Establishing the Base Race Strategy: Male Short Course 100-Yard Events

Select Competitions from 2010 - 2013

Prepared by Elliot Meena

July 2013

Agenda

I. Introduction
II. Analysis of the 100Y Freestyle
III. Analysis of the 100Y Backstroke
IV. Analysis of the 100Y Breastroke
V. Analysis of the 100Y Butterfly
VI. Conclusion – Establishing the Baseline

Introduction

Section I

Executive Summary

The Subject	• An analysis of the top five male finishers in each of the 100-stroke A-Finals from a selection of competitions over the past four years
The Objective	• To determine the most commonly used race strategy amongst the worlds best swimmers as a baseline for developing more detailed training plans
The Approach	• Separate and analyze each lap of the 100 for every race over the years to develop an average split delta, in percentage terms, for the second 50 when baselining from the first 50 of the race
The Advantage	• Using my results, I developed a list of recommended splits for a range of times in order to give elite level swimmers a factual approach to specific goal times • Using percentages as a measurement, rather than absolute times, does not disfavor any swimmers

Criteria Used

Sex:

- Male

Session

- A-Final

Distance

- 100 Yards

Place:

- 1st – 5th

Stroke

- Freestyle
- Backstroke
- Breastroke
- Butterfly

Meets

- Division 1 NCAA Championships
  - 10, 11, 12, 13

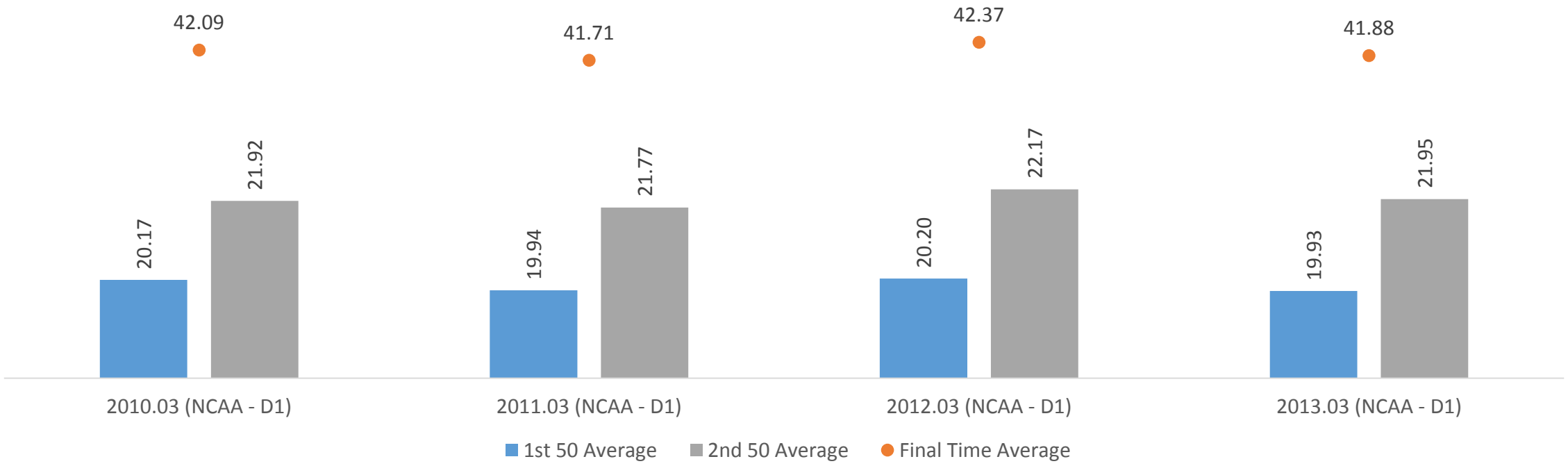
Note: In some scenarios a swimmer placing out of the top five may be included for comparison purposes.
Source: CollegeSwimming, NCAA

