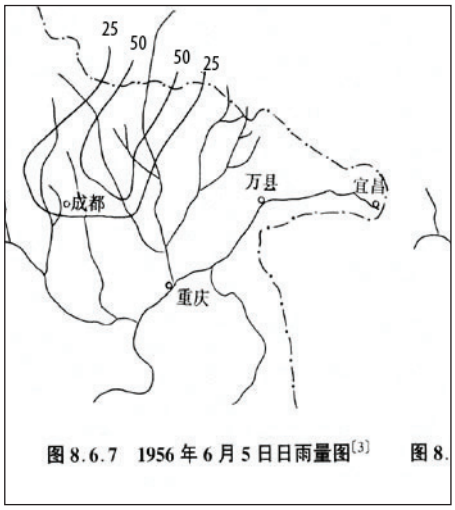

Figure 7.10. Daily rainfall map on 13 July 1981

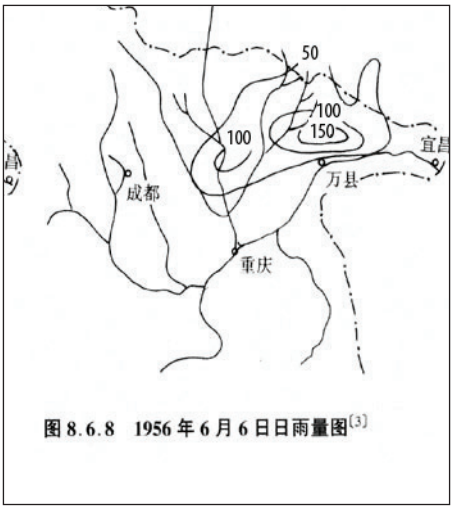

Figure 7.11. Daily rainfall map on 15 July 1982

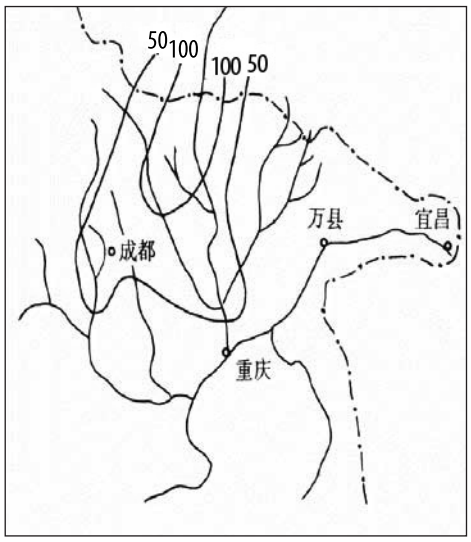

Figure 7.12. Daily rainfall map on 5 June 1956

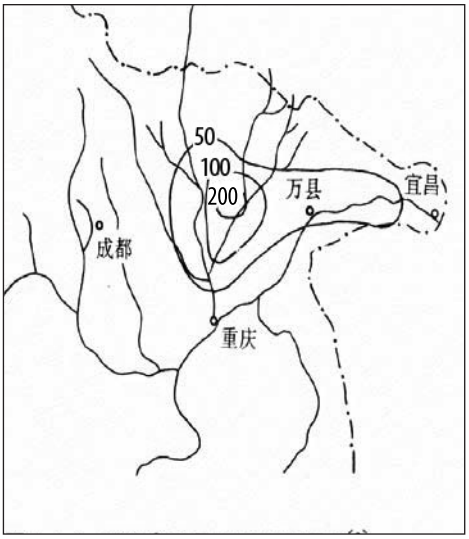

Figure 7.13. Daily rainfall map on 6 June 1956

7.6.3.1 Characteristics of runoff yield

The rainfall intensity and volume of a PMP storm are large and concentrated compared with average storms. In terms of runoff yield, the runoff coefficient is extraordinarily large and tends to exceed the observed maximum, especially in drought regions. Therefore, the importance of the runoff yield calculation in PMF estimation is much smaller than in hydrological forecasting. Since the PMP rainfall is far beyond the basin's maximum initial loss, the error caused by the loss-deduction calculation is a tiny percentage of the value of PMP. As a result, the calculation error has relatively minor effect on the estimation of the PMF, even if simple methods are used to estimate the loss.

7.6.3.2 Characteristics of flow concentration

Observed data indicate that, in cases of large floods, the discharge velocity tends to be constant, or close to constant, in the high-water-level part of the stage-discharge curve of the outlet section in the watershed. It can be shown theoretically that when the discharge velocity (V) for high stage is constant, $dV/dA = 0$, where A is the area of the section. This infers that the discharge velocity is equal to the wave velocity and the time of concentration is a constant. As a result, under PMF conditions, simple addition of confluences can be used to calculate the discharge of PMF. The simplest method is through the use of Sherman's unit hydrograph to derive the flow concentration in the watershed and the Muskingum method for channels.