

In summary, the basic steps necessary to produce a resource-leveled project schedule include the following:

1. Create a project activity network diagram (see Figure 12.10).
2. From this diagram, create a table showing the resources required for each activity, the activity durations, and the total float available (see Table 12.4).
3. Develop a time-phased resource-loading table that shows the resources required to complete each activity, the activity early starts, and the late finish times (Figure 12.13).
4. Identify any resource conflicts and begin to “smooth” the loading table using one or more of the heuristics for prioritizing resource assignment across activities (Figure 12.15).
5. Repeat step 4 as often as necessary to eliminate the source of resource conflicts. Use your judgment to interpret and improve the loading features of the table. Consider alternative means to minimize schedule slippage; for example, use overtime during peak periods.

12.4 RESOURCE-LOADING CHARTS

Another way to create a visual diagram of the resource management problem is to employ resource-loading charts. **Resource-loading charts** are used to display the amount of resources required as a function of time on a graph. Typically, each activity’s resource requirements are represented as a block (resource requirement over time) in the context of the project baseline schedule. Resource-loading charts have the advantage of offering an immediate visual reference point as we attempt to lay out the resources needed to support our project as well as smooth resource requirements over the project’s life.

Here is an example to illustrate how resource-loading charts operate. Suppose our resource profile indicated a number of “highs” and “lows” across the project; that is, although the resource limit is set at eight hourly resource units per day, on a number of days our actual resources employed are far less than the total available. The simplified project network is shown in Figure 12.17 and summarized in Table 12.6, and the corresponding resource-loading chart is shown in Figure 12.18. The network lists the early start and finish dates for each activity, as well as the resources required for each task for each day of work.

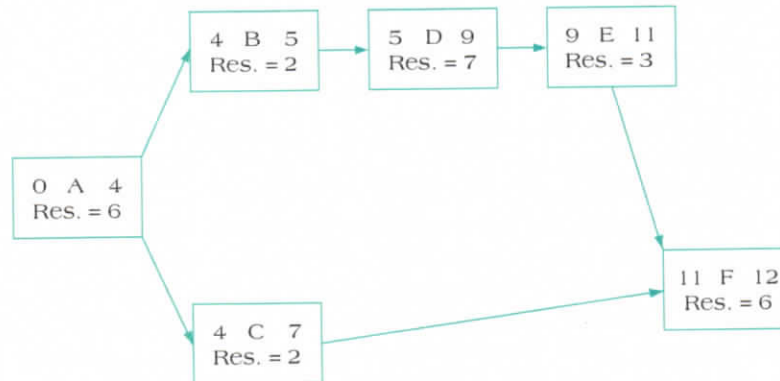


FIGURE 12.17 Sample Project Network

TABLE 12.6 Resource Staffing (Hourly Units) Required for Each Activity

Activity	Resource	Duration	Early Start	Slack	Late Finish
A	6	4	0	0	4
B	2	1	4	0	5
C	2	3	4	4	11
D	7	4	5	0	9
E	3	2	9	0	11
F	6	1	11	0	12