Analysis of the 100Y Freestyle

Section II

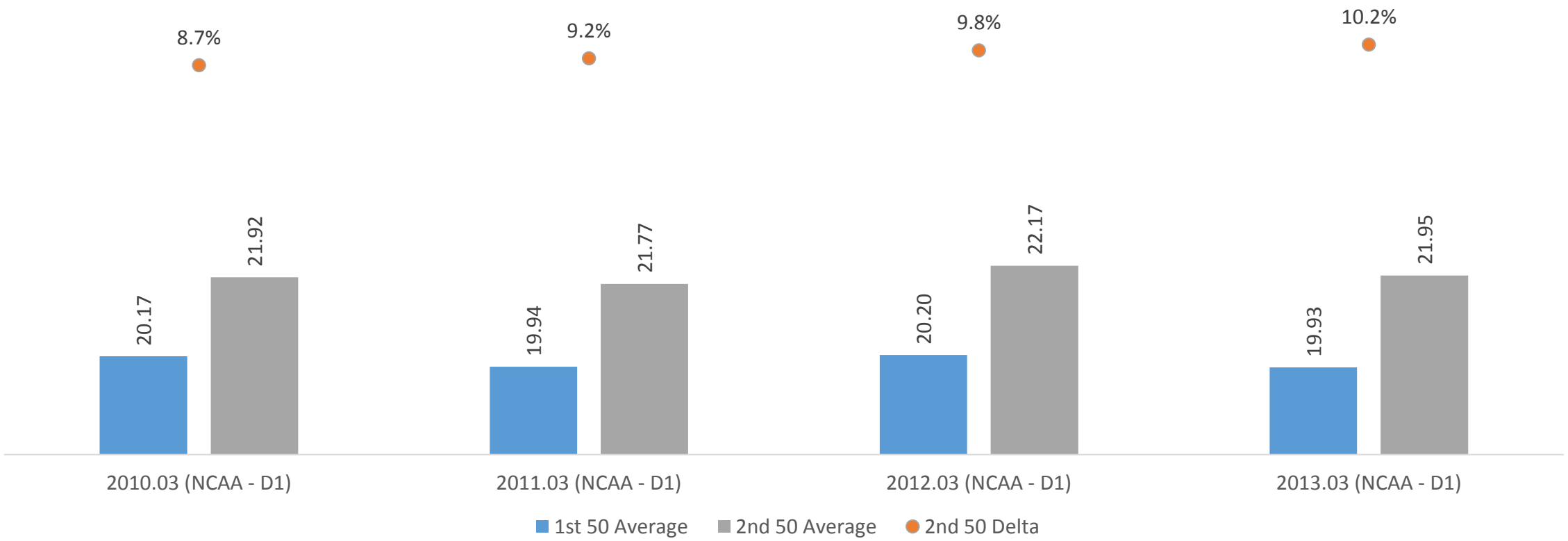
SCY Male 100 Freestyle: Race Averages

Average Time = 42.01



SCY Male 100 Freestyle: 1st → 2nd 50

