Track and Field Event

Performance Standards

and

Age Factors

1999 version

C. A. Phillips

Disclaimer: This book is not a publication of any governing body for track and field, national or international. The work is solely that of the author and is not to be construed as being the official standards or age factors published for or in affiliation with any governing body for track and field.

Copyright: A major objective of this book is to provide the information to a wide readership. Therefore, any of the tables, graphs or language may be reproduced without permission. As a courtesy, please mention that the material used was the work of the author.

Copyright Charles A. Phillips

5130 Nebraska Avenue NW
Washington, DC 20008

Table Of Contents

	Page
Preface	xi
Introduction	1
Chapter One - Running Events	3
Men's Standards	4
Men's Age Factors	8
Women's Standards	35
Women's Age Factors	39
Chapter Two - Hurdle Events	58
Men's Standards and Age Factors	59
Women's Standards and Age Factors	85
Chapter Three - Field Events	99
Men's Standards and Age Factors	100
Women's Standards and Age Factors	135
Chapter Four - Race Walk Events	158
Men's Standards	159
Men's Age Factors	161
Women's Standards	184
Women's Age Factors	186
Chapter Five - Data Base Content	202
Chapter Six - Summary Of Overall Effort	205
Appendix - Open Class Records And Standards	208

LIST OF TABLES

	Page
Men's Running Event Standards (h:m:s), 50-2 mile	4
Men's Running Event Standards (seconds), 50-2 mile	5
Men's Running Event Standards (h:m:s), 5K-100K	6
Men's Running Event Standards (seconds), 5K-100K	7
Men's Running Event Age Factors, 50-2 mile	8
Men's Running Event Age Factors, 5K-100K	9
Men's Performance Level Of Actual Records	13
Men's 1-Hour Run Standards (meters)	26
Men's Age Handicapped Runs for 100, 200 and 400	28
Women's Running Event Standards (h:m:s), 50-2 mile	35
Women's Running Event Standards (seconds), 50-2 mile	36
Women's Running Event Standards (h:m:s), 5K-100K	37
Women's Running Event Standards (seconds), 5K-100K	38
Women's Running Event Age Factors, 50-2 mile	39
Women's Running Event Age Factors, 5K-100K	40
Women's Performance Level Of Actual Records	41
Women's 1-Hour Run Standards (meters)	51
Women's Age Handicapped Runs for 100, 200 and 400	53
Men's Hurdle Standards and Age Factors	59
Youth's Hurdle Standards, special events	61
Men's Performance Level Of Actual Records	64
Women's Hurdle Standards and Age Factors	85
Youth's Hurdle Standards, special events	86
Women's Performance Level Of Actual Records	87
Men's Field Event Standards and Age Factors	100
Youth's Field Event Standards, special events	102
Men's Field Event Standards and Age Factors (USATF Events)	103
Men's Performance Level Of Actual Records	106
Women's Field Event Standards and Age Factors	135
Youth's Field Event Standards, special events	136
Women's Field Event Standards and Age Factors (USATF Events)	137
Women's Performance Level Of Actual Records	138
Men's Walk Event Standards (h:m:s)	159
Men's Walk Event Standards (seconds)	160
Men's Walk Event Age Factors	161
Men's Performance Level Of Actual Records	164
Men's 1-Hour Walk Standards (meters)	177
Women's Walk Event Standards (h:m:s)	184
Women's Walk Event Standards (seconds)	185
Women's Walk Event Age Factors	186
Women's Performance Level Of Actual Records	187
Women's 1-Hour Walk Standards (meters)	197

LIST OF FIGURES

Running Events

Fig		Page
1	Men's Rate-Age-Distance Surface for Running Events; Men's Running Rate by Age; Events 50-100	15
2	Men's Running Rate by Age; Events 200-3K; Men's Running Rate by Age; Events 5K-100K	16
3	Men's Running Rate by Event; Ages 8, 12, 18, OC; Men's Running Rate by Event; Ages OC,40, 60, 80, 100	17
4	Men's Time-Age-Distance Surface for Running Events	19
5	Men's Time Standards and Records for 100; Men's Time Standards and Records for 200	20
6	Men's Time Standards and Records for 400; Men's Time Standards and Records for 800	21
7	Men's Time Standards and Records for 1500; Men's Time Standards and Records for mile	22
8	Men's Time Standards and Records for 3K; Men's Time Standards and Records for 5K	23
9	Men's Time Standards and Records for10K; Men's Time Standards and Records for marathon	24
10	Men's Standards and Records for 1-Hour Run	27
11	Men's Standards for Sprint Fixed Time Runs	29
12	Men's Surface of Age Factor Values for Running Events	31
13	Men's Age Factors by Age for Events 50-1500; Men's Age Factors by Age for Events 3K-100K	32
14	Men's Age Factors by Event for Ages 8, 12, 18, OC; Men's Age Factors by Event for Ages OC, 40, 60, 80, 100	33

Fig		Page
15	Women's Rate-Age-Distance Surface for Running Events; Women's Running Rate by Age; Events 50-100	42
16	Women's Running Rate by Age; Events 200-3K; Women's Running Rate by Age; Events 5K-100K	43
17	Women's Running Rate by Event; Ages 8, 12, 18, OC; Women's Running Rate by Event; Ages OC,40, 60, 80, 100	44
18	Women's Time-Age-Distance Surface for Running Events	45
19	Women's Time Standards and Records for 100; Women's Time Standards and Records for 200	46
20	Women's Time Standards and Records for 400; Women's Time Standards and Records for 800	47
21	Women's Time Standards and Records for 1500; Women's Time Standards and Records for mile	48
22	Women's Time Standards and Records for 3K; Women's Time Standards and Records for 5K	49
23	Women's Time Standards and Records for10K; Women's Time Standards and Records for marathon	50
24	Women's Standards and Records for 1-Hour Run	52
25	Women's Standards for Sprint Fixed Time Runs	54
26	Women's Surface of Age Factor Values for Running Events	55
27	Women's Age Factors by Age for Events 50-1500; Women's Age Factors by Age for Events 3K-100K	56
28	Women's Age Factors by Event for Ages 8, 12, 18, OC; Women's Age Factors by Event for Ages OC, 40, 60, 80, 100	57

Hurdles

Fig		Page
29	Men's Running Rate - 80/30", 100/33", 100/36" Hurdles; Men's Running Rate - 110/36", 110/39", 110/42" Hurdles	66
30	Men's Composite of Standards - Sprint Hurdles; Men's Comparison of Standards - Sprint Hurdles	68
31	Men's Time Standards and Records for 80/30" Hurdles; Men's Time Standards and Records for 100/33" Hurdles	70
32	Men's Time Standards and Records for 100/36" Hurdles; Men's Time Standards and Records for 110/36" Hurdles	71
33	Men's Time Standards and Records for 110/39" Hurdles; Men's Time Standards and Records for 110/42" Hurdles	72
34	Men's Running Rate - 300 meter Hurdles; Men's Running Rate - 400 meter Hurdles	74
35	Men's Composite of Standards - Intermediate Hurdles; Men's Comparison of Standards - Intermediate Hurdles	75
36	Men's Time Standards and Records for 300/30" Hurdles; Men's Time Standards and Records for 300/33" Hurdles	76
37	Men's Time Standards and Records for 400/33" Hurdles; Men's Time Standards and Records for 400/36" Hurdles	77
38	Men's Running Rate - Steeplechase	78
39	Men's Composite of Standards - Steeplechase; Men's Comparison of Standards - Steeplechase	79
40	Men's Time Standards and Records for 2K Steeplechase; Men's Time Standards and Records for 3K Steeplechase	80
41	Men's Age Factors for Sprint Hurdle Events; Men's Age Factors for Intermediate Hurdles Events	82
42	Men's Age Factors for Steeplechase	83
43	Women's Running Rate - 80/30", 100/33" Hurdles	88
44	Women's Composite of Standards - Sprint Hurdles; Women's Comparison of Standards - Sprint Hurdles	89
45	Women's Time Standards and Records for 80/30" Hurdles; Women's Time Standards and Records for 100/33" Hurdles	90
46	Women's Running Rate - 300, 400 meter Hurdles	91

Fig		Page
47	Women's Composite of Standards - Intermediate Hurdles; Women's Comparison of Standards - Intermediate Hurdles	92
48	Women's Time Standards and Records for 300/30" Hurdles; Women's Time Standards and Records for 400/30" Hurdles	93
49	Women's Running Rate - Steeplechase	94
50	Women's Composite of Standards - Steeplechase; Women's Comparison of Standards - Steeplechase	95
51	Women's Time Standards and Records for 2K Steeplechase	96
52	Women's Age Factors for Sprint Hurdle Events; Women's Age Factors for Intermediate Hurdles Events	97
53	Women's Age Factors for Steeplechase	98

Field Events

54	Men's Distance Standards and Records - Pole Vault; Men's Distance Standards and Records - High Jump	108
55	Men's Distance Standards and Records - Long Jump; Men's Distance Standards and Records - Triple Jump	109
56	Men's Composite of Standards - Shot Put; Men's Comparison of Standards - Shot Put	111
57	Men's Distance Standards and Records - SP/16lb/7.26kg ; Men's Distance Standards and Records - SP/6kg	112
58	Men's Distance Standards and Records - SP/5kg; Men's Distance Standards and Records - SP/4kg	113
59	Men's Composite of Standards - Hammer Throw; Men's Comparison of Standards - Hammer Throw	115
60	Men's Distance Standards and Records - HT/16lb/7.26kg; Men's Distance Standards and Records - HT/6kg	116
61	Men's Distance Standards and Records - HT/5kg; Men's Distance Standards and Records - HT/4kg	117
62	Men's Composite of Standards - Discus Throw; Men's Comparison of Standards - Discus Throw	118
63	Men's Distance Standards and Records - DT/2kg; Men's Distance Standards and Records - DT/1.5kg	119
64	Men's Distance Standards and Records - DT/1kg	120

Fig		Page
65	Men's Composite of Standards - Javelin Throw; Men's Comparison of Standards - Javelin Throw	121
66	Men's Distance Standards and Records - JT/800g; Men's Distance Standards and Records - JT/600g	122
67	Men's Composite of Standards - Weight Throw; Men's Comparison of Standards - Weight Throw	123
68	Men's Distance Standards and Records - WT/35lb; Men's Distance Standards and Records - WT/25lb	124
69	Men's Distance Standards and Records - WT/20lb; Men's Distance Standards and Records - WT/16lb	125
70	Men's Distance Standards and Records - WT/12lb	126
71	Men's Composite of USATF Standards - SuperWeight; Men's Comparison of USATF Standards - SuperWeight	127
72	Men's Composite of USATF Standards - Weight; Men's Comparison of USATF Standards - Weight	128
73	Men's Distance Standards and Records - WT/56lb	129
74	Men's Age Factors for PV, HJ, LJ, TJ; Men's Age Factors for Shot Put	131
75	Men's Age Factors for Hammer Throw; Men's Age Factors for Discus Throw	132
76	Men's Age Factors for Javelin Throw; Men's Age Factors for Weight Throw	133
77	Women's Distance Standards and Records - Pole Vault; Women's Distance Standards and Records - High Jump	139
78	Women's Distance Standards and Records - Long Jump; Women's Distance Standards and Records - Triple Jump	140
79	Women's Composite of Standards - Shot Put; Women's Comparison of Standards - Shot Put	141
80	Women's Distance Standards and Records - SP/4kg; Women's Distance Standards and Records - SP/3kg	142
81	Women's Composite of Standards - Hammer Throw; Women's Comparison of Standards - Hammer Throw	143
82	Women's Distance Standards and Records - HT/4kg; Women's Distance Standards and Records - HT/3kg	144

Fig		Page
83	Women's Composite of Standards - Discus Throw; Women's Comparison of Standards - Discus Throw	145
84	Women's Distance Standards and Records - DT/1kg	146
85	Women's Composite of Standards - Javelin Throw; Women's Comparison of Standards - Javelin Throw	147
86	Women's Distance Standards and Records - JT/600g; Women's Distance Standards and Records - JT/400g	148
87	Women's Composite of Standards - Weight Throw; Women's Comparison of Standards - Weight Throw	149
88	Women's Distance Standards and Records - WT/20lb; Women's Distance Standards and Records - WT/16lb	150
89	Women's Distance Standards and Records - WT/12lb	151
90	Women's Composite of USATF Standards - SuperWeight; Women's Comparison of USATF Standards - SuperWeight	152
91	Women's Composite of USATF Standards - Weight; Women's Comparison of USATF Standards - Weight	153
92	Women's Distance Standards and Records - WT/35lb; Women's Distance Standards and Records - WT/25lb	154
93	Women's Age Factors for PV, HJ, LJ, TJ; Women's Age Factors for Shot Put	155
94	Women's Age Factors for Hammer Throw; Women's Age Factors for Discus Throw	156
95	Women's Age Factors for Javelin Throw; Women's Age Factors for Weight Throw	157

Race Walk Events

Fig		Page
96	Men's Rate-Age-Distance Surface for Walk Events; Men's Walking Rate by Age; Events 1 mile-8K	166
97	Men's Walking Rate by Age; Events 10K-20K; Men's Walking Rate by Age; Events 25K-50K	167
98	Men's Walking Rate by Event; Ages 8, 12, 18, OC; Men's Walking Rate by Event; Ages OC,40, 60, 80, 100	168
99	Men's Time-Age-Distance Surface for Walk Events	170
100	Men's Time Standards and Records for 1500; Men's Time Standards and Records for 3K	171
101	Men's Time Standards and Records for 2 mile; Men's Time Standards and Records for 5K	172
102	Men's Time Standards and Records for 10K; Men's Time Standards and Records for 15K	173
103	Men's Time Standards and Records for 20K; Men's Time Standards and Records for 25K	174
104	Men's Time Standards and Records for30K; Men's Time Standards and Records for 50K	175
105	Men's Standards and Records for 1-Hour Walk	178
106	Men's Surface of Age Factor Values for Walk Events	180
107	Men's Age Factors by Age; Events 1500-10K; Men's Age Factors by Age; Events 15K-50K	181
108	Men's Age Factors by Event; Ages 8, 12, 18, OC; Men's Age Factors by Event; Ages OC, 40, 60, 80, 100	182

Fig		Page
109	Women's Rate-Age-Distance Surface for Walk Events; Women's Walking Rate by Age; Events 1 mile-8K	188
110	Women's Walking Rate by Age; Events 10K-20K; Women's Walking Rate by Age; Events 25K-50K	189
111	Women's Walking Rate by Event; Ages 8, 12, 18, OC; Women's Walking Rate by Event; Ages OC,40, 60, 80, 100	190
112	Women's Time-Age-Distance Surface for Walk Events	191
113	Women's Time Standards and Records for 1500; Women's Time Standards and Records for 1 mile	192
114	Women's Time Standards and Records for 3K; Women's Time Standards and Records for 2 mile	193
115	Women's Time Standards and Records for 5K; Women's Time Standards and Records for 10K	194
116	Women's Time Standards and Records for 15K; Women's Time Standards and Records for 20K	195
117	Women's Time Standards and Records for25K; Women's Time Standards and Records for 50K	196
118	Women's Standards and Records for 1-Hour Walk	198
119	Women's Surface of Age Factor Values for Walk Events	199
120	Women's Age Factors by Age; Events 1500-10K; Women's Age Factors by Age; Events 15K-50K	200
121	Women's Age Factors by Event; Ages 8, 12, 18, OC; Women's Age Factors by Event; Ages OC, 40, 60, 80, 100	201

Preface

This book of standards is the destination arrived at after following a trail of exploration into the unknown commenced by the author in 1976. The unknown in this case involved investigating the effect of aging on one's ability to run. The exploration was made possible because battery operated, programmable calculators became available in the marketplace and hobbyists then had the means to more easily solve mathematical problems which were previously left untouched because of their complexity or the onerous repetition involved.

Using the simple hand held pocket calculators of that time, the effort began by fitting time-versus-age curves through masters age group record times in an attempt to understand what happens to running performance as the result of aging. An evolutionary process was soon taking place - the author began to learn more about the equational mathematics involved in fitting performance curves for runners, increased participation in competitive masters age running worldwide produced records for ages where no records existed and improved many records which did exist, and affordable calculators/computers of ever-increasing capability flooded the marketplace.

Initial efforts dealt only with men's running events. Hurdles, field events and race walking were added along the way for both men and women including running events for youths. Obtaining new or improved data, or the availability of more powerful computers, or both, meant going back frequently to improve everything previously done because better fitting curves were then available to produce ever improved results. Equations evolved from being those requiring six performance points to satisfy six unknowns for solution, to being equations having shaping terms so that only two or three performance points were required for solution. Present curves have evolved to where only one or two unknowns are involved (i.e., only one or two performance points are required to curve fit an event with ages ranging from 5 to 100).

What started out as a sports hobby endeavor has evolved into a serious work guided by the principles of the scientific method. The effort commenced in an exploratory development fashion, it then went through an initial development period where additional information on the nature of the subject matter was still being discovered, and it has now passed through the stage of examining numerous hypotheses. Comprehensive analytical investigations and evaluations have been conducted as every new hypothesis emerged. The work is now academically and professionally creditable, and its results are field-tested annually by the worldwide efforts of track and field competitors of all ages.

Records will continue to be set in events for ages that are not presently existing, improved records will continue to occur and replace existing records, and so on. The results of the effort to date have, however, matured to the point that future efforts will result in relatively minor changes or improvements overall, and hence the book is useful in its present form for today's applications, and should serve as the reference point of departure for future efforts in this area.

Introduction

The primary purpose of this book is to produce track and field performance standards and age factors applicable to all levels of performance ability for competitors of all ages.

Performance standards are listed as time standards for running, hurdle and race walking events, and as distance standards for field events. Age factors are applied to a competitor's performance to convert it to an equivalent open class performance.

The book is organized so that running, hurdle, field and race walking events are covered in their entirety in separate chapters. Results for both men and women are included in each chapter.

Each chapter commences with tables of the performance standards and age factors applicable to its events, followed by a table listing the performance level percentage of the existing records measured against the standards. Next, an explanation provides insight into how the standards of that section were developed. The remainder of the chapter includes individual event graphs which show the comparison of existing event records to the standards developed, and other graphs and material that pertains to the development of those standards and age factors.

The listed performance standards reflect world record level performances. They were produced by curve fitting the best of the actual records available worldwide for all ages. Thus they are not directly standards for average runners or average field eventers, but they are applicable to performers of any level of ability through use of the performance level percentage concept. The details and application of the concept will be discussed in each chapter, including an example to illustrate the process.

A variety of sources were used in compiling the records of the data base necessary to accomplish curve fitting, analysis and modeling. The purpose here is to acknowledge and identify the sources used, and to state that any errors in the listing of, or failure to list, records lies with the author's extraction and not with the source material. Only the record time or distance is used, the record holder is not identified and neither the date nor place of record is noted. While most of the records used have been ratified by a properly constituted track and field governing body, not all of the records used have been ratified. In addition, no claim is made or implied that other records may not exist which are better than those that were used. Thus the records in the data base consist solely of their numerical value and are otherwise unidentifiable. The endeavor here is to minimize or preclude bias being favorably or unfavorably accorded any data point, while at the same time ensuring that every data point is a record from an acceptably valid source.

For the initial data base, running and field event records for masters age athletes were international in scope and were extracted from "Masters Age Records 1980 edition" published by National Masters News. Running event records for youths were based on American times only and were extracted from "Running Records By Age," published by National Running Data Center, Inc. Marathon records for international runners of all ages were extracted from "Runner's World" magazine published by World Publications.

The cut-off date for records used in developing the standards for this book was 1 October 1998. For the 1999 data base, records for running and field events for masters age athletes were updated from "Masters Age Records 1998 edition" published by National Masters News. Running and field event records for boys are international in scope and were updated from USATF/TAC listings of "World Junior Men All-Time Age Year Records." Marathon records were updated from National Master's News. Open class and Junior world records were updated from "Track & Field News" magazine on-line at www.trackandfieldnews.com.

Three special mathematical applications used by the author's approach produce standards which are unique in their method of generation, and have as a result the highest possible fidelity and reliability for purposes of performance comparison measurement.

The first special application applies to the time-age curve fitting process for all run, hurdle and walk events, and also to the distance-age curve fitting process for all field events. The time-age and distance-age equations used employ asymptotic shaping terms which mathematically proportion the fitted curve to include all records for youths as well as all records for masters in a single curve. In this way youth and masters records are fitted together to produce a single set of curve fitted standards for the entire, continuous age range of 5 to 100 years. Being able to use asymptotic curve shaping techniques to achieve simultaneous curve fitting of both the youth segment and masters segment of the curve is an application of major significance as it simplifies and facilitates the curve fitting process while at the same time improving it by significantly increasing the statistical confidence level of the standards generated. Neither youths nor masters are favored to the detriment of the other group in this manner, and in fact, better results are achieved by fitting the whole as an entity instead of fitting the parts separately and independently.

The second special application is use of the time-surface concept to generate time standards for running and racewalk events. Rather than simply curve fitting each event separately and independently of other events, the application here fits a continuous three-dimensional time surface over the axes of age and distance. The third special application is use dynamics theory for masses in curve fitting field event throws. The time-surface concept and dynamics theory applications will be explained in later chapters.

The author's standards are prepared by design so that they will properly allow comparison of performances between separate events. Standards for runs, hurdles and walks are computer generated using the same performance-versus-age equation; that same equation, with a minor revision in form, is used for the field events. Arbitrariness in the curve fitting process has been minimized by computerizing the mathematical equations as algorithms in the curve fitting portions of the program so that the same "best record" selection criteria applies to runs, hurdles, walks and field events and to every event therein. In addition, performance-versus-age curve fitting is accomplished over an inclusive age range of 5 to 100 years, properly fitting the performances of all ages on a single curve and generating standards which apply equally to performers of all ages. Furthermore, for runs and walks, time-distance curve fitting is accomplished in addition to time-age curve fitting. This allows the time-age and time-distance curves to be combined into a three-dimensional time surface over the axes of performer's age and distance run/walked. The resulting standards are thus generated with event dependency so that performances can be properly compared - not only between the 1500 and mile, but also between the 200 and 10,000 meters, and without age limitation. Runs, hurdles, walks and field events can be compared to each other for performance measuring purposes.

This book is not a publication of any governing body for track and field, national or international. The work is solely that of the author and is not to be construed as being the official standards or age factors published for or in affiliation with any governing body for track and field. This point is emphasized because official standards are published and are available. The official standards and age factors for masters age runners were compiled and developed by World Association of Veteran Athletes (WAVA), published by National Masters News, with a 1989 version (first printing February 1989, second printing July 1989), and with a 1994 revised version (third printing August 1994).

Chapter One

Running Events

Standards are provided for selected track and long distance road running events most frequently included in sanctioned meets. The standards reflect times run by world record level runners. The standards apply to runners of all ability levels, however, through application of the performance level percentage concept.

The performance level percentage concept is that a runner's performance level is expressed as a percentage of the world record standard which is found by dividing the event standard by the runner's time for the event. To do this, the standard and the runner's time should both be expressed in seconds. A fifty-seven year old runner uses the standard listed for age 57. Runners twenty to twenty-nine years old use the standard listed for OC which is the open class runner standard.

Calculating a runner's performance level percentage. Determine the PL% for a 53 year old man who runs the mile in 4:30.0. Convert the 4 minutes and 30.0 seconds time run to time in seconds, obtaining 270.0 seconds. Find the standard on page 5 for the age 53 men's mile which is listed as 260.72 seconds. Divide 260.72 by 270.0 obtaining a value of 0.9656 which is a percentage of 96.56%.

The primary purpose of performance level percentages is to facilitate comparison of performances. An individual runner's performances can be compared against themselves, or performances of many runners can be compared. Since the standards for all events are adjusted to a world record level, comparison of performances for different events is valid. While this effort does not set standards as such for average runners, the standards are in fact applicable to runners of average ability regardless of what the term average runner may imply.

The tables of time standards are provided starting with the next page. The standards are listed in hours, minutes and seconds format (h:m:s), and are also listed in seconds. The listing in seconds is to facilitate calculating performance level percentage.

Following the tables of time standards, age-factor tables are provided for the same events. Age-factors are used to convert the performances of non-open class runners (e.g., masters age) to their equivalent performance as an open class effort. Specifically, age-factors for running events are factors which convert records for non-open class runners to the value of the open class record. Age-factor is thus obtained by dividing the open class world record time by the time of the records for the other ages. For this book, age-factor is defined to be division of the open class time standard by the time standard for the other ages.

MEN'S TRACK RUNNING EVENT STANDARDS IN H;M;S

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	6.65	7.27	7.89	13.18	27.49	42.47	58.28	1:34.44	2:19.97	3:00.08	4:43.86	5:07.01	6:30.69	10:10.31	10:59.18
9	6.24	6.82	7.40	12.29	25.71	39.98	55.18	1:29.76	2:12.11	2:50.06	4:28.04	4:49.87	6:08.71	9:35.24	10:21.13
10	6.02	6.55	7.10	11.68	24.37	38.08	52.79	1:26.14	2:06.00	2:42.27	4:15.78	4:36.59	5:51.71	9:08.24	9:51.86
11	5.87	6.38	6.90	11.23	23.32	36.57	50.90	1:23.26	2:01.13	2:36.07	4:06.03	4:26.03	5:38.21	8:46.86	9:28.71
12	5.78	6.27	6.76	10.88	22.49	35.36	49.37	1:20.93	1:57.17	2:31.03	3:58.11	4:17.46	5:27.27	8:29.58	9:10.01
13	5.72	6.18	6.66	10.62	21.82	34.37	48.11	1:19.00	1:53.88	2:26.87	3:51.59	4:10.40	5:18.26	8:15.38	8:54.64
14	5.67	6.12	6.58	10.40	21.26	33.54	47.05	1:17.39	1:51.13	2:23.38	3:46.14	4:04.51	5:10.75	8:03.55	8:41.84
15	5.64	6.08	6.52	10.23	20.79	32.83	46.16	1:16.04	1:48.80	2:20.44	3:41.55	3:59.55	5:04.42	7:53.59	8:31.07
16	5.61	6.05	6.48	10.10	20.39	32.23	45.40	1:14.89	1:46.81	2:17.93	3:37.66	3:55.34	4:59.06	7:45.16	8:21.95
17	5.59	6.02	6.45	9.98	20.05	31.72	44.75	1:13.91	1:45.10	2:15.79	3:34.34	3:51.75	4:54.49	7:37.97	8:14.18
18	5.58	6.00	6.42	9.89	19.76	31.28	44.19	1:13.07	1:43.63	2:13.96	3:31.50	3:48.69	4:50.58	7:31.83	8:07.54
19	5.57	5.99	6.42	9.84	19.51	30.89	43.71	1:12.35	1:42.36	2:12.38	3:29.08	3:46.07	4:47.25	7:26.59	8:01.86
OC	5.56	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
30	5.57	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
31	5.57	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
32	5.58	6.00	6.42	9.84	19.40	30.66	43.37	1:11.79	1:41.11	2:10.75	3:26.13	3:42.80	4:42.77	7:18.54	7:52.96
33	5.58	6.00	6.43	9.86	19.52	30.84	43.61	1:12.13	1:41.73	2:11.50	3:27.31	3:44.07	4:44.36	7:20.97	7:55.57
34	5.59	6.01	6.44	9.90	19.65	31.04	43.86	1:12.50	1:42.38	2:12.31	3:28.55	3:45.41	4:46.04	7:23.52	7:58.32
35	5.60	6.03	6.45	9.95	19.77	31.23	44.12	1:12.90	1:43.05	2:13.16	3:29.85	3:46.80	4:47.79	7:26.20	8:01.20
36	5.61	6.04	6.47	9.99	19.90	31.43	44.38	1:13.30	1:43.73	2:14.03	3:31.19	3:48.25	4:49.62	7:28.98	8:04.19
37	5.62	6.05	6.49	10.04	20.03	31.63	44.64	1:13.72	1:44.44	2:14.93	3:32.59	3:49.76	4:51.51	7:31.87	8:07.30
38	5.63	6.07	6.50	10.09	20.16	31.83	44.91	1:14.15	1:45.16	2:15.85	3:34.03	3:51.31	4:53.47	7:34.86	8:10.51
39	5.64	6.08	6.52	10.14	20.30	32.04	45.19	1:14.59	1:45.89	2:16.80	3:35.51	3:52.91	4:55.49	7:37.94	8:13.82
40	5.65	6.10	6.54	10.20	20.43	32.25	45.47	1:15.04	1:46.64	2:17.78	3:37.04	3:54.56	4:57.57	7:41.11	8:17.23
41	5.67	6.12	6.57	10.25	20.57	32.46	45.75	1:15.50	1:47.41	2:18.77	3:38.61	3:56.26	4:59.71	7:44.38	8:20.75
42	5.68	6.14	6.59	10.31	20.71	32.68	46.04	1:15.97	1:48.19	2:19.79	3:40.23	3:58.01	5:01.92	7:47.74	8:24.36
43	5.70	6.16	6.61	10.36	20.85	32.89	46.33	1:16.45	1:48.99	2:20.84	3:41.89	3:59.80	5:04.18	7:51.20	8:28.07
44	5.72	6.18	6.64	10.42	20.99	33.11	46.63	1:16.95	1:49.80	2:21.91	3:43.59	4:01.64	5:06.51	7:54.75	8:31.88
45	5.74	6.20	6.67	10.49	21.13	33.34	46.94	1:17.45	1:50.63	2:23.01	3:45.35	4:03.53	5:08.90	7:58.40	8:35.80
46	5.76	6.22	6.69	10.55	21.28	33.57	47.25	1:17.97	1:51.48	2:24.13	3:47.14	4:05.48	5:11.36	8:02.15	8:39.83
47	5.78	6.25	6.72	10.61	21.43	33.80	47.57	1:18.50	1:52.35	2:25.29	3:48.99	4:07.47	5:13.89	8:06.00	8:43.97
48	5.80	6.27	6.75	10.68	21.58	34.03	47.89	1:19.05	1:53.23	2:26.47	3:50.89	4:09.53	5:16.49	8:09.96	8:48.22
49	5.82	6.30	6.78	10.75	21.73	34.27	48.22	1:19.60	1:54.14	2:27.68	3:52.84	4:11.64	5:19.16	8:14.04	8:52.60
50	5.84	6.33	6.82	10.82	21.89	34.52	48.56	1:20.18	1:55.07	2:28.92	3:54.85	4:13.81	5:21.91	8:18.23	8:57.10
51	5.87	6.36	6.85	10.89	22.05	34.77	48.91	1:20.76	1:56.03	2:30.20	3:56.91	4:16.04	5:24.74	8:22.55	9:01.74
52	5.89	6.39	6.89	10.96	22.21	35.02	49.26	1:21.37	1:57.00	2:31.51	3:59.04	4:18.35	5:27.66	8:26.99	9:06.51
53	5.92	6.42	6.93	11.04	22.38	35.28	49.63	1:21.99	1:58.01	2:32.87	4:01.23	4:20.72	5:30.67	8:31.58	9:11.43
54	5.95	6.46	6.96	11.12	22.55	35.55	50.00	1:22.62	1:59.04	2:34.26	4:03.49	4:23.16	5:33.77	8:36.30	9:16.50
55	5.98	6.49	7.00	11.20	22.72	35.82	50.38	1:23.28	2:00.10	2:35.69	4:05.82	4:25.69	5:36.97	8:41.18	9:21.74
56	6.01	6.53	7.05	11.28	22.90	36.10	50.78	1:23.95	2:01.19	2:37.17	4:08.23	4:28.29	5:40.27	8:46.22	9:27.15
57	6.04	6.57	7.09	11.36	23.08	36.39	51.18	1:24.65	2:02.31	2:38.69	4:10.72	4:30.98	5:43.69	8:51.43	9:32.74
58	6.08	6.61	7.13	11.45	23.27	36.68	51.59	1:25.37	2:03.47	2:40.26	4:13.29	4:33.77	5:47.22	8:56.82	9:38.53
59	6.11	6.65	7.18	11.54	23.46	36.99	52.02	1:26.11	2:04.67	2:41.89	4:15.95	4:36.65	5:50.89	9:02.40	9:44.52
60	6.15	6.69	7.23	11.63	23.66	37.30	52.47	1:26.88	2:05.91	2:43.57	4:18.71	4:39.64	5:54.68	9:08.19	9:50.73
61	6.19	6.73	7.28	11.73	23.87	37.62	52.92	1:27.68	2:07.19	2:45.32	4:21.57	4:42.74	5:58.62	9:14.19	9:57.17
62	6.23	6.78	7.33	11.83	24.07	37.95	53.39	1:28.50	2:08.51	2:47.12	4:24.54	4:45.95	6:02.70	9:20.42	10:03.86
63	6.27	6.83	7.39	11.93	24.29	38.30	53.88	1:29.35	2:09.88	2:49.00	4:27.62	4:49.30	6:06.95	9:26.90	10:10.82
64	6.31	6.88	7.44	12.03	24.51	38.65	54.39	1:30.24	2:11.31	2:50.95	4:30.83	4:52.78	6:11.37	9:33.65	10:18.06
65	6.36	6.93	7.50	12.14	24.74	39.02	54.91	1:31.16	2:12.79	2:52.98	4:34.18	4:56.40	6:15.98	9:40.68	10:25.61
66	6.40	6.98	7.56	12.25	24.98	39.40	55.45	1:32.12	2:14.33	2:55.09	4:37.66	5:00.18	6:20.79	9:48.01	10:33.48
67	6.45	7.04	7.62	12.36	25.23	39.79	56.02	1:33.12	2:15.93	2:57.29	4:41.30	5:04.12	6:25.81	9:55.68	10:41.70
68	6.50	7.09	7.69	12.48	25.48	40.20	56.61	1:34.16	2:17.61	2:59.59	4:45.11	5:08.25	6:31.05	10:03.69	10:50.30
69	6.56	7.15	7.75	12.60	25.75	40.63	57.22	1:35.24	2:19.36	3:01.99	4:49.09	5:12.57	6:36.55	10:12.08	10:59.31
70	6.61	7.22	7.82	12.73	26.02	41.07	57.86	1:36.38	2:21.18	3:04.51	4:53.26	5:17.09	6:42.31	10:20.88	11:08.76
71	6.67	7.28	7.89	12.86	26.31	41.53	58.53	1:37.57	2:23.10	3:07.15	4:57.64	5:21.84	6:48.36	10:30.13	11:18.69
72	6.73	7.35	7.97	13.00	26.61	42.01	59.22	1:38.82	2:25.11	3:09.92	5:02.25	5:26.84	6:54.73	10:39.86	11:29.13
73	6.79	7.42	8.04	13.14	26.92	42.52	59.96	1:40.13	2:27.22	3:12.84	5:07.10	5:32.10	7:01.43	10:50.11	11:40.13
74	6.85	7.49	8.12	13.29	27.24	43.05	1:00.73	1:41.51	2:29.44	3:15.91	5:12.21	5:37.65	7:08.50	11:00.93	11:51.75
75	6.92	7.56	8.21	13.44	27.58	43.60	1:01.53	1:42.97	2:31.78	3:19.15	5:17.61	5:43.51	7:15.98	11:12.37	12:04.03
76	6.98	7.64	8.29	13.60	27.94	44.19	1:02.38	1:44.50	2:34.25	3:22.58	5:23.33	5:49.72	7:23.90	11:24.49	12:17.05
77	7.05	7.72	8.38	13.77	28.31	44.80	1:03.28	1:46.12	2:36.87	3:26.21	5:29.40	5:56.30	7:32.31	11:37.36	12:30.87
78	7.13	7.80	8.48	13.94	28.70	45.45	1:04.23	1:47.84	2:39.65	3:30.06	5:35.85	6:03.30	7:41.24	11:51.06	12:45.57
79	7.21	7.89	8.57	14.12	29.11	46.13	1:05.23	1:49.67	2:42.60	3:34.16	5:42.72	6:10.76	7:50.77	12:05.66	13:01.25
80	7.29	7.98	8.68	14.31	29.55	46.85	1:06.30	1:51.61	2:45.74	3:38.53	5:50.05	6:18.72	8:00.94	12:21.26	13:18.01
81	7.37	8.07	8.78	14.51	30.01	47.62	1:07.43	1:53.68	2:49.09	3:43.20	5:57.90	6:27.25	8:11.84	12:37.99	13:35.97
82	7.45	8.17	8.89	14.71	30.49	48.44	1:08.64	1:55.90	2:52.68	3:48.20	6:06.32	6:36.40	8:23.54	12:55.96	13:55.28
83	7.54	8.27	9.00	14.93	31.00	49.30	1:09.93	1:58.27	2:56.53	3:53.58	6:15.38	6:46.25	8:36.15	13:15.33	14:16.09
84	7.64	8.38	9.12	15.16	31.55	50.23	1:11.31	2:00.82	3:00.68	3:59.38	6:25.17	6:56.88	8:49.77	13:36.28	14:38.59
85	7.74	8.49	9.25	15.40	32.13	51.22	1:12.79	2:03.58	3:05.16	4:05.65	6:35.77	7:08.41	9:04.53	13:59.01	15:03.01
86	7.84	8.61	9.38	15.65	32.75	52.29	1:14.39	2:06.55	3:10.01	4:12.45	6:47.29	7:20.94	9:20.59	14:23.76	15:29.60
87	7.94	8.73	9.51	15.92	33.41	53.44	1:16.12	2:09.78	3:15.29	4:19.85	6:59.86	7:34.61	9:38.14	14:50.82	15:58.68
88	8.05	8.85	9.65	16.20	34.12	54.68	1:18.00	2:13.30	3:21.05	4:27.95	7:13.64	7:49.60	9:57.39	15:20.54	16:30.63
89	8.17	8.98	9.80	16.50	34.89	56.02	1:20.03	2:17.15	3:27.36	4:36.85	7:28.81	8:06.11	10:18.61	15:53.34	17:05.90
90	8.29	9.12	9.96	16.82	35.71	57.48	1:22.26	2:21.38	3:34.32	4:46.67	7:45.60	8:24.39	10:42.12	16:29.74	17:45.03
91	8.42	9.27	10.12	17.15	36.61	59.07	1:24.71	2:26.05	3:42.03	4:57.56	8:04.28	8:44.74	11:08.33	17:10.37	18:28.73
92	8.55	9.42	10.29	17.51	37.58	1:00.82	1:27.41	2:31.23	3:50.61	5:09.73	8:25.20	9:07.54	11:37.73	17:56.02	19:17.84
93	8.68	9.57	10.47	17.89	38.63	1:02.75	1:30.41	2:37.02	4:00.23	5:23.40	8:48.80	9:33.26	12:10.94	18:47.70	20:13.45
94	8.83	9.74	10.66	18.30	39.79	1:04.89	1:33.75	2:43.53	4:11.10	5:38.88	9:15.62	10:02.52	12:48.78	19:46.70	21:16.95
95	8.98	9.91	10.86	18.73	41.07	1:07.27	1:37.50	2:50.91	4:23.47	5:56.56	9:46.39	10:36.11	13:32.28	20:54.71	22:30.18
96	9.14	10.10	11.06	19.20	42.47	1:09.94	1:41.74	2:59.34	4:37.68	6:16.95	10:22.06	11:15.07	14:22.84	22:13.98	23:55.57
97	9.30	10.29	11.28	19.71	44.04	1:12.95	1:46.59	3:09.06	4:54.18	6:40.72	11:03.89	12:00.80	15:22.33	23:47.58	25:36.44
98	9.48	10.49	11.52	20.25	45.79	1:16.39	1:52.16	3:20.42	5:13.58	7:08.80	11:53.66	12:55.26	16:33.38	25:39.80	27:37.46
99	9.66	10.70	11.76	20.85	47.76	1:20.34	1:58.66	3:33.84	5:36.72	7:42.49	12:53.86	14:01.22	17:59.72	27:56.86	30:05.36
100	9.85	10.93	12.02	21.49	50.00	1:24.93	2:06.33	3:49.97	6:04.81	8:23.67	14:08.19	15:22.78	19:46.91	30:48.04	33:10.25

MEN'S TRACK RUNNING EVENT STANDARDS IN SECONDS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	6.65	7.27	7.89	13.18	27.49	42.47	58.28	94.44	139.97	180.08	283.86	307.01	390.69	610.31	659.18
9	6.24	6.82	7.40	12.29	25.71	39.98	55.18	89.76	132.11	170.06	268.04	289.87	368.71	575.24	621.13
10	6.02	6.55	7.10	11.68	24.37	38.08	52.79	86.14	126.00	162.27	255.78	276.59	351.71	548.24	591.86
11	5.87	6.38	6.90	11.23	23.32	36.57	50.90	83.26	121.13	156.07	246.03	266.03	338.21	526.86	568.71
12	5.78	6.27	6.76	10.88	22.49	35.36	49.37	80.93	117.17	151.03	238.11	257.46	327.27	509.58	550.01
13	5.72	6.18	6.66	10.62	21.82	34.37	48.11	79.00	113.88	146.87	231.59	250.40	318.26	495.38	534.64
14	5.67	6.12	6.58	10.40	21.26	33.54	47.05	77.39	111.13	143.38	226.14	244.51	310.75	483.55	521.84
15	5.64	6.08	6.52	10.23	20.79	32.83	46.16	76.04	108.80	140.44	221.55	239.55	304.42	473.59	511.07
16	5.61	6.05	6.48	10.10	20.39	32.23	45.40	74.89	106.81	137.93	217.66	235.34	299.06	465.16	501.95
17	5.59	6.02	6.45	9.98	20.05	31.72	44.75	73.91	105.10	135.79	214.34	231.75	294.49	457.97	494.18
18	5.58	6.00	6.42	9.89	19.76	31.28	44.19	73.07	103.63	133.96	211.50	228.69	290.58	451.83	487.54
19	5.57	5.99	6.42	9.84	19.51	30.89	43.71	72.35	102.36	132.38	209.08	226.07	287.25	446.59	481.86
OC	5.56	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
30	5.57	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
31	5.57	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
32	5.58	6.00	6.42	9.84	19.40	30.66	43.37	71.79	101.11	130.75	206.13	222.80	282.77	438.54	472.96
33	5.58	6.00	6.43	9.86	19.52	30.84	43.61	72.13	101.73	131.50	207.31	224.07	284.36	440.97	475.57
34	5.59	6.01	6.44	9.90	19.65	31.04	43.86	72.50	102.38	132.31	208.55	225.41	286.04	443.52	478.32
35	5.60	6.03	6.45	9.95	19.77	31.23	44.12	72.90	103.05	133.16	209.85	226.80	287.79	446.20	481.20
36	5.61	6.04	6.47	9.99	19.90	31.43	44.38	73.30	103.73	134.03	211.19	228.25	289.62	448.98	484.19
37	5.62	6.05	6.49	10.04	20.03	31.63	44.64	73.72	104.44	134.93	212.59	229.76	291.51	451.87	487.30
38	5.63	6.07	6.50	10.09	20.16	31.83	44.91	74.15	105.16	135.85	214.03	231.31	293.47	454.86	490.51
39	5.64	6.08	6.52	10.14	20.30	32.04	45.19	74.59	105.89	136.80	215.51	232.91	295.49	457.94	493.82
40	5.65	6.10	6.54	10.20	20.43	32.25	45.47	75.04	106.64	137.78	217.04	234.56	297.57	461.11	497.23
41	5.67	6.12	6.57	10.25	20.57	32.46	45.75	75.50	107.41	138.77	218.61	236.26	299.71	464.38	500.75
42	5.68	6.14	6.59	10.31	20.71	32.68	46.04	75.97	108.19	139.79	220.23	238.01	301.92	467.74	504.36
43	5.70	6.16	6.61	10.36	20.85	32.89	46.33	76.45	108.99	140.84	221.89	239.80	304.18	471.20	508.07
44	5.72	6.18	6.64	10.42	20.99	33.11	46.63	76.95	109.80	141.91	223.59	241.64	306.51	474.75	511.88
45	5.74	6.20	6.67	10.49	21.13	33.34	46.94	77.45	110.63	143.01	225.35	243.53	308.90	478.40	515.80
46	5.76	6.22	6.69	10.55	21.28	33.57	47.25	77.97	111.48	144.13	227.14	245.48	311.36	482.15	519.83
47	5.78	6.25	6.72	10.61	21.43	33.80	47.57	78.50	112.35	145.29	228.99	247.47	313.89	486.00	523.97
48	5.80	6.27	6.75	10.68	21.58	34.03	47.89	79.05	113.23	146.47	230.89	249.53	316.49	489.96	528.22
49	5.82	6.30	6.78	10.75	21.73	34.27	48.22	79.60	114.14	147.68	232.84	251.64	319.16	494.04	532.60
50	5.84	6.33	6.82	10.82	21.89	34.52	48.56	80.18	115.07	148.92	234.85	253.81	321.91	498.23	537.10
51	5.87	6.36	6.85	10.89	22.05	34.77	48.91	80.76	116.03	150.20	236.91	256.04	324.74	502.55	541.74
52	5.89	6.39	6.89	10.96	22.21	35.02	49.26	81.37	117.00	151.51	239.04	258.35	327.66	506.99	546.51
53	5.92	6.42	6.93	11.04	22.38	35.28	49.63	81.99	118.01	152.87	241.23	260.72	330.67	511.58	551.43
54	5.95	6.46	6.96	11.12	22.55	35.55	50.00	82.62	119.04	154.26	243.49	263.16	333.77	516.30	556.50
55	5.98	6.49	7.00	11.20	22.72	35.82	50.38	83.28	120.10	155.69	245.82	265.69	336.97	521.18	561.74
56	6.01	6.53	7.05	11.28	22.90	36.10	50.78	83.95	121.19	157.17	248.23	268.29	340.27	526.22	567.15
57	6.04	6.57	7.09	11.36	23.08	36.39	51.18	84.65	122.31	158.69	250.72	270.98	343.69	531.43	572.74
58	6.08	6.61	7.13	11.45	23.27	36.68	51.59	85.37	123.47	160.26	253.29	273.77	347.22	536.82	578.53
59	6.11	6.65	7.18	11.54	23.46	36.99	52.02	86.11	124.67	161.89	255.95	276.65	350.89	542.40	584.52
60	6.15	6.69	7.23	11.63	23.66	37.30	52.47	86.88	125.91	163.57	258.71	279.64	354.68	548.19	590.73
61	6.19	6.73	7.28	11.73	23.87	37.62	52.92	87.68	127.19	165.32	261.57	282.74	358.62	554.19	597.17
62	6.23	6.78	7.33	11.83	24.07	37.95	53.39	88.50	128.51	167.12	264.54	285.95	362.70	560.42	603.86
63	6.27	6.83	7.39	11.93	24.29	38.30	53.88	89.35	129.88	169.00	267.62	289.30	366.95	566.90	610.82
64	6.31	6.88	7.44	12.03	24.51	38.65	54.39	90.24	131.31	170.95	270.83	292.78	371.37	573.65	618.06
65	6.36	6.93	7.50	12.14	24.74	39.02	54.91	91.16	132.79	172.98	274.18	296.40	375.98	580.68	625.61
66	6.40	6.98	7.56	12.25	24.98	39.40	55.45	92.12	134.33	175.09	277.66	300.18	380.79	588.01	633.48
67	6.45	7.04	7.62	12.36	25.23	39.79	56.02	93.12	135.93	177.29	281.30	304.12	385.81	595.68	641.70
68	6.50	7.09	7.69	12.48	25.48	40.20	56.61	94.16	137.61	179.59	285.11	308.25	391.05	603.69	650.30
69	6.56	7.15	7.75	12.60	25.75	40.63	57.22	95.24	139.36	181.99	289.09	312.57	396.55	612.08	659.31
70	6.61	7.22	7.82	12.73	26.02	41.07	57.86	96.38	141.18	184.51	293.26	317.09	402.31	620.88	668.76
71	6.67	7.28	7.89	12.86	26.31	41.53	58.53	97.57	143.10	187.15	297.64	321.84	408.36	630.13	678.69
72	6.73	7.35	7.97	13.00	26.61	42.01	59.22	98.82	145.11	189.92	302.25	326.84	414.73	639.86	689.13
73	6.79	7.42	8.04	13.14	26.92	42.52	59.96	100.13	147.22	192.84	307.10	332.10	421.43	650.11	700.13
74	6.85	7.49	8.12	13.29	27.24	43.05	60.73	101.51	149.44	195.91	312.21	337.65	428.50	660.93	711.75
75	6.92	7.56	8.21	13.44	27.58	43.60	61.53	102.97	151.78	199.15	317.61	343.51	435.98	672.37	724.03
76	6.98	7.64	8.29	13.60	27.94	44.19	62.38	104.50	154.25	202.58	323.33	349.72	443.90	684.49	737.05
77	7.05	7.72	8.38	13.77	28.31	44.80	63.28	106.12	156.87	206.21	329.40	356.30	452.31	697.36	750.87
78	7.13	7.80	8.48	13.94	28.70	45.45	64.23	107.84	159.65	210.06	335.85	363.30	461.24	711.06	765.57
79	7.21	7.89	8.57	14.12	29.11	46.13	65.23	109.67	162.60	214.16	342.72	370.76	470.77	725.66	781.25
80	7.29	7.98	8.68	14.31	29.55	46.85	66.30	111.61	165.74	218.53	350.05	378.72	480.94	741.26	798.01
81	7.37	8.07	8.78	14.51	30.01	47.62	67.43	113.68	169.09	223.20	357.90	387.25	491.84	757.99	815.97
82	7.45	8.17	8.89	14.71	30.49	48.44	68.64	115.90	172.68	228.20	366.32	396.40	503.54	775.96	835.28
83	7.54	8.27	9.00	14.93	31.00	49.30	69.93	118.27	176.53	233.58	375.38	406.25	516.15	795.33	856.09
84	7.64	8.38	9.12	15.16	31.55	50.23	71.31	120.82	180.68	239.38	385.17	416.88	529.77	816.28	878.59
85	7.74	8.49	9.25	15.40	32.13	51.22	72.79	123.58	185.16	245.65	395.77	428.41	544.53	839.01	903.01
86	7.84	8.61	9.38	15.65	32.75	52.29	74.39	126.55	190.01	252.45	407.29	440.94	560.59	863.76	929.60
87	7.94	8.73	9.51	15.92	33.41	53.44	76.12	129.78	195.29	259.85	419.86	454.61	578.14	890.82	958.68
88	8.05	8.85	9.65	16.20	34.12	54.68	78.00	133.30	201.05	267.95	433.64	469.60	597.39	920.54	990.63
89	8.17	8.98	9.80	16.50	34.89	56.02	80.03	137.15	207.36	276.85	448.81	486.11	618.61	953.34	1025.90
90	8.29	9.12	9.96	16.82	35.71	57.48	82.26	141.38	214.32	286.67	465.60	504.39	642.12	989.74	1065.03
91	8.42	9.27	10.12	17.15	36.61	59.07	84.71	146.05	222.03	297.56	484.28	524.74	668.33	1030.37	1108.73
92	8.55	9.42	10.29	17.51	37.58	60.82	87.41	151.23	230.61	309.73	505.20	547.54	697.73	1076.02	1157.84
93	8.68	9.57	10.47	17.89	38.63	62.75	90.41	157.02	240.23	323.40	528.80	573.26	730.94	1127.70	1213.45
94	8.83	9.74	10.66	18.30	39.79	64.89	93.75	163.53	251.10	338.88	555.62	602.52	768.78	1186.70	1276.95
95	8.98	9.91	10.86	18.73	41.07	67.27	97.50	170.91	263.47	356.56	586.39	636.11	812.28	1254.71	1350.18
96	9.14	10.10	11.06	19.20	42.47	69.94	101.74	179.34	277.68	376.95	622.06	675.07	862.84	1333.98	1435.57
97	9.30	10.29	11.28	19.71	44.04	72.95	106.59	189.06	294.18	400.72	663.89	720.80	922.33	1427.58	1536.44
98	9.48	10.49	11.52	20.25	45.79	76.39	112.16	200.42	313.58	428.80	713.66	775.26	993.38	1539.80	1657.46
99	9.66	10.70	11.76	20.85	47.76	80.34	118.66	213.84	336.72	462.49	773.86	841.22	1079.72	1676.86	1805.36
100	9.85	10.93	12.02	21.49	50.00	84.93	126.33	229.97	364.81	503.67	848.19	922.78	1186.91	1848.04	1990.25

