

# Errata for Acoustics: Sound Fields and Transducers by Leo Beranek & Tim Mellow, August 2012 to May 2014.

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Updated October 2, 2018

Cover images: Replace “Wave<sup>®</sup>” with “Wave<sup>®</sup>”.

P. 4, 2<sup>nd</sup> line from top: replace “lead” with “led”.

P. 10, penultimate sentence: Replace “Mathematics” with “Mathematica” and “double-struck *i*” with “double-struck *i*”.

P. 18, Replace Eq. (1.23) with “ $C_n = 10 \log_{10} (f_b - f_a) \text{ dB}$ ”.

P. 18, Replace Eq. (1.24) with “ $L_n = C_n + S_n$ ”.

P. 29, in Eq. (2.27): Replace “*S*” with “*S*(*x*)”.

P. 30, Eq. (2.33): Replace “ $\partial x$ ” with “ $\partial t$ ”.

P. 31: Delete last sentence before Section 2.3.2.

P. 31, Eq. (2.38): replace “ $p_n$ ” with “ $p$ ”.

P. 34, Last paragraph: Replace “both *x* and [see Eq. (2.46)]” with “both *x* and *t* [see Eq. (2.46)]”.

P. 37, 8<sup>th</sup> line after heading 2.4: Replace “ $u_0$  at  $x = 0$ ” with “ $\tilde{u}_0$  at  $x = l$ ”.

P. 38: Replace Eq. (2.57) with

$$SWR = \frac{Z_T}{\rho_0 c} = \frac{1 + |\Gamma|}{1 - |\Gamma|}.$$

P. 38: Replace equation following Eq. (2.57) with

$$\alpha = 1 - |\Gamma|^2.$$

P. 39, 2<sup>nd</sup> column of Table 2.1: Replace  $\begin{matrix} 0 & 0 \\ 0 & \infty \\ -1 & -1 \\ 2 & 0 \end{matrix}$  with  $\begin{matrix} \infty \\ -1 \end{matrix}$ .

P. 40, 3<sup>rd</sup> line from top: Replace “Fig. 9.6 and Fig. 9.7” with “Figs. 10.6 and 10.7”.

P. 41, 7<sup>th</sup> and 8<sup>th</sup> line after Eq. (2.67): “ $1 - n\lambda/2$ ” should be italic “ $l - n\lambda/2$ ” in both instances.

P. 52, Eq. (2.109): Replace “s” or “rayls” with “rayls”.

P. 52, Eq. (2.110): Replace “s” with “rayls”.

P. 55, 6<sup>th</sup> line after Eq. (2.115): Replace “three equations for each ordinate as follows” with “three equations, one for each ordinate as follows”

P. 57, 1<sup>st</sup> line: Replace “ $W_n(w)\Phi(\phi)Z(z)$ ” with “ $W_n(w)\Phi_n(\phi)Z(z)$ ”.

P. 59, Eq. (2.140): Replace “arctan” with “arccot”.

P. 60, Eqs. (2.149) and (2.156), Replace “ $Z_n^m$ ” with “ $Z_{mn}$ ”.

P. 60, Eq. (2.153): Insert “j” before “ $y_n$ ”.

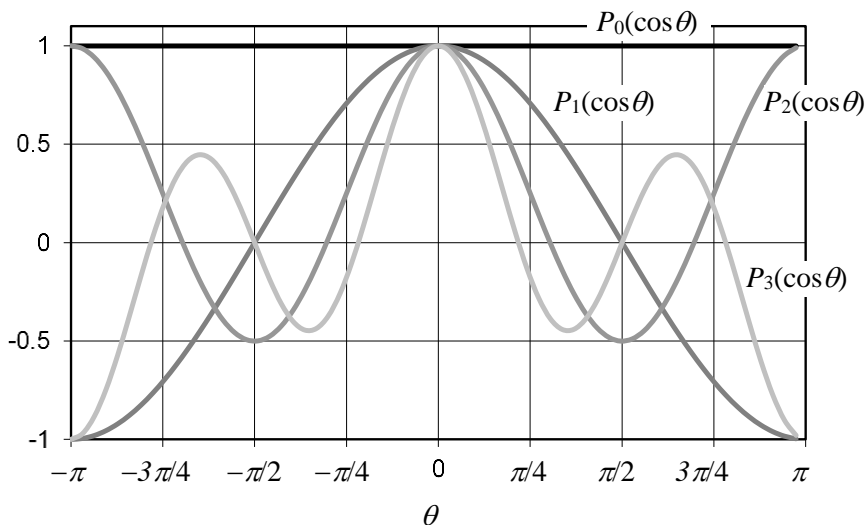
P. 62, Eq. (2.160): Replace “ $Z_n^m(\cos \theta)$ ” with “ $Z_{mn}(\theta)$ ”.

P. 62, 1<sup>st</sup> line after Eq. (2.160): Replace “ $P_n^m(\theta)$ ” with “ $P_n^m(\cos \theta)$ ”.

P. 62, 2<sup>nd</sup> line after Eq. (2.160): Replace “ $P_n(\theta)$ ” with “ $P_n(\cos \theta)$ ”.

P. 62, Eqs. (2.163) and (2.164): Exchange “ $h_n^{(1)}$ ” and “ $h_n^{(2)}$ ”.

P. 62, Fig. 2.22: Replace with



P. 63, 3<sup>rd</sup> line of paragraph [3]: Replace “m3” with “ $m^3$ ”.

P. 63, 4<sup>th</sup> line of paragraph [3]: Replace “n” with “ $n$ ”.

P. 72, 2<sup>nd</sup> line after Eq. (3.3): Replace “SFig. 3.1” with “Fig. 3.1”.

P. 78, Fig. 3.13: Add “3” and “ $\tilde{u}_3$ ”.

P. 84, Eq. (3.20): Replace “ $m_2(l_1 + l_2)^2$ ” with “ $M_{M2}(l_1 + l_2)^2$ ”.

P. 85, 9<sup>th</sup> line from top: Replace “ $\sim p$ ” with “ $\tilde{p}$ ”.

P. 86, Eq. (3.22): Replace “ $S$ ” with “ $S^2$ ” in last term:

$$\frac{f(t)}{S} = \frac{M_M}{S} \frac{d(u(t)S)}{dt S} = p(t) = \frac{M_M}{S^2} \frac{dU(t)}{dt}$$
$$p(t) = M_A \frac{dU(t)}{dt}$$

P. 88, 4<sup>th</sup> and 5<sup>th</sup> lines from top: Replace “Chapter 5” with “Chapter 4”.

P. 89, 4<sup>th</sup> line after Eq. (3.26): Replace “ $G_A = G_M/S^2$ ” with “ $G_A = G_M S^2$ ”.

P. 92, 4<sup>th</sup> eqn. from top: Replace “ $\tilde{p}_2 = (R_{A2} + j\omega M_{A2})\tilde{U}_2 + \tilde{p}_3$ ” with “ $\tilde{p}_2 = (R_{A1} + j\omega M_{A2})\tilde{U}_2 + \tilde{p}_3$ ”

P. 95, 5<sup>th</sup> line from top: Replace “ $e$ ” with “ $\tilde{e}$ ”.

P. 95, 6<sup>th</sup> line from top: Replace “ $i$ ” with “ $\tilde{i}$ ”.

P. 95, 7<sup>th</sup> line from top: Insert “ $\tilde{f}$ ” after “a force”.

P. 95, 2<sup>nd</sup> line after Eq. (3.27b): Replace “ $i$ ” with “ $\tilde{i}$ ”.

P. 96, last word before Eq. (3.28a): Replace “rewrite” with “write”.

P. 106, Caption to Fig. 3.42: Replace “Fig. 3.40” with “Fig. 3.41”.

P. 106, Eq. (3.44): Replace “ $e$ ” with “ $\tilde{e}$ ”.

P. 107, 2<sup>nd</sup> line after Eq. (3.45): Replace “Eqs. (3.39) and (3.40)” with “Eqs. (3.44) and (3.45)”.

P. 116, 4<sup>th</sup> line from bottom: Replace “farad” with “F”.

P. 120, 1<sup>st</sup> line: Replace “Chapter 6” with “Chapter 7”.

P. 122, between Eqs. (4.10) and (4.11): Insert “Thus”.

P. 122, between Eqs. (4.11) and (4.12): Replace “Thus” with “For  $\ell < \lambda/10$ , Eq. (4.9) becomes”.

P. 123, 3<sup>rd</sup> and 4<sup>th</sup> lines after Fig. 4.2: Replace “ $M_A/3$  in (b),  $C_A/3$  in (d)” with “ $C_A/3$  in (b),  $M_A/3$  in (d)”.

P. 126, 2<sup>nd</sup> line after Fig. 4.4: Replace “ $Z_s$ ” with “ $R_s$ ”.

P. 128, After Eq. (4.21), add “where  $M_M = \rho_0 l w t =$  mass of air in the slit in kg”.

P. 130: Replace Eq. (4.25) with “ $R_A = \frac{\sqrt{2\omega\rho_0\mu}}{\pi a^2} \left\{ \frac{t}{a} + 2 \left( 1 - \frac{A_h}{A_b} \right) \right\} \text{ kg} \cdot \text{s/m}^5$ ”.

P. 130: Replace Eq. (4.26) with  $M_A = \frac{\rho_0}{\pi a^2} \left\{ t + 1.7a \left( 1 - \frac{2.1a}{b} \right) \right\}$  kg/m<sup>4</sup>

P. 131, Fig. 4.9(a): Replace “S<sub>1</sub>” on right with “S<sub>2</sub>”.

P. 132: Replace Eq. (4.37) with  $Z_{S1} = \frac{\tilde{p}_1}{S_2 \tilde{u}_2} = \frac{\tilde{p}_2}{S_1 \tilde{u}_2}$

P. 133: Replace Eq. (4.43) with  $\tilde{p}_T = \tilde{p}_+ + \tilde{p}_-$

P. 135: Replace 4<sup>th</sup> eqn. from top with “ $X_B = \frac{1}{\omega_0 C_A} = \frac{\gamma P_0}{18840 \times V} = \frac{1.4 \times 10^{11}}{18840 \times 0.4} = 18.6 \times 10^6$  N · s/m<sup>5</sup>”.

P. 135: Replace 5<sup>th</sup> eqn. from top with “ $M_A = \frac{X_B}{\omega_0} = \frac{18.6 \times 10^6}{18840} = 985$  kg/m<sup>4</sup>”.

P. 136: 1<sup>st</sup> line from top: Replace “The design impedance is equal to” with “The  $Q$  value is given by”.

P. 137, 9<sup>th</sup> line from top: Replace “baffles, horns, and noise sources” with “baffles, and horns”.

P. 140: Replace Eq. (4.70) with “ $I = \left| \frac{\tilde{p}(r)}{\sqrt{2}} \right|^2 \frac{1}{\rho_0 c} = \left| \frac{\tilde{u}_0}{\sqrt{2}} \right|^2 \frac{R_s}{4\pi r^2}$ ”.

