Text Corrections

The following text corrections apply to the first printing of Level III Study Guide: Ultrasonic Testing Method. Subsequent printings of the document will incorporate the correction into the published text.

Page 4  Table 1.2 should be altered as follows:

Acoustic Velocities, Densities and Acoustic Impedances of Common Materials

<table>
<thead>
<tr>
<th>Material</th>
<th>V_L (m/s)</th>
<th>V_T (m/s)</th>
<th>Z</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>5900</td>
<td>3230</td>
<td>45.0</td>
<td>7.63</td>
</tr>
<tr>
<td>Aluminum</td>
<td>6320</td>
<td>3130</td>
<td>17.0</td>
<td>2.70</td>
</tr>
<tr>
<td>Plexiglass</td>
<td>2730</td>
<td>1430</td>
<td>3.2</td>
<td>1.17</td>
</tr>
<tr>
<td>Water</td>
<td>1483</td>
<td>--</td>
<td>1.5</td>
<td>1.00</td>
</tr>
<tr>
<td>Quartz</td>
<td>5800</td>
<td>2200</td>
<td>15.2</td>
<td>2.62</td>
</tr>
</tbody>
</table>

Page 12  Q.1-14, should be modified to read: “The incident angle needed in immersion testing to develop a 70 degree shear wave in plexiglass using the information in Table 1.2 equals _______."

Page 19  In Table 2.2 the Greek letter rho (ρ) should replace the letter “P” under the word “Density.”

Page 24  Figure 2.8: a. = test part, b. = A Scan, c. = B Scan, and d. = C Scan.

Page 25  The paragraph to the left of Figure 2.9 should be modified to read (in part): The RF display shown in Figure 2.9 is representative of the actual ultrasonic stress pulses received. In this mode, the first oscillation (downward at 17 µs) shows the nature of the pulse (compression or rarefaction) when received. Note the inversion of the shape of the pulse at 19, 21, ..., microseconds due to phase inversion caused by reflection from a “free” boundary. This phase reversal can be used to discriminate between “hard” boundaries (high impedance) and “soft” boundaries (low impedance such as air).

Page 27  Q.2-1, answer A should read: which occurs naturally.
Page 28
Q.2-16, should read: In longitudinal-wave immersion test …
Q.2-18, should read: The horizontal scale is 0.5 inches per division and the vertical scale is linear.

Page 40
In Figure 3.7, remove the word “inches” from the vertical legend.

Page 64
Q.4-12 should be modified as follows:
change “+ 10 percent” to “±10 percent”;
delete “The pipe is steel (…)”;
change answers to read:
A. +11, -14 percent
B. +13, -12 percent
C. +10, -10 percent
D. +14, -10 percent.

Page 83
Table B-2, last entry should read: 39.

Page 86
Q.5-18, answer C should read: > 100% ARL …

Page 87
Q.5-20, answer B should read: 50, 34, 26, 20, 11.

Page 103
Q.A-2, should read: The reference level recorded using the DSC block for the above case was 32 dB. …
Q.A-6, should read: … each of which has resulted in a rating equal to 0 dB.

Page 107
Appendix B, replace “V_r” with V_s.

Page 109
Appendix C, change answers as follows:
Chapter 2, 19 should be B,
Appendix A, A1 should be C.