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Date: Thu, 4 Dec 1997 15:24:19 -0500
Reply-To: lori livingston F <llivings@mach1.wlu.ca>
Sender: Biomechanics and Movement Science listserver <BIOMCH-L@NIC.SURFNET.NL>
From: lori livingston F <llivings@mach1.wlu.ca>
Subject: 100 m Split Times Summary
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; CHARSET=US-ASCII
Content-Transfer-Encoding: QUOTED-PRINTABLE

Thank you to all who responded to my question regarding split times (at=20
10 m intervals) for world class sprinters. Numerous people responded,=20
and several asked that I forward the information on to the list. =20

In addition to the information listed below, I also received a FAX from=20
Phil Martin (philip.martin@asu.edu) with times from several races. =20

The information is summarized below:

From=20lforrest@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=20jabsmith@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=20wrledoux@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=20morey@hrz.dshs-koeln.de Thu Dec 4 15:06:42 1997
Date: Wed, 3 Dec 1997 16:08:07 +0000
From: morey@hrz.dshs-koeln.de

Hi lori,

We did this data collection in Athen=B497. I=B4m 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

To: lilvings@mach1.wlu.ca

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.=20
I have included the mens indoor and outdoor world records times (*)=20
for comparison. The top speed is reach at 200-210 feet (61-64 m) from=20
the start with a velocity of 39.75 ft/sec (12.12 m/s)

I know that others have developed simular 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=20
to know how the programs does at the start, first 50-100 ft, velocity=20
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	26.09	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
150*	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
180.46*	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	
=09	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	
=09	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=
=20
final- it was published in Track Technique or some similar journal at the=
=20
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

80m 8.11 8.12
90m 8.98 8.99
100m 9.83 9.86

Hope this is useful. =20

Marion Alexander

From=20A.Salo@exeter.ac.uk Thu Dec 4 15:07:04 1997
Date: Wed, 3 Dec 1997 15:34:04 PST
From: Aki Salo <A.Salo@exeter.ac.uk>

Dear Lori

The split times in hurdles are usually taken at the touchdown after the hur=
dle, i.e.=20
not in 10 m intervals. The following two papers include these touchdown tim=
es at=20
the highest level:

Susanka et al. ... New Studies in Athletics 3 (2): 51-57, 1988. (analysis f=
rom the=20
World Championships in Rome 1987)

Bruggeman & Glad. Scientific research report at the Games of the XXIVth Oly=
mpiad=20
- Seoul 1988. Final report, 1990, pp. 91-131.

The above mentioned book also contains data from the sprints, and there are=
 some=20
articles published about split times in other issues of New Studies in Athl=
etics=20
(which is published by IAAF). Unfortunately, I do not have exact references=
 for the=20
Sprint splits in my hand now.

Hope, this helps for the start

Sincerely

Aki Salo

From=20newt@sumatra.usc.edu Thu Dec 4 15:07:27 1997
Date: Wed, 3 Dec 1997 14:52:33 -0800 (PST)
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,=20

=09http://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.

=09=09=09=09=09Sincerely,

=09=09=09=09=09J. R. Mureika
=09=09=09=09=09Department of Computer Science
=09=09=09=09=09University of Southern California