P. 140, 2<sup>nd</sup> line from bottom: Replace “Sec. 12.13” with “Sec. 13.13”.

P. 142: Replace Eq. (4.73) with “ $I = \left| \frac{\tilde{p}(r)}{\sqrt{2}} \right|^2 \frac{1}{\rho_0 c} = \left| \frac{\tilde{U}_0}{\sqrt{2}} \right|^2 \frac{f^2 \rho_0}{4r^2 c}$  W/m<sup>2</sup>”.

P. 144, Eqs. (4.78) and (4.83): The tilde is missing from  $\tilde{p}(r, \theta)$ .

P. 146, 1<sup>st</sup> line after Eq. (4.84): Replace “Eq. (52)” with “Eq. (51)”.

P. 150, Eqs. (4.92) and (4.94): Replace “ $\sum_{n=1}^N$ ” with “ $\sum_{n=1}^{N/2}$ ”.

P. 150, 2<sup>nd</sup> line after Eq. (4.93): Replace “delay” with “array”.

P. 153, 1<sup>st</sup> line after Eq. (4.103): Replace “Eq. (155)” with “Eq. (154)”.

P. 153, 1<sup>st</sup> line after Eq. (4.107): Replace “Fig. 4.20a and Fig. 4.20b” with “Fig. 4.20c and Fig. 4.20d”.

P. 153, 5<sup>th</sup> line after Eq. (4.107): Replace “(a) and (b)” with “(a) and (c)”.

P. 155, Eq. (4.117), Replace “ $p_d$ ” with “ $\tilde{p}_d$ ”.

P. 157, 11<sup>th</sup> line after Eq. (4.120): Replace “see Fig. 4.7” with “see Fig. 4.22”.

P. 157, 2<sup>nd</sup> line from bottom: Replace “see Sec. 12.10” with “see Sec. 13.10”.

P. 158, 2<sup>nd</sup> line from bottom: Replace “where the term  $\tilde{U}_0 \Delta z_0$  has been replaced with the unknown coefficient  $\tilde{A}_0 = \tilde{U}_0 \Delta z_0$ ” with “where the term  $\tilde{U}_0 b$  has been replaced with the unknown coefficient  $\tilde{A}_0 = \tilde{U}_0 b$ ”.

P. 159, Eq. (4.128): Replace “ $i$ ” with “ $j$ ”.

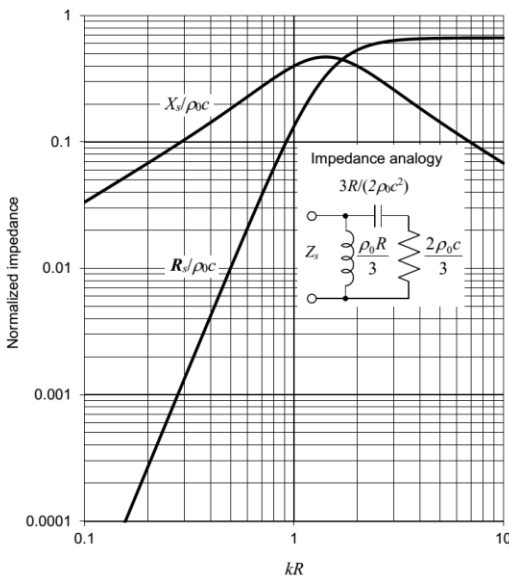
P. 161: Replace Eq. (4.136) with

$$\begin{aligned}\tilde{F} &= 2R^2 \int_0^{2\pi} \int_0^{\pi/2} \tilde{p}(R, \theta) \cos \theta \sin \theta d\theta d\varphi \\ &= \rho_0 c \tilde{U}_0 \frac{2}{3} \cdot \frac{jkR(1 + jkR)}{2 - k^2 R^2 + 2jkR} e^{-jkR}.\end{aligned}$$

P. 161: Replace equation Eq. (4.137) with

$$\begin{aligned}Z_s &= R_s + jX_s = \frac{\tilde{F}}{\tilde{U}_0 e^{-jkR}} \\ &= \frac{2}{3} \cdot \frac{jkR(1 + jkR)}{2 - k^2 R^2 + 2jkR} \rho_0 c \\ &= \frac{2}{3} \cdot \frac{k^4 R^4 + j(k^3 R^3 + 2kR)}{k^4 R^4 + 4} \rho_0 c.\end{aligned}$$

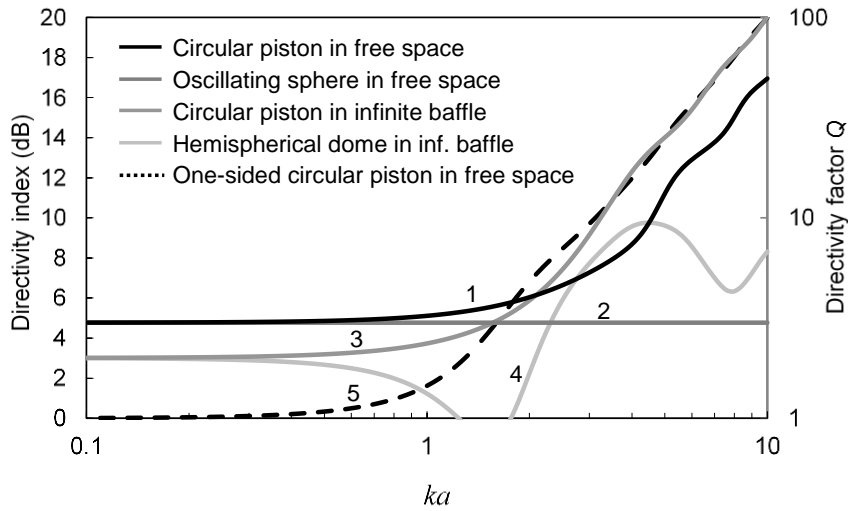
P. 162, Replace Fig. 4.27 with



P. 165, 4<sup>th</sup> line after Eq. (4.142): Replace “Eq. (12.271)” with “Eq. (13.271)”.

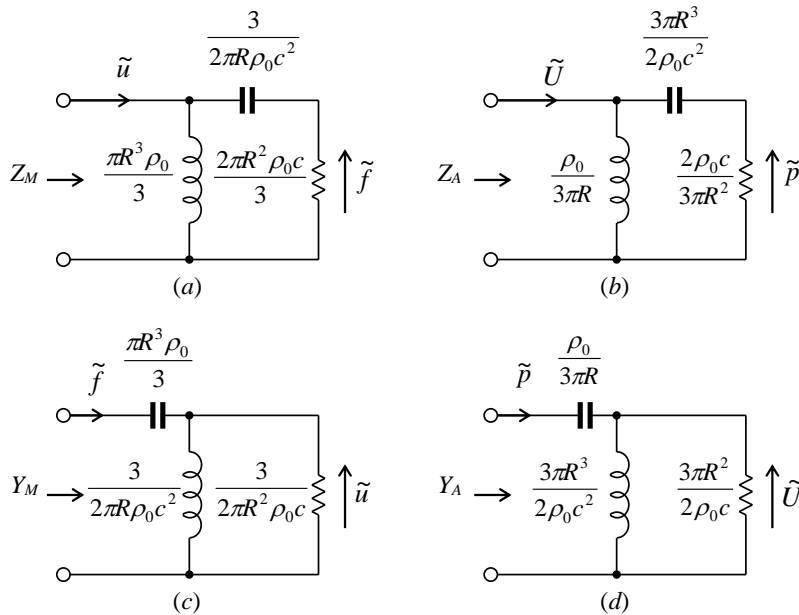
P. 165, 5<sup>th</sup> and 6<sup>th</sup> lines after Eq. (4.142): Replace “Eqs. (12.101) and (12.235)” with “Eqs. (13.101) and (13.235)”.

P. 166, Replace Fig. 4.30 with



P. 166, Add to caption of Fig. 4.30 “These are plotted using Eq. (4.143), which is divided by 2 in the case of the piston and oscillating sphere in free space because they radiate from both sides and hence radiate twice the power.”

P. 170, Replace Fig. 4.34 with



P. 170, 2<sup>nd</sup> line after heading 4.19: Replace “see Fig. 12.3” with “see Fig. 13.3” and replace “Eqs. (12.116), (12.117), and (12.118)” with “Eqs. (13.116), (13.117), and (13.118)”.

P. 172, Caption to Fig. 4.36: Replace “ $Y_s/\rho_0c$ ” with “ $\rho_0cY_s$ ”.

P. 175, 3<sup>rd</sup> line after heading 4.20: Replace “Eqs. (12.249), (12.250), and (12.251)” with “Eqs. (13.248), (13.249), and (13.250)”.

P. 176, 1<sup>st</sup> line after heading 4.21: Replace “Eqs. (12.256) and (12.257)” with “Eqs. (13.254) and (13.255)”.

P. 176, Bottom of Table 4.5: Replace “Fig. 13.28” with “Fig. 4.38”.

P. 177: Delete 1<sup>st</sup> sentence after Fig. 4.39.

P. 179, Bottom of Table 4.6: Replace “Fig. 13.36” with “Fig. 4.39”.

P. 180, Just before Eq. (4.175): Replace “<sup>10</sup>” with “[10]”.

P. 181, Just before Eq. (4.178): Replace “<sup>11</sup>” with “[11]”.

P. 184, Just before Eq. (4.201): Replace “<sup>12</sup>” with “[12]”.

P. 186, Last line before Eq. (4.218): Replace “Eq. (2.64)” with “Eq. (3.64)”.

P. 187, 6<sup>th</sup> line after Eq. (4.220): Replace “Eqs. (2.74) to (2.77)” with “Eqs. (3.74) to (3.77)”.

P. 190, Eq. (4.244): Replace “ $C_s$ ” with “ $C_s$ ”.

P. 194, 1<sup>st</sup> line after Eq. (4.252): Replace “regime #3” with “Eq. (4.251)”.

P. 195, 1<sup>st</sup> line: Replace “Eq. (49)” with “Eq. (48)”.

P. 195, 1<sup>st</sup> line after Eq. (4.258): Replace “defined in 1 to 3” with “those for an open-ended tube”.

P. 195, 4<sup>th</sup> line after Eq. (4.259): Replace “light grey” with “dashed”.

P. 197, Eq. (4.260) and Eq. (4.261): Replace “ $\omega_V$ ” with “ $\omega_T$ ”.

P. 204, 1<sup>st</sup> line after Eq. (5.8): Replace “Eq. (2.107)” with “Eq. (2.89)”.

P. 213, Caption to Fig. 5.16: Delete “, 1,  $\sqrt{3}$ ,”.

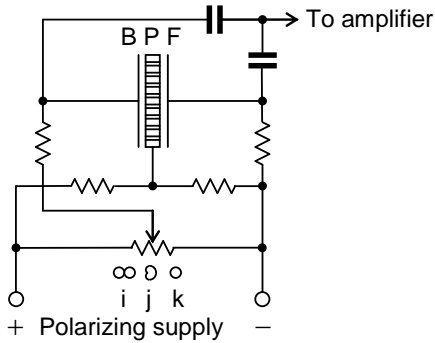
P. 221, 4<sup>th</sup> line from top: Replace “Fig. 5.20” with “Fig. 5.21b”.

