

Introduction to Transportation Systems

PART II:

FREIGHT

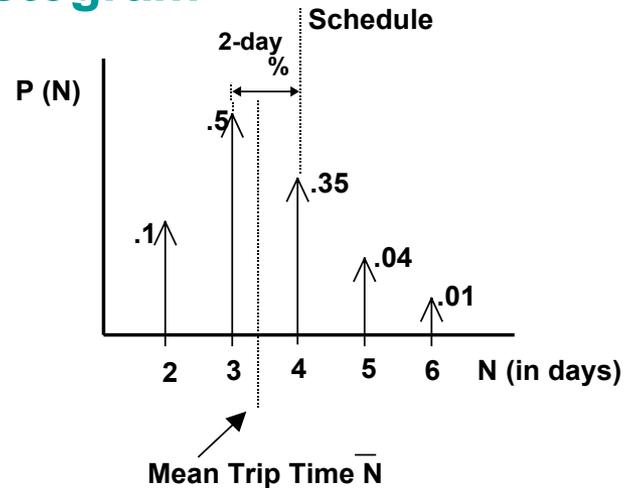
TRANSPORTATION

Chapter 18:

Measuring Origin-Destination Service and Other Rail Issues

Measuring Origin-Destination Service

Trip Time Histogram



Suppose we are using a “two-day” percent. Take a piece of paper that is two days wide; you slide it back and forth along the histogram until you find the pair of adjacent days that gives you the largest probability, as in Figure 18.1. So a particular origin-destination pair may have a two-day percent of 85%, which means that the percentage of travel time in the best contiguous two days, in this case three and four days, was 85%. In the case of a high-quality intermodal service, the two-day percent might well be 100%.

Figure 18.1

Schedule Adherence

- ◆ Schedule adherence is a measure that can be easily manipulated. One can relax the schedule and apparently perform better in the sense that a larger number of cars are now on schedule. But nothing has really changed.
- ◆ This is a chronic problem in the airline passenger industry. When the FAA publishes data about schedule adherence, a not-unreasonable response on the part of the airlines is to change their schedules -- making scheduled trip times longer. The operation may not have changed at all. But performance looks better on a schedule adherence basis, because the schedule is easier to adhere to.