Average 1st 50 = 20.06	Average 2nd 50 = 21.95	Average Split Delta = 9.5%

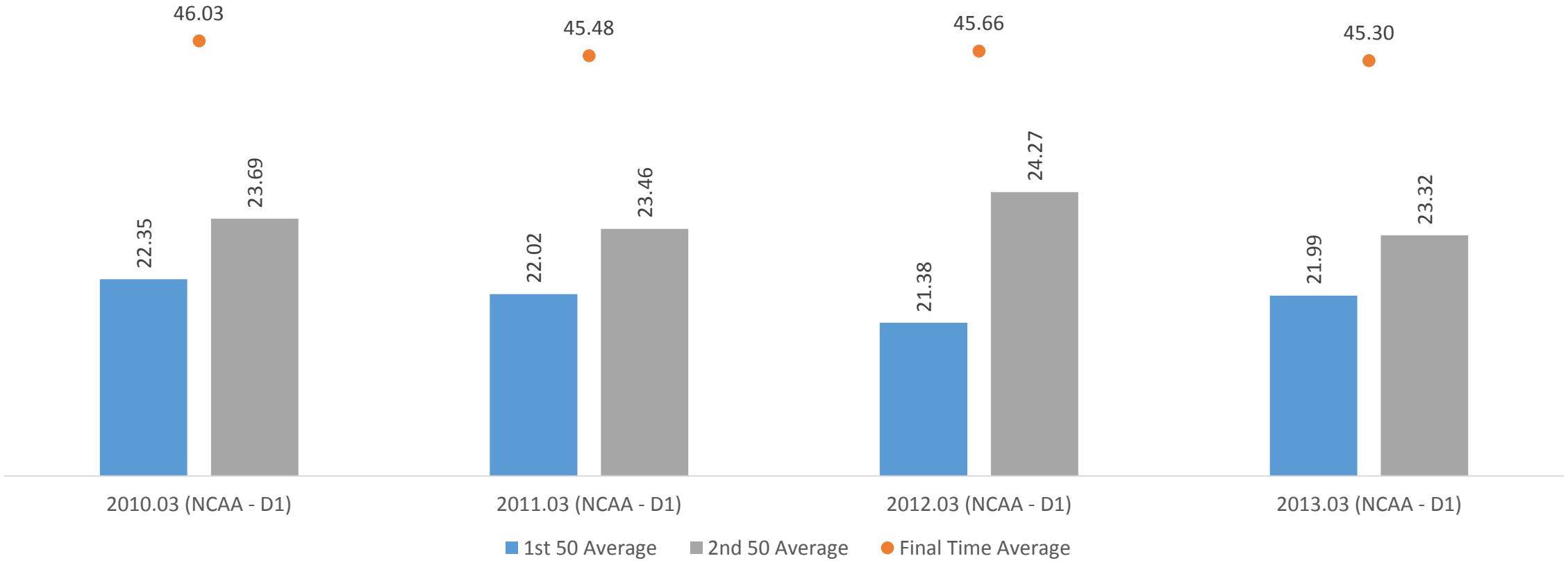


Analysis of the 100Y Backstroke

Section III