P. 225, 1<sup>st</sup> line after Eq. (5.54): Replace “[4]” with “[3]”.

P. 227, last line before heading “*Performance*”: Replace “ $\tilde{f}_r = \tilde{p}_r S$ ” with “ $\tilde{f}_R = \tilde{p}_R S$ ”.

P. 230, 2<sup>nd</sup> line after heading 5.8: Replace “p. 208” with “p. 206”.

P. 231: Replace Fig 5.31 with



P. 234, Eq. (5.81): Replace “ $\Delta l = l + 3a/\pi$ ” with “ $\Delta l = l + \pi a/4$ ”.

P. 235, 1<sup>st</sup> line after Eq. (5.85): Replace “[3]” with “[1]”.

P. 236, 5<sup>th</sup> line after Eq. (5.94): Replace “Chapter 12” with “Chapter 13”.

P. 236, 2<sup>nd</sup> line after Eq. (5.95): Replace “180\degree” with “180°”.

P. 238, Eq. (5.108): Replace “ $l + \frac{3a}{\pi}$ ” with “ $l + \frac{\pi a}{4}$ ”.

P. 239, Table 5.2, 2<sup>nd</sup> column: Replace “ $D$ ” with “ $d$ ”.

P. 240, Delete all of reference “[3]” and make reference “[4]” into reference “[3]”.

P. 247, Fig. 6.4a: Replace “ $L$ ” with “ $L_E$ ”.

P. 247, Caption to Fig. 6.4: Replace “ $\Re_{MR^2}$ ” with “ $\mathbf{R}_{MR^2}$ ”.

P. 269: Replace Eq. (6.90) with

$$E_{ff} \approx 100 \frac{2B^2 S_D^2 \rho_0}{\pi^2 \kappa \rho_w^2 V_g c}, \quad 2f_0 < f < \frac{c}{4\pi a}, \quad M'_{MS} \approx M_{MC}$$

P. 269, 4<sup>th</sup> line before Eq. (6.91): Replace “size of the magnet  $V_G$  is directly related to that of the magnetic gap  $V_G$ ” with “size of the magnet  $V_M$  is directly related to that of the magnetic gap  $V_G$ ”.

P. 271, Fig. 6.14: Replace “SPL” with “re reference pressure”.

P. 274, 9<sup>th</sup> line from top: Replace “289” with “285”.

P. 274, 12<sup>th</sup> line from top: Replace “Fig. 12.24” with “Fig. 12.23”.

P. 275, 7<sup>th</sup> line from top: Replace “the equations for maximum power available efficiency” with “Eqs. (4.65) and (4.66) for an omnidirectional source”.



P. 275, 10<sup>th</sup> line from top: Replace “power-available response” with “efficiency response”.

P. 275, 12<sup>th</sup> line from top: Replace “power-available-efficiency” with “efficiency”.

P. 275, Eq. (6.95): Replace “ $\log_{10} 4\pi r^2$ ” with “ $10 \log_{10} 4\pi r^2$ ”.

P. 275, 1<sup>st</sup> line after Eq. (6.95): Replace “ $I_{ax} = p_{ax}^2$ ” with “ $I_{ax} = |p_{ax}|^2 / \rho_0 c$ ”.

P. 275, Eq. (6.96): Replace “ $\log_{10} 4\pi r^2$ ” with “ $10 \log_{10} 4\pi r^2$ ”.

P. 277, 1<sup>st</sup> line after Eq. (6.100): Replace “zeros” with “*zeros*”.

P. 282, 2<sup>nd</sup> line before Table 6.3,: Replace “[see (7) in Fig. 6.1]” with “[see (9) in Fig. 6.1]”.

P. 293, Eq. (7.1): Replace “ $\tilde{U}_0$ ” with “ $|\tilde{U}_0|$ ”.

P. 296, end of 5<sup>th</sup> line from top: Replace “<sup>37</sup>” with “[37]”.

P. 299, 2<sup>nd</sup> line after heading “*Values of the mechanical-circuit elements*”: Replace “Part XVIII” with “Part XIX”.

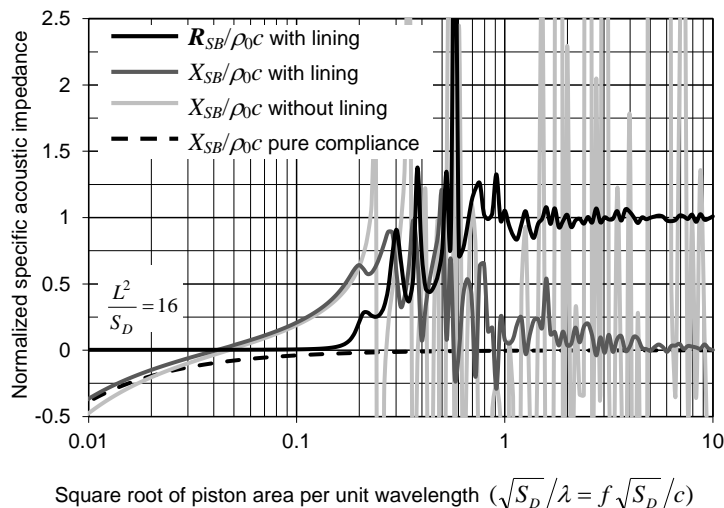
P. 305, last sentence before Eq. (7.9): Replace “total volume the absorbent” with “total volume of the absorbent”.

P. 306: Delete “ $\alpha$  is the real part of the propagation coefficient”.

P. 306: Delete “ $\beta$  is the imaginary part of the propagation coefficient”.

P. 307, Eq. (7.13): Replace “ $2n\pi$ ” with “ $n\pi$ ”.

P. 308: Replace Fig 7.12 with



P. 311, 2<sup>nd</sup> line after Eq. (7.27): Replace “<sup>38</sup>” with “[38]”.

P. 313, 3<sup>rd</sup> line after Eq. (7.33): Delete “magnitude of the rms”.

P. 314, Replace Eq. (7.38) with

$$D(0) = \frac{1-2(ka/\sqrt{5})^2 + j2(ka/\sqrt{5})}{1-(ka/\sqrt{5})^2 + j(ka/\sqrt{5})}$$

P. 314, Replace Eq. (7.39) with

$$|p(r)| = \frac{f\rho_0|U_c|}{2r} \sqrt{\frac{(5-2k^2a^2)^2 + 20k^2a^2}{(5-k^2a^2)^2 + 5k^2a^2}}$$

P. 314, 5<sup>th</sup> line after Eq. (7.39): Replace “Sec. 7.24” with “Sec. 7.20”.

P. 319, Eq. (7.56): Replace “ $Q_{TS}$ ” with “ $Q_{TC}$ ” and “ $\omega_0$ ” with “ $\omega_c$ ”.

P. 320, last equation: Replace “ $M_{AD} + M_{A1}$ ” with “ $M_{AD} + M_{A1} + M_{AB}$ ”.

P. 323, 2<sup>nd</sup> line after 3<sup>rd</sup> equation: Replace “ $R_{jd}$  is the flow resistance” with “ $R_f$  is the flow resistance”.

P. 324, 2<sup>nd</sup> equation: Replace “39” with “30.5”.

P. 328, 2<sup>nd</sup> line after Fig. 7.21: Replace “Eq. (7.96)” with “Eq. (7.33)”.

P. 329, caption to Fig. 7.22: Replace “part” with “port”.

P. 330, 3<sup>rd</sup> line from bottom: Replace “ $l$  is the length of the tube” with “ $t$  is the length of the tube”.

P. 342, caption to Fig. 7.28: Replace “ $Z_E/R_E$ ” with “magnitude  $|Z_E/R_E|$ ”.

P. 343, last sentence: Replace “series branch” with “mechanical or driver part”.

P. 345, last line before 4<sup>th</sup> equation: Replace “p. 336” with “p.334”.

P. 355, Eq. (7.113): Replace “ $\tilde{P}$ ” with “ $\tilde{p}$ ”.

P. 355, Eq. (7.114): Replace “ $K_{mn}$ ” with lower case “ $k_{mn}$ ”.

P. 356: Replace Eq. (7.119) with

$$\begin{aligned}\tilde{u}_z(x, y, l_z) &= \frac{2}{k} \tilde{u}_0 \sum_{m=0}^{\infty} \sum_{n=0}^{\infty} k_{mn} A_{mn} \frac{k \rho_0 c \cos k_{mn} l_z + j k_{mn} Z_s \sin k_{mn} l_z}{k \rho_0 c - k_{mn} Z_s} \\ &\quad \times \int_0^{l_x} \cos(m\pi x / l_x) \cos(p\pi x / l_x) dx \int_0^{l_y} \cos(n\pi y / l_y) \cos(q\pi y / l_y) dy \\ &= \tilde{u}_0 \int_{(l_x - a_1)/2}^{(l_x + a_1)/2} \cos(p\pi x / l_x) dx \int_{y_1 - b_1/2}^{y_1 + b_1/2} \cos(q\pi y / l_y) dy\end{aligned}$$

P. 357: Replace Eq. (7.123) with

$$\int_{y_1 - b_1/2}^{y_1 + b_1/2} \cos(n\pi y / l_y) dy = \begin{cases} b_1, & n = 0 \\ \frac{2l_y}{n\pi} \cos\left(\frac{n\pi y_1}{l_y}\right) \sin\left(\frac{n\pi b_1}{2l_y}\right), & n = 1, 2, \dots \end{cases}$$

P. 357: Replace Eq. (7.128) with

$$Z_{11} = \frac{1}{-\tilde{u}_0} \int_{(l_x - a_1)/2}^{(l_x + a_1)/2} \int_{y_1 - b_1/2}^{y_1 + b_1/2} \tilde{p}(x, y, l_z) dy dx$$

P. 359, last line before equation: Replace “Eq. (6.33)” with “Eq. (6.34)”.

$$\text{P. 359: Replace equation with "SPL}_{\max} = 20 \log_{10} \left( \frac{1}{rc \times 20 \times 10^{-6}} \sqrt{\frac{Z_{nom} W_{\max} 2\pi f^3 V_{AS} \rho_0}{R_E Q_{ES}}} \right) \text{dB SPL @ 1 m".}$$

P. 360, 3rd line from top: Replace “Eq. (6.15)” with “Eq. (7.101)”.

$$\text{P. 360: Replace 1st equation with "}\eta_{\max} = \frac{1}{S_{DC}} \sqrt{\frac{Z_{nom} W_{\max} V_{AS}}{R_E Q_{ES} \pi f_S \rho_0}} \text{"}$$

P. 360: Replace last equation with “ $M_{A2} = 0.2026 \rho_0 / a_T$ ”.

P. 362, 3rd line before heading 7.19.1.3: Replace “Fig. 7.5” with “Fig. 7.6”.

P. 363, Eq. (7.134): Replace “ $\tilde{U}_r$ ” with “ $\tilde{U}_T$ ”.

P. 364, 4th line after heading 7.19.1.4: Replace “ $\tilde{U}_O$ ” with “ $\tilde{U}_0$ ” and “ $\tilde{U}_C$ ” with “ $\tilde{U}_c$ ”.

$$\text{P. 369, 1st equation: Replace "}\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}\text{" with "}\begin{bmatrix} a_{22} & a_{12} \\ a_{21} & a_{11} \end{bmatrix}\text{"}$$

P. 369, 5th equation: Replace “ $a_{12}$ ” with “ $a_{22}$ ”.

P. 373, 4th line from top: Replace “ $\tilde{i}_g = a_{21} \tilde{p}_9$ ” with “ $\tilde{i}_g = a_{21} \tilde{p}_7$ ” and “ $\tilde{p}_9 = \tilde{e}_g / a_{11}$ ” with “ $\tilde{p}_7 = \tilde{e}_g / a_{11}$ ”.