MEN'S LONG DISTANCE RUNNING STANDARDS IN H;M;S

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	17:45.8	29:36.4	37:43.3	45:58.4	58:33.7	1:03:12	1:19:60	1:24:46	1:41:55	2:04:17	2:50:19	3:00:39	3:38:07	8:06:47
9	16:42.3	27:46.2	35:19.9	43:00.4	54:41.7	58:59.8	1:14:33	1:18:58	1:34:48	1:55:25	2:37:41	2:47:10	3:21:25	7:23:39
10	15:53.8	26:23.0	33:32.3	40:47.7	51:50.0	55:53.7	1:10:34	1:14:44	1:29:39	1:49:04	2:28:50	2:37:44	3:09:54	6:55:50
11	15:15.7	25:18.0	32:08.7	39:05.0	49:38.2	53:31.2	1:07:32	1:11:31	1:25:47	1:44:20	2:22:19	2:30:49	3:01:32	6:36:38
12	14:45.0	24:26.1	31:02.1	37:43.6	47:54.1	51:38.8	1:05:10	1:09:00	1:22:46	1:40:40	2:17:21	2:25:34	2:55:14	6:22:46
13	14:19.8	23:43.7	30:08.0	36:37.6	46:30.2	50:08.2	1:03:16	1:06:60	1:20:22	1:37:46	2:13:28	2:21:28	2:50:21	6:12.25
14	13:58.9	23:08.6	29:23.3	35:43.2	45:21.2	48:54.0	1:01:43	1:05:21	1:18:25	1:35:26	2:10:22	2:18:11	2:46:29	6:04:32
15	13:41.4	22:39.3	28:45.9	34:57.8	44:23.9	47:52.4	1:00:26	1:04:00	1:16:49	1:33:31	2:07:51	2:15:33	2:43:23	5:58:25
16	13:26.5	22:14.4	28:14.4	34:19.6	43:35.6	47:00.6	59:22.0	1:02:52	1:15:29	1:31.57	2:05.48	2:13.23	2:40:52	5:53:38
17	13:13.8	21:53.3	27:47.6	33:47.1	42:55.0	46:16.9	58:27.8	1:01:55	1:14:23	1:30:38	2:04:06	2:11:37	2:38:49	5:49:52
18	13:03.0	21:35.2	27:24.7	33:19.5	42:20.3	45:39.7	57:42.0	1:01:07	1:13:26	1:29:31	2:02:42	2:10:09	2:37:09	5:46:54
19	12:53.7	21:19.7	27:05.1	32:55.8	41:50.7	45:08.0	57:03.0	1:00:26	1:12:39	1:28:36	2:01:32	2:08:56	2:35:46	5:44:33
OC	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
30	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
31	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
32	12:37.3	20:49.0	26:24.4	32:05.0	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
33	12:41.4	20:55.6	26:32.5	32:14.6	40:56.7	44:09.4	55:48.5	59:07.5	1:11:05	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
34	12:45.7	21:02.5	26:41.0	32:24.7	41:09.1	44:22.6	56:04.2	59:23.9	1:11:24	1:27:06	1:59:35	2:06:54	2:33:29	5:40:32
35	12:50.2	21:09.6	26:49.9	32:35.3	41:22.0	44:36.4	56:20.9	59:41.3	1:11:44	1:27:29	2:00:03	2:07:23	2:33:58	5:41:19
36	12:54.9	21:17.1	26:59.2	32:46.3	41:35.6	44:50.8	56:38.3	59:59.6	1:12:05	1:27:53	2:00:33	2:07:55	2:34:33	5:42:13
37	12:59.7	21:24.8	27:08.8	32:57.7	41:49.6	45:05.8	56:56.5	1:00:19	1:12:27	1:28:19	2:01:06	2:08:28	2:35:11	5:43:15
38	13:04.7	21:32.8	27:18.7	33:09.5	42:04.1	45:21.3	57:15.4	1:00:39	1:12:50	1:28:46	2:01:40	2:09:04	2:35:52	5:44:25
39	13:09.9	21:41.0	27:28.9	33:21.6	42:19.1	45:37.3	57:35.0	1:00:59	1:13:14	1:29:14	2:02:16	2:09:42	2:36:36	5:45:42
40	13:15.2	21:49.5	27:39.3	33:34.1	42:34.6	45:53.8	57:55.3	1:01:20	1:13:39	1:29:44	2:02:54	2:10:22	2:37:22	5:47:08
41	13:20.7	21:58.1	27:50.1	33:47.0	42:50.5	46:10.8	58:16.2	1:01:42	1:14:05	1:30:15	2:03:35	2:11:04	2:38:12	5:48:42
42	13:26.3	22:07.0	28:01.2	34:00.1	43:06.8	46:28.3	58:37.8	1:02:05	1:14:31	1:30:46	2:04:17	2:11:48	2:39:04	5:50:24
43	13:32.1	22:16.2	28:12.5	34:13.7	43:23.6	46:46.3	59:00.1	1:02:29	1:14:59	1:31:19	2:05:01	2:12:35	2:39:58	5:52:14
44	13:38.0	22:25.6	28:24.2	34:27.6	43:40.9	47:04.8	59:23.0	1:02:53	1:15:28	1:31:54	2:05:46	2:13:23	2:40:56	5:54:13
45	13:44.1	22:35.2	28:36.1	34:41.8	43:58.6	47:23.8	59:46.5	1:03:18	1:15:57	1:32:29	2:06:34	2:14:13	2:41:56	5:56:21
46	13:50.3	22:45.1	28:48.4	34:56.5	44:16.9	47:43.3	1:00:11	1:03:43	1:16:28	1:33:06	2:07:24	2:15:06	2:42:60	5:58:39
47	13:56.8	22:55.2	29:00.9	35:11.5	44:35.6	48:03.4	1:00:36	1:04:10	1:16:59	1:33:44	2:08:16	2:16:01	2:44:06	6:01:05
48	14:03.3	23:05.6	29:13.9	35:26.9	44:54.8	48:24.1	1:01:02	1:04:37	1:17:32	1:34:23	2:09:10	2:16:58	2:45:15	6:03:42
49	14:10.1	23:16.3	29:27.1	35:42.8	45:14.6	48:45.3	1:01:28	1:05:05	1:18:05	1:35:04	2:10:06	2:17:58	2:46:27	6:06:29
50	14:17.1	23:27.3	29:40.8	35:59.1	45:35.0	49:07.1	1:01:55	1:05:34	1:18:40	1:35:46	2:11:04	2:18:60	2:47:43	6:09:26
51	14:24.2	23:38.6	29:54.8	36:15.9	45:55.9	49:29.6	1:02:23	1:06:03	1:19:15	1:36:30	2:12:04	2:20:04	2:49:01	6:12.34
52	14:31.6	23:50.2	30:09.2	36:33.1	46:17.5	49:52.8	1:02:53	1:06:34	1:19:52	1:37:15	2:13:07	2:21:11	2:50:24	6:15:54
53	14:39.2	24:02.2	30:24.1	36:50.9	46:39.7	50:16.7	1:03:22	1:07:06	1:20:30	1:38:02	2:14:13	2:22:21	2:51:49	6:19:25
54	14:47.1	24:14.5	30:39.4	37:09.3	47:02.7	50:41.3	1:03:53	1:07:39	1:21:10	1:38:50	2:15:21	2:23:33	2:53:19	6:23:09
55	14:55.1	24:27.2	30:55.2	37:28.2	47:26.3	51:06.8	1:04:25	1:08:12	1:21:50	1:39:40	2:16:31	2:24:49	2:54:52	6:27:06
56	15:03.5	24:40.4	31:11.5	37:47.7	47:50.8	51:33.0	1:04:58	1:08:47	1:22:33	1:40:33	2:17:45	2:26:08	2:56:30	6:31:16
57	15:12.1	24:53.9	31:28.4	38:07.9	48:16.0	52:00.2	1:05:33	1:09:24	1:23:16	1:41:27	2:19:02	2:27:29	2:58:12	6:35:41
58	15:21.0	25:08.0	31:45.8	38:28.7	48:42.2	52:28.3	1:06:08	1:10:01	1:24:02	1:42:23	2:20:21	2:28:55	2:59:58	6:40:20
59	15:30.3	25:22.5	32:03.9	38:50.3	49:09.2	52:57.4	1:06:45	1:10:40	1:24:49	1:43:21	2:21:44	2:30:24	3:01:49	6:45:16
60	15:39.9	25:37.6	32:22.6	39:12.7	49:37.3	53:27.6	1:07:23	1:11:20	1:25:38	1:44:21	2:23:11	2:31:57	3:03:45	6:50:28
61	15:49.8	25:53.2	32:41.9	39:35.9	50:06.4	53:58.9	1:08:02	1:12:02	1:26:29	1:45:24	2:24:41	2:33:33	3:05:47	6:55:58
62	16:00.1	26:09.4	33:02.1	39:60.0	50:36.6	54:31.5	1:08:43	1:12:46	1:27:22	1:46:30	2:26:16	2:35:15	3:07:54	7:01:47
63	16:10.8	26:26.2	33:23.0	40:25.1	51:08.1	55:05.3	1:09:26	1:13:31	1:28:17	1:47:39	2:27:54	2:37:01	3:10:07	7:07:56
64	16:22.0	26:43.8	33:44.8	40:51.1	51:40.8	55:40.6	1:10:11	1:14:19	1:29:14	1:48:50	2:29:38	2:38:51	3:12:27	7:14:26
65	16:33.6	27:02.0	34:07.5	41:18.3	52:14.9	56:17.3	1:10:57	1:15:08	1:30:14	1:50:05	2:31:26	2:40:47	3:14:53	7:21:19
66	16:45.7	27:21.1	34:31.1	41:46.7	52:50.6	56:55.6	1:11:46	1:15:60	1:31:17	1:51:23	2:33:19	2:42:49	3:17:27	7:28:36
67	16:58.4	27:41.0	34:55.8	42:16.3	53:27.8	57:35.7	1:12:36	1:16:53	1:32:22	1:52:45	2:35:18	2:44:57	3:20:09	7:36:19
68	17:11.6	28:01.8	35:21.7	42:47.2	54:06.7	58:17.6	1:13:30	1:17:50	1:33:31	1:54:11	2:37:22	2:47:11	3:22:59	7:44:30
69	17:25.5	28:23.6	35:48.8	43:19.7	54:47.5	59:01.5	1:14:25	1:18:49	1:34:43	1:55:41	2:39:34	2:49:32	3:25:58	7:53:11
70	17:40.1	28:46.4	36:17.2	43:53.7	55:30.3	59:47.6	1:15:24	1:19:51	1:35:59	1:57:15	2:41:52	2:52:01	3:29:07	8:02:24
71	17:55.4	29:10.5	36:47.0	44:29.5	56:15.3	1:00:36	1:16:25	1:20:56	1:37:18	1:58:55	2:44:17	2:54:37	3:32:27	8:12:12
72	18:11.4	29:35.7	37:18.4	45:07.1	57:02.6	1:01:27	1:17:30	1:22:05	1:38:42	2:00:40	2:46:51	2:57:23	3:35:58	8:22:37
73	18:28.4	30:02.4	37:51.5	45:46.8	57:52.5	1:02:21	1:18:38	1:23:18	1:40:11	2:02:31	2:49:34	3:00:18	3:39:42	8:33:44
74	18:46.3	30:30.5	38:26.5	46:28.7	58:45.2	1:03:18	1:19:50	1:24:34	1:41:44	2:04:29	2:52:26	3:03:24	3:43:39	8:45:34
75	19:05.2	31:00.2	39:03.4	47:13.1	59:41.0	1:04:18	1:21:07	1:25:56	1:43:24	2:06:33	2:55:29	3:06:41	3:47:50	8:58:14
76	19:25.3	31:31.8	39:42.6	48:00.1	1:00:40	1:05:22	1:22:28	1:27:22	1:45:09	2:08:45	2:58:43	3:10:10	3:52:19	9:11:46
77	19:46.6	32:05.3	40:24.2	48:50.0	1:01:43	1:06:29	1:23:54	1:28:53	1:47:01	2:11:06	3:02:10	3:13:53	3:57:04	9:26:17
78	20:09.3	32:40.9	41:08.6	49:43.1	1:02:50	1:07:41	1:25:26	1:30:31	1:49:00	2:13:36	3:05:51	3:17:52	4:02:10	9:41:51
79	20:33.5	33:18.9	41:55.8	50:39.9	1:04:01	1:08:58	1:27:04	1:32:15	1:51:08	2:16:16	3:09:47	3:22:07	4:07:37	9:56:37
80	20:59.3	33:59.6	42:46.4	51:40.6	1:05:18	1:10:21	1:28:48	1:34:06	1:53:24	2:19:07	3:14:00	3:26:40	4:13:28	10:16:41
81	21:27.1	34:43.3	43:40.7	52:45.6	1:06:40	1:11:49	1:30:41	1:36:06	1:55:50	2:22:12	3:18:33	3:31:34	4:19:46	10:36:12
82	21:56.9	35:30.2	44:39.0	53:55.7	1:08:08	1:13:24	1:32:42	1:38:15	1:58:28	2:25:30	3:23:26	3:36:51	4:26:33	10:57:21
83	22:29.0	36:20.8	45:42.0	55:11.2	1:09:43	1:15:07	1:34:53	1:40:34	2:01:19	2:29:05	3:28:44	3:42:34	4:33:54	11:20:20
84	23:03.8	37:15.6	46:50.1	56:33.1	1:11:27	1:16:58	1:37:14	1:43:05	2:04:23	2:32:57	3:34:28	3:48:46	4:41:53	11:45:22
85	23:41.6	38:15.1	48:04.2	58:01.9	1:13:19	1:18:59	1:39:48	1:45:48	2:07:44	2:37:10	3:40:44	3:55:31	4:50:35	12:12:45
86	24:22.7	39:20.0	49:24.9	59:38.9	1:15:21	1:21:11	1:42:36	1:48:47	2:11:23	2:41:46	3:47:33	4:02:54	5:00:06	12:42:47
87	25:07.8	40:31.0	50:53.3	1:01:25	1:17:35	1:23:36	1:45:41	1:52:03	2:15:23	2:46:49	3:55:03	4:11:00	5:10:33	13:15:53
88	25:57.3	41:49.1	52:30.6	1:03:22	1:20:02	1:26:15	1:49:03	1:55:39	2:19:48	2:52:23	4:03:19	4:19:56	5:22:04	13:52:30
89	26:52.0	43:15.5	54:18.2	1:05:31	1:22:45	1:29:11	1:52:48	1:59:38	2:24:41	2:58:33	4:12:29	4:29:50	5:34:51	14:33:14
90	27:52.8	44:51.5	56:17.8	1:07:55	1:25:47	1:32:26	1:56:57	2:04:03	2:30:07	3:05:24	4:22:41	4:40:52	5:49:06	
91	29:00.7	46:38.9	58:31.7	1:10:36	1:29:10	1:36:05	2:01:37	2:09:01	2:36:12	3:13:06	4:34:08	4:53:15	6:05:06	
92	30:17.1	48:39.9	1:01:02	1:13:37	1:32:59	1:40:13	2:06:53	2:14:37	2:43:05	3:21:46	4:47:04	5:07:13	6:23:10	
93	31:43.8	50:57.3	1:03:54	1:17:03	1:37:19	1:44:54	2:12:51	2:20:59	2:50:53	3:31:39	5:01:47	5:23:08	6:43:46	
94	33:22.9	53:34.5	1:07:10	1:20:59	1:42:18	1:50:16	2:19:43	2:28:17	2:59:52	3:42:59	5:18:41	5:41:25	7:07:25	
95	35:17.4	56:36.5	1:10:57	1:25:33	1:48:04	1:56:29	2:27:40	2:36:44	3:10:16	3:56:08	5:38:19	6:02:39	7:34:55	
96	37:31.3	1:00:09	1:15:23	1:30:53	1:54:49	2:03:46	2:36:59	2:46:40	3:22:28	4:11:34	6:01:22	6:27:36	8:07:14	
97	40:09.7	1:04:22	1:20:39	1:37:14	2:02:51	2:12:27	2:48:05	2:58:29	3:36:60	4:29:58	6:28:51	6:57:20	8:45:46	
98	43:20.5	1:09:27	1:27:00	1:44:53	2:12:33	2:22:56	3:01:30	3:12:47	3:54:35	4:52:14	7:02:10	7:33:24	9:32:31	
99	47:14.4	1:15:42	1:34:50	1:54:20	2:24:32	2:35:52	3:18:05	3:30:26	4:16:20	5:19:47	7:43:25	8:18:02	10:30:26	
100	52:08.2	1:23:35	1:44:43	2:06:16	2:39:41	2:52:15	3:39:04	3:52:48	4:43:53	5:54:43	8:35:47	9:14:44	11:44:02	

MEN'S LONG DISTANCE RUNNING STANDARDS IN SECONDS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	1065.8	1776.4	2263.3	2758.4	3513.7	3792.1	4800	5086	6115	7457	10219	10839	13087	29207
9	1002.3	1666.2	2119.9	2580.4	3281.7	3539.8	4473	4738	5688	6925	9461	10030	12085	26619
10	953.8	1583.0	2012.3	2447.7	3110.0	3353.7	4234	4484	5379	6544	8930	9464	11394	24950
11	915.7	1518.0	1928.7	2345.0	2978.2	3211.2	4052	4291	5147	6260	8539	9049	10892	23798
12	885.0	1466.1	1862.1	2263.6	2874.1	3098.8	3910	4140	4966	6040	8241	8734	10514	22966
13	859.8	1423.7	1808.0	2197.6	2790.2	3008.2	3796	4020	4822	5866	8008	8488	10221	22345
14	838.9	1388.6	1763.3	2143.2	2721.2	2934.0	3703	3921	4705	5726	7822	8291	9989	21872
15	821.4	1359.3	1725.9	2097.8	2663.9	2872.4	3626	3840	4609	5611	7671	8133	9803	21505
16	806.5	1334.4	1694.4	2059.6	2615.8	2820.6	3562	3772	4529	5517	7548	8003	9652	21218
17	793.8	1313.3	1667.6	2027.1	2575.0	2776.9	3508	3715	4463	5438	7446	7897	9529	20992
18	783.0	1295.2	1644.7	1999.5	2540.3	2739.7	3462	3667	4406	5371	7362	7809	9429	20814
19	773.7	1279.7	1625.1	1975.8	2510.7	2708.0	3423	3626	4359	5316	7292	7736	9346	20673
OC	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
30	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
31	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
32	757.3	1249.0	1584.4	1925.0	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
33	761.4	1255.6	1592.5	1934.6	2456.7	2649.4	3348	3547	4265	5209	7169	7610	9209	20414
34	765.7	1262.5	1601.0	1944.7	2469.1	2662.6	3364	3564	4284	5226	7175	7614	9209	20432
35	770.2	1269.6	1609.9	1955.3	2482.0	2676.4	3381	3581	4304	5249	7203	7643	9238	20479
36	774.9	1277.1	1619.2	1966.3	2495.6	2690.8	3398	3600	4325	5273	7233	7675	9273	20533
37	779.7	1284.8	1628.8	1977.7	2509.6	2705.8	3417	3619	4347	5299	7266	7708	9311	20595
38	784.7	1292.8	1638.7	1989.5	2524.1	2721.3	3435	3639	4370	5326	7300	7744	9352	20665
39	789.9	1301.0	1648.9	2001.6	2539.1	2737.3	3455	3659	4394	5354	7336	7782	9396	20742
40	795.2	1309.5	1659.3	2014.1	2554.6	2753.8	3475	3680	4419	5384	7374	7822	9442	20828
41	800.7	1318.1	1670.1	2027.0	2570.5	2770.8	3496	3702	4445	5415	7415	7864	9492	20922
42	806.3	1327.0	1681.2	2040.1	2586.8	2788.3	3518	3725	4471	5446	7457	7908	9544	21024
43	812.1	1336.2	1692.5	2053.7	2603.6	2806.3	3540	3749	4499	5479	7501	7955	9598	21134
44	818.0	1345.6	1704.2	2067.6	2620.9	2824.8	3563	3773	4528	5514	7546	8003	9656	21253
45	824.1	1355.2	1716.1	2081.8	2638.6	2843.8	3587	3798	4557	5549	7594	8053	9716	21381
46	830.3	1365.1	1728.4	2096.5	2656.9	2863.3	3611	3823	4588	5586	7644	8106	9780	21519
47	836.8	1375.2	1740.9	2111.5	2675.6	2883.4	3636	3850	4619	5624	7696	8161	9846	21665
48	843.3	1385.6	1753.9	2126.9	2694.8	2904.1	3662	3877	4652	5663	7750	8218	9915	21822
49	850.1	1396.3	1767.1	2142.8	2714.6	2925.3	3688	3905	4685	5704	7806	8278	9987	21989
50	857.1	1407.3	1780.8	2159.1	2735.0	2947.1	3715	3934	4720	5746	7864	8340	10063	22166
51	864.2	1418.6	1794.8	2175.9	2755.9	2969.6	3743	3963	4755	5790	7924	8404	10141	22354
52	871.6	1430.2	1809.2	2193.1	2777.5	2992.8	3773	3994	4792	5835	7987	8471	10224	22554
53	879.2	1442.2	1824.1	2210.9	2799.7	3016.7	3802	4026	4830	5882	8053	8541	10309	22765
54	887.1	1454.5	1839.4	2229.3	2822.7	3041.3	3833	4059	4870	5930	8121	8613	10399	22989
55	895.1	1467.2	1855.2	2248.2	2846.3	3066.8	3865	4092	4910	5980	8191	8689	10492	23226
56	903.5	1480.4	1871.5	2267.7	2870.8	3093.0	3898	4127	4953	6033	8265	8768	10590	23476
57	912.1	1493.9	1888.4	2287.9	2896.0	3120.2	3933	4164	4996	6087	8342	8849	10692	23741
58	921.0	1508.0	1905.8	2308.7	2922.2	3148.3	3968	4201	5042	6143	8421	8935	10798	24020
59	930.3	1522.5	1923.9	2330.3	2949.2	3177.4	4005	4240	5089	6201	8504	9024	10909	24316
60	939.9	1537.6	1942.6	2352.7	2977.3	3207.6	4043	4280	5138	6261	8591	9117	11025	24628
61	949.8	1553.2	1961.9	2375.9	3006.4	3238.9	4082	4322	5189	6324	8681	9213	11147	24958
62	960.1	1569.4	1982.1	2400.0	3036.6	3271.5	4123	4366	5242	6390	8776	9315	11274	25307
63	970.8	1586.2	2003.0	2425.1	3068.1	3305.3	4166	4411	5297	6459	8874	9421	11407	25676
64	982.0	1603.8	2024.8	2451.1	3100.8	3340.6	4211	4459	5354	6530	8978	9531	11547	26066
65	993.6	1622.0	2047.5	2478.3	3134.9	3377.3	4257	4508	5414	6605	9086	9647	11693	26479
66	1005.7	1641.1	2071.1	2506.7	3170.6	3415.6	4306	4560	5477	6683	9199	9769	11847	26916
67	1018.4	1661.0	2095.8	2536.3	3207.8	3455.7	4356	4613	5542	6765	9318	9897	12009	27379
68	1031.6	1681.8	2121.7	2567.2	3246.7	3497.6	4410	4670	5611	6851	9442	10031	12179	27870
69	1045.5	1703.6	2148.8	2599.7	3287.5	3541.5	4465	4729	5683	6941	9574	10172	12358	28391
70	1060.1	1726.4	2177.2	2633.7	3330.3	3587.6	4524	4791	5759	7035	9712	10321	12547	28944
71	1075.4	1750.5	2207.0	2669.5	3375.3	3636.1	4585	4856	5838	7135	9857	10477	12747	29532
72	1091.4	1775.7	2238.4	2707.1	3422.6	3687.1	4650	4925	5922	7240	10011	10643	12958	30157
73	1108.4	1802.4	2271.5	2746.8	3472.5	3740.9	4718	4998	6011	7351	10174	10818	13182	30824
74	1126.3	1830.5	2306.5	2788.7	3525.2	3797.7	4790	5074	6104	7469	10346	11004	13419	31534
75	1145.2	1860.2	2343.4	2833.1	3581.0	3857.8	4867	5156	6204	7593	10529	11201	13670	32294
76	1165.3	1891.8	2382.6	2880.1	3640.2	3921.6	4948	5242	6309	7725	10723	11410	13939	33106
77	1186.6	1925.3	2424.2	2930.0	3703.0	3989.3	5034	5333	6421	7866	10930	11633	14224	33977
78	1209.3	1960.9	2468.6	2983.1	3770.0	4061.5	5126	5431	6540	8016	11151	11872	14530	34911
79	1233.5	1998.9	2515.8	3039.9	3841.4	4138.5	5224	5535	6668	8176	11387	12127	14857	35917
80	1259.3	2039.6	2566.4	3100.6	3917.9	4220.9	5328	5646	6804	8347	11640	12400	15208	37001
81	1287.1	2083.3	2620.7	3165.6	3999.9	4309.3	5441	5766	6950	8532	11913	12694	15586	38172
82	1316.9	2130.2	2679.0	3235.7	4088.1	4404.4	5562	5895	7108	8730	12206	13011	15993	39441
83	1349.0	2180.8	2742.0	3311.2	4183.4	4507.1	5693	6034	7279	8945	12524	13354	16434	40820
84	1383.8	2235.6	2810.1	3393.1	4286.5	4618.3	5834	6185	7463	9177	12868	13726	16913	42322
85	1421.6	2295.1	2884.2	3481.9	4398.6	4739.2	5988	6348	7664	9430	13244	14131	17435	43965
86	1462.7	2360.0	2964.9	3578.9	4520.9	4871.1	6156	6527	7883	9706	13653	14574	18006	45767
87	1507.8	2431.0	3053.3	3685.1	4654.8	5015.5	6341	6723	8123	10009	14103	15060	18633	47753
88	1557.3	2509.1	3150.6	3801.9	4802.3	5174.6	6543	6939	8388	10343	14599	15596	19324	49950
89	1612.0	2595.5	3258.2	3931.2	4965.4	5350.5	6768	7178	8681	10713	15149	16190	20091	52394
90	1672.8	2691.5	3377.8	4074.9	5146.8	5546.3	7017	7443	9007	11124	15761	16852	20946	55127
91	1740.7	2798.9	3511.7	4235.8	5350.0	5765.5	7297	7741	9372	11586	16448	17595	21906	58201
92	1817.1	2919.9	3662.5	4417.2	5579.1	6012.6	7613	8077	9785	12106	17224	18433	22990	61685
93	1903.8	3057.3	3833.8	4623.2	5839.4	6293.5	7971	8459	10253	12699	18107	19388	24226	65662
94	2002.9	3214.5	4030.0	4859.2	6137.8	6615.6	8383	8897	10792	13379	19121	20485	25645	70245
95	2117.4	3396.5	4257.1	5132.6	6483.6	6988.8	8860	9404	11416	14168	20299	21759	27295	75582
96	2251.3	3609.4	4523.2	5453.0	6888.9	7426.4	9419	10000	12148	15094	21682	23256	29234	81871
97	2409.7	3862.2	4839.1	5833.6	7370.8	7946.8	10085	10709	13020	16198	23331	25040	31546	89389
98	2600.5	4167.0	5220.5	6293.4	7953.4	8576.0	10890	11567	14075	17534	25330	27204	34351	98533
99	2834.4	4541.9	5690.1	6860.1	8672.1	9352.4	11885	12626	15380	19187	27805	29882	37826	109888
100	3128.2	5014.5	6282.9	7575.9	9581	10335	13144	13968	17033	21283	30947	33284	42242	124363

MEN'S TRACK RUNNING EVENT AGE FACTORS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	0.8361	0.8244	0.8131	0.7467	0.7028	0.7189	0.7428	0.7602	0.7224	0.7261	0.7257	0.7251	0.7228	0.7171	0.7160
9	0.8913	0.8791	0.8676	0.8004	0.7516	0.7637	0.7845	0.7998	0.7654	0.7689	0.7685	0.7680	0.7659	0.7608	0.7599
10	0.9250	0.9145	0.9045	0.8427	0.7929	0.8019	0.8200	0.8335	0.8024	0.8058	0.8054	0.8049	0.8029	0.7983	0.7974
11	0.9472	0.9389	0.9307	0.8766	0.8283	0.8348	0.8505	0.8623	0.8347	0.8378	0.8373	0.8368	0.8350	0.8307	0.8299
12	0.9626	0.9563	0.9499	0.9042	0.8589	0.8634	0.8769	0.8871	0.8630	0.8657	0.8651	0.8647	0.8629	0.8589	0.8581
13	0.9735	0.9691	0.9643	0.9270	0.8855	0.8884	0.8999	0.9087	0.8878	0.8903	0.8895	0.8891	0.8873	0.8835	0.8828
14	0.9815	0.9786	0.9753	0.9458	0.9089	0.9104	0.9201	0.9276	0.9098	0.9119	0.9109	0.9105	0.9088	0.9051	0.9044
15	0.9874	0.9858	0.9837	0.9616	0.9294	0.9299	0.9378	0.9441	0.9293	0.9310	0.9298	0.9293	0.9276	0.9241	0.9235
16	0.9917	0.9912	0.9902	0.9747	0.9475	0.9472	0.9535	0.9586	0.9466	0.9479	0.9465	0.9460	0.9443	0.9409	0.9403
17	0.9950	0.9953	0.9952	0.9857	0.9635	0.9626	0.9674	0.9714	0.9620	0.9629	0.9611	0.9606	0.9589	0.9556	0.9551
18	0.9973	0.9984	0.9990	0.9949	0.9777	0.9762	0.9796	0.9825	0.9757	0.9761	0.9740	0.9735	0.9718	0.9686	0.9681
19	0.9990	1.0000	1.0000	1.0000	0.9902	0.9883	0.9904	0.9923	0.9878	0.9877	0.9853	0.9848	0.9831	0.9800	0.9795
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	0.9997	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	0.9989	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9979	0.9994	1.0000	1.0000	0.9959	0.9959	0.9981	1.0000	1.0000	1.0000	0.9994	0.9992	0.9987	0.9980	0.9979
33	0.9968	0.9979	0.9987	0.9981	0.9896	0.9899	0.9926	0.9954	0.9939	0.9943	0.9937	0.9935	0.9931	0.9925	0.9924
34	0.9954	0.9963	0.9967	0.9939	0.9834	0.9837	0.9869	0.9902	0.9876	0.9882	0.9878	0.9876	0.9873	0.9868	0.9867
35	0.9939	0.9944	0.9945	0.9894	0.9771	0.9776	0.9813	0.9848	0.9812	0.9819	0.9817	0.9816	0.9812	0.9809	0.9808
36	0.9923	0.9924	0.9921	0.9848	0.9708	0.9714	0.9755	0.9794	0.9747	0.9755	0.9754	0.9753	0.9751	0.9748	0.9748
37	0.9905	0.9902	0.9896	0.9801	0.9645	0.9652	0.9697	0.9738	0.9681	0.9690	0.9690	0.9689	0.9687	0.9685	0.9685
38	0.9885	0.9878	0.9868	0.9752	0.9582	0.9591	0.9639	0.9682	0.9615	0.9625	0.9625	0.9624	0.9623	0.9622	0.9622
39	0.9863	0.9853	0.9839	0.9702	0.9519	0.9529	0.9580	0.9625	0.9548	0.9558	0.9559	0.9558	0.9557	0.9557	0.9558
40	0.9840	0.9825	0.9808	0.9652	0.9456	0.9467	0.9522	0.9567	0.9481	0.9490	0.9491	0.9491	0.9490	0.9491	0.9492
41	0.9816	0.9797	0.9776	0.9600	0.9394	0.9406	0.9462	0.9509	0.9414	0.9422	0.9423	0.9423	0.9422	0.9424	0.9425
42	0.9789	0.9766	0.9741	0.9547	0.9331	0.9344	0.9403	0.9450	0.9346	0.9353	0.9354	0.9354	0.9353	0.9357	0.9358
43	0.9761	0.9734	0.9706	0.9494	0.9268	0.9282	0.9343	0.9390	0.9277	0.9284	0.9284	0.9284	0.9284	0.9288	0.9290
44	0.9732	0.9701	0.9669	0.9439	0.9205	0.9220	0.9283	0.9330	0.9209	0.9214	0.9213	0.9213	0.9213	0.9219	0.9220
45	0.9701	0.9665	0.9630	0.9384	0.9142	0.9158	0.9222	0.9269	0.9139	0.9143	0.9142	0.9141	0.9142	0.9148	0.9150
46	0.9668	0.9629	0.9590	0.9328	0.9079	0.9096	0.9162	0.9207	0.9070	0.9072	0.9069	0.9069	0.9070	0.9077	0.9079
47	0.9634	0.9590	0.9548	0.9271	0.9016	0.9034	0.9100	0.9145	0.9000	0.9000	0.8996	0.8996	0.8997	0.9005	0.9008
48	0.9598	0.9551	0.9505	0.9213	0.8953	0.8971	0.9039	0.9082	0.8929	0.8927	0.8922	0.8922	0.8923	0.8932	0.8935
49	0.9561	0.9509	0.9460	0.9155	0.8890	0.8909	0.8977	0.9019	0.8858	0.8854	0.8847	0.8847	0.8848	0.8859	0.8862
50	0.9522	0.9466	0.9414	0.9095	0.8826	0.8845	0.8914	0.8954	0.8787	0.8780	0.8772	0.8771	0.8772	0.8784	0.8787
51	0.9481	0.9422	0.9366	0.9035	0.8762	0.8782	0.8851	0.8889	0.8714	0.8705	0.8695	0.8695	0.8696	0.8709	0.8712
52	0.9439	0.9376	0.9318	0.8975	0.8698	0.8718	0.8787	0.8823	0.8642	0.8630	0.8618	0.8617	0.8618	0.8632	0.8636
53	0.9395	0.9329	0.9267	0.8913	0.8633	0.8654	0.8723	0.8757	0.8568	0.8553	0.8539	0.8539	0.8540	0.8555	0.8559
54	0.9350	0.9280	0.9216	0.8851	0.8568	0.8589	0.8658	0.8689	0.8494	0.8476	0.8460	0.8459	0.8461	0.8477	0.8481
55	0.9303	0.9230	0.9163	0.8788	0.8502	0.8523	0.8592	0.8621	0.8419	0.8398	0.8380	0.8379	0.8380	0.8397	0.8402
56	0.9255	0.9178	0.9109	0.8724	0.8436	0.8457	0.8526	0.8551	0.8343	0.8319	0.8299	0.8298	0.8299	0.8317	0.8322
57	0.9205	0.9125	0.9053	0.8659	0.8369	0.8391	0.8459	0.8481	0.8266	0.8240	0.8216	0.8215	0.8217	0.8235	0.8241
58	0.9154	0.9071	0.8996	0.8593	0.8302	0.8323	0.8390	0.8410	0.8189	0.8159	0.8133	0.8132	0.8133	0.8153	0.8158
59	0.9101	0.9015	0.8937	0.8526	0.8234	0.8255	0.8321	0.8337	0.8110	0.8077	0.8048	0.8047	0.8048	0.8069	0.8075
60	0.9046	0.8957	0.8878	0.8459	0.8165	0.8186	0.8251	0.8263	0.8030	0.7994	0.7963	0.7961	0.7962	0.7984	0.7990
61	0.8990	0.8899	0.8817	0.8391	0.8095	0.8116	0.8180	0.8188	0.7950	0.7909	0.7876	0.7874	0.7875	0.7897	0.7903
62	0.8933	0.8838	0.8754	0.8321	0.8025	0.8045	0.8108	0.8112	0.7868	0.7824	0.7787	0.7785	0.7786	0.7809	0.7816
63	0.8873	0.8777	0.8690	0.8251	0.7954	0.7973	0.8035	0.8035	0.7785	0.7737	0.7697	0.7695	0.7696	0.7720	0.7727
64	0.8813	0.8713	0.8625	0.8180	0.7881	0.7900	0.7960	0.7956	0.7700	0.7649	0.7606	0.7604	0.7604	0.7629	0.7636
65	0.8751	0.8649	0.8559	0.8107	0.7808	0.7825	0.7884	0.7875	0.7614	0.7559	0.7513	0.7511	0.7511	0.7537	0.7544
66	0.8687	0.8583	0.8491	0.8034	0.7734	0.7750	0.7807	0.7794	0.7527	0.7468	0.7419	0.7416	0.7416	0.7443	0.7450
67	0.8622	0.8515	0.8422	0.7960	0.7658	0.7673	0.7728	0.7710	0.7438	0.7375	0.7323	0.7320	0.7320	0.7347	0.7355
68	0.8555	0.8447	0.8351	0.7884	0.7581	0.7595	0.7648	0.7625	0.7348	0.7281	0.7225	0.7222	0.7221	0.7250	0.7258
69	0.8487	0.8376	0.8280	0.7807	0.7503	0.7515	0.7566	0.7538	0.7256	0.7184	0.7126	0.7122	0.7121	0.7150	0.7159
70	0.8417	0.8305	0.8206	0.7730	0.7424	0.7434	0.7482	0.7449	0.7162	0.7086	0.7024	0.7021	0.7019	0.7049	0.7057
71	0.8346	0.8232	0.8132	0.7650	0.7343	0.7351	0.7397	0.7358	0.7066	0.6987	0.6921	0.6917	0.6915	0.6945	0.6954
72	0.8273	0.8157	0.8056	0.7570	0.7261	0.7267	0.7309	0.7265	0.6968	0.6885	0.6816	0.6811	0.6809	0.6840	0.6849
73	0.8199	0.8081	0.7979	0.7488	0.7177	0.7181	0.7220	0.7170	0.6868	0.6781	0.6708	0.6703	0.6701	0.6732	0.6741
74	0.8123	0.8004	0.7900	0.7405	0.7092	0.7092	0.7129	0.7072	0.6766	0.6674	0.6598	0.6593	0.6590	0.6622	0.6631
75	0.8046	0.7925	0.7820	0.7321	0.7004	0.7002	0.7035	0.6972	0.6662	0.6566	0.6486	0.6481	0.6477	0.6509	0.6519
76	0.7967	0.7844	0.7738	0.7235	0.6915	0.6910	0.6939	0.6870	0.6555	0.6455	0.6371	0.6366	0.6362	0.6394	0.6404
77	0.7887	0.7763	0.7655	0.7148	0.6824	0.6815	0.6841	0.6765	0.6445	0.6341	0.6254	0.6248	0.6243	0.6276	0.6286
78	0.7805	0.7680	0.7571	0.7059	0.6731	0.6718	0.6740	0.6657	0.6333	0.6225	0.6134	0.6128	0.6122	0.6155	0.6165
79	0.7722	0.7595	0.7485	0.6969	0.6636	0.6619	0.6636	0.6546	0.6218	0.6106	0.6011	0.6004	0.5999	0.6031	0.6041
80	0.7638	0.7509	0.7398	0.6877	0.6539	0.6516	0.6529	0.6432	0.6101	0.5983	0.5885	0.5878	0.5872	0.5904	0.5914
81	0.7551	0.7422	0.7310	0.6783	0.6439	0.6411	0.6420	0.6315	0.5980	0.5858	0.5756	0.5749	0.5742	0.5774	0.5784
82	0.7464	0.7333	0.7220	0.6687	0.6336	0.6304	0.6307	0.6194	0.5855	0.5730	0.5624	0.5616	0.5608	0.5640	0.5650
83	0.7375	0.7242	0.7128	0.6590	0.6231	0.6193	0.6191	0.6070	0.5728	0.5598	0.5488	0.5480	0.5471	0.5503	0.5513
84	0.7285	0.7151	0.7035	0.6491	0.6124	0.6078	0.6071	0.5942	0.5596	0.5462	0.5348	0.5340	0.5331	0.5362	0.5372
85	0.7193	0.7057	0.6941	0.6389	0.6013	0.5960	0.5947	0.5810	0.5461	0.5323	0.5205	0.5197	0.5186	0.5216	0.5227
86	0.7099	0.6963	0.6845	0.6286	0.5899	0.5839	0.5819	0.5673	0.5321	0.5179	0.5058	0.5049	0.5037	0.5067	0.5077
87	0.7005	0.6867	0.6747	0.6181	0.5782	0.5714	0.5687	0.5532	0.5178	0.5032	0.4906	0.4897	0.4885	0.4913	0.4923
88	0.6908	0.6769	0.6649	0.6073	0.5662	0.5584	0.5550	0.5386	0.5029	0.4880	0.4750	0.4741	0.4727	0.4754	0.4764
89	0.6811	0.6670	0.6548	0.5964	0.5537	0.5450	0.5409	0.5235	0.4876	0.4723	0.4590	0.4580	0.4565	0.4591	0.4601
90	0.6712	0.6570	0.6446	0.5852	0.5410	0.5312	0.5262	0.5078	0.4718	0.4561	0.4424	0.4414	0.4398	0.4422	0.4432
91	0.6612	0.6468	0.6343	0.5737	0.5278	0.5168	0.5110	0.4916	0.4554	0.4394	0.4254	0.4243	0.4225	0.4248	0.4257
92	0.6510	0.6364	0.6237	0.5620	0.5141	0.5020	0.4952	0.4747	0.4384	0.4222	0.4078	0.4066	0.4047	0.4067	0.4076
93	0.6407	0.6259	0.6131	0.5500	0.5001	0.4866	0.4788	0.4572	0.4209	0.4043	0.3896	0.3883	0.3863	0.3881	0.3890
94	0.6302	0.6153	0.6022	0.5378	0.4855	0.4705	0.4618	0.4390	0.4027	0.3858	0.3708	0.3695	0.3673	0.3688	0.3696
95	0.6197	0.6045	0.5912	0.5252	0.4705	0.4539	0.4440	0.4201	0.3838	0.3667	0.3513	0.3500	0.3477	0.3488	0.3496
96	0.6089	0.5936	0.5801	0.5124	0.4549	0.4366	0.4255	0.4003	0.3641	0.3469	0.3312	0.3298	0.3273	0.3281	0.3288
97	0.5981	0.5825	0.5688	0.4993	0.4387	0.4185	0.4062	0.3797	0.3437	0.3263	0.3103	0.3089	0.3062	0.3066	0.3072
98	0.5871	0.5713	0.5573	0.4858	0.4219	0.3997	0.3860	0.3582	0.3224	0.3049	0.2887	0.2872	0.2843	0.2842	0.2848
99	0.5760	0.5599	0.5456	0.4720	0.4045	0.3800	0.3648	0.3357	0.3003	0.2827	0.2662	0.2646	0.2615	0.2610	0.2614
100	0.5648	0.5484	0.5338	0.4579	0.3864	0.3595	0.3427	0.3122	0.2772	0.2596	0.2429	0.2412	0.2379	0.2368	0.2371

MEN'S LONG DISTANCE AGE FACTORS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	0.7089	0.7020	0.6993	0.6976	0.6963	0.6961	0.6961	0.6962	0.6971	0.6985	0.7015	0.7021	0.7037	0.6989
9	0.7539	0.7484	0.7466	0.7457	0.7455	0.7457	0.7469	0.7474	0.7494	0.7522	0.7577	0.7588	0.7620	0.7669
10	0.7922	0.7878	0.7865	0.7862	0.7867	0.7871	0.7891	0.7898	0.7924	0.7960	0.8027	0.8041	0.8083	0.8182
11	0.8252	0.8215	0.8206	0.8206	0.8215	0.8220	0.8244	0.8252	0.8282	0.8322	0.8395	0.8409	0.8455	0.8578
12	0.8538	0.8506	0.8500	0.8501	0.8512	0.8518	0.8544	0.8553	0.8584	0.8624	0.8699	0.8713	0.8759	0.8889
13	0.8788	0.8759	0.8754	0.8756	0.8768	0.8775	0.8801	0.8809	0.8840	0.8880	0.8952	0.8966	0.9010	0.9135
14	0.9007	0.8980	0.8976	0.8979	0.8991	0.8997	0.9022	0.9030	0.9059	0.9097	0.9165	0.9178	0.9219	0.9333
15	0.9199	0.9174	0.9170	0.9173	0.9184	0.9190	0.9214	0.9221	0.9248	0.9283	0.9345	0.9357	0.9394	0.9492
16	0.9369	0.9345	0.9341	0.9343	0.9353	0.9358	0.9380	0.9387	0.9411	0.9442	0.9498	0.9508	0.9541	0.9621
17	0.9518	0.9495	0.9491	0.9493	0.9501	0.9506	0.9525	0.9531	0.9552	0.9580	0.9628	0.9637	0.9664	0.9724
18	0.9650	0.9628	0.9623	0.9624	0.9631	0.9635	0.9651	0.9656	0.9674	0.9698	0.9738	0.9745	0.9767	0.9808
19	0.9766	0.9744	0.9740	0.9739	0.9744	0.9747	0.9760	0.9765	0.9780	0.9799	0.9831	0.9837	0.9854	0.9874
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9978	0.9984	0.9990	0.9996	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9924	0.9932	0.9939	0.9947	0.9959	0.9963	0.9978	0.9982	0.9995	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9868	0.9878	0.9886	0.9895	0.9909	0.9914	0.9931	0.9936	0.9951	0.9967	0.9991	0.9994	1.0000	0.9991
35	0.9810	0.9822	0.9831	0.9841	0.9857	0.9863	0.9882	0.9887	0.9905	0.9924	0.9952	0.9956	0.9969	0.9968
36	0.9751	0.9764	0.9775	0.9786	0.9804	0.9810	0.9832	0.9837	0.9857	0.9878	0.9911	0.9916	0.9931	0.9942
37	0.9690	0.9706	0.9717	0.9730	0.9749	0.9756	0.9779	0.9785	0.9806	0.9830	0.9867	0.9873	0.9890	0.9912
38	0.9629	0.9646	0.9659	0.9672	0.9693	0.9700	0.9725	0.9732	0.9755	0.9780	0.9820	0.9827	0.9847	0.9878
39	0.9566	0.9585	0.9599	0.9614	0.9635	0.9643	0.9670	0.9677	0.9701	0.9729	0.9772	0.9779	0.9801	0.9841
40	0.9502	0.9523	0.9538	0.9554	0.9577	0.9585	0.9614	0.9621	0.9647	0.9675	0.9721	0.9729	0.9753	0.9801
41	0.9437	0.9460	0.9477	0.9493	0.9518	0.9527	0.9556	0.9564	0.9591	0.9621	0.9668	0.9677	0.9703	0.9757
42	0.9371	0.9397	0.9415	0.9432	0.9458	0.9467	0.9498	0.9506	0.9533	0.9564	0.9614	0.9623	0.9650	0.9710
43	0.9304	0.9333	0.9351	0.9370	0.9397	0.9406	0.9438	0.9446	0.9474	0.9506	0.9558	0.9567	0.9595	0.9659
44	0.9237	0.9268	0.9288	0.9307	0.9335	0.9344	0.9377	0.9386	0.9415	0.9447	0.9500	0.9509	0.9537	0.9605
45	0.9169	0.9202	0.9223	0.9243	0.9272	0.9282	0.9316	0.9324	0.9354	0.9387	0.9440	0.9449	0.9478	0.9547
46	0.9100	0.9135	0.9158	0.9179	0.9208	0.9219	0.9253	0.9262	0.9292	0.9325	0.9378	0.9388	0.9417	0.9486
47	0.9030	0.9068	0.9091	0.9113	0.9144	0.9154	0.9189	0.9198	0.9228	0.9262	0.9315	0.9325	0.9354	0.9422
48	0.8960	0.9000	0.9024	0.9047	0.9079	0.9089	0.9125	0.9134	0.9164	0.9198	0.9250	0.9260	0.9288	0.9355
49	0.8888	0.8931	0.8957	0.8980	0.9013	0.9023	0.9059	0.9068	0.9099	0.9132	0.9184	0.9193	0.9221	0.9284
50	0.8816	0.8861	0.8888	0.8912	0.8945	0.8957	0.8993	0.9002	0.9032	0.9065	0.9116	0.9125	0.9152	0.9209
51	0.8743	0.8791	0.8819	0.8844	0.8877	0.8889	0.8925	0.8934	0.8964	0.8997	0.9046	0.9055	0.9081	0.9132
52	0.8669	0.8719	0.8748	0.8774	0.8809	0.8820	0.8856	0.8866	0.8895	0.8927	0.8975	0.8983	0.9008	0.9051
53	0.8594	0.8647	0.8677	0.8704	0.8739	0.8750	0.8787	0.8796	0.8825	0.8856	0.8902	0.8910	0.8933	0.8967
54	0.8518	0.8573	0.8605	0.8632	0.8668	0.8679	0.8716	0.8725	0.8754	0.8784	0.8828	0.8835	0.8856	0.8880
55	0.8441	0.8499	0.8531	0.8559	0.8596	0.8607	0.8644	0.8653	0.8681	0.8710	0.8752	0.8758	0.8777	0.8789
56	0.8363	0.8424	0.8457	0.8486	0.8522	0.8534	0.8570	0.8579	0.8607	0.8635	0.8674	0.8680	0.8696	0.8696
57	0.8284	0.8347	0.8381	0.8411	0.8448	0.8460	0.8496	0.8505	0.8531	0.8558	0.8594	0.8599	0.8613	0.8599
58	0.8204	0.8269	0.8305	0.8335	0.8372	0.8384	0.8420	0.8429	0.8455	0.8480	0.8513	0.8517	0.8529	0.8498
59	0.8122	0.8190	0.8227	0.8258	0.8296	0.8307	0.8343	0.8351	0.8377	0.8401	0.8429	0.8433	0.8442	0.8395
60	0.8040	0.8110	0.8148	0.8179	0.8217	0.8229	0.8264	0.8273	0.8297	0.8319	0.8344	0.8347	0.8353	0.8289
61	0.7955	0.8029	0.8067	0.8099	0.8138	0.8150	0.8184	0.8192	0.8216	0.8236	0.8258	0.8260	0.8262	0.8179
62	0.7870	0.7946	0.7985	0.8018	0.8057	0.8069	0.8103	0.8110	0.8133	0.8152	0.8169	0.8170	0.8168	0.8066
63	0.7783	0.7861	0.7902	0.7935	0.7974	0.7986	0.8020	0.8027	0.8048	0.8065	0.8078	0.8078	0.8073	0.7950
64	0.7695	0.7776	0.7817	0.7851	0.7890	0.7902	0.7935	0.7942	0.7962	0.7977	0.7985	0.7984	0.7975	0.7831
65	0.7605	0.7688	0.7730	0.7765	0.7804	0.7816	0.7848	0.7855	0.7873	0.7887	0.7890	0.7888	0.7876	0.7709
66	0.7513	0.7599	0.7642	0.7677	0.7716	0.7728	0.7760	0.7766	0.7783	0.7794	0.7793	0.7790	0.7773	0.7584
67	0.7420	0.7508	0.7552	0.7587	0.7627	0.7638	0.7669	0.7675	0.7691	0.7700	0.7694	0.7689	0.7669	0.7456
68	0.7324	0.7415	0.7460	0.7496	0.7536	0.7547	0.7577	0.7583	0.7597	0.7604	0.7592	0.7587	0.7561	0.7325
69	0.7227	0.7320	0.7366	0.7402	0.7442	0.7453	0.7482	0.7488	0.7501	0.7505	0.7488	0.7481	0.7452	0.7190
70	0.7128	0.7223	0.7270	0.7306	0.7346	0.7358	0.7386	0.7391	0.7402	0.7404	0.7382	0.7374	0.7340	0.7053
71	0.7026	0.7124	0.7171	0.7208	0.7249	0.7259	0.7287	0.7292	0.7301	0.7301	0.7273	0.7263	0.7225	0.6912
72	0.6923	0.7022	0.7071	0.7108	0.7148	0.7159	0.7185	0.7190	0.7198	0.7195	0.7161	0.7150	0.7107	0.6769
73	0.6817	0.6919	0.6968	0.7005	0.7045	0.7056	0.7081	0.7085	0.7092	0.7086	0.7046	0.7034	0.6986	0.6623
74	0.6709	0.6812	0.6862	0.6900	0.6940	0.6951	0.6975	0.6978	0.6983	0.6975	0.6929	0.6916	0.6863	0.6473
75	0.6598	0.6703	0.6754	0.6792	0.6832	0.6842	0.6865	0.6868	0.6871	0.6860	0.6809	0.6794	0.6737	0.6321
76	0.6484	0.6592	0.6643	0.6681	0.6721	0.6731	0.6753	0.6756	0.6757	0.6743	0.6685	0.6669	0.6607	0.6166
77	0.6368	0.6477	0.6529	0.6568	0.6607	0.6617	0.6637	0.6640	0.6639	0.6623	0.6559	0.6541	0.6474	0.6008
78	0.6248	0.6359	0.6412	0.6451	0.6490	0.6499	0.6518	0.6520	0.6518	0.6499	0.6429	0.6410	0.6338	0.5847
79	0.6126	0.6238	0.6291	0.6330	0.6369	0.6378	0.6396	0.6398	0.6393	0.6371	0.6296	0.6275	0.6199	0.5684
80	0.6000	0.6114	0.6167	0.6206	0.6245	0.6254	0.6270	0.6271	0.6265	0.6240	0.6158	0.6137	0.6056	0.5517
81	0.5871	0.5986	0.6039	0.6079	0.6117	0.6125	0.6141	0.6141	0.6133	0.6106	0.6018	0.5995	0.5909	0.5348
82	0.5738	0.5854	0.5908	0.5947	0.5985	0.5993	0.6007	0.6007	0.5997	0.5967	0.5873	0.5849	0.5758	0.5176
83	0.5601	0.5718	0.5772	0.5811	0.5848	0.5857	0.5869	0.5869	0.5857	0.5824	0.5724	0.5699	0.5604	0.5001
84	0.5460	0.5578	0.5632	0.5671	0.5708	0.5716	0.5727	0.5726	0.5712	0.5676	0.5571	0.5544	0.5445	0.4823
85	0.5315	0.5433	0.5488	0.5526	0.5562	0.5570	0.5579	0.5578	0.5562	0.5524	0.5413	0.5385	0.5282	0.4643
86	0.5166	0.5284	0.5338	0.5377	0.5412	0.5419	0.5427	0.5425	0.5407	0.5367	0.5251	0.5222	0.5115	0.4460
87	0.5011	0.5130	0.5184	0.5222	0.5256	0.5263	0.5269	0.5267	0.5248	0.5204	0.5083	0.5053	0.4942	0.4275
88	0.4852	0.4970	0.5024	0.5061	0.5095	0.5101	0.5106	0.5103	0.5082	0.5036	0.4910	0.4879	0.4766	0.4087
89	0.4687	0.4804	0.4858	0.4895	0.4927	0.4933	0.4937	0.4933	0.4911	0.4863	0.4732	0.4700	0.4584	0.3896
90	0.4517	0.4633	0.4686	0.4722	0.4754	0.4759	0.4761	0.4757	0.4733	0.4683	0.4548	0.4516	0.4397	0.3703
91	0.4341	0.4455	0.4507	0.4543	0.4573	0.4578	0.4579	0.4574	0.4548	0.4496	0.4358	0.4325	0.4204	0.3507
92	0.4158	0.4271	0.4322	0.4356	0.4385	0.4390	0.4389	0.4384	0.4357	0.4303	0.4162	0.4128	0.4006	0.3309
93	0.3969	0.4079	0.4128	0.4162	0.4190	0.4194	0.4191	0.4186	0.4157	0.4102	0.3959	0.3925	0.3801	0.3109
94	0.3772	0.3879	0.3927	0.3960	0.3986	0.3990	0.3986	0.3980	0.3950	0.3893	0.3749	0.3715	0.3591	0.2906
95	0.3568	0.3671	0.3718	0.3749	0.3773	0.3777	0.3771	0.3765	0.3734	0.3677	0.3532	0.3497	0.3374	0.2701
96	0.3356	0.3455	0.3499	0.3529	0.3551	0.3554	0.3547	0.3541	0.3509	0.3451	0.3306	0.3272	0.3150	0.2493
97	0.3136	0.3229	0.3271	0.3299	0.3319	0.3322	0.3313	0.3307	0.3274	0.3216	0.3073	0.3039	0.2919	0.2284
98	0.2906	0.2993	0.3032	0.3058	0.3076	0.3078	0.3068	0.3061	0.3028	0.2971	0.2830	0.2797	0.2681	0.2072
99	0.2666	0.2746	0.2782	0.2805	0.2821	0.2822	0.2811	0.2805	0.2772	0.2715	0.2578	0.2547	0.2435	0.1858
100	0.2415	0.2487	0.2519	0.2540	0.2554	0.2554	0.2542	0.2535	0.2503	0.2448	0.2316	0.2286	0.2180	0.1641

These time standards were developed using a unique approach. Rather than simply curve fitting each event separately and independently of other events, the approach here fits a continuous three-dimensional time surface over the axes of age and distance. There are two primary by-products of the time surface: one being time-age curves for each event giving time as age varies from 5 to 100 years, and another being time-distance curves for each year of age giving time as distance varies from 50 meters to 100k. Examples of these curves are included later in the chapter.

Both the time-age and time-distance curve equations must meet certain general requirements. They must be equations that lend themselves to direct parametric solution of coefficient and exponent values, and inherently have the shape or distribution of the data involved so that a minimum number of coefficients or exponents are required to form the curve. The benefit of this requirement is that a minimum number of data points suffice to obtain statistically good curve fits over the entire range of the curve. Curve shaping terms also are employed in the equations to mathematically proportion the resulting curve so that records for youths and masters can be fitted simultaneously to produce a single set of curve fitted standards for the entire, continuous age range of 5 to 100 years for any event. Only two time-age points are required to fit the time-age curve for any running event. Four time-distance points are required to fit the time-distance curve for any age with distances ranging from 50 to 800 meters, and four time-distance points are required to fit that age for distances ranging from 800 to 100,000 meters. The non-linear time-age and time-distance equations are combined to operate in an interdependent manner within the program.

The time surface is computer generated as follows. The initial step in generating time standards is to fit the time-distance curve for open class events using the world record times. Existing time-age and time-distance equations remain or are pre-loaded in the running event portion of the computer program; time-age equations for 100, 200, 400, 800, and three other distances, and time-distance equations for open class, age 60 and age 100. New youth, masters age and open class world records are manually entered into the records data base and the program then identifies all data base records which are better (faster) than the existing time standards. Selected records are manually entered into the program, which then calculates new time-age curves, from which new time-distance curves are calculated for every event, from which the program then produces a new set of time standards for all events, and in addition the program then identifies (if there are any) all data base records which are still better than the newly generated time standards. Selected records are again manually entered into the program and the calculations are repeated. This iteration process is continued until no records in the data base are identified as being better than the standards generated. (This is the algorithm that removes arbitrariness or bias from the best record selection process.) The results are then evaluated to determine if a significant number of actual records are included as standards and that those records are suitably distributed over the entire age-distance region of the time surface. The standards are then finalized after ensuring that the running rate requirements are met for all events and that resulting age-factor values and distribution are suitable.

Refer to the table of page 13 which shows performance level of actual records for a quick view of how many "world record" level performances are identified by the running standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The table also illustrates the distribution of those records on the time surface across all ages and distances.

The fitting process described above has its results produced in both the time domain and the rate domain to ensure that rate requirements are not violated. For example, "curve crossover" has occured and rate requirements are violated when standards result for an age which would have longer distances run at faster rates than for shorter distances.

It is difficult to qualitatively evaluate a table of standards just on the basis of the feeling one gets in looking at the numerical progression of values therein. To get a better feel for the quality of the standards, the running rates for all events must be examined and compared. For the standards of this book, refer to the running rate graphs provided at figures 1, 2 and 3. Rate graphs must have a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered good.

Age-factors are then computer generated by dividing the open class standard by the standard for each age, doing this for every event. Just as the derived time standards form a time surface over the axes of age and distance, the resulting age-factors also form a surface of age-factor values over the axes of age and distance. Age-factor results are looked at early on in the standards generating process. When it is seen that an undesirable distribution of age-factor values has resulted, the problem areas are refitted until the resulting age-factors are acceptable. Hence the age-factors are another tool like the rate results, and both tools are used to obtain the best standards possible.

The resulting age-factor surface requires further discussion to provide an understanding of its nature before attempts are made by the reader to determine whether the age-factor values have an acceptable continuity and distribution.

Refer to the age-factor tables at pages 8 and 9 for discussion purposes. It is seen that the factors are not smooth in their progression. For every event, age-factor values decrease continuously as they go from their 1.000 value at open class (OC) ages to their fractional value at age 100, and as they go from their 1.000 value at OC ages to their fractional value at age 5. There are, however, a number of conditions involved that prevent age-factors from behaving with perfect arithmetical uniformity as they vary across the distances of all events for a specific age. And as a further complication, the effects of these conditions vary in their amount as age changes. Two of the more significant factors are the open class record age phenomenon and the 100 meter zero velocity start phenomenon.

The open class record age phenomenon results from the fact that for sprints, world record level runner ages average at about 24 years, while for middle distances that age is at about 25 or 26 years, and for the long distances and marathon that age is at about 27 years. Thus, the age-factors for 35 year old runners would be expected to be very nearly 1.000 for long distances since they are nominally only 8 years past the most favorable age for those events, their age-factors would be somewhat less for middle distances since they are nominally 9 or 10 years past the prime age for those events, and their age-factors would be even less for sprint events since they are nominally 11 years past the prime age for sprinting. This effect may not be clearly seen, however, as it is being combined with the effects of other phenomena to produce the final overall effect that results.

The 100 meter zero velocity start (i.e., not a running start) phenomenon is fairly easy to envision. From ages 13 through 40 or so, the 100 meter times and their resulting standards are "slowed" with respect to those for the 200 and 400 meters and all longer distances by the zero velocity, standing start effect. A small but finite amount of time is lost because of the zero velocity start in all events, but the effect is significant in only events of less than about 140 meters as illustrated by the following example.

The open class world record time for the men's 4x100 relay is 37.40 seconds. If all four runners ran world record time 9.84 second legs, their relay time would be 39.36 seconds which is not as fast as the relay record. So how do you get 37.40? Lead runs 9.84 from a standing, zero velocity start, and the following three legs are all run in 9.186 seconds from running starts. That's the effect of the zero velocity start on the 100 meter dash.

The open class world record time for the men's 4x200 relay is 1:19.11 which is 79.11 seconds. If all four runners ran world record time 19.32 second legs, their relay time would be 77.28 seconds which is faster than the relay record. It is therefor seen that the zero velocity start effect does not significantly impact the 200 meter dash, but it does significantly impact the 100 meter dash.

From the discussion above, it is seen that there are certain conditions existing which prevent the resulting age-factor values for runners from having a perfectly well behaved continuity in the arithmetic progression sense as one reads age-factors across the table for a specific age. The effects of the various phenomena combine in a non-linear fashion and exhibit significant impact as age approaches that of the open class runners. This doesn't mean that the age-factors cannot be analyzed and challenged as reflecting poor curve fitting, it simply means that some amount of warpage and undulation is inherent to age-factors for runners, and this should be taken into consideration when looking at, or analyzing, tables of age-factors for runners. Graphic material is presented at the end of the men's running package in this chapter showing what the age-factor curves look like.

The table on the next page is the listing of performance level in percent for actual records. The percentages listed in the table are determined by dividing the time standard by the actual record for every age of every event having a listed record. The percentage values have been rounded to the nearest whole integer.

First look at the performance level percentages for OC which is listed in the table between ages 19 and 30. These are the percentages that result for the time-distance curve fit of world records for open class events. It is seen that not every record has a 100% performance level - this is because world records are usually set one at a time with only a few, rather than all, being set in any one year. It is possible that a year or two from now it will be the mile and the 3000 meter run which are the 100% level records, it changes all the time. It is noteworthy that the men's curve fitting process has all of the major event world records at 99 or 100 percent performance levels because that is what one would expect. See the appendix for an expanded treatment of open class world record time-distance curve fitting.

Look at the rest of the table to see what has resulted for the youths and the masters age runners. Only records having a percentage of 100 were used in determining the standards that resulted. Bear in mind that a single curve for each event fitted the records of both youths and masters, and that all curves are interrelated. As discussed earlier, the time surface curve fitting process attempts to include as many actual records as possible with their occurrence evenly distributed as much as possible over all of the ages and distances involved. This table provides an excellent quick look concerning whether certain ages or certain events are favored or disadvantaged by the fitting process used - no single event appears to be poorly fitted, and 100% performance levels are achieved in all age ranges (i.e., young masters, middle masters and old masters).

