

# COURSE MEASUREMENT REPORT

## HC Andersen Marathon 2016



# SUMMARY SHEET

EVENT: ***H.C. ANDERSEN MARATHON***  
LOCATION: ***ODENSE, DENMARK***  
DATE: ***2 OCTOBER 2016***  
Promoting Organisation: Fjordager IF  
Name & Address of race director: Torben Simonsen  
Stadionven 47  
DK – 5200 Odense  
Email: [info@hcamarathon.dk](mailto:info@hcamarathon.dk)  
Distance: ***Half marathon course is not less than 21,097.5 m***  
***Marathon course is not less than 42,195 m***  
Measured by: ***Peer Jensen, Denmark***  
Date: ***17 September 2016***  
Measurement method: ***Jones counter mounted on bicycle wheel***  
Elevation, if not same, of: **START 0 m FINISH 0 m**  
Distance, in a straight line, between start & finish: ***300 m***

## Description of the Course

- i) Terrain: ***flat***
- ii) Race surface: ***tarmac roads finished by 300 m on tartan track***
- iii) Course configuration: ***closed loop***
- iiii) Start point: ***Højstrupvej at Southeast entrance to “Odense Sports Hall”***
- iiii) Finish point: ***Odense Stadium at “40 m point to the Finish” on the track***

**See the course map.**

## Measurement Details

- i) Section of road available: ***Bicycle path and half of the roads are available. On “Højstrupvej” and “Stadionvej” and “Rugårdsvej” and on the pedestrian streets in the centre of Odense the entire width is available. Cones will be placed in the middle of the roads.***
- ii) Line to be taken at turns: ***Shortest possible route except at km 8 where the runners use the right part of the road and turn 90 degrees to the left.***

SIGNED: *Peer Jensen* DATE: 2016-09-27

# STEEL TAPING DATA

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## For measuring a calibration course

Name of calibration course: Langesøstien  
City/town and State: Odense, Denmark  
Date: \*)  
Start time:  
Finish time:  
Pavement temperature:

## Measurements and calculations:

First measurement.  
Second measurement.  
Average raw (uncorrected) measurement of course  
Temperature correction.

**Final (adjusted) length of calibration course      300.00 m**

## Calibrations

300 m calibration course on Langesøstien, Odense. 500 m from start line.

\*) It is unknown when the calibration course was measured, but the marks were clearly on the road

### Pre-measurement

Date/Time 17 September 2016 6:00  
Temp. 15 °C, light wind  
Start      End              Reading  
847900    851299            3399  
851300    854698            3398  
854700    858098            3398  
858100    861497            3397

Average                      3462.5

Working Constant            11326.67/km  
+ 1 ‰                          11.33/km  
Pre-measurement constant    11338/km

### Post-measurement

Date/Time 17 September 2016 12:40  
Temp. 18 °C, cloudy  
Start      End              Reading  
154200    157595            3395  
157600    160997            3397  
161000    164395            3395  
164400    167796            3396

Average                      3395.75

Working Constant            11319.17/km  
+ 1 ‰                          11.32/km  
Post-measurement constant    11330.50/km

Measurement working constant: **11338/km**  
Constant for the Day (average): **11334.25/km**

# CALIBRATION COURSE MAP

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The calibration course is about 500 m north of start point of the race which is “Højstrupvej”. The race will finish at “Odense Atletikstadion” (Athletic Stadium). See map above.

## MEASUREMENT PROCEDURE

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Measurement working constant: **11338**

**Measurement of both half marathon and marathon course. We were measuring against the running direction, and we started at a fictive 20 km point, as the gate to the stadium was closed. Start 6:25. Later we measured from that 20 km point to the finish line at the stadium. The 41 km point should be exactly 97.5 m from the 20 km point = 1,105 counts. All the km points were marked with spray.**

Counter	Counts	Distance	Fix point
		From start line	
872895	0	20,000 m	Corner Richard M Nielsens Place/Stadionvej
874000	1105	41,000 m	Electricity locker Stadionvej 49
884233	11338	19,000 m	
885338	12443	40,000 m	Kløvermosevej 90
895571	22676	18,000 m	
896676	23781	39,000 m	
906909	34014	17,000 m	
908014	35119	38,000 m	
918247	45352	16,000 m	
919352	46457	37,000 m	
927463	54568	15,187/36,285 m	Corner Hannerupgårdsvej/Sadolinsgade

At that point half marathon course and marathon course meet again after split when marathon runners do the second loop. We followed the marathon course to 35 km point where also the half marathon runners will run.

930690	57795	36,000 m	
942028	69133	35,000 m	Postbox Kastanjevej 38

At that point we stopped measuring and went to the above fixpoint to continue at the half marathon course. The distance from fixpoint to 15 km point is 187 m = 2,120 counts

946980	0	15,187 m	Corner Hannerupgårdsvej/Sadolinsgade
949100	2120	15,000 m	Corner Hannerupgårdsvej/Læssøgade

At that point half marathon and marathon course splits when marathon runners do the second loop. We found the 35 km point and noticed the counter

954679	7699	35,000 m	Postbox Kastanjevej 38
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That means that there are  $(7699-2120) = 5579$  counts = 492 m between 15 km and 35 km points and 502 m between 35 km and 14 km points. We continued measuring

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960438	13458	14,000 m	
966017	19037	34,000 m	
971776	24796	13,000 m	
977355	30375	33,000 m	
983114	36134	12,000 m	
988693	41713	32,000 m	
994452	47472	11,000 m	
31	53051	31,000 m	
5790	58810	10,000 m	Skibhusvej 29

I stopped measuring because of a breakfast break

16500	0	10,000 m	Skibhusvej 29
22079	5579	30,000 m	Skibhusvej 84
73190	56690	5,000 m	Kanalvej, 25 m before entrance to restaurant
78769	62269	25,000 m	Kanalvej, electricity locker between 116 and 118
118542	102042	1,000 m	
123016	106516	21,0975 m	Stadionvej 30
124121	107621	21,000 m	
128942	112442	83 m	Startpoint from 2015 race – see conclusion later

When we reached the 20 km point from the half marathon course the counter showed:

134432, which means that the distance between 21 km and 20 km point is  
(134432-124121) = 10311 counts = 909 m – see conclusion later in this report.