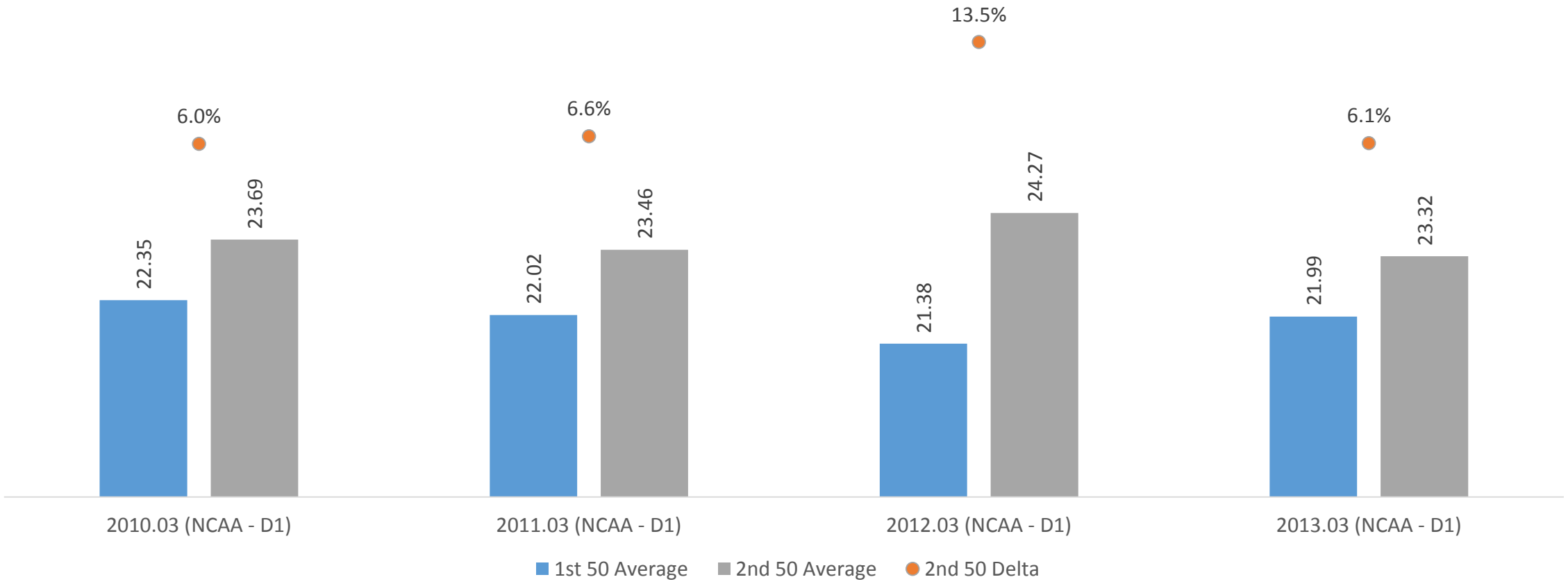
SCY Male 100 Backstroke: Race Averages

Average Time = 45.61



SCY Male 100 Backstroke: 1st → 2nd 50

Average 1st 50 = 21.93	Average 2nd 50 = 23.68	Average Split Delta = 8.0%