PERFORMANCE LEVEL OF MEN'S RUNNING RECORDS

AGE	100	200	400	800	1500	MILE	3K	5K	10K	MAR
8	98	100	91	96	94	92	96	94	95	100
9	95	96	91	95	94	91	91	89	91	94
10	96	97	91	94	92	90	93	87	94	90
11	95	97	94	93	92	92	93	90	85	90
12	98	98	95	94	94	91	92	84	87	87
13	97	98	96	96	95	93	92	89	88	87
14	98	99	100	98	97	93	94	89	90	86
15	98	100	99	100	100	96	96	98	100	91
16	98	100	100	100	99	95	98	97	96	93
17	98	100	99	97	98	97	93	100	100	92
18	98	98	99	99	98	97	98	95	98	94
19	98	97	100	99	98	98	98	100	100	97
OC	100	100	100	100	100	99	99	100	100	100
30	97	94	96	94	92	95	92	92	94	99
31	97	89	93	93	93	93		94	94	99
32	99	92	93	91	93	92	92	94	92	96
33		92	93	92		92	92	94	93	97
34	97					94		95	91	96
35	99	98	95	100	98	97	95	97	98	97
36	100	98	93	100	99	98	96	96	99	94
37	100	97	93	100	98	98	97	98	99	97
38	95	95	92	93	99	98	94	95	97	
39	97	96	94	92	93	92	95	96	95	94
40	96	93	94	95	96	97	95	96	97	97
41	96	94	96	97	95	99	93	93	97	100
42	95	95	97	94	94	93	93	96	96	95
43	96	93	96	94	96	97	95	94	94	97
44	95	94	96	95	95	93	95	93	94	97
45	95	95	94	95	94	95	93	92	95	95
46	95	95	94	95	95	94	91	96	93	98
47	96	95	94	97	94	94	92	95	97	97
48	97	96	95	96	94	94	91	92	91	95
49	95	93	94	96	93	94	93	96	96	95
50	97	96	94	96	96	93	93	95	96	95
51	96	96	95	96	95	90	91	96	96	96
52	97	97	95	95	95	94	93	93	94	97
53	96	97	94	96	96	97	96	94	92	95
54	97	96	95	95	95	91	91	92	94	94
55	97	96	94	96	97	95	97	95	95	99
56	97	98	96	93	95	93	94	96	96	99
57	98	96	97	95	97	93	93	92	95	93
58	96	96	98	96	98	91	92	96	95	94
59	99	97	97	94	96	92	91	93	93	95
60	97	96	97	95	96	95	94	95	95	92
61	100	99	98	94	94	95	96	96	95	94
62	96	95	97	97	98	94	92	96	96	92
63	99	96	100	95	96	95	91	93	94	93
64	98	96	96	97	96	99	93	95	93	98
65	97	97	95	98	98	100	99	99	98	100
66	98	95	96	100	96	91	95	96	95	100
67	97	100	94	99	95	97	97	95	95	94
68	96	96	94	99	95	91	89	95	94	97
69	97	96	92	91	95	93	94	94	93	94
70	98	97	94	96	96	95	95	95	94	95
71	98	96	90	95	96	91	93	96	96	95
72	99	97	90	94	94	93	89	95	95	94
73	98	95	93	94	96	94	92	93	92	94
74		98	88	95	96	94	89	92	91	84
75	100	98	90	95	97	96	93	95	93	88
76	97	96	89	93	96	82	90	93	90	89
77	96	93	87	94	96	86	93	97	86	91
78	94	94	89	97	99	97	93	93	90	89
79	94	92	88	98	98	88	81	96	95	88
80	100	96	88	96	99	94	94	93	94	92
81	93	91	89	100	97	80	81	98	98	83
82	94	90	90	97	98	76	93	99	98	95
83	92	86	85	91	81	76		98	95	74
84	87	84	69	94	100	86	86	100	96	89
85	93	90	80	88	93		85	92	82	73
86	91	91	79	78	87			84	77	71
87	86	83	74	87	93	94	89	94	94	
88	99	83	79	76	84		81	85	74	
89	100	81	82	90	94					
90	85	81	73	80	82	61	82	77	79	
91			72	74	80	64	83		71	
92	85		67	73	83				69	
93			60		67			88	86	
94			60	66	71	71				
95	87		55	73	70	72		70		90
96	92	88	60		71					
97										
98										100
99										
100										

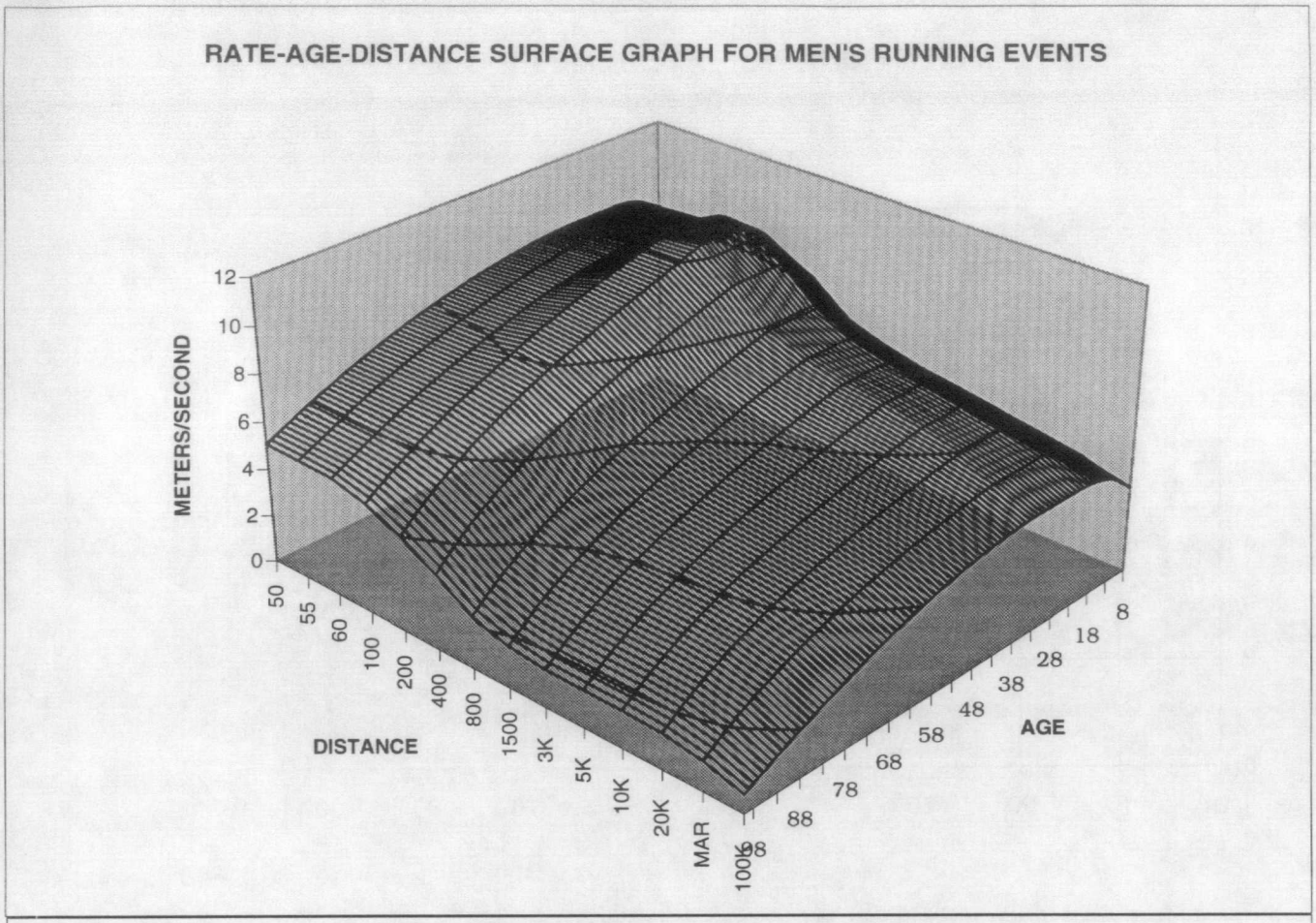
Running rate material is shown next. It was mentioned earlier that the standards were produced in both the rate domain and the time domain; these are the rate domain graphs. It was also mentioned that a rate surface is produced over axes of runner's age and distance run. Figure 1 is a three-dimensional graph of the rate surface for the standards of this book.

The lower graph in figure 1 and the graphs of figure 2 display rate in meters per second for the standards generated. In these graphs the relationship is rate versus age for selected events. The selected events are the 50, 55, 60, 100, 200, 400, 800, 1500, 3k, 5k, 10k, 20k, marathon and 100k.

The graphs in figure 3 also display rate in meters per second for the standards generated, but in these graphs the relationship is rate versus distance for selected ages. The selected ages are 8, 12, 18 and OC in the upper graph, and OC, 40, 60, 80 and 100 in the lower graph.

It was mentioned earlier that these rate graphs must show a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered suitable or good. It is seen that excellent smoothness, continuity and proportionality are displayed in all of the graphs.
Rate graphs are the proof of the pudding so to speak for running event (and walk event) time standards - the rates must be examined before the times can be accepted.

In looking at the three-dimensional rate surface graph, it can be easily seen how the rate surface is made up by combining (at right angles to each other) the rate versus age curves and the rate versus distance curves.


RATE-AGE-DISTANCE SURFACE GRAPH FOR MEN'S RUNNING EVENTS
METERS/SECOND
12
10
8
6
4
2
0
DISTANCE
50
55
60
100
200
400
800
1500
3K
5K
10K
20K
MAR
100K
AGE
8
18
28
38
48
58
68
78
88
98

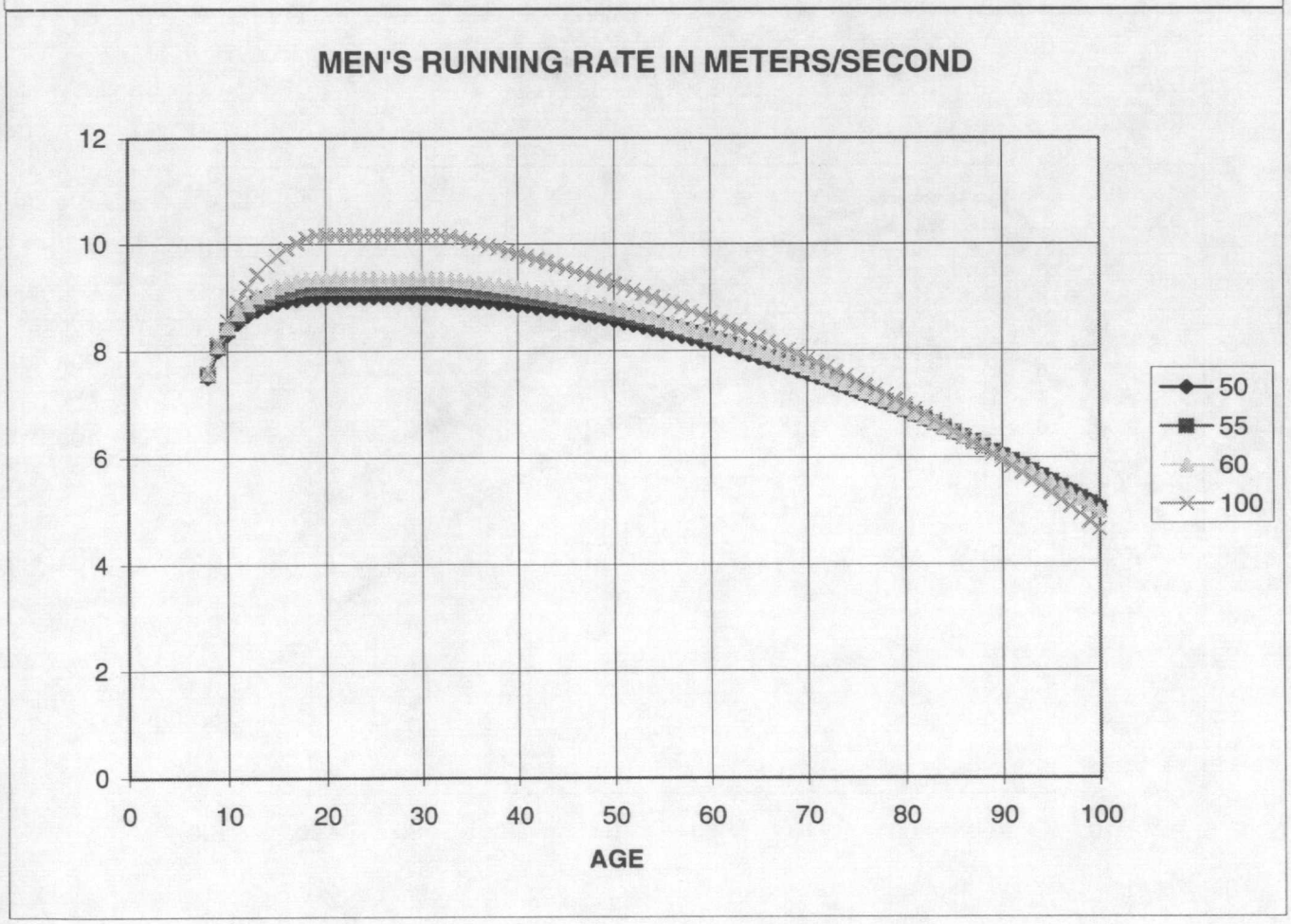
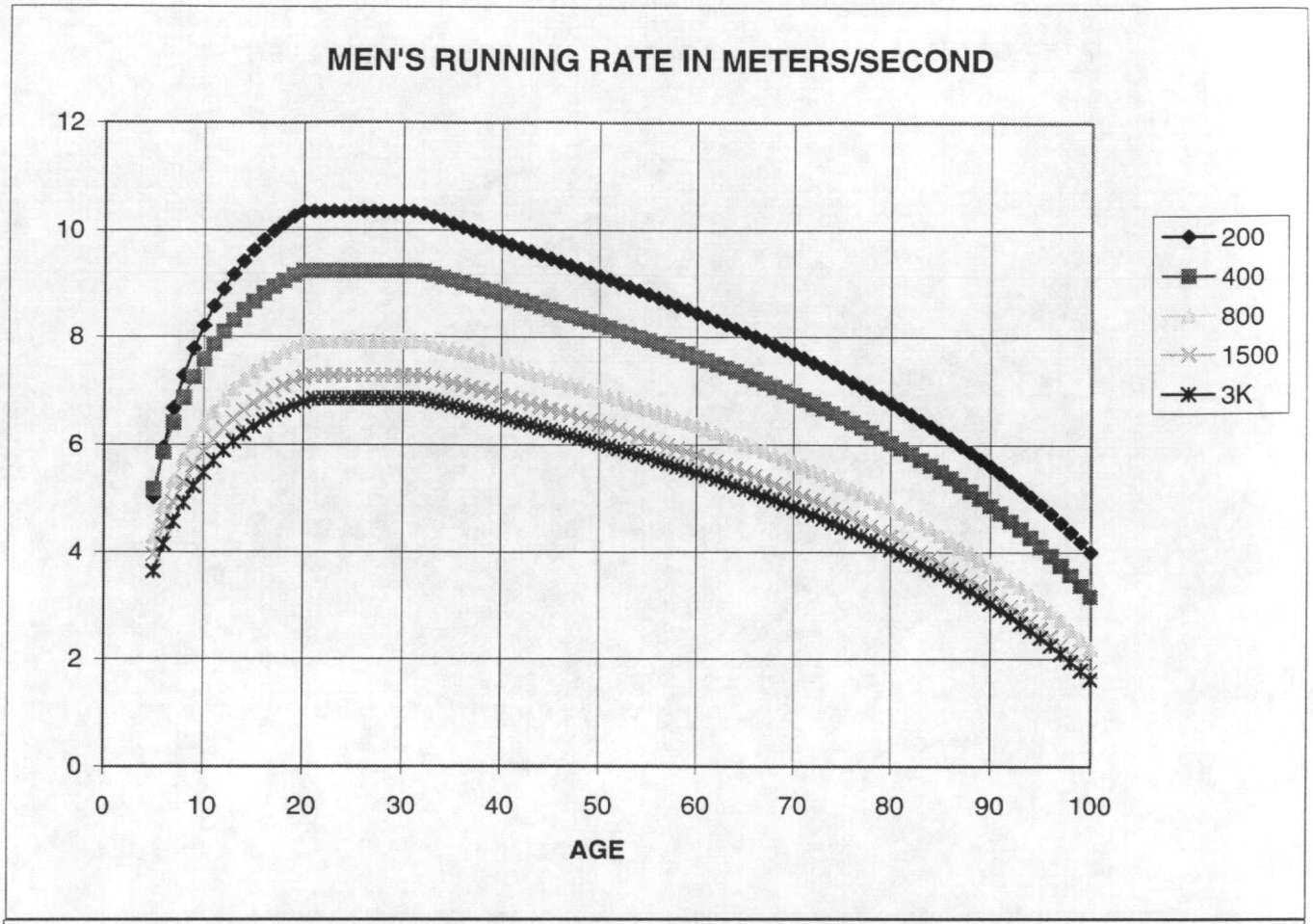

MEN'S RUNNING RATE IN METERS/SECOND
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
50
55
60
100

Figure 2


MEN'S RUNNING RATE IN METERS/SECOND
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
200
400
800
1500
3K

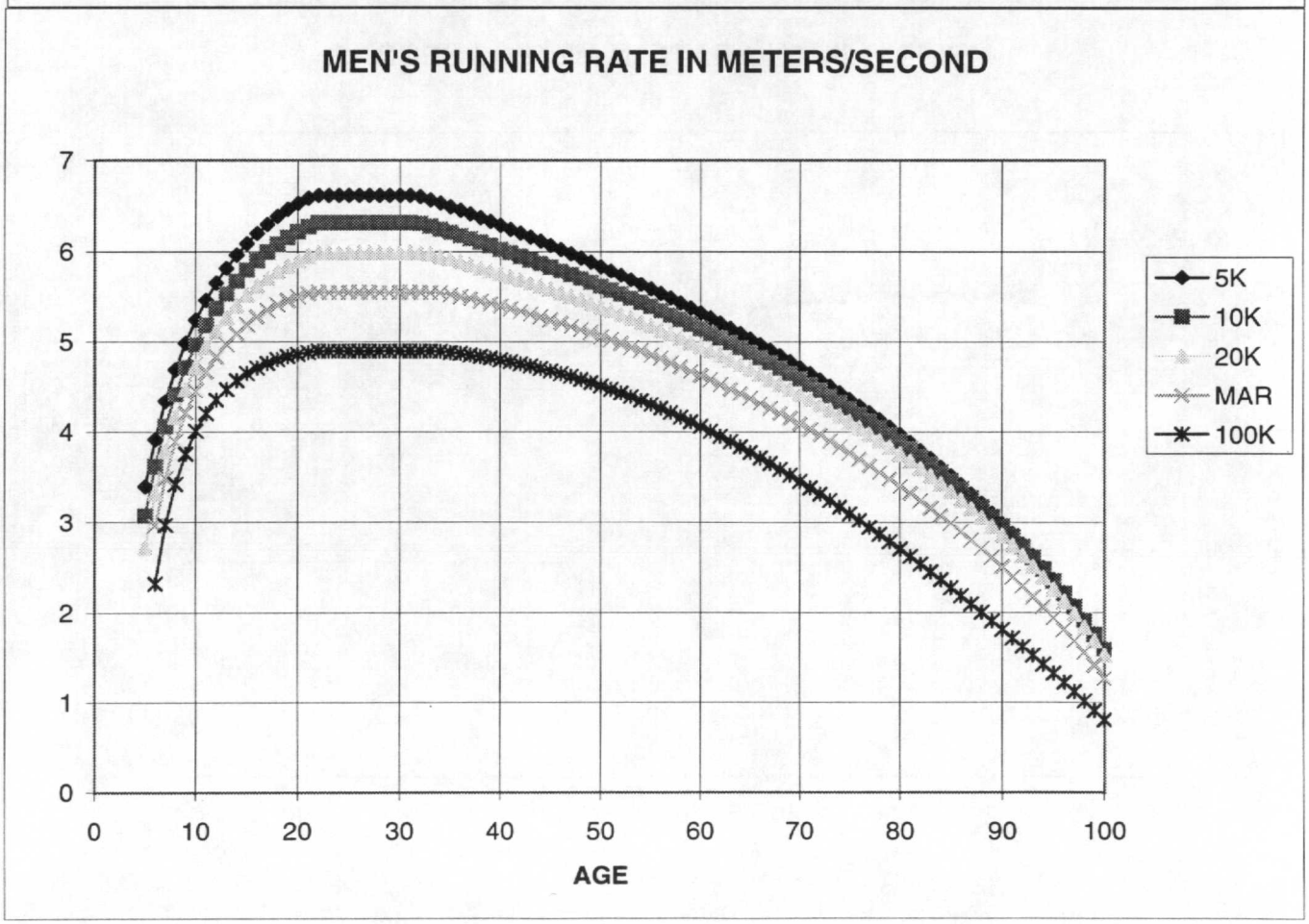
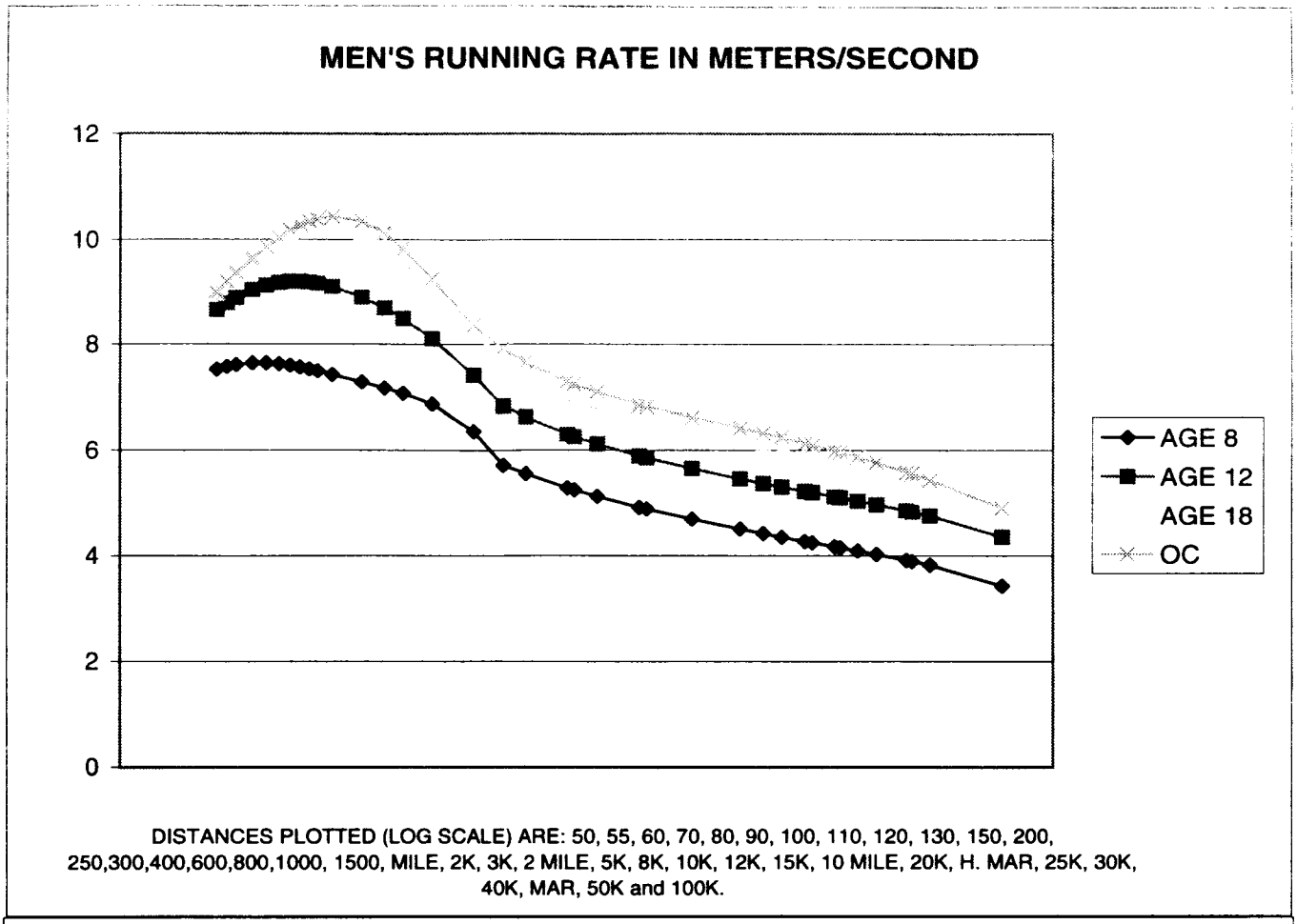
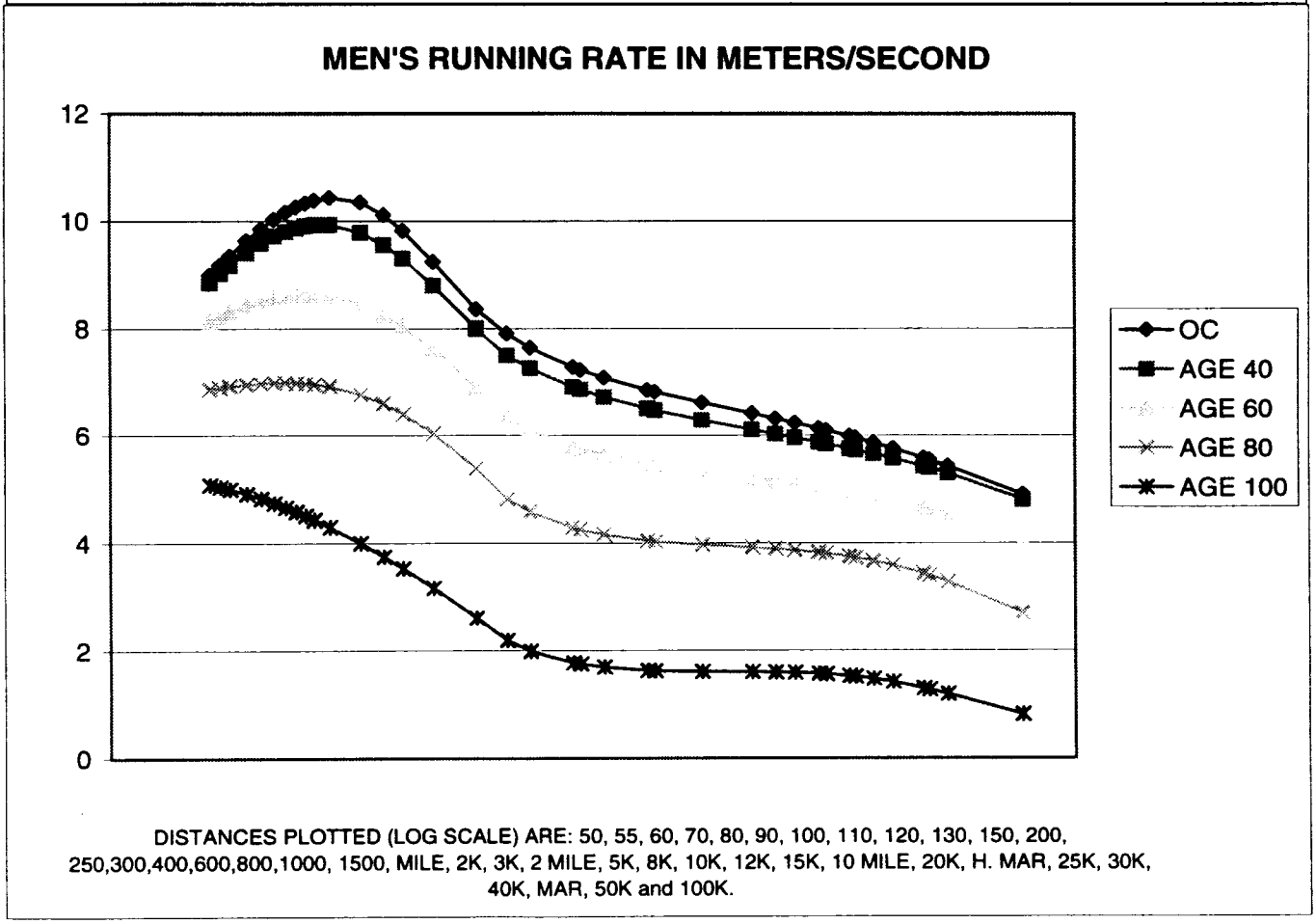

MEN'S RUNNING RATE IN METERS/SECOND
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K
10K
20K
MAR
100K

Figure 3


MEN'S RUNNING RATE IN METERS/SECOND
12
10
8
6
4
2
0
AGE 8
AGE 12
AGE 18
OC
DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250,300,400,600,800,1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.


MEN'S RUNNING RATE IN METERS/SECOND
12
10
8
6
4
2
0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250,300,400,600,800,1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

Running time material is shown next. It was mentioned earlier that the standards were produced in both the rate domain and the time domain; these are the time domain graphs. It was also mentioned that a time surface is produced over axes of runner's age and distance run. Figure 4 is a three-dimensional graph of the time surface for the standards of this book. Note that the scales of the time axis and distance axis are logarithmic and this introduces a compression factor into the surface viewed here.

The next set of graphs presents performance-versus-age material plotted as time-age curves. Figures 5 through 9 show graphs of time standards and actual records versus age for individual events for the 100, 200, 400, 800, 1500, mile, 3k, 5k, 10k and marathon. As indicated by the graph, a single curve includes fitting both youth and master age performances. The resulting curves do not reflect attempts to curve fit the events on a stand alone basis; these curves were produced as cross-sectional elements of the time surface. These curves fit the data base records remarkably well in view of the many stringent requirements that must be met.

There are also time-distance curves fitted but none are included here as graphics for the reason discussed below.

In looking at the three-dimensional time surface graph, it can be seen how the time surface is made up by combining (at right angles to each other) the time versus age curves and the time versus distance curves. However, because of the numerical magnitudes involved, the time and distance axes are in log scale and this renders the graphic less useful for purposes of visual analysis and interpretation. Refer to the rate surface graph of figure 1 for a more useful graphic of the relationships involved.

It is frequently asked why the running standards curve up so much at the 5 year old and 100 year old edges of the graphs, as many aficionados believe that straighter lines with less curvature would seem more realistic. The data being fitted is what requires equations that turn the curves upward sharply at the 5 year old and 100 year old portions of the curve. Refer to figures 5 through 9 to see the plot of the actual record data for each event. Every event from 100 meters to the marathon indicates a rapid increase in running ability taking place for 5, 6 and 7 year olds, and a rapid loss of running ability setting in for runners in the 85 to 100 year old age range. Refer also to figures 19 through 23 for women's running events. Meeting that condition certainly makes the curve fitting equations of this book more complicated, but that is required if the curves of the standards are to realistically portray what is physically happening as indicated by every plot of the actual records.

Refer to chapter 5 for a discussion of what records are included in or removed from the data base, and which records, if any, are not included in the plots of standards and records versus age graphs or in the tables listing performance level for actual records. The discussion in chapter 5 addresses running, hurdles, field events and walks in one coverage to preclude needless repetition of the discussion in each chapter while at the same time improving the overall understanding of which events are most and which are least impacted in this regard.

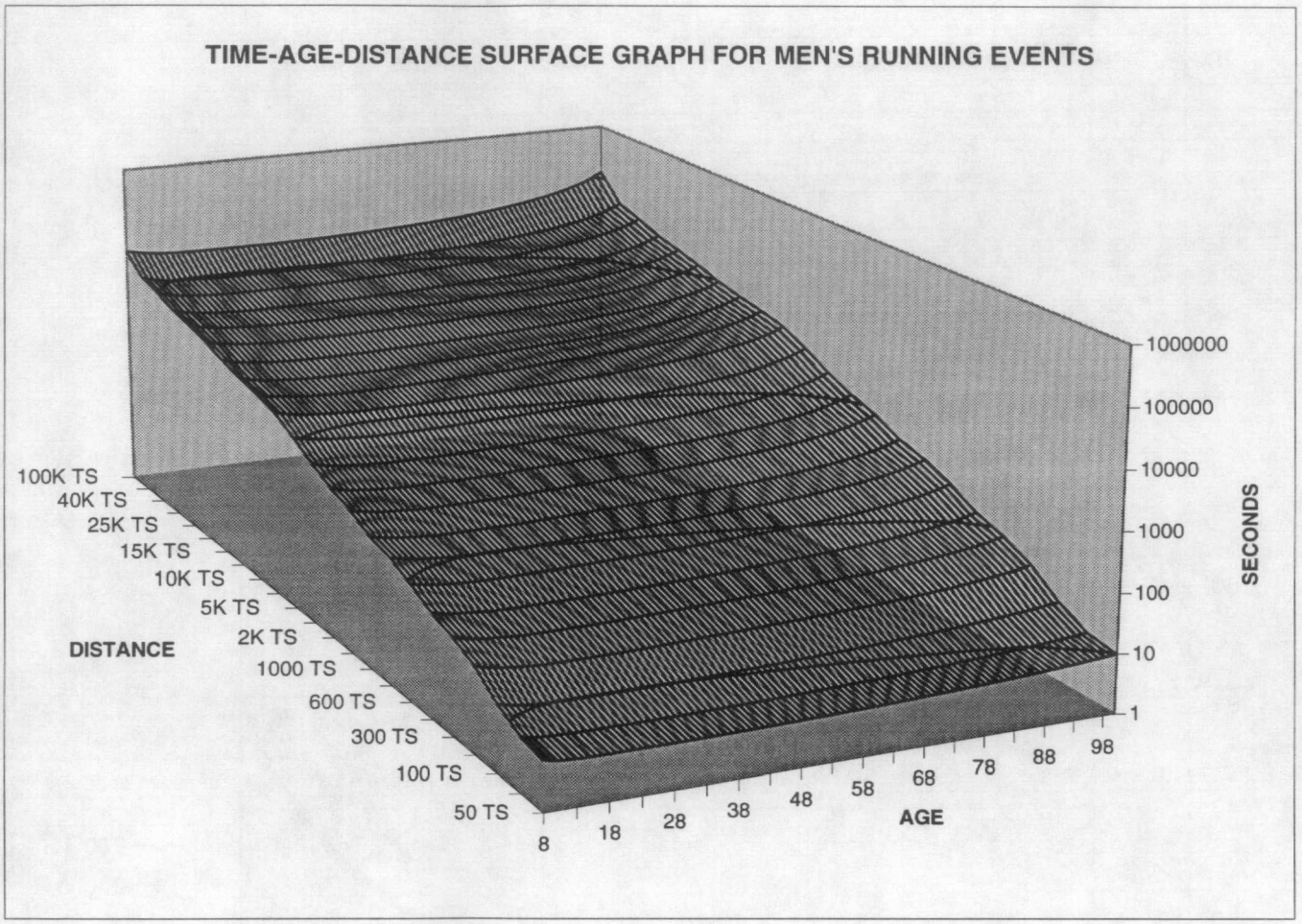
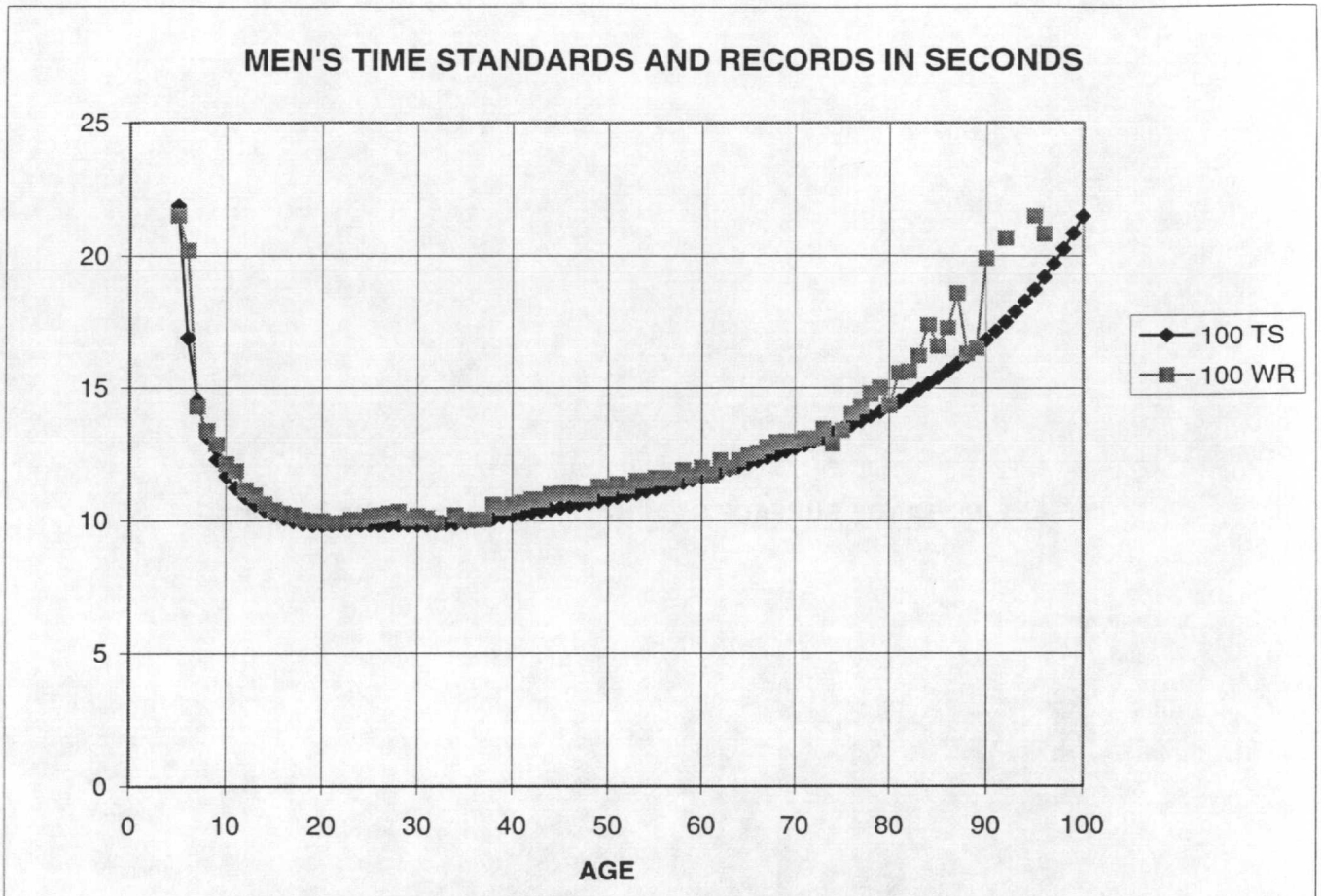

TIME-AGE-DISTANCE SURFACE GRAPH FOR MEN'S RUNNING EVENTS
DISTANCE
100K TS
40K TS
25K TS
15K TS
10K TS
5K TS
2K TS
1000 TS
600 TS
300 TS
100 TS
50 TS
AGE
8
18
28
38
48
58
68
78
88
98
SECONDS
1000000
100000
10000
1000
100
10
1

Figure 5


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
100 TS
100 WR

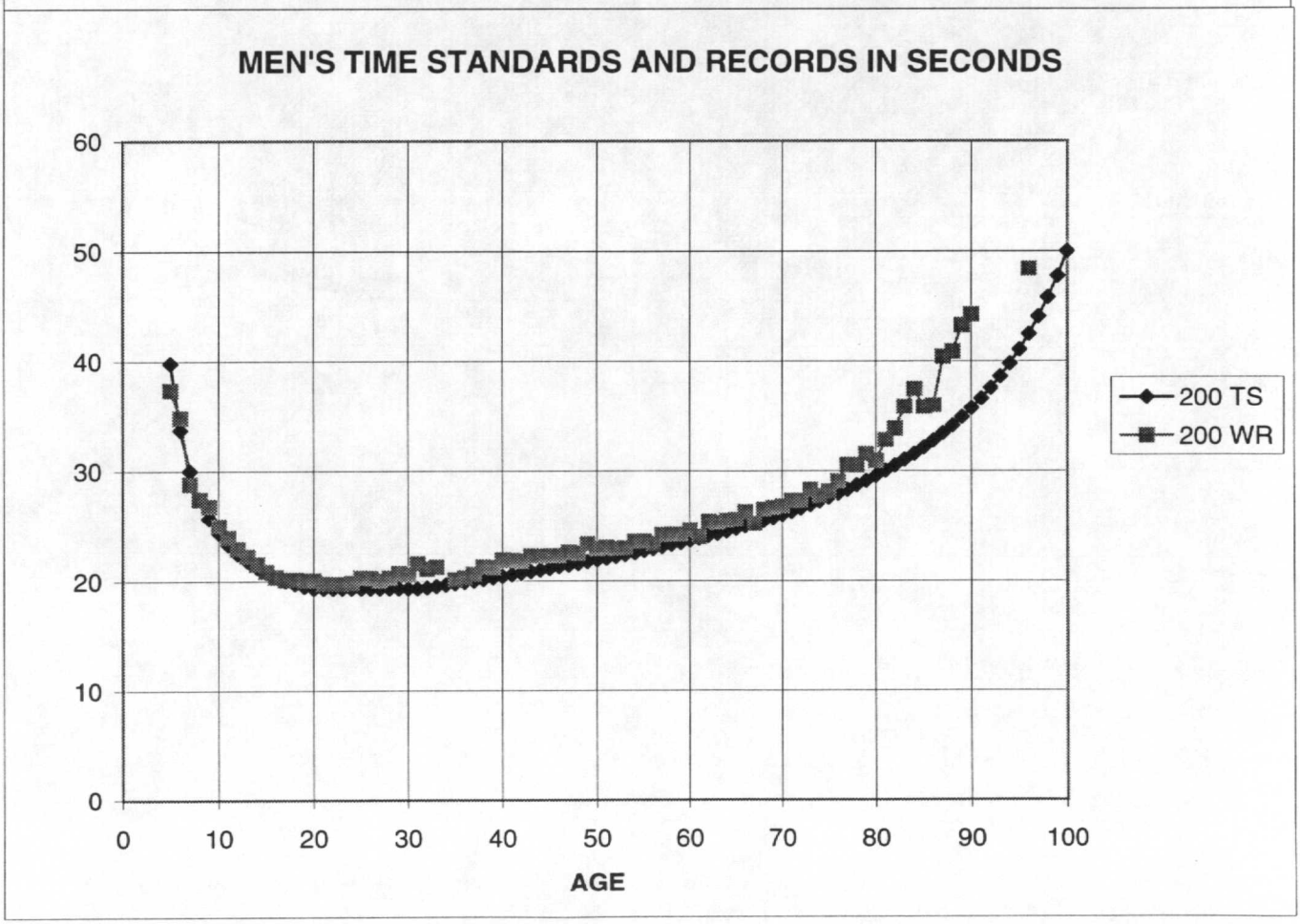
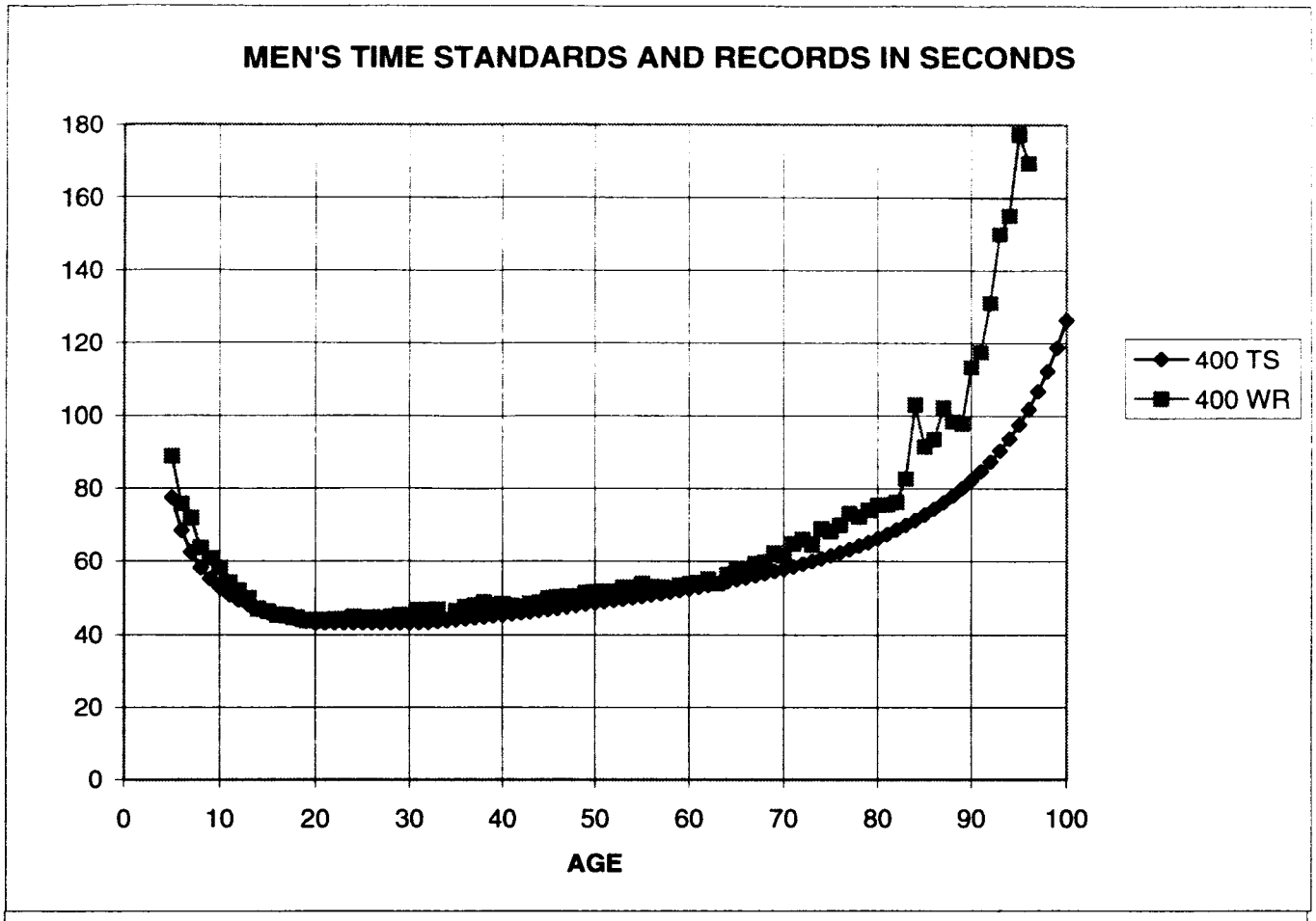

MEN'S TIME STANDARDS AND RECORDS IN SECONDS
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
200 TS
200 WR

Figure 6


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400 TS
400 WR

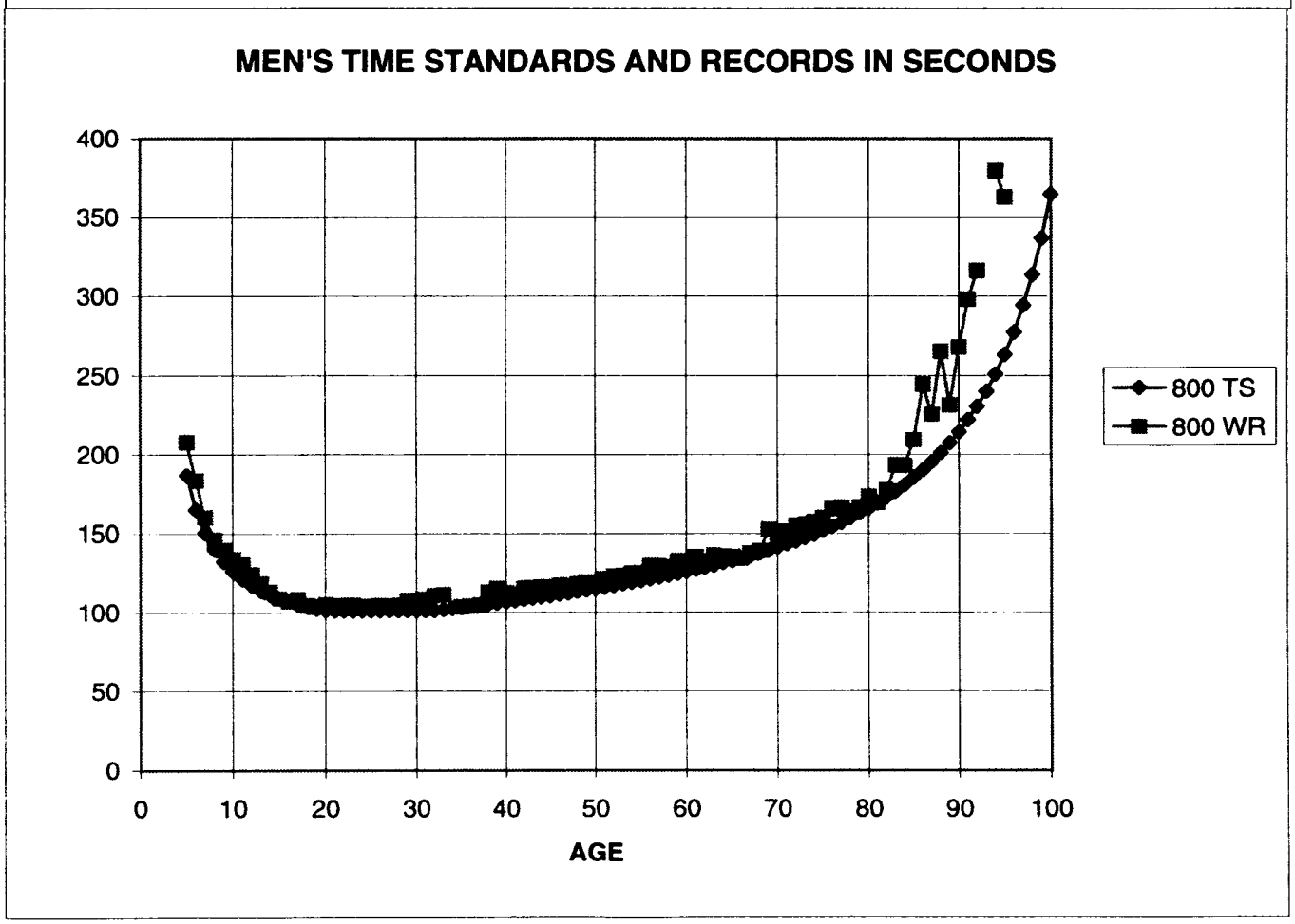
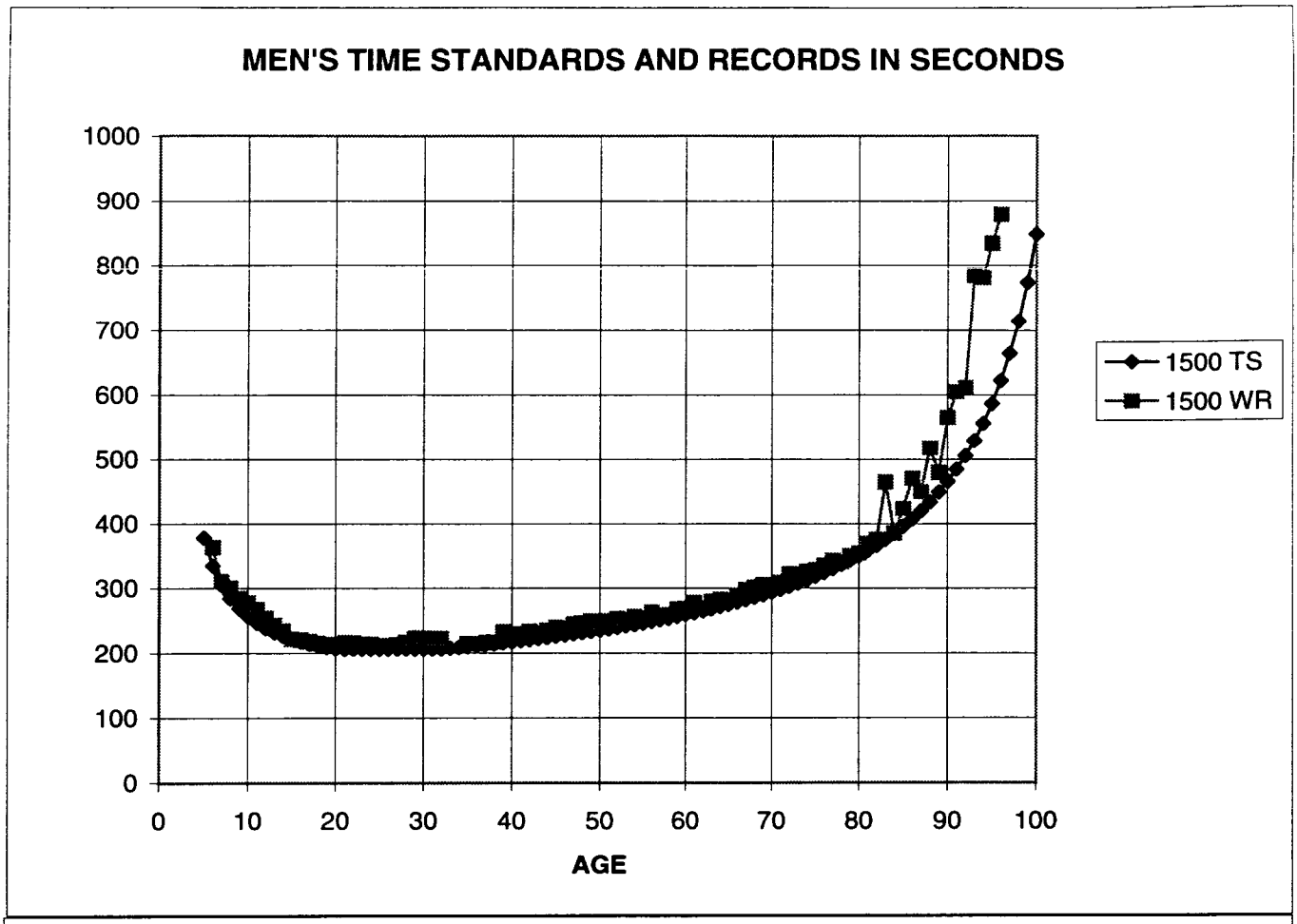

MEN'S TIME STANDARDS AND RECORDS IN SECONDS
400
350
300
250
200
150
100
50
0
0
10
20
30
40
50
60
70
80
90
100
AGE
800 TS
800 WR

Figure 7


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
1000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500 TS
1500 WR

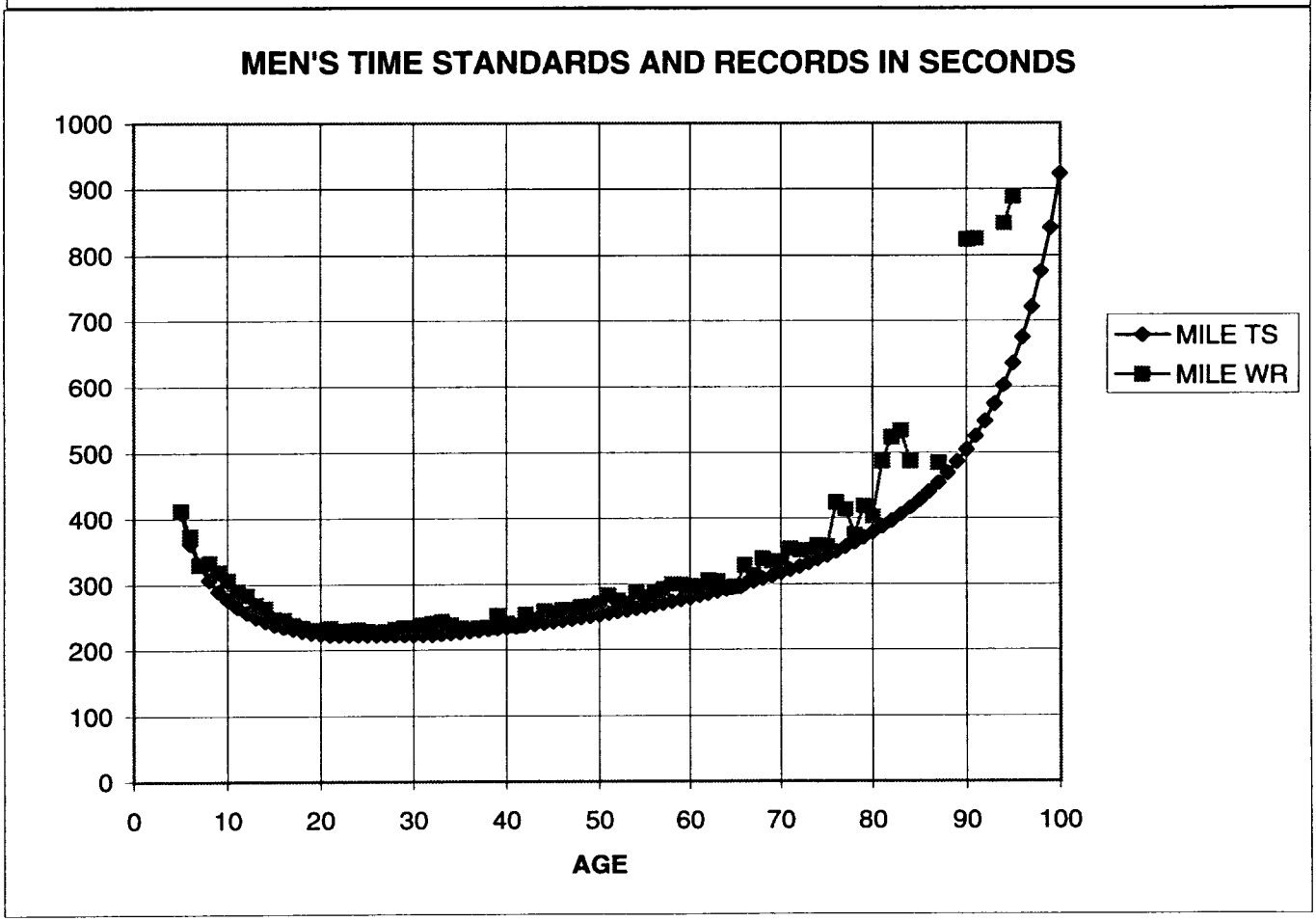
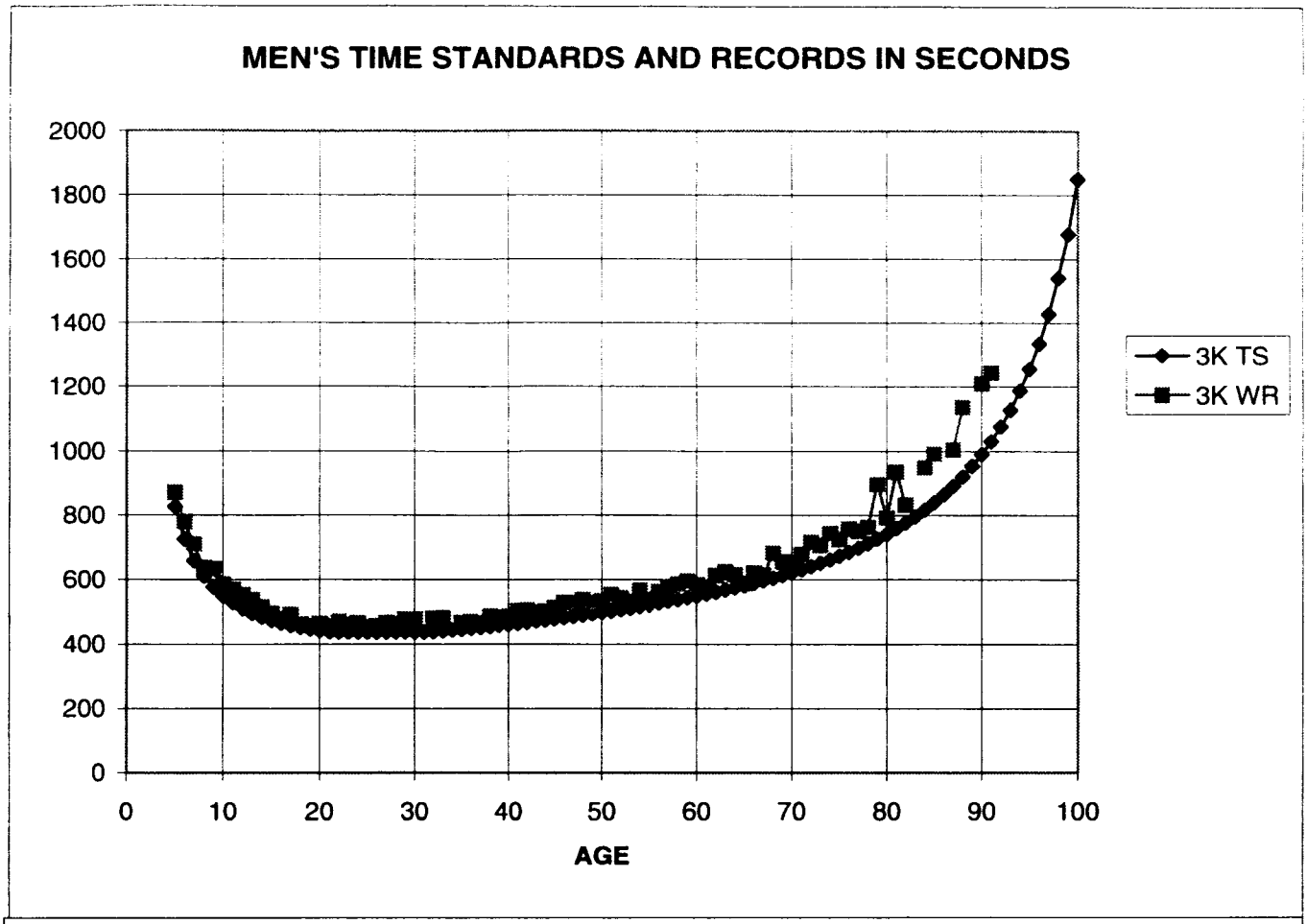

MEN'S TIME STANDARDS AND RECORDS IN SECONDS
1000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
AGE
MILE TS
MILE WR