Empty Freight Car Distribution

Empty Moves

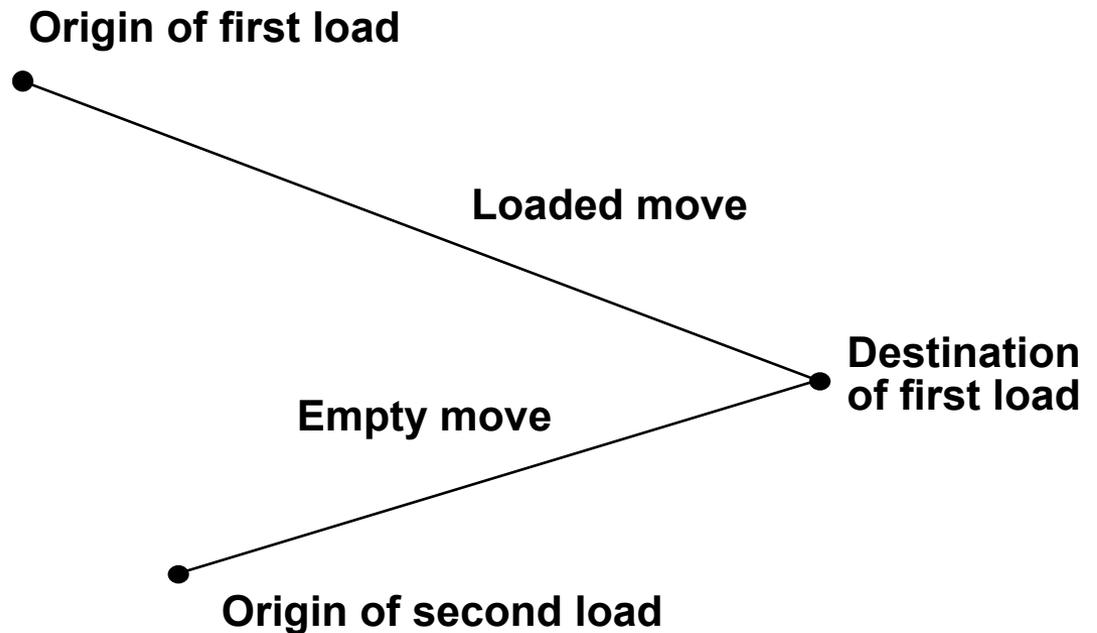
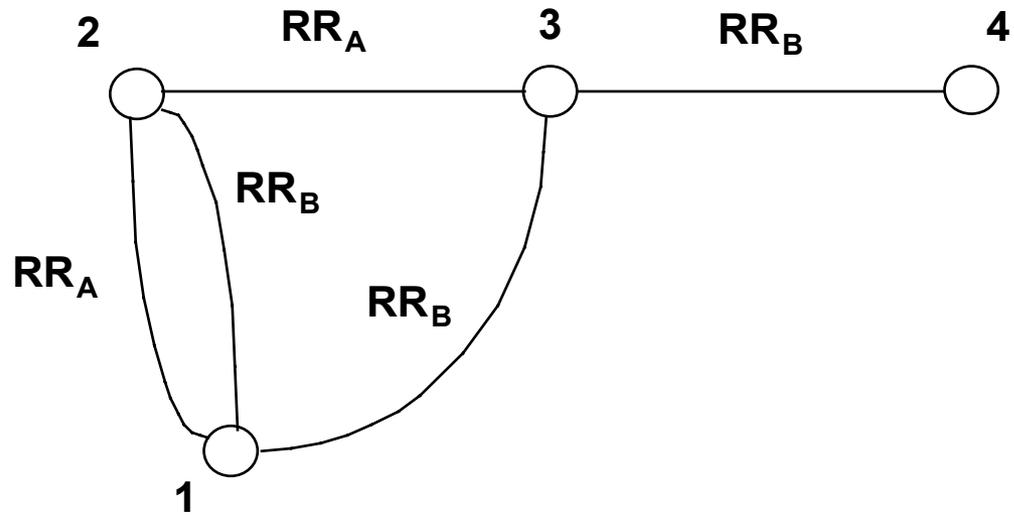


Figure 18.2

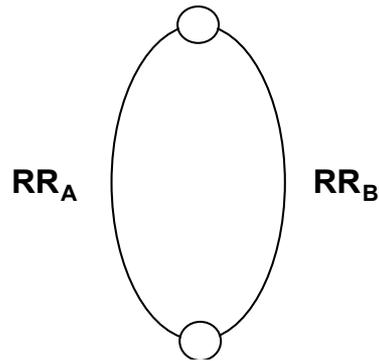
Competition and Cooperation



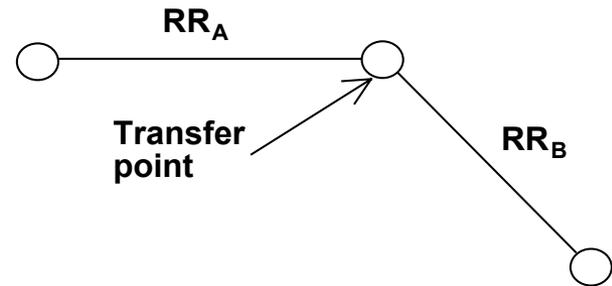
RR_A and RR_B *cooperate* on 2 - 4 traffic and *compete* on 1 - 2 traffic.

