Estimating Equipment Costs: Concrete Pumps and Cranes

Week 4
Construction Estimation, Planning and Control

Equipments

- RS Means: Equipment Rental 01590
- Concrete pumps
- Cranes
- Earth moving equipment
  - Scraper-dozer combination
  - Truck-excavator/shovel combination

Concrete Pumps

- Classified according to the length of their boom in feet (28 – 55 m)
- Output rate of concrete in CY/hr
  - Output: 75% of stated max. value (set up, mobilization)
- Rented by the hour
- Strict control of concrete mix design
  - Reduction in effective pipe diameter reduces productivity

Reference: http://www.reedpumps.com/

Cranes

- Mobile cranes and Tower cranes
- Various boom sizes
- While selecting a crane:
  - Lifting capacity
  - Boom size
- Crane supports moment created by weight lifted: different lifting capacities for different radius!
- Table gives 85% of the maximum theoretical capacity
Earthmoving Concepts

- Rolling resistance
- Grade resistance
- Gross vehicular weight
- Pull ( usable ) > Pull ( Required )
- Cycle Time
  - Hauling time (loaded) + returning time (empty)
  - Function of Pull and Speed of hauling.