Practical Example

QAP Manufacturing is a company that produces high quality aluminum parts for the automotive industry. The company stores oil based paint in 55 gallon drums in the storage room. Flammable solvents are also stored in the storage room. The solvents contain up to 5% of Benzene.

The paint and the solvents are moved with a forklift truck to the conventional spray booth. Conventional air spray guns are the standard spray equipment used to apply coatings in the automotive refinishing industry. The employees are using this type of spray gun. A low volume between 2 to 10 cubic feet per meter (cfm) of air is pressurized and forced through a nozzle; the paint is atomized in the air at the nozzle throat. The spray guns are operated with air pressures of 30 to 90 pounds per square inch (psi) at a fluid pressure of 10 to 20 psi. The air is supplied by air compressors during spraying operations. There are two basic types of conventional spray guns: syphon-feed and gravity feed. The company is using syphon-feed guns, where the paint cup is attached below the spray gun, and the rapid flow of air through the gun creates a vacuum that siphons the paint out of the cup.

The coating operators are using only N95 respirators and safety glasses. However, the glasses are “coated” with paint after just 10 min. of use. The spray paint operators are complaining that they can’t see very well the parts and the Quality Control (QC) manager determined that only 70% of the parts are coated properly. The following diagram presents the sequence of the process.
Figure 7.1E – Simple process diagram

A simplified version of the PHA is presented below.

Figure 7.2E

Students task: Use Ch 7 PHA RA Assignment Student form to assign Risk Factor (Severity x Probability) to the potential effects from the hazards. Review Current State (CS) process, PHA simple form (Fig. 7.2E/ HA Form 2a Excel file) and go to Risk Assessment Matrix (RAM) to assign Severity and Probability values. The Severity (S) and Probability (P) descriptions are provided in RAM worksheet. Use the drop down menu to select S and P numerical values based on the descriptions. Risk Factor (SxP) will be automatically calculated for you and transferred to PHA w/RF form. Submit the form to the instructor.