Known Typographical Errors in the First Edition, First Printing of
Dynamics by D. C. Wilcox

These are all of the known typographical errors as of May 4, 2014.
(NOTE: The disk file answers-dynamics.pdf replaces the “Answers to Selected Problems”
section in the book. All known typographical errors have been corrected in the disk file.)

1. Page ii, About the Cover, second line: Replace “Oakland” with “Marin County”.

2. Page 27, Problem 1.8: Replace “2 stones” with “2 stone”.

3. Page 32, Problem 1.63: Replace “(x - 4)^2 / 4 - y^2 / 9 = 1” with “(x - 4)^2 / 4 - y^2 / 12 = 1”.

4. Page 42, Example 2.4, Equation for v_y: Replace “j” with “k” (twice).

5. Page 48, Example 2.5, first line: Replace “j” with “k”.

6. Page 59, Problem 2.30: Add “Express your answer in terms of v_0”.

7. Page 61, Problems 2.41 and 2.42 figure: The dimension arrows for H are incorrect. The following figure shows the correct dimension arrows.

8. Page 63, Problem 2.53(b): Replace “θ = 0” with “θ = 18.6°”.

9. Page 66, Problems 2.76 and 2.77, figure: Add the statement, “Because of a malfunction, the airplane’s wings are locked into a non-lifting configuration.”.

10. Page 66, Problem 2.81: Replace “in terms of Γ and r” with “in terms of Γ and R”.

11. Page 70, Equations (3.1) and (3.2): Replace x' = x + v_0 t' with x' = x - v_0 t' in Equation (3.1) and replace v'_x = v_x + v_0 with v'_x = v_x - v_0 in Equation (3.2).

12. Page 87, paragraph just above Equation (3.47), last line: Replace “the angular velocity of the orbiting object is” with “for the orbiting object we have”.

13. Page 91, Table 3.4: Replace “Closet” with “Closest” in the caption. Also, replace “apohelian” with “aphelion”.

14. Page 106, Problem 3.36, next to last line: Replace “e^t/τ” with “e^{-t/τ}”.

15. Page 108, Problems 3.49 and 3.50, first line: Replace “m” with “M”.

16. Page 109, Problem 3.56: Add “For θ = 0, r = \frac{2}{3} r_o and dr/dθ = 0.”

17. Page 111, Problem 3.65, third line: Replace “increased” with “decreased”. Also, delete the “.” after the “?” in Parts (a) and (b).

18. Page 112, Problems 3.69(b) and 3.70(b), last line: Replace “r_p” with “r_A”.

19. Page 136, Problem 4.20, line 6: Replace “\frac{1}{2} mg/\sin θ”, where θ” with “\frac{1}{2} mg \sin θ”, where θ = 18°”. Also, note that the length of the board is \ell \sec θ.

20. Page 138, Problem 4.26(b): The car’s weight is mg = 3421 lb.
21. Page 139, Problem 4.32, third line: Replace “the wall” with “z = 0”.

22. Page 141, Problem 4.42: In Part (b), replace “v = 50 ft/sec” with “v = 5 ft/sec”. There is no need to use a Galilean transformation, and the correct shape of the bump is

\[ z = \frac{1}{2} z_m \left[ 1 - \cos \left( \frac{2\pi x}{\lambda} \right) \right] \]

23. Page 142, Problem 4.43: In Part (b), replace “v = 10 m/sec” with “v = 1 m/sec”. There is no need to use a Galilean transformation, and the correct shape of the bump is

\[ z = \frac{1}{2} z_m \left[ 1 - \cos \left( \frac{2\pi x}{\lambda} \right) \right] \]

24. Page 153, Equation (5.29), just after “⇒” : Replace “m_A” with “m_B”.

25. Page 154, Equation (5.33): The limits of the integral of R should be “t_m to t_2” rather than “t_1 to t_m”.

26. Page 169, Problem 5.25, third line: Replace “still moves with speed 3v” with “moves with speed 2\frac{3}{6}v”.

27. Page 172, Problem 5.35, last line: Replace “other corner pocket” with “same corner pocket”.

28. Page 172, Problem 5.36, fifth line: Replace “lower cushion” with “cushion”.

29. Page 180, Equations (6.15) and (6.16): Replace “\( \mathbf{v}_i \)”, “\( \mathbf{v}_f \)”, “\( \mathbf{a}_i \)” and “\( \mathbf{a}_f \)”, i.e., remove the overbars.

30. Page 182, Figure 6.3: Replace “\( \mathbf{v}_i \)”, “\( \mathbf{v}_f \)” with “\( \mathbf{r}_i \)” and “\( \mathbf{v}_f \)”, i.e., remove the overbars.