P. 374, Fig. 7.45e: 
$$L_5(s) = \frac{\omega_0^5}{\left(s^2 + \frac{2}{\sqrt{5}+1}\omega_0s + \omega_0^2\right)\left(s^2 + \frac{2}{\sqrt{5}-1}\omega_0s + \omega_0^2\right)(s + \omega_0)}$$

P. 374, 2<sup>nd</sup> line from bottom: Delete “a factor of”.

P. 375, Fig. 7.46e: 
$$H_5(s) = \frac{s^5}{\left(s^2 + \frac{2}{\sqrt{5}+1}\omega_0s + \omega_0^2\right)\left(s^2 + \frac{2}{\sqrt{5}-1}\omega_0s + \omega_0^2\right)(s + \omega_0)}$$

P. 377, Eq. (7.145): Replace “ $\omega C$ ” with “ $\omega c$ ”.

P. 377, 1<sup>st</sup> line after Eq. (7.148): Replace “high-pass transfer function” with “Butterworth high-pass filter”.

P. 379, 4<sup>th</sup> line before heading “4<sup>th</sup>-order high-pass filter with a series capacitor and shunt inductor”: Replace “ $Q_{MS}$ ” with “ $Q_{MC}$ ”. Also, in 1<sup>st</sup> line before heading: Replace “ $Q_M$ ” with “ $Q_{MC}$ ”.

P. 380, last line before Eq. (7.161): Replace “coil resistance  $R_E$ ” with “inductor  $L$ ”.

P. 380, 1<sup>st</sup> line after Eq. (7.163): Replace “high-pass transfer function” with “Linkwitz-Riley or B2<sup>2</sup> high-pass filter”.

P. 381, headings to Tables 7.6 and 7.7: Replace “B3<sup>2</sup>” with “B2<sup>2</sup>”.

P. 383, 1<sup>st</sup> line after 2<sup>nd</sup> equation: Replace “low frequencies to the high ones” with “low frequencies relative to the high ones”.

P. 395, 1<sup>st</sup> line from top: Replace “ $-\zeta a$ ” with “ $-\zeta a$ ”.

P. 396, 5<sup>th</sup> line after Eq. (8.4), Replace “ $\mu$  is velocity coefficient in N·s/m<sup>2</sup>” with “ $\mu$  is viscosity coefficient in N·s/m<sup>2</sup> [see Eq. (4.23)]”.

P. 397, last word before heading 8.5: Replace “interesting” with “informative”.

P. 399, last line before Eq. (8.11): Replace “[11]” with “[9]”.

P. 399, Eq. (8.11): Delete “ $\epsilon_r$ ”.

P. 399, 8<sup>th</sup> line after Eq. (8.11): Replace “[10]” with “[9]”.

P. 399, final paragraph: Replace “The circuit for an electret microphone shown in Fig. 8.7 is much simpler than that for an externally polarized microphone, shown in Fig. 5.18, because the electret provides both the polarization for the capsule and the bias for the FET.” with “The circuit for an electret microphone shown in Fig. 8.7 is simpler than that for an externally polarized microphone, shown in Fig. 5.18, because the electret provides the polarization for the capsule, although the bias for the FET usually settles to zero due to leakage.”

P. 402, last line before heading 8.6: Replace “[18, 20]” with “[18, 19]”.

P. 404, Eq. (8.12): Replace “ $s_i - w_i$ ” with “ $S_i - W_i$ ”.

P. 415, 3<sup>rd</sup> line from top: Delete “power available”.

P. 415, Eq. (9.20): Insert “100” in numerator so that  $E_{ff} = \frac{100B^2l^2\mathbf{G}_{Mc}}{R_E + B^2l^2\mathbf{G}_{Mc}}$

P. 418, 11<sup>th</sup> line from top: Delete “ $a$ ”.

P. 418, 20<sup>th</sup> line from top: Replace “[5]” with “[4]”.

P. 420, Eq. (9.29): Replace 1<sup>st</sup> line of equation with “ $\tilde{u}(x) = -\frac{1}{jk\rho_0c} \frac{\partial}{\partial x} \tilde{p}(x)$ ”.

P. 421, 1<sup>st</sup> line from top: Replace “Eqs. (75) and (112)” with “Eqs. (75) and (111)”.

P. 421, Eq. (9.36): Replace 1<sup>st</sup> line of equation with “ $\tilde{u}(x) = -\frac{1}{jk\rho_0c} \frac{\partial}{\partial x} \tilde{p}(x)$ ”.

P. 423, Eq. (9.43): Replace 1<sup>st</sup> line of equation with “ $\tilde{u}(x) = -\frac{1}{jk\rho_0c} \frac{\partial}{\partial x} \tilde{p}(x)$ ”.

P. 423, last line before Eq. (9.44): Replace “ $x = 0$ ” with “ $x = x_T$ ”.

P. 425, last line before Eq. (9.52): Replace “exponential” with “hyperbolic”.

P. 427, 1<sup>st</sup> line from top: Replace “exponential” with “hyperbolic”.

P. 427, in Eq. (9.54): Replace “ $\frac{m^2}{4k^2}$ ” with “ $\frac{1}{k^2x_T^2}$ ”.

P. 427: Replace Eq. (9.55) with “ $\tilde{u}(x) = -\frac{1}{jk\rho_0c} \frac{\partial}{\partial x} \tilde{p}(x)$ ”.

P. 427, last line before Eq. (9.56): Replace “ $x = 0$ ” with “ $x = x_T$ ”.

P. 431, Eq. (9.83): Replace “sin” with “sinh”.

P. 431, 4<sup>th</sup> line after heading “*Truncation effects*”: Replace “Fig. 9.8” with “Fig. 9.9”.

P. 439, 3<sup>rd</sup> line after heading “Example 9.3. Low-frequency horn design.”: Replace “Fig. 9.17” with “Fig. 10.17”.

P. 439, last line before last equation before Fig. 9.17: Replace “The flare constant in equals” with “The flare constant  $m$  equals”.

P. 439, “=” missing from last equation before Fig. 9.17: “ $m = \frac{4\pi f_c}{c} = \frac{4\pi \times 40}{344.8} = 1.44 \text{ m}^{-1}$ ”.

P. 440, 2<sup>nd</sup> equation: Replace “ $G_{MT} = \frac{S_T}{\rho_0 S_D^2}$ ” with “ $G_{MT} = \frac{S_T}{\rho_0 c S_D^2}$ ”.

P. 440, 1<sup>st</sup> and 2<sup>nd</sup> lines after 3<sup>rd</sup> equation (for  $E_{ff}$ ): Replace both instances of “PAE” with “ $E_{ff}$ ”.

P. 446: Replace equation for  $S_T$  with

$$S_T = 4R_T^2 \left\{ \arctan \left( \frac{\tan \frac{\pi}{12} \tan \frac{\pi}{6}}{\sec^2 \frac{\pi}{12} + \sqrt{\sec^2 \frac{\pi}{12} + \tan^2 \frac{\pi}{6}}} \right) + \arctan \left( \frac{\tan \frac{\pi}{12} \tan \frac{\pi}{6}}{\sec^2 \frac{\pi}{6} + \sqrt{\sec^2 \frac{\pi}{6} + \tan^2 \frac{\pi}{12}}} \right) \right\}$$
$$= 4 \times 0.022^2 \times 0.13 = 2.52 \text{ cm}^2$$

P. 452, Eq. (10.7): Replace “ $P_{n_x, n_y, n_z}$ ” with “ $p_{n_x, n_y, n_z}$ ”.

P. 453: Replace both equations with “ $(\theta_x)_{1,1,0} = \arctan \frac{l_x}{l_y} = \arctan \frac{4}{3} = 53.1^\circ$ ”

and “ $(\theta_x)_{3,2,0} = \arctan \frac{2l_x}{3l_y} = \arctan \frac{8}{9} = 41.6^\circ$ ”.

P. 454: Replace both equations with “ $(\theta_y)_{1,1,0} = \arctan \frac{l_y}{l_x} = \arctan \frac{3}{4} = 36.9^\circ$ ”

and “ $(\theta_y)_{3,2,0} = \arctan \frac{3l_y}{2l_x} = \arctan \frac{9}{8} = 48.4^\circ$ ”.