Finally I measured the distance from the 41 km point to the finish point in the stadium

136800	0	41,000 m	Electricity locker Stadionvej 49
137905	1105	20,000 m	Corner Richard M Nielsens Place/Stadionvej
149654	12854	42,134 m	Finish line at the stadium – 61 m too short

The organizers want the start point to be moved (173800-174330) = 46.76 m in the running direction.

# CONCLUSIONS

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**With the average constant 11334.25 my conclusions are:**

## **Total length of half marathon course:**

Distance from 20 km point to fixpoint (927463-872895) = 54568 counts =	4,814.43 m
Distance from fixpoint to 10 km point (1005790-946978) = 58812 counts =	5,188.87 m
Distance from 10 km point to 2015 start point (128942-16500) = 112442 counts =	9,920.55 m
Moving of start point	-46.76 m
Distance from 20 km point to finish line (149654-137905) = 11749 counts =	1,036.59 m
Total distance	20,913.73 m

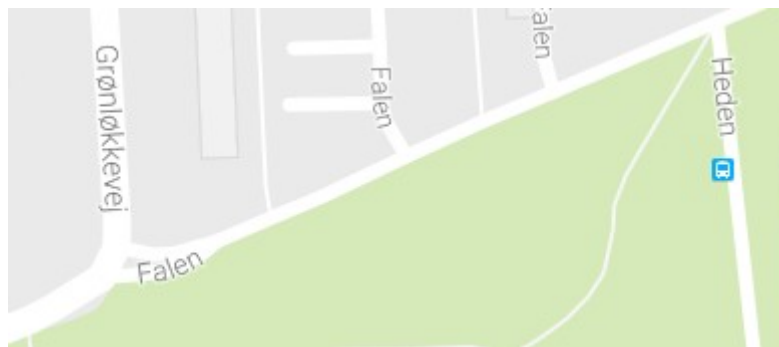
**Which means too short (21,097.5 – 20,913.73) = 184 m**

## **Total length of marathon course:**

Distance from 41 km point to 35 km point (942028-874000) = 68028 counts =	6,001.99 m
Distance from 35 km point to 31 km point (1000031-954679) = 45352 counts =	4,001.32 m
Distance from 31 km point to half marathon 20 km point (134432-10741) = 123691 counts =	10,913.03 m
Distance from half marathon 20 km point to start line (see above)	19,877.14 m
Distance from km 41 point to finish line (149654-136800) = 12854 counts =	1,134.08 m
Total distance	41,927.56 m

**Which means too short (42,195 – 41,927.50) = 267.50 m**

On race day the organizers will place two turning points at “Grønløkkevej”



The runners come from “Heden” and turn left at “Falen”. Instead of running straight at “Falen” as I measured they will turn right at “Grønløkkevej”. The half marathon runners and the marathon runners on their first lap will turn after 92 m. The marathon runners will on their second lap turn after  $(267.50-184)/2 = 42$  m. That means practically that the turning point will be moved 50 m when all the half marathon runners have passed.

## **Moving of kilometre points**

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The kilometre points which were sprayed on the road during the measurement should be moved as followed:

### **Half marathon course:**

Km 20 and km 19 should be moved 61 m against the running direction (97.50 minus 36.50)  
Km 18 to km 1 should be moved 123 m with the running direction because of the turning point.

### **Marathon course:**

Km 41, 40 and 39 should be moved 61 m against the running direction (195 minus 134)  
Km 38 to km 21 (incl. half marathon point) should be moved 23 m with the running direction because of the turning point on second lap.



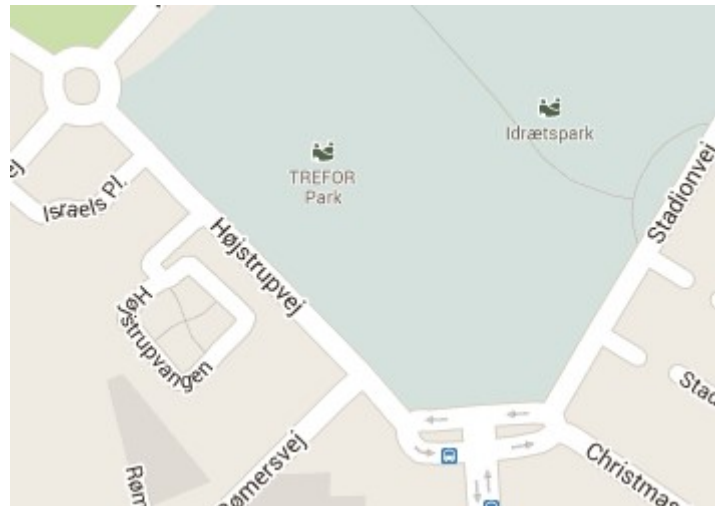
## MAP of marathon course

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The marathon runners will do the half marathon course to km 20.5 where the turn in the roundabout. They come from South East and run towards South East again. See map below



Then they will do the half marathon course once more. When they reach “Læssøegade” they will **not** turn right at “Hannerupgårdsvej” and then right at “Saldolinsgade” as they did on the first lap. But they will continue to “Tietgens Allé” where they turn right and then right again at “Sadolinsgade”. See map below



# MAP of ½ Marathon and Marathon course

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