31. Page 187, Equation (6.46): Replace “\( \mathbf{v}_i \)” with “\( \mathbf{v}_f \)” (first line, two places).

32. Page 210, Problems 6.18 and 6.19, first line: Replace “z = H k” with “z = H”.

33. Page 211, Problem 6.22, last line: Replace “m = 100 kg, Mg =” with “m = 200 kg, M =”.

34. Page 211, Problem 6.25, second line: Replace “\( \omega = 4v_0/d \)”.

35. Page 212, Problem 6.27, figure: Add “h” between the dimension arrows on the right-hand side of the figure.

36. Page 214, Problems 6.34 and 6.35, third line: Replace “\( v_3 = v_0'(\cos \beta \mathbf{i} + \sin \beta \mathbf{j}) \) and \( v_3' = v_0'\mathbf{k} \)” respectively with “as shown”. Also, the lower angle \( \beta \) should be “\( \frac{\pi}{2} - \beta \)”, i.e., \( \beta \) should be measured from the horizontal for both the three ball and the nine ball.

37. Page 226, Equation (7.28): Replace “\( \mathbf{r}_{3\leftrightarrow A} \)” with “\( \mathbf{r}_{A\leftrightarrow 3} \)”.

38. Page 230, paragraph below Equation (7.37), last line: Replace “pure translation” with “pure rotation”.

39. Page 235, third bullet point at the bottom of the page: Replace “\( \dot{\Omega} \times \mathbf{r} \) is the angular acceleration” with “\( \dot{\Omega} \times \mathbf{r} \) is the Euler acceleration”.

40. Page 236, Figure 7.13: The velocity vectors are drawn incorrectly. The figure should appear as follows.
41. Page 239, Part (b), first line: Replace “Appendage A” with “Appendage OA”.

42. Page 243, Problem 7.11, last line: Replace “at Points B and C” with “of the points on Gears B and C that are in contact”.

43. Page 246, Problem 7.26(a): Replace “ω_B = -3ω_k” with “ω_B = 3ω_k”.

44. Page 248, Problem 7.35: Replace “v_B < 0” with “v_B > 0”.

45. Page 250, Problem 7.47: In Part (a), replace “y = r” with “y' = r”, where y' is distance along the y axis relative to Point B, in terms of”. In Part (b), replace “λ = \frac{1}{2}L” with “λ = \frac{1}{2}”.

46. Page 250, Problem 7.48: In Part (a), replace “y = r” with “y' = -r”, where y' is distance along the y axis relative to Point B, in terms of”. In Parts (b) and (c), replace “y = -r” with “y' = -r”.

47. Page 254, Equation (8.11): Replace “-ω_{x'}x'z'” with “-ω_{x'}x'z'”.

48. Page 270, Table 8.1: Replace “I_{xx}, I_{yy}, I_{zz}” with “I_{x'x'}, I_{y'y'}, I_{z'z'}”.

49. Page 270, Equation (8.87): Replace “ω” with “Ω”.

50. Page 281, Problem 8.9, figure: Replace “y” with “z” and “z” with “y” on the coordinate axes.

51. Page 284, Problems 8.24 and 8.25: Add “The Chevy has average tires and is moving on dry pavement”.

52. Page 285, Problem 8.26(a), first line: Replace “disk’s” with “ball’s”.

53. Page 286, Problem 8.33, first and second lines: Replace “angular velocity” with “constant angular velocity”.

54. Page 287, Problem 8.36(c): Replace “m, Ω, ω, L and r” with “m, Ω and L”.

55. Page 288, Problems 8.37 and 8.38, first and second lines: Replace “angular velocity” with “constant angular velocity”.

56. Page 290, Problem 8.43, second line: Replace “disk’s” with “rod’s”.

57. Page 291, Problem 8.46, Part (a): Replace “Determine the cylinder’s angular velocity, ω, when the center has moved a horizontal distance \( \frac{5}{2}d \) in terms of k, m, d and gravitational acceleration, g” with “Assuming the velocity of the cylinder’s center of mass is \( \overline{v} = \frac{1}{\tau} I \omega d \), where \( \lambda \) is a constant and \( \omega \) the cylinder’s angular velocity, determine \( \omega \) when its center has moved a horizontal distance \( \frac{5}{2}d \) in terms of \( \lambda, k, m, d, \mu_k \) and gravitational acceleration, g.” Part (b): Replace “If k = 9 lb/ft” with “If \( \lambda = 1.5 \), k = 9 lb/ft”.

58. Page 300, Equation (9.28), last line: Replace “ω_f” with “ω_n”.

59. Page 309, Natural Frequency equation and table: Replace “Table 8.12” with “Table 9.1”.

60. Page 311, Problem 9.8(b): Replace “verify that” with “verify that, with \( \zeta \equiv z - z_{eq} \)”, and replace the equation with

\[
m\ddot{\zeta} = mg - k(\zeta + z_{eq}) - T \quad \text{and} \quad T = \frac{5}{4}k(\zeta + z_{eq})
\]

61. Page 313, Problems 9.14 and 9.15, figures: Replace “\( \omega_n t \)” with “\( \omega_n t \)” on the horizontal axis of each graph.

62. Page 317, Problem 9.35(b): Replace “in terms of k, m and c” with “in terms of k, m, c and \( \omega \)”.

63. Page 319, Problem 9.40(c): Replace “m = 1 lb” with “mg = 1 lb, where g is gravitational acceleration”.

64. Page 331: Replace “Apohelian” with “Aphelion”.