 0.9 \\ \cos^2 61^\circ & \text{if } \dfrac{\lambda P}{8\pi A} < \cos^2(61^\circ) \end{cases} \tag{8.55}$$

where P is the perimeter of the wall leaf and A is its face area.

p362, change Equation (8.58) to:

$$\tau_{Fa} = \frac{\pi(\eta_2\xi_1 + \eta_1\xi_2)}{2\bar{a}_1^2\,\bar{a}_2^2\,\eta_1\eta_2(q_1^2 + q_2^2)\bar{\alpha}^2} \tag{8.67}$$

p363, 6 lines from the bottom of the page, change the equation to:

$$20 + 20\log_{10}(2500/100) - 6 = 42.0 \text{ dB}$$

p363, change Equation (8.62) to:

$$q_2 = 2(\xi_1 - \xi_2) \tag{8.71}$$

p363, 4 lines from the bottom of the page, change “77” to “78” and “61” to “60” in 2 places

p363, last line, change “61” to “60” and “52” to “51”

p365, Section 8.2.6.2, 5 lines down, replace the sentence beginning with “Alternatively” with the following: “This mechanism can be considered to approximately double the loss factor of the base panels. Alternatively, the panels could be connected together with a layer of visco-elastic material to give a loss factor of about 0.2.”

p365, Section 8.2.6.2, 9 lines down, after the words “(0.3 to 0.6 m)”, add the words, “or connected with a layer of visco-elastic material or even nailed together”.

p371, In the 500 Hz column, 7th number from the bottom, replace S1" with "51"

p379, 2 lines above "Example 8.4", change "Example 8.7" to "Example 8.8" p380, replace the example table with the following table.

	Octave band centre frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
TL from Table 8.2	30	36	37	40	46	54	57	59
$\bar{\alpha}_w$ from Table 7.1	0.013	0.013	0.015	0.02	0.03	0.04	0.05	0.06
$\bar{\alpha}_f$ from Table 7.1	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03
$S_i\bar{\alpha}$ (m)	0.463	0.463	0.525	0.68	1.05	1.36	1.67	2.04
$S_E/S_i\bar{\alpha}_i$	67	67	59	45.6	29.5	22.8	18.6	15.2
$10\log_{10}(S_E/S_i\bar{\alpha}_i)$	18	18	18	17	15	14	13	12
NR (dB)	12	18	19	23	31	40	44	47

p381, 3rd line down, Equation (8.75) should be (8.65), 6 lines down Equation (8.76) should be (8.66) and 8 lines down, Equation (8.6), should be (8.65).

p381, 4th Eq. in section 3, "30.5/30" should be "30.5/31"

p391, At the end of the paragraph above the figure, add the following sentences. "When paths involving the ground reflected wave on the source side are considered, the straight line distance, *d*, used in Equation (8.85) is the distance between the image source and the receiver. The same reasoning applies to paths involving ground reflections on the receiver side."

p394, 3 lines following Eq. 8.98, replace "barier" with "barrier".

p395, replace the four equations for A_b with the following in the same order

$$A_b = 15.8 + 20\log_{10}[5.8/4.5] = 18.0 \text{ dB};\; A_R = 1.3 \text{ dB};\; A_b + A_R = 19.3 \text{ dB}$$

$$A_b + A_R = 19.3 \text{ dB}$$

$$A_b = 19.8 + 20\log_{10}[7.2/4] = 24.9 \text{ dB};\; A_R = 2.6 \text{ dB};\; A_b + A_R = 27.5 \text{ dB}$$

$$A_b = 19.5 + 20\log_{10}[7.5/4.5] = 23.9 \text{ dB};\; A_R = 5 \text{ dB};\; A_b + A_R = 28.9 \text{ dB}$$

p395, 6 lines from the bottom, replace "4.6" with "4.7"

p395, Solution, item 1, last line, change "5.18" to "5.20".

p396, replace the two equations for A_b with the following in the same order.

$$A_b = 12.0 + 20\log_{10}[4.5/4] = 13.0 \text{ dB}$$

$$A_b = 19.8 + 20\log_{10}[7.2/4] = 24.9 \text{ dB}$$

p396, Item 3, lines 2 and 3, change the numbers to 19.3 dB, 19.3 dB, 27.5 dB, 28.9 dB, 28.9 dB, 13 dB, 24.9 dB and 24.9 dB p396, Item 3, line 4, change “5.18” to “5.20”.