=09=09=09=09=09http://rana.usc.edu:8376/~jonasm/

=09=09=09=09=09Phone: (213) 740-6345
=09=09=09=09=09FAX: (213) 740-5687

```
Rome '87        wind +1.0
=20
Ben Johnson     1.84 2.86 3.80 4.67 5.53 6.38 7.23 8.10 8.96 9.83
                1.71 1.02 0.94 0.87 0.86 0.85 0.85 0.87 0.86 0.87
        Reaction Time:  0.129
Carl Lewis      1.94 2.96 3.91 4.78 5.64 6.50 7.36 8.22 9.07 9.93
                1.75 1.02 0.95 0.87 0.86 0.86 0.86 0.86 0.85 0.86
        Reaction Time:  0.193
=20
=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D=
-=20
Seoul '88       wind +1.1
=20
Ben Johnson     1.83 2.87 3.80 4.66 5.50 6.33 7.17 8.02 8.89 9.79
                1.70 1.04 0.93 0.86 0.84 0.83 0.84 0.85 0.87 0.90
        Reaction Time:  0.132
Carl Lewis      1.89 2.96 3.90 4.79 5.65 6.48 7.33 8.18 9.04 9.92
                1.75 1.07 0.94 0.89 0.86 0.83 0.85 0.85 0.86 0.88
        Reaction Time:  0.136
L. Christie     1.92 2.97 3.92 4.81 5.66 6.50 7.36 8.22 9.09 9.97
                1.05 0.95 0.89 0.85 0.84 0.86 0.86 0.87 0.88
        Reaction Time: ?
=20
=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D=3D-=3D-=3D-=3D-=3D-=3D-=3D-=
=3D-=3D-=3D-
Tokyo '91       wind +1.2
=20
Carl Lewis      1.88 2.96 3.88 4.77 5.61 6.46 7.30 8.13 9.00 9.86
                1.74 1.08 0.92 0.89 0.84 0.85 0.84 0.83 0.87 0.86
        Reaction Time:  0.140
Leroy Burrell   1.83 2.89 3.79 4.68 5.55 6.41 7.26 8.12 9.01 9.88
                1.71 1.06 0.90 0.89 0.87 0.86 0.87 0.84 0.89 0.87
        Reaction Time:  0.120
Dennis Mitchell 1.80 2.87 3.80 4.68 5.55 6.42 7.28 8.14 9.01 9.91
                1.71 1.07 0.93 0.88 0.87 0.87 0.86 0.86 0.87 0.90
        Reaction Time:  0.090

=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D=
-=3D-=3D-=3D-
Athens '97=09wind +0.2
(note: first row does not include reaction time)

Maurice Greene=091.71 2.75 3.67 4.55 5.42 6.27 7.12 7.98 8.85 9.73
                1.71 1.04 0.92 0.88 0.87 0.85 0.85 0.86 0.87 0.88
=09Reaction Time: 0.13

Donovan Bailey=091.78 2.81 3.72 4.59 5.44 6.29 7.14 8.00 8.87 9.77
=09=091.78 1.03 0.91 0.87 0.85 0.85 0.85 0.86 0.87 0.90
=09Reaction Time: 0.14

Tim Montgomery=091.73 2.76 3.69 4.57 5.43 6.29 7.15 8.02 8.90 9.80
=09=091.73 1.03 0.93 0.88 0.86 0.86 0.86 0.87 0.88 0.90
=09Reaction Time: 0.13

F. Fredericks=091.73 2.77 3.70 4.59 5.46 6.32 7.18 8.05 8.93 9.82
=09        1.73 1.04 0.93 0.89 0.87 0.86 0.86 0.87 0.88 0.89
=09Reaction Time: 0.12

Ato Boldon=091.72 2.77 3.70 4.59 5.46 6.33 7.20 8.08 8.98 9.90
=09=091.72 1.05 0.93 0.89 0.87 0.87 0.87 0.88 0.90 0.92
=09Reaction Time: 0.12

=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D-=3D=
-=3D-=3D-=3D-
------------------------------------------------------------------------
From=20N.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>


Lori,

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

Cheers,

Noel Lythgo

From=20smithg@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>
=20
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:
=20

Time	Position
0.1 s	0 m
1.1 s	5 m
1.8 s	10 m
2.8 s	20 m
3.7 s	30 m
4.6 s	40 m
5.5 s	50 m
6.3 s	60 m
7.2 s	70 m
8.0 s	80 m
8.9 s	90 m
10 s	100 m

=20
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.
=20
Regards,
=20
Gerald Smith
Biomechanics Lab
Oregon State University
Corvallis, Oregon 97331
=20
smithg@ccmail.orst.edu

From=20gallowaym@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 t=
he
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, 0.95, 0.97, 0.99
Greene=09=091.71, 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 t=
o
you

Margy Galloway

From=20darras_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:

SCIENTIFIC RESHEARCH PROJECT AT THE GAMES OF THE XXIVth OLYMPIAD - SEUL - 1988.

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 o get it from there.

Good luck.

Nikos.

From=20C.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=20 interest to you, but its a hard copy. Email your fax number to me and=20 I'll send it through.

Best wishes,

Calvin.

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