P. 455, Eq. (10.11): Replace “ $C$ ” with “ $c$ ”.

P. 456, caption to Fig. 10.4: Following “(b) one wall absorbent” add “where  $R_f d/3 \approx \rho_0 c$ ”.

P. 458, Eq. (10.13), Replace “ $R_f$ ” with “ $R_f d$ ”.

P. 459, 1<sup>st</sup> line after Eq. (10.15): Replace “Eq. (44)” with “Eq. (43)”.

P. 460, 1<sup>st</sup> line from top: Replace “Eq. (43)” with “Eq. (42)”.

P. 461, after Eq. (10.28): Replace “Eq. (43)” with “Eq. (42)”.

P. 461, last line: Replace “Eq. (44)” with “Eq. (43)”.

P. 463, Eq. (10.40): Replace “ $|P_n|$ ” with “ $p_n$ ”.

P. 470, Eq. (10.45): Replace “In” with “ln”.

P. 470, Eq. (10.46): Replace “In” with “ln”.

P. 471, Eq. (10.49): Replace “In” with “ln” and “log” with “log<sub>10</sub>”.

- P. 472, Eq. (10.56): Replace “In” with “ln” and “log” with “log<sub>10</sub>”.
- P. 488, 6<sup>th</sup> line from top: Replace “sphere” with “cylinder”.
- P. 489, 5<sup>th</sup> line after heading 12.3: Replace “rotationally” with “axially”.
- P. 490, 3<sup>rd</sup> line after Eq. (12.12): Replace “ $\tilde{P}_s$ ” with “ $\tilde{p}_s$ ” and “ $\tilde{P}_l$ ” with “ $\tilde{p}_l$ ”.
- P. 490, Eq. (12.15): Insert “=” after “ $h_n^{(2)}(kR)$ ”.
- P. 491, Eq. (12.17): Replace “ $h_n^{(2)}(kR)$ ” with “ $h_n^{(2)}(kr)$ ”.
- P. 491, 3<sup>rd</sup> line after Eq. (12.17): Replace “ $r = \sqrt{w^2 + Z^2}$ ” with “ $r = \sqrt{w^2 + z^2}$ ”  
and “ $\cos\theta = Z/\sqrt{w^2 + Z^2}$ ” with “ $\cos\theta = z/\sqrt{w^2 + z^2}$ ”.
- P. 491, Eq. (12.18): Replace “ $j_n^{(2)}$ ” with “ $h_n^{(2)}$ ”.
- P. 492, 1<sup>st</sup> line after Fig. 12.3: Replace “ $D(r, \theta)$ ” with “ $D(\theta)$ ”.
- P. 494, Eqs. (12.24) and (12.25): Replace “ $\tilde{p}_1$ ” with “ $\tilde{p}_l$ ”.
- P. 495, Eq. (12.32): Insert “=” after “ $h_n^{(2)}(kR)$ ”.
- P. 497, 1<sup>st</sup> line after Eq. (12.35): Replace “ $D(r, \theta)$ ” with “ $D(\theta)$ ”.
- P. 497, Eq. (12.36): Replace “ $h_n^{(1)}$ ” with “ $h_n^{(2)}$ ”.
- P.498, Fig. 12.10: Exchange “ $D(\pi)$ ” and “ $D(0)$ ”.
- P.499, Fig. 12.11: Exchange “ $D(\pi)$ ” and “ $D(0)$ ”.
- P. 499, 4<sup>th</sup> line after Fig. 12.11: Replace “in the plot for  $d = 2R$ ,” with “In the plot for  $d = 2R$ ,”.
- P. 500, Eq. (12.42): Replace “ $h_n^{(1)}$ ” with “ $h_n^{(2)}$ ”.
- P. 500, 3<sup>rd</sup> line after Eq. (12.42), Replace “Eqs. (67) and (68)” with “Eqs. (66) and (67)”.
- P. 501, Eq. (12.45): Replace “ $e^{jkr}$ ” with “ $e^{-jkr}$ ”.
- P. 501, Eq. (12.46): Replace “ $j^n$ ” with “ $j^{n+1}$ ”.
- P. 504, after Eq. (12.51): Insert “of Eq. (2.4a)” between “condition” and “gives”.
- P. 505, 2<sup>nd</sup> line from top: Replace “Eq. (12.41)” with “Eq. (12.52)”.
- P. 505, Eq. (12.53): Replace “ $h_n^{(1)}$ ” with “ $h_n^{(2)}$ ”.

P. 505, 1<sup>st</sup> line after Eq. (12.56), Replace “Eqs. (67) and (69) in Appendix II” with “Eqs. (66) and (68) in Appendix II”.

P. 505, 2<sup>nd</sup> line after Eq. (12.56): Replace “ $n = 0$  and 1 in Eq. (69)” with “ $n = 0$  and 1 in Eq. (68)”.

P. 505, 4<sup>th</sup> line after Eq. (12.56): Replace “use Eq. (70) from Appendix II” with “use Eq. (69) from Appendix II”.

P. 505, Eq. (12.57): Replace “ $h_0^{(1)}$ ” with “ $h_0^{(2)}$ ” and “ $h_1^{(1)}$ ” with “ $h_1^{(2)}$ ”.

P. 505, Eq. (12.57), Replace “ $\rho$ ” with “ $\rho_0$ ”.

P. 506, Eq. (12.59): Replace “ $h_1^{(1)}$ ” with “ $h_1^{(2)}$ ”.

P. 506, Eq. (12.60): Replace “ $\text{Re}^{jkR}$ ” with “ $\text{Re}^{jkR}$ ”.

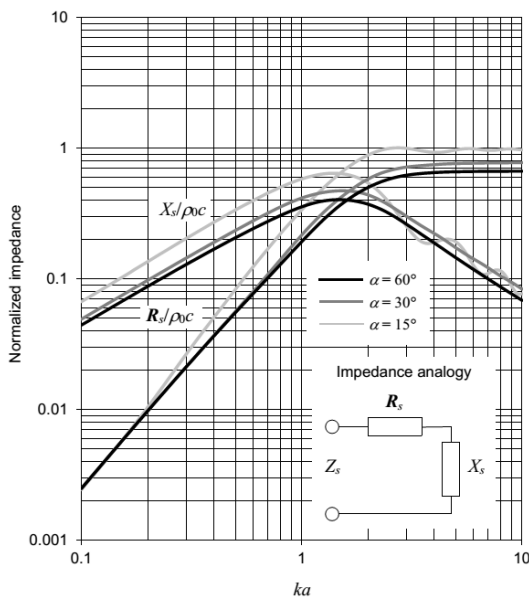
P. 506, Eq. (12.60), Replace first instance of “ $(2n + 1)$ ” with “ $(2n + 2)$ ”.

P. 507, Eq. (12.61): Replace “ $h_2^0$ ” with “ $h_2^{(2)}$ ”.

P. 507, Replace Eq. (12.62) with

$$\tilde{F} = R^2 \int_0^{2\pi} \int_0^\alpha \tilde{p}(R, \theta) \cos \theta \sin \theta d\theta d\phi$$

P. 508, Replace Fig. 12.19 with



P. 508, 1<sup>st</sup> line after Fig. 12.19: Replace “equation (70)” with “Eq. (68) from Appendix II”.



P. 508, Replace Eq. (12.63) with

$$Z_s = \frac{\tilde{F}}{\tilde{U}_0} = j\rho_0 c \left( \frac{\sin^2 \alpha h_0^{(2)}(kR)}{4h_1^{(2)}(kR)} - \frac{(1 - \cos^3 \alpha)^2 h_1^{(2)}(kR)}{\sin^2 \alpha (h_0^{(2)}(kR) - 2h_2^{(2)}(kR))} \right) - \sum_{n=2}^{\infty} \frac{(2n+1)^2 (\sin \alpha P_n(\cos \alpha) + \cos \alpha P_n^1(\cos \alpha))^2 h_n^{(2)}(kR)}{(n-1)^2 (n+2)^2 (nh_{n-1}^{(2)}(kR) - (n+1)h_{n+1}^{(2)}(kR))}$$

P. 508, Replace “When  $\alpha = \frac{1}{2}\pi$ , the second term simplifies to that for an oscillating sphere, as described in Par. 4.15, and the expansion vanishes so that Eq. (12.63) simplifies to” with “When  $\alpha = \frac{1}{2}\pi$ , the odd terms of the expansion vanish, except for the second term, which simplifies to that for an oscillating sphere, as described in Sec. 4.15. Hence, Eq. (12.63) simplifies to”

P. 508: Replace Eq. (12.64) with

$$Z_s \Big|_{\alpha=\frac{\pi}{2}} = \rho_0 c \left( \frac{k^4 R^4 + j(k^3 R^3 + 2kR)}{3(k^4 R^4 + 4)} - j \sum_{n=0}^{\infty} \frac{(4n+1)^2 (P_{2n}(0))^2 h_{2n}^{(2)}(kR)}{(2n-1)^2 (2n+2)^2 (2nh_{2n-1}^{(2)}(kR) - (2n+1)h_{2n+1}^{(2)}(kR))} \right)$$

P. 511, 1<sup>st</sup> line after Eq. (12.73): Replace “We now equate Eq. (12.48) with Eq. (12.52)” with “We now equate Eq. (12.66) with Eq. (12.72)”.

P. 513, Eq. (12.81): Replace “ $h_n^{(1)}$ ” with “ $h_n^{(2)}$ ”.

P. 513, 1<sup>st</sup> line after Eq. (12.81): Replace “Eq. (12.51)” with “Eq. (12.71)”.

P. 513, 1<sup>st</sup> line after Eq. (12.82): Replace “the dome effective area given by Eq. (12.49)” with “the cap effective area given by Eq. (12.69)”.

P. 513, Eq. (12.85): Replace “ $D(0, \phi)$ ” with “ $D(0, 0)$ ”.

P. 513, 2<sup>nd</sup> line after Eq. (12.85): Replace “[from Eq. (12.85)]” with “[from Eq. (13.83)]”.

P. 515, 1<sup>st</sup> line from top: Replace “Eq. (12.49)” with “Eq. (12.69)”.

P. 515, 2<sup>nd</sup> line from top: Replace “plotted in Fig. 12.19 where” with “given by”.

P. 516: Replace Eq. (12.92) with  $\tilde{u}_r(R, \theta) = \frac{1}{-jk\rho_0 c} \cdot \frac{\partial}{\partial r} \tilde{p}(r, \theta) \Big|_{r=R} = 0, \quad \alpha < \theta \leq \pi, \quad r = R$

P. 516, 2<sup>nd</sup> line after Eq. (12.97): Replace “Eq. (66)” with “Eq. (65)”.

P. 517, 1<sup>st</sup> line after Eq. (12.108): Replace “Eq. (71)” with “Eq. (70)”.

P. 521, Eq. (12.118), Replace “ $p(r, \theta)$ ” with “ $\tilde{p}(r, \theta)$ ”.

P. 522, 2<sup>nd</sup> line after Eq. (12.125): Replace “Eq. (66)” with “Eq. (65)”.

P. 522, 1<sup>st</sup> line after Eq. (12.127): Replace “Eq. (12.118)” with “Eq. (12.125)”.

P. 523, Eq. (12.130), Replace “ $P_m^1(\alpha)$ ” with “ $P_m^1(\cos\alpha)$ ”.

P. 523, 1<sup>st</sup> line after Eq. (12.130): Replace “Eqs. (67) and (69)” with “Eqs. (66) and (68)”.

P. 523, Eq. (12.133), Delete “ $j$ ” from the denominator.

P. 524, 1<sup>st</sup> line after Eq. (12.137): Delete “can”.

P. 524, 1<sup>st</sup> line after Eq. (12.138): Replace “ $kR$ ” with “ $ka$ ”.

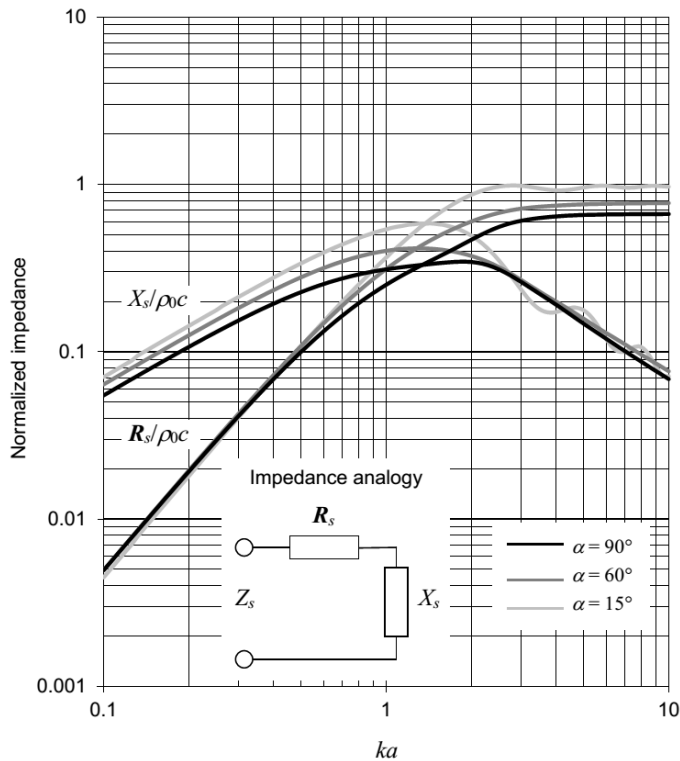
P. 525, 1<sup>st</sup> line after Eq. (12.139): Replace “ $kR$ ” with “ $ka$ ”.

