Thank you to all who responded to my question regarding split times (at=2010 m intervals) for world class sprinters. Numerous people responded, and several asked that I forward the information on to the list.

In addition to the information listed below, I also received a FAX from Phil Martin (philip.martin@asu.edu) with times from several races.

The information is summarized below:

From lforrest@physio.ab.umd.edu Thu Dec  4 15:06:05 1997
Date: Wed, 03 Dec 1997 09:53:06 -0500
From: "Larry W. Forrester" <lforrest@physio.ab.umd.edu>

Lori,
Try contacting Track & Field News
http://www.trackandfieldnews.com
Good luck,
Larry

From jabsmith@cc.usu.edu Thu Dec  4 15:06:24 1997
Date: Wed, 03 Dec 1997 08:03:47 -0700
From: "J. Abendroth-Smith" <jabsmith@cc.usu.edu>

Hi Lori - I have the split times from the 1988 Olympics for the top three women in the 100 m race, and the splits for the top three men in the 1991 Tokyo worlds. I will attach a document that I have used for my classes with the splits listed. If it doesn't come through, let me know and I will try to send it another way.
Julie

From wrledoux@seas.upenn.edu Thu Dec  4 15:06:33 1997
Date: Wed, 03 Dec 1997 10:02:56 -0500
From: William Ledoux <wrledoux@seas.upenn.edu>

Lori,
=09This information was published in Sports Illustrated in the summer of '96 before the Olympics. Maybe you could find a copy. If I remember, runners reach their peak at 40m and slowly decelerate from there. The best runners are the ones who decelerate the least.

Bill

From morey@hrz.dhs-koeln.de Thu Dec  4 15:06:42 1997
Date: Wed, 3 Dec 1997 16:08:07 +0000
From: morey@hrz.dhs-koeln.de

Hi lori,
We did this data collection in Athen=8497. I=84m not working in the final=20 report, but I think this data will be included in it. The report will=20 be published in "NEW STUDIES IN ATHLETICS" (I think in december 97).

Good luck.
Gaspar
Lori;

I posted the following results on the list a few months back and did not get any feedback. I would be very interested in any information you get. This program was developed for race horses and modified for humans. It is always in a state of development.

Larry

***************

Below you will see the output from a computer simulation for a 200 meter sprint based on a modification to program I developed for horse racing. I have included the mens indoor and outdoor world records times (*) for comparison. The top speed is reach at 200-210 feet (61-64 m) from the start with a velocity of 39.75 ft/sec (12.12 m/s).

I know that others have developed similar programs, however I do not know how my program compares to actual data. The simulation compares very well with world record times at distance from 150 ft on. I would like to know how the programs does at the start, first 50-100 ft, velocity profile, acceleration, etc.

Distance, ft Time, sec Velocity, ft/sec Accel, ft/sec^2
--- --- --- --- ---
0 0 0 19.94
10 1.05 17.20 11.69
20 1.56 22.56 9.41
30 1.97 26.90 7.87
40 2.33 28.71 6.69
50 2.67 30.81 5.72
100 4.13 36.74 2.67
150 5.45 39.10 1.03
158* 5.22 indoor-50yd world record
160 5.70 39.32 .80
164.05* 5.56 indoor-50m world record
180 6.21 39.63 .40
188.46* 5.99 indoor-55m world record
196.86* 6.41 indoor-60m world record
200 6.71 39.75 .08
210 6.96 39.75 -.06
250 7.97 39.46 -.49
300 9.25 38.60 -.82
300* 9.50 indoor-100yd world record
328.1* 9.84 outdoor-100m world record
330 10.05 indoor
330 10.04 37.90 -.93
400 11.93 36.01 -1.04
500 14.83 33.03 -.98
600 17.99 30.21 -.80
650 19.68 28.94 -.70
656.2* 19.32 outdoor-200m world record
660 19.92 indoor
660 20.03 28.70 -.68