p396, Item 3, line 4 or 5, change “10 dB” to “12 dB”

p397, Item 3, “$N = (2/\ell)(2.5)$” should be “$N = (2/\lambda)(2.5)$”

p397, Add the following to the end of item 3, “As there are 3 diffracted paths around the building for sound arriving at the rear wall, the power level on the rear wall should be increased by $10\log_{10}(3)$=4.8 dB, so the total power on the rear wall becomes 71.8 dB.”

p397, Four lines above the equation at the bottom of the page, change 67 to 71.8 and change 79 to 80

p397, Two lines above the equation at the bottom of the page, change 80 to 81

p397, In the equation at the bottom of the page, change 80 to 81 and change 74 to 75

p399, Figure 8.19, replace *r* with *R*

p399, Replace Eq. (8.100) with:

$$
\begin{aligned}
\ell_s^{\prime} &= R\,\theta\cos\alpha \\
h_s^{\prime} &= H_b - R\,\theta\sin\alpha \\
\alpha &= \frac{1}{2}(\pi - \theta) - \beta \\
\beta &= \cos^{-1}(H_b/A) \\
\theta &= \pm\cos^{-1}[1 - (A^2/2R^2)], \quad |R| > A/2
\end{aligned}
$$

p400, 1st paragraph, change "Figure 8.12" to "Figure 8.14"

p400, In Equation (8.103), replace "*b*" with "*e*"

p400, 2 lines above Equation (8.104), replace "*b*" with "*e*"

p401, Eq. (8.107) should be:

$$
N = \pm\frac{2}{\lambda}\left\{\left[\left[\left(X_S^2 + (h_b - Z_S)^2\right)^{1/2} + \left(X_R^2 + (h_b - Z_R)^2\right)^{1/2} + b\right]^2 + Y^2\right]^{1/2} - d\right\}
$$

p404, In Equations (8.113), there should be an additional "(" following the "/" in the last term.

p404, Figure 8.21 is missing (see following figure)

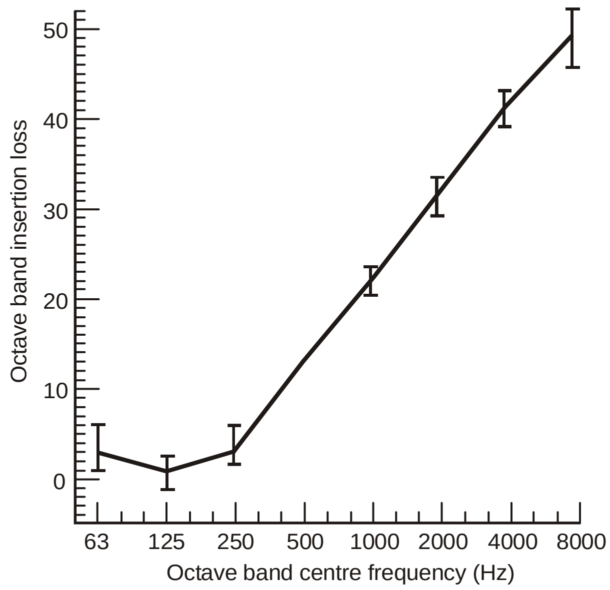


Figure 8.21 Typical pipe lagging insertion loss for 50 mm glass-fibre, density 70-90 kg/m^3, covered with a lead / aluminium jacket of surface density, 6 kg/m^2. The I symbols represent variations in measured values for three pipe diameters (75 mm, 150 mm and 360 mm).

p405, Replace Equations (8.116), (8.117) and (8.119) with the following:

$$X_c = [41.6(m/h)^{1/2}\xi_c(1 - 1/\xi_c)^{-1/4}] - [258h/(\ell\xi_c)] \tag{8.116}$$

$$C_c = 0.232\xi_c\ell/h \tag{8.117}$$

$$X_m = [226(m/h)^{1/2}\xi_c(1 - \xi_c^2)] - [258h/(\ell\xi_c)] \tag{8.119}$$

p415, lines 6 and 7 under Eq 9.16, replace with, "the end correction. In this case, $\xi = 0$. For a"

p417, In Eq. (9.25), replace $(1 - M^2)$ with $(1 - M)^2$

p417, In Equations (9.27) and (9.28) and on the line between them ``Re'' should be in italics font as it represents the Reynolds number, not the real part of a complex number.

