2004 California State Parks Lifeguard
Swim Test Result with 500 meter swim comparison

2004	LOCATION	CONDITIONS	MEASURING DEVICE USED	TOTAL SWIMMERS	TOTAL FAILED 500 m 10 min	TOTAL FAILED 1000 YD 20 min	TOTAL FAILED R-S-R
3/13	Huntington State Beach	Surf: 2' -3' westerly swell H2o Temperature: 61degrees Overcast w/ winds 2-4 mph	GPS Radar	149	7	6	4
3/21	San Buenaventura State Beach	Surf: 1'-2' west: swell H2o Temperature: 58 degrees Overcast w/ winds 0-3 mph	(2) Laser Range Finders	124	7	6	6
3/27	Santa Cruz Rio del Mar	Surf: 3'-5' NM swell H2o Temperature: 57 degrees Sunny with glassy conditions.	(2) Laser Range Finders	57	1	1	n/a
3/28	Carlsbad State Beach	Surf: 3'-5' west swell H2o Temperature: 63 degrees Sunny w/ calm conditions	Radar (2) Laser Range Finders	88	10	9	9
4/3	Angeles Sector Sycamore Cove	Surf: 1'-3' S/W swell H2o Temperature: 61 degrees Partly cloudy. Winds: 0-5 rnph south	(2) Laser Range Finders	53	1	1	2
4/10	Monterey Slate Beach	Surf: 3'-5' west swell H2o Temperature: 54 deg. Foggy w/ glassy conditions	(2) Laser Range Finders	30	2	2	2
	All listed swim tests were attended by the Department Aquatic Safety Specialist: Alex Peabody		**Total Results**	**501**	**28**	**25**	**2**

Converting the USLA Swim Time Standard to Longer Distances
by Carl Drake
April 2004

The USLA time standard for open water lifeguards is to be able to swim 500 meters within 10 minutes. Some agencies, because of hiring requirements or set courses, use a standard that involves greater distances. The USLA standard is also permitted to be performed in a swimming pool.

There are a number of methods and charts to convert a 500 meter swim time to something other such as 800 yards or 1000 yards. These conversion methods and charts are geared for competitive swimming standards or qualifications. One of the problems is that these standards are aimed a very high caliber swimmer. For example, an Olympic caliber swimmer will be going twice as fast as someone swimming at the USLA standard. USA Swimming publishes its time standard for the US Open on its web site (http://www.usa-swimming.org/PDF/03_open_timestandards.pdf). The times are listed by event and in short course (yards), short course (meters) and long course. Some formulas can be developed from these time standards that can be applied to open water swims and longer than 500 meter distances.

To develop a conversion formula for a longer distance that takes into effect the fatigue factor of swimming longer distances, a formula is developed by looking at the US Open standards for the 400 meter and 800 meter swims. The difference in time is broken down by 100 meter and then applied to the 100 meter intervals between 400 meters and 1000 meters. A conversion factor is then developed for the 100 meter intervals for the USLA standard from 600 meters to 1000 meters (see chart A).

The greatest challenge in conversion is to account for the time difference between a swimming pool and the open water environment. Factors increasing the time for open water include no flip turns, the inability to swim a straight course, lateral currents, chop, surf and cold water. These factors do not lend themselves to formulas with the possible exception of flip turns.

Again using the US Open swim standards, a formula may be developed that factors the extra speed acquired by flip turns. The US Open time standards have a comparison by event between long course and short course meters. Chart B shows how the actual times compare and what these would be extrapolated at 100 meter increments between 600 meters and 1000 meters.

Swim Test Theory

Theory For calculating Swim Test Graph

1. USLA Curve.
   This curve is just a straight line from (0,0) through the point 10 minutes, 500 meters, converted to yards. The line is extended past 1000 yards to give a reference for the other two curves. This curve shows the USLA short course standard 500 meters in 10 minutes with no conversion, extended to 1000 yards.