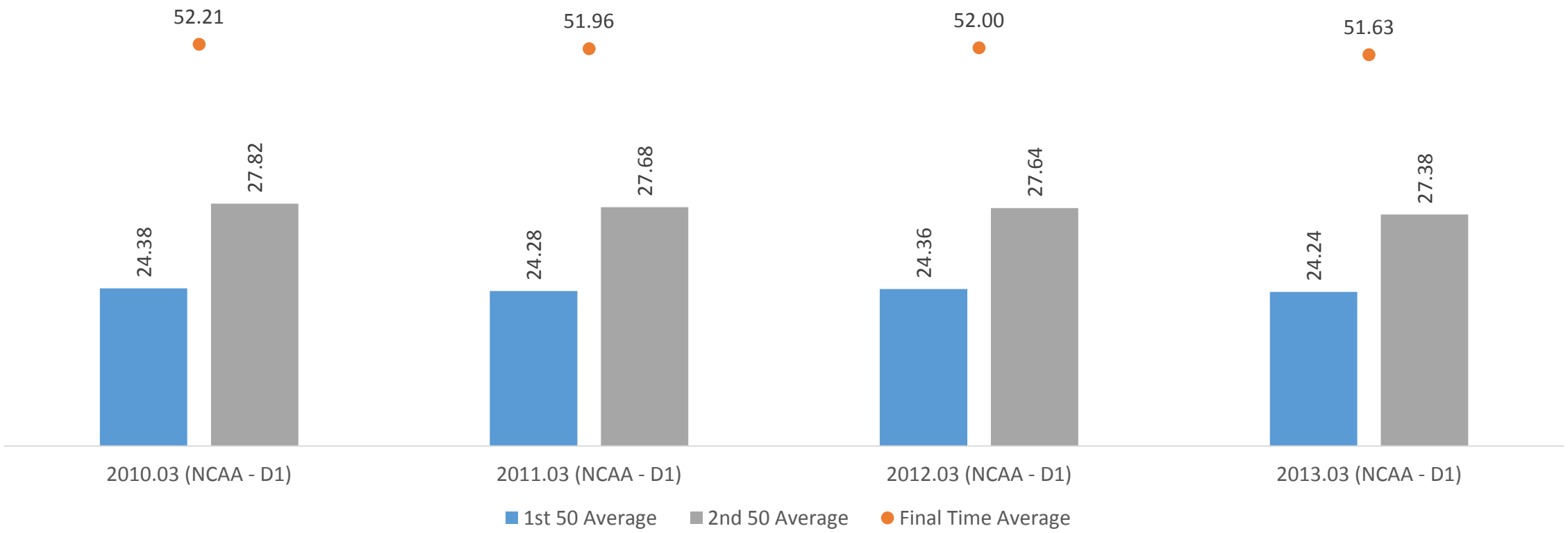


Analysis of the 100Y Breastroke

Section IV

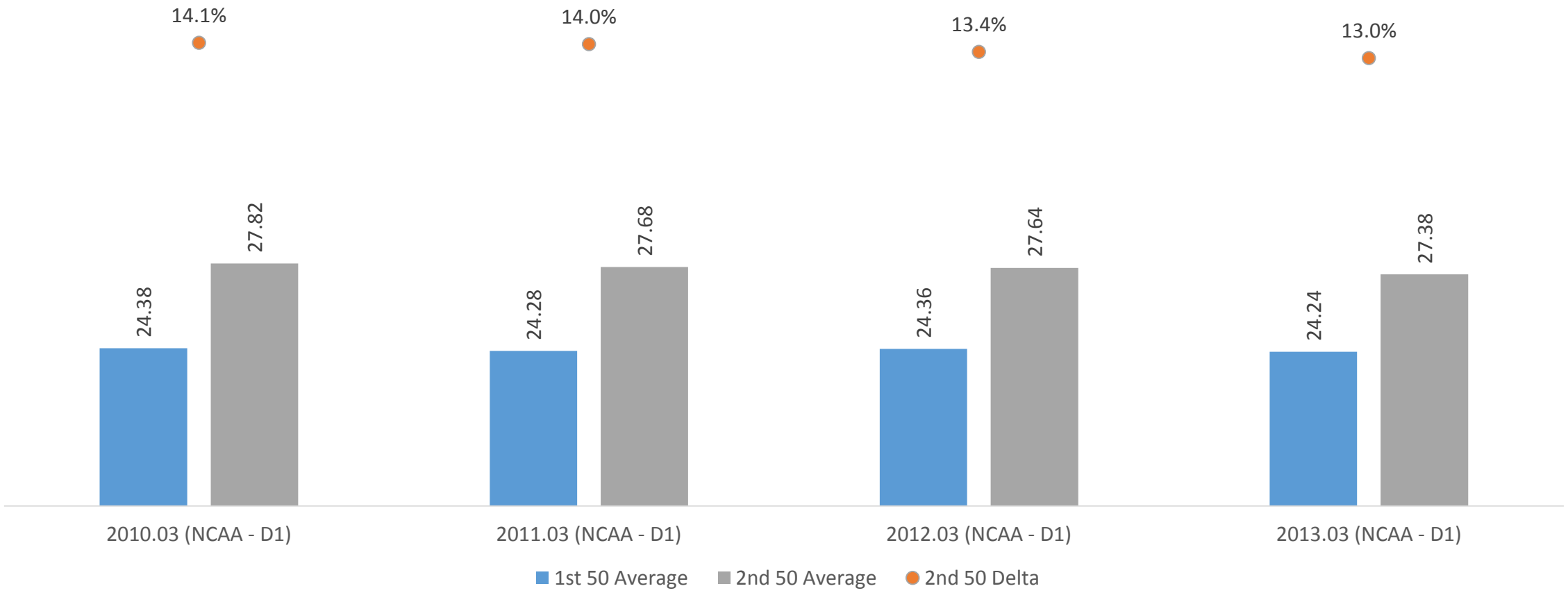
SCY Male 100 Breaststroke: Race Averages