Larry

From=20ALEXANDR@bldgken.lan1.umanitoba.ca Thu Dec 4 15:06:56 1997
Date: Wed, 03 Dec 97 09:25:00 CST
From: ALEXANDR@bldgken.lan1.umanitoba.ca

Lori:

I have the split times for the Johnson-Lewis 100m from the 1988 Olympic final- it was published in Track Technique or some similar journal at the time. We use it as a lab assignment in kinesiology class.

johnson     Lewis
10m         1.86     1.88
20m         2.87     2.96
30m         3.80     3.88
### 100 m Split Times Summary

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>80m</td>
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<tr>
<td>90m</td>
<td>8.98</td>
<td>8.99</td>
</tr>
<tr>
<td>100m</td>
<td>9.83</td>
<td>9.86</td>
</tr>
</tbody>
</table>

Hope this is useful. =20

Marion Alexander

---

**From:** Aki Salo @exeter.ac.uk
**Date:** Thu Dec 4 15:07:04 1997
**From:** Aki Salo <A.Salo@exeter.ac.uk>

Dear Lori,

The split times in hurdles are usually taken at the touchdown after the hurdle, i.e. not in 10 m intervals. The following two papers include these touchdown times at the highest level:


The above mentioned book also contains data from the sprints, and there are some articles published about split times in other issues of New Studies in Athletics (which is published by IAAF). Unfortunately, I do not have exact references for the Sprint splits in my hand now.

Hope, this helps for the start

Sincerely

Aki Salo

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**From:** newt@sumatra.usc.edu
**Date:** Thu Dec 4 15:07:27 1997
**From:** Jonas Mureika <newt@sumatra.usc.edu>

Hi Lori:

Here are some splits that I have on file for various 100m finals at the WCs and OGs. I use them in mathematical models of sprinting on which I am working. You might be interested in my research page, http://rana.usc.edu:8376/~jonasm/track/

Unfortunately, I don’t have any hurdle splits. I also have splits for the women’s 100m final from Athens, as well, if you’d like these. However, these aren’t readily accessible, so I’d have to dig them up.

If you have any questions or comments, please feel free to ask. I hope these help.

Sincerely,

J. R. Mureika
Department of Computer Science
University of Southern California
http://rana.usc.edu:8376/~jonasm/

Phone: (213) 740-6345
FAX: (213) 740-5687

## 20m Time Splits for 1991 World Athletic Championships

**Rome '87**
- Wind: +1.0
- Ben Johnson: 1.84, 2.86, 3.80, 4.67, 5.53, 6.38, 7.23, 8.10, 8.96, 9.83
- Carl Lewis: 1.94, 2.96, 3.91, 4.78, 5.64, 6.50, 7.36, 8.22, 9.07, 9.93
- Reaction Time: 0.129

**Seoul '88**
- Wind: +1.1
- Ben Johnson: 1.83, 2.87, 3.80, 4.66, 5.50, 6.33, 7.17, 8.02, 8.89, 9.79
- Reaction Time: 0.132

**Tokyo '91**
- Wind: +1.2
- Carl Lewis: 1.88, 2.96, 3.88, 4.77, 5.61, 6.46, 7.30, 8.13, 9.00, 9.86
- Leroy Burrell: 1.83, 2.89, 3.79, 4.68, 5.55, 6.41, 7.26, 8.12, 9.01, 9.91
- Dennis Mitchell: 1.80, 2.87, 3.80, 4.68, 5.55, 6.42, 7.28, 8.14, 9.01, 9.91
- Reaction Time: 0.140