P. 525, Replace Eq. (12.140) with  $\tilde{F} = R^2 \int_0^{2\pi} \int_0^\alpha \tilde{p}(R, \theta) \cos\theta \sin\theta d\theta d\phi$ .

P. 525, 1<sup>st</sup> line after Eq. (12.140): Replace “Eq. (70)” with “Eq. (68)”.

P. 525, Replace Eq. (12.141) with  $Z_s = \frac{\tilde{F}}{\tilde{U}_0} = \frac{2\rho_0 c}{\sin^2 \alpha} \sum_{n=0}^N A_n h_n^{(2)}(kR) K_n$ .

P. 526, Replace Fig. 12.29 with



P. 527, Eq. (12.144), Replace “ $p(r, \theta)$ ” with “ $\tilde{p}(r, \theta)$ ”.

P. 527, Eq. (12.145), Replace “ $\tilde{p}_l$ ” with “ $\tilde{p}_l$ ”.

P. 527, Eq. (12.146): Replace “ $j_n$ ” with “ $j'_n$ ”.

P. 528, 2<sup>nd</sup> line after Eq. (12.147): Replace “has to match on” with “has to match that on”.

P. 529, Eq. (12.158): Replace “ $h'_m$ ” with “ $j'_m$ ”.

P. 529, Eq. (12.161): Replace “ $P_n(\cos \theta_1)$ ” with “ $P_n(\cos \theta)$ ”.

P. 529, Eq. (12.161): Replace “ $P_n(\cos \alpha)P_m(\cos \alpha) - P_m(\cos \alpha)P_n(\cos \alpha)$ ” with “ $P_m(\cos \alpha)P'_n(\cos \alpha) - P_n(\cos \alpha)P'_m(\cos \alpha)$ ”.

P. 530, 1<sup>st</sup> line from top: Replace “Eqs. (67). (69), and (71)” with “Eqs. (66). (68), and (70)”.

P. 531, 1<sup>st</sup> line after Eq. (12.167): Replace “ $kR$ ” with “ $ka$ ”.

P. 531, Eq. (12.168): Replace “ $D(\theta)$ ” with “ $D(0)$ ”.

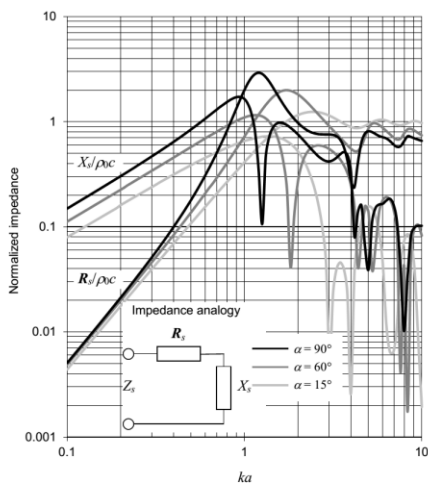
P. 531, 1<sup>st</sup> line after Eq. (12.168): Replace “ $kR$ ” with “ $ka$ ”.

P. 532, Replace Eq. (12.169) with  $\tilde{F} = R^2 \int_0^{2\pi} \int_0^\alpha \tilde{p}(R, \theta) \cos \theta \sin \theta d\theta d\phi$ .

P. 532, 1<sup>st</sup> line after Eq. (12.169): Replace “Eq. (70)” with “Eq. (68)”.

P. 532, Replace Eq. (12.170) with  $Z_s = \frac{\tilde{F}}{\tilde{U}_0} = \frac{2\rho_0 c}{\sin^2 \alpha} \sum_{n=0}^N y_n j_n(kR) L_n$ .

P. 532, Replace Fig. 12.33 with



P. 539: Replace Eq. (13.19) with “ $\tilde{\alpha}(\mathbf{r} - \mathbf{r}_0) = \tilde{\alpha}(\mathbf{r}_0 - \mathbf{r})$ ”.

P. 541, Eq. (13.29): Delete “ $= -\tilde{p}_V(\mathbf{r})/2$ ”.

P. 541: Replace Eq. (13.30) with “ $\tilde{p}(\mathbf{r})|_{\mathbf{r} \in V_0} = 0, \quad \tilde{p}_S(\mathbf{r}) = -\tilde{p}_V(\mathbf{r}), \quad \left( \begin{array}{l} \tilde{p}_M(\mathbf{r}) = \tilde{p}_D(\mathbf{r}) = -\tilde{p}_V(\mathbf{r})/2 \\ \text{if planar infinite surface} \end{array} \right)$ ”.

P. 541, following Eq. (13.31): Replace “where” with “where  $R$  is the Euclidean distance, which is given by”

P. 542, 4<sup>th</sup> line from top: Replace “waves are converging” with “waves converge towards them”.

P. 542, 14<sup>th</sup> line after Eq. (13.34): Replace “Sec. 13.20” with “Sec. 13.19”.

P. 542, 4<sup>th</sup> line from bottom: Replace “non-integral” with “Euclidean”.

P. 542, 3<sup>rd</sup> line from bottom: Replace both instances of “integral” with “Fourier”.

P. 543, 1<sup>st</sup> line after Eq. (13.38): Replace “Eq. (155)” with “Eq. (154)”.

P. 543, 1<sup>st</sup> line after Eq. (13.40): Replace “integral” with “Fourier”.

P. 545, 2<sup>nd</sup> line after Eq. (13.49): Replace “non-integral” with “Euclidean”.

P. 545, 2<sup>nd</sup> line after Eq. (13.52): Replace “integral” with “Fourier”.

P. 545, 3<sup>rd</sup> line after Eq. (13.52): Replace “ $k_y = k_w \cos \varphi$ ” with “ $k_y = k_w \sin \varphi$ ”.

P. 545, last line before Eq. (13.53): Replace “Eq. (47)” with “Eq. (46)”.

P. 546, 1<sup>st</sup> line from top: Replace “Eq. (111)” with “Eq. (110)”.

P. 546, Eq. (13.60): Insert “+” between “ $\cos(\phi - \phi_0)$ ” and “ $\cos \theta$ ”.

P. 546, last line: Replace “non-integral” with “Euclidean”.

P. 547, Eq. (13.61), Replace “ $2 - \delta_{m0}$ ” with “ $(2 - \delta_{m0})$ ”.

P. 547: Replace sentence following Eq. (13.63) with “Like the Fourier Green’s functions in rectangular and cylindrical coordinates, this expansion form in spherical coordinates can be applied to reverse problems (see Ref. [41], pp. 210-211, Eqs. (6.107)-(6.110) for compact Kirchhoff-Helmholtz integrals. Note that  $G_N$  and  $G_D$  are not equivalent to the Green’s function given by Eq. (13.61) above or its normal derivative but can be derived from it using the method we shall apply in Sec. 13.5)”

P. 549, Eq. (13.73): Replace “ $j'_2$ ” with “ $j'_n$ ”.

P. 549, 1<sup>st</sup> line after Eq. (13.76): Replace “Eqs. (67) and (70)” with “Eqs. (66) and (69)”.

P. 550, 1<sup>st</sup> line after Eq. (13.80): Replace “Eqs. (67) and (70)” with “Eqs. (66) and (69)”.

P. 551, 1<sup>st</sup> line from top: Replace “ $\sin^2 \alpha/2$ ” with “ $\sin^2 \alpha/2$ ”.

- P. 551, Eq. (13.86): Replace “ $(p_n^{-1}(\cos\alpha))^2$ ” with “ $(P_n^{-1}(\cos\alpha))^2$ ”.
- P. 554, Fig. 13.3: Replace “ $r_0$ ” with “ $R$ ”.
- P. 555, 2<sup>nd</sup> and 3<sup>rd</sup> lines after Eq. (13.100): Replace “Eqs. (77) and (96)” with “Eqs. (76) and (95)”.
- P. 555, Eq. (13.101): Replace “ $\tilde{u}$ ” with “ $\tilde{u}_0$ ”.
- P. 556, In caption to Fig. 13.5: Replace “ $\omega$ ” with “ $2\pi fa$ ”.
- P. 557, Eq. (13.106): Replace “ $\frac{k^2 a^2}{4}$ ” with “ $-\frac{k^2 a^2}{4}$ ”.
- P. 559, Fig. 13.6 and in caption: Replace “ $\rho c$ ” with “ $\rho_0 c$ ”.
- P. 560, Fig. 13.7 and in caption and in Eq. (13.113): Replace “ $\rho c$ ” with “ $\rho_0 c$ ”.
- P. 561, 1<sup>st</sup> line from top: Replace “Eq. (96)” with “Eq. (95)”.
- P. 561, Eq. (13.114): Replace “ $i$ ” with “ $j$ ” in both instance.
- P. 561, last line before Eq. (13.115): Replace “Eq. (96)” with “Eq. (95)”.
- P. 561, 1<sup>st</sup> line after Eq. (13.118), Replace “Eqs. (72) and (126)” with “Eqs. (71) and (125)”.
- P. 563, Fig. 13.8: Replace “ $r_0$ ” with “ $R$ ”.
- P. 563, 3<sup>rd</sup> line after Eq. (13.124), Replace “Eqs. (77) and (96)” with “Eqs. (76) and (95)”.
- P. 564, In caption to Fig. 13.9: Replace “ $\omega$ ” with “ $2\pi fa$ ”.
- P. 565, In Eq. (13.131): Delete “2”.
- P. 566, Eq. (13.142): Replace “ $\rho c \tilde{u}$ ” with “ $\rho_0 c \tilde{u}_0$ ”.
- P. 567, Caption to Fig. 13.10: Delete “ $\rho$  is the density of the acoustic medium and  $c$  is the speed of sound in that medium”.
- P. 568, 1<sup>st</sup> line after Fig. 13.12: Replace “Eq. (96)” with “Eq. (95)”.
- P. 568, Eq. (13.143): Replace all instances of “ $\rho c$ ” with “ $\rho_0 c$ ”.
- P. 569, Eq. (13.144): Replace “ $E(w^2/a^2)$ ” with “ $\mathbf{E}(w^2/a^2)$ ”.
- P. 569, Eqs. (13.144) and (13.145): Replace all instances of “ $\rho c$ ” with “ $\rho_0 c$ ”.
- P. 569, last line before Eq. (13.145): Replace “Eq. (96)” with “Eq. (95)”.
- P. 570, caption to Fig. 13.13: Replace “ $Y_s/\rho_0 c$ ” with “ $\rho_0 c Y_s$ ”.

