

## **REPORT OF VALIDATION ACTIVITY 2002 LA SALLE BANK CHICAGO MARATHON (IL-02088-JW)**

**CONCLUSION:** It is my opinion that the course for the 2002 LaSalle Bank Chicago Marathon, currently certified as IL-02088-JW, is, after an adjustment on 29 September 2002, 42237.2 meters long. The course should be considered 'pre-validated' at the marathon distance of 42195 meters as it is now that distance plus the Short Course Prevention Factor (SCPF) of 0.1%.

**CHRONOLOGY:** Construction on the 31<sup>st</sup> Street Bridge over South Lake Shore Drive made that bridge unavailable to the Marathon for the 2002 event and necessitated that the course be rerouted between 31<sup>st</sup> Street and the finish area. This was accomplished by rerouting the course west of Lake Shore Drive and thus under McCormick Place West. This change shortened the latter part of the course, which necessitated adding distance earlier in the course. This was accomplished by adding a section on Ogden Avenue and Jackson Boulevard west of Ashland Avenue and then adjusting the start line of the race to establish the correct race distance. Thus although only a couple relatively short portions of the course were changed, every intermediate split point before the 26 mile mark was affected.

Chuck Hinde measured the new course for certification 25 August 2002 and 1 September 2002. The 25 August measurement was of the part of the course from the 10 mile mark to the finish and the 1 September measurement was from the start to the 10 mile mark. Jim Knoedel performed the second measurement of both segments at the same time Hinde performed the lead measurement. A spreadsheet breaking down those measurements is included as Exhibit A. It should be noted that although the two measurements of the entire course, when combined in the most conservative way, differ by 0.627 percent of the race distance (and thus within the allowable 0.8%), the 25 August measurements of the 10 mile to finish segment do not. The difference between the two measurements is 22.61 meters, which is 0.866 percent of the 26,151 meter distance between the 10 mile mark and the marathon finish. There is no clear explanation for this; with the exception of the 40K to finish segment, Knoedel's measurements were consistently shorter than Hinde's and if Hinde's measurement constant had not increased as a result of his post-calibration the differential would have been even greater. In the start to 10 mile segment, where the two measurers' total counts differ by only 3.85 meters, there is a major disagreement in the segment between miles 4 and 5 that, if it is not the result of a transposition error, would have definitely merited another measurement of the segment in question.

### **MEASUREMENT METHOD:**

The course was measured using the Calibrated Bicycle Method. This is the same method used by USATF and IAAF for layout measurement (which also might be called a measurement for certification). The procedure requires that a bicycle, equipped with a device known as a Jones Counter mounted on the front hub, be first calibrated by riding it four times over a course of known distance (called a calibration course), then ridden over the race course, and then ridden four more times over the calibration course. The Jones Counter records a fixed number of counts for each revolution of the front wheel of the bicycle; if the measurer knows how many counts are recorded over the known calibration distance he can calculate the number of counts between the

start and finish of the race distance as well as any desired intermediate distances. The number of counts on the Jones Counter per unit of distance is referred to as the Measurement Constant.

The differences in procedure between a layout and a validation measurement are as follows:

1. When calculating the Measurement Constant (usually counts/meter or counts/mile) on a layout measurement, the SCPF is added to the constant. This is done to insure that the course is not short. A validation measurement is conducted to verify the length of a previously certified course, and the SCPF is NOT added to the Measurement Constant.
2. When calculating the course length in a Layout Measurement, the Measurement Constant used is the LARGER of the constant calculated as a result of the pre-measurement calibration rides and that calculated on the basis of the post-measurement calibration rides. This is to provide another safeguard against the course being short. When calculating the course length in a validation measurement, the AVERAGE of the pre-measurement and post-measurement calibration numbers is used; this provides a fairer picture of the conditions under which the validation measurement was made.
3. In a Layout Measurement, the course is measured twice. USATF has no requirements regarding the skill or previous experience of the measurer(s). A validation measurement must be conducted by an "expert" measurer as appointed by USATF or an "A" measurer as designated by IAAF, and only one measurement of the course is conducted.

