

COURSE MEASUREMENT SUMMARY SHEET

EVENT **MARATHONS OF THE GAMES OF THE XXX OLYMPIAD**

LOCATION: **LONDON, UK**

DATE: **5 & 12 AUGUST 2012**

Promoting Organisation: **LOCOG 2012**

Name & Address of Road Events Manager:

Terry Colton

Tel:

Email:

Distance: **not less than 42,195m** Measured by: **Hugh Jones**

Dates: 2012-06-13

Measurement method: **Jones counter mounted on bicycle wheel**

Elevation, if not same, of: START 7m FINISH 7m

Distance, in a straight line, between start & finish: **identical**

Description of the Course

- i) Terrain: **mainly flat: sharpest rise 9m in 200m, sharpest descents - Byward St (7m in 150m) & White Lion Hill (9m in 250m)**
- ii) Race surface: **tarmac city streets**
- iii) Course configuration: **short lap of 3570.75m then 3 laps of 12874.75m**

Measurement Details

- i) Section of road available: **entire width of road or carriageway but keeping to north half of Birdcage Walk.**
- ii) Line to be taken at turns: **shortest route, with defined turnaround point (see map detail)**

SIGNED:

DATE: 2012-07-05

MARATHONS OF THE GAMES OF THE XXX OLYMPIAD

LONDON, UK

5 & 12 AUGUST 2012

This official measurement was based upon many preceding measurements of the course, which had identified landmarks from which it would be easy to reference all splits required. Some small modifications of the route had been made in Queen Victoria Street and White Lion Hill, but the main change was a decision to fix the running line around the Queen Victoria Memorial at 1.3m offset from the cobbled strip (ie coned 1m out from the cobbles).

The official measurer David Katz was already familiar with the course after a visit in January 2012. We also rode the course the afternoon before the official measurement.

On the evening of the measurement we rode to the start line early to tape-measure (with a calibrated tape, certified as 13mm shorter than the advertised length of 100m) between permanent landmarks on a section of The Mall which would remain accessible throughout the duration of the Games. This was between the west faces of lamp-posts 18 and 30, and was measured at 328.57m

Mike Sandford, measurement secretary for the South of England, joined us at 02.00 and we calibrated soon afterwards (02.30), after a delay caused by the jamming of David Katz's new model Jones counter and replacement by an old model.

We rode with 8 police motorbikes as escort, who enforced a "rolling closure" along with a London Marathon vehicle following up, driven by Mark Griffiths and in which course manager Lisa Thompson was a passenger.

Even around 03.00 there were some traffic problems, most notably in Northumberland Avenue, but with patience and police direction we were able to stick strictly to the shortest possible route throughout the course, measuring sequentially the one small lap and the first of three identical large laps. We stopped and noted references at all locations required for split points (known approximately from previous measurements), although at 20km I overshot the mark by 70m and had to improvise a new reference landmark.

For the turn points we rode to the reference points and returned directly. The prescribed turn radii for both short lap and long lap turn points is 4m, so the turn path is $(4.3\text{m} \times \pi =) 13.5\text{m}$. Adding this distance, the adjustment is made by retracting (small lap) or extending (long lap) the centre of the turn circle from the reference point so that the lap becomes the required length. Accordingly, the centre of the small lap turn is 5.58m before the 3rd expansion joint on Westminster Bridge; for the large lap it is 16.75m past the end of the divider on Tower Hill – which is just over a metre beyond (east of) the Roman Wall.

We recalibrated at 04.40 with small calibration change (1C change of temperature).

counts distance adjusted dist.(m) location

$c = 11.266302/m$

00000	0.0m		The Mall, finish Gantry position
18166	1612.4m		Embankment, traffic light at Westminster Bridge
19226	1706.5m		Westminster Bridge, 3 rd expansion joint
--- retract by 5.58m (x 2) and add turning path of 4.3m x pi – total addition 2.34m ---			
36043	3199.1m	3201.5m	The Mall, near (west) side of pillar
40203	3568.4m	3570.75m	The Mall, finish Gantry position

