

Wade Bartlett's Errata Sheet for John H. Bickford's
Introduction to the Design and Behavior of Bolted Joints, 4th edition
January, 2008

(Note: All items start with the page of interest)

- 90 The example in 5.2.2 uses a “ $\frac{3}{8}$ -16 x $\frac{1}{2}$ SAE” bolt, but the problem appears to have been worked for a 1½-in. long bolt. This confused the heck out of me until I got to the example in Chapter 11, which expands on this example and shows the correct dimensions (see page 277).
- 102 “...springs **A and C in Figure 5.16, for example...**” should probably be “...springs 1 and 3 in Figure 5.1...”
- 110 I think that in the hypothetical joint of 6.2, the bolt size should be **1½-8** , instead of the “ $\frac{1}{8}$ – **8**” shown. .
- 119 In the penultimate line, “...**let go off the bolt.**” should probably be “...let go of the bolt.”
- 124 The very first word on the page cites material in chapter 7 in the past tense. Since we're only at chapter 6 at this point, perhaps “will examine” would be better.
- 125 I suspect that the stud size shown, “**24-8x124**” is erroneous. If it's really something big enough to have 8tpi, 500 in-lb seems a little light, but if you're tensioning them separately, maybe that's all it takes.
- 129 The discussion in the second paragraph states that “**Bolt 3 started and ended about the same.**” This appears to be a typo. Bolt 3 is not “about the same” in Figure 6.23 or 6.24. Perhaps bolt 13 was intended.
- 140 The 5th paragraph mentions the “energy equation (Equation 2.29)”. There does not appear to be any such equation in this book.
- 144 The second paragraph in 7.3.5 has a comma after “input torque”, but it should not (this is one of the nitpicky editorial style items).
- 153 The fourth paragraph in 7.6.3 refers to Histogram A in Figure 7.7, but Figure 7.8A is probably intended.
- 161 “...**the impacts it generates care of such duration...**” should probably be “...the impacts it generates **ARE** of such duration...”
- 162 the penultimate sentence in the first paragraph misspells “torque” as “toque.”
- 168 Since physical distance is not involved, “farther” should be “further.”
- 169 “**Even if the final bolts don't break the tensile stress...**” should probably be something like “Even if the final bolts don't break due to the tensile stress...”
- 182 The first paragraph refers to Figure 3.17, which does not exist. This should probably be Figure 3.16.
- 187 In section 8.7.3, “**In hesitation, tightening the tool...**” seems like maybe it should be “In hesitation tightening, tightening the tool...” or even “In hesitation tightening, the tool...” but on re-reading it several times, I'm not sure I “get it,” so my confusion may be a result of my own unfamiliarity with the nomenclature. But frankly, if I'm confused, others will be, too.

- 188 The arrow in section #2 of Figure 8.18 is under the label and pointed to empty space. Perhaps it should be above the (2) and pointed at about 9:30, where the line crosses the phase delineator?
- 190 Near the end of the first paragraph, "**the control curve...in Figure 8.20**" is mentioned, but Figure 20 has no such control curve, and I can't find any figure in this book having superimposed curves which fits this description.
- 193 The intro to Section 8.10 suggests the reader refer to Section 6.7, but I can't immediately make a connection there. Perhaps this should refer to Section 6.8. Or else I'm just confused.
- 200 Section 9.3.1.4 mentions heater rods. I eventually found the description of them later, but referring the novice/confused reader to section 9.9 for further information would be helpful.
- 208 In Section 9.7.6, "...**the use of otherwise undescribed alternative design fasteners**" if they meet..." should probably include an open-quote prior to *alternative*
- 210 With regard to steels, I have usually heard the loss of carbon due to heating called "decarburization", rather than the term used here, "decarbonization", but if that's the industry's term of art, then so be it.
- 214 The top paragraph on the page has this: "...**and the bolt bend as it bends slightly**" is confusing to me. I think there's probably an extra "bends" somewhere, but I'm not sure.
- 220 Figure 10.1 shows left-handed threads. Intentionally? Possibly. It is irrelevant to the point, they just look funny since I can count on the fingers of two hands the LH bolts I've actually held.
- 232 Figure 10.20 shows " ΔT " twice. The lower one should probably be just " ΔT "
- 233 After Equation 10.10, the text says that after joint separation, $\Delta F_B = \Delta L_x$, but is that true? Isn't this just for further or additional ΔF_B ?
- 233 In Equation 10.17, the final "F" should probably be " F_J "
- 234 In the mid-page example, "(1-0.17)" morphs into "(0-0.17)", though the next step gets the right calculation (0.83*0.25)
- 240 Figure 10.27 has a text note that " $n=T_1/T_2$ ", while Equation 10.20 shows the opposite, which appears to match the text.
- 241 "...**we've used the original, actual bolt stiffnesses K_J and K_B to compute...**" probably doesn't need the word "bolt", as that's the *bolt and joint stiffness*, not just bolt stiffnesses, right?.
- 250 Figure 11.1 shows the overall distance between L_x and Q to be "1" which looks like an Arial-font lowercase letter L, while the text clearly shows the serifs of the Times New Roman number one. This highlights the problems of using different fonts in Figures and text. <shrug>