In short, the underlying philosophy during a layout measurement is to insure that the course is not short, and to error on the side of conservatism. In a validation measurement, the objective is to determine the length of the course as originally measured and run, so the measurement philosophy is much less conservative. In all cases, my measurements of the course were made using the validation methodology and thus without the SCPF.

## **VALIDATION MEASUREMENT:**

The first attempt at the validation measurement took place on 8 September 2002. The basic strategy was to measure the course backwards from the finish to the 40 kilometer mark (thus completing the portion of the course that uses heavily traveled streets in the Museum Campus area) and then move to the start line and measure the remainder of the course in the start to finish direction. I calibrated my bicycle on the Grant Park calibration course (IL-96058-JW). This course runs north-south on a sidewalk parallel to Lake Shore Drive and is relatively free of motorized vehicle traffic. After calibration I proceeded to the finish line where I began to measure the course. The section from the finish back to the 40 kilometer mark was measured without incident, and the first 25 kilometers of the measurement of the remainder of the course went well. Unfortunately prior to the 30 kilometer mark I was involved in a head-on collision with an automobile. This collision blew the front tire (and bent the bicycle frame and fork) rendering the previous measurement data useless. It should be noted, though, that the 5 kilometer intermediate splits were located easily and were in the locations described. Additionally, the readings between the splits were quite consistent for the first three 5 km segments although they were not nearly as consistent between 15 and 20 km and between 20 and

25 km. There was very little vehicular activity on the course (up to the time of the collision, of course) and deviations from the Shortest Possible Route (SPR) were few.

During the ensuing week I purchased a new bicycle, had the Jones Counter installed on it, and we returned to the course on Sunday morning, 15 September. The same strategy was followed. The bicycle was again calibrated on the Grant Park calibration course and the portion of the course between 40 km and the finish was measured from the finish to the 40 km mark. The bicycle was then transported back to the start and the measurement of the remainder of the course began there. The streets were relatively free of traffic and construction, so any deviations from the SPR were not material. The only incident worth mentioning in the first 25 km was my failure to execute the turn from Wells onto Hubbard. Upon discovering the error, I froze the front wheel of the bicycle, took a reading of the counter, turned the bicycle around, rode back to beyond the corner, froze the front wheel again, took another reading, froze the front wheel, turned the bicycle around, and proceeded with the measurement. It should also be noted that the measurement party missed the 25 km mark on Taylor Street and, rather than backtracking, decided to move forward to the 30 km mark.

Unlike the previous week, when the weather was sunny and the course dry, the 15 September measurement was conducted in an intermittent light drizzle. During much of the measurement the course was dry but occasional segments of the course were damp. One of these segments was a drawbridge with an open steel grate deck on Halsted Street between Cermak and Archer approximately 29 km into the course. When the measurement bicycle encountered this bridge it lost traction and steering and the measurer and bicycle fell hard to the bridge deck, causing the front wheel of the bicycle to spin. As the counter reading at the 25 km mark had not been recorded, this required that the measurement restart at the 20 km mark. Bicycle and measurer were loaded into one of the escort vehicles and returned to the 20 km mark and the measurement recommenced. This time, the drizzle had abated and the bridge deck appeared dry but in the interest of the measurer's safety the bicycle was walked over the bridge. The measurement was completed at the 40 km mark and the bicycle was recalibrated on the same calibration course as it had originally been calibrated. A spreadsheet summary of my measurement data is included as exhibit B and the completed RRTC validation form is included as exhibit C.

