**Essentials of Industrial Hygiene – Errata/Comments for the 2nd Edition**

**Ch. 6 – Gases and Vapors**

Pg. 134 - Review Question 6 – replace ethyl alcohol with acrylonitrile monomer

Pg. 134 – Review Question 7 – “fraction is set” not defined in the text section, pg. 122. Ignore question.

**Ch. 7 – Aerosols**

Pg. 142 – 4mm 🡪4 μm

Pg. 147 – Example problem, V = Q x T not Q / T

**Ch. 8 – Ventilation**

Pg. 164 – “Because air in a duct is generally considered incompressible…” We treat volumetric flow as incompressible, but it is a gas and therefore compressible. However, we can do this because the flow is constant at steady state.

Pg. 172 – First Example Problem – Second line of the solution should have the radius as 0.5 not 0.25. Las line, the answer for Q is 2,328.5 cfm not 1,578 (sig figs are arbitrary as the problem only has 1).

Pg. 186 – Review Questions –Q11 – The text does not explain why the area of the flanged slot hood is not needed, only the length. Slot hoods have a maximum aspect ratio of 0.2 W/L, therefore this must be assumed for this question.

Pg. 187 – Review Questions – Q13 – The term “r” in V=1,096√VP/r is misleading as “r” is used as radius elsewhere in the chapter and “r” for this equation is not defined as rho (ρ) for air density in lbs/ft^3.

Pg. 187 – Review Questions – Q14 – The correct answer 80-120 fpm comes from ANSI/AIHA Z9.5. However, this is not referenced in the chapter.

Pg. 188 – Review Questions-Q25 –Add, Assume perfect mixing Kmix=1.0

Pg. 188 – Review Questions-Q27 – Answer is not discussed in the text, ignore this question.

**Ch. 9 – Respiratory Protection**

Pg. 206 – Calculating the MUC, the equation MUC = APF x OEL should be used.

**Ch. 11 – Noise**

Pg. 241 – The text an equation mix terms of Sound Power Level (SWL) in watts and Intensity in w/m^2. Also the “where” statements are in pressure which is inappropriate. Further explanation will be provided in class.

Pg. 242 – The term “oval window” is used twice, but no mention of the ear drum/tympanic membrane is made. The term stereo cilia is missing.

Pg. 244 – Indicates that hearing loss in the upper frequencies is easier (more common?) than in the middle frequencies, which is not the case and contrary to the statement in the previous paragraph.

Pg. 255 – Sample Problems – Q2 – Question is in terms of watts, equation on page 241 is in terms of w/m^2 – while the equation works, it is unclear to students. Additionally, the question states 280 watts per channel, but does not define how many channels – and from there distance, enclosure, etc.

Pg. 255 – Sample Problems – Q3 – *Ibid*.

Pg. 255 – Sample Problems – Q5 – The answer is given at the bottom of the table. Additionally, the answer is imprecise. The answer for the HCA problem is given to 4 decimal places, but the individual lines are given to 1-3 decimals. Correct answer to the given precision is 1.0625 not 1.0575.

Pg. 255 – Sample Problems – Q9 – Same issues as Q2 – Additionally “receiver” I assume is a stereo receiver/amplifier which is not intuitive for younger generations.

Pg. 255 – Sample Problems – Q10 – Question is in N/m^2, text uses Pascals, the conversion is not described in the text. Same issue with “receiver” as Q9.

Pg. 255 – Sample Problems – Q11 –Appears to be derived from the NIOSH (not ACGIH?) recommended formula for A-weighted measurement which is (NRR-7)x0.5 or (NRR-7)/2. However, this procedure is not described in the text. NRR is not in the index.

Pg. 255 – Sample Problems – Q15 – Sensorineural hearing loss is not described in the text. Irreversibility is discussed on Pg. 244.

Pg. 255 – Sample Problems – Q16 – The terms “average young person” does not have context within the text, the term “unimpaired hearing” is sufficient.

**Ch. 11 – Radiation**

Pg. 284 – In the formula for the near field/far field boundary, the term for wavelength is given as lowercase L rather than lambda.

Pg. 284/285 – In the examples, the units for the speed of light are not defined (m/s)

Pg. 288 – Sample Problems – Q6 – While the answer must be gleaned from a vague description in the sentence that spans pages 264-265.

Pg. 288 – Sample Problems – Q9 – The definition of half-life is not explicitly provided in the text. It is also absent from the glossary.

**Ch. 13 – Thermal Stressors**

In this chapter temperature is abbreviated with the lowercase t, whereas upper case T is used in Ch. 7 & 12. (Note, upper case T is used for time in Ch. 11 and should be lower case in universal convention)

Throughout the chapter tr should be Tr tsk should be Tsk and ta should be Ta

The symbol used for water vapor pressure of ambient air is Pa which is the symbol for Pascals, which is quite confusing given that vapor pressure is measured in units of pressure – and the example on page 298 is in kPa. Similarly, vapor pressure skin Psk should be revised.

Pg. 295 – 1 kcal/hr = 1.163 W not 1.162

Pg. 296 – Clothed vs Un-clothed worker is not well defined. Clothed can be inferred from (2) on pg 296 to be long sleeve shirt and trousers.

Pr. 296 – Table 13-1 is not well described in the text and its use is only inferred in the second sample problem on Pg. 299.

Pg. 298 – In the general equations at the top of the page the 0.6 is not printed as an exponent as it is in the 35C equation.

Pg. 298 – Evaporative Heat Loss – Emax is given in L/h in the text, but W/m^2 in the formula, and kcal/hr is a more common convention, with no example problem or explanation as how students should proceed. The conversion of the heat of vaporization of water of 2,260 kJ/L should be provided as well as an example that uses the standard worker surface area of 1.8 m^2.

Pg. 304-305 – The text provides no instruction on how to use the Psychrometric chart in Fig. 13-6. See in-class description or examples on YouTube.

Pg. 316 – Review Questions – Q2 –Assume this is the “standard worker” from page 296

Pg. 316 – Review Questions – Q3 – Same comment as Q2.

Pg. 316 – Review Questions – Q4 – Same comment as Q2. Add “pressure” after water vapor.

Pg. 317 – Review Questions – Q7 – The question asks for the answer in F, but the formula for conversion of C to F is not provided in the book except in Q5 where it is not used and should have the 1 deleted before C.

Pg. 317 – Review Questions – Q8 – The formula for integrated Time Weighted Average does not appear in the text. See lecture notes.

Pg. 317 – Review Questions – Q9 – The concept of “Corrected Effective Temperature” is not in the index and from my reading, does not appear in the text. Skip problem.

**Ch. 14 – Ergonomics**

Pg. 322 – Delete “Ergonomic” at the beginning of the first sentence in the second paragraph of the page.

**Ch. 15 Biological Hazards**

Pg. 351 – Ingestion is not listed as a Route of Exposure (gastrointestinal tract is later discussed).