ERRATA
March 30, 2021

Constants c_1 and c_2 on page 89 should be

c_1 = 0.3018
c_2 = - 0.3283

Consequently, on page 113, the corresponding formula should be corrected as

$$k' = 0.3018 \cdot \left(\frac{TIT}{TIT_{ref}}\right)^{-0.3283}$$

On page 240, Eq. (10.37) should be

$$n = \frac{4\pi r_m}{0.8 \cdot b}(cos - 65.4)^2 \frac{1.7}{0.55} = 8.4135 \frac{r_m}{b}$$

On page 138, bottom of the page, itemized list, item 3, should be corrected as shown below:

3. Mechanical losses (e.g., friction losses in the bearings) are accounted for by a mechanical efficiency term. Compression work ~~multiplied~~ divided by mechanical efficiency gives us shaft work.

In conjunction with this correction, on page 139, Equations (7.1) and (7.3) should be as shown below:

Equation (7.1):

$$w_{mot} = \frac{1}{\eta_{mot}\eta_{mech}}[h_2(T_2) - h_1(T_1)]$$

Equation (7.3):

$$w_{mot} = \frac{1}{\eta_{mot}\eta_{mech}} \frac{[h_{2s}(T_{2s}) - h_1(T_1)]}{\eta_{c,s}}$$

On page 81-82, in the itemized list, the term “irreversibility” is used erroneously. What is meant was “imperfection”. Thus, in that itemized list (comprising 5 items), including the paragraphs between the individual items, the term “irreversibility” should be replaced by “imperfection”. For example,

2. The triangular area {1–4–4C–1} is the cycle heat rejection ~~irreversibility~~ imperfection and is quantitatively equal to the rectangular area given by

This is not just semantics. In particular, <u>both</u> processes, i.e.,

- Carnot cycle heat rejection {4C-1}
- Ideal, air-standard Brayton cycle heat rejection {4-1}

are **reversible** processes. The difference between the two is the difference between the "perfect" (for the lack of a better term) **isothermal** heat rejection {4C-1} and the "imperfect" **isobaric** heat rejection {4-1}.

The said imperfection manifests itself as "lost work".

Correction to **Figure 22.3** – see below. Several numbers were incorrect (e.g., turbine inlet temperature should have been 1,150°C.)

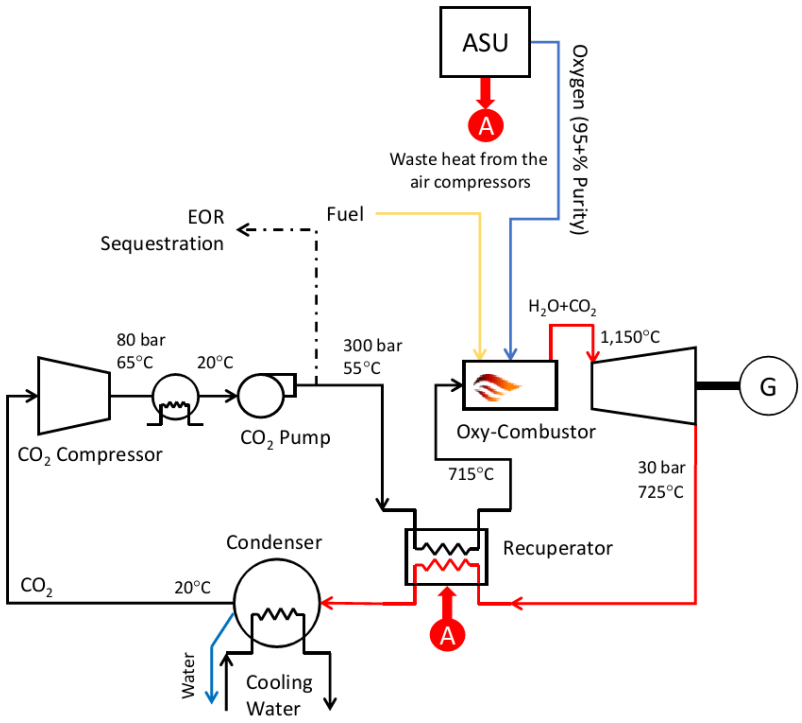

Figure 22.3 Semi-closed oxy-combustion. Allam Cycle. EOR: enhanced oil recovery.