**Athens '97**
- Wind: +0.2
- Maurice Greene: 1.71, 2.75, 3.67, 4.55, 5.42, 6.27, 7.12, 7.98, 8.85, 9.73
- Donovan Bailey: 1.78, 2.81, 3.72, 4.59, 5.44, 6.29, 7.14, 8.00, 8.87, 9.77
- Tim Montgomery: 1.73, 2.76, 3.69, 4.57, 5.43, 6.29, 7.15, 8.02, 8.99, 9.80
- F. Fredericks: 1.73, 2.77, 3.70, 4.59, 5.46, 6.32, 7.18, 8.05, 8.93, 9.82
- Ato Boldon: 1.72, 2.77, 3.70, 4.59, 5.46, 6.33, 7.20, 8.08, 8.98, 9.90
- Reaction Time: 0.13

From: N.Lythgo@christ.acu.edu.au
Thu Dec 4 15:07:35 1997
Date: Wed, 3 Dec 1997 18:02:21 -0500 (EST)
From: Noel Lythgo <N.Lythgo@christ.acu.edu.au>

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Lori,
These are the 20m time splits for 1991 World Athletic Championships.
I would be very interested in a summary of the replies that you receive.

Cheers,
Noel Lythgo

From: smithg@ccmail.orst.edu Thu Dec 4 15:07:42 1997
Date: Wed, 3 Dec 1997 16:14:57 -0800
From: "Gerald A. Smith" <smithg@ccmail.orst.edu>

Hi Lori! I have some rather approximate data that I gathered from a tape of Lindford Christy in Barcelona Olympics. It was from a commercial telecast video with a panning camera. I estimated displacements from markings on the track as he ran past them. So it is rather approximate. The data are as follows:

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>Position (m)</th>
</tr>
</thead>
<tbody>
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<td>3.7</td>
<td>30</td>
</tr>
<tr>
<td>4.6</td>
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<tr>
<td>5.5</td>
<td>50</td>
</tr>
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<td>6.3</td>
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<tr>
<td>7.2</td>
<td>70</td>
</tr>
<tr>
<td>8.0</td>
<td>80</td>
</tr>
<tr>
<td>8.9</td>
<td>90</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

These should probably have uncertainties of +/- 0.1 seconds on each measurement (maybe a little less). I was using this as an illustration for my undergrad biomechanics class. If you get some better data from someone, would you mind sending a copy to me? I would like to get my class examples as close to reality as possible.

Regards,

Gerald Smith
Biomechanics Lab
Oregon State University
Corvallis, Oregon 97331
smithg@ccmail.orst.edu

From: gallowaym@ausport.gov.au Thu Dec 4 15:07:51 1997
Date: Thu, 4 Dec 1997 13:06:49 +1100
From: gallowaym@ausport.gov.au

The data from the last world champs in Athens is available. It was done by the German Sport University Cologne, Institute for Athletics.

EG 10 m splits 100m Gold medallists
Marin Jones=09 1.81, 1.11, 1.02, 0.97, 0.95, 0.94, 0.95, 0.97, 0.99
Greene=09=01.71, 1.04, 0.92, 0.88, 0.87, 0.85, 0.85, 0.86, 0.87, 0.88

If you need more of these let me know and I can post a copy of the report to you.

Margy Galloway

From: darras_n@hellasnet.gr Thu Dec 4 15:08:05 1997
Date: Thu, 4 Dec 1997 09:48:36 +0200
From: Darras Nikolaos <darras_n@hellasnet.gr>

the book is:


BIOMECHANICAL ANALYSIS OF THE JUMPING EVENTS

TIME ANALYSIS OF THE SPRINT AND HURDLE EVENTS.

The book has been published from IAAF so it won’t be difficult to get it from there.

Good luck.

Nikos.

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From=C.Morriss@mmu.ac.uk Thu Dec  4 15:08:12 1997
Date: Thu, 4 Dec 1997 11:19:59 GMT
From: “C.MORRISS” <C.Morriss@mmu.ac.uk>

Lori,

I have some information from the 1997 World Champs that will be of interest to you, but it’s a hard copy. Email your fax number to me and I'll send it through.

Best wishes,

Calvin.