p417, replace the text between Eqs. (9.25) and (9.26) with:
"An alternative expression for the effective length, which may give slightly better results than Equation (9.25), for grazing flow across the holes, and which only applies for flow speeds such that $u_\tau/(\omega d) > 0.03$, is (Dickey and Selamet, 2001)"

p419, Line under Equation (9.32), change "static (atmospheric)" to "absolute".

p420, The last + sign on the RHS of Equation (9.36b) should be replaced with a – sign p429, Move Equation (9.52) up one line and remove the ":" after "by".

p432, Item 5, line 1, Replace "Equation (8.48)" with "Equation (9.52)"

p439, line following Equation (9.81), replace μ with f_m

p439, In Eq. (9.83), the right hand side should be multiplied by the gas density

p443, Top label in Figure 9.13, change "quadruple" to "quadrupole"

p444, In Table 9.2, "19" should be "-19"

p447, 4 lines under Equation (9.89), replace $P/100$ with $PS_p/100$ where S_p is the area of one side of the perforated panel

p449, 3rd line under the figure caption, change "height" to "width"

p482, 5 lines above the page bottom, change element C to element D.

p453, Replace the caption in the figure with
Predicted octave band attenuations for a rectangular duct lined on two opposite sides. Lined circular ducts or square ducts lined on all four sides give twice the attenuation shown here. The quantity, ρ, is the density of fluid flowing in the duct, c is the speed of sound in the duct, ℓ is the liner thickness, h is the half width of the airway, σ is the surface density of a limp membrane covering the liner, R_1 is the liner flow resistivity. Bulk reacting liner with various densities of limp membrane or equivalent perforated sheet ($\sigma/\rho h$ = 0.01 to 2). Zero mean flow (Mach number, M = 0.1).

P454, Replace the caption in the figure with
Predicted octave band attenuations for a rectangular duct lined on two opposite sides. Lined circular ducts or square ducts lined on all four sides give twice the attenuation shown here. The quantity, ρ, is the density of fluid flowing in the duct, c is the speed of sound in the duct, ℓ is the liner thickness, h is the half width of the airway, σ is the surface density of a limp membrane covering the liner, R_1 is the liner flow resistivity. Bulk reacting liner with various densities of limp membrane or equivalent perforated sheet ($\sigma/\rho h$ = 0.01 to 2). Zero mean flow (Mach number, M = 0). For the figures on the left, the flow is in the same direction as sound propagation and for the figures on the right, the flow is in the opposite direction to sound propagation.

p457, 15 lines from the top, $2h/\ell$ should be $2h/\lambda$

p459, 10 and 15 lines from the top, $2h/\ell$ should be $2h/\lambda$

p459, Figure 9.21, x-axis label, change "*S*" to "*A*" and in the caption add "open" immediately before "duct". Also add the following sentence. "Note that for a silencer with multiple baffles, *A* is the cross-sectional area of one airway, not the total silencer."

p461, In the equation in the centre of the page, change “6” to “5”

p461, 4 lines below the equation in the middle of the page, change “5.5” to “7”

p461, 8 lines below the equation in the middle of the page, change “12.5” to “13”

p462, line 1, change “1.2” to “1.0”

p462, Figure 9.23 caption, last line, change “1992” to “1987”

p463, In note a under Table 9.4, change “doubled” to “double”