Figure 8


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K TS
3K WR

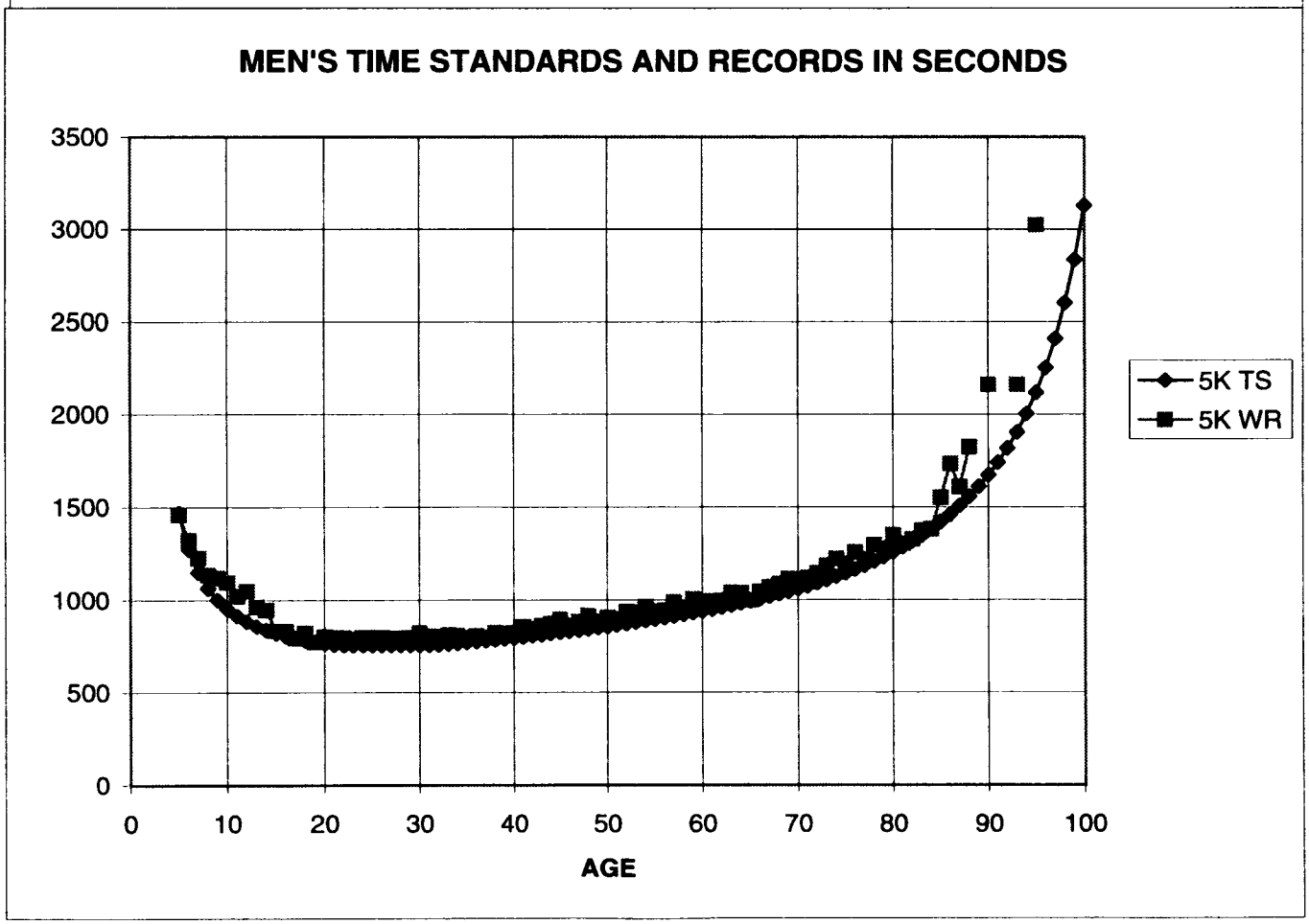
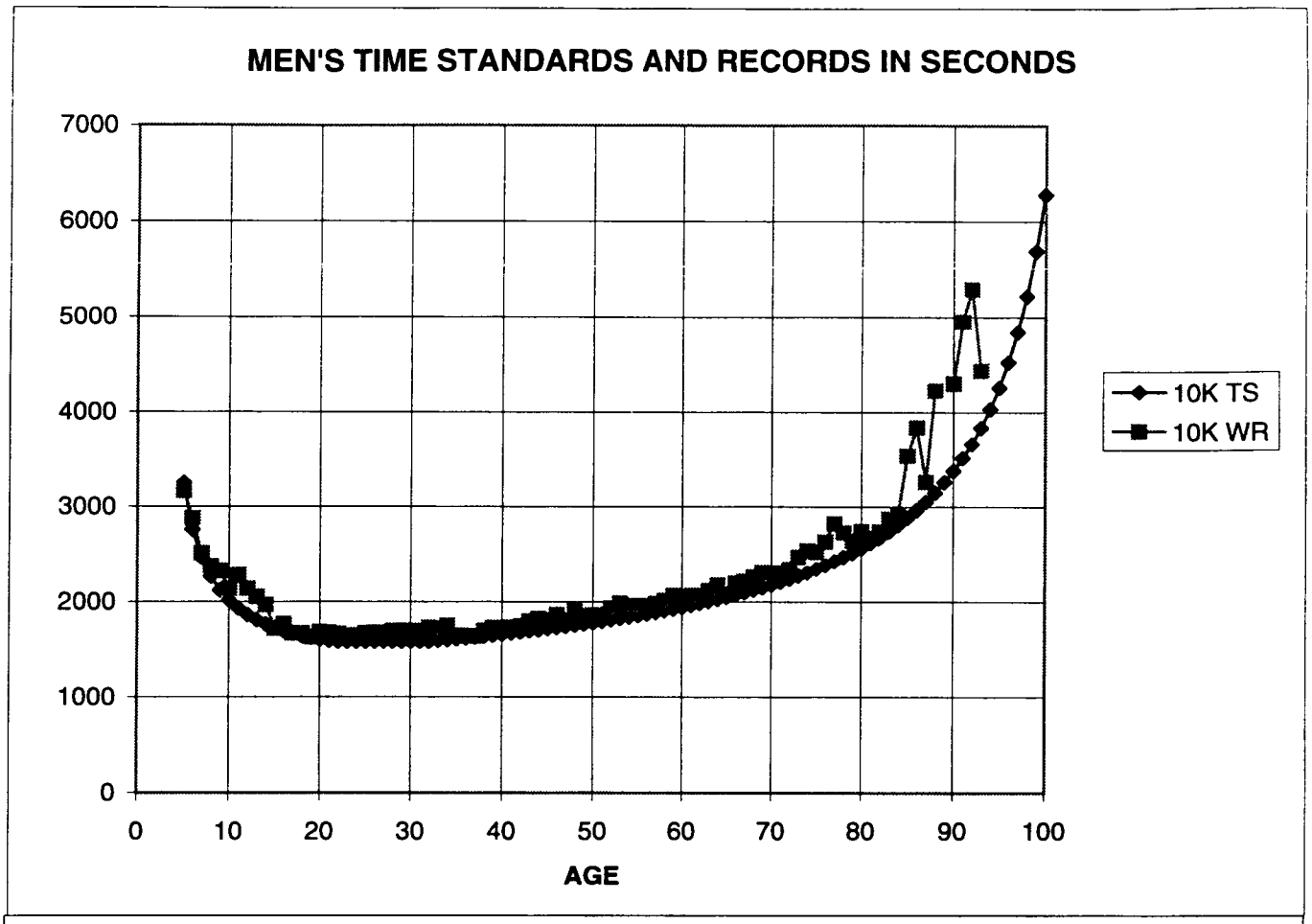
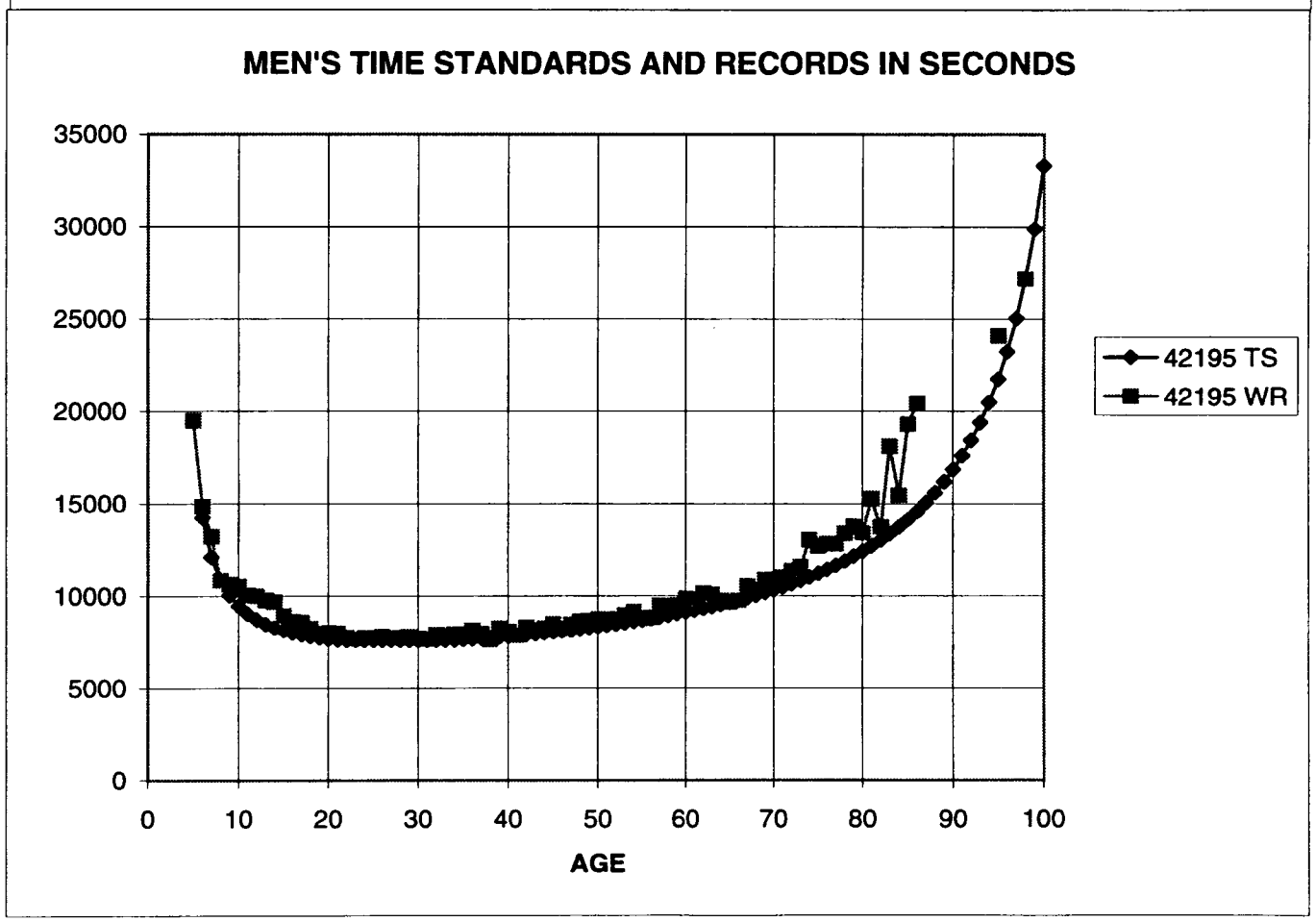

MEN'S TIME STANDARDS AND RECORDS IN SECONDS
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K TS
5K WR

Figure 9


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K TS
10K WR


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
35000
30000
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
42195 TS
42195 WR

Material is presented next regarding fixed time runs which includes the 1-hour run and distances to be run when sprint events are handicapped for runner's age. The four pages which follow this discussion will present tables of standards for the events and graphs plotting those standards.

For the time standards, the equations found time as a function of distance. The process must be reversed then for fixed time runs, and equations must be used which find distance as a function of time. This has been accomplished by using the existing time-distance equation which generated the time standards. Since the time-distance equation is non-linear and its variable of distance is not singular in occurrence, the equation cannot be simply rewritten with time as the variable. Thus, while the existing time-distance equations were used, programming required that iterative operation methods be employed to obtain solutions. To support this need there is a time-distance equation extracted from the time surface for every year of age from 5 to 100.

The 1-hour run table of standards and age-factors which is located at the next page lists the standards in the column headed "1-HR DS", lists the records for the event under "1-HR WR", lists the resulting performance level percentage of the records under "1-HR PL%", and lists the resulting age-factors for the 1-hour run under "1-HR AF".

From the discussion above concerning use of the time surface equations to generate the distance standards for the 1-hour run, it is clear that the standards were not generated by simply curve fitting the available records for the run (in fact the records were not fitted at all), and hence like all the other events, the 1-hour run is not separately fitted on the basis of being a stand alone event. Figure 10 is the graph plotting the standards and the records for the 1-hour run event. The reasonably good fit of the record data that does result is a favorable validation of the applicability of the time surface concept.

As an aside note here, the 1-hour run can be visualized or traced in as a line on the time surface of figure 4. On figure 4 it is seen that the graphic already includes isometric time lines representing the 10 second run, the 100 second run, the 1000 second run and the 10,000 second run. The 1-hour run would be the 3600 second isometric time line.

The age handicapped run distances come about as follows. The standards are generated the same way as are the 1-hour run standards. The same time-distance equations are used, but instead of the event time being 3600 seconds (1 hour), the times of 9.84 seconds, 19.32 seconds and 43.29 seconds are used. Thus, for the 100 meter event, the handicapped distance that runners of all ages run is the distance that a 100% performance level runner of that age would cover in 9.84 seconds. With distance to be run measured back from the finish line, and all runners starting at the gun, near blanket finishes result.

The handicap distances are listed in the table at page 28, and the graph of distances for the three events is at figure 11.

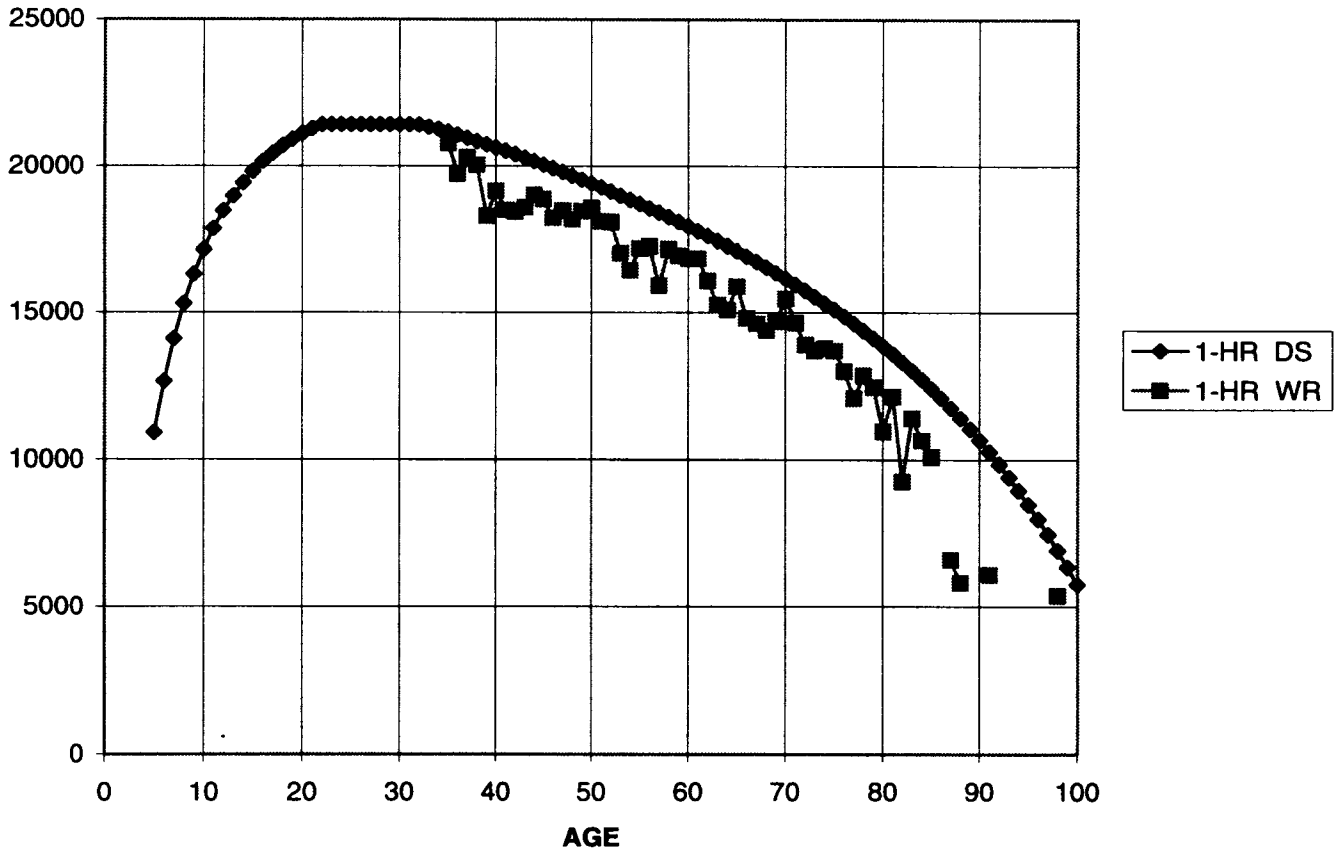
The same times (9.84, 19.32 and 43.29) are used to handicap the women's events. In this way the events are handicapped so that men, women, boys and girls of all ages can run together. Comparing the tables at pages 28 and 53 for handicapped distances run by men and women, it is seen that while open class men run 100, 200 and 400 meters (zero meters of handicap) for these events, open class women run about 90, 180 and 360 meters which is about a 10% handicap between open class men and women.

MEN'S 1-HOUR RUN (meters)

AGE	1-HR DS	1-HR WR	1-HR PL%	1-HR AF
8	15303			0.7145
9	16303			0.7612
10	17143			0.8004
11	17854			0.8336
12	18460			0.8618
13	18979			0.8861
14	19427			0.9070
15	19814			0.9251
16	20150			0.9408
17	20443			0.9544
18	20697			0.9663
19	20919			0.9766
OC	21151	21101	100	1.0000
30	21419			1.0000
31	21419			1.0000
32	21406			0.9994
33	21339			0.9962
34	21264			0.9928
35	21168	20774	98	0.9883
36	21068	19715	94	0.9836
37	20964	20305	97	0.9788
38	20858	20033	96	0.9738
39	20749	18290	88	0.9687
40	20637	19150	93	0.9635
41	20523	18496	90	0.9582
42	20407	18428	90	0.9528
43	20289	18585	92	0.9472
44	20169	19007	94	0.9416
45	20046	18862	94	0.9359
46	19921	18222	91	0.9301
47	19795	18475	93	0.9242
48	19666	18173	92	0.9181
49	19535	18449	94	0.9120
50	19402	18575	96	0.9058
51	19267	18105	94	0.8995
52	19129	18078	95	0.8931
53	18990	17020	90	0.8866
54	18847	16445	87	0.8799
55	18703	17185	92	0.8732
56	18556	17260	93	0.8663
57	18406	15925	87	0.8593
58	18253	17150	94	0.8522
59	18098	16946	94	0.8449
60	17939	16853	94	0.8375
61	17778	16853	95	0.8300
62	17613	16090	91	0.8223
63	17445	15255	87	0.8145
64	17273	15089	87	0.8064
65	17097	15892	93	0.7982
66	16918	14813	88	0.7899
67	16734	14626	87	0.7813
68	16546	14392	87	0.7725
69	16354	14688	90	0.7635
70	16157	15474	96	0.7543
71	15954	14642	92	0.7449
72	15747	13899	88	0.7352
73	15534	13699	88	0.7252
74	15314	13784	90	0.7150
75	15089	13697	91	0.7045
76	14857	12995	87	0.6936
77	14618	12078	83	0.6825
78	14372	12852	89	0.6710
79	14118	12446	88	0.6591
80	13856	10944	79	0.6469
81	13585	12130	89	0.6342
82	13304	9253	70	0.6211
83	13014	11394	88	0.6076
84	12713	10636	84	0.5935
85	12401	10088	81	0.5790
86	12077			0.5638
87	11740	6594	56	0.5481
88	11390	5800	51	0.5318
89	11025			0.5147
90	10644			0.4969
91	10247	6073	59	0.4784
92	9832			0.4590
93	9398			0.4388
94	8945			0.4176
95	8470			0.3954
96	7973			0.3722
97	7453			0.3480
98	6909	5367	78	0.3226
99	6341			0.2960
100	5749			0.2684

Figure 10

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS FOR 1-HOUR RUN

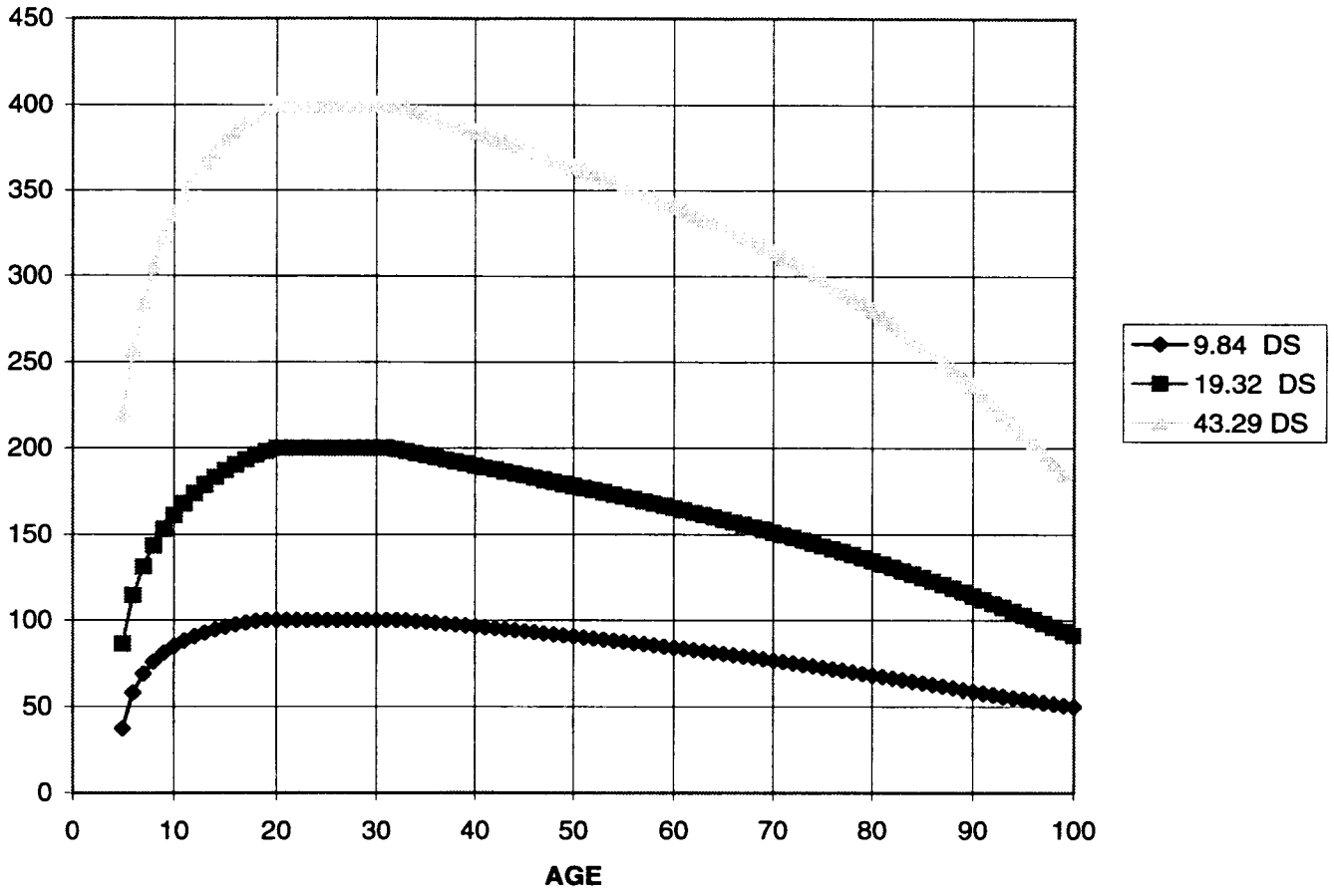


Age Handicapped Runs For Men

	Meters Run By Age		
AGE	100	200	400
8	75.7	143.5	305.4
9	80.8	153.2	322.4
10	84.7	161.2	336.3
11	87.8	168.0	347.9
12	90.4	173.7	357.7
13	92.6	178.7	366.0
14	94.4	183.1	373.1
15	96.0	186.9	379.3
16	97.3	190.3	384.6
17	98.5	193.2	389.3
18	99.4	195.9	393.3
19	100.0	198.2	396.9
OC	100.0	200.0	400.0
30	100.0	200.0	400.0
31	100.0	200.0	400.0
32	100.0	199.2	399.4
33	99.8	198.1	397.6
34	99.3	196.9	395.7
35	98.8	195.7	393.9
36	98.3	194.6	392.0
37	97.8	193.4	390.0
38	97.3	192.2	388.1
39	96.8	191.0	386.2
40	96.3	189.9	384.2
41	95.7	188.7	382.2
42	95.2	187.5	380.2
43	94.6	186.3	378.2
44	94.0	185.1	376.1
45	93.5	184.0	374.1
46	92.9	182.8	372.0
47	92.3	181.6	369.9
48	91.7	180.4	367.8
49	91.1	179.2	365.7
50	90.5	178.0	363.6
51	89.8	176.8	361.4
52	89.2	175.6	359.2
53	88.6	174.3	357.0
54	87.9	173.1	354.8
55	87.3	171.8	352.5
56	86.6	170.6	350.2
57	86.0	169.3	347.9
58	85.3	168.0	345.5
59	84.6	166.7	343.1
60	83.9	165.4	340.7
61	83.2	164.1	338.2
62	82.5	162.7	335.7
63	81.8	161.4	333.1
64	81.0	160.0	330.5
65	80.3	158.6	327.9
66	79.6	157.1	325.2
67	78.8	155.7	322.4
68	78.0	154.2	319.6
69	77.2	152.7	316.7
70	76.4	151.2	313.8
71	75.6	149.7	310.8
72	74.8	148.1	307.7
73	74.0	146.5	304.6
74	73.2	144.8	301.4
75	72.3	143.2	298.1
76	71.5	141.5	294.7
77	70.6	139.8	291.2
78	69.7	138.0	287.7
79	68.8	136.2	284.0
80	67.9	134.4	280.3
81	67.0	132.5	276.4
82	66.1	130.6	272.5
83	65.2	128.7	268.4
84	64.3	126.7	264.2
85	63.3	124.7	259.9
86	62.4	122.7	255.4
87	61.4	120.6	250.9
88	60.5	118.5	246.2
89	59.6	116.4	241.3
90	58.6	114.2	236.3
91	57.7	112.0	231.2
92	56.7	109.7	225.9
93	55.8	107.5	220.4
94	54.9	105.2	214.8
95	54.0	102.9	209.1
96	53.2	100.6	203.2
97	52.3	98.2	197.2
98	51.5	95.9	191.0
99	50.7	93.6	184.8
100	49.9	91.3	178.4

Figure 11

MEN'S DISTANCE STANDARDS IN METERS FOR FIXED TIME RUNS



Age-factor material is presented here in support and explanation of the age-factor standards tables included at the beginning of the chapter. A discussion previously covered what age-factors represent, how they are derived and what some of the peculiarities are that characterize the derived results. The purpose here is to present the tabulated age-factor values in graphic plots which can be more easily visualized and interpreted.

It was previously mentioned that an age-factor surface is produced over axes of runner's age and distance run. Figure 12 is a three-dimensional graph of the age-factor surface for the standards of this book.

The graphs in figure 13 display age-factor values for the standards generated. In these graphs the relationship is age-factor value versus age for selected events. The selected events are 50, 100, 200, 400, 800 and 1500 in the upper graph, and 3k, 5k, 10k, marathon and 100k in the lower graph.

The graphs in figure 14 also display age-factor values for the standards generated, but in these graphs the relationship is age-factor value versus distance for selected ages. The selected ages are 8, 12, 18 and OC in the upper graph, and OC, 40, 60, 80 and 100 in the lower graph.

It was mentioned earlier that the age-factor values would not be perfectly smooth and would show some warpage or undulation particularly at ages near the open class range. This is seen in the graphs of figure 14.

In looking at the three-dimensional age-factor surface graph, it can be easily seen how the age-factor surface is made up by combining (at right angles to each other) the age-factor value versus age curves and the age-factor value versus distance curves.

Considering the impacts of the various phenomena involved, the resulting age-factor surface depicted in figure 12 is really quite well behaved.

ASSESSMENT OF RUNNING STANDARDS FOR MEN.

In summary, masters and youth running standards and age factors for men have very high levels of statistical confidence. These are the events which have previously had the highest degree of participation worldwide over the years, and now have the least amount of variation of standards versus records across all ages and events.

Figure 12

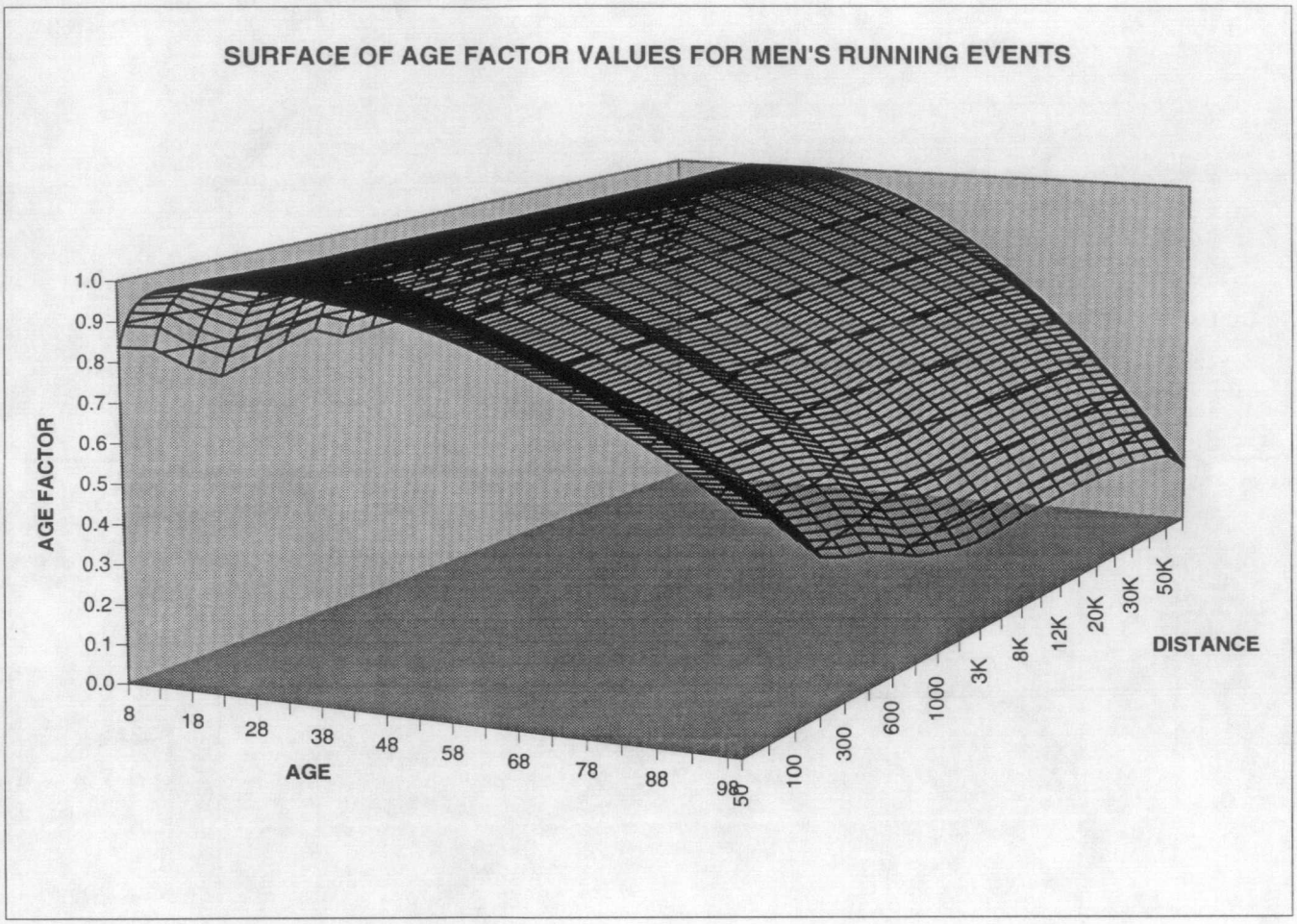
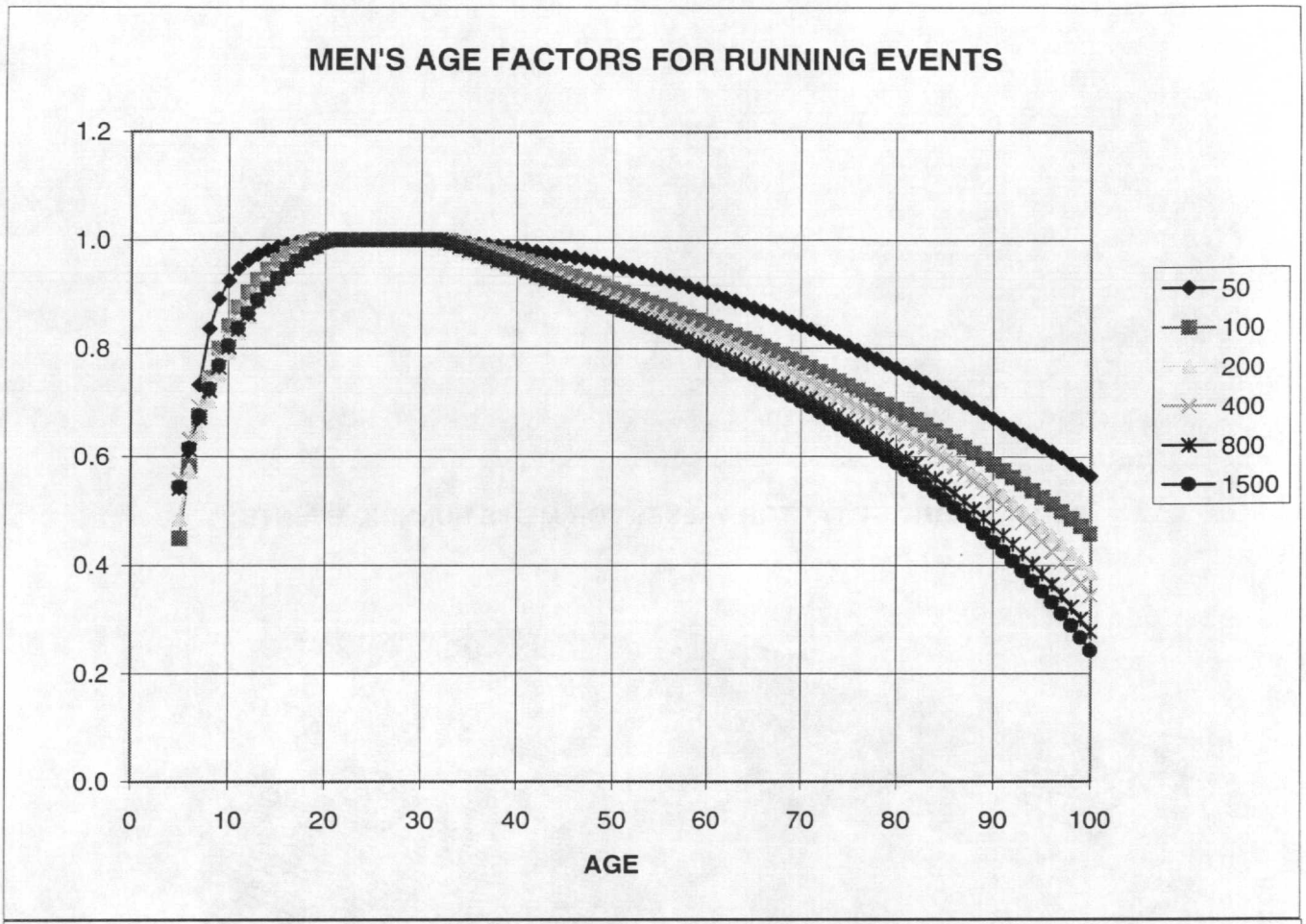

SURFACE OF AGE FACTOR VALUES FOR MEN'S RUNNING EVENTS
AGE FACTOR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
8
18
28
38
48
58
68
78
88
98
AGE
50
100
300
600
1000
3K
8K
12K
20K
30K
50K
DISTANCE

Figure 13


MEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
50
100
200
400
800
1500

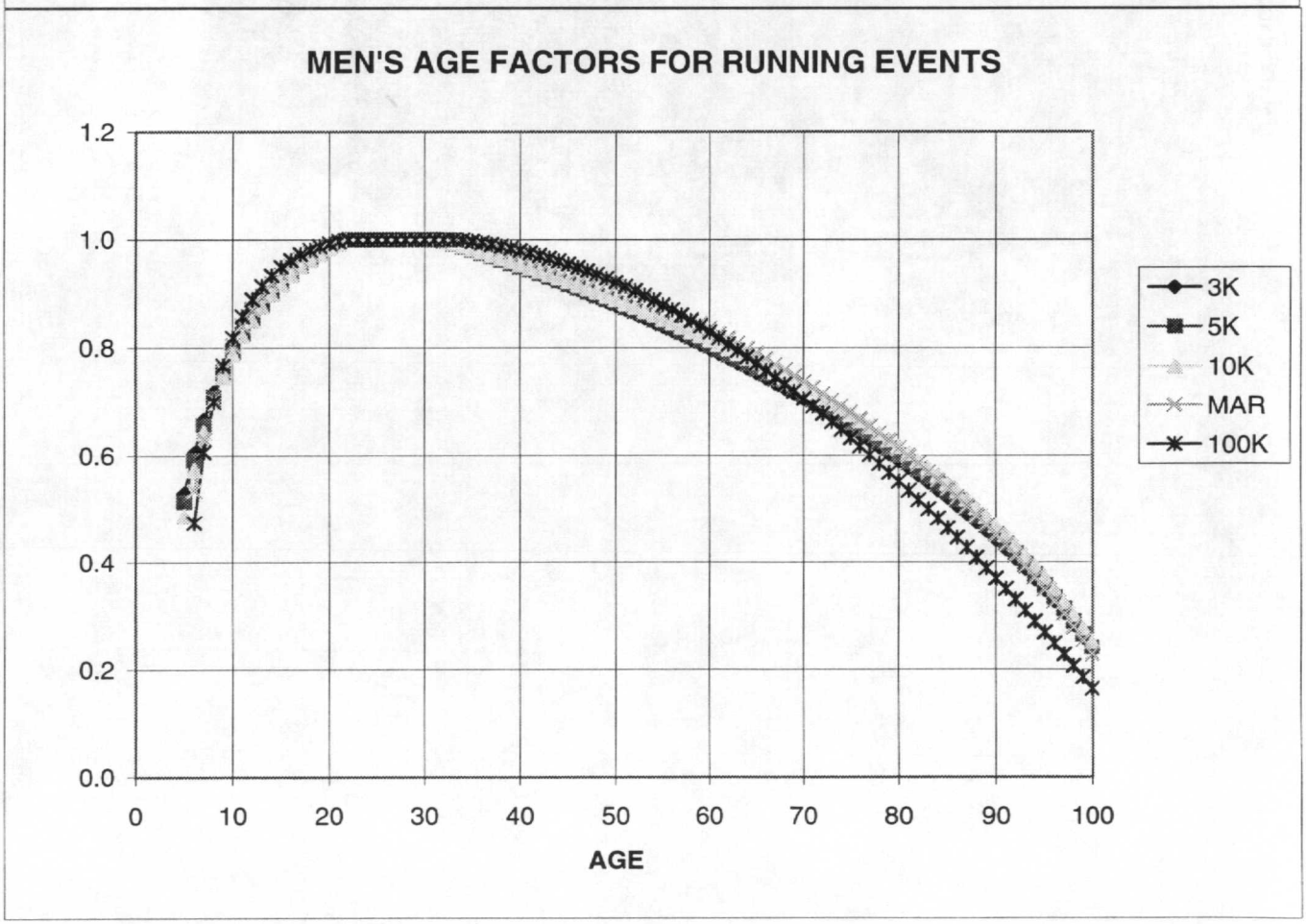
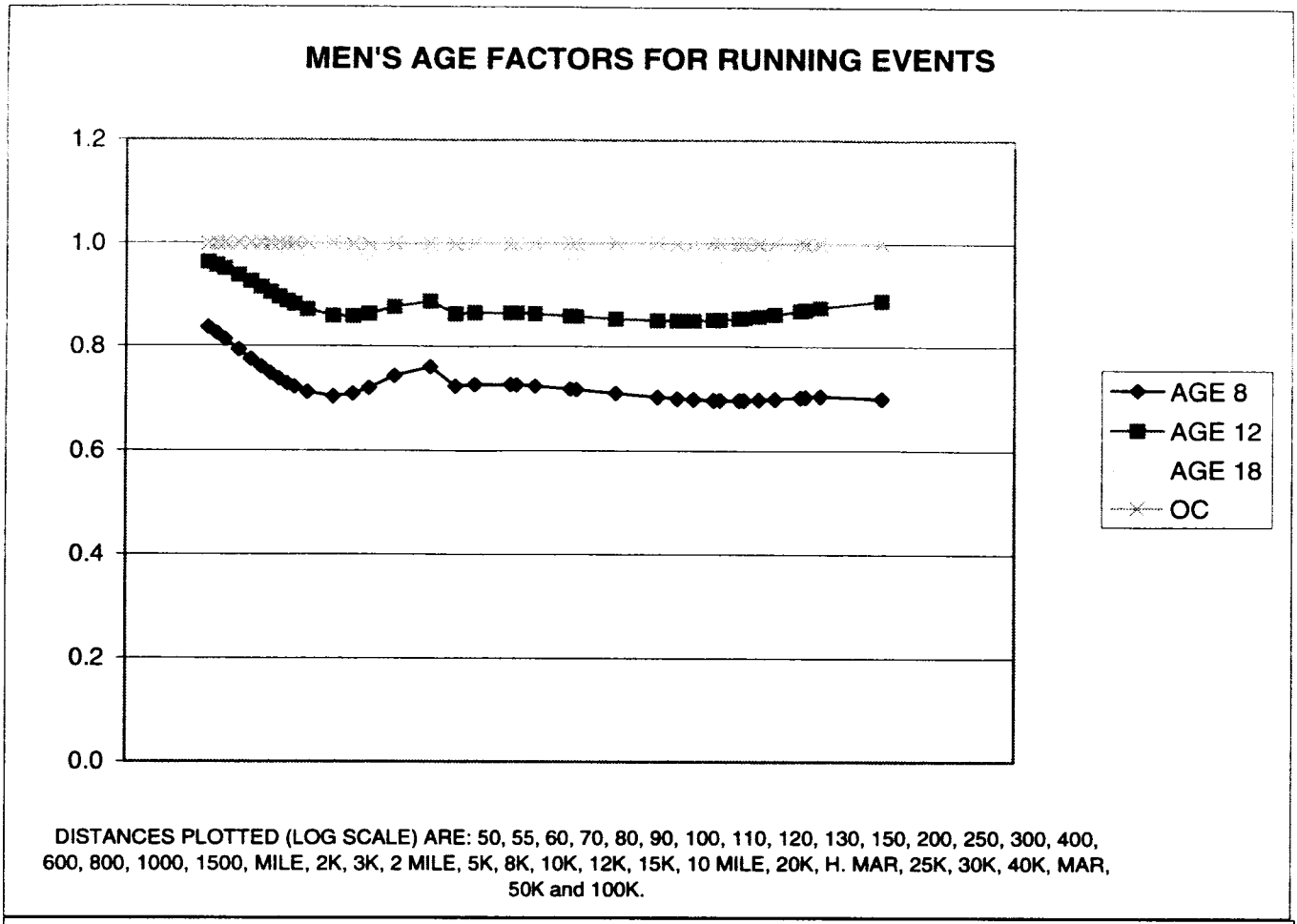
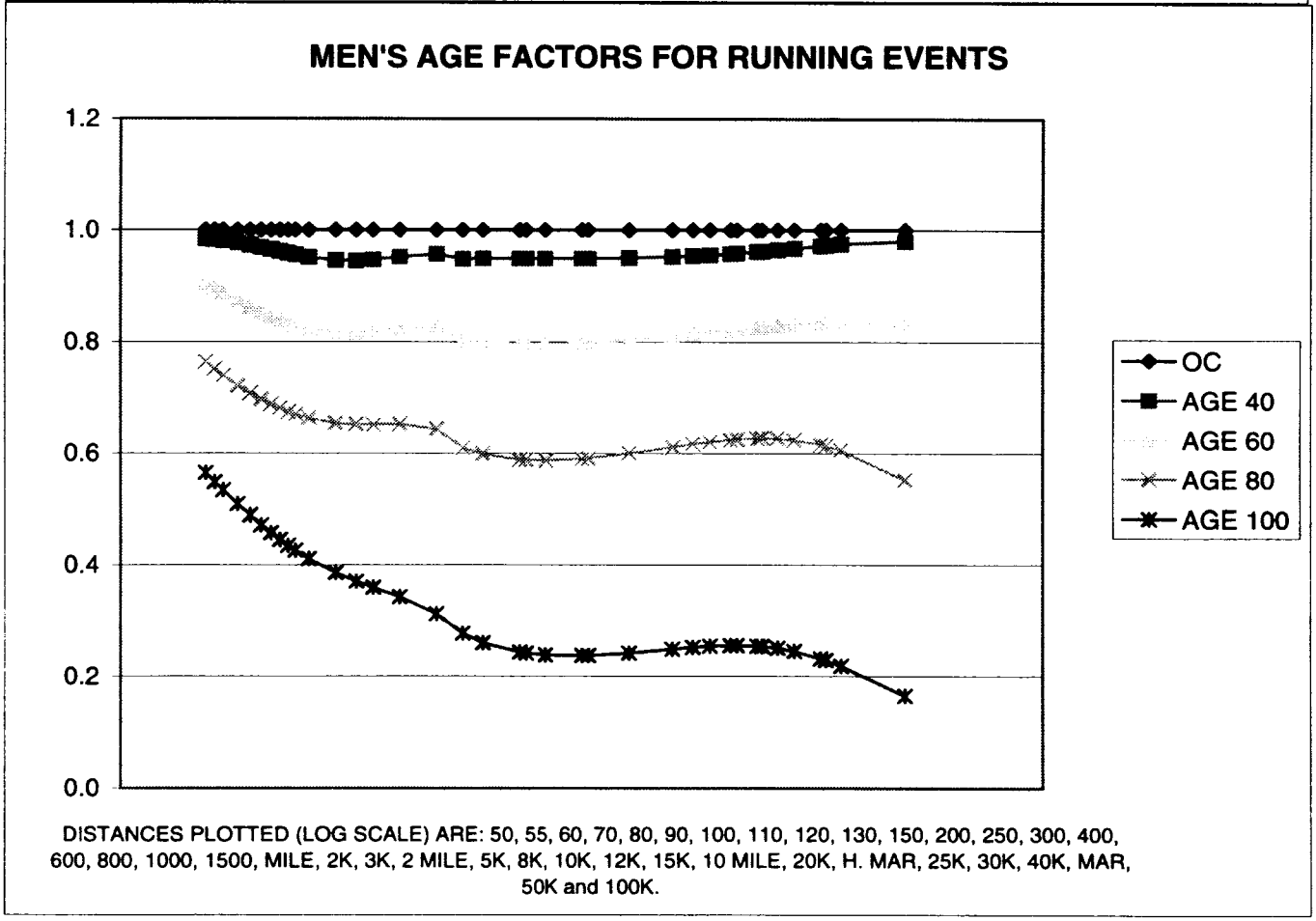

MEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K
5K
10K
MAR
100K

Figure 14


MEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
AGE 8
AGE 12
AGE 18
OC
DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.


MEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

The remainder of the chapter will include the same standards tables and graphs for women as were presented and discussed for men's running events. The same discussion applies to the material in the women's portion of the chapter and hence it will not be repeated. For an explanation of a table or graph for women, refer to the same table or graph for men and its narrative at the beginning of the chapter.

Refer to the table of Performance Level Of Actual Records for women at page 41 to see which women's records determined their resulting standards. The table shows performance level of actual records for a quick view of how many "world record" level performances are identified by the running standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The table also illustrates the distribution of those records on the time surface across all ages and distances.

Fixed time runs are discussed at page 25, and it is noted that the men's 1-hour run standards have a good fit with respect to the records. While the women's 1-hour run does not produce the good fit of record data to the generated standards that results for the men, it is fair to point out that the reason for this is not that the time surface concept for fitting time-age and time-distance performance curves does not work, the reason is that in comparison to men, a more dedicated cadre of women of all ages with long distance ability in the 20k range for younger masters down to the 5k range for older masters has not regularly and competitively run this event over the years as have the men.

In the age handicapped run distances for women it is seen that open class women sprinters would not run distances of 100.0 meters, 200.0 meters and 400.0 meters for their handicap distance; this is because the handicapping was accomplished so that men, women, boys and girls could run together in these handicapped events.

ASSESSMENT OF RUNNING STANDARDS FOR WOMEN.

In summary, masters and youth running standards and age factors for women have good levels of statistical confidence. These are the events which have previously had the highest degree of women's participation worldwide over the years, and now are attaining acceptable levels in the amount of variation of standards versus records across most ages and events. The women's records are less competitively mature than the men's simply because participation has been less for women than for men over the years, but their better records fully define and support the standards and age factors that have resulted. Their standards are based solely on their records as a completely separate effort and are not adjusted or otherwise modeled on the men's standards.

WOMEN'S TRACK RUNNING EVENT STANDARDS IN H:M:S

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	7.39	7.90	8.42	13.14	28.07	45.99	1:05.72	1:48.03	2:32.00	3:13.66	5:02.19	5:26.58	6:55.26	10:51.57	11:44.77
9	7.12	7.61	8.11	12.60	26.63	43.40	1:01.85	1:41.58	2:23.18	3:02.73	4:45.51	5:08.56	6:32.31	10:14.93	11:04.97
10	6.91	7.38	7.87	12.18	25.53	41.40	58.88	1:36.65	2:16.46	2:54.42	4:32.87	4:54.91	6:14.92	9:47.11	10:34.72
11	6.74	7.20	7.68	11.85	24.66	39.83	56.55	1:32.79	2:11.22	2:47.96	4:23.06	4:44.33	6:01.44	9:25.49	10:11.20
12	6.60	7.05	7.52	11.59	23.96	38.58	54.69	1:29.71	2:07.05	2:42.85	4:15.32	4:35.97	5:50.79	9:08.38	9:52.58
13	6.48	6.93	7.39	11.37	23.39	37.56	53.17	1:27.22	2:03.69	2:38.75	4:09.13	4:29.30	5:42.28	8:54.67	9:37.66
14	6.39	6.83	7.28	11.20	22.93	36.72	51.93	1:25.18	2:00.96	2:35.42	4:04.14	4:23.91	5:35.42	8:43.60	9:25.59
15	6.31	6.75	7.20	11.05	22.55	36.03	50.90	1:23.50	1:58.73	2:32.72	4:00.09	4:19.55	5:29.86	8:34.59	9:15.77
16	6.24	6.68	7.12	10.93	22.23	35.45	50.04	1:22.11	1:56.89	2:30.51	3:56.81	4:16.00	5:25.34	8:27.26	9:07.76
17	6.19	6.62	7.06	10.83	21.97	34.97	49.33	1:20.96	1:55.38	2:28.70	3:54.13	4:13.12	5:21.67	8:21.28	9:01.23
18	6.14	6.57	7.01	10.75	21.75	34.57	48.74	1:20.01	1:54.14	2:27.23	3:51.97	4:10.79	5:18.70	8:16.43	8:55.93
19	6.10	6.53	6.97	10.68	21.57	34.24	48.25	1:19.22	1:53.13	2:26.04	3:50.24	4:08.92	5:16.32	8:12.51	8:51.64
OC	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
30	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
31	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
32	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
33	6.07	6.50	6.93	10.62	21.37	33.86	47.66	1:18.23	1:51.90	2:24.62	3:47.96	4:06.46	5:13.09	8:06.92	8:45.45
34	6.09	6.52	6.95	10.66	21.46	34.02	47.89	1:18.59	1:52.31	2:25.07	3:48.74	4:07.29	5:14.14	8:08.61	8:47.30
35	6.11	6.54	6.98	10.70	21.56	34.19	48.14	1:19.00	1:52.83	2:25.69	3:49.63	4:08.25	5:15.35	8:10.54	8:49.41
36	6.13	6.57	7.01	10.74	21.67	34.38	48.42	1:19.44	1:53.41	2:26.38	3:50.63	4:09.32	5:16.71	8:12.72	8:51.78
37	6.16	6.59	7.03	10.79	21.78	34.58	48.72	1:19.92	1:54.04	2:27.13	3:51.75	4:10.52	5:18.23	8:15.14	8:54.42
38	6.19	6.62	7.06	10.84	21.91	34.80	49.04	1:20.44	1:54.73	2:27.96	3:52.98	4:11.85	5:19.90	8:17.81	8:57.31
39	6.22	6.65	7.10	10.89	22.04	35.03	49.37	1:20.99	1:55.46	2:28.86	3:54.32	4:13.29	5:21.73	8:20.72	9:00.47
40	6.25	6.69	7.13	10.94	22.18	35.27	49.73	1:21.57	1:56.25	2:29.83	3:55.78	4:14.86	5:23.71	8:23.87	9:03.89
41	6.28	6.72	7.17	11.00	22.32	35.53	50.10	1:22.19	1:57.09	2:30.87	3:57.35	4:16.55	5:25.86	8:27.26	9:07.58
42	6.31	6.76	7.21	11.07	22.48	35.80	50.50	1:22.84	1:57.99	2:31.98	3:59.03	4:18.37	5:28.16	8:30.91	9:11.53
43	6.35	6.79	7.25	11.13	22.64	36.08	50.91	1:23.52	1:58.93	2:33.16	4:00.84	4:20.32	5:30.63	8:34.80	9:15.75
44	6.38	6.83	7.29	11.20	22.81	36.38	51.35	1:24.24	1:59.93	2:34.42	4:02.76	4:22.39	5:33.26	8:38.95	9:20.25
45	6.42	6.87	7.33	11.28	22.99	36.69	51.80	1:25.00	2:00.98	2:35.75	4:04.81	4:24.60	5:36.07	8:43.37	9:25.03
46	6.46	6.92	7.38	11.35	23.18	37.01	52.27	1:25.79	2:02.09	2:37.15	4:06.98	4:26.94	5:39.04	8:48.04	9:30.09
47	6.50	6.96	7.43	11.43	23.37	37.35	52.77	1:26.62	2:03.26	2:38.63	4:09.27	4:29.42	5:42.19	8:52.99	9:35.44
48	6.55	7.01	7.48	11.52	23.58	37.70	53.28	1:27.48	2:04.48	2:40.19	4:11.70	4:32.05	5:45.53	8:58.21	9:41.10
49	6.59	7.05	7.53	11.61	23.79	38.07	53.82	1:28.38	2:05.75	2:41.83	4:14.27	4:34.82	5:49.05	9:03.72	9:47.05
50	6.64	7.10	7.58	11.70	24.01	38.45	54.37	1:29.32	2:07.09	2:43.55	4:16.97	4:37.74	5:52.76	9:09.53	9:53.33
51	6.68	7.16	7.64	11.80	24.25	38.84	54.95	1:30.30	2:08.50	2:45.36	4:19.82	4:40.82	5:56.67	9:15.64	9:59.93
52	6.73	7.21	7.70	11.90	24.49	39.26	55.56	1:31.33	2:09.96	2:47.26	4:22.81	4:44.06	6:00.79	9:22.06	10:06.86
53	6.79	7.27	7.76	12.01	24.74	39.69	56.18	1:32.39	2:11.50	2:49.25	4:25.96	4:47.46	6:05.12	9:28.81	10:14.15
54	6.84	7.33	7.82	12.12	25.00	40.13	56.84	1:33.50	2:13.10	2:51.34	4:29.27	4:51.04	6:09.67	9:35.89	10:21.79
55	6.89	7.39	7.89	12.23	25.28	40.60	57.52	1:34.66	2:14.77	2:53.53	4:32.75	4:54.80	6:14.45	9:43.33	10:29.81
56	6.95	7.45	7.96	12.35	25.56	41.08	58.22	1:35.86	2:16.52	2:55.82	4:36.40	4:58.75	6:19.47	9:51.13	10:38.23
57	7.01	7.52	8.03	12.48	25.86	41.58	58.96	1:37.12	2:18.35	2:58.22	4:40.23	5:02.90	6:24.74	9:59.31	10:47.05
58	7.08	7.59	8.10	12.61	26.17	42.11	59.73	1:38.43	2:20.26	3:00.73	4:44.25	5:07.25	6:30.28	10:07.89	10:56.30
59	7.14	7.66	8.18	12.75	26.49	42.65	1:00.52	1:39.80	2:22.26	3:03.36	4:48.47	5:11.81	6:36.09	10:16.89	11:06.00
60	7.21	7.73	8.26	12.89	26.83	43.22	1:01.35	1:41.22	2:24.35	3:06.12	4:52.89	5:16.61	6:42.18	10:26.33	11:16.17
61	7.28	7.81	8.35	13.04	27.18	43.82	1:02.22	1:42.71	2:26.53	3:09.01	4:57.54	5:21.64	6:48.58	10:36.23	11:26.83
62	7.35	7.89	8.44	13.20	27.54	44.44	1:03.13	1:44.27	2:28.82	3:12.04	5:02.42	5:26.92	6:55.30	10:46.61	11:38.01
63	7.43	7.98	8.53	13.36	27.93	45.08	1:04.07	1:45.89	2:31.21	3:15.21	5:07.54	5:32.46	7:02.36	10:57.50	11:49.73
64	7.51	8.06	8.63	13.53	28.33	45.76	1:05.05	1:47.58	2:33.71	3:18.54	5:12.92	5:38.29	7:09.77	11:08.93	12:02.03
65	7.59	8.16	8.73	13.71	28.75	46.46	1:06.08	1:49.36	2:36.33	3:22.04	5:18.57	5:44.41	7:17.56	11:20.93	12:14.95
66	7.68	8.25	8.84	13.90	29.19	47.20	1:07.16	1:51.21	2:39.08	3:25.70	5:24.51	5:50.84	7:25.74	11:33.53	12:28.51
67	7.77	8.36	8.95	14.10	29.65	47.97	1:08.28	1:53.16	2:41.97	3:29.56	5:30.76	5:57.61	7:34.35	11:46.77	12:42.75
68	7.87	8.46	9.07	14.31	30.13	48.78	1:09.46	1:55.19	2:44.99	3:33.60	5:37.33	6:04.73	7:43.41	12:00.70	12:57.72
69	7.97	8.58	9.19	14.53	30.64	49.63	1:10.70	1:57.33	2:48.17	3:37.86	5:44.25	6:12.23	7:52.94	12:15.34	13:13.47
70	8.08	8.69	9.32	14.76	31.17	50.52	1:12.00	1:59.57	2:51.51	3:42.35	5:51.55	6:20.13	8:02.99	12:30.77	13:30.05
71	8.19	8.82	9.46	15.00	31.73	51.45	1:13.36	2:01.93	2:55.03	3:47.07	5:59.24	6:28.46	8:13.59	12:47.01	13:47.51
72	8.31	8.95	9.60	15.26	32.32	52.44	1:14.80	2:04.41	2:58.73	3:52.05	6:07.35	6:37.25	8:24.77	13:04.15	14:05.92
73	8.43	9.09	9.75	15.53	32.94	53.48	1:16.31	2:07.03	3:02.64	3:57.30	6:15.93	6:46.54	8:36.58	13:22.23	14:25.34
74	8.56	9.23	9.91	15.82	33.60	54.57	1:17.90	2:09.79	3:06.76	4:02.86	6:24.99	6:56.36	8:49.06	13:41.33	14:45.86
75	8.70	9.39	10.08	16.12	34.29	55.73	1:19.58	2:12.70	3:11.12	4:08.73	6:34.59	7:06.75	9:02.28	14:01.53	15:07.55
76	8.85	9.55	10.26	16.44	35.03	56.95	1:21.36	2:15.78	3:15.73	4:14.96	6:44.76	7:17.77	9:16.28	14:22.91	15:30.51
77	9.00	9.72	10.45	16.78	35.80	58.24	1:23.24	2:19.04	3:20.62	4:21.56	6:55.55	7:29.46	9:31.13	14:45.58	15:54.85
78	9.17	9.91	10.66	17.15	36.63	59.62	1:25.24	2:22.50	3:25.81	4:28.57	7:07.02	7:41.88	9:46.92	15:09.64	16:20.67
79	9.35	10.10	10.87	17.53	37.51	1:01.08	1:27.36	2:26.17	3:31.33	4:36.02	7:19.22	7:55.10	10:03.70	15:35.22	16:48.11
80	9.53	10.31	11.10	17.95	38.45	1:02.63	1:29.62	2:30.08	3:37.20	4:43.97	7:32.22	8:09.18	10:21.59	16:02.44	17:17.32
81	9.74	10.54	11.35	18.39	39.45	1:04.29	1:32.03	2:34.25	3:43.47	4:52.45	7:46.10	8:24.22	10:40.68	16:31.47	17:48.45
82	9.95	10.78	11.62	18.86	40.53	1:06.07	1:34.60	2:38.71	3:50.16	5:01.52	8:00.95	8:40.30	11:01.09	17:02.48	18:21.70
83	10.18	11.04	11.90	19.37	41.68	1:07.97	1:37.36	2:43.48	3:57.34	5:11.24	8:16.86	8:57.53	11:22.95	17:35.66	18:57.28
84	10.43	11.31	12.21	19.92	42.92	1:10.01	1:40.32	2:48.61	4:05.04	5:21.67	8:33.94	9:16.03	11:46.41	18:11.23	19:35.41
85	10.70	11.62	12.54	20.52	44.25	1:12.21	1:43.51	2:54.12	4:13.33	5:32.91	8:52.33	9:35.94	12:11.66	18:49.47	20:16.39
86	11.00	11.94	12.90	21.16	45.70	1:14.59	1:46.95	3:00.07	4:22.27	5:45.03	9:12.17	9:57.42	12:38.88	19:30.65	21:00.52
87	11.32	12.30	13.30	21.86	47.27	1:17.17	1:50.68	3:06.50	4:31.95	5:58.15	9:33.63	10:20.66	13:08.31	20:15.13	21:48.16
88	11.67	12.69	13.73	22.63	48.97	1:19.97	1:54.73	3:13.49	4:42.46	6:12.39	9:56.92	10:45.87	13:40.22	21:03.30	22:39.74
89	12.05	13.12	14.20	23.47	50.84	1:23.03	1:59.14	3:21.10	4:53.90	6:27.90	10:22.26	11:13.29	14:14.93	21:55.61	23:35.76
90	12.47	13.59	14.72	24.39	52.89	1:26.38	2:03.97	3:29.43	5:06.40	6:44.86	10:49.94	11:43.25	14:52.80	22:52.63	24:36.79
91	12.94	14.11	15.29	25.41	55.15	1:30.07	2:09.28	3:38.57	5:20.13	7:03.45	11:20.28	12:16.07	15:34.29	23:54.98	25:43.51
92	13.46	14.69	15.93	26.54	57.65	1:34.14	2:15.15	3:48.65	5:35.26	7:23.95	11:53.68	12:52.20	16:19.91	25:03.45	26:56.76
93	14.05	15.34	16.65	27.81	1:00.43	1:38.68	2:21.66	3:59.82	5:52.02	7:46.64	12:30.62	13:32.14	17:10.31	26:18.95	28:17.50
94	14.71	16.08	17.46	29.23	1:03.56	1:43.75	2:28.94	4:12.28	6:10.68	8:11.89	13:11.67	14:16.52	18:06.25	27:42.60	29:46.93
95	15.46	16.91	18.38	30.85	1:07.08	1:49.45	2:37.11	4:26.25	6:31.59	8:40.16	13:57.55	15:06.11	19:08.70	29:15.78	31:26.51
96	16.32	17.87	19.44	32.70	1:11.09	1:55.93	2:46.37	4:42.03	6:55.18	9:12.02	14:49.16	16:01.87	20:18.83	31:00.19	33:18.04
97	17.33	18.98	20.66	34.83	1:15.69	2:03.33	2:56.93	5:00.00	7:21.99	9:48.19	15:47.62	17:05.00	21:38.13	32:57.96	35:23.79
98	18.50	20.29	22.10	37.32	1:21.02	2:11.88	3:09.10	5:20.64	7:52.72	10:29.61	16:54.37	18:17.05	23:08.51	35:11.79	37:46.61
99	19.90	21.84	23.80	40.26	1:27.27	2:21.86	3:23.28	5:44.59	8:28.31	11:17.49	18:11.31	19:40.05	24:52.44	37:45.19	40:30.22
100	21.60	23.72	25.86	43.79	1:34.71	2:33.68	3:40.00	6:12.72	9:10.00	12:13.46	19:40.92	21:16.67	26:53.17	40:42.72	43:39.46