Average Time = 51.95



SCY Male 100 Breaststroke: 1st → 2nd 50

Average 1st 50 = 24.32	Average 2nd 50 = 27.63	Average Split Delta = 13.6%

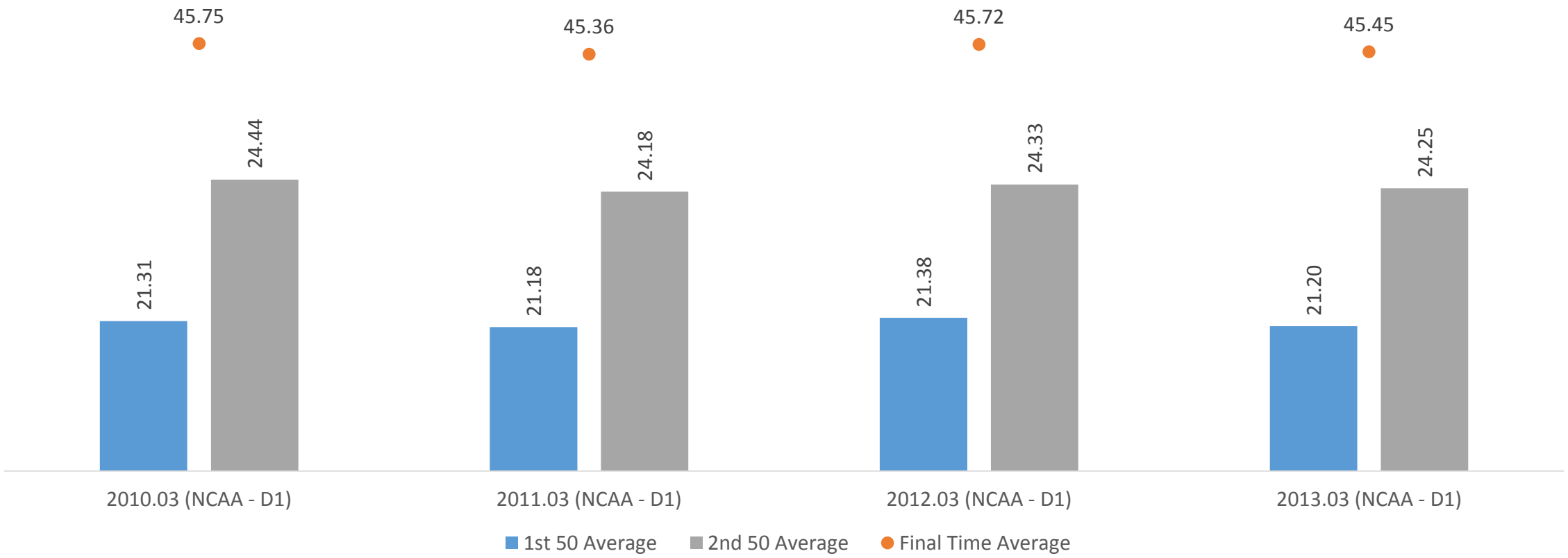


Analysis of the 100Y Butterfly

Section V

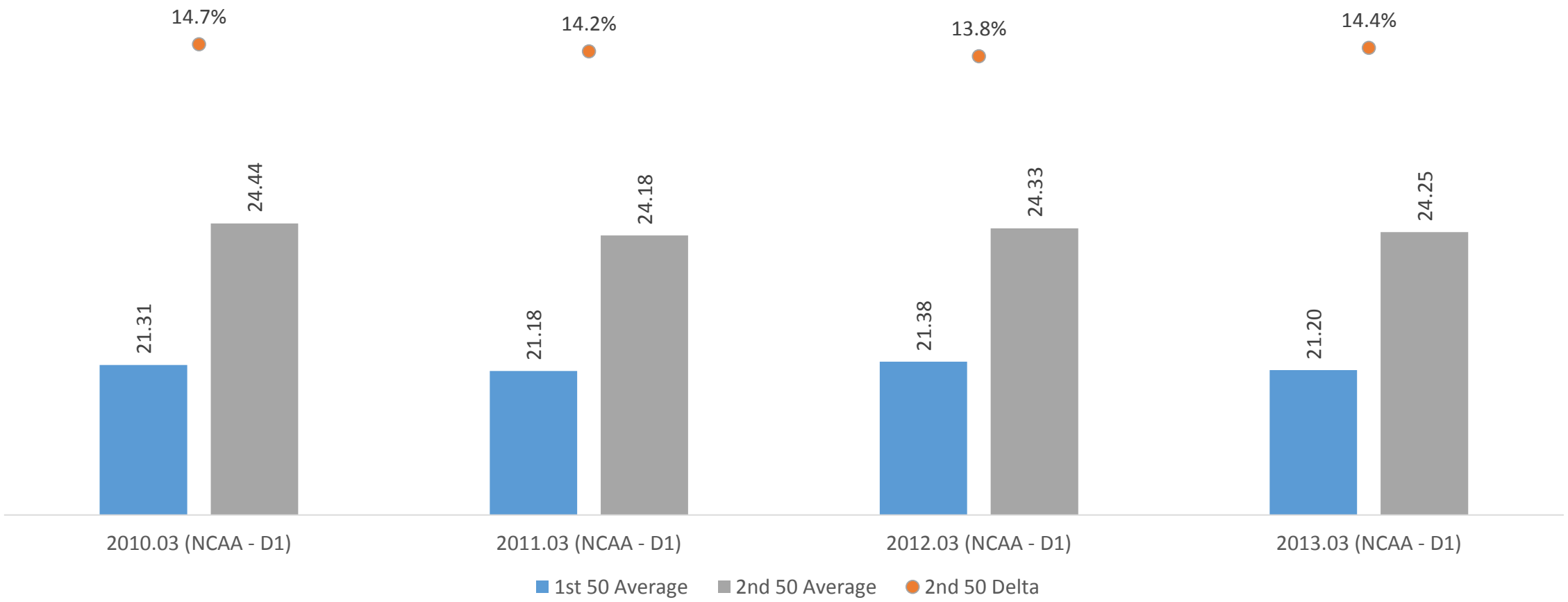
SCY Male 100 Butterfly: Race Averages

Average Time = 45.57



SCY Male 100 Butterfly: 1st → 2nd 50

Average 1st 50 = 21.27	Average 2nd 50 = 24.30	Average Split Delta = 14.3%



Establishing the Baseline

Section VI

SCY Male 100Y Freestyle: Baseline

- Using the average first 50 (20.06) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 9.5%

