Errata for Callen / Thermodynamics & Intro. To Thermostatistics, 2nd ed.

P21 Label on ordinate of Figure should be $10^5/32$ instead of $10^4$

P25 In answer to Prob. 1.8-6:

\[ U-U_0 = A \left( P \Delta_\tau - P_0 \right) + \ldots \text{ Instead of } U-U_0 = A P_0 \left( r \Delta_\tau - 1 \right) + \ldots \]

P53 In last line of first paragraph of Prob. 2.7-2: temperature should be singular (instead of temperatures)

P70 Interchange $\beta$ and $\delta$- in each of the three diagrams of Fig 3.2.

P72 In last line of Prob. 3.4-2: idea should be ideal

P81 Replace entire Problem 3.7-3 by:

3.7-3 If the energy of the unstretched rubber band were found to increase quadratically with $T$, so that eq’n 3.58 were to be replaced by $U = cL_0 T^2$, would equation 3.59 require alteration?

Again find the fundamental equation of the rubber band.

P86 In line above Example: 3.8-6 should be 3.9-6

P88 In Prob. 3.9-4, first line: Prob. 1.9-1(a) should be Prob. 1.10-1(a).

P92 Third line should read: Two such systems, with equal heat capacities, have initial temperatures $T_{10}$

P94 In Prob. 4.1-1: In second line: delete “each”

In third line: “fixed volumes $v_1$ and $v_2$. The temperature”.

P109 In 4th and 9th lines of prob. 4.5-2: Change “compressed” to “expanded”

P110 In last line of Prob. 4.5-5: Example 1 should be Problem 4.5-1

P117 In Problem 4.6-8, last sentence should be:

Apply equation 4.9 to a differential process and integrate to calculate the work delivered to a reversible work source. Corroborate by over-all energy and entropy conversation.

In last sentence of Prob. 4.6-9: Replace $T_1$ by $B/P_i$ & replace $B$ by $V_i$.

In Prob. 4.6-10, on last two lines of page: Replace $A$ by $B$.

P119 On last line of page: $(T_h-T_c)/T_c$ should be $(T_h-T_c)/T_h$

P122 On next-to-last line of page: 4.7-5 should be 4.7-4.

P127 In equation 4.28: The “square brackets” should be squared.

P150 In next-to-last line of Problem 5.3-8: $k$ should be $k_8$

In Problem 5.8-10: Strike out labels “a)” and “b)”. The last two lines should be: An analogous additivity does not hold for any other potential expressed in terms of its natural variables.

P167 Last line of Prob. 6.3-3 should be: $k$/mole-K. Carry calculations only to first order in $b/v$ and $a/RTv$.

P172 In third line of Problem 6.4-1: 10-1 Pa should be 10$^4$ Pa

In answer of Problem 6.4-1: c) $H_2$ and $H_2O$ depleted

d) $\epsilon = 3/5$, $x_{H_2O} = 5/16$ e) $N = 2/3$, $x_{H_2O} = .59$

P200 On lower left hand corner of middle square: Replace $T$ by $I$

P203 In 5th line of 3rd paragraph: change "energy" to "entropy"

P206 In equation 8.6: $x$ should be $\ge$

In 5th line of 2nd paragraph: change “also be negative” to “must be positive”.

At end of second paragraph: change (8.7) to (8.6).

P207 In second display equation of Prob. 8.1-1: change $\le$ to $\ge$

In Problem 8.1-2, second line should read: that $S$ is a concave function of $U$, $V$, and also of $N$. 
Eq’n 8.7 should be \( \frac{\partial^2 S}{\partial U^2} \nu, N = \frac{l}{T} \frac{\partial T}{\partial U} \nu, N = \frac{l}{N T - \gamma} \leq 0 \)

P208 In Prob. 8.2-1 (e): change \( U = D(S^4 V/N^2)^{1/3} \) to \( U = D(S^4 V^4/N^5)^{1/2} \)

P209 On 2nd line, add: Recall the “fluting condition” (equation 8.10).
In first eqn: mixed 2nd derivative in numerator should be squared.
In Problem 8.2-3, > should be ≥.

P210 In first line: 7.4-8 should be 3.9-5
Third line above Problems should be: so at constant volume than at constant pressure. And....

P214 Problem 8.4-1 should be 8.5-1.

P225 Starting with the second line of Table 9.1, the second column is in units of MPa rather than kPa.

P226 In heading of second line of Table: change kPa to MPa.

P243 In Problem 9.4-11, second line: change 2.8 m³ to 200 cm³
In third line of same problem, add additional sentence:
Use the van der Waals constants of oxygen.

P296 In Problem 13.2-3, first line: change “fraction” to “fractions”
Second line of same problem should read:
Pa, if the vessel initially had contained...
In Problem 13.2-7, second line: change 3278 to 3200
In last line of same problem: change 8.25 Pa to 0.0429 MPa

P332 In 3rd line from bottom: ...of two non-interacting subsystems of...

P340 In Fig 15.4: replace (=T) by (=\(\Omega\))

P354 In eq’ns 16.23 and 16.24. replace plus sign by minus sign

P370 In first two eqns on page: \( \pi \) should be \( \pi^2 \)

P390 On next-to-last line of page: Sign in first parenthesis in numerator, and in denominator, should be minus.

P391 In third line: Fig. 15.3 should be Fig. 15.4

Pp 429-430 In Prob. 19.3-8: In sequence, change ”mean square” to ”rms”, 10⁻³ to 10⁻⁶, ”mean square” to ”rms”, 2x10⁻¹⁶ to 10⁻¹⁸, 2/3 cm³ to 1 mm³, and ”equal to” to ”smaller than”.

P449 Section 20-4 should be 20-3.

P456 In display equation at bottom of page:
Insert a 2 in denominator of last parenthesis: (-\(X^2/2o^2\))

P458 In 9th line from bottom: ”qualitative” should be ”quantitative”

P492 Under “Steam tables;”: change page references as follows:
saturated, 224   superheated, 175, 176