WOMEN'S TRACK RUNNING EVENT STANDARDS IN SECONDS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	7.39	7.90	8.42	13.14	28.07	45.99	65.72	108.03	152.00	193.66	302.19	326.58	415.26	651.57	704.77
9	7.12	7.61	8.11	12.60	26.63	43.40	61.85	101.58	143.18	182.73	285.51	308.56	392.31	614.93	664.97
10	6.91	7.38	7.87	12.18	25.53	41.40	58.88	96.65	136.46	174.42	272.87	294.91	374.92	587.11	634.72
11	6.74	7.20	7.68	11.85	24.66	39.83	56.55	92.79	131.22	167.96	263.06	284.33	361.44	565.49	611.20
12	6.60	7.05	7.52	11.59	23.96	38.58	54.69	89.71	127.05	162.85	255.32	275.97	350.79	548.38	592.58
13	6.48	6.93	7.39	11.37	23.39	37.56	53.17	87.22	123.69	158.75	249.13	269.30	342.28	534.67	577.66
14	6.39	6.83	7.28	11.20	22.93	36.72	51.93	85.18	120.96	155.42	244.14	263.91	335.42	523.60	565.59
15	6.31	6.75	7.20	11.05	22.55	36.03	50.90	83.50	118.73	152.72	240.09	259.55	329.86	514.59	555.77
16	6.24	6.68	7.12	10.93	22.23	35.45	50.04	82.11	116.89	150.51	236.81	256.00	325.34	507.26	547.76
17	6.19	6.62	7.06	10.83	21.97	34.97	49.33	80.96	115.38	148.70	234.13	253.12	321.67	501.28	541.23
18	6.14	6.57	7.01	10.75	21.75	34.57	48.74	80.01	114.14	147.23	231.97	250.79	318.70	496.43	535.93
19	6.10	6.53	6.97	10.68	21.57	34.24	48.25	79.22	113.13	146.04	230.24	248.92	316.32	492.51	531.64
OC	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
30	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
31	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
32	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
33	6.07	6.50	6.93	10.62	21.37	33.86	47.66	78.23	111.90	144.62	227.96	246.46	313.09	486.92	525.45
34	6.09	6.52	6.95	10.66	21.46	34.02	47.89	78.59	112.31	145.07	228.74	247.29	314.14	488.61	527.30
35	6.11	6.54	6.98	10.70	21.56	34.19	48.14	79.00	112.83	145.69	229.63	248.25	315.35	490.54	529.41
36	6.13	6.57	7.01	10.74	21.67	34.38	48.42	79.44	113.41	146.38	230.63	249.32	316.71	492.72	531.78
37	6.16	6.59	7.03	10.79	21.78	34.58	48.72	79.92	114.04	147.13	231.75	250.52	318.23	495.14	534.42
38	6.19	6.62	7.06	10.84	21.91	34.80	49.04	80.44	114.73	147.96	232.98	251.85	319.90	497.81	537.31
39	6.22	6.65	7.10	10.89	22.04	35.03	49.37	80.99	115.46	148.86	234.32	253.29	321.73	500.72	540.47
40	6.25	6.69	7.13	10.94	22.18	35.27	49.73	81.57	116.25	149.83	235.78	254.86	323.71	503.87	543.89
41	6.28	6.72	7.17	11.00	22.32	35.53	50.10	82.19	117.09	150.87	237.35	256.55	325.86	507.26	547.58
42	6.31	6.76	7.21	11.07	22.48	35.80	50.50	82.84	117.99	151.98	239.03	258.37	328.16	510.91	551.53
43	6.35	6.79	7.25	11.13	22.64	36.08	50.91	83.52	118.93	153.16	240.84	260.32	330.63	514.80	555.75
44	6.38	6.83	7.29	11.20	22.81	36.38	51.35	84.24	119.93	154.42	242.76	262.39	333.26	518.95	560.25
45	6.42	6.87	7.33	11.28	22.99	36.69	51.80	85.00	120.98	155.75	244.81	264.60	336.07	523.37	565.03
46	6.46	6.92	7.38	11.35	23.18	37.01	52.27	85.79	122.09	157.15	246.98	266.94	339.04	528.04	570.09
47	6.50	6.96	7.43	11.43	23.37	37.35	52.77	86.62	123.26	158.63	249.27	269.42	342.19	532.99	575.44
48	6.55	7.01	7.48	11.52	23.58	37.70	53.28	87.48	124.48	160.19	251.70	272.05	345.53	538.21	581.10
49	6.59	7.05	7.53	11.61	23.79	38.07	53.82	88.38	125.75	161.83	254.27	274.82	349.05	543.72	587.05
50	6.64	7.10	7.58	11.70	24.01	38.45	54.37	89.32	127.09	163.55	256.97	277.74	352.76	549.53	593.33
51	6.68	7.16	7.64	11.80	24.25	38.84	54.95	90.30	128.50	165.36	259.82	280.82	356.67	555.64	599.93
52	6.73	7.21	7.70	11.90	24.49	39.26	55.56	91.33	129.96	167.26	262.81	284.06	360.79	562.06	606.86
53	6.79	7.27	7.76	12.01	24.74	39.69	56.18	92.39	131.50	169.25	265.96	287.46	365.12	568.81	614.15
54	6.84	7.33	7.82	12.12	25.00	40.13	56.84	93.50	133.10	171.34	269.27	291.04	369.67	575.89	621.79
55	6.89	7.39	7.89	12.23	25.28	40.60	57.52	94.66	134.77	173.53	272.75	294.80	374.45	583.33	629.81
56	6.95	7.45	7.96	12.35	25.56	41.08	58.22	95.86	136.52	175.82	276.40	298.75	379.47	591.13	638.23
57	7.01	7.52	8.03	12.48	25.86	41.58	58.96	97.12	138.35	178.22	280.23	302.90	384.74	599.31	647.05
58	7.08	7.59	8.10	12.61	26.17	42.11	59.73	98.43	140.26	180.73	284.25	307.25	390.28	607.89	656.30
59	7.14	7.66	8.18	12.75	26.49	42.65	60.52	99.80	142.26	183.36	288.47	311.81	396.09	616.89	666.00
60	7.21	7.73	8.26	12.89	26.83	43.22	61.35	101.22	144.35	186.12	292.89	316.61	402.18	626.33	676.17
61	7.28	7.81	8.35	13.04	27.18	43.82	62.22	102.71	146.53	189.01	297.54	321.64	408.58	636.23	686.83
62	7.35	7.89	8.44	13.20	27.54	44.44	63.13	104.27	148.82	192.04	302.42	326.92	415.30	646.61	698.01
63	7.43	7.98	8.53	13.36	27.93	45.08	64.07	105.89	151.21	195.21	307.54	332.46	422.36	657.50	709.73
64	7.51	8.06	8.63	13.53	28.33	45.76	65.05	107.58	153.71	198.54	312.92	338.29	429.77	668.93	722.03
65	7.59	8.16	8.73	13.71	28.75	46.46	66.08	109.36	156.33	202.04	318.57	344.41	437.56	680.93	734.95
66	7.68	8.25	8.84	13.90	29.19	47.20	67.16	111.21	159.08	205.70	324.51	350.84	445.74	693.53	748.51
67	7.77	8.36	8.95	14.10	29.65	47.97	68.28	113.16	161.97	209.56	330.76	357.61	454.35	706.77	762.75
68	7.87	8.46	9.07	14.31	30.13	48.78	69.46	115.19	164.99	213.60	337.33	364.73	463.41	720.70	777.72
69	7.97	8.58	9.19	14.53	30.64	49.63	70.70	117.33	168.17	217.86	344.25	372.23	472.94	735.34	793.47
70	8.08	8.69	9.32	14.76	31.17	50.52	72.00	119.57	171.51	222.35	351.55	380.13	482.99	750.77	810.05
71	8.19	8.82	9.46	15.00	31.73	51.45	73.36	121.93	175.03	227.07	359.24	388.46	493.59	767.01	827.51
72	8.31	8.95	9.60	15.26	32.32	52.44	74.80	124.41	178.73	232.05	367.35	397.25	504.77	784.15	845.92
73	8.43	9.09	9.75	15.53	32.94	53.48	76.31	127.03	182.64	237.30	375.93	406.54	516.58	802.23	865.34
74	8.56	9.23	9.91	15.82	33.60	54.57	77.90	129.79	186.76	242.86	384.99	416.36	529.06	821.33	885.86
75	8.70	9.39	10.08	16.12	34.29	55.73	79.58	132.70	191.12	248.73	394.59	426.75	542.28	841.53	907.55
76	8.85	9.55	10.26	16.44	35.03	56.95	81.36	135.78	195.73	254.96	404.76	437.77	556.28	862.91	930.51
77	9.00	9.72	10.45	16.78	35.80	58.24	83.24	139.04	200.62	261.56	415.55	449.46	571.13	885.58	954.85
78	9.17	9.91	10.66	17.15	36.63	59.62	85.24	142.50	205.81	268.57	427.02	461.88	586.92	909.64	980.67
79	9.35	10.10	10.87	17.53	37.51	61.08	87.36	146.17	211.33	276.02	439.22	475.10	603.70	935.22	1008.11
80	9.53	10.31	11.10	17.95	38.45	62.63	89.62	150.08	217.20	283.97	452.22	489.18	621.59	962.44	1037.32
81	9.74	10.54	11.35	18.39	39.45	64.29	92.03	154.25	223.47	292.45	466.10	504.22	640.68	991.47	1068.45
82	9.95	10.78	11.62	18.86	40.53	66.07	94.60	158.71	230.16	301.52	480.95	520.30	661.09	1022.48	1101.70
83	10.18	11.04	11.90	19.37	41.68	67.97	97.36	163.48	237.34	311.24	496.86	537.53	682.95	1055.66	1137.28
84	10.43	11.31	12.21	19.92	42.92	70.01	100.32	168.61	245.04	321.67	513.94	556.03	706.41	1091.23	1175.41
85	10.70	11.62	12.54	20.52	44.25	72.21	103.51	174.12	253.33	332.91	532.33	575.94	731.66	1129.47	1216.39
86	11.00	11.94	12.90	21.16	45.70	74.59	106.95	180.07	262.27	345.03	552.17	597.42	758.88	1170.65	1260.52
87	11.32	12.30	13.30	21.86	47.27	77.17	110.68	186.50	271.95	358.15	573.63	620.66	788.31	1215.13	1308.16
88	11.67	12.69	13.73	22.63	48.97	79.97	114.73	193.49	282.46	372.39	596.92	645.87	820.22	1263.30	1359.74
89	12.05	13.12	14.20	23.47	50.84	83.03	119.14	201.10	293.90	387.90	622.26	673.29	854.93	1315.61	1415.76
90	12.47	13.59	14.72	24.39	52.89	86.38	123.97	209.43	306.40	404.86	649.94	703.25	892.80	1372.63	1476.79
91	12.94	14.11	15.29	25.41	55.15	90.07	129.28	218.57	320.13	423.45	680.28	736.07	934.29	1434.98	1543.51
92	13.46	14.69	15.93	26.54	57.65	94.14	135.15	228.65	335.26	443.95	713.68	772.20	979.91	1503.45	1616.76
93	14.05	15.34	16.65	27.81	60.43	98.68	141.66	239.82	352.02	466.64	750.62	812.14	1030.31	1578.95	1697.50
94	14.71	16.08	17.46	29.23	63.56	103.75	148.94	252.28	370.68	491.89	791.67	856.52	1086.25	1662.60	1786.93
95	15.46	16.91	18.38	30.85	67.08	109.45	157.11	266.25	391.59	520.16	837.55	906.11	1148.70	1755.78	1886.51
96	16.32	17.87	19.44	32.70	71.09	115.93	166.37	282.03	415.18	552.02	889.16	961.87	1218.83	1860.19	1998.04
97	17.33	18.98	20.66	34.83	75.69	123.33	176.93	300.00	441.99	588.19	947.62	1025.00	1298.13	1977.96	2123.79
98	18.50	20.29	22.10	37.32	81.02	131.88	189.10	320.64	472.72	629.61	1014.37	1097.05	1388.51	2111.79	2266.61
99	19.90	21.84	23.80	40.26	87.27	141.86	203.28	344.59	508.31	677.49	1091.31	1180.05	1492.44	2265.19	2430.22
100	21.60	23.72	25.86	43.79	94.71	153.68	220.00	372.72	550.00	733.46	1180.92	1276.67	1613.17	2442.72	2619.46

WOMEN'S LONG DISTANCE RUNNING STANDARDS IN H:M:S

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	19:14.3	32:38.3	41:55.1	51:21.8	1:05:42	1:10:56	1:29:40	1:34:55	1:53:30	2:17:04	3:03:25	3:13:29	3:49:01	7:34:32
9	18:06.8	30:39.5	39:20.1	48:09.8	1:01:34	1:06:28	1:24:01	1:28:56	1:46:23	2:08:34	2:52:23	3:01:55	3:35:44	7:13:03
10	17:15.4	29:08.3	37:20.9	45:42.0	58:22.8	1:03:01	1:19:39	1:24:20	1:40:54	2:02:01	2:43:55	2:53:05	3:25:36	6:57:04
11	16:35.2	27:56.7	35:47.1	43:45.5	55:52.2	1:00:18	1:16:13	1:20:41	1:36:35	1:56:53	2:37:19	2:46:11	3:17:44	6:44:59
12	16:03.3	26:59.5	34:32.0	42:12.1	53:51.3	58:07.6	1:13:28	1:17:46	1:33:07	1:52:46	2:32:04	2:40:42	3:11:32	6:35:46
13	15:37.6	26:13.2	33:31.0	40:56.2	52:12.9	56:21.2	1:11:13	1:15:24	1:30:19	1:49:27	2:27:51	2:36:20	3:06:36	6:28:42
14	15:16.6	25:35.4	32:41.1	39:53.9	50:52.1	54:53.7	1:09:22	1:13:27	1:28:01	1:46:44	2:24:27	2:32:48	3:02:39	6:23:15
15	14:59.5	25:04.2	31:59.8	39:02.4	49:45.2	53:41.4	1:07:51	1:11:51	1:26:07	1:44:31	2:21:42	2:29:56	2:59:29	6:19:05
16	14:45.5	24:38.4	31:25.6	38:19.6	48:49.7	52:41.3	1:06:35	1:10:31	1:24:34	1:42:42	2:19:27	2:27:37	2:56:56	6:15:53
17	14:34.0	24:17.0	30:57.2	37:44.1	48:03.5	51:51.3	1:05:33	1:09:25	1:23:16	1:41:12	2:17:38	2:25:44	2:54:53	6:13:28
18	14:24.5	23:59.4	30:33.7	37:14.5	47:25.0	51:09.7	1:04:40	1:08:30	1:22:12	1:39:58	2:16:10	2:24:14	2:53:16	6:11:40
19	14:16.8	23:44.9	30:14.2	36:50.0	46:53.2	50:35.3	1:03:57	1:07:45	1:21:20	1:38:58	2:14:59	2:23:01	2:51:59	6:10:20
OC	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
30	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
31	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
32	14:02.3	23:15.4	29:33.6	35:58.1	45:44.5	49:20.7	1:02:24	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
33	14:04.9	23:20.7	29:40.7	36:06.9	45:55.9	49:33.0	1:02:39	1:06:22	1:19:44	1:37:09	2:13:02	2:21:06	2:50:11	6:08:30
34	14:08.2	23:26.7	29:48.8	36:17.0	46:08.9	49:47.0	1:02:56	1:06:40	1:20:05	1:37:32	2:13:21	2:21:21	2:50:15	6:08:44
35	14:11.9	23:33.5	29:57.8	36:28.3	46:23.4	50:02.7	1:03:16	1:07:00	1:20:28	1:37:59	2:13:52	2:21:53	2:50:48	6:09:14
36	14:16.0	23:41.0	30:07.7	36:40.6	46:39.4	50:20.0	1:03:37	1:07:23	1:20:55	1:38:29	2:14:28	2:22:30	2:51:27	6:09:54
37	14:20.5	23:49.2	30:18.5	36:54.1	46:56.8	50:38.7	1:04:01	1:07:48	1:21:24	1:39:03	2:15:08	2:23:11	2:52:12	6:10:44
38	14:25.5	23:58.1	30:30.2	37:08.6	47:15.5	50:59.0	1:04:26	1:08:15	1:21:55	1:39:40	2:15:53	2:23:58	2:53:04	6:11:45
39	14:30.9	24:07.7	30:42.7	37:24.2	47:35.6	51:20.7	1:04:54	1:08:44	1:22:29	1:40:20	2:16:44	2:24:50	2:54:02	6:12:59
40	14:36.7	24:17.9	30:56.1	37:40.7	47:57.1	51:43.9	1:05:23	1:09:15	1:23:06	1:41:04	2:17:39	2:25:48	2:55:06	6:14:27
41	14:42.9	24:28.8	31:10.3	37:58.4	48:19.8	52:08.5	1:05:54	1:09:48	1:23:45	1:41:51	2:18:40	2:26:51	2:56:18	6:16:10
42	14:49.5	24:40.4	31:25.4	38:17.0	48:43.9	52:34.6	1:06:27	1:10:23	1:24:27	1:42:41	2:19:45	2:27:60	2:57:37	6:18:09
43	14:56.5	24:52.6	31:41.3	38:36.6	49:09.2	53:02.0	1:07:02	1:10:60	1:25:12	1:43:35	2:20:56	2:29:14	2:59:03	6:20:26
44	15:04.0	25:05.5	31:58.0	38:57.3	49:35.9	53:30.9	1:07:39	1:11:39	1:25:59	1:44:32	2:22:12	2:30:34	3:00:36	6:23:02
45	15:11.9	25:19.1	32:15.6	39:19.0	50:03.9	54:01.3	1:08:18	1:12:20	1:26:49	1:45:33	2:23:34	2:32:00	3:02:18	6:25:58
46	15:20.3	25:33.4	32:34.1	39:41.7	50:33.3	54:33.1	1:08:59	1:13:04	1:27:41	1:46:37	2:25:01	2:33:33	3:04:07	6:29:16
47	15:29.0	25:48.4	32:53.4	40:05.5	51:04.0	55:06.4	1:09:41	1:13:49	1:28:36	1:47:45	2:26:34	2:35:11	3:06:05	6:32:58
48	15:38.3	26:04.1	33:13.6	40:30.4	51:36.1	55:41.2	1:10:26	1:14:37	1:29:34	1:48:56	2:28:13	2:36:56	3:08:11	6:37:04
49	15:48.0	26:20.6	33:34.7	40:56.4	52:09.7	56:17.6	1:11:13	1:15:27	1:30:35	1:50:12	2:29:59	2:38:48	3:10:26	6:41:36
50	15:58.2	26:37.8	33:56.8	41:23.5	52:44.7	56:55.6	1:12:02	1:16:19	1:31:39	1:51:31	2:31:50	2:40:47	3:12:50	6:46:37
51	16:08.9	26:55.7	34:19.8	41:51.8	53:21.2	57:35.2	1:12:53	1:17:13	1:32:46	1:52:54	2:33:48	2:42:53	3:15:24	6:52:07
52	16:20.1	27:14.5	34:43.9	42:21.2	53:59.2	58:16.5	1:13:46	1:18:10	1:33:56	1:54:21	2:35:53	2:45:06	3:18:08	6:58:09
53	16:31.9	27:34.1	35:08.9	42:52.0	54:38.9	58:59.5	1:14:42	1:19:09	1:35:09	1:55:53	2:38:04	2:47:26	3:21:02	7:04:45
54	16:44.2	27:54.5	35:35.0	43:24.0	55:20.2	59:44.3	1:15:40	1:20:11	1:36:25	1:57:29	2:40:23	2:49:55	3:24:07	7:11:56
55	16:57.1	28:15.9	36:02.3	43:57.3	56:03.2	1:00:31	1:16:41	1:21:16	1:37:45	1:59:10	2:42:49	2:52:32	3:27:23	7:19:46
56	17:10.5	28:38.1	36:30.6	44:32.1	56:48.0	1:01:20	1:17:44	1:22:23	1:39:08	2:00:55	2:45:23	2:55:17	3:30:50	7:28:15
57	17:24.6	29:01.4	37:00.2	45:08.3	57:34.7	1:02:10	1:18:50	1:23:34	1:40:35	2:02:45	2:48:05	2:58:12	3:34:30	7:37:26
58	17:39.4	29:25.6	37:31.0	45:46.0	58:23.3	1:03:03	1:19:58	1:24:47	1:42:06	2:04:41	2:50:56	3:01:15	3:38:22	7:47:23
59	17:54.8	29:50.9	38:03.2	46:25.2	59:13.9	1:03:58	1:21:10	1:26:03	1:43:41	2:06:42	2:53:55	3:04:29	3:42:28	7:58:08
60	18:10.9	30:17.3	38:36.7	47:06.2	1:00:07	1:04:55	1:22:24	1:27:23	1:45:20	2:08:48	2:57:04	3:07:52	3:46:47	8:09:43
61	18:27.8	30:44.8	39:11.6	47:48.8	1:01:02	1:05:55	1:23:42	1:28:46	1:47:04	2:11:01	3:00:23	3:11:27	3:51:21	8:22:13
62	18:45.5	31:13.6	39:48.1	48:33.3	1:01:59	1:06:57	1:25:03	1:30:13	1:48:52	2:13:19	3:03:51	3:15:12	3:56:11	8:35:40
63	19:04.0	31:43.6	40:26.1	49:19.7	1:02:59	1:08:02	1:26:28	1:31:44	1:50:45	2:15:45	3:07:31	3:19:09	4:01:17	8:50:07
64	19:23.3	32:15.0	41:05.9	50:08.2	1:04:01	1:09:10	1:27:56	1:33:19	1:52:44	2:18:17	3:11:21	3:23:19	4:06:39	9:05:39
65	19:43.6	32:47.9	41:47.4	50:58.8	1:05:06	1:10:21	1:29:29	1:34:58	1:54:47	2:20:56	3:15:24	3:27:42	4:12:20	9:22:21
66	20:04.9	33:22.2	42:30.8	51:51.6	1:06:14	1:11:35	1:31:06	1:36:41	1:56:57	2:23:43	3:19:39	3:32:19	4:18:20	9:40:15
67	20:27.2	33:58.2	43:16.2	52:46.9	1:07:26	1:12:52	1:32:47	1:38:29	1:59:13	2:26:38	3:24:08	3:37:10	4:24:40	9:59:28
68	20:50.6	34:35.8	44:03.6	53:44.7	1:08:40	1:14:13	1:34:32	1:40:22	2:01:35	2:29:42	3:28:50	3:42:17	4:31:21	10:20:05
69	21:15.2	35:15.3	44:53.4	54:45.2	1:09:58	1:15:38	1:36:23	1:42:21	2:04:04	2:32:55	3:33:48	3:47:41	4:38:25	10:42:10
70	21:41.1	35:56.7	45:45.5	55:48.7	1:11:20	1:17:06	1:38:19	1:44:25	2:06:40	2:36:17	3:39:01	3:53:22	4:45:53	11:05:51
71	22:08.2	36:40.2	46:40.3	56:55.2	1:12:45	1:18:39	1:40:21	1:46:36	2:09:24	2:39:50	3:44:32	3:59:21	4:53:46	11:31:14
72	22:36.8	37:25.8	47:37.7	58:05.0	1:14:15	1:20:17	1:42:29	1:48:53	2:12:16	2:43:34	3:50:20	4:05:41	5:02:07	11:58:27
73	23:07.0	38:13.9	48:38.1	59:18.3	1:15:49	1:21:59	1:44:43	1:51:17	2:15:18	2:47:30	3:56:28	4:12:22	5:10:58	12:27:37
74	23:38.8	39:04.4	49:41.6	1:00:35	1:17:28	1:23:47	1:47:04	1:53:48	2:18:28	2:51:38	4:02:56	4:19:25	5:20:19	12:58:52
75	24:12.3	39:57.7	50:48.5	1:01:57	1:19:13	1:25:41	1:49:33	1:56:28	2:21:49	2:56:00	4:09:47	4:26:54	5:30:14	
76	24:47.8	40:54.0	51:59.1	1:03:22	1:21:03	1:27:40	1:52:09	1:59:16	2:25:21	3:00:36	4:17:01	4:34:48	5:40:45	
77	25:25.3	41:53.4	53:13.6	1:04:53	1:22:59	1:29:46	1:54:55	2:02:13	2:29:05	3:05:29	4:24:41	4:43:10	5:51:55	
78	26:05.1	42:56.3	54:32.4	1:06:28	1:25:02	1:31:60	1:57:49	2:05:20	2:33:02	3:10:38	4:32:49	4:52:04	6:03:47	
79	26:47.3	44:02.9	55:55.8	1:08:09	1:27:11	1:34:21	2:00:54	2:08:39	2:37:12	3:16:05	4:41:27	5:01:30	6:16:24	
80	27:32.2	45:13.6	57:24.3	1:09:56	1:29:29	1:36:50	2:04:10	2:12:09	2:41:38	3:21:53	4:50:37	5:11:31	6:29:51	
81	28:19.9	46:28.8	58:58.3	1:11:50	1:31:55	1:39:29	2:07:38	2:15:52	2:46:19	3:28:02	5:00:23	5:22:12	6:44:11	
82	29:10.9	47:48.8	1:00:38	1:13:51	1:34:30	1:42:17	2:11:19	2:19:49	2:51:19	3:34:35	5:10:47	5:33:35	6:59:28	
83	30:05.3	49:14.1	1:02:25	1:16:00	1:37:15	1:45:17	2:15:15	2:24:02	2:56:39	3:41:33	5:21:53	5:45:45	7:15:50	
84	31:03.5	50:45.3	1:04:19	1:18:18	1:40:12	1:48:28	2:19:26	2:28:31	3:02:19	3:49:00	5:33:45	5:58:45	7:33:21	
85	32:06.0	52:23.0	1:06:20	1:20:45	1:43:20	1:51:53	2:23:54	2:33:19	3:08:24	3:56:58	5:46:27	6:12:40	7:52:08	
86	33:13.2	54:07.8	1:08:31	1:23:23	1:46:43	1:55:33	2:28:42	2:38:28	3:14:54	4:05:31	6:00:06	6:27:38	8:12:19	
87	34:25.6	56:00.6	1:10:52	1:26:13	1:50:20	1:59:28	2:33:51	2:43:60	3:21:54	4:14:41	6:14:46	6:43:43	8:34:04	
88	35:43.9	58:02.4	1:13:23	1:29:15	1:54:14	2:03:42	2:39:24	2:49:56	3:29:25	4:24:34	6:30:35	7:01:03	8:57:32	
89	37:08.8	1:00:14	1:16:07	1:32:33	1:58:26	2:08:17	2:45:23	2:56:22	3:37:33	4:35:15	6:47:40	7:19:48	9:22:54	
90	38:41.1	1:02:37	1:19:05	1:36:07	2:02:60	2:13:14	2:51:52	3:03:19	3:46:21	4:46:48	7:06:11	7:40:07	9:50:26	
91	40:21.8	1:05:13	1:22:18	1:40:00	2:07:57	2:18:36	2:58:54	3:10:52	3:55:54	4:59:21	7:26:18	8:02:11	10:20:22	
92	42:12.2	1:08:03	1:25:49	1:44:14	2:13:22	2:24:28	3:06:34	3:19:06	4:06:19	5:13:01	7:48:14	8:26:15	10:53:02	
93	44:13.6	1:11:10	1:29:41	1:48:53	2:19:17	2:30:54	3:14:58	3:28:06	4:17:42	5:27:59	8:12:14	8:52:35	11:28:47	
94	46:27.8	1:14:36	1:33:56	1:53:60	2:25:48	2:37:57	3:24:12	3:38:00	4:30:12	5:44:24	8:38:34	9:21:31	12:08:03	
95	48:56.8	1:18:25	1:38:39	1:59:39	2:32:59	2:45:45	3:34:23	3:48:55	4:43:60	6:02:30	9:07:38	9:53:24		
96	51:43.3	1:22:39	1:43:53	2:05:56	2:40:59	2:54:25	3:45:40	4:01:02	4:59:17	6:22:34	9:39:49	10:28:44		
97	54:50.5	1:27:25	1:49:45	2:12:58	2:49:54	3:04:05	3:58:16	4:14:32	5:16:20	6:44:56	10:15:40	11:08:05		
98	58:22.5	1:32:46	1:56:21	2:20:52	2:59:56	3:14:57	4:12:25	4:29:41	5:35:27	7:09:59	10:55:48	11:52:09		
99	1:02:24	1:38:53	2:03:51	2:29:51	3:11:18	3:27:15	4:28:25	4:46:49	5:57:02	7:38:15	11:41:04	12:41:50		
100	1:07:03	1:45:53	2:12:27	2:40:06	3:24:16	3:41:17	4:46:38	5:06:20	6:21:36	8:10:24	12:32:28	13:38:14		

WOMEN'S LONG DISTANCE RUNNING STANDARDS IN SECONDS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	1154.3	1958.3	2515.1	3081.8	3941.5	4256.1	5380	5695	6810	8224	11005	11609	13741	27272
9	1086.8	1839.5	2360.1	2889.8	3693.8	3988.1	5041	5336	6383	7714	10343	10915	12944	25983
10	1035.4	1748.3	2240.9	2742.0	3502.8	3781.5	4779	5060	6054	7321	9835	10385	12336	25024
11	995.2	1676.7	2147.1	2625.5	3352.2	3618.5	4573	4841	5795	7013	9439	9971	11864	24299
12	963.3	1619.5	2072.0	2532.1	3231.3	3487.6	4408	4666	5587	6766	9124	9642	11492	23746
13	937.6	1573.2	2011.0	2456.2	3132.9	3381.2	4273	4524	5419	6567	8871	9380	11196	23322
14	916.6	1535.4	1961.1	2393.9	3052.1	3293.7	4162	4407	5281	6404	8667	9168	10959	22995
15	899.5	1504.2	1919.8	2342.4	2985.2	3221.4	4071	4311	5167	6271	8502	8996	10769	22745
16	885.5	1478.4	1885.6	2299.6	2929.7	3161.3	3995	4231	5074	6162	8367	8857	10616	22553
17	874.0	1457.0	1857.2	2264.1	2883.5	3111.3	3933	4165	4996	6072	8258	8744	10493	22408
18	864.5	1439.4	1833.7	2234.5	2845.0	3069.7	3880	4110	4932	5998	8170	8654	10396	22300
19	856.8	1424.9	1814.2	2210.0	2813.2	3035.3	3837	4065	4880	5938	8099	8581	10319	22220
OC	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
30	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
31	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
32	842.3	1395.4	1773.6	2158.1	2744.5	2960.7	3744	3967	4771	5822	7982	8466	10211	22110
33	844.9	1400.7	1780.7	2166.9	2755.9	2973.0	3759	3982	4784	5829	7982	8466	10211	22110
34	848.2	1406.7	1788.8	2177.0	2768.9	2987.0	3776	4000	4805	5852	8001	8481	10215	22124
35	851.9	1413.5	1797.8	2188.3	2783.4	3002.7	3796	4020	4828	5879	8032	8513	10248	22154
36	856.0	1421.0	1807.7	2200.6	2799.4	3020.0	3817	4043	4855	5909	8068	8550	10287	22194
37	860.5	1429.2	1818.5	2214.1	2816.8	3038.7	3841	4068	4884	5943	8108	8591	10332	22244
38	865.5	1438.1	1830.2	2228.6	2835.5	3059.0	3866	4095	4915	5980	8153	8638	10384	22305
39	870.9	1447.7	1842.7	2244.2	2855.6	3080.7	3894	4124	4949	6020	8204	8690	10442	22379
40	876.7	1457.9	1856.1	2260.7	2877.1	3103.9	3923	4155	4986	6064	8259	8748	10506	22467
41	882.9	1468.8	1870.3	2278.4	2899.8	3128.5	3954	4188	5025	6111	8320	8811	10578	22570
42	889.5	1480.4	1885.4	2297.0	2923.9	3154.6	3987	4223	5067	6161	8385	8880	10657	22689
43	896.5	1492.6	1901.3	2316.6	2949.2	3182.0	4022	4260	5112	6215	8456	8954	10743	22826
44	904.0	1505.5	1918.0	2337.3	2975.9	3210.9	4059	4299	5159	6272	8532	9034	10836	22982
45	911.9	1519.1	1935.6	2359.0	3003.9	3241.3	4098	4340	5209	6333	8614	9120	10938	23158
46	920.3	1533.4	1954.1	2381.7	3033.3	3273.1	4139	4384	5261	6397	8701	9213	11047	23356
47	929.0	1548.4	1973.4	2405.5	3064.0	3306.4	4181	4429	5316	6465	8794	9311	11165	23578
48	938.3	1564.1	1993.6	2430.4	3096.1	3341.2	4226	4477	5374	6536	8893	9416	11291	23824
49	948.0	1580.6	2014.7	2456.4	3129.7	3377.6	4273	4527	5435	6612	8999	9528	11426	24096
50	958.2	1597.8	2036.8	2483.5	3164.7	3415.6	4322	4579	5499	6691	9110	9647	11570	24397
51	968.9	1615.7	2059.8	2511.8	3201.2	3455.2	4373	4633	5566	6774	9228	9773	11724	24727
52	980.1	1634.5	2083.9	2541.2	3239.2	3496.5	4426	4690	5636	6861	9353	9906	11888	25089
53	991.9	1654.1	2108.9	2572.0	3278.9	3539.5	4482	4749	5709	6953	9484	10046	12062	25485
54	1004.2	1674.5	2135.0	2604.0	3320.2	3584.3	4540	4811	5785	7049	9623	10195	12247	25916
55	1017.1	1695.9	2162.3	2637.3	3363.2	3631.0	4601	4876	5865	7150	9769	10352	12443	26386
56	1030.5	1718.1	2190.6	2672.1	3408.0	3679.7	4664	4943	5948	7255	9923	10517	12650	26895
57	1044.6	1741.4	2220.2	2708.3	3454.7	3730.3	4730	5014	6035	7365	10085	10692	12870	27446
58	1059.4	1765.6	2251.0	2746.0	3503.3	3783.1	4798	5087	6126	7481	10256	10875	13102	28043
59	1074.8	1790.9	2283.2	2785.2	3553.9	3838.1	4870	5163	6221	7602	10435	11069	13348	28688
60	1090.9	1817.3	2316.7	2826.2	3606.7	3895.4	4944	5243	6320	7728	10624	11272	13607	29383
61	1107.8	1844.8	2351.6	2868.8	3661.7	3955.1	5022	5326	6424	7861	10823	11487	13881	30133
62	1125.5	1873.6	2388.1	2913.3	3719.0	4017.4	5103	5413	6532	7999	11031	11712	14171	30940
63	1144.0	1903.6	2426.1	2959.7	3778.8	4082.4	5188	5504	6645	8145	11251	11949	14477	31807
64	1163.3	1935.0	2465.9	3008.2	3841.2	4150.2	5276	5599	6764	8297	11481	12199	14799	32739
65	1183.6	1967.9	2507.4	3058.8	3906.4	4221.0	5369	5698	6887	8456	11724	12462	15140	33741
66	1204.9	2002.2	2550.8	3111.6	3974.5	4294.9	5466	5801	7017	8623	11979	12739	15500	34815
67	1227.2	2038.2	2596.2	3166.9	4045.6	4372.2	5567	5909	7153	8798	12248	13030	15880	35968
68	1250.6	2075.8	2643.6	3224.7	4120.1	4453.1	5672	6022	7295	8982	12530	13337	16281	37205
69	1275.2	2115.3	2693.4	3285.2	4198.0	4537.8	5783	6141	7444	9175	12828	13661	16705	38530
70	1301.1	2156.7	2745.5	3348.7	4279.6	4626.4	5899	6265	7600	9377	13141	14002	17153	39951
71	1328.2	2200.2	2800.3	3415.2	4365.2	4719.4	6021	6396	7764	9590	13472	14361	17626	41474
72	1356.8	2245.8	2857.7	3485.0	4455.0	4817.0	6149	6533	7936	9814	13820	14741	18127	43107
73	1387.0	2293.9	2918.1	3558.3	4549.3	4919.5	6283	6677	8118	10050	14188	15142	18658	44857
74	1418.8	2344.4	2981.6	3635.5	4648.5	5027.3	6424	6828	8308	10298	14576	15565	19219	46732
75	1452.3	2397.7	3048.5	3716.7	4752.9	5140.7	6573	6988	8509	10560	14987	16014	19814	48744
76	1487.8	2454.0	3119.1	3802.3	4862.9	5260.3	6729	7156	8721	10836	15421	16488	20445	50902
77	1525.3	2513.4	3193.6	3892.7	4979.0	5386.4	6895	7333	8945	11129	15881	16990	21115	53217
78	1565.1	2576.3	3272.4	3988.2	5101.7	5519.7	7069	7520	9182	11438	16369	17524	21827	55704
79	1607.3	2642.9	3355.8	4089.3	5231.5	5660.7	7254	7719	9432	11765	16887	18090	22584	58375
80	1652.2	2713.6	3444.3	4196.5	5369.0	5810.1	7450	7929	9698	12113	17437	18691	23391	61248
81	1699.9	2788.8	3538.3	4310.2	5515.0	5968.7	7658	8152	9979	12482	18023	19332	24251	64339
82	1750.9	2868.8	3638.2	4431.2	5670.1	6137.2	7879	8389	10279	12875	18647	20015	25168	67668
83	1805.3	2954.1	3744.8	4560.1	5835.4	6316.8	8115	8642	10599	13293	19313	20745	26150	71257
84	1863.5	3045.3	3858.6	4697.8	6011.8	6508.3	8366	8911	10939	13740	20025	21525	27201	75132
85	1926.0	3143.0	3980.4	4845.0	6200.4	6713.1	8634	9199	11304	14218	20787	22360	28328	79321
86	1993.2	3247.8	4111.1	5002.8	6402.5	6932.6	8922	9508	11694	14731	21606	23258	29539	83855
87	2065.6	3360.6	4251.6	5172.5	6619.7	7168.4	9231	9840	12114	15281	22486	24223	30844	88772
88	2143.9	3482.4	4403.1	5355.4	6853.6	7422.3	9564	10196	12565	15874	23435	25263	32252	94112
89	2228.8	3614.2	4567.0	5553.0	7106.2	7696.6	9923	10582	13053	16515	24460	26388	33774	99923
90	2321.1	3757.2	4744.7	5767.2	7379.9	7993.6	10312	10999	13581	17208	25571	27607	35426	106261
91	2421.8	3913.0	4938.1	6000.1	7677.4	8316.4	10734	11452	14154	17961	26778	28931	37222	113191
92	2532.2	4083.3	5149.3	6254.4	8001.8	8668.4	11194	11946	14779	18781	28094	30375	39182	120787
93	2653.6	4270.2	5381.0	6533.1	8357.1	9053.7	11698	12486	15462	19679	29534	31955	41327	129137
94	2787.8	4476.4	5636.1	6839.8	8747.8	9477.4	12252	13080	16212	20664	31114	33691	43683	138347
95	2936.8	4704.8	5918.5	7178.9	9179.5	9945.4	12863	13735	17040	21750	32858	35604	46282	148540
96	3103.3	4959.3	6232.8	7556.0	9658.8	10464.9	13540	14462	17957	22954	34789	37724	49163	159868
97	3290.5	5244.5	6584.6	7977.7	10194.3	11045.1	14296	15272	18980	24296	36940	40085	52371	172511
98	3502.5	5566.4	6981.1	8452.4	10796.3	11697.0	15145	16181	20127	25799	39348	42729	55963	186694
99	3744.4	5932.6	7431.2	8990.7	11478.0	12435.0	16105	17209	21422	27495	42064	45710	60012	202692
100	4023.1	6352.7	7946.8	9606.3	12256.3	13277.1	17198	18380	22896	29424	45148	49094	64606	220852

WOMEN'S TRACK RUNNING EVENT AGE FACTORS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	0.8191	0.8208	0.8214	0.8073	0.7603	0.7351	0.7243	0.7240	0.7362	0.7468	0.7544	0.7545	0.7535	0.7461	0.7442
9	0.8500	0.8519	0.8528	0.8418	0.8013	0.7790	0.7696	0.7700	0.7815	0.7914	0.7984	0.7986	0.7975	0.7905	0.7887
10	0.8760	0.8780	0.8790	0.8706	0.8360	0.8165	0.8084	0.8092	0.8200	0.8291	0.8354	0.8356	0.8345	0.8280	0.8263
11	0.8981	0.9001	0.9012	0.8948	0.8655	0.8487	0.8417	0.8429	0.8528	0.8610	0.8666	0.8667	0.8657	0.8596	0.8581
12	0.9169	0.9189	0.9199	0.9152	0.8906	0.8763	0.8704	0.8719	0.8808	0.8881	0.8928	0.8929	0.8919	0.8865	0.8851
13	0.9331	0.9349	0.9359	0.9325	0.9122	0.9001	0.8952	0.8968	0.9047	0.9110	0.9150	0.9150	0.9141	0.9092	0.9079
14	0.9470	0.9486	0.9496	0.9472	0.9307	0.9207	0.9167	0.9183	0.9251	0.9305	0.9337	0.9337	0.9328	0.9284	0.9273
15	0.9589	0.9604	0.9613	0.9596	0.9465	0.9384	0.9352	0.9367	0.9425	0.9470	0.9495	0.9494	0.9485	0.9446	0.9437
16	0.9692	0.9705	0.9712	0.9701	0.9600	0.9536	0.9512	0.9526	0.9573	0.9609	0.9627	0.9626	0.9617	0.9583	0.9575
17	0.9780	0.9791	0.9797	0.9790	0.9715	0.9667	0.9649	0.9661	0.9699	0.9726	0.9736	0.9735	0.9727	0.9697	0.9691
18	0.9855	0.9864	0.9868	0.9865	0.9813	0.9778	0.9766	0.9776	0.9804	0.9823	0.9827	0.9826	0.9818	0.9792	0.9786
19	0.9919	0.9925	0.9928	0.9926	0.9894	0.9872	0.9864	0.9873	0.9892	0.9903	0.9901	0.9899	0.9892	0.9870	0.9865
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9973	0.9977	0.9979	0.9983	0.9984	0.9985	0.9988	0.9998	1.0000	1.0000	1.0000	0.9998	0.9993	0.9983	0.9982
34	0.9939	0.9944	0.9947	0.9950	0.9942	0.9938	0.9940	0.9952	0.9964	0.9969	0.9966	0.9965	0.9960	0.9949	0.9947
35	0.9902	0.9908	0.9911	0.9914	0.9897	0.9887	0.9887	0.9901	0.9918	0.9927	0.9927	0.9926	0.9922	0.9910	0.9907
36	0.9862	0.9869	0.9874	0.9875	0.9848	0.9833	0.9830	0.9845	0.9867	0.9880	0.9884	0.9883	0.9879	0.9866	0.9863
37	0.9821	0.9828	0.9833	0.9833	0.9796	0.9775	0.9770	0.9786	0.9812	0.9829	0.9837	0.9836	0.9832	0.9818	0.9814
38	0.9777	0.9785	0.9791	0.9789	0.9741	0.9714	0.9707	0.9724	0.9754	0.9774	0.9785	0.9784	0.9781	0.9765	0.9761
39	0.9731	0.9740	0.9746	0.9741	0.9683	0.9650	0.9641	0.9658	0.9691	0.9715	0.9729	0.9729	0.9725	0.9708	0.9704
40	0.9683	0.9693	0.9699	0.9691	0.9622	0.9584	0.9572	0.9589	0.9626	0.9652	0.9669	0.9669	0.9666	0.9648	0.9643
41	0.9634	0.9644	0.9650	0.9639	0.9559	0.9515	0.9500	0.9517	0.9556	0.9586	0.9605	0.9605	0.9602	0.9583	0.9578
42	0.9583	0.9593	0.9599	0.9584	0.9493	0.9443	0.9426	0.9442	0.9484	0.9516	0.9537	0.9537	0.9534	0.9515	0.9510
43	0.9530	0.9540	0.9546	0.9527	0.9425	0.9369	0.9349	0.9364	0.9409	0.9442	0.9465	0.9466	0.9463	0.9443	0.9437
44	0.9476	0.9485	0.9491	0.9467	0.9354	0.9293	0.9270	0.9284	0.9330	0.9365	0.9390	0.9391	0.9389	0.9367	0.9362
45	0.9420	0.9429	0.9434	0.9405	0.9282	0.9214	0.9189	0.9202	0.9249	0.9286	0.9312	0.9313	0.9310	0.9288	0.9282
46	0.9362	0.9371	0.9375	0.9341	0.9207	0.9134	0.9106	0.9117	0.9165	0.9203	0.9230	0.9231	0.9229	0.9206	0.9200
47	0.9303	0.9311	0.9315	0.9275	0.9129	0.9051	0.9021	0.9030	0.9079	0.9117	0.9145	0.9146	0.9144	0.9120	0.9114
48	0.9242	0.9250	0.9253	0.9207	0.9050	0.8967	0.8934	0.8941	0.8990	0.9028	0.9057	0.9058	0.9055	0.9032	0.9026
49	0.9180	0.9187	0.9189	0.9137	0.8969	0.8881	0.8845	0.8850	0.8898	0.8937	0.8965	0.8966	0.8964	0.8940	0.8934
50	0.9116	0.9122	0.9123	0.9064	0.8886	0.8793	0.8754	0.8757	0.8804	0.8842	0.8871	0.8872	0.8870	0.8846	0.8840
51	0.9051	0.9056	0.9056	0.8990	0.8801	0.8703	0.8662	0.8662	0.8708	0.8746	0.8774	0.8775	0.8772	0.8749	0.8742
52	0.8984	0.8988	0.8987	0.8913	0.8714	0.8612	0.8568	0.8565	0.8610	0.8646	0.8674	0.8675	0.8672	0.8649	0.8643
53	0.8916	0.8918	0.8916	0.8835	0.8626	0.8518	0.8472	0.8466	0.8510	0.8545	0.8571	0.8572	0.8569	0.8546	0.8540
54	0.8846	0.8847	0.8843	0.8754	0.8535	0.8424	0.8375	0.8365	0.8407	0.8441	0.8466	0.8467	0.8464	0.8441	0.8435
55	0.8775	0.8774	0.8769	0.8672	0.8443	0.8327	0.8276	0.8263	0.8303	0.8334	0.8358	0.8359	0.8356	0.8333	0.8328
56	0.8702	0.8699	0.8693	0.8587	0.8349	0.8229	0.8175	0.8159	0.8196	0.8226	0.8248	0.8248	0.8245	0.8223	0.8218
57	0.8627	0.8623	0.8614	0.8500	0.8253	0.8130	0.8073	0.8053	0.8088	0.8115	0.8135	0.8135	0.8132	0.8111	0.8106
58	0.8551	0.8544	0.8535	0.8412	0.8156	0.8028	0.7970	0.7946	0.7978	0.8002	0.8020	0.8020	0.8017	0.7997	0.7991
59	0.8473	0.8464	0.8453	0.8321	0.8056	0.7926	0.7865	0.7837	0.7866	0.7887	0.7903	0.7903	0.7899	0.7880	0.7875
60	0.8393	0.8383	0.8369	0.8229	0.7955	0.7821	0.7758	0.7727	0.7752	0.7770	0.7783	0.7783	0.7780	0.7761	0.7757
61	0.8311	0.8299	0.8284	0.8134	0.7852	0.7715	0.7650	0.7615	0.7636	0.7651	0.7661	0.7661	0.7658	0.7641	0.7636
62	0.8228	0.8213	0.8197	0.8037	0.7748	0.7608	0.7541	0.7502	0.7519	0.7531	0.7538	0.7538	0.7534	0.7518	0.7514
63	0.8143	0.8126	0.8107	0.7938	0.7641	0.7499	0.7430	0.7387	0.7400	0.7408	0.7412	0.7412	0.7408	0.7393	0.7390
64	0.8056	0.8036	0.8016	0.7837	0.7533	0.7388	0.7317	0.7270	0.7280	0.7284	0.7285	0.7284	0.7280	0.7267	0.7264
65	0.7967	0.7945	0.7922	0.7734	0.7423	0.7276	0.7203	0.7152	0.7158	0.7158	0.7156	0.7155	0.7151	0.7139	0.7136
66	0.7875	0.7851	0.7826	0.7629	0.7312	0.7163	0.7088	0.7033	0.7034	0.7030	0.7025	0.7024	0.7019	0.7009	0.7007
67	0.7782	0.7756	0.7729	0.7521	0.7198	0.7047	0.6971	0.6912	0.6909	0.6901	0.6892	0.6891	0.6886	0.6878	0.6876
68	0.7687	0.7658	0.7629	0.7412	0.7083	0.6930	0.6852	0.6790	0.6782	0.6770	0.6758	0.6756	0.6752	0.6745	0.6744
69	0.7589	0.7558	0.7526	0.7300	0.6966	0.6812	0.6733	0.6666	0.6654	0.6638	0.6622	0.6620	0.6616	0.6611	0.6610
70	0.7490	0.7455	0.7422	0.7186	0.6847	0.6692	0.6611	0.6541	0.6524	0.6504	0.6485	0.6482	0.6478	0.6475	0.6475
71	0.7387	0.7350	0.7315	0.7069	0.6726	0.6570	0.6488	0.6415	0.6393	0.6369	0.6346	0.6343	0.6339	0.6338	0.6338
72	0.7283	0.7243	0.7205	0.6951	0.6603	0.6447	0.6364	0.6287	0.6261	0.6232	0.6206	0.6203	0.6199	0.6199	0.6200
73	0.7176	0.7133	0.7093	0.6829	0.6478	0.6322	0.6238	0.6157	0.6127	0.6094	0.6064	0.6061	0.6057	0.6060	0.6061
74	0.7066	0.7021	0.6978	0.6706	0.6352	0.6195	0.6110	0.6027	0.5992	0.5955	0.5921	0.5918	0.5914	0.5919	0.5921
75	0.6953	0.6905	0.6861	0.6579	0.6223	0.6066	0.5981	0.5894	0.5855	0.5814	0.5777	0.5774	0.5770	0.5777	0.5779
76	0.6838	0.6787	0.6740	0.6451	0.6093	0.5936	0.5851	0.5761	0.5717	0.5672	0.5632	0.5629	0.5625	0.5633	0.5636
77	0.6720	0.6666	0.6617	0.6320	0.5960	0.5804	0.5718	0.5625	0.5578	0.5529	0.5486	0.5482	0.5478	0.5489	0.5493
78	0.6598	0.6542	0.6491	0.6186	0.5826	0.5670	0.5584	0.5489	0.5437	0.5385	0.5338	0.5335	0.5331	0.5344	0.5348
79	0.6474	0.6415	0.6362	0.6049	0.5689	0.5535	0.5449	0.5351	0.5295	0.5239	0.5190	0.5187	0.5183	0.5198	0.5203
80	0.6346	0.6285	0.6229	0.5910	0.5550	0.5397	0.5311	0.5211	0.5152	0.5093	0.5041	0.5037	0.5034	0.5051	0.5056
81	0.6215	0.6151	0.6093	0.5767	0.5409	0.5258	0.5172	0.5071	0.5007	0.4945	0.4891	0.4887	0.4884	0.4903	0.4909
82	0.6080	0.6014	0.5954	0.5622	0.5266	0.5117	0.5032	0.4928	0.4862	0.4796	0.4740	0.4736	0.4733	0.4754	0.4761
83	0.5941	0.5873	0.5811	0.5474	0.5120	0.4974	0.4889	0.4784	0.4715	0.4647	0.4588	0.4584	0.4581	0.4605	0.4612
84	0.5799	0.5728	0.5665	0.5323	0.4972	0.4829	0.4745	0.4639	0.4567	0.4496	0.4436	0.4432	0.4429	0.4455	0.4462
85	0.5652	0.5579	0.5514	0.5169	0.4822	0.4681	0.4599	0.4492	0.4417	0.4344	0.4282	0.4278	0.4276	0.4304	0.4312
86	0.5501	0.5426	0.5360	0.5012	0.4670	0.4532	0.4451	0.4344	0.4267	0.4191	0.4128	0.4125	0.4123	0.4152	0.4161
87	0.5346	0.5269	0.5202	0.4851	0.4515	0.4381	0.4301	0.4194	0.4115	0.4038	0.3974	0.3970	0.3969	0.4000	0.4009
88	0.5186	0.5108	0.5039	0.4687	0.4357	0.4227	0.4149	0.4042	0.3962	0.3883	0.3819	0.3815	0.3815	0.3848	0.3857
89	0.5021	0.4941	0.4872	0.4520	0.4198	0.4072	0.3995	0.3889	0.3807	0.3728	0.3663	0.3660	0.3660	0.3695	0.3705
90	0.4850	0.4770	0.4700	0.4349	0.4035	0.3914	0.3840	0.3735	0.3652	0.3572	0.3507	0.3504	0.3505	0.3541	0.3552
91	0.4675	0.4594	0.4523	0.4174	0.3870	0.3753	0.3682	0.3579	0.3495	0.3415	0.3351	0.3348	0.3349	0.3388	0.3398
92	0.4494	0.4412	0.4341	0.3996	0.3702	0.3591	0.3522	0.3421	0.3338	0.3258	0.3194	0.3191	0.3193	0.3233	0.3244
93	0.4307	0.4225	0.4154	0.3814	0.3531	0.3426	0.3360	0.3261	0.3179	0.3099	0.3037	0.3034	0.3037	0.3079	0.3090
94	0.4113	0.4032	0.3961	0.3628	0.3358	0.3258	0.3196	0.3100	0.3019	0.2940	0.2880	0.2877	0.2880	0.2924	0.2935
95	0.3913	0.3832	0.3763	0.3438	0.3181	0.3089	0.3030	0.2938	0.2858	0.2780	0.2722	0.2719	0.2724	0.2769	0.2780
96	0.3706	0.3627	0.3559	0.3244	0.3002	0.2916	0.2861	0.2773	0.2695	0.2620	0.2564	0.2562	0.2567	0.2613	0.2625
97	0.3492	0.3414	0.3348	0.3045	0.2819	0.2741	0.2690	0.2607	0.2532	0.2459	0.2406	0.2404	0.2410	0.2458	0.2470
98	0.3270	0.3194	0.3130	0.2842	0.2634	0.2563	0.2517	0.2439	0.2367	0.2297	0.2247	0.2246	0.2253	0.2302	0.2314
99	0.3040	0.2967	0.2906	0.2634	0.2445	0.2383	0.2342	0.2270	0.2201	0.2135	0.2089	0.2088	0.2096	0.2146	0.2158
100	0.2801	0.2732	0.2675	0.2422	0.2253	0.2200	0.2164	0.2099	0.2035	0.1972	0.1930	0.1930	0.1940	0.1990	0.2002

