

STARTS, TURNS AND FINISHES

Example 1				EXAMPLE 2				EXAMPLE 3			
		Split	V m/s			Split	V m/s			Split	V m/s
	Fly				B/C				Bst		
Race Start 15m	07.560		1.98	Race Start 15m	10.220		1.47	Race Start 15m	09.970		1.50
Race Start 15m	07.420		2.02	Race Start 15m	10.000		1.50	Race Start 15m	10.470		1.43
Race Start 15m	07.660		1.96	Race Start 15m	10.090		1.49	Race Start 15m	09.920		1.51
Race Start 15m	07.430		2.02	Race Start 15m	09.980		1.50	Race Start 15m	10.230		1.47
	Bst				Bst				F/C		
Race Start 15m	09.240		1.62	Race Start 15m	10.460		1.43	Race Start 15m	08.180		1.83
Race Start 15m	09.120		1.64	Race Start 15m	10.620		1.41	Race Start 15m	08.660		1.73
Race Start 15m	08.690		1.73	Race Start 15m	10.260		1.46	Race Start 15m	08.260		1.82
Race Start 15m	09.000		1.67	Race Start 15m	10.220		1.47	Race Start 15m	08.150		1.84
	Fly				B/C				Bst		
Flags to Touch	03.590		1.39	Flags to Touch	04.020		1.24	Flags to Touch	04.470		1.12
Touch to Flags	06.730	03.140		Touch to Flags	06.410	02.390		Touch to Flags	08.300	03.830	
Flags to Touch	03.670		1.36	Flags to Touch	04.400		1.14	Flags to Touch	04.380		1.14
Touch to Flags	06.840	03.170		Touch to Flags	06.720	02.320		Touch to Flags	08.280	03.900	
Flags to Touch	03.660		1.37	Flags to Twist	02.990		1.67	Flags to Touch	04.500		1.11
Fingers to Feet	04.590	00.930		Prone to Feet	04.100	01.110		Fingers to Feet	05.580	01.080	
Feet to Flags	06.660	02.070	2.42	Feet to Flags	06.420	02.320	2.16	Feet to Flags	08.220	02.640	1.89
Flags to Touch	03.590		1.39	Flags to Twist	02.950		1.69	Flags to Touch	04.310		1.16
Fingers to Feet	04.640	01.050		Prone to Feet	04.130	01.180		Fingers to Feet	05.390	01.080	
Feet to Flags	06.810	02.170	2.30	Feet to Flags	06.660	02.530	1.98	Feet to Flags	08.000	02.610	1.92
	Fly				B/C				Bst		
10m Race Finish	07.370		1.36	10m Race Finish	07.530		1.33	10m Race Finish	08.750		1.14
10m Race Finish	07.250		1.38	10m Race Finish	07.720		1.30	10m Race Finish	09.160		1.09
10m Race Finish	07.160		1.40	10m Race Finish	NTR			10m Race Finish	08.840		1.13
10m Race Finish	07.420		1.35	10m Race Finish	07.560		1.32	10m Race Finish	08.760		1.14
	Bst				Bst				F/C		
Flags to Touch	04.190		1.19	Flags to Touch	04.100		1.22	Flags to Feet	03.760		
Fingers to Feet	05.000	00.810		Fingers to Feet	05.730	01.630		Feet to Flags	06.760	03.000	1.67
Feet to Flags	07.250	02.250	2.22	Feet to Flags	08.160	02.430	2.06	Flags to Feet	03.780		
Flags to Touch	04.130		1.21	Flags to Touch	04.440		1.13	Feet to Flags	06.780	03.000	1.67
Fingers to Feet	05.030	00.900		Fingers to Feet	05.480	01.040					
Feet to Flags	07.410	02.380	2.10	Feet to Flags	07.870	02.390	2.09				
10m Race Finish	08.250		1.21	10m Race Finish	09.530		1.05	10m Race Finish	06.670		1.50
10m Race Finish	08.250		1.21	10m Race Finish	09.520		1.05	10m Race Finish	06.920		1.45

General Coaching Points for Race Starts - the velocity in the first 15m falls into 3 categories:
 Greater than 2.5 m/s (6 seconds) - Elite standard.
 Between 2m/s and 2.4m/s - getting there but room for improvement
 Slower than 2m/s - definitely need to improve.

Improvements can be obtained by:

- Fast reaction time off the block - target < 0.6s
- Powerful dive, with the hands entering further than 3m from the wall.
- Perfect streamline before hands enter the water.
- Fast and effective fly kicks as soon as the feet are under water.
- Perfect streamline throughout the underwater phase.
- Smooth breakout, minimum increase in frontal resistance.
- Breath holding for 2 strokes of fly, 4 strokes of F/C
- Duration of the glide on Bst prior to the A Pull.
- Timing of the fly kick (as the hands commence A Pull) on Bst
- Duration of the glide after the A Pull before the Arm recovery.
- Hips clear of the water in the stance of the B/C start.
- B/C start on "Go", head flicks backwards, legs drive the hips upwards and away from the wall at 45 degrees, hands press down on the bar and release when the arms reach full extension.
- Whole body clear of the water during the flight phase on B/C start.

General Coaching Points for the push off and transition after a turn.

Velocity to flags (feet to flags) should be greater than 2m/s (t < 2.5s)

Improvements can be obtained by:

- Approach must be fast, fast in = fast out
- Plyometric leg exercises with improve elasticity and thereby power off the wall.
- Upper body MUST be in a perfect streamline position before the legs extend to initiate the push off.
- Fly kicks must be fast and effective, kicks should start as soon as the feet leave the wall.
- Breakout should occur 7m - 12m off the wall at the point where maximum swim speed occurs.

General Coaching Points for Touch Turns - the fingers to feet time falls into 3 categories:

Less than 0.6s - Elite standard.
 Between 0.7s and 0.95s - getting there but room for improvement
 Slower than 1 second - definitely need to improve.

Improvements can be obtained by:

- Faster rotation.
- Tuck knees tighter and quicker,
- Immediately after the touch, raise the head to look at the wall, this will aid a faster rotation.
- Ensure the hand that releases from the wall first has an effective "grip" on the water to assist in fast rotation.

General Coaching Points for Race Finish

Races are won and lost in the final few metres. Quality finishing is a vital skill for success.

Improvements can be obtained by:

- Approach - maximum speed must be maintained until the touch is made.
- An accurate finish, exactly at the end of the arm recovery, is the fastest way to finish; any glide, no matter how short, means slowing down.
- Breaststroke and Fly - finish at the end of the arm recovery with both hands at the same time at or just below the surface of the water with the hands slightly apart.
- Backstroke - MUST know the stroke count from the flags to the finish.
- Backstroke - the last arm action should be a bent recovery where the elbow bends to 90 degrees and is then extended past the face as the opposite hip rotates to an almost vertical position, which extends the reach. The body should remain horizontal, head neutral and only rotate to a maximum of 80 degrees.
- Frontcrawl and Fly - no breathing in the final stage, as a minimum 5m from the wall in a 100/200 Race, 10 - 15m in a 50m race.
- Frontcrawl - the final arm recovery must be fast, the hip on that side should drive downwards to rotate the body inwards and extend the reach. The head must remain neutral until the touch is made.
- Frontcrawl and Backstroke - the leg power should be increased in the final 15m of the race.