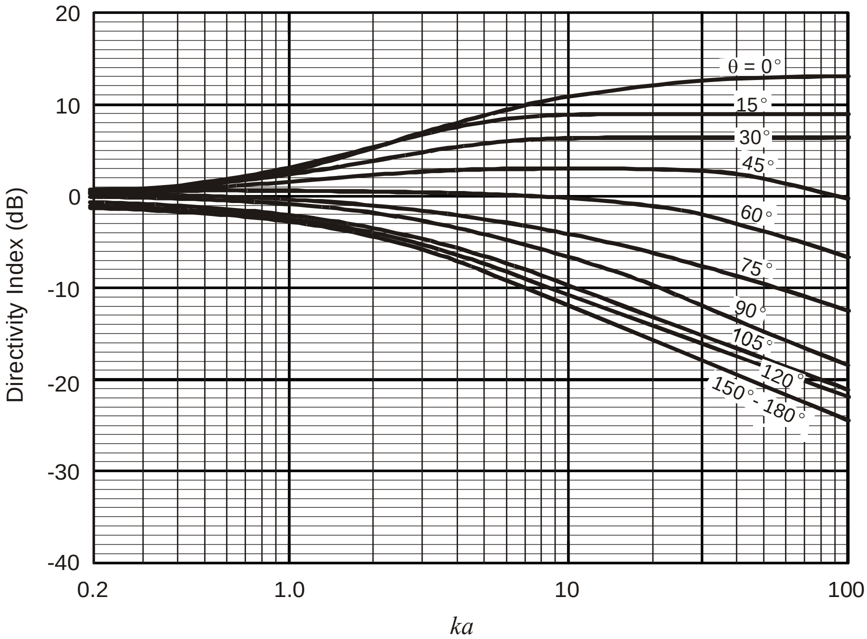
p464, Replace Table 9.5 with the following:

Duct diameter (mm)	63	Octave band centre frequency (Hz) 125	250	500	1000	2000
150	18(20)	13(14)	8(9)	4(5)	1(2)	0(1)
200	16(18)	11(12)	6(7)	2(3)	1(1)	0(0)
250	14(16)	9(11)	5(6)	2(2)	1(1)	0(0)
300	13(14)	8(9)	4(5)	1(2)	0(1)	0(0)
400	10(12)	6(7)	2(3)	1(1)	0(0)	0(0)
510	9(10)	5(6)	2(2)	1(1)	0(0)	0(0)
610	8(9)	4(5)	1(2)	0(1)	0(0)	0(0)
710	7(8)	3(4)	1(1)	0(0)	0(0)	0(0)
810	6(7)	2(3)	1(1)	0(0)	0(0)	0(0)
910	5(6)	2(3)	1(1)	0(0)	0(0)	0(0)
1220	4(5)	1(2)	0(1)	0(0)	0(0)	0(0)
1830	2(3)	1(1)	0(0)	0(0)	0(0)	0(0)

p464, To avoid confusion with the discussion on p466, section 9.12.2, change f_0 to f_{0s} in three locations in the paragraph below Table 9.5

p469, replace second sentence under the heading, “9.15 DIRECTIVITY OF EXHAUST DUCTS” with “The latter figure has been derived from field measurements reported by Day and Bennett (2008). To get the rectangular section data to collapse on to the ka axis for circular ducts, where $2a$ is the duct diameter, it was necessary to multiply the rectangular duct dimension ($2d$) in the direction of the observer by $4/\pi$ to get $2a$.p470, Equation (9.115), replace "D" with "d"

p470, Figure 9.27, replace it with a more recent one below.



Exhaust stack directivity index vs *ka* (where *a* is the stack radius), measured in the field. Curves are fitted to data reported by Day and Bennett (2008).

p471, Eq. (9.116) and (9.117) and 2 lines below Fig. 9.28, replace "*D*" with "*d*"

p476, 3rd and 6th line of the first paragraph, change "1979" to "1978"

p478, line above Equation (10.14), change "1979" to "1978"

p483, In Equation (10.18) and 2 lines above it, replace "*e*" with "*q*" to avoid confusion with the distance, *e*, between spring supports.

p484, In Figure 10.6, the force should be shown as acting on mass m_2, not mass m_1.

p485 In Eqs. (10.25a,b), the left hand side should be squared.

p487, line above Equation (10.31), change "1986" to "1988"

p487, Equation (10.45) should be:

$$f_{c1} < 2\pi f_\ell$$

p495, Equation (10.42), remove the symbol "*d*" from the right hand side.