WOMEN'S LONG DISTANCE AGE FACTORS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	0.7297	0.7120	0.7044	0.6995	0.6956	0.6951	0.6957	0.6965	0.7006	0.7079	0.7253	0.7293	0.7431	0.8107
9	0.7750	0.7580	0.7507	0.7459	0.7423	0.7418	0.7425	0.7433	0.7474	0.7547	0.7718	0.7756	0.7889	0.8510
10	0.8135	0.7976	0.7907	0.7861	0.7827	0.7823	0.7832	0.7840	0.7881	0.7952	0.8116	0.8152	0.8277	0.8836
11	0.8463	0.8316	0.8252	0.8210	0.8179	0.8175	0.8185	0.8193	0.8233	0.8302	0.8457	0.8491	0.8606	0.9099
12	0.8744	0.8610	0.8551	0.8513	0.8485	0.8482	0.8493	0.8501	0.8539	0.8604	0.8749	0.8780	0.8885	0.9311
13	0.8984	0.8863	0.8810	0.8776	0.8752	0.8749	0.8760	0.8768	0.8805	0.8865	0.8998	0.9026	0.9120	0.9480
14	0.9189	0.9082	0.9035	0.9004	0.8983	0.8981	0.8993	0.9000	0.9034	0.9090	0.9210	0.9235	0.9317	0.9615
15	0.9364	0.9270	0.9229	0.9202	0.9184	0.9183	0.9194	0.9201	0.9233	0.9283	0.9389	0.9411	0.9482	0.9721
16	0.9512	0.9432	0.9396	0.9374	0.9359	0.9358	0.9369	0.9375	0.9403	0.9448	0.9540	0.9559	0.9618	0.9803
17	0.9638	0.9570	0.9540	0.9521	0.9509	0.9508	0.9518	0.9524	0.9549	0.9588	0.9666	0.9682	0.9731	0.9867
18	0.9743	0.9687	0.9662	0.9647	0.9637	0.9637	0.9646	0.9651	0.9673	0.9706	0.9771	0.9783	0.9822	0.9915
19	0.9830	0.9786	0.9766	0.9754	0.9746	0.9746	0.9755	0.9759	0.9777	0.9805	0.9856	0.9866	0.9895	0.9950
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	0.9993	0.9989	0.9988	0.9990	0.9992	0.9999	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9969	0.9955	0.9950	0.9948	0.9949	0.9950	0.9959	0.9962	0.9973	0.9987	1.0000	1.0000	1.0000	1.0000
34	0.9931	0.9912	0.9905	0.9901	0.9902	0.9903	0.9913	0.9916	0.9930	0.9947	0.9977	0.9982	0.9995	0.9994
35	0.9888	0.9865	0.9855	0.9851	0.9850	0.9852	0.9862	0.9866	0.9881	0.9902	0.9938	0.9945	0.9963	0.9980
36	0.9840	0.9812	0.9801	0.9795	0.9794	0.9796	0.9806	0.9811	0.9828	0.9851	0.9894	0.9902	0.9926	0.9962
37	0.9788	0.9756	0.9743	0.9736	0.9734	0.9735	0.9746	0.9751	0.9770	0.9796	0.9845	0.9854	0.9882	0.9940
38	0.9732	0.9696	0.9681	0.9672	0.9669	0.9671	0.9682	0.9687	0.9707	0.9735	0.9790	0.9801	0.9834	0.9913
39	0.9672	0.9632	0.9615	0.9605	0.9601	0.9602	0.9614	0.9619	0.9640	0.9670	0.9730	0.9742	0.9779	0.9880
40	0.9608	0.9564	0.9546	0.9535	0.9530	0.9531	0.9542	0.9547	0.9569	0.9601	0.9665	0.9678	0.9719	0.9841
41	0.9541	0.9493	0.9473	0.9461	0.9455	0.9456	0.9467	0.9472	0.9494	0.9527	0.9595	0.9608	0.9653	0.9796
42	0.9470	0.9419	0.9397	0.9384	0.9377	0.9378	0.9388	0.9393	0.9415	0.9449	0.9520	0.9534	0.9582	0.9745
43	0.9395	0.9342	0.9319	0.9305	0.9297	0.9297	0.9306	0.9311	0.9333	0.9367	0.9440	0.9455	0.9505	0.9686
44	0.9317	0.9261	0.9238	0.9223	0.9213	0.9213	0.9222	0.9227	0.9248	0.9282	0.9355	0.9371	0.9423	0.9621
45	0.9237	0.9179	0.9154	0.9138	0.9127	0.9127	0.9135	0.9139	0.9160	0.9193	0.9267	0.9282	0.9336	0.9547
46	0.9153	0.9093	0.9067	0.9051	0.9039	0.9038	0.9045	0.9049	0.9068	0.9101	0.9174	0.9189	0.9243	0.9466
47	0.9066	0.9005	0.8978	0.8961	0.8948	0.8947	0.8952	0.8956	0.8974	0.9005	0.9076	0.9092	0.9146	0.9378
48	0.8977	0.8915	0.8887	0.8869	0.8856	0.8854	0.8857	0.8860	0.8877	0.8907	0.8975	0.8991	0.9043	0.9281
49	0.8885	0.8822	0.8794	0.8775	0.8761	0.8758	0.8760	0.8763	0.8778	0.8805	0.8871	0.8885	0.8936	0.9176
50	0.8790	0.8727	0.8699	0.8680	0.8664	0.8661	0.8661	0.8663	0.8676	0.8701	0.8762	0.8776	0.8825	0.9063
51	0.8693	0.8630	0.8602	0.8582	0.8565	0.8562	0.8560	0.8561	0.8572	0.8594	0.8650	0.8663	0.8709	0.8942
52	0.8594	0.8531	0.8502	0.8482	0.8464	0.8461	0.8457	0.8458	0.8466	0.8485	0.8535	0.8547	0.8589	0.8812
53	0.8492	0.8430	0.8401	0.8381	0.8362	0.8358	0.8352	0.8352	0.8358	0.8373	0.8416	0.8427	0.8465	0.8676
54	0.8388	0.8327	0.8299	0.8278	0.8258	0.8253	0.8245	0.8244	0.8247	0.8259	0.8295	0.8304	0.8337	0.8531
55	0.8282	0.8222	0.8194	0.8173	0.8152	0.8147	0.8136	0.8135	0.8135	0.8143	0.8171	0.8178	0.8206	0.8380
56	0.8173	0.8116	0.8088	0.8067	0.8045	0.8039	0.8026	0.8024	0.8021	0.8024	0.8044	0.8050	0.8072	0.8221
57	0.8063	0.8007	0.7980	0.7959	0.7936	0.7930	0.7915	0.7912	0.7905	0.7904	0.7915	0.7918	0.7934	0.8056
58	0.7951	0.7897	0.7871	0.7850	0.7826	0.7820	0.7801	0.7798	0.7788	0.7782	0.7783	0.7785	0.7793	0.7884
59	0.7837	0.7786	0.7760	0.7739	0.7715	0.7707	0.7687	0.7682	0.7669	0.7658	0.7649	0.7649	0.7650	0.7707
60	0.7721	0.7673	0.7648	0.7627	0.7602	0.7594	0.7571	0.7565	0.7549	0.7533	0.7513	0.7511	0.7504	0.7525
61	0.7603	0.7558	0.7534	0.7514	0.7488	0.7479	0.7453	0.7447	0.7427	0.7406	0.7375	0.7370	0.7356	0.7338
62	0.7484	0.7442	0.7419	0.7399	0.7372	0.7363	0.7335	0.7328	0.7304	0.7278	0.7236	0.7228	0.7205	0.7146
63	0.7363	0.7325	0.7303	0.7283	0.7256	0.7246	0.7215	0.7207	0.7179	0.7148	0.7095	0.7085	0.7053	0.6951
64	0.7240	0.7206	0.7185	0.7166	0.7138	0.7128	0.7094	0.7085	0.7054	0.7017	0.6952	0.6940	0.6899	0.6753
65	0.7116	0.7086	0.7066	0.7047	0.7019	0.7008	0.6972	0.6962	0.6927	0.6885	0.6808	0.6793	0.6744	0.6553
66	0.6991	0.6964	0.6946	0.6927	0.6898	0.6888	0.6849	0.6838	0.6799	0.6751	0.6663	0.6646	0.6588	0.6351
67	0.6863	0.6841	0.6825	0.6807	0.6777	0.6766	0.6724	0.6713	0.6670	0.6617	0.6517	0.6497	0.6430	0.6147
68	0.6735	0.6717	0.6702	0.6685	0.6655	0.6643	0.6599	0.6586	0.6540	0.6482	0.6370	0.6348	0.6272	0.5943
69	0.6605	0.6592	0.6578	0.6561	0.6531	0.6519	0.6473	0.6459	0.6409	0.6345	0.6223	0.6197	0.6112	0.5738
70	0.6474	0.6465	0.6453	0.6437	0.6407	0.6394	0.6345	0.6331	0.6278	0.6208	0.6074	0.6046	0.5953	0.5534
71	0.6341	0.6338	0.6327	0.6312	0.6281	0.6268	0.6217	0.6202	0.6145	0.6070	0.5925	0.5895	0.5793	0.5331
72	0.6208	0.6209	0.6200	0.6185	0.6154	0.6141	0.6088	0.6072	0.6012	0.5932	0.5776	0.5743	0.5633	0.5129
73	0.6073	0.6079	0.6072	0.6058	0.6027	0.6013	0.5958	0.5941	0.5877	0.5793	0.5626	0.5591	0.5473	0.4929
74	0.5937	0.5948	0.5942	0.5929	0.5898	0.5884	0.5827	0.5809	0.5742	0.5653	0.5476	0.5439	0.5313	0.4731
75	0.5800	0.5815	0.5812	0.5800	0.5769	0.5755	0.5695	0.5677	0.5607	0.5513	0.5326	0.5287	0.5153	0.4536
76	0.5661	0.5682	0.5680	0.5669	0.5638	0.5624	0.5562	0.5543	0.5471	0.5372	0.5176	0.5135	0.4994	0.4344
77	0.5522	0.5548	0.5548	0.5537	0.5507	0.5492	0.5429	0.5409	0.5334	0.5231	0.5026	0.4983	0.4836	0.4155
78	0.5382	0.5412	0.5414	0.5405	0.5374	0.5359	0.5295	0.5274	0.5196	0.5090	0.4876	0.4831	0.4678	0.3969
79	0.5240	0.5276	0.5280	0.5271	0.5241	0.5226	0.5160	0.5139	0.5058	0.4948	0.4727	0.4680	0.4521	0.3788
80	0.5098	0.5138	0.5144	0.5137	0.5107	0.5092	0.5024	0.5003	0.4920	0.4806	0.4578	0.4529	0.4365	0.3610
81	0.4955	0.5000	0.5007	0.5001	0.4972	0.4956	0.4888	0.4866	0.4781	0.4664	0.4429	0.4379	0.4211	0.3437
82	0.4811	0.4861	0.4870	0.4864	0.4835	0.4820	0.4751	0.4728	0.4641	0.4522	0.4281	0.4230	0.4057	0.3267
83	0.4666	0.4720	0.4731	0.4727	0.4699	0.4683	0.4613	0.4590	0.4502	0.4379	0.4133	0.4081	0.3905	0.3103
84	0.4520	0.4579	0.4592	0.4588	0.4561	0.4545	0.4474	0.4451	0.4361	0.4237	0.3986	0.3933	0.3754	0.2943
85	0.4373	0.4436	0.4451	0.4449	0.4422	0.4407	0.4335	0.4312	0.4221	0.4095	0.3840	0.3786	0.3604	0.2787
86	0.4226	0.4293	0.4310	0.4309	0.4282	0.4267	0.4196	0.4172	0.4080	0.3952	0.3694	0.3640	0.3457	0.2637
87	0.4078	0.4149	0.4167	0.4167	0.4142	0.4127	0.4055	0.4031	0.3938	0.3810	0.3550	0.3495	0.3310	0.2491
88	0.3929	0.4004	0.4024	0.4025	0.4000	0.3986	0.3914	0.3890	0.3797	0.3667	0.3406	0.3351	0.3166	0.2349
89	0.3779	0.3858	0.3880	0.3882	0.3858	0.3844	0.3772	0.3748	0.3655	0.3525	0.3263	0.3208	0.3023	0.2213
90	0.3629	0.3711	0.3734	0.3738	0.3715	0.3701	0.3630	0.3606	0.3513	0.3383	0.3122	0.3067	0.2882	0.2081
91	0.3478	0.3563	0.3588	0.3593	0.3571	0.3557	0.3487	0.3464	0.3371	0.3241	0.2981	0.2926	0.2743	0.1953
92	0.3326	0.3415	0.3441	0.3446	0.3426	0.3413	0.3344	0.3320	0.3228	0.3100	0.2841	0.2787	0.2606	0.1831
93	0.3174	0.3265	0.3293	0.3299	0.3281	0.3267	0.3200	0.3177	0.3086	0.2958	0.2703	0.2649	0.2471	0.1712
94	0.3021	0.3115	0.3144	0.3152	0.3134	0.3121	0.3055	0.3033	0.2943	0.2817	0.2565	0.2513	0.2337	0.1598
95	0.2868	0.2964	0.2994	0.3003	0.2987	0.2974	0.2910	0.2888	0.2800	0.2677	0.2429	0.2378	0.2206	0.1488
96	0.2714	0.2812	0.2843	0.2853	0.2839	0.2827	0.2764	0.2743	0.2657	0.2536	0.2294	0.2244	0.2077	0.1383
97	0.2560	0.2659	0.2691	0.2702	0.2690	0.2678	0.2618	0.2597	0.2514	0.2396	0.2161	0.2112	0.1950	0.1282
98	0.2405	0.2505	0.2538	0.2550	0.2540	0.2529	0.2472	0.2451	0.2370	0.2257	0.2029	0.1981	0.1825	0.1184
99	0.2249	0.2350	0.2384	0.2398	0.2389	0.2379	0.2324	0.2305	0.2227	0.2117	0.1898	0.1852	0.1701	0.1091
100	0.2094	0.2195	0.2230	0.2244	0.2237	0.2228	0.2177	0.2158	0.2084	0.1979	0.1768	0.1724	0.1580	0.1001

AGE	100	200	400	800	1500	MILE	3K	5K	10K	MAR
8	94	98	100	97	97	95	93	68		100
9	94	95	98	97	93	93		97	99	95
10	92	99	100	95	92	94	90		82	93
11	96	96	96	96	94	95	91	92	93	90
12	95	100	98	96	94	94	90	95	88	90
13	94	97	96	96	91	91	90	84	84	90
14	96	97	96	99	92	94	91	85	83	89
15	96	96	98	97	92	90	91	89	78	90
16	96	98	97	95	92	92	90	88	90	96
17	97	97	97	95	91	92	90	86		87
18	99	98	99	97	97	97	96	98	97	96
19	98	97	98	96	94	97	92	96	94	95
OC	101	100	100	99	99	98	100	96	100	100
30										95
31										94
32			99	99						92
33				94						94
34										100
35	99	98	95	96	97	96	97	93	96	93
36	100	98	94	97	95	95	96	93	91	91
37	100	99	87	97	97	89	95	93	93	97
38	89	87	88	97	97	95	93	88	97	91
39	89	87	89	97	95	80	88	89	91	96
40	91	90	93	97	97	97	91	89	91	90
41	92	88	91	96	98	95	84	91	88	100
42	90	90	90	99		85	88	93	91	91
43	89	88	89	87	99	98	87	93	98	100
44	93	88	88	88	100	99	83	93	97	97
45	90	88	91	90	90	88	94	93	90	92
46	89	90	90	88	88	83	92	87	100	89
47	89	92	89	90	87	86	91	88	89	90
48	92	91	93	90	87	81	90	88	91	88
49	90	90	90	91	89	82	87	88	87	93
50	94	93	93	90	89	86	87	92	92	94
51	91	90	87	88	88	85	90	90	93	95
52	87	88	89	92	90	84	90	90	87	91
53	90	89	87	87	92	83	86	90	95	93
54	90	90	91	87	88	83	88	91	92	99
55	90	89	90	90	90	88	90	91	95	91
56	90	91	88	89	88	86	83	90	90	94
57	90	88	89	91	89	80	89	91	99	92
58	90	90	88	89	90	77	86	91	94	90
59	90	89	90	86	89	82	91	92	94	90
60	93	91	89	90	88	80	87	94	91	96
61	93	95	92	88	86	80	85	91	91	92
62	91	91	93	88	87	81	87	90	91	94
63	96	94	91	91	89	86	83	90	90	95
64	91	93	87	91	89	73	86	87	87	93
65	94	92	87	90	88	86	90	91	94	96
66	94	94	91	88	89	84	89	90	90	93
67	93	94	90	88	90	85	91	90	97	86
68	90	91	89	90	90	85	87	88	88	92
69	95	94	95	87	91	78	89	93	92	90
70	92	97	91	89	94	85	93	93	94	93
71	97	95	91	92	90	79	89	94	97	86
72	92	93	94	87	88	80	88	91	91	100
73	97	100	91	85	93	90	87	91	92	85
74	96	93	88	88	94	86	87	92	91	90
75	100	100	89	90	92	84	89	92	95	90
76	96	93	89	84	94	81	85	97	80	95
77	98	94	87	92	98		89	97	100	90
78	97	94	88	86	78	76	72	75		97
79	92	91	89	83	89	61	71	88	84	99
80	97	93	89	92	100	83	87	96	98	100
81	90	78	72	79	90			91	90	92
82	98	99	73	80	88	64	64	89	82	89
83	89	86	82	90	94			85	82	88
84	96	70	82	90	96	77	77	89	76	99
85	72	76	68	82	84		74	81	70	90
86	67		80	87	72			90		81
87										95
88	61		49	63	60					
89										
90	77	75			63					
91										
92		58	60							
93										
94										
95										
96										
97										
98										
99										
100										

Figure 15

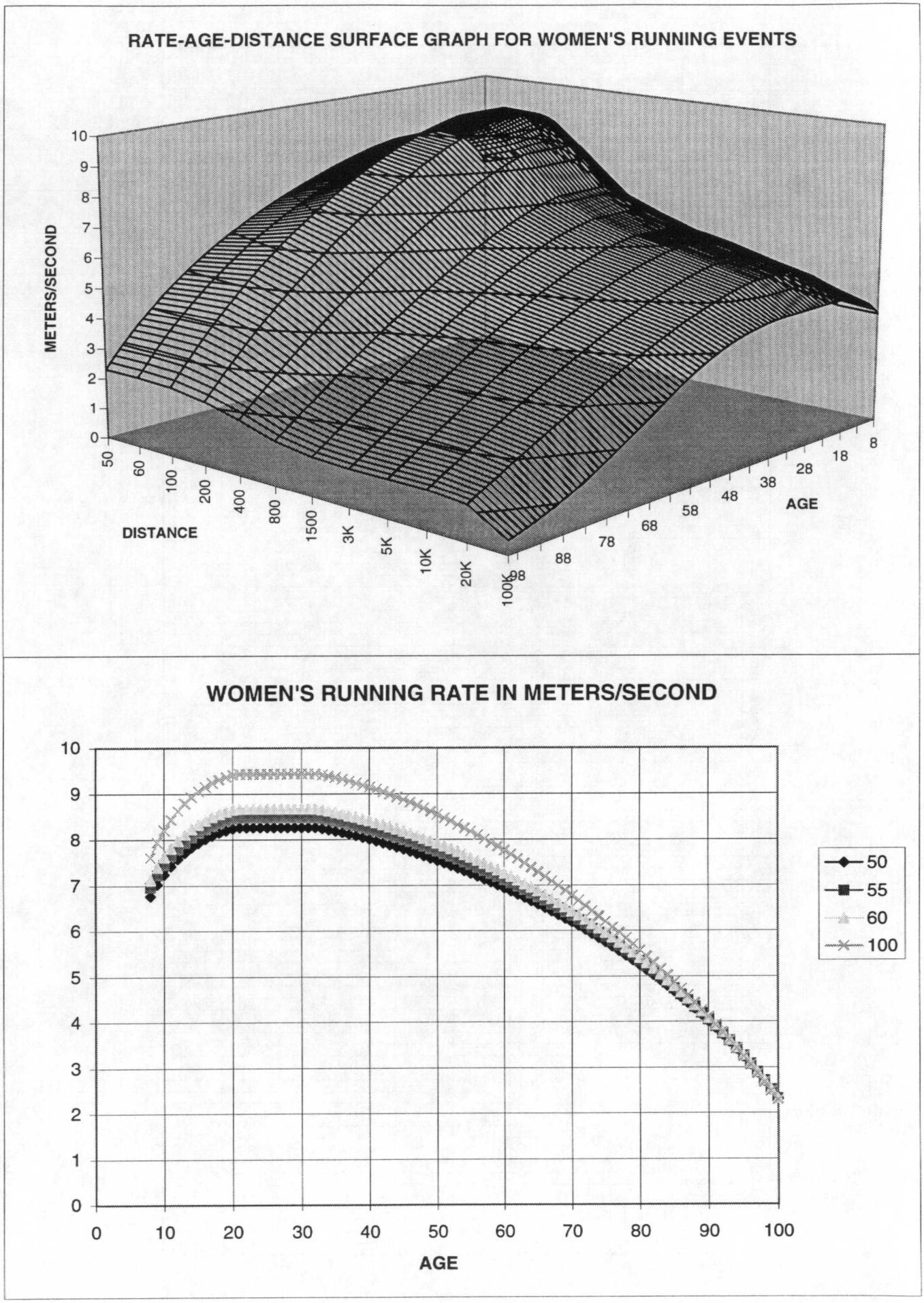
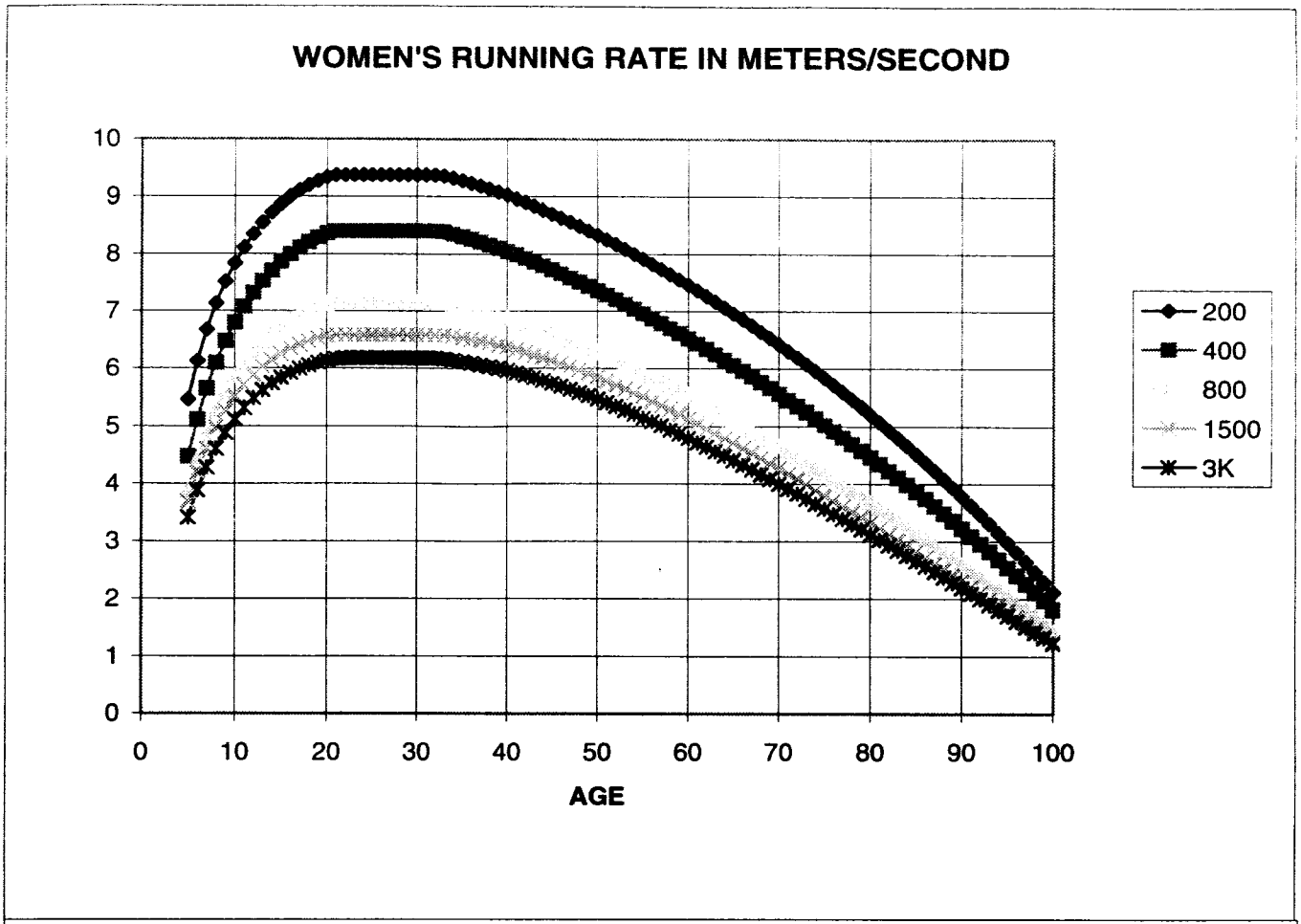

RATE-AGE-DISTANCE SURFACE GRAPH FOR WOMEN'S RUNNING EVENTS
METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
DISTANCE
50
60
100
200
400
800
1500
3K
5K
10K
20K
100K
AGE
8
18
28
38
48
58
68
78
88
98
WOMEN'S RUNNING RATE IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
50
55
60
100

Figure 16


WOMEN'S RUNNING RATE IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
200
400
800
1500
3K

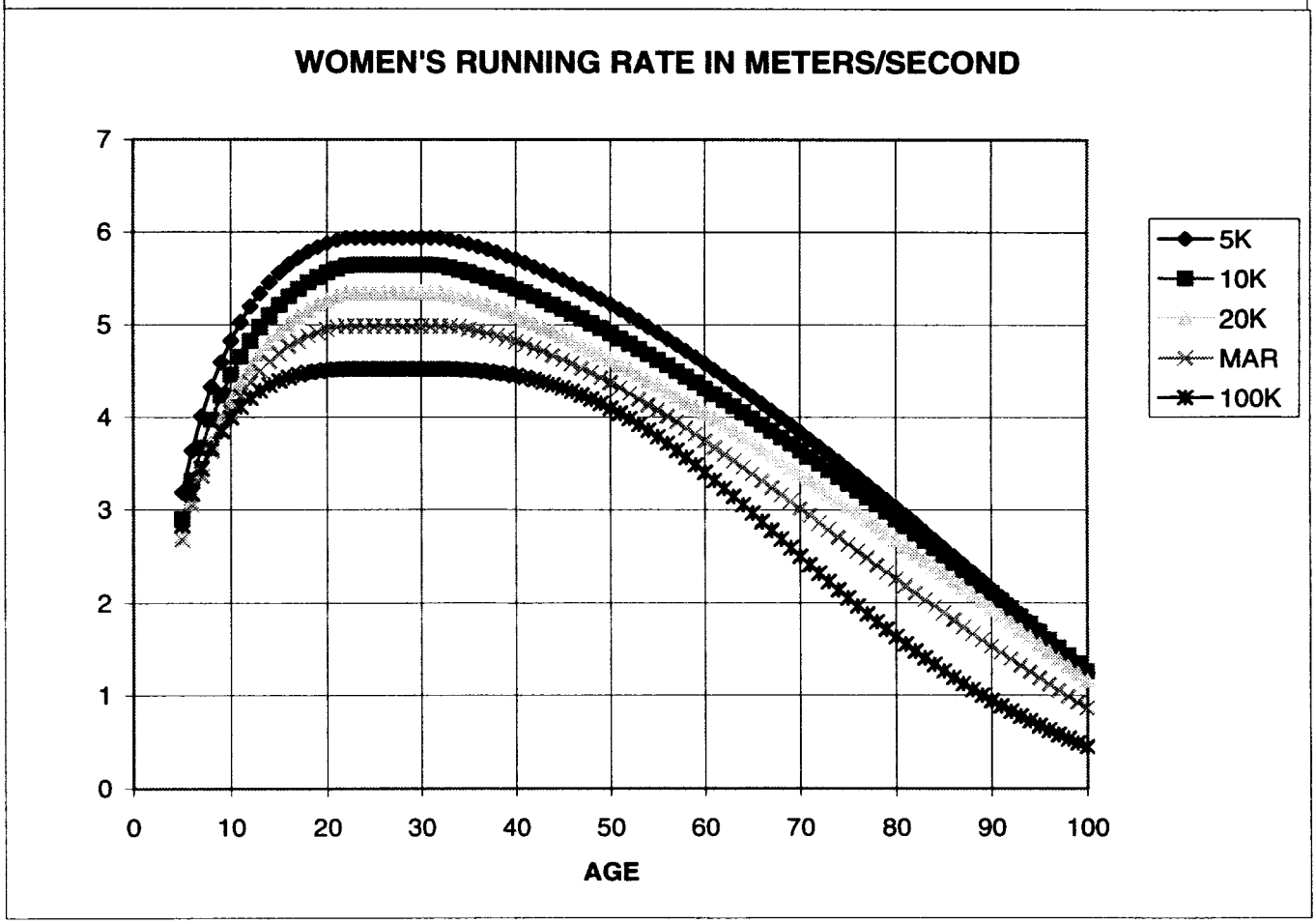
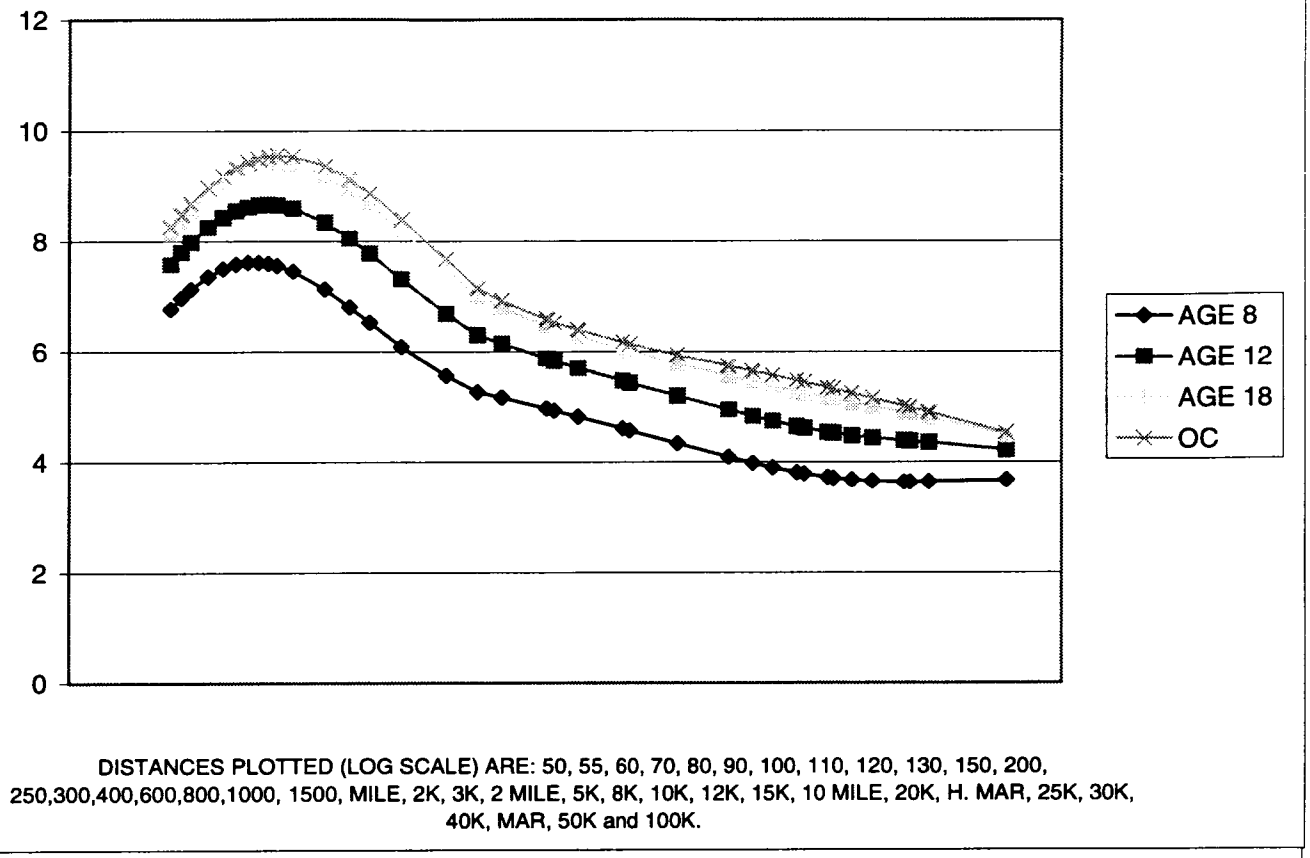
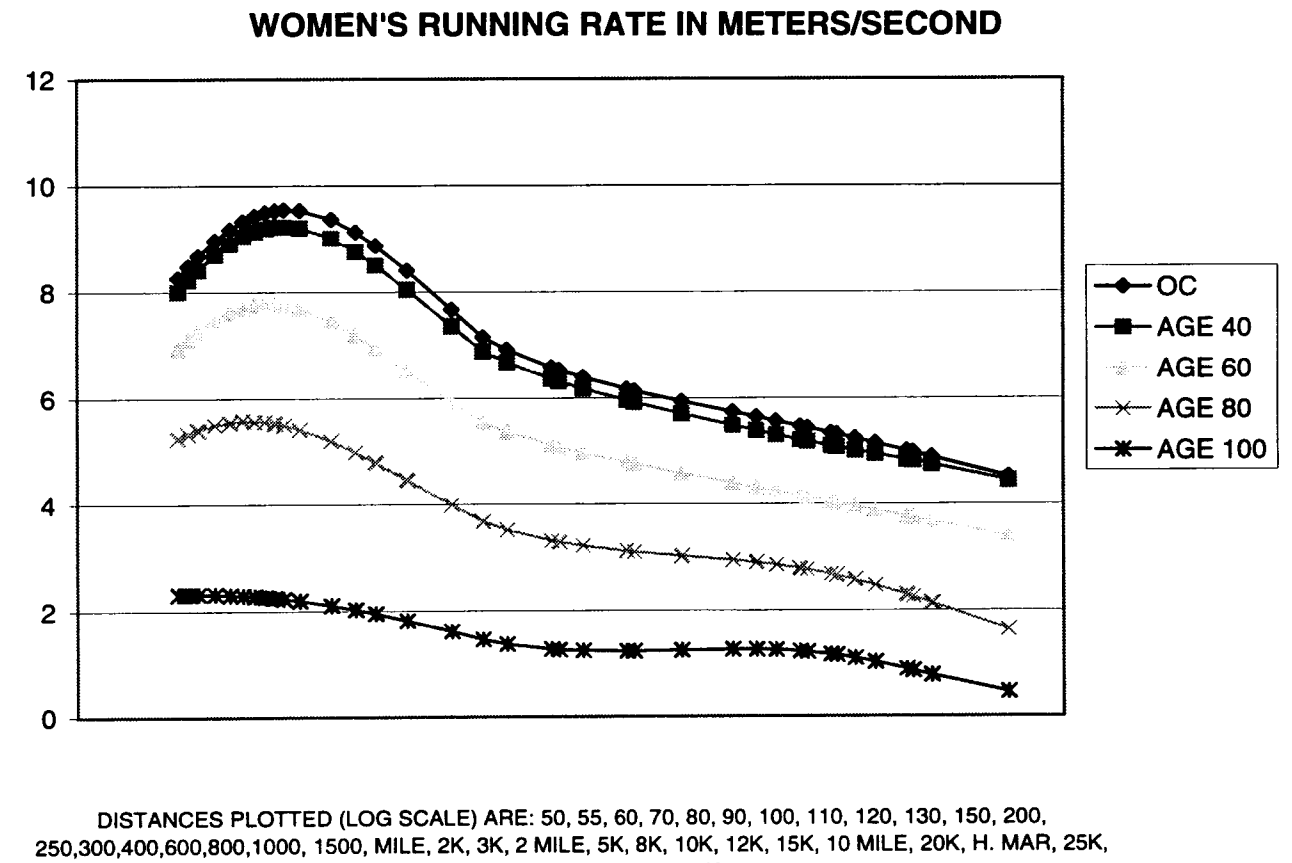

WOMEN'S RUNNING RATE IN METERS/SECOND
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K
10K
20K
MAR
100K

Figure 17



DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250,300,400,600,800,1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.



DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250,300,400,600,800,1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

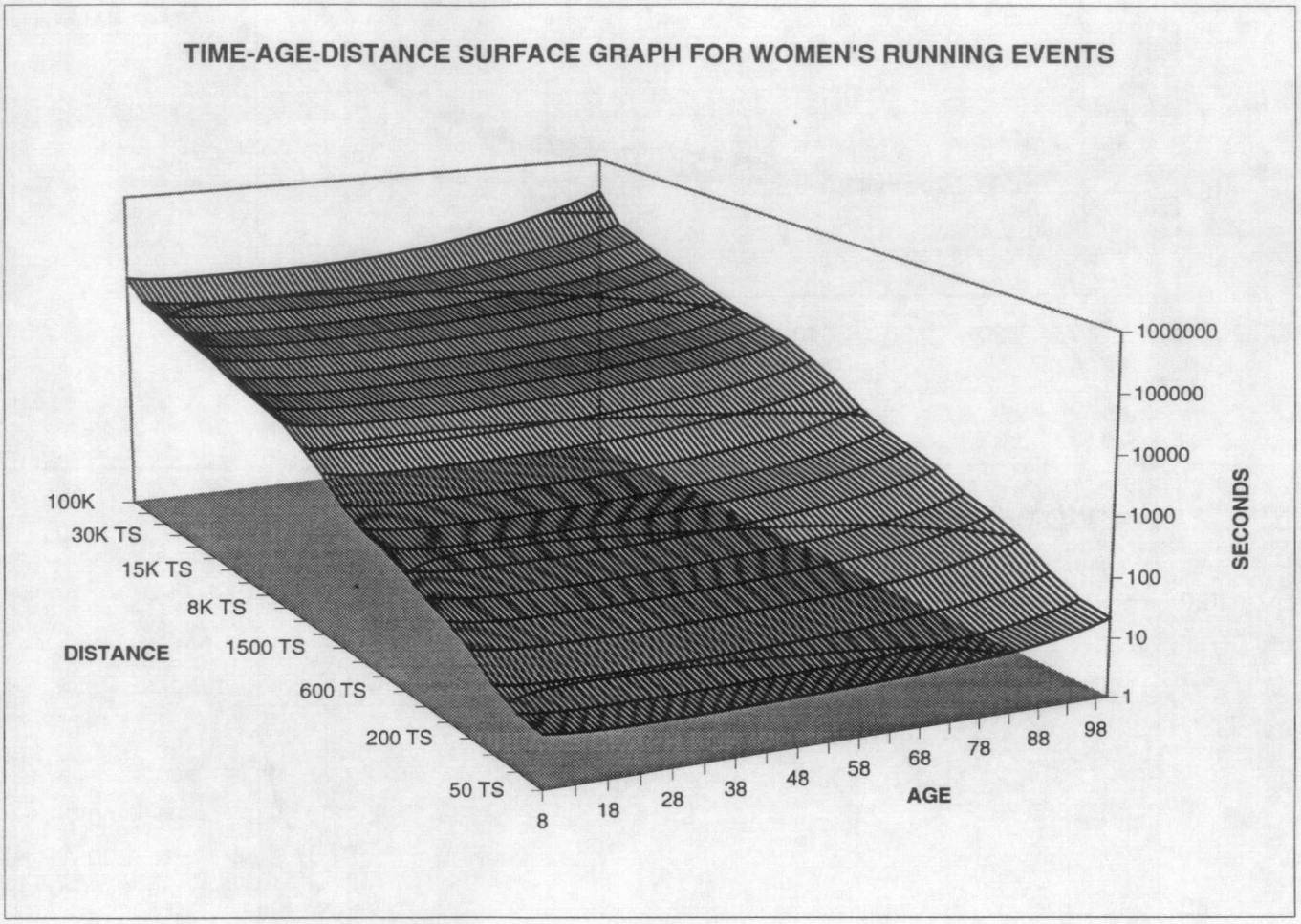
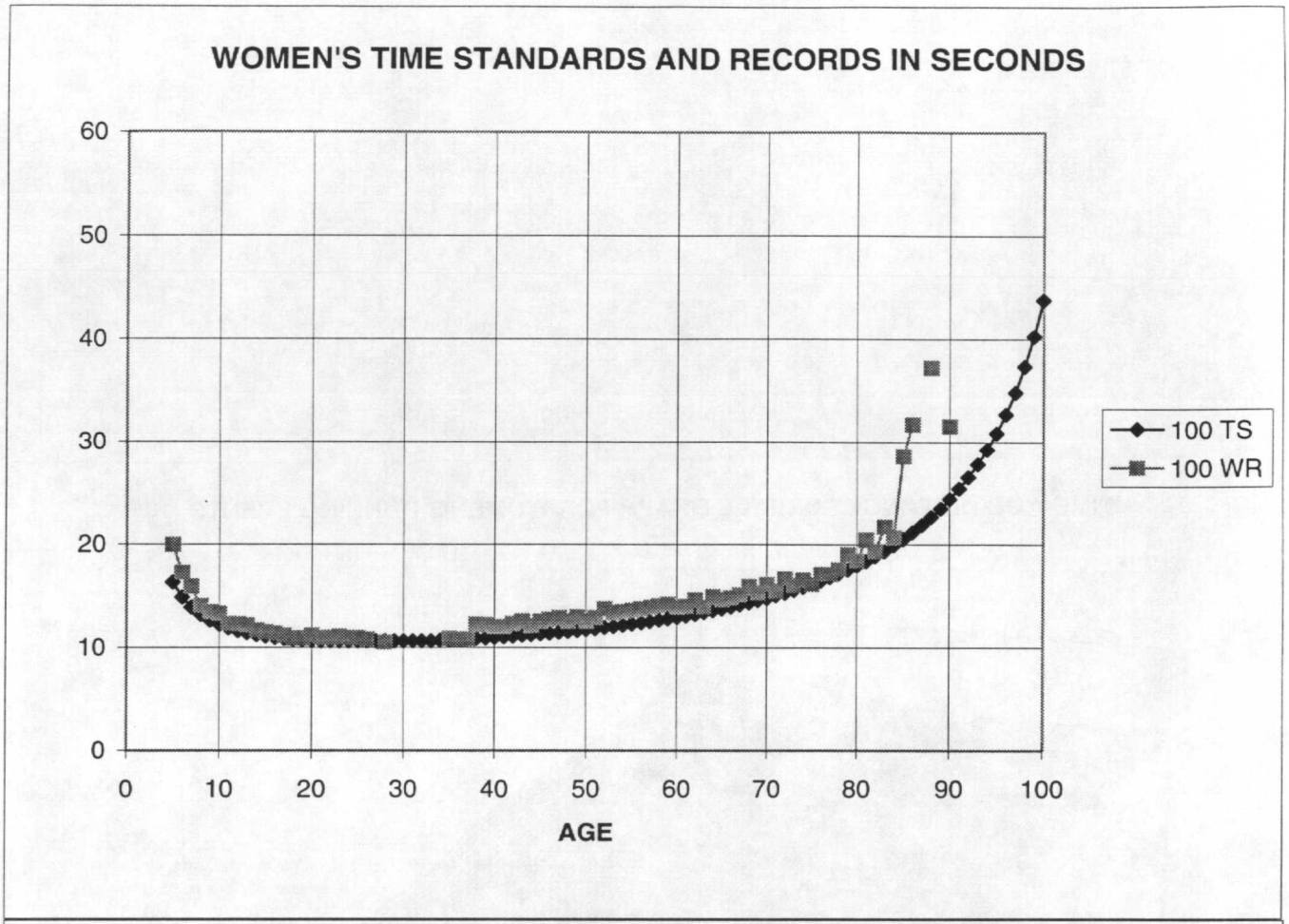

TIME-AGE-DISTANCE SURFACE GRAPH FOR WOMEN'S RUNNING EVENTS
DISTANCE
100K
30K TS
15K TS
8K TS
1500 TS
600 TS
200 TS
50 TS
AGE
8
18
28
38
48
58
68
78
88
98
SECONDS
1000000
100000
10000
1000
100
10
1

Figure 19


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
100 TS
100 WR

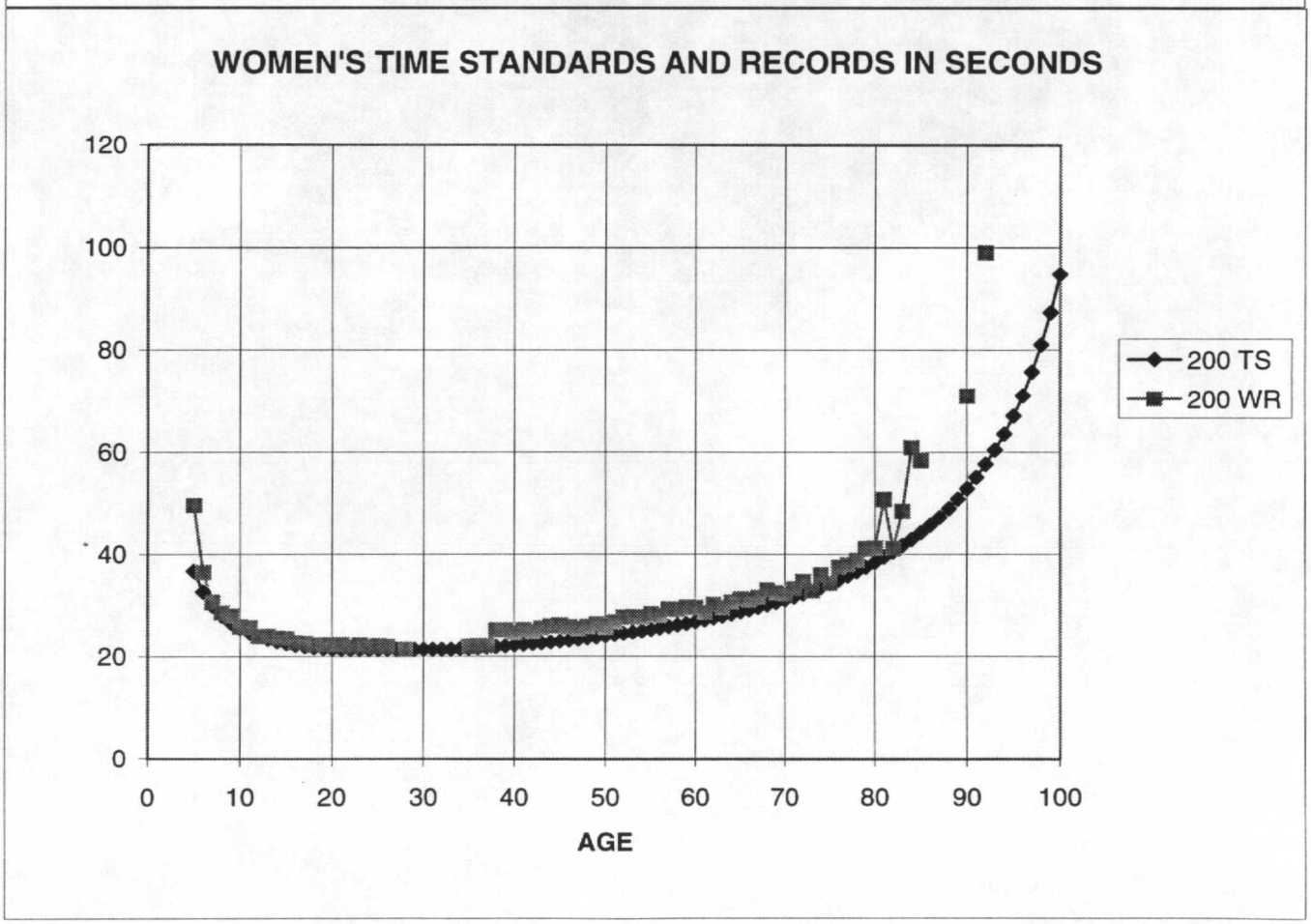
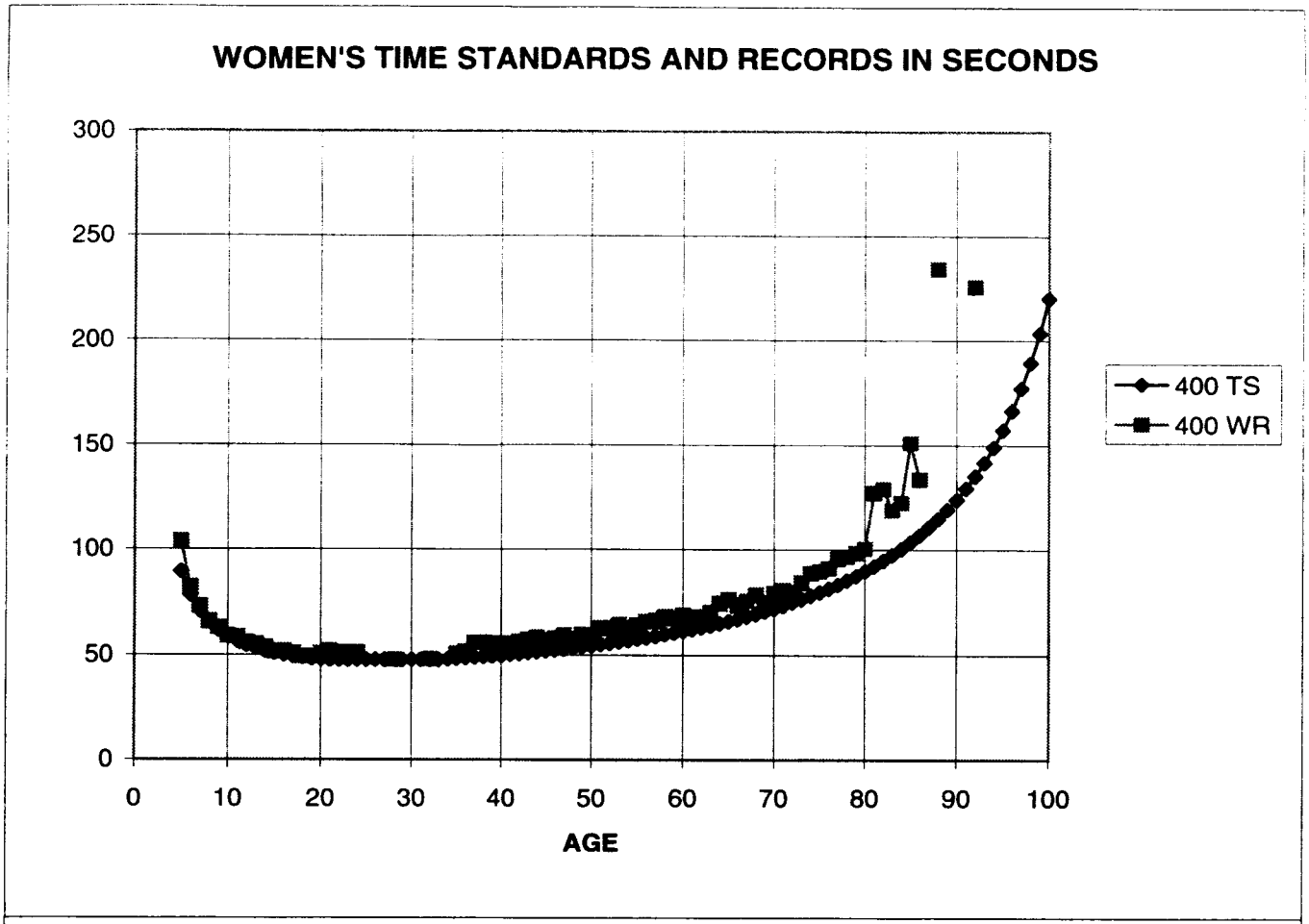

WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
200 TS
200 WR

Figure 20


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
300
250
200
150
100
50
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400 TS
400 WR

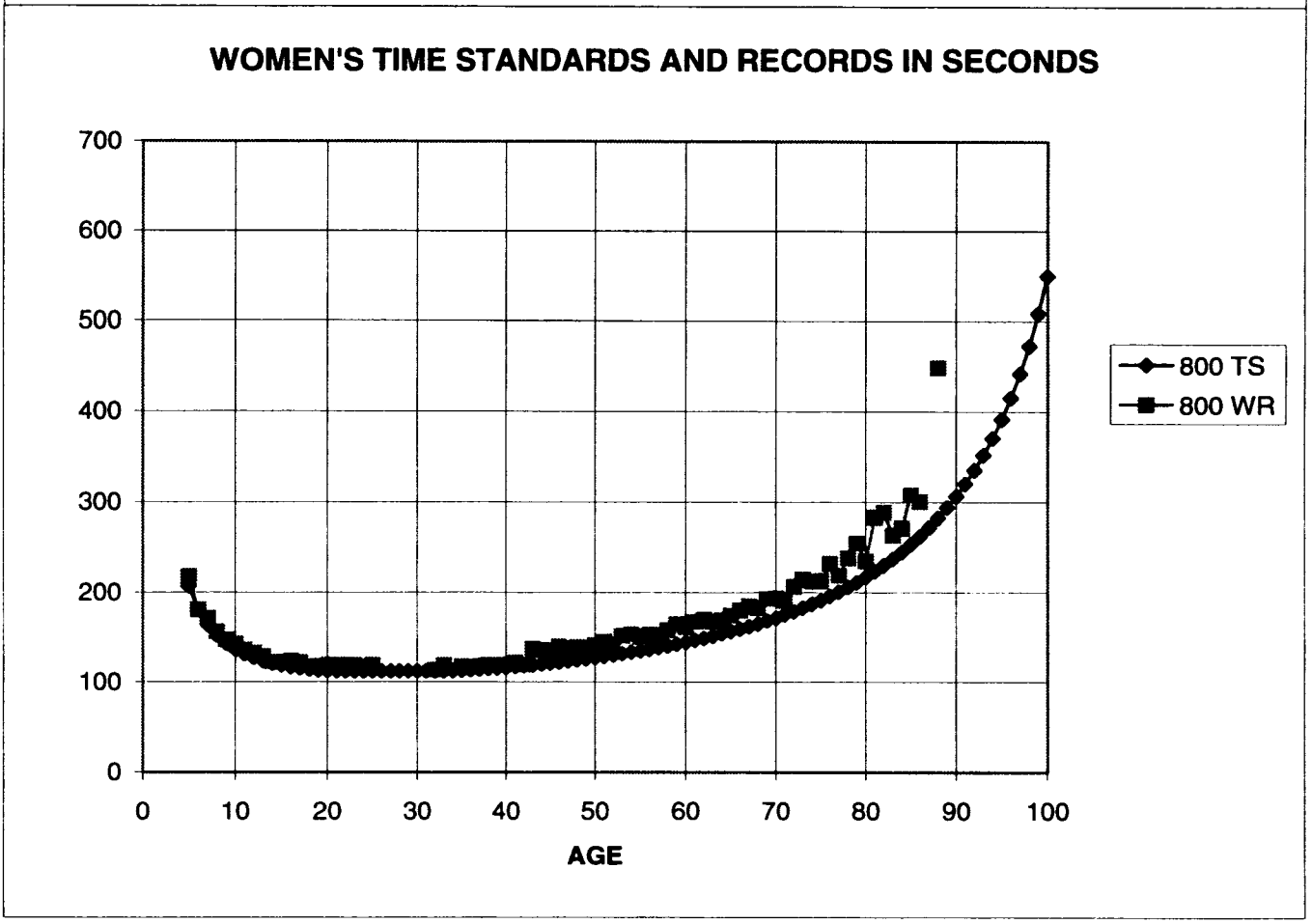
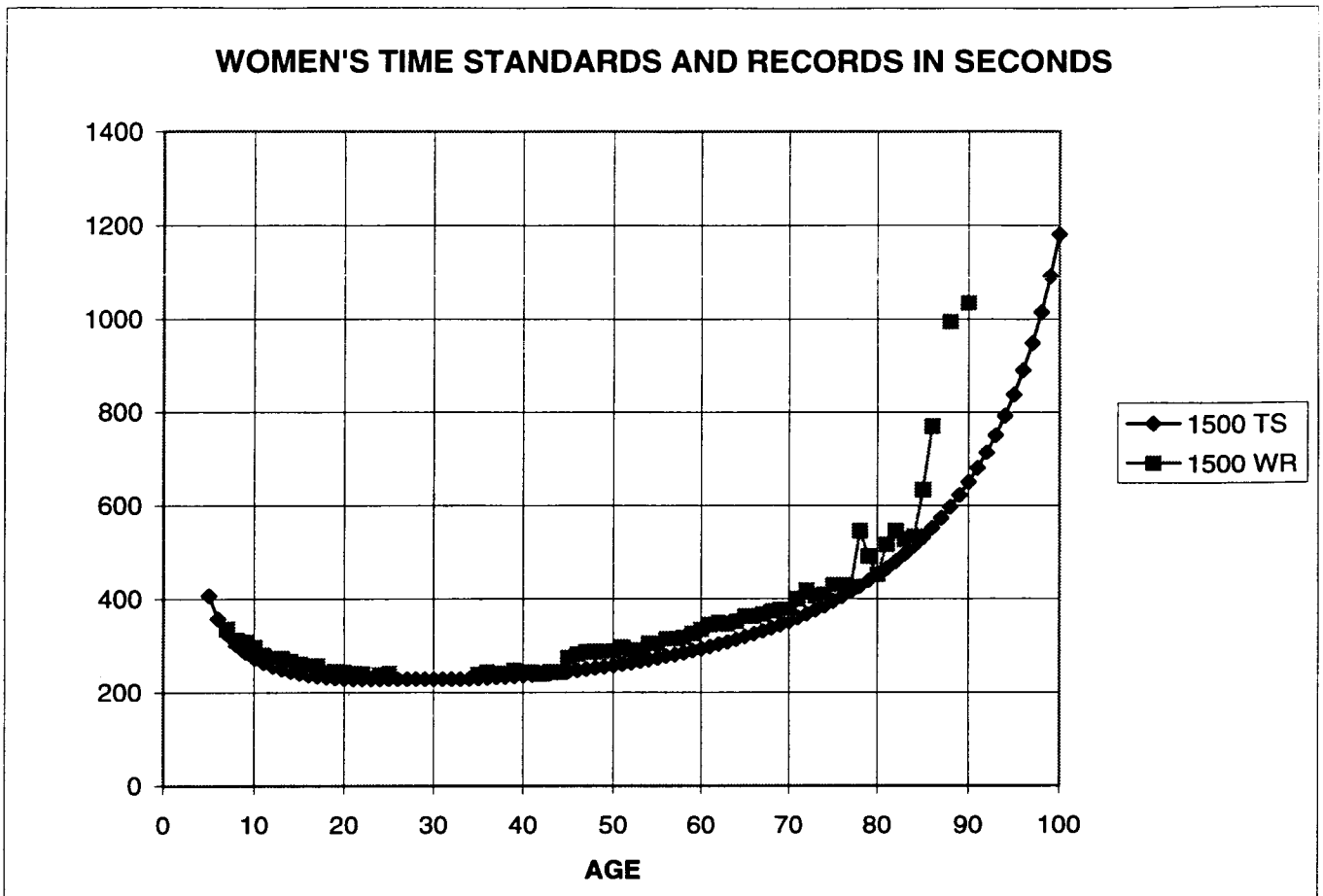

WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
AGE
800 TS
800 WR

Figure 21


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500 TS
1500 WR

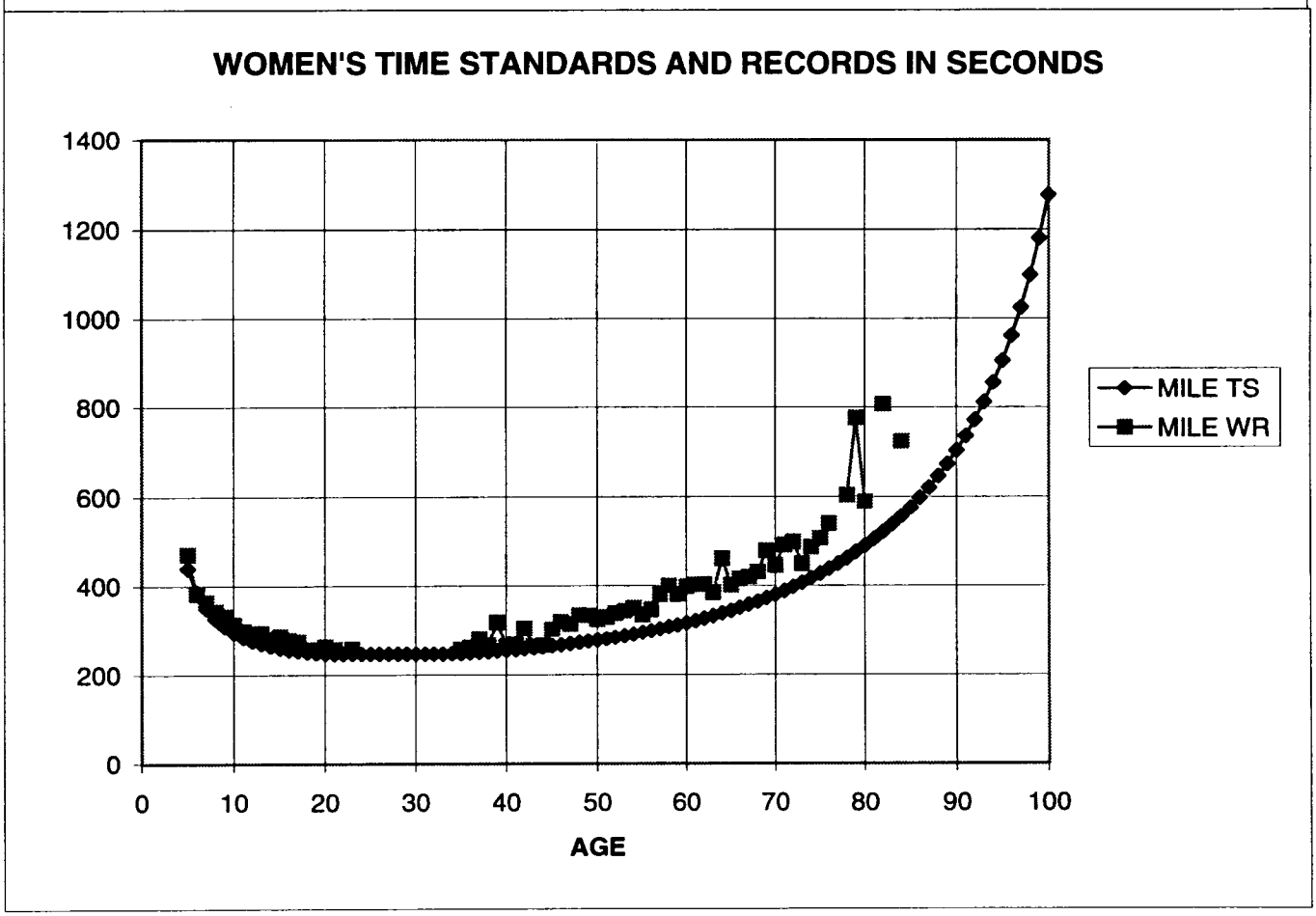
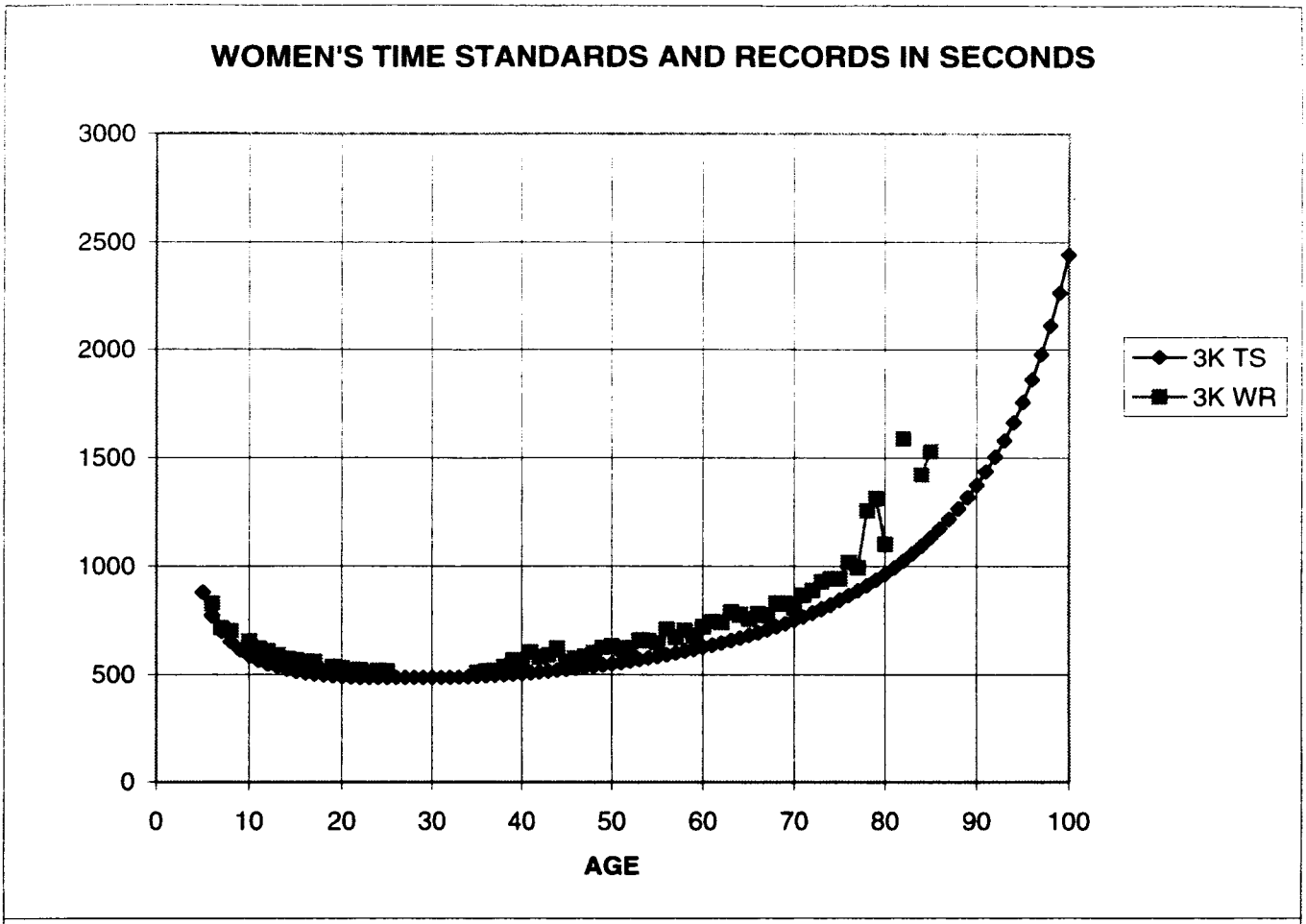

WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
MILE TS
MILE WR

Figure 22


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K TS
3K WR

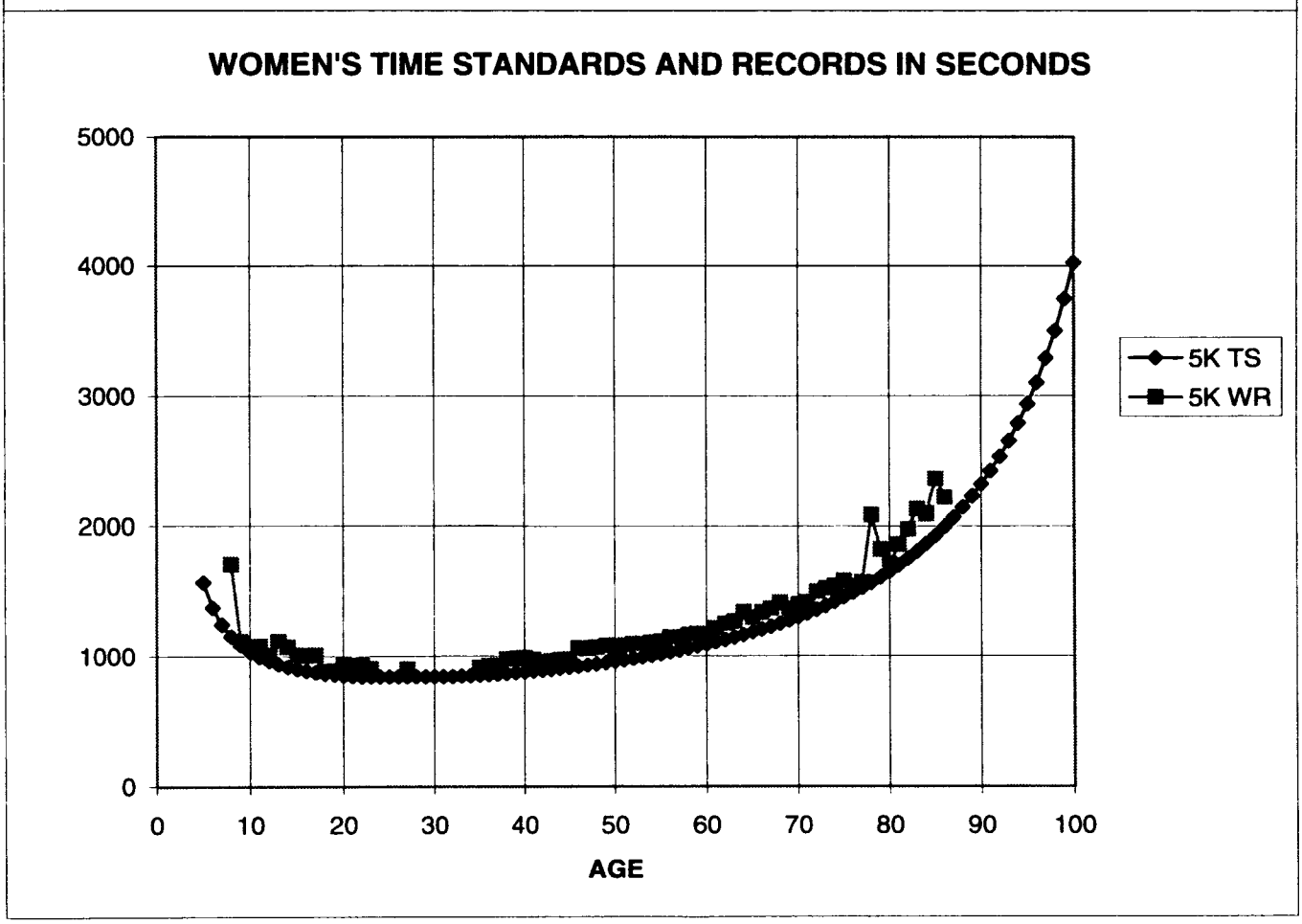
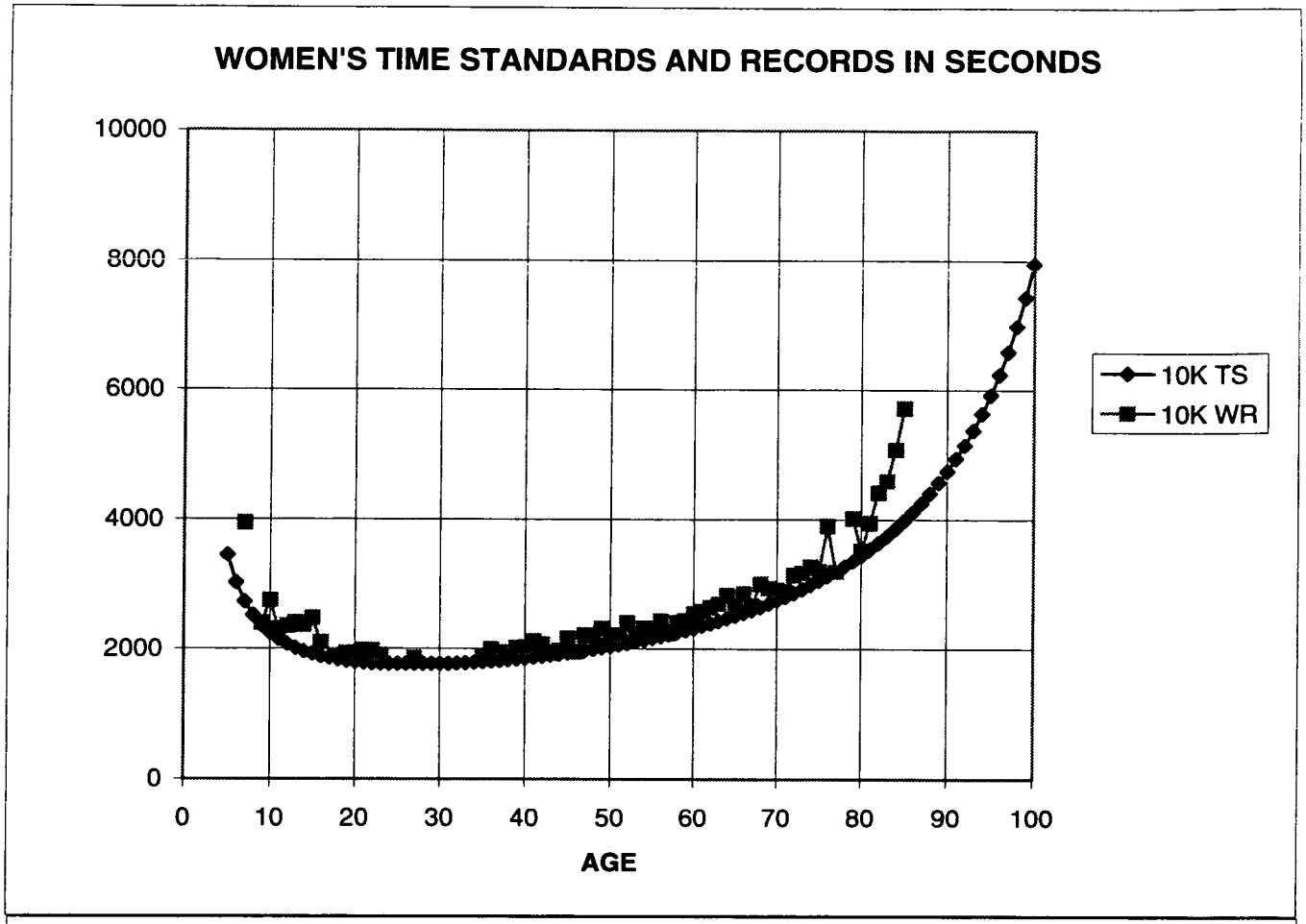
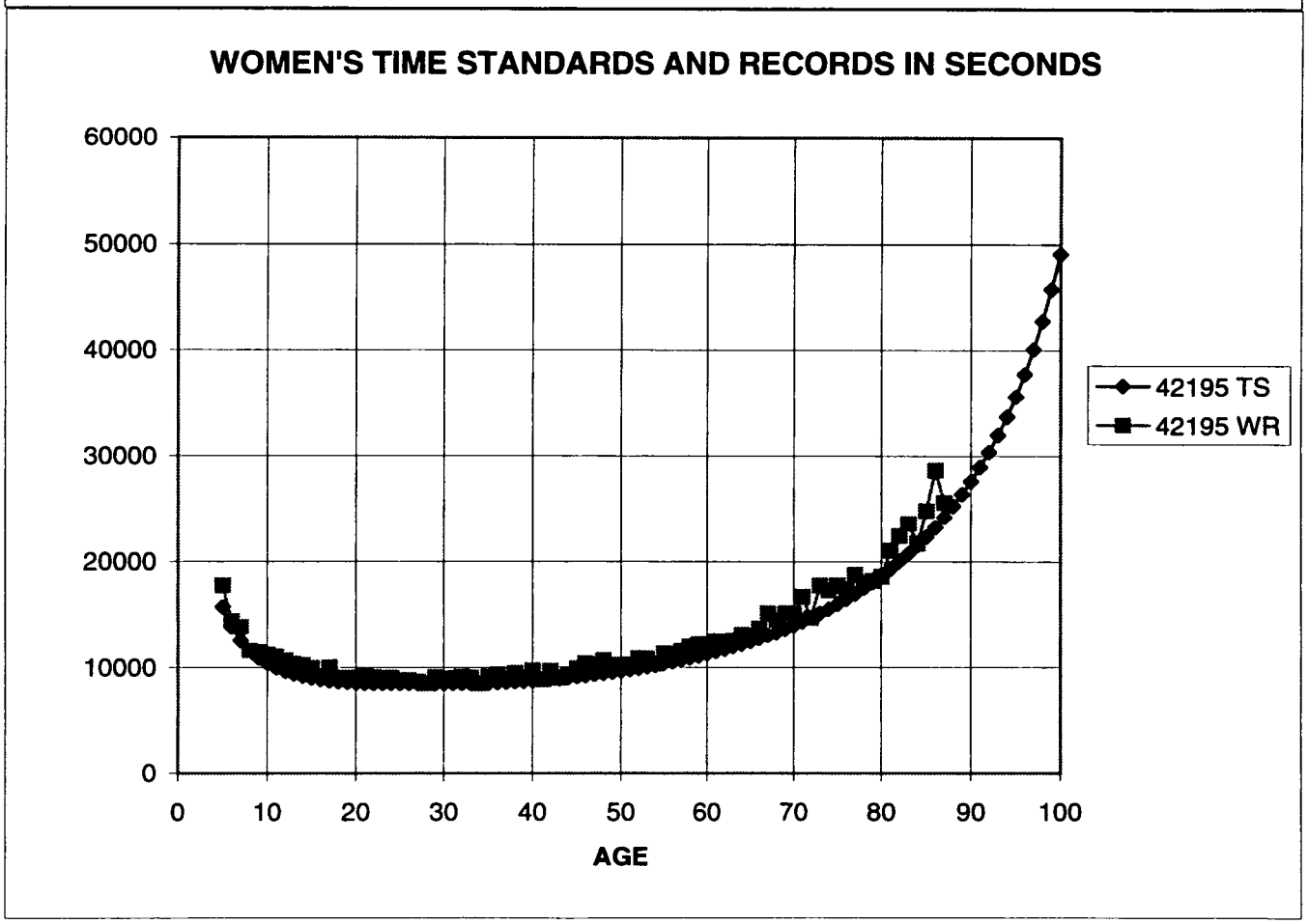

WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K TS
5K WR

Figure 23


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K TS
10K WR

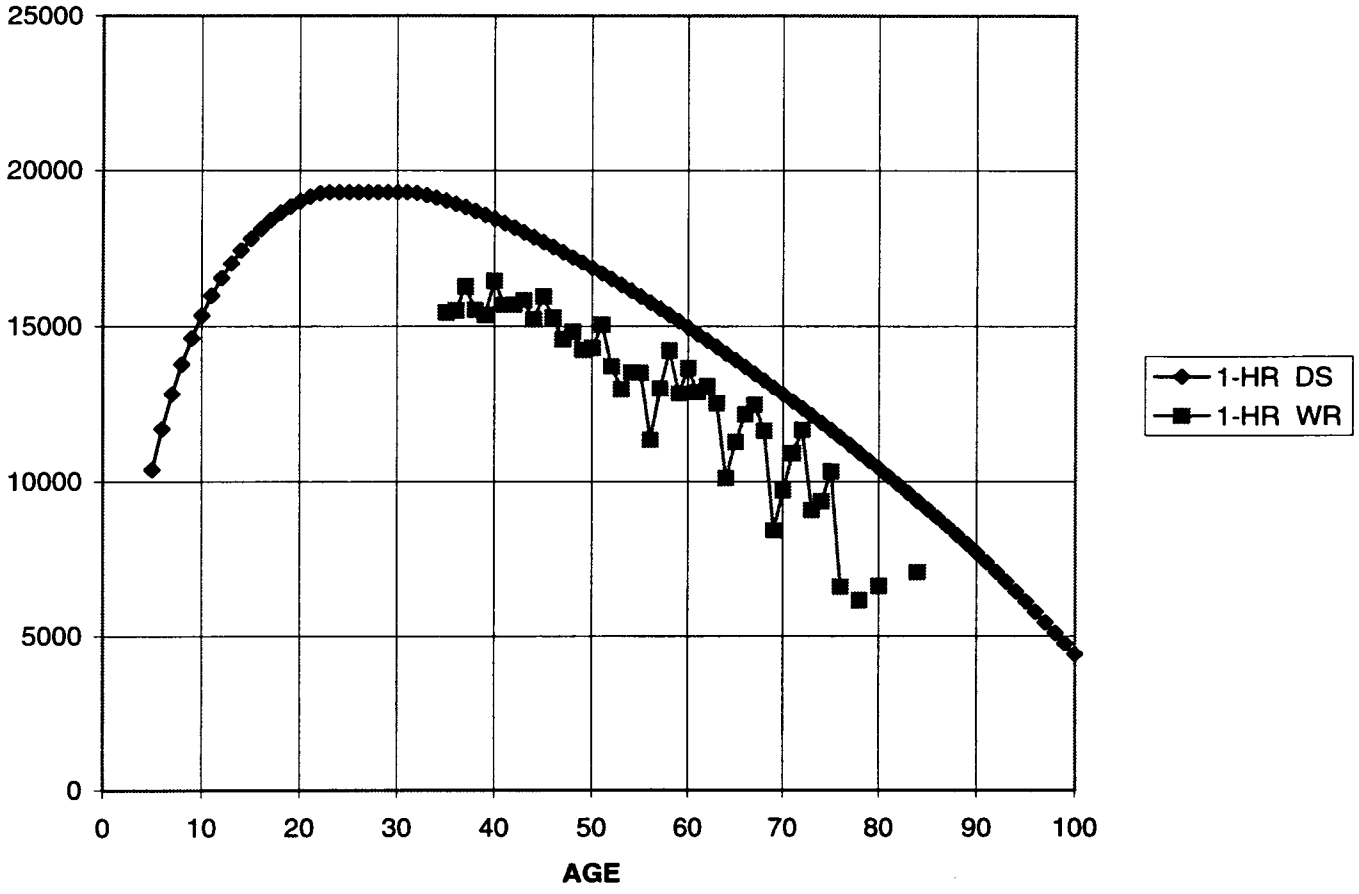

WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
60000
50000
40000
30000
20000
10000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
42195 TS
42195 WR

WOMEN'S 1-HOUR RUN (Meters)

AGE	1-HR DS	1-HR WR	1-HR PL%	1-HR AF
8	13781			0.7143
9	14618			0.7577
10	15347			0.7955
11	15983			0.8284
12	16538			0.8572
13	17022			0.8823
14	17445			0.9042
15	17812			0.9232
16	18130			0.9397
17	18404			0.9539
18	18638			0.9660
19	18837			0.9763
OC	19353	18084	93	1.0000
30	19293			1.0000
31	19293			1.0000
32	19275			0.9990
33	19199			0.9951
34	19117			0.9908
35	19023	15439	81	0.9860
36	18922	15512	82	0.9807
37	18812	16272	86	0.9751
38	18696	15530	83	0.9690
39	18572	15365	83	0.9626
40	18442	16460	89	0.9559
41	18307	15693	86	0.9489
42	18166	15693	86	0.9415
43	18019	15843	88	0.9339
44	17868	15227	85	0.9261
45	17712	15955	90	0.9180
46	17551	15285	87	0.9097
47	17387	14592	84	0.9012
48	17219	14826	86	0.8925
49	17047	14250	84	0.8836
50	16871	14305	85	0.8745
51	16693	15052	90	0.8652
52	16511	13718	83	0.8558
53	16326	12973	79	0.8462
54	16139	13520	84	0.8365
55	15949	13509	85	0.8266
56	15756	11337	72	0.8166
57	15560	13007	84	0.8065
58	15363	14225	93	0.7963
59	15162	12845	85	0.7859
60	14960	13659	91	0.7754
61	14755	12884	87	0.7648
62	14548	13075	90	0.7541
63	14339	12518	87	0.7432
64	14128	10110	72	0.7323
65	13914	11265	81	0.7212
66	13698	12159	89	0.7100
67	13480	12467	92	0.6987
68	13260	11631	88	0.6873
69	13038	8410	65	0.6758
70	12813	9704	76	0.6641
71	12585	10910	87	0.6523
72	12356	11667	94	0.6404
73	12124	9075	75	0.6284
74	11889	9355	79	0.6162
75	11651	10323	89	0.6039
76	11411	6590	58	0.5914
77	11167			0.5788
78	10921	6153	56	0.5660
79	10671			0.5531
80	10418 ,	6602	63	0.5400
81	10162			0.5267
82	9902			0.5132
83	9638			0.4996
84	9370	7048	75	0.4857
85	9098			0.4716
86	8822			0.4573
87	8541			0.4427
88	8255			0.4279
89	7965			0.4128
90	7669			0.3975
91	7368			0.3819
92	7061			0.3660
93	6749			0.3498
94	6431			0.3333
95	6107			0.3165
96	5778			0.2995
97	5443			0.2821
98	5102			0.2645
99	4757			0.2466
100	4407			0.2284

Figure 24

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS FOR 1-HOUR RUN



Age Handicapped Runs For Women

	Meters Run By Age		
AGE	100	200	400
8	73.3	144.4	286.1
9	76.6	150.8	299.8
10	79.3	156.2	311.6
11	81.7	160.9	321.7
12	83.7	164.9	330.4
13	85.3	168.3	337.9
14	86.8	171.3	344.4
15	88.0	173.8	350.0
16	89.0	176.0	354.8
17	89.9	177.9	359.0
18	90.7	179.4	362.6
19	91.3	180.8	365.6
OC	92.0	182.5	369.6
30	92.0	182.5	369.6
31	92.0	182.5	369.6
32	92.0	182.5	369.6
33	91.8	182.2	369.3
34	91.5	181.5	367.8
35	91.2	180.8	366.2
36	90.8	180.0	364.4
37	90.3	179.1	362.6
38	89.9	178.2	360.7
39	89.4	177.2	358.7
40	88.9	176.2	356.5
41	88.4	175.2	354.3
42	87.8	174.1	352.1
43	87.3	173.0	349.7
44	86.7	171.8	347.3
45	86.1	170.6	344.8
46	85.4	169.4	342.3
47	84.8	168.1	339.6
48	84.1	166.8	337.0
49	83.4	165.5	334.2
50	82.7	164.1	331.4
51	81.9	162.7	328.6
52	81.2	161.3	325.7
53	80.4	159.8	322.7
54	79.6	158.4	319.7
55	78.8	156.8	316.7
56	78.0	155.3	313.5
57	77.1	153.7	310.4
58	76.2	152.1	307.1
59	75.3	150.4	303.9
60	74.4	148.7	300.5
61	73.5	147.0	297.1
62	72.5	145.3	293.7
63	71.6	143.5	290.2
64	70.6	141.7	286.6
65	69.6	139.9	283.0
66	68.5	138.0	279.4
67	67.5	136.1	275.6
68	66.4	134.1	271.9
69	65.3	132.1	268.0
70	64.2	130.1	264.1
71	63.0	128.0	260.1
72	61.9	125.9	256.1
73	60.7	123.8	252.0
74	59.4	121.6	247.8
75	58.2	119.4	243.5
76	56.9	117.1	239.2
77	55.6	114.8	234.8
78	54.3	112.4	230.3
79	52.9	110.0	225.7
80	51.5	107.5	221.1
81	50.1	105.0	216.3
82	48.7	102.4	211.5
83	47.2	99.7	206.5
84	45.7	97.0	201.5
85	44.1	94.2	196.3
86	42.5	91.4	191.0
87	40.9	88.5	185.6
88	39.2	85.5	180.1
89	37.5	82.4	174.4
90	35.8	79.3	168.6
91	33.9	76.0	162.6
92	32.1	72.7	156.4
93	30.2	69.2	150.1
94	28.3	65.7	143.5
95	26.2	62.0	136.8
96	24.2	58.2	129.8
97	22.1	54.2	122.6
98	19.9	50.1	115.0
99	17.7	45.8	107.1
100	15.4	41.4	98.9

Figure 25

WOMEN'S DISTANCE STANDARDS IN METERS FOR FIXED TIME RUNS

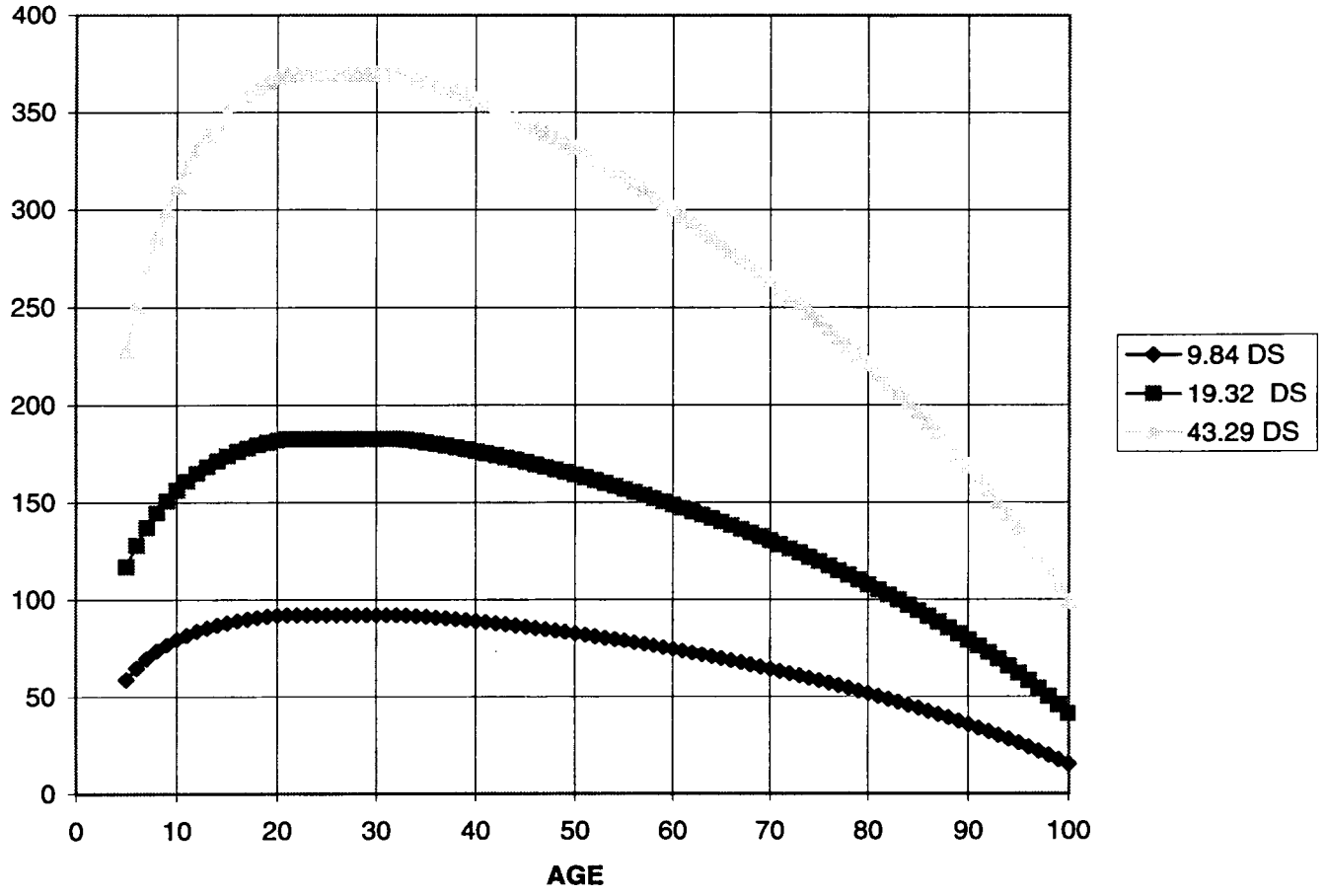


Figure 26

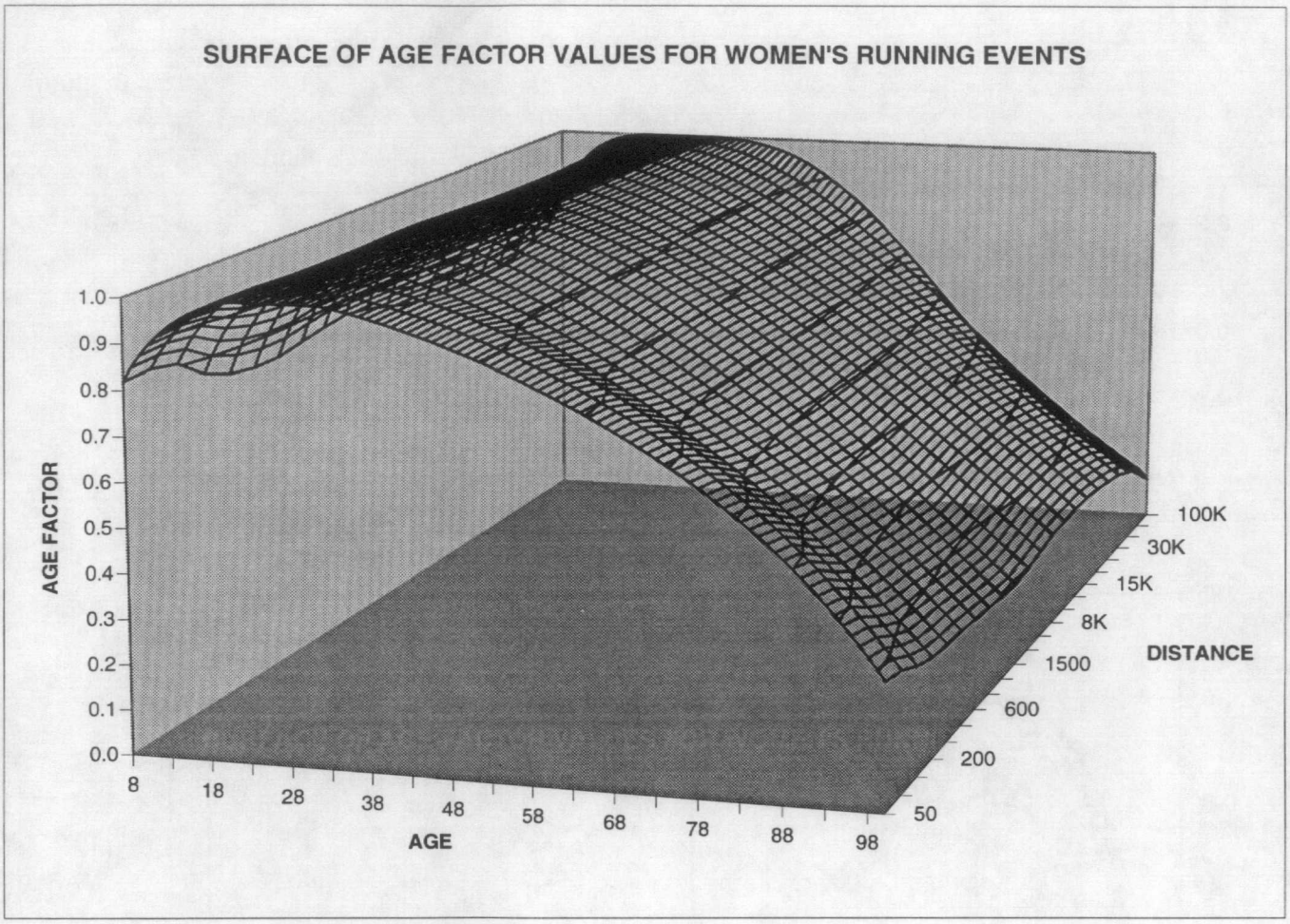
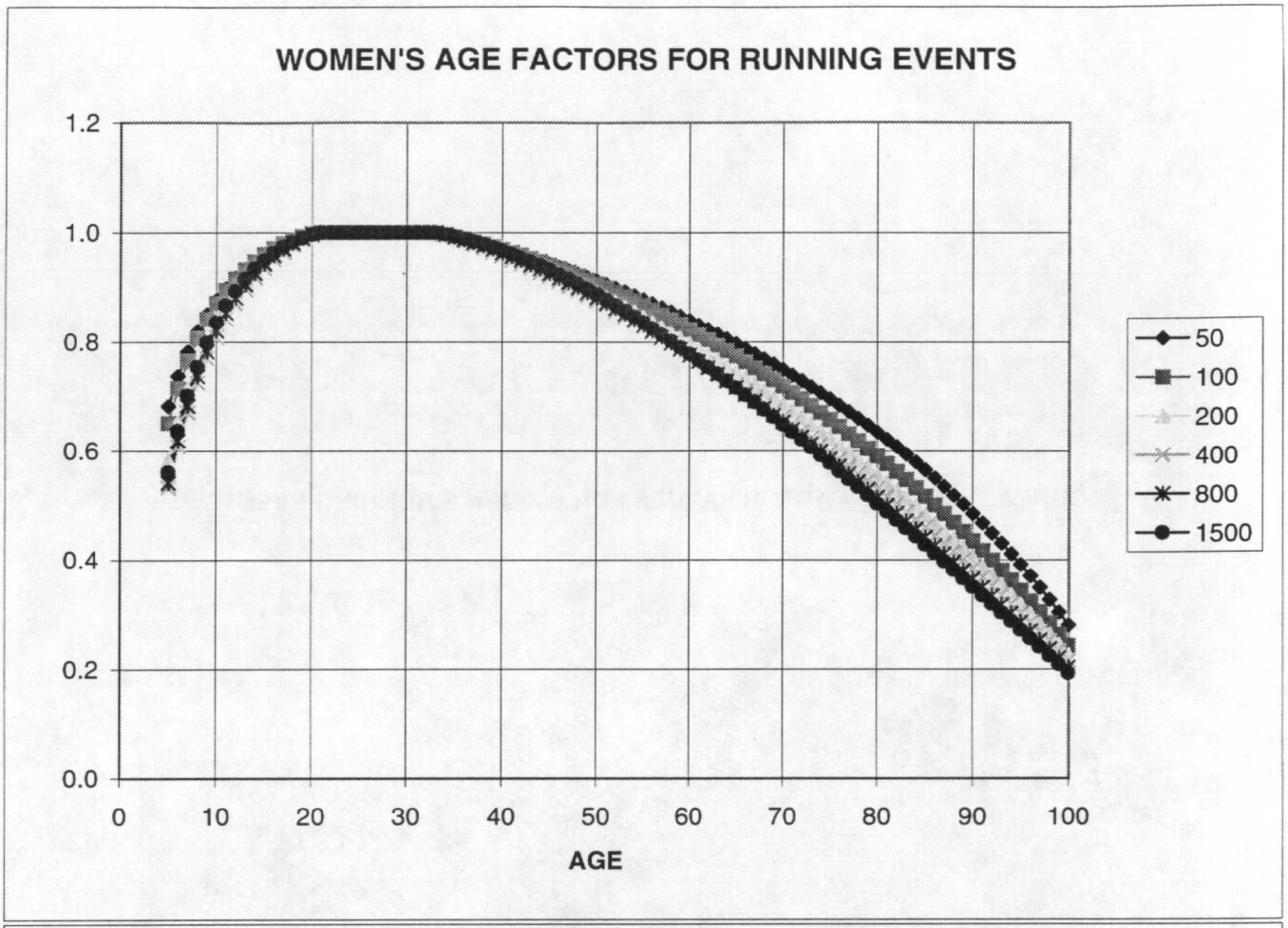

SURFACE OF AGE FACTOR VALUES FOR WOMEN'S RUNNING EVENTS
AGE FACTOR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
8
18
28
38
48
58
68
78
88
98
AGE
50
200
600
1500
8K
15K
30K
100K
DISTANCE

Figure 27


WOMEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
50
100
200
400
800
1500

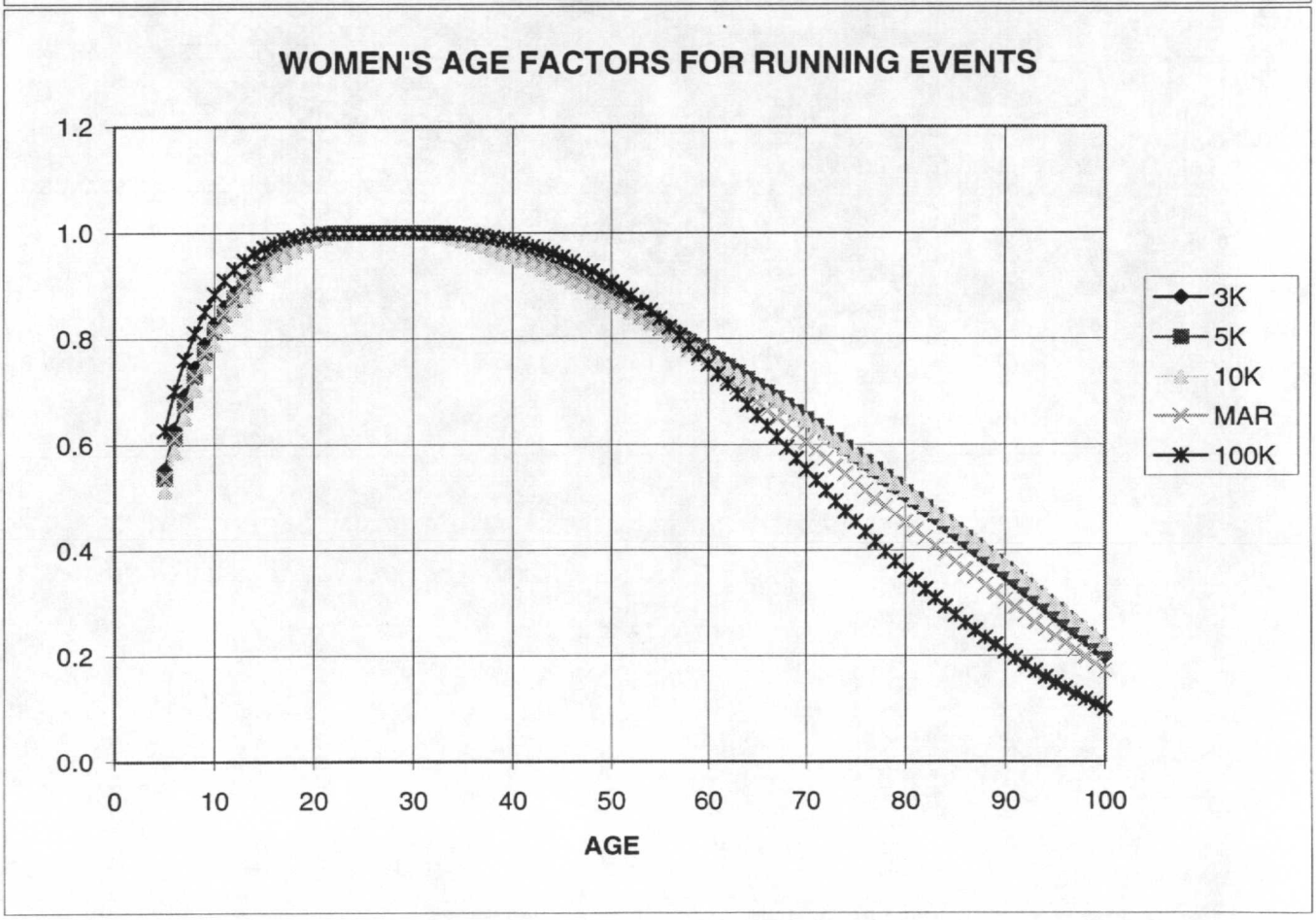
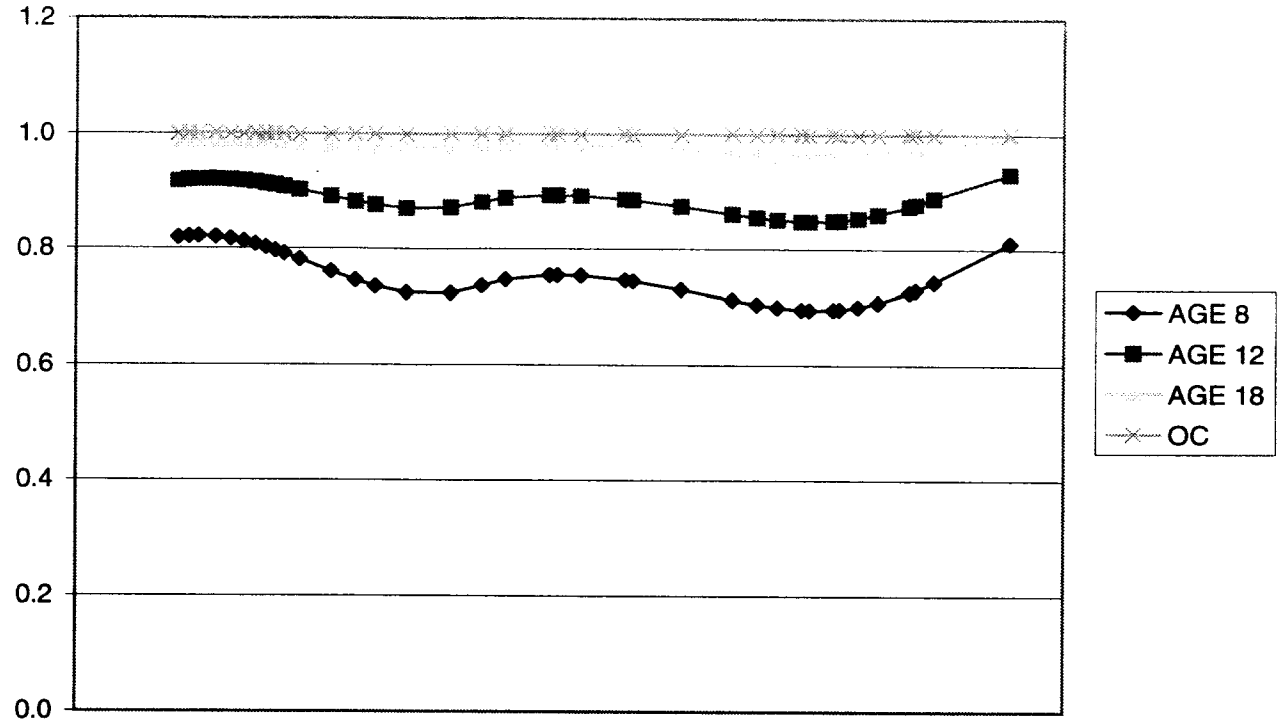

WOMEN'S AGE FACTORS FOR RUNNING EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K
5K
10K
MAR
100K

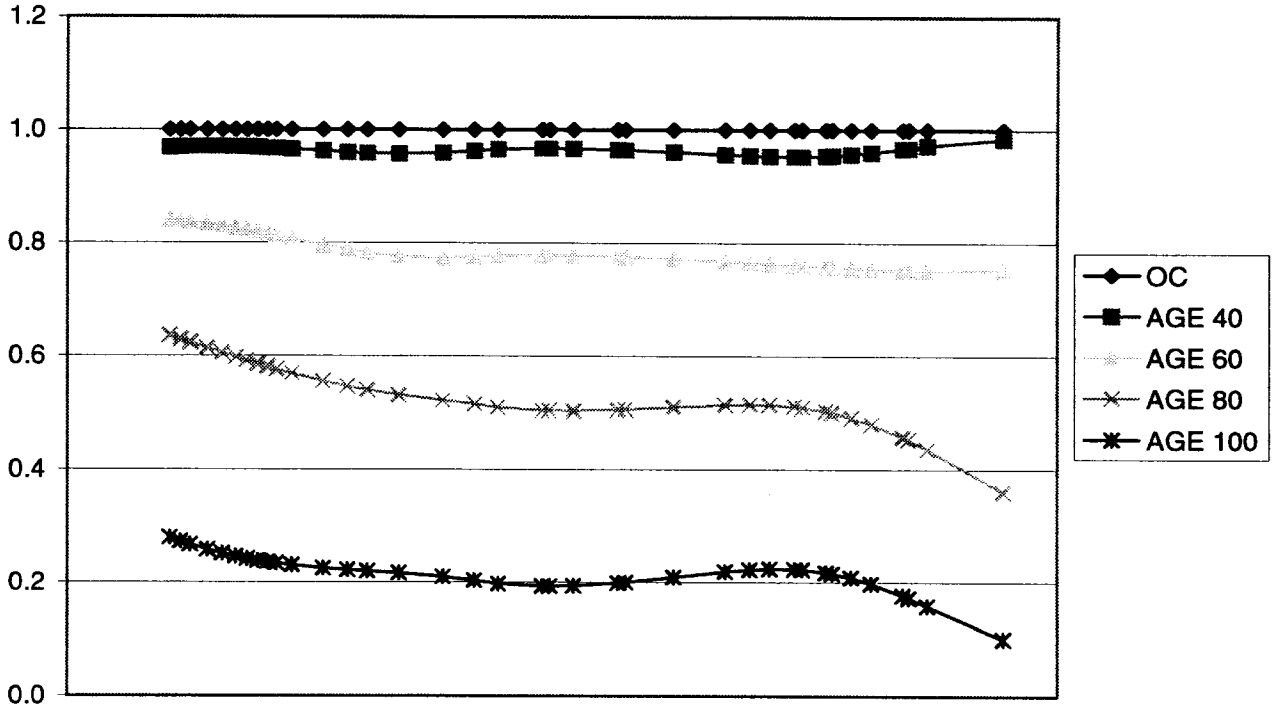
Figure 28

WOMEN'S AGE FACTORS FOR RUNNING EVENTS



DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

WOMEN'S AGE FACTORS FOR RUNNING EVENTS



DISTANCES PLOTTED (LOG SCALE) ARE: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

Chapter Two

Hurdle Events

Standards are provided for selected hurdle events most frequently included in sanctioned meets. The standards reflect times run by world record level hurdlers. The standards apply to hurdlers of all ability levels, however, through application of the performance level percentage concept.

The performance level percentage concept is that a hurdler's performance level is expressed as a percentage of the world record standard which is found by dividing the event standard by the hurdler's time for the event. To do this, the standard and the hurdler's time should both be expressed in seconds. A fifty-seven year old hurdler uses the standard listed for age 57. Hurdlers twenty to twenty-nine years old use the standard listed for OC which is the open class hurdler standard.

Calculating a hurdler's performance level percentage. Determine the PL% for a 53 year old woman who runs the 300/30" in 54.5 seconds. Find the standard on page 85 for the age 53 women's 300/30" hurdles which is listed as 47.30 seconds. Divide 47.30 by 54.5 obtaining a value of 0.8679 which is a percentage of 86.79%.

The primary purpose of performance level percentages is to facilitate comparison of performances. An individual hurdler's performances can be compared against themselves, or performances of many hurdlers can be compared. Since the standards for all events are adjusted to a world record level, comparison of performances for different events is valid. While this effort does not set standards as such for average hurdlers, that doesn't mean the standards aren't applicable to hurdlers of average ability regardless of what the term average hurdler may imply.

The standards are listed in hours, minutes and seconds format (h:m:s) with the steeplechase also listed in seconds. The listing in seconds is to facilitate calculating performance level percentage.

The hurdle time standards are on the next page. The event distance, hurdle height and age range listed are those set forth by WAVA/USATF specification.

Age-factor tables are provided on the same page with the standards. Age-factors are used to convert the performances of non-open class hurdlers (e.g., masters age hurdlers) to their equivalent performance as an open class effort in the corresponding open class hurdle event. Specifically, age-factors for hurdle events are factors which convert records for non-open class hurdlers to the value of the open class record. Hence age-factor is obtained by dividing the open class world record time by the time of the records for the other ages. For this book, age-factor is defined to be division of the open class time standard by the time standard for the other ages.

MEN'S HURDLE STANDARDS AND AGE FACTORS

	STANDARDS					AGE FACTORS		
AGE	SPRINT	INTER	STEEPLE	STEEPLE	AGE	SPRINT	INTER	STEEPLE
	110/39	400/36	3000/SC	3000/SC		110/39	400/36	3000/SC
			(H:M:S)	(Seconds)				
14	14.24	51.80	8:46.34	526.34	14	0.9065	0.9031	0.9038
15	13.84	50.60	8:35.58	515.58	15	0.9329	0.9246	0.9227
16	13.50	49.59	8:26.60	506.60	16	0.9562	0.9434	0.9390
17	13.22	48.74	8:19.08	499.08	17	0.9766	0.9599	0.9532
18	12.98	48.02	8:12.79	492.79	18	0.9943	0.9742	0.9654
19	12.79	47.42	8:07.53	487.53	19	1.0095	0.9865	0.9758
	110/42					110/42		
OC	12.91	46.78	7:55.72	475.72	OC	1.0000	1.0000	1.0000
	110/39					110/39		
30	12.48	46.78	7:55.72	475.72	30	1.0345	1.0000	1.0000
31	12.48	46.91	7:55.89	475.89	31	1.0345	0.9973	0.9997
32	12.51	47.23	7:57.86	477.86	32	1.0322	0.9905	0.9955
33	12.60	47.57	8:00.10	480.10	33	1.0246	0.9833	0.9909
34	12.70	47.94	8:02.59	482.59	34	1.0165	0.9758	0.9858
35	12.81	48.32	8:05.30	485.30	35	1.0077	0.9681	0.9803
36	12.93	48.73	8:08.24	488.24	36	0.9985	0.9601	0.9744
37	13.06	49.15	8:11.40	491.40	37	0.9888	0.9518	0.9681
38	13.19	49.59	8:14.76	494.76	38	0.9787	0.9433	0.9615
39	13.33	50.05	8:18.34	498.34	39	0.9683	0.9347	0.9546
40	13.48	50.53	8:22.13	502.13	40	0.9575	0.9259	0.9474
41	13.64	51.02	8:26.12	506.12	41	0.9464	0.9169	0.9399
42	13.81	51.53	8:30.32	510.32	42	0.9350	0.9078	0.9322
43	13.98	52.07	8:34.74	514.74	43	0.9233	0.8985	0.9242
44	14.17	52.62	8:39.37	519.37	44	0.9114	0.8891	0.9160
45	14.36	53.19	8:44.23	524.23	45	0.8992	0.8795	0.9075
46	14.56	53.78	8:49.31	529.31	46	0.8869	0.8698	0.8987
47	14.77	54.39	8:54.63	534.63	47	0.8743	0.8600	0.8898
48	14.98	55.03	9:00.20	540.20	48	0.8616	0.8501	0.8806
49	15.21	55.69	9:06.02	546.02	49	0.8487	0.8400	0.8712
	100/36	400/33				100/36	400/33	
50	13.03	53.78	9:12.11	552.11	50	0.9906	0.8699	0.8616
51	13.21	54.35	9:18.48	558.48	51	0.9771	0.8607	0.8518
52	13.40	54.95	9:25.14	565.14	52	0.9634	0.8513	0.8418
53	13.60	55.57	9:32.11	572.11	53	0.9495	0.8419	0.8315
54	13.80	56.21	9:39.40	579.40	54	0.9353	0.8323	0.8210
55	14.02	56.87	9:47.04	587.04	55	0.9210	0.8226	0.8104
56	14.24	57.56	9:55.05	595.05	56	0.9065	0.8128	0.7995
57	14.48	58.27	10:03.44	603.44	57	0.8918	0.8028	0.7883
58	14.72	59.01	10:12.25	612.25	58	0.8769	0.7927	0.7770
59	14.98	59.79	10:21.51	621.51	59	0.8618	0.7824	0.7654
	100/33	300/30	2000/SC	2000/SC		100/33	300/30	2000/SC
60	13.64	41.35	6:50.44	410.44	60	0.9462	1.1314	1.1590
61	13.82	41.85	6:56.56	416.56	61	0.9344	1.1178	1.1420
62	14.00	42.38	7:02.99	422.99	62	0.9222	1.1039	1.1247
63	14.19	42.93	7:09.73	429.73	63	0.9098	1.0897	1.1070
64	14.39	43.51	7:16.82	436.82	64	0.8971	1.0752	1.0890
65	14.60	44.11	7:24.30	444.30	65	0.8841	1.0604	1.0707
66	14.83	44.75	7:32.19	452.19	66	0.8708	1.0453	1.0520
67	15.06	45.43	7:40.53	460.53	67	0.8571	1.0298	1.0330
68	15.31	46.14	7:49.36	469.36	68	0.8431	1.0139	1.0135
69	15.58	46.89	7:58.74	478.74	69	0.8286	0.9976	0.9937
	80/30					80/30		
70	12.24	47.69	8:08.72	488.72	70	1.0545	0.9809	0.9734
71	12.45	48.54	8:19.35	499.35	71	1.0371	0.9637	0.9527
72	12.67	49.45	8:30.72	510.72	72	1.0192	0.9460	0.9315
73	12.90	50.42	8:42.90	522.90	73	1.0007	0.9277	0.9098
74	13.15	51.47	8:55.98	535.98	74	0.9816	0.9089	0.8876
75	13.42	52.59	9:10.08	550.08	75	0.9618	0.8895	0.8648
76	13.72	53.80	9:25.32	565.32	76	0.9413	0.8695	0.8415
77	14.03	55.11	9:41.86	581.86	77	0.9200	0.8488	0.8176
78	14.38	56.54	9:59.86	599.86	78	0.8979	0.8274	0.7930
79	14.76	58.10	10:19.54	619.54	79	0.8749	0.8052	0.7679
80	15.17	59.81	10:41.16	641.16	80	0.8510	0.7821	0.7420
81	15.63	1:01.70	11:05.01	665.01	81	0.8260	0.7582	0.7154
82	16.14	1:03.79	11:31.48	691.48	82	0.8001	0.7334	0.6880
83	16.70	1:06.12	12:01.01	721.01	83	0.7729	0.7075	0.6598
84	17.34	1:08.74	12:34.20	754.20	84	0.7445	0.6805	0.6308
85	18.06	1:11.70	13:11.76	791.76	85	0.7148	0.6524	0.6008
86	18.88	1:15.08	13:54.64	834.64	86	0.6837	0.6230	0.5700
87	19.83	1:18.98	14:44.07	884.07	87	0.6510	0.5923	0.5381
88	20.94	1:23.52	15:41.69	941.69	88	0.6167	0.5601	0.5052
89	22.24	1:28.88	16:49.72	1009.72	89	0.5805	0.5263	0.4711
90	23.80	1:35.30	18:11.29	1091.29	90	0.5424	0.4909	0.4359

A special set of youth standards has been prepared for boys which includes some events whose records are not included in the listing of World Junior Men All-Time Age Year Records. However, only events which were already fitted from masters age record data could be included. For that reason, events such as the 80/30", 100/33" and 300/30" were included in the special youth summary, but events such as the 180y/30" and 200/30" were not.

The youth hurdle standards are at the next page.

BOY'S HURDLE TIME STANDARDS

AGE	80/30	100/33	100/36	110/39	110/42	300/30	300/33	400/33	400/36	2K/SC	3K/SC
14	9.49	11.80	12.19	14.24	14.58	35.53	38.40	50.49	51.80	349.5	526.3
15	9.33	11.58	11.88	13.84	14.19	34.68	37.15	49.30	50.60	341.1	515.6
16	9.19	11.39	11.62	13.50	13.87	33.95	36.07	48.29	49.59	333.9	506.6
17	9.07	11.23	11.41	13.22	13.61	33.32	35.13	47.42	48.74	327.8	499.1
18	8.97	11.10	11.22	12.98	13.39	32.77	34.30	46.68	48.02	322.5	492.8
19	8.88	10.98	11.07	12.79	13.22	32.29	33.56	46.04	47.42	318.1	487.5
OC					12.91				46.78		475.7

AGE	2K/SC	3K/SC
14	5:49.5	8:46.3
15	5:41.1	8:35.6
16	5:33.9	8:26.6
17	5:27.8	8:19.1
18	5:22.5	8:12.8
19	5:18.1	8:07.5
OC		7:55.72

It is not expected that men and women over ninety years of age will be running hurdle races, and no competitive records are available for such events. Therefore, standards and age factors for hurdling are listed only for the age span of 14 to 90 years.

Hurdle time standards are generated using the same time-age equation employed for runs and walks. The time-age equation must meet certain general requirements. It must be an equation that lends itself to direct parametric solution of coefficient and exponent values, and inherently has the shape or distribution of the data involved so that a minimum number of coefficients or exponents are required to form the curve. The benefit of this requirement is that a minimum number of data points suffice to obtain statistically good curve fits over the entire range of the curve. Curve shaping terms also are employed in the equations to mathematically proportion the resulting curve so that records for youths and masters can be fitted together to produce a single set of curve fitted standards for the entire, continuous age range of 14 to 90 years for any event. Only two time-age points are required to fit the time-age curve for any hurdle event. The time-distance equations of the runs and walks, however, do not apply for hurdle events. Hurdle event time standards are compared to running event time standards of the same distance in order to generate hurdle factor values. Hurdle factor values are used in generating standards for a family of hurdle events (different hurdle heights but same event distance), and for ensuring that no hurdle time standard results which is faster than the standard of its flat distance.

Just as the running event time standards are verified in the rate domain as well as in the time domain, so are the hurdle event standards. The guiding rule for hurdle rates is that for hurdle events of the same distance but of different hurdle heights, the lower hurdle event is run at a faster rate than is the higher hurdle event. In addition, hurdle factors always increase in severity with age for masters age hurdlers. Thus for verification purposes, the standard for older ages for a higher hurdle height can not be faster than the standard for younger ages for a lower hurdle height when the event distance is the same. This condition is a requirement of the time standards generated for hurdle events, and is the reason that standards are calculated over the entire age range of 14 to 90 years for curve fitting purposes. It is not expected that any 90 year old will ever run the 110/42" or the 110/39" hurdles, but such constructed times have mathematical meaning for curve crossover purposes, even though they have no meaning in the physical sense.

The hurdle time standards are computer generated as follows. Existing time-age equations remain or are pre-loaded in the hurdle event portion of the computer program. New youth, masters age and open class world records are manually entered into the records data base and the program then identifies all data base records which are better (faster) than the existing time standards. For each event requiring refitting, selected records are manually entered into the program (one for each event), whereupon the program then produces a new set of time standards for all events, and in addition the program then identifies (if there are any) all data base records which are still better than the newly generated time standards. As may be required, selected records are again manually entered into the program (one for each event to be refitted), causing the program to again produce a new set of time standards for all events, and identify any data base records which are still better than the newly generated time standards. This process is repeated until suitable standards are obtained. (This is the algorithm that removes arbitrariness or bias from the best record selection process.) The hurdle rate curves are then manually evaluated to determine if the rate requirements have been met, and if required, adjustments are made; age-factor values and their distribution are also evaluated for suitability.

The process described above is separately carried out for each family of hurdle events. This allows hurdle factor values to be analyzed and readjusted as may be required for each family. Thus individual events are dependently related within a family of hurdle events and as a result the standards are not generated on a stand alone basis.

January 26, 1999

Al Sheahen
P.O. Box 2372
Van Nuys, CA 91404

Re: T&F Standards and Age Factors

Dear Al,

Thanks for your response last year when I sent you my Standards and Age Factors book for 1998. I said I would send you the updated versions for 1999 and 2000 when available, so, please find enclosed the updated book of Standards and Age Factors for 1999. I will also try to send you the updated version for 2000 when available.

As previously offered, you may use these as you see fit in regard to updating future WAVA Age-Graded Tables; using them in their entirety or extracting selected portions.

