

Total Slack	Activity	January											
		1	2	3	4	5	6	6	6	6	6	7	8
0	A	6	6	6	6	6							
1	B												
0	C												
0	D												
0	E												
0	F												
2	G												
	H												
	I												
	J												
	K												
Total		1	2	3	4	5	6	6	6	6	6	7	8

Total Slack	Activity	February											
		9	10	11	12	13	14	15	16	17	18	19	20
0	A												
0	B												
0	C												
0	D												
0	E												
0	F												
0	G												
0	H												
-2	I												
-3	J												
-3	K												
Total		9	10	11	12	13	14	15	16	17	18	19	20

FIGURE 12.16 Resource-Loading Table with Lowered Resource Constraints
 I = Original activity early start time

need, at times, to make sacrifices to the initial baseline schedule in order to maintain the nonvio-

lation of the resource-loading limit.
 Figure 12.16 pictures this resource-leveling example given in Table 12.4 with January and February stacked. As the steps in the table indicate, the determination of total project delay is not evident until all predecessor tasks have been loaded, resources leveled at the point each new activity is added to the table, and the overall project baseline schedule examined. Interestingly, note from this example that the project's schedule did not show a delay through the inclusion of 8 of the 11 activities (through activity H). However, once activity H was included in the resource table, it was necessary to delay the start of activity J in order to account for the project resource constraint. As a result, the project's baseline schedule was delayed through a combination of loss of project slack and the need to reassess the activity network in light of resource constraints. The overall effect of this iterative process was to delay the completion of the project by three days.

The extended example in this section illustrates one of the more difficult challenges that project managers face: the need to balance concern for resources with concern for schedule. In conforming to the new, restricted resource budget, which allows us to spend only up to eight resource units per day, the alternatives often revolve around making reasoned schedule trade-offs to account for limited resources. The project's basic schedule dictates that any changes to the availability of sufficient resources to support the activity network are going to involve lengthening the project's duration. Part of the reason for this circumstance, of course, lies in the fact that this example included a simplified project schedule with very little slack built into any of the project activities. As a result, major alterations to the project's resource base were bound to adversely affect the overall schedule.