|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stage** | **Stage Description** | **Stage Distance (meters)** | **Stage Time (seconds)** | **Predominant energy system** | **Commentary** |
| **1** | Rapid acceleration, preparing for stage 2. | 10 | 2.4 | ATP-PC | Aerobic system getting started but due to the speed of muscle contractions the ATP-PC system is predominant. |
| **2** | To the end of the first bend, getting near the front. | 100 | 12.5 | ATP-PC  Anaerobic lactic acid system | ATP-PC system becoming exhausted. Lactic acid system becomes more predominant (high intensity still means aerobic system only provides small percentage of energy). |
| **3** | Steady pace to end of the first lap. | 290 | 44.0 | Aerobic | Decreased pace allows aerobic system to become the major energy provider. Possibly sufficient oxygen available to reduce any accumulated lactic acid. |
| **4** | Accelerating, responding to overtaking runner on bend. | 70 | 10.0 | Anaerobic lactic acid system | Crossing lactate threshold. Lactic acid accumulation. |
| **5** | Back straight – decelerate then steady pace. | 130 | 21.0 | Aerobic | Aerobic system is predominant. Possibly sufficient aerobic capacity to reduce accumulated lactic acid. |
| **6** | Gradual increase in pace round final bend and entering straight. | 120 | 16.0 | Aerobic then anaerobic lactic acid system | Crossing lactic threshold again. Lactic acid system becoming dominant and lactic acid starting to accumulate. |
| **7** | Running at maximal pace. | 80 | 9.5 | Anaerobic lactic acid system (and any ATP-PC left!) | Aerobic system of little use at this pace. Energy provided by lactic acid system and any ATP-PC which may have been resynthesised during race. Has the runner gone too early – will acidosis induced fatigue set in? |

Analysis of the energy systems used during an 800m race