

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.