

general environment. A high-helicity, low-shear environment is possible.

17. Surface Cross Totals (SCT). Use SCT to predict severe potential for areas at high elevations.

18. Thompson Index (TI). Use TI to determine thunderstorm severity over or near the Rockies.

19. Total Totals (TT). Use TT to forecast thunderstorm coverage and severity. This index is particularly good with cold air aloft. It may over-forecast severe weather when sufficient low-level moisture is not available. The TT index is the sum of the Vertical Totals and Cross

Totals.

20. Vertical Totals (VT). Use VT in the western U.S., the UK, and in Western Europe to predict thunderstorm potential.

21. Wet-Bulb Zero Height (WBZ). The WBZ is often a good indicator of hail and surface gusts 50 knots or greater when it lies between 5,000 and 12,000 feet; and of tornadoes, when it lies between 7,000 and 9,000 feet. It is not a good indicator in deep mT air masses, which naturally have high WBZs; hail or strong surface gusts rarely occur in these air masses outside the immediate vicinity of tornadoes. Many studies indicate a strong correlation between the height of wet-bulb zero

Table 3-2. General thunderstorm (instability) indicators.

| General Thunderstorm (Instability) Indicators | | | | |
|---|-------------------|------------------|------------------------|----------------------|
| Index | Region | Weak (Low) | Moderate | Strong (High) |
| CAPE | | 300 to 1000 | 1000 to 2500 | 2500 to 5300 |
| Cross Totals (CT) | East of Rockies | < 18 No TSTMS | 18 to 19 | => 20 |
| | Gulf Coast | < 16 No TSTMS | 20 to 21 | |
| Dynamic Index | Airmass TSTMS | Positive numbers | | Negative numbers |
| Fawcush-Miller Index | | 0 to -2 | -2 to -6 | < -6 Svr Possible |
| GSI Index | Mediterranean | > 8 | | < 8 |
| K Index (KI) | East of Rockies | 20 to 26 | 26 to 35 | > 35 |
| | (mT air masses), | | | |
| | and the Tropics | | | |
| | West of Rockies | 15 to 21 | 21 to 30 | > 30 |
| | (mT) | | | |
| KO Index (KO) | Cool, moist | | | |
| | climates: Europe, | > 6 | 2 to 6 | < 2 |
| | Pacific NW | | | |
| Lifted Index (LI) | | 0 to -2 | -3 to -5 | -5 and lower |
| S-Index | Europe, April- | < 39 | ≥ 40 and < 46 | ≥ 46 |
| | September only | No thunderstorms | Thunderstorms possible | Thunderstorms likely |
| Showalter Stability Index (SSI) | US | > +3 | +2 to -2 | < -3 Svr Psbl |
| | Europe | > 2 | < 2 | |
| | | No thunderstorms | Thunderstorms | |
| Total Totals (TT) | West of Rockies | 48 to 51 | 52 to 54 | > 54 |
| | East of Rockies | 44 to 45 | 46 to 48 | > 48 |
| | Europe | > 42 | > 48 | > 50 |
| Vertical Totals (VT) | US: general | | | > 26 |
| | Gulf Coast | | | > 23 |
| | West of Rockies | < 28 | 28 to 32 | > 32 |
| | | No thunderstorms | | |
| | UK | | | > 22 |
| | W. Europe | | | > 28 |