ME1028 - Design Project (06-1)

Presentation: Monday, December 5th and 7th, 2005

Report due: Friday, December 9th, 2005

The figure below depicts a forklift truck negotiating a 15° ramp to drive onto a 4–ft–high loading platform. The truck weighs 5,000 lb and has a 42–in wheelbase. Design two (one for each side) 1–ft wide ramps to have a safety factor of 3 and no more than 1–in deflection in the worst case of loading as the truck travels up them. Minimize the weight of the ramps by using a sensible cross–sectional geometry. Choose an appropriate steel or aluminum alloy.