- 258 The text says "...we're about to define new 3Φ s [sic: no space] for various types of eccentricity. In Chapter 1- we defined our 4Φ s [sic: again, no space] in terms of bolt and joint stiffnesses..." Seems to me there ought to be spaces between the number of phis (3 or 4) and the phi term itself. I only find reference to TWO phi-terms in Chapter 10 (Φ_K and Φ_{Kn}), not four, only one of which is mentioned in the list that follows, which includes the three new terms.
- 259 Near the bottom of the page, the text states that Φ_K and Φ_H are defined in terms of bolt and joint stiffness in Chapter 12. Having searched Chapter 12 fruitlessly, though, I am pretty sure this should be Chapter 10...perhaps Eq. 10.12?
- 259 Figure 11.15(B), the Joint Center is not labeled in the picture. It can be figured out eventually by comparing to other figures, but it would be nice to have that label here, too.
- 261 Eqn. 1.16 has capital "S", but the text and the cited figures use a lower case "s". I presume they are the same.
- 264 In the first paragraph, it states: "...**we would find that it was, in general, not to be a straight line...**" I think either "was" or "to be" need to be excised.
- 269 In Eqn 11.13, and in the subsequent definitions, I think F_T should be ΔF_T
- 269 In the definitions for Eqns 11.14 and 11.15, I think the units for rho-2 need to be fixed.
- 270 Just to be clear, I think that in Figure 11.24: $\Delta F_B = \Delta F_J = F_T$
- 274 In the 5th paragraph of 11.4.6, "**we'ld**" should be "we'd"
- 276 Near the end of the first paragraph in 11.5.1, reference is made to Equation 12.15. This book contains no such equation. Perhaps it should be Eqn. 10.15.
- 277 The first paragraph of Section 11.5.2 contains a reference to Chapter 12, which I think is supposed to be Chapter 10.
- 277 In the example, under "Bolt Dimensions and Properties", the dimensions appear to be correct, but do not match the cited Chapter 5 example dimensions (see note about Page 90, above).
- 288 The second paragraph of Section 12.3 opens with: "**As applied force increases, the friction forces between joint members and the joint slips into bearing...**" I think there's some stuff missing after "members", perhaps "cease to be sufficient to prevent relative motion between the components" ?
- 289 There are two terms floating in space, identified as Equation 12.1. Since there is no "equals sign", this isn't really an equation. I think there supposed to be an "=1" appended to what's there.
- 289 Just below the last item, there is reference to "Equation 11.1" which I think should be a reference to Eqn 12.1
- 294 "**There were also been recent...**" needs to be fixed.
- 301 The caption to Figure 13.3 says: "**I galling forces us to drill...**" should probably be "IF..."

