Table 5.2. Sample computation of PMP precipitation estimates for the 7 542 km² Clinch River basin above Norris Dam, Tennessee. Centre of basin is 36°42′ N 82°54′ W.

Line	*Item and source*	*Duration (hours)*					
		6	*12*	*18*	*24*	*48*	*72*
1	Unadjusted PMP (Figure 5.22; mm)	259	333	386	432	508	561
2	Adjustment for location (Figure 5.23)	0.94	0.94	0.94	0.94	0.94	0.94
3	Basin PMP, unadjusted for terrain	243	313	363	406	478	527
4	Compute terrain stimulation factor (TSF)	Basin is 62% intermediate, 12% adjustment from Figure 5.28 Basin is 35% "rough". 5% adjustment from Figure 5.28 Total adjustment = 12% + 5% = 17% From Figure 5.29, adjustment for 7 542 km² basin = 0.25 TSF = 0.25 × 0.17 = 0.0425					
5	Compute broad-scale orographic factor (BOF) from Figure 5.14 (if required)	This step is not required in this example					
6	Total adjustment factor (TAF) = TSF + BOF + 1.00 (rounded to nearest 0.05)	1.05	1.05	1.05	1.05	1.05	1.04
7	PMP = TAF × basin PMP (smoothed)	255	328	381	426	502	553

Figure 5.30 to obtain the terrain stimulation factor (TSF). If this basin had been located in the mountainous east, the TSF would need to be further modified for sheltering and optimum wind direction effects.

(e) For basins in the mountainous east (not applicable in the example in Table 5.2), Figure 5.14 is used to obtain the percentages of primary upslopes, secondary upslopes and sheltered areas within the basin. These percentages are multiplied by the respective factors 0.55, 0.10 and 0.05. The results are added and rounded to the nearest 0.05 to obtain the broad-scale orographic factor (BOF).

(f) The numbers obtained in (d) and (e) are combined plus 1.00 to obtain the total adjustment factor (TAF). This factor is rounded to the nearest 0.05. The TAF equals the TSF in the non-mountainous east.

TAF = TSF + BOF +1.00

(g) The TAF from (f) is multiplied by the values from (c). A depth–duration diagram is plotted and a smooth curve is fitted for final results. The results are the basin-averaged PMP. This establishes the magnitude of PMP only, and in highly orographic regions – for example, the mountainous east – the pattern of areal distribution is also modified by topographic effects. The resulting isohyetal pattern must be planimetered to obtain the volume of the PMP within the basin.

Note: The procedure of determining the areal distribution of the basin averaged PMP is based on the generalized procedures outlined in the applications manual (Hansen and others, 1982) discussed in section 5.2.7. Following the procedure discussed in that section one can determine the storm area size that produces the maximum precipitation volume within the drainage. This is the PMP storm area. Section 5.2.7.4 described how to obtain labels for the isohyets of the PMP storm. This gives the areal

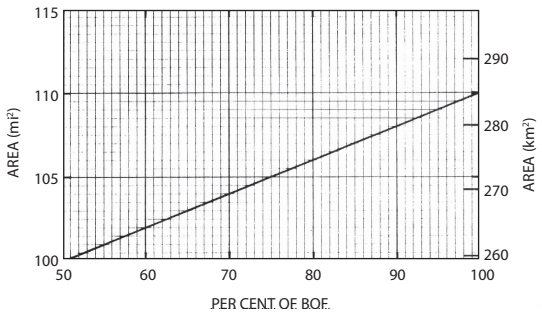

Figure 5.30. Adjustment applied to broad-scale orographic factor for areas near the interface between procedures for areas less than and greater than 259 km² (Zurndorfer and others, 1986)