P. 571, 2<sup>nd</sup> and 3<sup>rd</sup> lines after Fig. 13.14: Replace “(see Fig. 13.45 and Fig. 13.46 respectively)” with “(see Fig. 4.35 and Fig. 4.36 respectively)”.

P. 573, 5<sup>th</sup> line after Eq. (13.159): Exchange “ $n + \frac{1}{2}$ ” and “ $n - \frac{1}{2}$ ”.

P. 573, Eq. (13.160): Replace “ $w_\theta$ ” with “ $w_0$ ”.

P. 573, 2<sup>nd</sup> and 3<sup>rd</sup> lines after Eq. (13.160): Replace “Inserting Eqs. (13.52), (13.158), (13.159), and (13.99) into” with “Inserting Eqs. (13.52), (13.158), and (13.159) into”.

P. 573, last line before Eq. (13.161): Replace “Eq. (97)” with “Eq. (96)”.

P. 573, Eq. (13.161): Replace “ $wk_w$ ” with “ $k_w w$ ” and “ $ak_w$ ” with “ $k_w a$ ”.

P. 574, Eq. (13.166): Replace “ $I_{nR}(w) -$ ” with “ $I_{nR}(w) =$ ”.

P. 574, Eq. (13.167): Replace “ $k_w W$ ” with “ $k_w w$ ”.

P. 575, 3<sup>rd</sup> line after Eq. (13.177): Replace “Eqs. (77) and (97)” with “Eqs. (76) and (96)”.

P. 576, Eq. (13.182): Replace “ $i$ ” with “ $j$ ”.

P. 577, 6<sup>th</sup> line from top: Replace “Eq. (13.28)” with “Eq. (13.27)”.

P. 577, In caption to Fig. 13.16: Replace “ $\omega$ ” with “ $2\pi fa$ ”.

P. 578, Eq. (13.184): Replace “ $\frac{k^2 a^2}{4}$ ” with “ $-\frac{k^2 a^2}{4}$ ”.

P. 578, 1<sup>st</sup> line after Eq. (13.187): Replace “Eq. (110)” with “Eq. (109)”.

P. 579, Eq. (13.190): Replace “ $I_{Fin}$ ” with “ $I_{mf}$ ”.

P. 580, 4<sup>th</sup> line after Fig. 13.18: Delete “and again using the integral of Eq. (96) from Appendix II”.

P. 580, Eq. (13.191): Replace “ $\sum_{m=0}^M \tau_m$ ” with “ $\sum_{n=0}^N A_n$ ”.

P. 580, Eq. (13.192): Insert “=” just before “ $\mathbf{G}_s + jB_s$ ”.

P. 580, 1<sup>st</sup> line after Eq. (13.192): Delete “ $= \pi a^2 \tilde{u}_0$ ”.

P. 581, Eq. (13.194): Replace “ $\kappa\alpha$ ” with “ $ka$ ”.

P. 581, Eq. (13.196): Replace “ $-j \frac{\mathbf{G}_s}{\mathbf{G}_s^2 + B_s^2}$ ” with “ $-j \frac{B_s}{\mathbf{G}_s^2 + B_s^2}$ ”.

P. 581, 2<sup>nd</sup> and 3<sup>rd</sup> lines after Eq. (13.196): Replace “(see Fig. 13.45 and Fig. 13.46 respectively)” with “(see Fig. 4.35 and Fig. 4.36 respectively)”.

- P. 581, caption to Fig. 13.19: Replace " $Y_s/\rho_0 c$ " with " $\rho_0 c Y_s$ ".
- P. 583, Fig. 13.21: Replace " $r_0$ " with " $R$ ".
- P. 584, 3<sup>rd</sup> line from top: Delete "second term or" and "part".
- P. 584, 3<sup>rd</sup> line after Eq. (13.203): Replace "Eq. (97)" with "Eq. (96)".
- P. 585, 1<sup>st</sup> line after Eq. (13.212): Replace "Eq. (13.209)" with "Eq. (13.207)".
- P. 586, Eqs. (13.219) and (13.221): Replace "+" with "-".
- P. 586, Eq. (13.223): Replace " ${}_n \mathbf{B}_p$ " with " ${}_m \mathbf{B}_p$ ".
- P. 587, Eqs. (13.226), (13.227), and (13.231): Replace " ${}_m \mathbf{B}_p(kb) - j {}_m \mathbf{S}_p(kb)$ " with " ${}_m \mathbf{B}_p(kb) + j {}_m \mathbf{S}_p(kb)$ ".
- P. 587, Eq. (13.232): Replace "-j" with "+j".
- P. 588, 3<sup>rd</sup> line after Eq. (13.233): Replace "Eqs. (77) and (97)" with "Eqs. (76) and (96)".
- P. 590, In caption to Fig. 13.23: Replace " $\omega$ " with " $2\pi fa$ ".
- P. 590, Eq. (13.239): Delete "2".
- P. 590, Eq. (13.240): Replace "i" with "j".
- P. 591, In captions to Fig. 13.24: Replace " $\omega$ " with " $2\pi fa$ ".
- P. 592, 1<sup>st</sup> line after Eq. (13.243): Replace "Eq. (110)" with "Eq. (109)".
- P. 593, last line of first paragraph: Replace "baffle is plotted" with "baffle of radius  $b = 2a$  is plotted".
- P. 594, Fig. 13.26 and in caption: Replace " $\rho c$ " with " $\rho_0 c$ ".
- P. 595, Fig. 13.27 and in caption: Replace " $\rho c$ " with " $\rho_0 c$ ".
- P. 595, caption to Fig. 13.37: Replace "circular baffle as a function" with "circular baffle of radius  $b = 2a$  as a function".
- P. 598, caption to Fig. 13.30: Replace "an flat" with "a plane".
- P. 598, 1<sup>st</sup> line after Fig. 13.30: Replace "Eq. (13.104)" with "Eq. (13.103)".
- P. 598, last line: Replace "circular baffle is plotted" with "circular baffle of radius  $b = 2a$  is plotted".
- P. 599, In caption to Figs. 13.31 & 13.32: Replace " $\omega$ " with " $2\pi fa$ ".
- P. 601, Fig. 13.34 and in caption: Replace " $\rho c$ " with " $\rho_0 c$ ".
- P. 602, Fig. 13.35 and in caption: Replace " $\rho c$ " with " $\rho_0 c$ ".

P. 602, caption to Fig. 13.35: Replace “circular baffle as a function” with “circular baffle of radius  $b = 2a$  as a function”.

P. 604, 8<sup>th</sup> line after Fig. 13.37: Replace “an infinite baffle” with “an infinite rigid baffle”.

P. 605, Eq. (13.258): Replace “ $\rho c$ ” with “ $\rho_0 c$ ”.

P. 606, Eq. (13.260): Replace “ $\rho c$ ” with “ $\rho_0 c$ ”.

P. 609, Eq. (13.268): Replace “ $\rho c$ ” with “ $\rho_0 c$ ”.

P. 610, 2<sup>nd</sup> line after Eq. (13.272): Replace “ $\mu$ ” with “ $k_w$ ”.

P. 612, Eq. (13.281): Replace with “ $W = \left| \frac{\tilde{U}_0}{\sqrt{2}} \right|^2 \mathbf{R}_{AR} = \frac{l}{\rho_0 c} \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \left| \frac{\tilde{p}(r, \theta)}{\sqrt{2}} \right|^2 r d\theta \Big|_{r \rightarrow \infty}$ ”

P. 613, Eq. (13.285): Replace “In” with “ln”.

P. 616, 1<sup>st</sup> line after Eq. (13.305): Replace “Eq. (77)” with “Eq. (76)”.

P. 617, 2<sup>nd</sup> line from top: Replace “ $f(k_0)$ ” with “ $f(w_0)$ ”.

P. 617, 1<sup>st</sup> line after Eq. (13.309): Replace “Eq. (96)” with “Eq. (95)”.

P. 621, 2<sup>nd</sup> line from top: Replace “Eqs. (47) and (51)” with “Eqs. (46) and (50)”.

P. 621, Eqs. (13.328) and (13.329): Replace “ $g_{m,n}(q)$ ” with “ $g_{m,n}$ ”.

P. 623, 1<sup>st</sup> line after Eq. (13.333): Replace “ $\mu = k \sin \theta$ ” with “ $k_w = k \sin \theta$ ”.

P. 624, 2<sup>nd</sup> line after Fig. 13.45: Replace “Eq. (78)” with “Eq. (77)”.

P. 625, Eq. (13.336): Replace “ $s\sqrt{1-s}$ ” with “ $s\sqrt{1-s^2}$ ”.

P. 625, Eq. (13.338): Replace “ $i$ ” with “ $j$ ”.

P. 626, 1<sup>st</sup> line after Fig. 13.47: Replace “Eqs. (97). (98), and (99)” with “Eqs. (96). (97), and (98)”.

P. 626, 1<sup>st</sup> line after Eq. (13.339): Replace “Eq. (134)” with “Eq. (133)”.

P. 627, 3<sup>rd</sup> line before Eq. (13.342): Replace “integral” with “Fourier”.

P. 628, Eqs. (13.344), (13.346), and 1<sup>st</sup> line after Eq. (13.345): Replace  $\tilde{P}(k_z, z_0)$  with  $\tilde{P}(k_x, k_y, z_0)$ .

P. 628, 1<sup>st</sup> line after Eq. (13.344): move “where” and Eq. (13.345) to just after Eq. (13.343).

P. 628, Eqs. (13.346) and (13.347): Replace  $\tilde{P}(k_z, z)$  with  $\tilde{P}(k_x, k_y, z_0, z)$ .



P. 628, Eq. (13.347): Replace “ $\tilde{p}_0$ ” with “ $\tilde{p}$ ”.

P. 629, 2<sup>nd</sup> line of 2<sup>nd</sup> paragraph: Replace “tone of an impulse” with “tone or an impulse”.

P. 629, 5<sup>th</sup> line after Eq. (13.349): Replace “Sec. 2.1” with “Sec. 2.4”.

P. 634, 5<sup>th</sup> line after Eq. (14.2): Delete “current-source equivalents of the”.

P. 637, top of page: Replace “Table 6.1” with “Table 14.1”.

P. 640, 1<sup>st</sup> line after Table 14.2: Replace “[9]” with “[8]”.

P. 648, heading 14.8: Replace “[10]” with “[9]”.

P. 648, Eq. (14.64): Replace “ $-1/L_1$ ” with “ $-1/L_2$ ”.

P. 649, Eq. (14.70): Replace with “ $P_2 = \frac{1}{L_1 C_1} + \frac{1}{L_2 C_1} + \frac{1}{L_2 C_2} + \frac{R_1 + R_2}{R_1 R_2 C_1} \frac{R_3}{L_2}$ ”.