Final Time	Splits by 50		Split Delta (seconds)
	1st	2nd	
Note: all times are formatted in mm:ss.hh			
37.70	18.00	19.70	1.70
38.23	18.25	19.98	1.73
38.75	18.50	20.25	1.75
39.27	18.75	20.52	1.77
39.80	19.00	20.80	1.80
40.32	19.25	21.07	1.82
40.84	19.50	21.34	1.84
42.01	20.06	21.96	1.90
42.94	20.50	22.44	1.94
43.46	20.75	22.71	1.96
43.99	21.00	22.99	1.99
44.51	21.25	23.26	2.01
45.03	21.50	23.53	2.03
45.56	21.75	23.81	2.06
46.08	22.00	24.08	2.08

SCY Male 100Y Backstroke: Baseline

- Using the average first 50 (21.93) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 8.0%

Final Time	Splits by 50		Split Delta (seconds)
	1st	2nd	
Note: all times are formatted in mm:ss.hh			
40.57	19.50	21.07	1.57
41.09	19.75	21.34	1.59
41.61	20.00	21.61	1.61
42.13	20.25	21.88	1.63
42.65	20.50	22.15	1.65
43.17	20.75	22.42	1.67
43.69	21.00	22.69	1.69
45.63	21.93	23.70	1.76
44.73	21.50	23.23	1.73
45.25	21.75	23.50	1.75
45.77	22.00	23.77	1.77
46.29	22.25	24.04	1.79
46.81	22.50	24.31	1.81
47.33	22.75	24.58	1.83
47.85	23.00	24.85	1.85

SCY Male 100Y Breaststroke: Baseline

- Using the average first 50 (24.32) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 13.6%

Final Time	Splits by 50		Split Delta (seconds)
	1st	2nd	
Note: all times are formatted in mm:ss.hh			
41.66	19.50	22.16	2.66
42.19	19.75	22.44	2.69
42.73	20.00	22.73	2.73
43.26	20.25	23.01	2.76
43.80	20.50	23.30	2.80
44.33	20.75	23.58	2.83
44.86	21.00	23.86	2.86
51.95	24.32	27.64	3.32
45.93	21.50	24.43	2.93
46.47	21.75	24.72	2.97
47.00	22.00	25.00	3.00
47.54	22.25	25.29	3.04
48.07	22.50	25.57	3.07
48.60	22.75	25.85	3.10
49.14	23.00	26.14	3.14

SCY Male 100Y Butterfly: Baseline

- Using the average first 50 (21.27) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 14.3%

Final Time	Splits by 50		Split Delta (seconds)
	1st	2nd	
Note: all times are formatted in mm:ss.hh			
41.78	19.50	22.28	2.78
42.32	19.75	22.57	2.82
42.85	20.00	22.85	2.85
43.39	20.25	23.14	2.89
43.92	20.50	23.42	2.92
44.46	20.75	23.71	2.96
44.99	21.00	23.99	2.99
45.57	21.27	24.30	3.03
46.06	21.50	24.56	3.06
46.60	21.75	24.85	3.10
47.14	22.00	25.14	3.14
47.67	22.25	25.42	3.17
48.21	22.50	25.71	3.21
48.74	22.75	25.99	3.24
49.28	23.00	26.28	3.28

Race Analysis Comparison

- This analysis confirms that energy is more evenly dispersed in long-axis strokes vs. short-axis strokes
- Additionally, this analysis shows that females race with a more narrow delta than males

Delta from 1st to 2nd 50	Long-Axis			Short-Axis		
	Freestyle	Backstroke	**Average**	Breastroke	Butterfly	**Average**
Female	7.4%	6.6%	**7.0%**	12.2%	13.0%	**12.6%**
Male	9.5%	8.0%	**8.8%**	13.6%	14.3%	**13.9%**