“Life is what happens to you when you’re busy making other plans” – John Lennon

NAME:

LESSON 18: MOVIE DAY!
Friday, October 07, 2016

TODAY
Watch the movies, answer the following questions and hand this sheet in at the end of class. This material may be on an exam.

The Single Storey Building
1. **TRUE or FALSE.** In high-snow-drift parts of the roof, it is more economical to use a greater number of same-sized joists, rather than fewer joists of different types because of the “assembly-line” efficiency of mass-produced same-sized joists.
2. **TRUE or FALSE.** A Gerber girder system has the moment diagram of an indeterminate multi-span beam, yet is determinate because internal pins are placed at the location where zero moment would have resulted, anyway. Brilliant!
3. **TRUE or FALSE.** A girt is a horizontal wind beam that transfers wind to the columns.
4. **TRUE or FALSE.** Hollow Square Tubes are smart column choices for exterior columns because they are subjected to bending moment, as well as in axial load.
5. **TRUE or FALSE.** Wide flanges are smart column choices for interior columns because they are only subjected to axial load (no bending moment).
6. **TRUE or FALSE.** A roof diaphragm often utilizes bracing so that the exterior wind can be transferred to the vertical bracing which are only present in the exterior walls.

Steel Production
7. **TRUE or FALSE.** The process of recycling steel leads to a slight degradation of its mechanical properties. Hence, recycled steel tends to be somewhat lower strength than new steel, made from raw ore.
8. **TRUE or FALSE.** The process of recycling steel is accomplished by melting scrap material with an electric arc furnace (essentially, a huge welding rod).

Steel Detailing and Fabrication
9. **TRUE or FALSE.** Typical tolerances for structural steel fabrication of holes and cuts are $\frac{1}{4}''$; i.e., hole locations, etc. are specified to the nearest $\frac{1}{4}''$
10. **TRUE or FALSE.** The Detailer is responsible for developing the shop drawings that specify the location and dimensions of all holes and parts within a steel structure.
11. **TRUE or FALSE.** The Engineer of Record is responsible for developing the shop drawings that specify the location and dimensions of all holes and parts within a steel structure.
12. **TRUE or FALSE.** The Engineer of Record is responsible for approving the shop drawings that tell all of the location and dimensions of all holes and parts within a steel structure.
13. **TRUE or FALSE.** Copes and other square holes are made by “burning” or “flame-cutting” with a torch.
14. **TRUE or FALSE.** In the video, large shapes (e.g., wide-flanges) were sawed to length, while small shapes (e.g., angles) were sheared to length.
15. **TRUE or FALSE.** In the video, bolt holes in large shapes (e.g., wide-flanges) were punched, while bolt holes in small shapes (e.g., angles) were drilled.

The Erection of Steel
16. **TRUE or FALSE.** Temporary cables are used to stabilize a steel structure while under construction because only a few bolts are placed in each member, at first and final bolting and welding only takes place after much of the structure has been erected.

The Behavior of Steel Columns
17. **TRUE or FALSE.** Residual stresses (from cooling during manufacturing) are the primary explanation for why column strength is not simply determined by the lesser of: the “squash load” (yielding) and the Euler buckling load. This explains the AISC $\left(0.658 \frac{F_y}{F_e}\right) F_y$ equation.

HOMEWORK: NONE.