2. CA State 1.
   This curve shows the USLA curve with a short course (SC) to long course (LC) conversion, extended just past 1000 yards. The CA State 1 curve crosses 1000 yards at about 18 minutes. This curve does not take into account the time lost in open water from not being able to push off the wall every 50 meters.

3. CA State 2.
   This is the USLA curve with the SC to LC conversion which also accounts for time lost because of no turns in open water. The time lost is calculated by assuming 0.9 seconds is lost at each turn that doesn't happen in open water, then adding 0.1 second every 4 turns. The calculation assumes a short course, which has a turn every 50 meters (45.7 yards).

4. Conclusion.
   The CA state 2 curve estimate shows that the equivalent of swimming 500 meters in 10 minutes in a short course pool is about the same as swimming 1000 yards in 21 minutes in open water. This estimate takes into consideration both the extended short course to long course conversion, and the time lost because of no turns in open water. It does not take into account open water currents, waves, or the effect of water temperature on performance. According to the estimate, it is safe to say that swimming 1000 yards in 20 minutes in open water is more difficult than swimming 500 meters in 10 minutes in a 50 meter short course pool.

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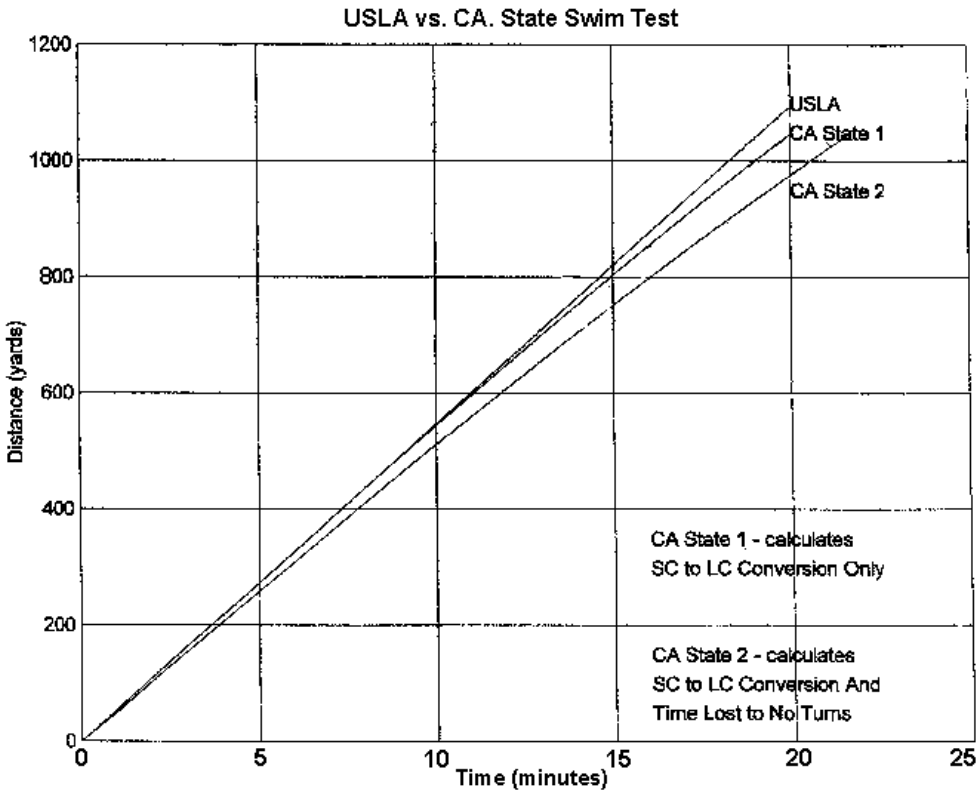
USLA vs. CA. State Swim Test
1200
1000
800
600
400
200
0
Distance (yards)
0
5
10
15
20
25
Time (minutes)
USLA
CA State 1
CA State 2
CA State 1 - calculates
SC to LC Conversion Only
CA State 2 - calculates
SC to LC Conversion And
Time Lost to No Turns