P496, Equation (10.48), replace "*d*" with $|F|/\, k_1$

p496, Equation (10.47), the numerator on the RHS should be $3(m_2\,/m_1)^3$

p498, 8 lines from the top of the page, change “1979” to “1978”

p513, Table 11.2, 3rd line in 2000 Hz column should be “25”

p513, Table 11.2, the 8000 Hz column should be replaced with 13, 15, 18, 27, 35, 35, 26, 32, 32, 34, 42 and 44 respectively and the BFI column for the two tubeaxial entries should be “ 7 ”

p513, Remove the paragraph containing Equation (11.2) and remove "(11.2)" in the second to bottom line.

p514, last Equation, label (11.2)

p515, Example 11.1 table, replace “30” with “36”

p517, Equation (11.10), change to: $L_w = 72 + 13.5\log_{10} kW$ (dB re 10^{-12} W)

p526, last line, change “8.8” to “8.3”

p526, Figure 11.2 caption, although Heitner did use a similar figure to this, it was based on the earlier work published by Ingard so the correct reference should be “Ingard, 1959".

p528, replace the values in the table with the following.

0	72	77	80	81	80	76	69	63
60	74	79	82	83	82	78	71	65
120	61	66	69	70	69	65	58	52
180	55	60	63	64	63	59	52	46

p529, 3 and 4 lines beneath the ``Control Valves" heading, change ``static" to ``absolute"

p529, 6 lines beneath the ``Control Valves" heading, remove ``static"

p530, 1, 8, 9 and 14 lines from the page bottom, change ``static" to ``absolute"

p531, line above Equation (11.28), change ``static" to ``absolute".

p531, First line, Figure 10.5 caption, change ``static" to ``absolute".

p531, change the label on the vertical axis in Figure 10.5 from ``Static pressure" to ``Absolute pressure".

p535, 4 lines above Eq.(11.33), and 2 lines after Eq. (11.34), change “534” to “60534”.

p536, 4 lines from the bottom, change “534” to “60534”.

p538, Line above Equation (11.52), change ``stream Mach number'' to ``freely expanding jet Mach number''.

p538, Equation (11.52) is only valid for regimes II, III and IV. The Mach number in the vena contracta for regime I is $M_0 = (10^4\eta)^{(1/3.6)}$. For regime V, the freely expanding jet Mach number is,

$$M_j = \sqrt{(\frac{2}{\gamma-1})[(22)^{(\gamma-1)/\gamma} - 1]}$$

p539, 2 lines below Equation (11.55), change the Howe and Baumann reference to Baumann and Coney, 2006.

p539, 4 lines below equation (11.55), remove "Howe and".

p540, 1 line below equation (11.56), remove ``static''.

p541, Following Eq. 11.64, insert the statement, "If the second term in brackets of Equation (11.64) exceeds 0.3, it is set equal to 0.3".

p542, line 3, change "534" to "60534".

p542, Immediately before Equation (11.67), add the following: "Note that the final spectrum levels must all be adjusted by adding or subtracting a constant decibel number so that when A-weighted and added together, the result is identical to the A-weighted overall levels form Equations (11.65) and (11.66)."

p543, 1 line and 4 lines above Eq. (11.70), change "534" to "60534".

p544, Equation 11.73, second term on the right should have the "$\log_{10}$" removed and "17.27" replaced with "17.37", so it reads "- 17.37(...........)"

p544, Replace the last paragraph with, "The octave band external sound pressure levels may be calculated using Equations (11.73) and (11.76) with octave band sound power levels used in Equation (11.76) instead of overall sound power levels."

p552, The constant in Equation (11.89) should be "55", not "53".

p555, Replace the first paragraph with:
where the values of C for relevant octave bands that are listed in Table 11.27 should have 2.4 dB subtracted from them. The measurement surface area used to obtain N_R is given by, $S = 1.25\ell_m h$ (m^2), where h is the height of the transformer tank and ℓ_m is the length of the horizontal measurement contour along which the average overall A-weighted sound pressure level was measured to obtain N_R. The measurement contour is typically located 2 m laterally from a horizontal contour made by a tight string placed around the transformer tank and touching the tank or its protrusions in various places (IEEE Std C57.12.90, 2015). For a measurement contour located 2 m from the transformer tank, the contour length, ℓ_m, may be approximated as, $\ell_m = 2L + 2W + 11.2$ (m), where L is the transformer length and W is the width (or depth). The NEMA

rating (A-weighted overall audible sound level), N_R, is the A-weighted sound pressure level averaged logarithmically along one or two measurement contours at different heights and maximum acceptable values are listed in Table 11.28. Where possible, values of N_R supplied by the manufacturer should be used.