- 306 At the end of Section 14.3, I suspect that the reference to Figure 14.6 should instead be to Figure 14.11.
- 312 **“The Junker is, I believe, the popular machine for testing the vibration resistance of fasteners, but it (and the NAS device) is far from the only fixtures which are used for this purpose.”** There seem to be number-confusion here. With the parentheses used, I think fixtures should be singular to match “is”.
- 337 Section 15.3.5 refers to Table 2.11, which does not exist in this book. Too bad, too, as I would really like to see this Table.
- 339 Figure 15.14(A) contains a not-quite vertical line that either needs explanation or deletion. It looks extraneous to me.
- 345 Section 15.5.1.7 refers to Figures 3.9 through 3.11, but I think it really refers to Figures 3.7 through 3.10. In the next sentence I think “Figure 3.9” should be “Figure 3.8”, and “Figure 3.10” should be “Figure 3.9”.
- 348 In the second line of text, I think “Figure 3.9A” should be “Figure 3.8A” and with regard to Figure 15.25, it does not appear to have the tapers mentioned in Figure 15.24, which appear to be what the text here is trying to convey. If I have understood that inference correctly, Figure 15.25 ought to show tapered threads? That seems like an easy thing to do, if that’s what’s intended.
- 348 Near the bottom of the page, another reference is made to the nonexistent Table 2.11. Also, the word “to” preceding this reference should be changed to “in”.
- 349 I think I understand the meaning of the following sentence: **“And accept this confirmation that fatigue data are often scattered”**, but it is poorly constructed, and should be fixed.
- 349 In the second line of the first full paragraph on the page, **“automotive”** needs repair.
- 350 I think the reference to Figure 3.18 in line 2 should probably instead be to Figure 3.15.
- 350 In my copy of the book, Figure 15.26 is unintelligible. Black stripes obscure the text, and there appear to be two sets of shading and two hatching sets, but one set of striped hatches doesn’t correspond to either line. I can’t figure out what this Figure is showing me. This is very frustrating.
- 351 The example in Section 15.8.2 probably was not supposed to indicate applying 385 lb-ft to “ $\frac{1}{8}$ -7x7” bolts. I suspect this is supposed to be a 1½-in. diameter bolt.
- 361 The last line of Section 16.2.2: **“...difficult to distinguish this type of failure from others we’re about to consider are corrosion related”**, probably needs a “which” or “that” before “are”.
- 362 It’s my understanding that a hyphen is supposed to separate a number-units pair, though it’s a rule not universally adhered to. In particular, though, in the 5th paragraph of 16.2.4 there is a hyphen in “24-h”, but in several placed on the following page, the same statement of time does not include a hyphen. Whichever way you go on the hyphen issue, it seems the book should be self-consistent.

- 362 I'm as civic-minded a guy as you're likely to find in the USA, but the term "Public Law" was new to me, and I assumed it was a British thing. A little internet searching taught me that it is, in fact, a term of art for our government, and that the act to which this refers, signed 18 years ago by the first President Bush, is also commonly called the "Fastener Quality Act". I'm not sure this qualifies as "recent," but beyond that, a little bit of clarification in the text to explain all this would be really helpful to many readers, IMHO. Here's one online page about this topic: <http://ts.nist.gov/WeightsAndMeasures/fqa.cfm>
- 364 The caption for Figure 16.6 uses a numeral one in "AIS1" when it should be a capital letter i.
- 364 The number one is again substituted for the capital letter i the first paragraph of the text: "**1 once heard a...**"
- 365 First full paragraph: "...**for out bolting application...**" should be "...for our bolting application..."
- 365 Section 16.3.3.3 refers to Figure 18.6, but I'm pretty sure it means Figure 16.6
- 366 The caption for Figure 16.7 makes no mention of the seawater and distilled water mentioned in the text. Should it? Are they really part of the Figure? It's not clear.
- 366 The very last line has an equation where a plus sign has somehow been substituted for an equals sign. Yikes!
- 369 The sixth paragraph mentions "**HI000**" when I think it means "H1000".
- 369 The 8th paragraph mentions "**Titanium TU6A1-4V**", which has two incorrect characters if it's supposed to be "Ti-6Al-4V"
- 371 The caption to Figure 16.9 says it applied to 1½ in. diameter bolts, while the text on page 371 says it applies to 11-in. diameter bolts. I think the caption is right. Also, in referring to the text adjacent to that 11-in. reference, 42HRC in Figure 16.9 looks more like 28-ksi, not the cited 32.5-ksi, but perhaps I'm misunderstanding what is being described.
- 379 Section 16.6.1 "**tine anode**" should be "tiny anode"
- 385 Footnote "b" in Table 16.2 refers to table 18.2, but no such table exists. Perhaps it means Table 16.3. Though that table does not actually have addresses as described here and earlier in the text, but rather cities where headquarters are based.
- 394 Section 17.1.2.1 "lighten" should be "tighten"
- 398 Section 17.2.3 cites Appendix F, which doesn't seem to make much sense. I think it's supposed to be Appendix E.
- 398 The last line of 17.2.3 mentions Section 17.1.1, which doesn't make much sense to me. I don't see what part of 17.1.1 pertains to this.
- 399 In Table 17.1, ASME is misspelled as "ASMK" in the 50-60 range description
- 411 In section 17.5.3, the author states that he has included "**whatever further [gasket creep data] I could find**", however, I can't find a single piece of such data in this book. I suspect that this information has been moved to Volume 2, but the reference slipped through.
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