LONG LAP: Started with 3570.75m elapsed

40203	3568.4m	3570.75m	The Mall, finish Gantry position
54276	4817.5m	4819.8m	Embankment, level with centre of Cleopatra's Needle
56486	5013.7m	5016.0m	Embankment, last lp on left before Waterloo Bridge
72501	6435.2m	6437.5m	QV St, start of permanent divider before White Lion Hill
90674	8048.2m	8050.5m	Cheapside, 1 st lp on left (opposite New Change)
08855	9662.0m	9664.3m	Fingerpost at start of Eastcheap (opp. Fish Street Hill)
12875	10018.8m	10021.1m	Great Tower Street, start of divider approaching Tower Hill
16608	10350.1m	10352.5m	Tower Hill, before turn
--- Extend turn by 47.0m (16.75 x 2 and add turn circle of 4.3 x pi) – adjust overall by +49.34m ---			
16608	10350.0m	10399.5m	Tower Hill, after turn
26220	11203.3m	11252.6m	London Bridge, lp2 on divider
44263	12804.8m	12854.1m	Embankment, traffic light on left opp. Temple Ave
62537	14426.8m	14476.1m	Embankment, far side of Battle of Britain Memorial
68293	14937.7m	14987.0m	lp6, Great George Street
80566	16027.0m	16076.4m	The Mall, west face of pillar
84724	16396.1m	16445.5m	The Mall, finish Gantry position after ONE long lap
ON SECOND LARGE LAP (add 16445.5m):			
40203	+ 0m	16445.5m	The Mall, finish Gantry position after ONE long lap
81114	+ 3631.2m	20076.7m	Paternoster Sq, far side of pillar to Chop House
92543	+ 4645.7m	21091.2m	Cheapside, level with east kerb of Bread St (on right)
=> plus Tower Hill adjustment of 47.0m from here to end of lap			
36030	+ 8505.6m	24998.1m	Q V Street, ped light on left at Millennium Bridge
84724	+ 12827.7m	29320.25m	The Mall, finish Gantry position after TWO long laps
ON THIRD LARGE LAP (add 29320.25m)			
40203	+ 0m	29320.25m	The Mall, finish Gantry position after TWO long laps
47786	+ 673.0m	29993.2m	level with middle of 2 tel boxes on right, entering N'land Ave
03849	+ 5649.2m	34969.4m	Traffic light, Leadenhall St (before turn into Whittington St)
=> plus Tower Hill adjustment of 47.0m from here to end of lap			
59906	+ 10624.8m	39992.1m	Embankment lp90, before Horse Guards Avenue
75693	+ 12026.1m	41393.3m	Birdcage Walk, lpC88
84724	+ 12827.7m	42195.0m	The Mall, finish Gantry position after THREE long laps

List of split mile and 5km positions

START	The Mall, 18.5m east of lp18E
1 mile	Embankment, 3.0m before traffic light at Westminster Bridge
TURN	Wstr Bridge, 4m coned radius centred 5.58m before 3 rd expn joint
2, 10, 18 & 26 miles	The Mall; west end, 17.1m past west side of pillar
3, 11 & 19 miles	Embankment, 8.2m past centre of Cleopatra's Needle
5km	Embankment, 16.0m before last lp on left before W'loo Bridge
4, 12 & 20 miles	Q Victoria St, 0.1m before start of permanent divider at W Lion Hill
5, 13 & 21 miles	Cheapside, 3.8m before first lp on left (opposite New Change)
6, 14 & 22 miles	Eastcheap, 8,3m before fingerpost opposite Fish Street Hill

10km	Great Tower St, 21.0m before start of divider approaching Tower Hill
TURN	Tower Hill, 4m coned radius centred 16.8m past end central divider
7, 15 & 23 miles	London Bridge, 12.8m past lp2 on divider
8, 16 & 24 miles	Embankment, 20.6m past traffic light opp. Temple Ave
9, 17 & 25 miles	Embankment, 8.0m past south face of Battle of Britain memorial
15km	Great George St, 13.0m past lp06

On second long lap:

20km	76.7m before far side of column o/s “Paternoster Chop House” OR: 7.3m before angle of last metal tree apron before turn thro arch
HALFWAY	Cheapside, 6.2m past east kerb of Bread Street
25km	Q Victoria St, 1.9m past ped. light on left at Millennium Bridge

On third long lap:

30km	N’land Ave, 6.8m past centre of two tel. boxes OR 8.6m before lp55
35km	Leadenhall St, 30.6m past traffic light at Gracechurch Street
40km	Embankment, 7.9m past lp90, before Horse Guards Avenue
800m to go	Birdcage Walk, 1.7m past lpC88
400m to go	The Mall 30.9m before west side of pillar OR 7.8m past lp32E
300m to go	The Mall, 13.1m past lp28E
200m to go	The Mall, 18.0m before lp24E
100m to go	The Mall, 3.4m past lp22E
FINISH	The Mall, 18.5m east of lp18E (St James’s Park side)

On 328.597m steel-taped calibration course on south side of The Mall, 2012-06-13

Pre-measurement, 02.30			Post-measurement, 04.40		
start	end	reading	start	end	reading
82000	85699	3699	85000	88698	3698
85699	89398	3699	88698	92396	3698
89398	93096	3698	92396	96094	3698
93096	96795	3699	96094	99792	3698
Average – 3698.75 (x 1.001/328.597m)			Average – 3698 (x 1.001/328.597m)		
Working Constant: 11.267445/m			Finish Constant: 11.265159/m		
Constant for the Day (Average) = 11.266302/m					