Figure 18.4

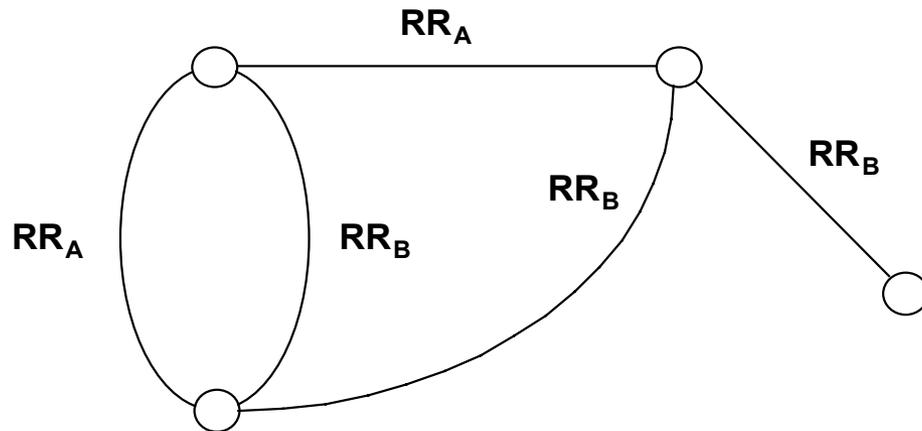
Types of Mergers



Parallel merger



End-to-end merger



Combined parallel/end-to-end merger

Figure 18.5

General Merchandise Service

Rail Network: Merchandise Service

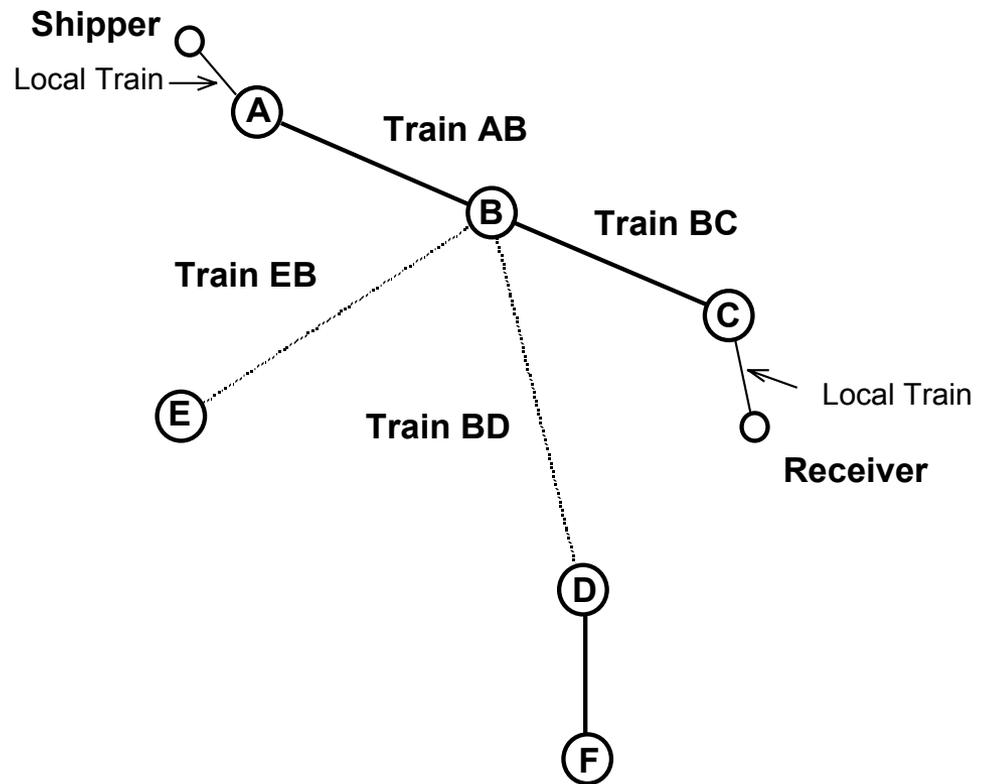


Figure 18.6

Types of Service

- ◆ Intermodal Service
- ◆ Bulk Commodities

Final Comments on Rail

- ◆ Using different levels-of-service as a way of managing capacity is an important transportation concept, and is applicable to railroads.
- ◆ There are many different kinds of capacities to be allocated.

There is line-haul capacity; a track can accommodate only so many trains a day; there is terminal capacity, as one switches trains through those facilities; capacity is also affected by the number of freight cars in our inventory, the amount of power on the system and labor and management resources, among other items.

These are all ideas that are applicable to other nodes.