**Chart 1 - The Range of Stroke Rates for Male and Female World Class Swimmer in Each Competitive Event**
(Olympic Games, Atlanta '96 and World Championships, Perth '98)

|  | **Stroke Rates Cycles / Min** | **Tempo Trainer Setting Seconds / Stroke** |
| --- | --- | --- |
| **Women** |   |   |
| 50 Free | 60 - 65 | .46 - .50 |
| 100 Free | 53 - 56 | .54 - .57 |
| 200 Free | 48 - 54 | .56 - .63 |
| 400/500 Free | 42 - 55 | .55 - .71 |
| 800/1000 Free | 44 - 54 | .56 - .68 |
| 100 Back | 50 - 56 | .54 - .60 |
| 200 Back | 40 - 42 | .71 - .75 |
| 100 Breast | 47 - 53 | 1.13 - 1.28 |
| 200 Breast | 34 - 45 | 1.33 - 1.76 |
| 100 Fly | 52 - 56 | 1.07 - 1.15 |
| 200 Fly | 45 - 54 | 1.11 - 1.33 |
| **Men** |   |   |
| 50 Free | 56 - 67 | .45 - .54 |
| 100 Free | 50 - 56 | .60 - .54 |
| 200 Free | 43 - 51 | .59 - .70 |
| 400/500 Free | 38 - 46 | .65 - .79 |
| 1500/1650 Free | 39 - 43 | .70 - .77 |
| 100 Back | 48 - 53 | .63 - .57 |
| 200 Back | 42 - 44 | .68 - .71 |
| 100 Breast | 52 - 55 | 1.08 - 1.15 |
| 200 Breast | 38 - 42 | 1.43 - 1.58 |
| 100 Fly | 52 - 56 | 1.07 - 1.15 |

**Chart 2 - Standard Stroke Rates**

| **Stroke RateCycle / Minute** | **Tempo Trainer SettingSeconds / Cycle** | **Tempo Trainer SettingSeconds / Stroke** |
| --- | --- | --- |
| 20 | 3.00 | 1.50 |
| 21 | 2.86 | 1.43 |
| 22 | 2.73 | 1.36 |
| 23 | 2.61 | 1.30 |
| 24 | 2.50 | 1.25 |
| 25 | 2.40 | 1.20 |
| 26 | 2.31 | 1.15 |
| 27 | 2.22 | 1.11 |
| 28 | 2.14 | 1.07 |
| 29 | 2.07 | 1.03 |
| 30 | 2.00 | 1.00 |
| 31 | 1.94 | 0.97 |
| 32 | 1.88 | 0.94 |
| 33 | 1.82 | 0.91 |
| 34 | 1.76 | 0.88 |
| 35 | 1.71 | 0.86 |
| 36 | 1.67 | 0.83 |
| 37 | 1.62 | 0.81 |
| 38 | 1.58 | 0.79 |
| 39 | 1.54 | 0.77 |
| 40 | 1.50 | 0.75 |
| 41 | 1.46 | 0.73 |
| 42 | 1.43 | 0.71 |
| 43 | 1.40 | 0.70 |
| 44 | 1.36 | 0.68 |
| 45 | 1.33 | 0.67 |
| 46 | 1.30 | 0.65 |
| 47 | 1.28 | 0.64 |
| 48 | 1.25 | 0.63 |
| 49 | 1.22 | 0.61 |
| 50 | 1.20 | 0.60 |
| 51 | 1.18 | 0.59 |
| 52 | 1.15 | 0.58 |
| 53 | 1.13 | 0.57 |
| 54 | 1.11 | 0.56 |
| 55 | 1.09 | 0.55 |
| 56 | 1.07 | 0.54 |
| 57 | 1.05 | 0.53 |
| 58 | 1.03 | 0.52 |
| 59 | 1.02 | 0.51 |
| 60 | 1.00 | 0.50 |
| 61 | 0.98 | 0.49 |
| 62 | 0.97 | 0.48 |
| 63 | 0.95 | 0.48 |
| 64 | 0.94 | 0.47 |
| 65 | 0.92 | 0.46 |
| 66 | 0.91 | 0.45 |
| 67 | 0.90 | 0.45 |
| 68 | 0.88 | 0.44 |
| 69 | 0.87 | 0.43 |
| 70 | 0.86 | 0.43 |
| 71 | 0.85 | 0.42 |
| 72 | 0.83 | 0.42 |
| 73 | 0.82 | 0.41 |
| 74 | 0.81 | 0.41 |
| 75 | 0.80 | 0.40 |
| 76 | 0.79 | 0.39 |
| 77 | 0.78 | 0.39 |
| 78 | 0.77 | 0.38 |
| 79 | 0.76 | 0.38 |
| 80 | 0.75 | 0.38 |
| 81 | 0.74 | 0.37 |