p558, Replace the paragraph following Table 11.29 with the following:
"The road surface or condition correction is taken as zero for either sealed roads at speeds above 75 km/hr or gravel roads. For speeds below 75 km/hr on impervious sealed roads, the correction is -1 dB. For pervious road surfaces, the correction is -3.5 dB. For concrete roads with deep random grooves greater than 5 mm in width, the correction is, $C_{cond} = 4 - 0.03P$ where P is the percentage of heavy vehicles."

p559, Replace the nine lines following Eq. 11.102 with the following:
"Low barriers such as twin beam metal crash barriers can have less effect than soft ground. So if these are used with any proportion, P_d, of soft ground, their effect should be calculated by looking at the lower noise level (or the most negative correction) resulting from the following two calculations:

- Soft ground correction ($0 < P_d < 1.0$), excluding the barrier correction; and
- hard-ground correction ($P_d = 0$) plus the barrier correction."

p560, Remove the sentence beginning 12 lines from the bottom of the page, "Note that the two values for β must add up to $180°$ "

p561, In the heading and first line, change "FWHA" to "FHWA"

p561, 6 lines from the bottom, add "Menge, et al.," before "1998".

p562, 4 lines under Equation (11.108), add "Menge, et al.," before "1998".

p563, 5th line in first paragraph, and 3 lines under Equation (11.109), replace "1995" with "U.K. DOT, 1995a".

p563, 3 lines under Equation (11.111), replace "1995" with "U.K. DOT, 1995a,b".

p563, p564, Replace the last two lines of page 563 and the top three lines of page 564 with the following:
"Note that different vehicle types must be considered as separate trains. For any specific train type consisting of N identical units, the quantity SEL_{ref} is calculated by adding $10\log_{10}N$ to SEL_v. In addition the track correction, C_2 from Table 11.32 must also be added so that:

$$SEL_{ref} = SEL_v + 10\log_{10}N + C_2$$

p564, The second entry of "Freight vehicles, tread braked, 2 axles" should actually be "Freight vehicles, disc braked, 4 axles"

p565, Lines 1 and 3, change SEL to SEL_{ref}.

p565, table 11.32, add ,C_2, after “Correction” in the column 2 label.

p567, In Equation (11.121), remove the minus sign

p568, Add equation numbers, 11.122 and 11.123 to the equations at the top of the page.

p580, 10 lines above Equation (12.1), change “1985” to “1986”.

p604, Eq. A.9 should be

$$F = -\nabla P_{tot} V = \rho_{tot} V \frac{\mathrm{d}\boldsymbol{U}_{tot}}{\mathrm{d}t} \qquad \text{(A.9a,b)}$$

p609, line 2 in the table for fresh water, change “988” to “998”.

p609, line in the table for iron, Young’s Modulus = 206, density =7,600, $\sqrt{E/\rho}$= 4910, η = 0.0005 and ν = 0.27.

p609, line in the table for Nylon, move the “6.6” next to “nylon” and Young’s Modulus = 2, density =1,140, $\sqrt{E/\rho}$= 1,320.

p609, line in table for lead, loss factor = 0.015

p609, line in table for concrete, loss factor = 0.005 - 0.02

p610, the last column of numbers is the density and the 2nd last column is Young’s modulus.

p610, 3 lines above the page bottom, change ``static'' to ``absolute''.

p611, Equation C.1 could be written in a less ambiguous way as

$$R_1 = \rho \Delta P A / (\dot{m} \ell) = \Delta P A / (V_0 \ell)$$

p617, In figure captions, change “C.6” to “C.5” and “C.5” to “C.6”.

p619, In Equation (C.19), replace L_{D1}-L_{D2} with L_{D2}-L_{D1}

p621, Change number of Eq. 1.36 to C.24.

p622, In Equation (C.29), replace Z_N with $Z_N/\rho c$

p623, In Equation (C.30), replace θ with β in three places.

p624 in Equation (C.34), change φ to ϑ and add immediately after the equation, “where the angles are defined in Figure 8.7”.

p624, Line above Equation (C.37), replace Z_N with $Z_N/\rho c$

p625, Line under Eq. (C.39), add after “cavity” the following: “, the impedance, Z_L for a wave incident at angle, θ, is"

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p663, after last line, add, “ANSI S3.6 – 1997. Specification for Audiometers.”

p667, line 1, replace “E90-99” with “E90-02”.

p715, Change “Noise Reduction Index” to “Noise Reduction Coefficient”.