Fall Prevention for Material Loading – Team B

Overview
The purpose of this project is to implement a portable fall prevention system for ArcelorMittal employees securing steel rails on flatbed rail cars. The task requires the employees to work on a surface higher than 48 inches above the ground, therefore requiring fall protection according to OSHA standards. Strict horizontal and vertical space constraints exist within the rail car loading areas which pose several challenges associated with selecting a system.

Objectives
The objective of this project is to select a fall prevention system for this work sequence which will satisfy federal safety regulations while allowing the workers to effectively perform their jobs.

Approach
- Research all possible pre-existing fall prevention solutions
- Eliminate all solutions which do not conform to the horizontal and vertical space constraints
- Contact the vendors of the solutions which were not eliminated and get information regarding the systems of interest
- Determine the criteria that will be used for the Analytical Hierarchy Process; the process that will be used to determine the best solution
- Create 1-5 ranking scales for each of the criteria, which will be used to evaluate the possible solutions
- Select the solution that received the best score after the Analytical Hierarchy Process has been completed
- Contact the vendor of this system and discuss the logistics of implementing the system
- Determine whether the system will need to be custom engineered and if so, create a SolidWorks model of the system
- Perform a cost-benefit analysis of implementing the solution

Outcomes
- The Tri-Arc Trailer Access Platform has been selected as the best solution and will be able to be custom engineered to work for the situation at hand
- The cost of the two systems will be recouped in the prevention of approximately 4 recordable accidents or 3 OSHA citations
- The vendor has been put in contact with the sponsor and they are planning a site visit at their earliest convenience
- A bid package has been prepared for the sales representative, which contains work environment dimensions as well as a SolidWorks model of a possible engineering solution