P. 649, Eq. (14.74): Replace “ $p_3 s + p_4$ ” with “ $P_3 s + P_4$ ”.

P. 652, 2<sup>nd</sup> line after heading 14.10: Replace “current sources” with “a current source”.

P. 655, 1<sup>st</sup> line after Eq. (14.105): Replace “Eq. (14.104)” with “Eq. (14.35)”.

P. 658, Eq. (14.125): Replace “ $R_2$ ” with “ $R_3$ ”.

P. 661, 1<sup>st</sup> line after Eq. (14.140): Replace “Eqs. (14.121) and (14.139)” with “Eqs. (14.121) and (14.140)”.

P. 661, last sentence: Replace “characteristics of the transformer respectively” with “characteristics respectively of the transformer”.

P. 667, Eq. (14.164): Replace “ $\tilde{i}_{T1P}$ ”, “ $\tilde{i}_{T1S}$ ”, “ $\tilde{i}_{G1P}$ ”, and “ $\tilde{i}_{G1S}$ ” with “ $\tilde{i}_{W1S}$ ”, “ $\tilde{i}_{CC1S}$ ”, “ $\tilde{i}_{VC1S}$ ”, and “ $\tilde{i}_{VC2S}$ ” respectively.

P. 667, Eq. (14.164): Add “-” sign to  $\mathbf{M}(13,13)$  and  $\mathbf{M}(14,14)$ .

P. 668, Eq. (14.167): Add “-” sign to  $\mathbf{M}_{33}(6,6)$  and  $\mathbf{M}_{33}(7,7)$ .

P. 680, Eq. (70): Replace integral limits “0” and “ $\alpha$ ” to “ $\alpha$ ” and “ $\pi$ ” respectively.

P. 680, In Eq. (70), replace “ $P_n(\cos \alpha)P'_m(\cos \alpha) - P_m(\cos \alpha)P'_n(\cos \alpha)$ ” with “ $P_m(\cos \alpha)P'_n(\cos \alpha) - P_n(\cos \alpha)P'_m(\cos \alpha)$ ”.

P. 683, Eq. (97): Change lower limit of integral from 0 to  $a$ .

P. 684, Eq. (101): Replace “ $\alpha_{km} \neq \alpha_{kn}$ ” with “ $\alpha_{km} \neq \alpha_{kn}$ ”.

P. 684, Eq. (109): Replace  $\frac{(-1)^n \left(\frac{1}{2}az\right)^{2n}}{n!\Gamma(n+\nu+1)^2} F_1\left(-n, -n-\nu; \mu+1; \frac{b^2}{a^2}\right)$  with  $\frac{(-1)^n \left(\frac{1}{2}az\right)^{2n}}{n!\Gamma(n+\nu+1)} {}_2F_1\left(-n, -n-\nu; \mu+1; \frac{b^2}{a^2}\right)$ .

P. 686, Eq. (125): Replace “1” with “(-1)<sup>m</sup>”.

P. 688, Eq. (147): Insert “-” sign after “=”.

P. 688, Eq. (152): Replace “x” with “z”.

P. 384, Replace Eq. (7.179) with

$$f_0 = \sqrt{5}c/(2\pi a)$$

After “=” insert “-” in Eqs. (4.116), (4.134), (4.135), (12.30), (12.33), (12.34), (12.46), (13.13), (13.28), (13.105), (13.160), (13.177), and (13.181).

After “=” delete “-” in Eqs. (4.64), (4.65), (4.67), (4.71), (4.72), (4.75), (4.110), (4.112), (4.114), (4.117), (4.118), (4.125), (4.126), (4.127), (4.129), (4.130), (4.132), (4.133), (6.31), (6.32), (6.36), (12.24), (12.25), (12.35), (13.2), (13.11), (13.12), (13.87), (13.89), (13.91), (13.92), (13.178), (13.184), (13.204), (13.206), (13.215), (13.222), (13.227), (13.230), (13.231), (13.232), (13.247), and (13.269).

P. 385-386: Replace Example 7.4 with the following simpler corrected version:

**Example 7.4. Crossover for woofer of Example 7.2.** In this example we shall implement a 3<sup>rd</sup>-order Butterworth high-pass filter using a series capacitor for the 1<sup>st</sup>-order section and the native response of the tweeter for the 2<sup>nd</sup>-order section. Because the tweeter will be mounted in a sphere, we shall design a crossover to compensate for the 6 dB lift associated with a point source in a sphere (see Fig. 7.14) so that it provides part of the 1<sup>st</sup>-order section. The low-pass section will be designed to give an all-pass overall response with zero phase shift, as discussed in the previous section. Hence the low-pass section will use just a series inductor together with the 6 dB lift due to the baffle effect, using a closed-back piston as a model (see Fig. 7.15). Since the woofer occupies almost the full width of the box, we will take  $a$  as 9.4 cm which, using Eq. (7.179), gives us a crossover frequency of

$$f_0 = 2.24 \times 344.8 / (2 \times 3.14 \times 0.094) = 1305 \text{ Hz}$$

Hence the value of the series inductance needed is

$$L_1 = \frac{R_E}{2\pi f_0} = \frac{6.27}{2 \times 3.14 \times 1305} = 0.766 \text{ mH}$$

However, the coil inductance is 0.71 mH, so to make up the difference we will use an inductor with a value of  $0.766 - 0.71 = 56 \mu\text{H}$ . Next we need to choose a tweeter suitable for a crossover frequency of 1305 Hz. The SEAS model 27TFF (H0831) has a resonance frequency of  $f_c = 1200 \text{ Hz}$ , which is close

enough. The effective area of the dome is  $S_D = 7.5 \text{ cm}^2$ . The maximum sound pressure of the woofer has already been specified as 99.6 dB SPL at a distance of  $r = 1 \text{ m}$ . At the crossover frequency  $f_0$ , the sound pressure produced by the tweeter is 3 dB less than this, that is 96.6 dB SPL, and decreases at a rate of 18 dB/octave below  $f_0$ . The peak displacement at  $f_0$  is obtained from Eq. (6.35) to give

$$\eta_{\text{peak}} = \frac{\sqrt{2}r \times 10^{\frac{\text{SPL}}{20}-5}}{\pi f^2 \rho_0 S_D} = \frac{1.414 \times 1 \times 10^{\frac{96.6}{20}-5}}{3.14 \times 1305^2 \times 1.18 \times 7.5 \times 10^{-4}} = 0.2 \text{ mm}$$

which is within the linear excursion limit of 0.5 mm and at frequencies above and below  $f_0$  the displacement is reduced. Using the method described in Sec. 6.10 for measuring the Thiele-Small parameters, we estimate the  $Q$  factors from the impedance curve to be

$$Q_{EC} = \omega_S M_{MD} R_{ES} / (Bl)^2 = 2\pi \times 1200 \times 0.0003 \times 4.8 / 3.5^2 = 0.89$$

$$Q_{MC} = \omega_S M_{MD} R_E / (Bl)^2 = 2\pi \times 1200 \times 0.0003 \times 10.2 / 3.5^2 = 1.88$$

Also, the quoted sensitivity is 92 dB SPL in a baffle at 1 m with an input voltage of 2.83 Vrms (or 86 dB SPL in free space). However, the woofer has a sensitivity of 79.6 dB SPL in free space, so the tweeter needs a series resistor to match its sensitivity to that of the woofer. If  $R_E = 4.8 \Omega$ , then the series resistor value is

$$\begin{aligned} R_1 &= R_E (10^{(TweeterSensitivity - WooferSensitivity)/20} - 1) \\ &= 4.8 \times (10^{(92-79.6)/20} - 1) = 15.2 \Omega \approx 15 \Omega \end{aligned}$$

This will modify the values of  $Q_{EC}$  and  $Q_{TC}$  as follows

$$Q'_{EC} = \left(1 + \frac{R_1}{R_E}\right) Q_{EC} = \left(1 + \frac{15}{4.8}\right) \times 0.89 = 3.67$$

$$Q'_{TC} = Q'_{EC} Q_{MC} / (Q'_{EC} + Q_{MC}) = 1.24$$

which is close enough to unity for a 3<sup>rd</sup>-order Butterworth response. We need to correct for the 6 dB lift in the response of the tweeter due to the baffle effect. We will simplify this by mounting the tweeter on a wooden sphere so that we can model it as a point source on a sphere of radius  $R$ . Then the transfer function of the point source on a sphere from Eq. (7.36) (producing a 6 dB lift) provides the shelf filter response

$$\frac{s + c/R}{s + 2c/R} = \frac{s + \omega_E}{s + \omega_0}$$

where the radius of the sphere is given by

$$R = 2c/\omega_0 = 344.8/(3.14 \times 1305) = 84.1 \text{ mm}$$

Thus the 6 dB transition takes place between  $f_E = f_0/2 = 1305/2 = 653$  Hz and  $f_0 = 1305$  Hz with a 1<sup>st</sup>-order slope. Hence we need the series capacitor to continue the 1<sup>st</sup>-order slope from  $f_E$  downwards and its value is determined by

$$C_1 = \frac{1}{2\pi f_E (R_E + R_1)} = \frac{1}{2 \times 3.14 \times 653 \times (4.8 + 15)} = 12.3 \mu\text{F} \approx 12 \mu\text{F}$$

The network is shown in Fig. 7.51.

P. 386: Replace Figure 7.51 with:

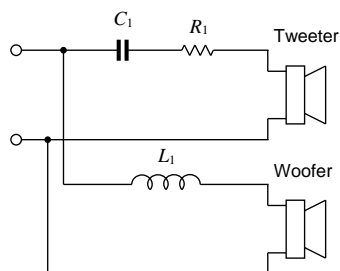


Fig. 7.51. Crossover network of Example 7.4 with a crossover frequency of  $f_0 = 1305$  Hz. The values of the crossover circuit elements are  $R_1 = 15 \Omega$  (25 W),  $L_1 = 56 \mu\text{H}$ , and  $C_1 = 12 \mu\text{F}$ . The woofer is a Bandor type 100DW/8A mounted in a closed-box baffle as described in Example 7.2 and shown Fig. 7.18. The tweeter is a SEAS type 27TFF (H0831) mounted in a 16 cm diameter sphere.