#### **OTHER RELEVANT MEASUREMENTS:**

On 24 September 2000, Chuck Hinde and I checked the Grant Park calibration course (IL-96058-JW) in conjunction with the validation measurement of the 2000 LaSalle Bank Chicago Marathon course. We measured it with a 60 meter steel tape in relatively cold (10 degrees C), damp (most of the course wet) weather. Because the course was damp we were unable to use any kind of adhesive tape to mark the end of the measuring tape segments so the exact accuracy of the measurement is a little suspect. Nevertheless the course measured out to 804.756 meters, which is definitely close enough to conclude that the course is the advertised 0.5 mile (804.672 meters). Given that the calibration course was originally measured with an EDM, it is reasonable to conclude that the original measurement would be more accurate than a tape measurement, even in perfect conditions. It would also be reasonable to conclude that any inaccuracies in the measurement were not the result of an inaccurate calibration course.

## **DISCUSSION:**

The validated length of the 2002 LaSalle Bank Chicago Marathon course (IL-02088-JW) as measured on 15 September was 42227.28 meters. Had this measurement taken place after the event had concluded, it would be my recommendation that any records set on the course be ratified. However it is RRTC policy that for a course to be considered pre-validated, it needs to be found by the validator to at least be the advertised distance plus the 0.1% SCPF. Thus I made the recommendation to race director Carey Pinkowski and measurer Chuck Hinde that the course be lengthened by 9.92 meters. If it were not lengthened and a record were set, the course would be subject to a second validation measurement. If the results of that second validation measurement were to find that the course length was not sufficient to allow records to be ratified, the records would not be ratified.

Chuck Hinde reported in a letter of 30 September 2002 that on 29 September 2002 he and Carey Pinkowski added 9.92 meters to the course by moving the start line south, increasing the course length to 42237.2 meters. The new description of the start line appears to confirm this. Apparently no adjustments of intermediate split points were made, so the first mile (and first 5K) will be approximately 10 meters longer than the other miles of the course. The RRTC Measurement Certificate at Exhibit D reflects the adjusted course and was not issued until documentation of the course adjustment was received.

While the inconsistency among the intermediate segments is not necessarily a problem for the 2002 event, the fact that the splits do not appear to be consistent will make it more difficult to use the intermediate split marks on this course as a starting point for making future adjustments to the course. Those adjustments will probably be necessary because the ongoing construction of Wacker Drive and other projects within the City of Chicago virtually assure that this course will not be available for the 2003 event. Even if street construction were not the issue, there were at least two places on the course where new buildings are under construction and concrete barriers protect the scaffolding that secures the construction site. These barriers extend out into the streets beyond the existing curb and it is reasonable to assume that once construction is complete the curb will return to its original location and, as a result, the SPR will be shorter than that measured in 2002. For that reason alone I definitely recommend that the Chicago Marathon course be remeasured and recertified prior to next year's event.

Please direct any questions about the validation measurement to my attention.

Respectfully submitted,

Jay Wight  
USATF/RRTC National Certifier  
IAAF "A" Measurer

Exhibit B- Report of Validation Measurement  
 La Salle Banks Chicago Marathon 2002 (IL-02088-JW)  
 Jay Wight's numbers of 15 September 2002

Point	Reading	Counts	Meters
FINISH	78000		
40000	98483	20483	2195.86
START	99000		
5000	145681	46681	5004.38
10000	192377	46696	5005.99
15000	239056	46679	5004.17
20000	285865	46809	5018.10
20000	78750		
25000	125381	46631	4999.02
30000	172004	46623	4998.16
35000	218649	46645	5000.52
40000	265299	46650	5001.06
TOTALS		393897	42227.27

Pre-calibration

39400		
46909	7509	
54416	7507	
61923	7507	
69431	7508	
Average	7507.75	

counts/meter

Post-calibration

68335		
75840	7505	
83346	7506	
90848	7502	
98352	7504	
Average	7504.25	

counts/meter

Average constant for the day= 9.32802434 counts/meter

Desired prevalidation distance= 42237.20 meters

Need to add 9.93 meters  
 or 32.56 feet