



# ARC 226 Construction Scheduling

Chapter 12

Creating Bar Charts and Tabular Reports From  
Network Logic Diagrams



# Introduction

- Network logic diagram forces detailed analysis of the project
  - May often be difficult to read and understand
- Use a bar chart or tabular report built from the CPM diagram
  - Easier to read and understand
    - Can be designed for the person receiving it
      - Owner, subs, crews can all receive different schedules

# Bar Charts for the PM

- Activities will be sorted by their ES dates
  - Activities with the same ES dates will then be sorted by the EF dates, shortest first
- Float shown will be shared
- Activities can also be sorted by total float
  - ES is still the first sort criteria
  - The most critical activities would be listed first
  - Activities start in the morning, end at the end of the day
- The bar chart is displaying the logic and information from the network diagram
  - Give a more accurate representation than developing the bar chart on its own



# Bar Charts for the Subs

- The PM for the GC may not want to distribute bar charts that show float
  - The sub will want to “own” the float, when in fact it should be shared
- Construct a bar chart that shows activities, but not float
  - Activities are sorted by ES, then EF
  - The sub must focus on the ES and EF dates to finish on schedule



# Bar Charts for the Owner

- Activities may start later than the ES and not delay the project
  - The activity must start within its allotted float
- An owner may look at a PM or sub bar chart and only consider the ES dates
- An owner can be given a bar chart based on the LS and LF dates
  - Eliminate the appearance of starting late
  - Do not show float
- The owner will not be concerned if some activities use float
  - Activities that don't use float will appear to start early



# Updated Bar Charts

- The bar charts should be updated to show how the activities are progressing
  - Show actual start and finish vs planned
- Provide the owner with a chart showing late dates
  - The update should show some activities ahead of schedule
- If the owner is familiar with CPM scheduling the owner may request specific reports
- The sub's chart will show some activities to be behind
  - If they have used any float



# Tabular Reports

- Tabular reports can be used to display network diagram information
- Use rows and columns without any graphic representations
- Categories
  - Activity, duration, TF, ES, EF, LS, LF



# PM's Tabular Reports

- Similar philosophy to bar charts
- Include activity, duration, TF, ES, EF, LS, LF
- Data is supplied from the network logic diagram
  - The tabular report does not show different types of float
    - Shared float not readily obvious



# Sub's Tabular Report

- Shows the activity duration, ES and EF dates
  - Listed as Start Date and Finish Date
  - Does not show float
    - The sub may consider the float theirs, even if it is actually shared
- Usually data will only be shown that is directly relevant to the sub
  - Additional information can be included in a notes column



# Owner's Tabular Report

- Focuses on the late dates
  - Items that do not use float appear to finish early
  - Start and finish dates are the LS and LF dates
- Does not show float
- Items shown in chronological order
- The tabular format is simple and easy to understand
  - Avoids misinterpretations
  - Spreadsheet format
  - Works well as an email attachment



# Linear Bar Charts

- Works well for repetitive activities
- Based on the network diagram
- Not computer based
- Based on the project calendar
  - The critical path is shown first
  - Duration is based on the length of the bar
  - Float is shown by multiple horizontal lines
    - Shared float is indicated
- Can be input into an Excel format



# Computer Generated Bar Charts

- Bar charts developed by computer
- Based on the network logic diagram
- Gives the activity, duration, ES, EF, LS, LF, TF
  - The management team decides what to show
- Critical activities can be highlighted
- Current day shown by a vertical line
- See pg 142-144



# Computer Generated Tabular Reports

- Generated by computer from the network logic diagram
- The PM would want ES, EF, LS, LF, TF, Duration
  - Management team decides what info to show for the owner's or sub's reports
  - See pg 144-146



# Conclusion

- Standard and linear bar charts make the network diagram easier to understand and communicate
- Data can be tailored to the party receiving the schedule
- Easy to input and make changes/updates