Diamondback Ergonomics Overhaul

Overview
The IE 480 team was tasked with proposing a solution for several worker-related problems that are causing work-related injuries among the employees of Diamondback Truck Covers. The observed problems involve body posture throughout a worker’s job. Certain body positions can cause an unhealthy amount of stress on certain body parts. Eventually, these motions will lead to more permanent consequences. The IE 480 team has focused on 3 specific stations that currently have issues: the shipping station, the skid-building station, and the plasma cutting station.

Objectives
There are 3 specific stations that were highlighted issues: the shipping station, the skid-building station, and the plasma cutting station. Diamondback has issued a spending budget of $15,000 to be utilized per station. The team planned to analyze the current state before recommending the necessary improvements and detailing corresponding standard operating procedures for each solution.

Approach
- The team gathered observation data of the work stations and physical processes that each worker goes through at the pertinent station.
- They next analyzed the data with respect to CTD risk analysis as well as MTM and MOST studies to highlight the major points of friction.
- The team combined the shipping and skid building station to solve two problems with one solution.
- Using the known harmful motions of the operators, the team developed solutions to mitigate the negative health impacts such as excessive bending and overhead loading.
- The team revisited the work site to test potential solutions in a more practical setting.
- Team then created CAD drawings to outline the proposed solutions.
- Finally, the team presented the solutions to the company along with pricing and alternative options.

Outcomes
- Team created solutions for given problem well under budget.
- Solution greatly reduces possibility of workers' compensation claims for all 3 stations (costs in excess of $50,000).
- Quality of products increased due to decreased risky maneuvering.
- Quantifiable time improvements to be assessed upon implementation at new facility.