Printer-original pages of the book's standards and age factors are also included as separate sheets.

Records used were those on the books as of 1 October 1998.

Best regards,

Chuck Phillips

5130 Nebraska Ave NW
Washington, DC 20008
(202) 244-6321

Track and Field Event

Performance Standards

and

Age Factors

1999 version

C. A. Phillips

MEN'S TRACK RUNNING EVENT STANDARDS IN H;M;S

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	6.65	7.27	7.89	13.18	27.49	42.47	58.28	1:34.44	2:19.97	3:00.08	4:43.86	5:07.01	6:30.69	10:10.31	10:59.18
9	6.24	6.82	7.40	12.29	25.71	39.98	55.18	1:29.76	2:12.11	2:50.06	4:28.04	4:49.87	6:08.71	9:35.24	10:21.13
10	6.02	6.55	7.10	11.68	24.37	38.08	52.79	1:26.14	2:06.00	2:42.27	4:15.78	4:36.59	5:51.71	9:08.24	9:51.86
11	5.87	6.38	6.90	11.23	23.32	36.57	50.90	1:23.26	2:01.13	2:36.07	4:06.03	4:26.03	5:38.21	8:46.86	9:28.71
12	5.78	6.27	6.76	10.88	22.49	35.36	49.37	1:20.93	1:57.17	2:31.03	3:58.11	4:17.46	5:27.27	8:29.58	9:10.01
13	5.72	6.18	6.66	10.62	21.82	34.37	48.11	1:19.00	1:53.88	2:26.87	3:51.59	4:10.40	5:18.26	8:15.38	8:54.64
14	5.67	6.12	6.58	10.40	21.26	33.54	47.05	1:17.39	1:51.13	2:23.38	3:46.14	4:04.51	5:10.75	8:03.55	8:41.84
15	5.64	6.08	6.52	10.23	20.79	32.83	46.16	1:16.04	1:48.80	2:20.44	3:41.55	3:59.55	5:04.42	7:53.59	8:31.07
16	5.61	6.05	6.48	10.10	20.39	32.23	45.40	1:14.89	1:46.81	2:17.93	3:37.66	3:55.34	4:59.06	7:45.16	8:21.95
17	5.59	6.02	6.45	9.98	20.05	31.72	44.75	1:13.91	1:45.10	2:15.79	3:34.34	3:51.75	4:54.49	7:37.97	8:14.18
18	5.58	6.00	6.42	9.89	19.76	31.28	44.19	1:13.07	1:43.63	2:13.96	3:31.50	3:48.69	4:50.58	7:31.83	8:07.54
19	5.57	5.99	6.42	9.84	19.51	30.89	43.71	1:12.35	1:42.36	2:12.38	3:29.08	3:46.07	4:47.25	7:26.59	8:01.86
OC	5.56	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
30	5.57	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
31	5.57	5.99	6.42	9.84	19.32	30.53	43.29	1:11.79	1:41.11	2:10.75	3:26.00	3:42.62	4:42.39	7:17.65	7:51.97
32	5.58	6.00	6.42	9.84	19.40	30.66	43.37	1:11.79	1:41.11	2:10.75	3:26.13	3:42.80	4:42.77	7:18.54	7:52.96
33	5.58	6.00	6.43	9.86	19.52	30.84	43.61	1:12.13	1:41.73	2:11.50	3:27.31	3:44.07	4:44.36	7:20.97	7:55.57
34	5.59	6.01	6.44	9.90	19.65	31.04	43.86	1:12.50	1:42.38	2:12.31	3:28.55	3:45.41	4:46.04	7:23.52	7:58.32
35	5.60	6.03	6.45	9.95	19.77	31.23	44.12	1:12.90	1:43.05	2:13.16	3:29.85	3:46.80	4:47.79	7:26.20	8:01.20
36	5.61	6.04	6.47	9.99	19.90	31.43	44.38	1:13.30	1:43.73	2:14.03	3:31.19	3:48.25	4:49.62	7:28.98	8:04.19
37	5.62	6.05	6.49	10.04	20.03	31.63	44.64	1:13.72	1:44.44	2:14.93	3:32.59	3:49.76	4:51.51	7:31.87	8:07.30
38	5.63	6.07	6.50	10.09	20.16	31.83	44.91	1:14.15	1:45.16	2:15.85	3:34.03	3:51.31	4:53.47	7:34.86	8:10.51
39	5.64	6.08	6.52	10.14	20.30	32.04	45.19	1:14.59	1:45.89	2:16.80	3:35.51	3:52.91	4:55.49	7:37.94	8:13.82
40	5.65	6.10	6.54	10.20	20.43	32.25	45.47	1:15.04	1:46.64	2:17.78	3:37.04	3:54.56	4:57.57	7:41.11	8:17.23
41	5.67	6.12	6.57	10.25	20.57	32.46	45.75	1:15.50	1:47.41	2:18.77	3:38.61	3:56.26	4:59.71	7:44.38	8:20.75
42	5.68	6.14	6.59	10.31	20.71	32.68	46.04	1:15.97	1:48.19	2:19.79	3:40.23	3:58.01	5:01.92	7:47.74	8:24.36
43	5.70	6.16	6.61	10.36	20.85	32.89	46.33	1:16.45	1:48.99	2:20.84	3:41.89	3:59.80	5:04.18	7:51.20	8:28.07
44	5.72	6.18	6.64	10.42	20.99	33.11	46.63	1:16.95	1:49.80	2:21.91	3:43.59	4:01.64	5:06.51	7:54.75	8:31.88
45	5.74	6.20	6.67	10.49	21.13	33.34	46.94	1:17.45	1:50.63	2:23.01	3:45.35	4:03.53	5:08.90	7:58.40	8:35.80
46	5.76	6.22	6.69	10.55	21.28	33.57	47.25	1:17.97	1:51.48	2:24.13	3:47.14	4:05.48	5:11.36	8:02.15	8:39.83
47	5.78	6.25	6.72	10.61	21.43	33.80	47.57	1:18.50	1:52.35	2:25.29	3:48.99	4:07.47	5:13.89	8:06.00	8:43.97
48	5.80	6.27	6.75	10.68	21.58	34.03	47.89	1:19.05	1:53.23	2:26.47	3:50.89	4:09.53	5:16.49	8:09.96	8:48.22
49	5.82	6.30	6.78	10.75	21.73	34.27	48.22	1:19.60	1:54.14	2:27.68	3:52.84	4:11.64	5:19.16	8:14.04	8:52.60
50	5.84	6.33	6.82	10.82	21.89	34.52	48.56	1:20.18	1:55.07	2:28.92	3:54.85	4:13.81	5:21.91	8:18.23	8:57.10
51	5.87	6.36	6.85	10.89	22.05	34.77	48.91	1:20.76	1:56.03	2:30.20	3:56.91	4:16.04	5:24.74	8:22.55	9:01.74
52	5.89	6.39	6.89	10.96	22.21	35.02	49.26	1:21.37	1:57.00	2:31.51	3:59.04	4:18.35	5:27.66	8:26.99	9:06.51
53	5.92	6.42	6.93	11.04	22.38	35.28	49.63	1:21.99	1:58.01	2:32.87	4:01.23	4:20.72	5:30.67	8:31.58	9:11.43
54	5.95	6.46	6.96	11.12	22.55	35.55	50.00	1:22.62	1:59.04	2:34.26	4:03.49	4:23.16	5:33.77	8:36.30	9:16.50
55	5.98	6.49	7.00	11.20	22.72	35.82	50.38	1:23.28	2:00.10	2:35.69	4:05.82	4:25.69	5:36.97	8:41.18	9:21.74
56	6.01	6.53	7.05	11.28	22.90	36.10	50.78	1:23.95	2:01.19	2:37.17	4:08.23	4:28.29	5:40.27	8:46.22	9:27.15
57	6.04	6.57	7.09	11.36	23.08	36.39	51.18	1:24.65	2:02.31	2:38.69	4:10.72	4:30.98	5:43.69	8:51.43	9:32.74
58	6.08	6.61	7.13	11.45	23.27	36.68	51.59	1:25.37	2:03.47	2:40.26	4:13.29	4:33.77	5:47.22	8:56.82	9:38.53
59	6.11	6.65	7.18	11.54	23.46	36.99	52.02	1:26.11	2:04.67	2:41.89	4:15.95	4:36.65	5:50.89	9:02.40	9:44.52
60	6.15	6.69	7.23	11.63	23.66	37.30	52.47	1:26.88	2:05.91	2:43.57	4:18.71	4:39.64	5:54.68	9:08.19	9:50.73
61	6.19	6.73	7.28	11.73	23.87	37.62	52.92	1:27.68	2:07.19	2:45.32	4:21.57	4:42.74	5:58.62	9:14.19	9:57.17
62	6.23	6.78	7.33	11.83	24.07	37.95	53.39	1:28.50	2:08.51	2:47.12	4:24.54	4:45.95	6:02.70	9:20.42	10:03.86
63	6.27	6.83	7.39	11.93	24.29	38.30	53.88	1:29.35	2:09.88	2:49.00	4:27.62	4:49.30	6:06.95	9:26.90	10:10.82
64	6.31	6.88	7.44	12.03	24.51	38.65	54.39	1:30.24	2:11.31	2:50.95	4:30.83	4:52.78	6:11.37	9:33.65	10:18.06
65	6.36	6.93	7.50	12.14	24.74	39.02	54.91	1:31.16	2:12.79	2:52.98	4:34.18	4:56.40	6:15.98	9:40.68	10:25.61
66	6.40	6.98	7.56	12.25	24.98	39.40	55.45	1:32.12	2:14.33	2:55.09	4:37.66	5:00.18	6:20.79	9:48.01	10:33.48
67	6.45	7.04	7.62	12.36	25.23	39.79	56.02	1:33.12	2:15.93	2:57.29	4:41.30	5:04.12	6:25.81	9:55.68	10:41.70
68	6.50	7.09	7.69	12.48	25.48	40.20	56.61	1:34.16	2:17.61	2:59.59	4:45.11	5:08.25	6:31.05	10:03.69	10:50.30
69	6.56	7.15	7.75	12.60	25.75	40.63	57.22	1:35.24	2:19.36	3:01.99	4:49.09	5:12.57	6:36.55	10:12.08	10:59.31
70	6.61	7.22	7.82	12.73	26.02	41.07	57.86	1:36.38	2:21.18	3:04.51	4:53.26	5:17.09	6:42.31	10:20.88	11:08.76
71	6.67	7.28	7.89	12.86	26.31	41.53	58.53	1:37.57	2:23.10	3:07.15	4:57.64	5:21.84	6:48.36	10:30.13	11:18.69
72	6.73	7.35	7.97	13.00	26.61	42.01	59.22	1:38.82	2:25.11	3:09.92	5:02.25	5:26.84	6:54.73	10:39.86	11:29.13
73	6.79	7.42	8.04	13.14	26.92	42.52	59.96	1:40.13	2:27.22	3:12.84	5:07.10	5:32.10	7:01.43	10:50.11	11:40.13
74	6.85	7.49	8.12	13.29	27.24	43.05	1:00.73	1:41.51	2:29.44	3:15.91	5:12.21	5:37.65	7:08.50	11:00.93	11:51.75
75	6.92	7.56	8.21	13.44	27.58	43.60	1:01.53	1:42.97	2:31.78	3:19.15	5:17.61	5:43.51	7:15.98	11:12.37	12:04.03
76	6.98	7.64	8.29	13.60	27.94	44.19	1:02.38	1:44.50	2:34.25	3:22.58	5:23.33	5:49.72	7:23.90	11:24.49	12:17.05
77	7.05	7.72	8.38	13.77	28.31	44.80	1:03.28	1:46.12	2:36.87	3:26.21	5:29.40	5:56.30	7:32.31	11:37.36	12:30.87
78	7.13	7.80	8.48	13.94	28.70	45.45	1:04.23	1:47.84	2:39.65	3:30.06	5:35.85	6:03.30	7:41.24	11:51.06	12:45.57
79	7.21	7.89	8.57	14.12	29.11	46.13	1:05.23	1:49.67	2:42.60	3:34.16	5:42.72	6:10.76	7:50.77	12:05.66	13:01.25
80	7.29	7.98	8.68	14.31	29.55	46.85	1:06.30	1:51.61	2:45.74	3:38.53	5:50.05	6:18.72	8:00.94	12:21.26	13:18.01
81	7.37	8.07	8.78	14.51	30.01	47.62	1:07.43	1:53.68	2:49.09	3:43.20	5:57.90	6:27.25	8:11.84	12:37.99	13:35.97
82	7.45	8.17	8.89	14.71	30.49	48.44	1:08.64	1:55.90	2:52.68	3:48.20	6:06.32	6:36.40	8:23.54	12:55.96	13:55.28
83	7.54	8.27	9.00	14.93	31.00	49.30	1:09.93	1:58.27	2:56.53	3:53.58	6:15.38	6:46.25	8:36.15	13:15.33	14:16.09
84	7.64	8.38	9.12	15.16	31.55	50.23	1:11.31	2:00.82	3:00.68	3:59.38	6:25.17	6:56.88	8:49.77	13:36.28	14:38.59
85	7.74	8.49	9.25	15.40	32.13	51.22	1:12.79	2:03.58	3:05.16	4:05.65	6:35.77	7:08.41	9:04.53	13:59.01	15:03.01
86	7.84	8.61	9.38	15.65	32.75	52.29	1:14.39	2:06.55	3:10.01	4:12.45	6:47.29	7:20.94	9:20.59	14:23.76	15:29.60
87	7.94	8.73	9.51	15.92	33.41	53.44	1:16.12	2:09.78	3:15.29	4:19.85	6:59.86	7:34.61	9:38.14	14:50.82	15:58.68
88	8.05	8.85	9.65	16.20	34.12	54.68	1:18.00	2:13.30	3:21.05	4:27.95	7:13.64	7:49.60	9:57.39	15:20.54	16:30.63
89	8.17	8.98	9.80	16.50	34.89	56.02	1:20.03	2:17.15	3:27.36	4:36.85	7:28.81	8:06.11	10:18.61	15:53.34	17:05.90
90	8.29	9.12	9.96	16.82	35.71	57.48	1:22.26	2:21.38	3:34.32	4:46.67	7:45.60	8:24.39	10:42.12	16:29.74	17:45.03
91	8.42	9.27	10.12	17.15	36.61	59.07	1:24.71	2:26.05	3:42.03	4:57.56	8:04.28	8:44.74	11:08.33	17:10.37	18:28.73
92	8.55	9.42	10.29	17.51	37.58	1:00.82	1:27.41	2:31.23	3:50.61	5:09.73	8:25.20	9:07.54	11:37.73	17:56.02	19:17.84
93	8.68	9.57	10.47	17.89	38.63	1:02.75	1:30.41	2:37.02	4:00.23	5:23.40	8:48.80	9:33.26	12:10.94	18:47.70	20:13.45
94	8.83	9.74	10.66	18.30	39.79	1:04.89	1:33.75	2:43.53	4:11.10	5:38.88	9:15.62	10:02.52	12:48.78	19:46.70	21:16.95
95	8.98	9.91	10.86	18.73	41.07	1:07.27	1:37.50	2:50.91	4:23.47	5:56.56	9:46.39	10:36.11	13:32.28	20:54.71	22:30.18
96	9.14	10.10	11.06	19.20	42.47	1:09.94	1:41.74	2:59.34	4:37.68	6:16.95	10:22.06	11:15.07	14:22.84	22:13.98	23:55.57
97	9.30	10.29	11.28	19.71	44.04	1:12.95	1:46.59	3:09.06	4:54.18	6:40.72	11:03.89	12:00.80	15:22.33	23:47.58	25:36.44
98	9.48	10.49	11.52	20.25	45.79	1:16.39	1:52.16	3:20.42	5:13.58	7:08.80	11:53.66	12:55.26	16:33.38	25:39.80	27:37.46
99	9.66	10.70	11.76	20.85	47.76	1:20.34	1:58.66	3:33.84	5:36.72	7:42.49	12:53.86	14:01.22	17:59.72	27:56.86	30:05.36
100	9.85	10.93	12.02	21.49	50.00	1:24.93	2:06.33	3:49.97	6:04.81	8:23.67	14:08.19	15:22.78	19:46.91	30:48.04	33:10.25

MEN'S TRACK RUNNING EVENT STANDARDS IN SECONDS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	6.65	7.27	7.89	13.18	27.49	42.47	58.28	94.44	139.97	180.08	283.86	307.01	390.69	610.31	659.18
9	6.24	6.82	7.40	12.29	25.71	39.98	55.18	89.76	132.11	170.06	268.04	289.87	368.71	575.24	621.13
10	6.02	6.55	7.10	11.68	24.37	38.08	52.79	86.14	126.00	162.27	255.78	276.59	351.71	548.24	591.86
11	5.87	6.38	6.90	11.23	23.32	36.57	50.90	83.26	121.13	156.07	246.03	266.03	338.21	526.86	568.71
12	5.78	6.27	6.76	10.88	22.49	35.36	49.37	80.93	117.17	151.03	238.11	257.46	327.27	509.58	550.01
13	5.72	6.18	6.66	10.62	21.82	34.37	48.11	79.00	113.88	146.87	231.59	250.40	318.26	495.38	534.64
14	5.67	6.12	6.58	10.40	21.26	33.54	47.05	77.39	111.13	143.38	226.14	244.51	310.75	483.55	521.84
15	5.64	6.08	6.52	10.23	20.79	32.83	46.16	76.04	108.80	140.44	221.55	239.55	304.42	473.59	511.07
16	5.61	6.05	6.48	10.10	20.39	32.23	45.40	74.89	106.81	137.93	217.66	235.34	299.06	465.16	501.95
17	5.59	6.02	6.45	9.98	20.05	31.72	44.75	73.91	105.10	135.79	214.34	231.75	294.49	457.97	494.18
18	5.58	6.00	6.42	9.89	19.76	31.28	44.19	73.07	103.63	133.96	211.50	228.69	290.58	451.83	487.54
19	5.57	5.99	6.42	9.84	19.51	30.89	43.71	72.35	102.36	132.38	209.08	226.07	287.25	446.59	481.86
OC	5.56	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
30	5.57	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
31	5.57	5.99	6.42	9.84	19.32	30.53	43.29	71.79	101.11	130.75	206.00	222.62	282.39	437.65	471.97
32	5.58	6.00	6.42	9.84	19.40	30.66	43.37	71.79	101.11	130.75	206.13	222.80	282.77	438.54	472.96
33	5.58	6.00	6.43	9.86	19.52	30.84	43.61	72.13	101.73	131.50	207.31	224.07	284.36	440.97	475.57
34	5.59	6.01	6.44	9.90	19.65	31.04	43.86	72.50	102.38	132.31	208.55	225.41	286.04	443.52	478.32
35	5.60	6.03	6.45	9.95	19.77	31.23	44.12	72.90	103.05	133.16	209.85	226.80	287.79	446.20	481.20
36	5.61	6.04	6.47	9.99	19.90	31.43	44.38	73.30	103.73	134.03	211.19	228.25	289.62	448.98	484.19
37	5.62	6.05	6.49	10.04	20.03	31.63	44.64	73.72	104.44	134.93	212.59	229.76	291.51	451.87	487.30
38	5.63	6.07	6.50	10.09	20.16	31.83	44.91	74.15	105.16	135.85	214.03	231.31	293.47	454.86	490.51
39	5.64	6.08	6.52	10.14	20.30	32.04	45.19	74.59	105.89	136.80	215.51	232.91	295.49	457.94	493.82
40	5.65	6.10	6.54	10.20	20.43	32.25	45.47	75.04	106.64	137.78	217.04	234.56	297.57	461.11	497.23
41	5.67	6.12	6.57	10.25	20.57	32.46	45.75	75.50	107.41	138.77	218.61	236.26	299.71	464.38	500.75
42	5.68	6.14	6.59	10.31	20.71	32.68	46.04	75.97	108.19	139.79	220.23	238.01	301.92	467.74	504.36
43	5.70	6.16	6.61	10.36	20.85	32.89	46.33	76.45	108.99	140.84	221.89	239.80	304.18	471.20	508.07
44	5.72	6.18	6.64	10.42	20.99	33.11	46.63	76.95	109.80	141.91	223.59	241.64	306.51	474.75	511.88
45	5.74	6.20	6.67	10.49	21.13	33.34	46.94	77.45	110.63	143.01	225.35	243.53	308.90	478.40	515.80
46	5.76	6.22	6.69	10.55	21.28	33.57	47.25	77.97	111.48	144.13	227.14	245.48	311.36	482.15	519.83
47	5.78	6.25	6.72	10.61	21.43	33.80	47.57	78.50	112.35	145.29	228.99	247.47	313.89	486.00	523.97
48	5.80	6.27	6.75	10.68	21.58	34.03	47.89	79.05	113.23	146.47	230.89	249.53	316.49	489.96	528.22
49	5.82	6.30	6.78	10.75	21.73	34.27	48.22	79.60	114.14	147.68	232.84	251.64	319.16	494.04	532.60
50	5.84	6.33	6.82	10.82	21.89	34.52	48.56	80.18	115.07	148.92	234.85	253.81	321.91	498.23	537.10
51	5.87	6.36	6.85	10.89	22.05	34.77	48.91	80.76	116.03	150.20	236.91	256.04	324.74	502.55	541.74
52	5.89	6.39	6.89	10.96	22.21	35.02	49.26	81.37	117.00	151.51	239.04	258.35	327.66	506.99	546.51
53	5.92	6.42	6.93	11.04	22.38	35.28	49.63	81.99	118.01	152.87	241.23	260.72	330.67	511.58	551.43
54	5.95	6.46	6.96	11.12	22.55	35.55	50.00	82.62	119.04	154.26	243.49	263.16	333.77	516.30	556.50
55	5.98	6.49	7.00	11.20	22.72	35.82	50.38	83.28	120.10	155.69	245.82	265.69	336.97	521.18	561.74
56	6.01	6.53	7.05	11.28	22.90	36.10	50.78	83.95	121.19	157.17	248.23	268.29	340.27	526.22	567.15
57	6.04	6.57	7.09	11.36	23.08	36.39	51.18	84.65	122.31	158.69	250.72	270.98	343.69	531.43	572.74
58	6.08	6.61	7.13	11.45	23.27	36.68	51.59	85.37	123.47	160.26	253.29	273.77	347.22	536.82	578.53
59	6.11	6.65	7.18	11.54	23.46	36.99	52.02	86.11	124.67	161.89	255.95	276.65	350.89	542.40	584.52
60	6.15	6.69	7.23	11.63	23.66	37.30	52.47	86.88	125.91	163.57	258.71	279.64	354.68	548.19	590.73
61	6.19	6.73	7.28	11.73	23.87	37.62	52.92	87.68	127.19	165.32	261.57	282.74	358.62	554.19	597.17
62	6.23	6.78	7.33	11.83	24.07	37.95	53.39	88.50	128.51	167.12	264.54	285.95	362.70	560.42	603.86
63	6.27	6.83	7.39	11.93	24.29	38.30	53.88	89.35	129.88	169.00	267.62	289.30	366.95	566.90	610.82
64	6.31	6.88	7.44	12.03	24.51	38.65	54.39	90.24	131.31	170.95	270.83	292.78	371.37	573.65	618.06
65	6.36	6.93	7.50	12.14	24.74	39.02	54.91	91.16	132.79	172.98	274.18	296.40	375.98	580.68	625.61
66	6.40	6.98	7.56	12.25	24.98	39.40	55.45	92.12	134.33	175.09	277.66	300.18	380.79	588.01	633.48
67	6.45	7.04	7.62	12.36	25.23	39.79	56.02	93.12	135.93	177.29	281.30	304.12	385.81	595.68	641.70
68	6.50	7.09	7.69	12.48	25.48	40.20	56.61	94.16	137.61	179.59	285.11	308.25	391.05	603.69	650.30
69	6.56	7.15	7.75	12.60	25.75	40.63	57.22	95.24	139.36	181.99	289.09	312.57	396.55	612.08	659.31
70	6.61	7.22	7.82	12.73	26.02	41.07	57.86	96.38	141.18	184.51	293.26	317.09	402.31	620.88	668.76
71	6.67	7.28	7.89	12.86	26.31	41.53	58.53	97.57	143.10	187.15	297.64	321.84	408.36	630.13	678.69
72	6.73	7.35	7.97	13.00	26.61	42.01	59.22	98.82	145.11	189.92	302.25	326.84	414.73	639.86	689.13
73	6.79	7.42	8.04	13.14	26.92	42.52	59.96	100.13	147.22	192.84	307.10	332.10	421.43	650.11	700.13
74	6.85	7.49	8.12	13.29	27.24	43.05	60.73	101.51	149.44	195.91	312.21	337.65	428.50	660.93	711.75
75	6.92	7.56	8.21	13.44	27.58	43.60	61.53	102.97	151.78	199.15	317.61	343.51	435.98	672.37	724.03
76	6.98	7.64	8.29	13.60	27.94	44.19	62.38	104.50	154.25	202.58	323.33	349.72	443.90	684.49	737.05
77	7.05	7.72	8.38	13.77	28.31	44.80	63.28	106.12	156.87	206.21	329.40	356.30	452.31	697.36	750.87
78	7.13	7.80	8.48	13.94	28.70	45.45	64.23	107.84	159.65	210.06	335.85	363.30	461.24	711.06	765.57
79	7.21	7.89	8.57	14.12	29.11	46.13	65.23	109.67	162.60	214.16	342.72	370.76	470.77	725.66	781.25
80	7.29	7.98	8.68	14.31	29.55	46.85	66.30	111.61	165.74	218.53	350.05	378.72	480.94	741.26	798.01
81	7.37	8.07	8.78	14.51	30.01	47.62	67.43	113.68	169.09	223.20	357.90	387.25	491.84	757.99	815.97
82	7.45	8.17	8.89	14.71	30.49	48.44	68.64	115.90	172.68	228.20	366.32	396.40	503.54	775.96	835.28
83	7.54	8.27	9.00	14.93	31.00	49.30	69.93	118.27	176.53	233.58	375.38	406.25	516.15	795.33	856.09
84	7.64	8.38	9.12	15.16	31.55	50.23	71.31	120.82	180.68	239.38	385.17	416.88	529.77	816.28	878.59
85	7.74	8.49	9.25	15.40	32.13	51.22	72.79	123.58	185.16	245.65	395.77	428.41	544.53	839.01	903.01
86	7.84	8.61	9.38	15.65	32.75	52.29	74.39	126.55	190.01	252.45	407.29	440.94	560.59	863.76	929.60
87	7.94	8.73	9.51	15.92	33.41	53.44	76.12	129.78	195.29	259.85	419.86	454.61	578.14	890.82	958.68
88	8.05	8.85	9.65	16.20	34.12	54.68	78.00	133.30	201.05	267.95	433.64	469.60	597.39	920.54	990.63
89	8.17	8.98	9.80	16.50	34.89	56.02	80.03	137.15	207.36	276.85	448.81	486.11	618.61	953.34	1025.90
90	8.29	9.12	9.96	16.82	35.71	57.48	82.26	141.38	214.32	286.67	465.60	504.39	642.12	989.74	1065.03
91	8.42	9.27	10.12	17.15	36.61	59.07	84.71	146.05	222.03	297.56	484.28	524.74	668.33	1030.37	1108.73
92	8.55	9.42	10.29	17.51	37.58	60.82	87.41	151.23	230.61	309.73	505.20	547.54	697.73	1076.02	1157.84
93	8.68	9.57	10.47	17.89	38.63	62.75	90.41	157.02	240.23	323.40	528.80	573.26	730.94	1127.70	1213.45
94	8.83	9.74	10.66	18.30	39.79	64.89	93.75	163.53	251.10	338.88	555.62	602.52	768.78	1186.70	1276.95
95	8.98	9.91	10.86	18.73	41.07	67.27	97.50	170.91	263.47	356.56	586.39	636.11	812.28	1254.71	1350.18
96	9.14	10.10	11.06	19.20	42.47	69.94	101.74	179.34	277.68	376.95	622.06	675.07	862.84	1333.98	1435.57
97	9.30	10.29	11.28	19.71	44.04	72.95	106.59	189.06	294.18	400.72	663.89	720.80	922.33	1427.58	1536.44
98	9.48	10.49	11.52	20.25	45.79	76.39	112.16	200.42	313.58	428.80	713.66	775.26	993.36	1539.80	1657.46
99	9.66	10.70	11.76	20.85	47.76	80.34	118.66	213.84	336.72	462.49	773.86	841.22	1079.72	1676.86	1805.36
100	9.85	10.93	12.02	21.49	50.00	84.93	126.33	229.97	364.81	503.67	848.19	922.78	1186.91	1848.04	1990.25

MEN'S LONG DISTANCE RUNNING STANDARDS IN H;M;S

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	17:45.8	29:36.4	37:43.3	45:58.4	58:33.7	1:03:12	1:19:60	1:24:46	1:41:55	2:04:17	2:50:19	3:00:39	3:38:07	7:34:32
9	16:42.3	27:46.2	35:19.9	43:00.4	54:41.7	58:59.8	1:14:33	1:18:58	1:34:48	1:55:25	2:37:41	2:47:10	3:21:25	7:13:03
10	15:53.8	26:23.0	33:32.3	40:47.7	51:50.0	55:53.7	1:10:34	1:14:44	1:29:39	1:49:04	2:28:50	2:37:44	3:09:54	6:55:50
11	15:15.7	25:18.0	32:08.7	39:05.0	49:38.2	53:31.2	1:07:32	1:11:31	1:25:47	1:44:20	2:22:19	2:30:49	3:01:32	6:36:38
12	14:45.0	24:26.1	31:02.1	37:43.6	47:54.1	51:38.8	1:05:10	1:09:00	1:22:46	1:40:40	2:17:21	2:25:34	2:55:14	6:22:46
13	14:19.8	23:43.7	30:08.0	36:37.6	46:30.2	50:08.2	1:03:16	1:06:60	1:20:22	1:37:46	2:13:28	2:21:28	2:50:21	6:12:25
14	13:58.9	23:08.6	29:23.3	35:43.2	45:21.2	48:54.0	1:01:43	1:05:21	1:18:25	1:35:26	2:10:22	2:18:11	2:46:29	6:04:32
15	13:41.4	22:39.3	28:45.9	34:57.8	44:23.9	47:52.4	1:00:26	1:04:00	1:16:49	1:33:31	2:07:51	2:15:33	2:43:23	5:58:25
16	13:26.5	22:14.4	28:14.4	34:19.6	43:35.8	47:00.6	59:22.0	1:02:52	1:15:29	1:31:57	2:05:48	2:13:23	2:40:52	5:53:38
17	13:13.8	21:53.3	27:47.6	33:47.1	42:55.0	46:16.9	58:27.8	1:01:55	1:14:23	1:30:38	2:04:06	2:11:37	2:38:49	5:49:52
18	13:03.0	21:35.2	27:24.7	33:19.5	42:20.3	45:39.7	57:42.0	1:01:07	1:13:26	1:29:31	2:02:42	2:10:09	2:37:09	5:46:54
19	12:53.7	21:19.7	27:05.1	32:55.8	41:50.7	45:08.0	57:03.0	1:00:26	1:12:39	1:28:36	2:01:32	2:08:56	2:35:46	5:44:33
OC	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
30	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
31	12:35.6	20:47.0	26:22.8	32:04.3	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
32	12:37.3	20:49.0	26:24.4	32:05.0	40:46.6	43:59.6	55:41.1	59:01.0	1:11:03	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
33	12:41.4	20:55.6	26:32.5	32:14.6	40:56.7	44:09.4	55:48.5	59:07.5	1:11:05	1:26:49	1:59:29	2:06:50	2:33:29	5:40:14
34	12:45.7	21:02.5	26:41.0	32:24.7	41:09.1	44:22.6	56:04.2	59:23.9	1:11:24	1:27:06	1:59:35	2:06:54	2:33:29	5:40:32
35	12:50.2	21:09.6	26:49.9	32:35.3	41:22.0	44:36.4	56:20.9	59:41.3	1:11:44	1:27:29	2:00:03	2:07:23	2:33:58	5:41:19
36	12:54.9	21:17.1	26:59.2	32:46.3	41:35.6	44:50.8	56:38.3	59:59.6	1:12:05	1:27:53	2:00:33	2:07:55	2:34:33	5:42:13
37	12:59.7	21:24.8	27:08.8	32:57.7	41:49.6	45:05.8	56:56.5	1:00:19	1:12:27	1:28:19	2:01:06	2:08:28	2:35:11	5:43:15
38	13:04.7	21:32.8	27:18.7	33:09.5	42:04.1	45:21.3	57:15.4	1:00:39	1:12:50	1:28:46	2:01:40	2:09:04	2:35:52	5:44:25
39	13:09.9	21:41.0	27:28.9	33:21.6	42:19.1	45:37.3	57:35.0	1:00:59	1:13:14	1:29:14	2:02:16	2:09:42	2:36:36	5:45:42
40	13:15.2	21:49.5	27:39.3	33:34.1	42:34.6	45:53.8	57:55.3	1:01:20	1:13:39	1:29:44	2:02:54	2:10:22	2:37:22	5:47:08
41	13:20.7	21:58.1	27:50.1	33:47.0	42:50.5	46:10.8	58:16.2	1:01:42	1:14:05	1:30:15	2:03:35	2:11:04	2:38:12	5:48:42
42	13:26.3	22:07.0	28:01.2	34:00.1	43:06.8	46:28.3	58:37.8	1:02:05	1:14:31	1:30:46	2:04:17	2:11:48	2:39:04	5:50:24
43	13:32.1	22:16.2	28:12.5	34:13.7	43:23.6	46:46.3	59:00.1	1:02:29	1:14:59	1:31:19	2:05:01	2:12:35	2:39:58	5:52:14
44	13:38.0	22:25.6	28:24.2	34:27.6	43:40.9	47:04.8	59:23.0	1:02:53	1:15:28	1:31:54	2:05:46	2:13:23	2:40:56	5:54:13
45	13:44.1	22:35.2	28:36.1	34:41.8	43:58.6	47:23.8	59:46.5	1:03:18	1:15:57	1:32:29	2:06:34	2:14:13	2:41:56	5:56:21
46	13:50.3	22:45.1	28:48.4	34:56.5	44:16.9	47:43.3	1:00:11	1:03:43	1:16:28	1:33:06	2:07:24	2:15:06	2:42:60	5:58:39
47	13:56.8	22:55.2	29:00.9	35:11.5	44:35.6	48:03.4	1:00:36	1:04:10	1:16:59	1:33:44	2:08:16	2:16:01	2:44:06	6:01:05
48	14:03.3	23:05.6	29:13.9	35:26.9	44:54.8	48:24.1	1:01:02	1:04:37	1:17:32	1:34:23	2:09:10	2:16:58	2:45:15	6:03:42
49	14:10.1	23:16.3	29:27.1	35:42.8	45:14.6	48:45.3	1:01:28	1:05:05	1:18:05	1:35:04	2:10:06	2:17:58	2:46:27	6:06:29
50	14:17.1	23:27.3	29:40.8	35:59.1	45:35.0	49:07.1	1:01:55	1:05:34	1:18:40	1:35:46	2:11:04	2:18:60	2:47:43	6:09:26
51	14:24.2	23:38.6	29:54.8	36:15.9	45:55.9	49:29.6	1:02:23	1:06:03	1:19:15	1:36:30	2:12:04	2:20:04	2:49:01	6:12:34
52	14:31.6	23:50.2	30:09.2	36:33.1	46:17.5	49:52.8	1:02:53	1:06:34	1:19:52	1:37:15	2:13:07	2:21:11	2:50:24	6:15:54
53	14:39.2	24:02.2	30:24.1	36:50.9	46:39.7	50:16.7	1:03:22	1:07:06	1:20:30	1:38:02	2:14:13	2:22:21	2:51:49	6:19:25
54	14:47.1	24:14.5	30:39.4	37:09.3	47:02.7	50:41.3	1:03:53	1:07:39	1:21:10	1:38:50	2:15:21	2:23:33	2:53:19	6:23:09
55	14:55.1	24:27.2	30:55.2	37:28.2	47:26.3	51:06.8	1:04:25	1:08:12	1:21:50	1:39:40	2:16:31	2:24:49	2:54:52	6:27:06
56	15:03.5	24:40.4	31:11.5	37:47.7	47:50.8	51:33.0	1:04:58	1:08:47	1:22:33	1:40:33	2:17:45	2:26:08	2:56:30	6:31:16
57	15:12.1	24:53.9	31:28.4	38:07.9	48:16.0	52:00.2	1:05:33	1:09:24	1:23:16	1:41:27	2:19:02	2:27:29	2:58:12	6:35:41
58	15:21.0	25:08.0	31:45.8	38:28.7	48:42.2	52:28.3	1:06:08	1:10:01	1:24:02	1:42:23	2:20:21	2:28:55	2:59:58	6:40:20
59	15:30.3	25:22.5	32:03.9	38:50.3	49:09.2	52:57.4	1:06:45	1:10:40	1:24:49	1:43:21	2:21:44	2:30:24	3:01:49	6:45:16
60	15:39.9	25:37.6	32:22.6	39:12.7	49:37.3	53:27.6	1:07:23	1:11:20	1:25:38	1:44:21	2:23:11	2:31:57	3:03:45	6:50:28
61	15:49.8	25:53.2	32:41.9	39:35.9	50:06.4	53:58.9	1:08:02	1:12:02	1:26:29	1:45:24	2:24:41	2:33:33	3:05:47	6:55:58
62	16:00.1	26:09.4	33:02.1	39:60.0	50:36.6	54:31.5	1:08:43	1:12:46	1:27:22	1:46:30	2:26:16	2:35:15	3:07:54	7:01:47
63	16:10.8	26:26.2	33:23.0	40:25.1	51:08.1	55:05.3	1:09:26	1:13:31	1:28:17	1:47:39	2:27:54	2:37:01	3:10:07	7:07:56
64	16:22.0	26:43.8	33:44.8	40:51.1	51:40.8	55:40.6	1:10:11	1:14:19	1:29:14	1:48:50	2:29:38	2:38:51	3:12:27	7:14:26
65	16:33.6	27:02.0	34:07.5	41:18.3	52:14.9	56:17.3	1:10:57	1:15:08	1:30:14	1:50:05	2:31:26	2:40:47	3:14:53	7:21:19
66	16:45.7	27:21.1	34:31.1	41:46.7	52:50.6	56:55.6	1:11:46	1:15:60	1:31:17	1:51:23	2:33:19	2:42:49	3:17:27	7:28:36
67	16:58.4	27:41.0	34:55.8	42:16.3	53:27.8	57:35.7	1:12:36	1:16:53	1:32:22	1:52:45	2:35:18	2:44:57	3:20:09	7:36:19
68	17:11.6	28:01.8	35:21.7	42:47.2	54:06.7	58:17.6	1:13:30	1:17:50	1:33:31	1:54:11	2:37:22	2:47:11	3:22:59	7:44:30
69	17:25.5	28:23.6	35:48.8	43:19.7	54:47.5	59:01.5	1:14:25	1:18:49	1:34:43	1:55:41	2:39:34	2:49:32	3:25:58	7:53:11
70	17:40.1	28:46.4	36:17.2	43:53.7	55:30.3	59:47.6	1:15:24	1:19:51	1:35:59	1:57:15	2:41:52	2:52:01	3:29:07	8:02:24
71	17:55.4	29:10.5	36:47.0	44:29.5	56:15.3	1:00:36	1:16:25	1:20:56	1:37:18	1:58:55	2:44:17	2:54:37	3:32:27	8:12:12
72	18:11.4	29:35.7	37:18.4	45:07.1	57:02.6	1:01:27	1:17:30	1:22:05	1:38:42	2:00:40	2:46:51	2:57:23	3:35:58	8:22:37
73	18:28.4	30:02.4	37:51.5	45:46.8	57:52.5	1:02:21	1:18:38	1:23:18	1:40:11	2:02:31	2:49:34	3:00:18	3:39:42	8:33:44
74	18:46.3	30:30.5	38:26.5	46:28.7	58:45.2	1:03:18	1:19:50	1:24:34	1:41:44	2:04:29	2:52:26	3:03:24	3:43:39	8:45:34
75	19:05.2	31:00.2	39:03.4	47:13.1	59:41.0	1:04:18	1:21:07	1:25:56	1:43:24	2:06:33	2:55:29	3:06:41	3:47:50	8:58:14
76	19:25.3	31:31.8	39:42.6	48:00.1	1:00:40	1:05:22	1:22:28	1:27:22	1:45:09	2:08:45	2:58:43	3:10:10	3:52:19	9:11:46
77	19:46.6	32:05.3	40:24.2	48:50.0	1:01:43	1:06:29	1:23:54	1:28:53	1:47:01	2:11:06	3:02:10	3:13:53	3:57:04	9:26:17
78	20:09.3	32:40.9	41:08.6	49:43.1	1:02:50	1:07:41	1:25:26	1:30:31	1:49:00	2:13:36	3:05:51	3:17:52	4:02:10	9:41:51
79	20:33.5	33:18.9	41:55.8	50:39.9	1:04:01	1:08:58	1:27:04	1:32:15	1:51:08	2:16:16	3:09:47	3:22:07	4:07:37	9:58:37
80	20:59.3	33:59.6	42:46.4	51:40.6	1:05:18	1:10:21	1:28:48	1:34:06	1:53:24	2:19:07	3:14:00	3:26:40	4:13:28	10:16:41
81	21:27.1	34:43.3	43:40.7	52:45.6	1:06:40	1:11:49	1:30:41	1:36:06	1:55:50	2:22:12	3:18:33	3:31:34	4:19:46	10:36:12
82	21:56.9	35:30.2	44:39.0	53:55.7	1:08:08	1:13:24	1:32:42	1:38:15	1:58:28	2:25:30	3:23:26	3:36:51	4:26:33	10:57:21
83	22:29.0	36:20.8	45:42.0	55:11.2	1:09:43	1:15:07	1:34:53	1:40:34	2:01:19	2:29:05	3:28:44	3:42:34	4:33:54	11:20:20
84	23:03.8	37:15.6	46:50.1	56:33.1	1:11:27	1:16:58	1:37:14	1:43:05	2:04:23	2:32:57	3:34:28	3:48:46	4:41:53	11:45:22
85	23:41.6	38:15.1	48:04.2	58:01.9	1:13:19	1:18:59	1:39:48	1:45:48	2:07:44	2:37:10	3:40:44	3:55:31	4:50:35	12:12:45
86	24:22.7	39:20.0	49:24.9	59:38.9	1:15:21	1:21:11	1:42:36	1:48:47	2:11:23	2:41:46	3:47:33	4:02:54	5:00:06	12:42:47
87	25:07.8	40:31.0	50:53.3	1:01:25	1:17:35	1:23:36	1:45:41	1:52:03	2:15:23	2:46:49	3:55:03	4:11:00	5:10:33	13:15:53
88	25:57.3	41:49.1	52:30.6	1:03:22	1:20:02	1:26:15	1:49:03	1:55:39	2:19:48	2:52:23	4:03:19	4:19:56	5:22:04	13:52:30
89	26:52.0	43:15.5	54:18.2	1:05:31	1:22:45	1:29:11	1:52:48	1:59:38	2:24:41	2:58:33	4:12:29	4:29:50	5:34:51	14:33:14
90	27:52.8	44:51.5	56:17.8	1:07:55	1:25:47	1:32:26	1:56:57	2:04:03	2:30:07	3:05:24	4:22:41	4:40:52	5:49:06	
91	29:00.7	46:38.9	58:31.7	1:10:36	1:29:10	1:36:05	2:01:37	2:09:01	2:36:12	3:13:06	4:34:08	4:53:15	6:05:06	
92	30:17.1	48:39.9	1:01:02	1:13:37	1:32:59	1:40:13	2:06:53	2:14:37	2:43:05	3:21:46	4:47:04	5:07:13	6:23:10	
93	31:43.8	50:57.3	1:03:54	1:17:03	1:37:19	1:44:54	2:12:51	2:20:59	2:50:53	3:31:39	5:01:47	5:23:08	6:43:46	
94	33:22.9	53:34.5	1:07:10	1:20:59	1:42:18	1:50:16	2:19:43	2:28:17	2:59:52	3:42:59	5:18:41	5:41:25	7:07:25	
95	35:17.4	56:36.5	1:10:57	1:25:33	1:48:04	1:56:29	2:27:40	2:36:44	3:10:16	3:56:08	5:38:19	6:02:39	7:34:55	
96	37:31.3	1:00:09	1:15:23	1:30:53	1:54:49	2:03:46	2:36:59	2:46:40	3:22:28	4:11:34	6:01:22	6:27:36	8:07:14	
97	40:09.7	1:04:22	1:20:39	1:37:14	2:02:51	2:12:27	2:48:05	2:58:29	3:36:60	4:29:58	6:28:51	6:57:20	8:45:46	
98	43:20.5	1:09:27	1:27:00	1:44:53	2:12:33	2:22:56	3:01:30	3:12:47	3:54:35	4:52:14	7:02:10	7:33:24	9:32:31	
99	47:14.4	1:15:42	1:34:50	1:54:20	2:24:32	2:35:52	3:18:05	3:30:26	4:16:20	5:19:47	7:43:25	8:18:02	10:30:26	
100	52:08.2	1:23:35	1:44:43	2:06:16	2:39:41	2:52:15	3:39:04	3:52:48	4:43:53	5:54:43	8:35:47	9:14:44	11:44:02	

MEN'S LONG DISTANCE RUNNING STANDARDS IN SECONDS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	1065.8	1776.4	2263.3	2758.4	3513.7	3792.1	4800	5086	6115	7457	10219	10839	13087	27272
9	1002.3	1666.2	2119.9	2580.4	3281.7	3539.8	4473	4738	5688	6925	9461	10030	12085	25983
10	953.8	1583.0	2012.3	2447.7	3110.0	3353.7	4234	4484	5379	6544	8930	9464	11394	24950
11	915.7	1518.0	1928.7	2345.0	2978.2	3211.2	4052	4291	5147	6260	8539	9049	10892	23798
12	885.0	1466.1	1862.1	2263.6	2874.1	3098.8	3910	4140	4966	6040	8241	8734	10514	22966
13	859.8	1423.7	1808.0	2197.6	2790.2	3008.2	3796	4020	4822	5866	8008	8488	10221	22345
14	838.9	1388.6	1763.3	2143.2	2721.2	2934.0	3703	3921	4705	5726	7822	8291	9989	21872
15	821.4	1359.3	1725.9	2097.8	2663.9	2872.4	3626	3840	4609	5611	7671	8133	9803	21505
16	806.5	1334.4	1694.4	2059.6	2615.8	2820.6	3562	3772	4529	5517	7548	8003	9652	21218
17	793.8	1313.3	1667.6	2027.1	2575.0	2776.9	3508	3715	4463	5438	7446	7897	9529	20992
18	783.0	1295.2	1644.7	1999.5	2540.3	2739.7	3462	3667	4406	5371	7362	7809	9429	20814
19	773.7	1279.7	1625.1	1975.8	2510.7	2708.0	3423	3626	4359	5316	7292	7736	9346	20673
OC	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
30	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
31	755.6	1247.0	1582.8	1924.3	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
32	757.3	1249.0	1584.4	1925.0	2446.6	2639.6	3341	3541	4263	5209	7169	7610	9209	20414
33	761.4	1255.6	1592.5	1934.6	2456.7	2649.4	3348	3547	4265	5209	7169	7610	9209	20414
34	765.7	1262.5	1601.0	1944.7	2469.1	2662.6	3364	3564	4284	5226	7175	7614	9209	20432
35	770.2	1269.6	1609.9	1955.3	2482.0	2676.4	3381	3581	4304	5249	7203	7643	9238	20479
36	774.9	1277.1	1619.2	1966.3	2495.6	2690.8	3398	3600	4325	5273	7233	7675	9273	20533
37	779.7	1284.8	1628.8	1977.7	2509.6	2705.8	3417	3619	4347	5299	7266	7708	9311	20595
38	784.7	1292.8	1638.7	1989.5	2524.1	2721.3	3435	3639	4370	5326	7300	7744	9352	20665
39	789.9	1301.0	1648.9	2001.6	2539.1	2737.3	3455	3659	4394	5354	7336	7782	9396	20742
40	795.2	1309.5	1659.3	2014.1	2554.6	2753.8	3475	3680	4419	5384	7374	7822	9442	20828
41	800.7	1318.1	1670.1	2027.0	2570.5	2770.8	3496	3702	4445	5415	7415	7864	9492	20922
42	806.3	1327.0	1681.2	2040.1	2586.8	2788.3	3518	3725	4471	5446	7457	7908	9544	21024
43	812.1	1336.2	1692.5	2053.7	2603.6	2806.3	3540	3749	4499	5479	7501	7955	9598	21134
44	818.0	1345.6	1704.2	2067.6	2620.9	2824.8	3563	3773	4528	5514	7546	8003	9656	21253
45	824.1	1355.2	1716.1	2081.8	2638.6	2843.8	3587	3798	4557	5549	7594	8053	9716	21381
46	830.3	1365.1	1728.4	2096.5	2656.9	2863.3	3611	3823	4588	5586	7644	8106	9780	21519
47	836.8	1375.2	1740.9	2111.5	2675.6	2883.4	3636	3850	4619	5624	7696	8161	9846	21665
48	843.3	1385.6	1753.9	2126.9	2694.8	2904.1	3662	3877	4652	5663	7750	8218	9915	21822
49	850.1	1396.3	1767.1	2142.8	2714.6	2925.3	3688	3905	4685	5704	7806	8278	9987	21989
50	857.1	1407.3	1780.8	2159.1	2735.0	2947.1	3715	3934	4720	5746	7864	8340	10063	22166
51	864.2	1418.6	1794.8	2175.9	2755.9	2969.6	3743	3963	4755	5790	7924	8404	10141	22354
52	871.6	1430.2	1809.2	2193.1	2777.5	2992.8	3773	3994	4792	5835	7987	8471	10224	22554
53	879.2	1442.2	1824.1	2210.9	2799.7	3016.7	3802	4026	4830	5882	8053	8541	10309	22765
54	887.1	1454.5	1839.4	2229.3	2822.7	3041.3	3833	4059	4870	5930	8121	8613	10399	22989
55	895.1	1467.2	1855.2	2248.2	2846.3	3066.8	3865	4092	4910	5980	8191	8689	10492	23226
56	903.5	1480.4	1871.5	2267.7	2870.8	3093.0	3898	4127	4953	6033	8265	8768	10590	23476
57	912.1	1493.9	1888.4	2287.9	2896.0	3120.2	3933	4164	4996	6087	8342	8849	10692	23741
58	921.0	1508.0	1905.8	2308.7	2922.2	3148.3	3968	4201	5042	6143	8421	8935	10798	24020
59	930.3	1522.5	1923.9	2330.3	2949.2	3177.4	4005	4240	5089	6201	8504	9024	10909	24316
60	939.9	1537.6	1942.6	2352.7	2977.3	3207.6	4043	4280	5138	6261	8591	9117	11025	24628
61	949.8	1553.2	1961.9	2375.9	3006.4	3238.9	4082	4322	5189	6324	8681	9213	11147	24958
62	960.1	1569.4	1982.1	2400.0	3036.6	3271.5	4123	4366	5242	6390	8776	9315	11274	25307
63	970.8	1586.2	2003.0	2425.1	3068.1	3305.3	4166	4411	5297	6459	8874	9421	11407	25676
64	982.0	1603.8	2024.8	2451.1	3100.8	3340.6	4211	4459	5354	6530	8978	9531	11547	26066
65	993.6	1622.0	2047.5	2478.3	3134.9	3377.3	4257	4508	5414	6605	9086	9647	11693	26479
66	1005.7	1641.1	2071.1	2506.7	3170.6	3415.6	4306	4560	5477	6683	9199	9769	11847	26916
67	1018.4	1661.0	2095.8	2536.3	3207.8	3455.7	4356	4613	5542	6765	9318	9897	12009	27379
68	1031.6	1681.8	2121.7	2567.2	3246.7	3497.6	4410	4670	5611	6851	9442	10031	12179	27870
69	1045.5	1703.6	2148.8	2599.7	3287.5	3541.5	4465	4729	5683	6941	9574	10172	12358	28391
70	1060.1	1726.4	2177.2	2633.7	3330.3	3587.6	4524	4791	5759	7035	9712	10321	12547	28944
71	1075.4	1750.5	2207.0	2669.5	3375.3	3636.1	4585	4856	5838	7135	9857	10477	12747	29532
72	1091.4	1775.7	2238.4	2707.1	3422.6	3687.1	4650	4925	5922	7240	10011	10643	12958	30157
73	1108.4	1802.4	2271.5	2746.8	3472.5	3740.9	4718	4998	6011	7351	10174	10818	13182	30824
74	1126.3	1830.5	2306.5	2788.7	3525.2	3797.7	4790	5074	6104	7469	10346	11004	13419	31534
75	1145.2	1860.2	2343.4	2833.1	3581.0	3857.8	4867	5156	6204	7593	10529	11201	13670	32294
76	1165.3	1891.8	2382.6	2880.1	3640.2	3921.6	4948	5242	6309	7725	10723	11410	13939	33106
77	1186.6	1925.3	2424.2	2930.0	3703.0	3989.3	5034	5333	6421	7866	10930	11633	14224	33977
78	1209.3	1960.9	2468.6	2983.1	3770.0	4061.5	5126	5431	6540	8016	11151	11872	14530	34911
79	1233.5	1998.9	2515.8	3039.9	3841.4	4138.5	5224	5535	6668	8176	11387	12127	14857	35917
80	1259.3	2039.6	2566.4	3100.6	3917.9	4220.9	5328	5646	6804	8347	11640	12400	15208	37001
81	1287.1	2083.3	2620.7	3165.6	3999.9	4309.3	5441	5766	6950	8532	11913	12694	15586	38172
82	1316.9	2130.2	2679.0	3235.7	4088.1	4404.4	5562	5895	7108	8730	12206	13011	15993	39441
83	1349.0	2180.8	2742.0	3311.2	4183.4	4507.1	5693	6034	7279	8945	12524	13354	16434	40820
84	1383.8	2235.6	2810.1	3393.1	4286.5	4618.3	5834	6185	7463	9177	12868	13726	16913	42322
85	1421.6	2295.1	2884.2	3481.9	4398.6	4739.2	5988	6348	7664	9430	13244	14131	17435	43965
86	1462.7	2360.0	2964.9	3578.9	4520.9	4871.1	6156	6527	7883	9706	13653	14574	18006	45767
87	1507.8	2431.0	3053.3	3685.1	4654.8	5015.5	6341	6723	8123	10009	14103	15060	18633	47753
88	1557.3	2509.1	3150.6	3801.9	4802.3	5174.6	6543	6939	8388	10343	14599	15596	19324	49950
89	1612.0	2595.5	3258.2	3931.2	4965.4	5350.5	6768	7178	8681	10713	15149	16190	20091	52394
90	1672.8	2691.5	3377.8	4074.9	5146.8	5546.3	7017	7443	9007	11124	15761	16852	20946	55127
91	1740.7	2798.9	3511.7	4235.8	5350.0	5765.5	7297	7741	9372	11586	16448	17595	21906	58201
92	1817.1	2919.9	3662.5	4417.2	5579.1	6012.6	7613	8077	9785	12106	17224	18433	22990	61685
93	1903.8	3057.3	3833.8	4623.2	5839.4	6293.5	7971	8459	10253	12699	18107	19388	24226	65662
94	2002.9	3214.5	4030.0	4859.2	6137.8	6615.6	8383	8897	10792	13379	19121	20485	25645	70245
95	2117.4	3396.5	4257.1	5132.6	6483.6	6988.8	8860	9404	11416	14168	20299	21759	27295	75582
96	2251.3	3609.4	4523.2	5453.0	6888.9	7426.4	9419	10000	12148	15094	21682	23256	29234	81871
97	2409.7	3862.2	4839.1	5833.6	7370.8	7946.8	10085	10709	13020	16198	23331	25040	31546	89389
98	2600.5	4167.0	5220.5	6293.4	7953.4	8576.0	10890	11567	14075	17534	25330	27204	34351	98533
99	2834.4	4541.9	5690.1	6860.1	8672.1	9352.4	11885	12626	15380	19187	27805	29882	37826	109888
100	3128.2	5014.5	6282.9	7575.9	9581	10335	13144	13968	17033	21283	30947	33284	42242	124363

MEN'S TRACK RUNNING EVENT AGE FACTORS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	0.8361	0.8244	0.8131	0.7467	0.7028	0.7189	0.7428	0.7602	0.7224	0.7261	0.7257	0.7251	0.7228	0.7171	0.7160
9	0.8913	0.8791	0.8676	0.8004	0.7516	0.7637	0.7845	0.7998	0.7654	0.7689	0.7685	0.7680	0.7659	0.7608	0.7599
10	0.9250	0.9145	0.9045	0.8427	0.7929	0.8019	0.8200	0.8335	0.8024	0.8058	0.8054	0.8049	0.8029	0.7983	0.7974
11	0.9472	0.9389	0.9307	0.8766	0.8283	0.8348	0.8505	0.8623	0.8347	0.8378	0.8373	0.8368	0.8350	0.8307	0.8299
12	0.9626	0.9563	0.9499	0.9042	0.8589	0.8634	0.8769	0.8871	0.8630	0.8657	0.8651	0.8647	0.8629	0.8589	0.8581
13	0.9735	0.9691	0.9643	0.9270	0.8855	0.8884	0.8999	0.9087	0.8878	0.8903	0.8895	0.8891	0.8873	0.8835	0.8828
14	0.9815	0.9786	0.9753	0.9458	0.9089	0.9104	0.9201	0.9276	0.9098	0.9119	0.9109	0.9105	0.9088	0.9051	0.9044
15	0.9874	0.9858	0.9837	0.9616	0.9294	0.9299	0.9378	0.9441	0.9293	0.9310	0.9298	0.9293	0.9276	0.9241	0.9235
16	0.9917	0.9912	0.9902	0.9747	0.9475	0.9472	0.9535	0.9586	0.9466	0.9479	0.9465	0.9460	0.9443	0.9409	0.9403
17	0.9950	0.9953	0.9952	0.9857	0.9635	0.9626	0.9674	0.9714	0.9620	0.9629	0.9611	0.9606	0.9589	0.9556	0.9551
18	0.9973	0.9984	0.9990	0.9949	0.9777	0.9762	0.9796	0.9825	0.9757	0.9761	0.9740	0.9735	0.9718	0.9686	0.9681
19	0.9990	1.0000	1.0000	1.0000	0.9902	0.9883	0.9904	0.9923	0.9878	0.9877	0.9853	0.9848	0.9831	0.9800	0.9795
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	0.9997	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	0.9989	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9979	0.9994	1.0000	1.0000	0.9959	0.9959	0.9981	1.0000	1.0000	1.0000	0.9994	0.9992	0.9987	0.9980	0.9979
33	0.9968	0.9979	0.9987	0.9981	0.9896	0.9899	0.9926	0.9954	0.9939	0.9943	0.9937	0.9935	0.9931	0.9925	0.9924
34	0.9954	0.9963	0.9967	0.9939	0.9834	0.9837	0.9869	0.9902	0.9876	0.9882	0.9878	0.9876	0.9873	0.9868	0.9867
35	0.9939	0.9944	0.9945	0.9894	0.9771	0.9776	0.9813	0.9848	0.9812	0.9819	0.9817	0.9816	0.9812	0.9809	0.9808
36	0.9923	0.9924	0.9921	0.9848	0.9708	0.9714	0.9755	0.9794	0.9747	0.9755	0.9754	0.9753	0.9751	0.9748	0.9748
37	0.9905	0.9902	0.9896	0.9801	0.9645	0.9652	0.9697	0.9738	0.9681	0.9690	0.9690	0.9689	0.9687	0.9685	0.9685
38	0.9885	0.9878	0.9868	0.9752	0.9582	0.9591	0.9639	0.9682	0.9615	0.9625	0.9625	0.9624	0.9623	0.9622	0.9622
39	0.9863	0.9853	0.9839	0.9702	0.9519	0.9529	0.9580	0.9625	0.9548	0.9558	0.9559	0.9558	0.9557	0.9557	0.9558
40	0.9840	0.9825	0.9808	0.9652	0.9456	0.9467	0.9522	0.9567	0.9481	0.9490	0.9491	0.9491	0.9490	0.9491	0.9492
41	0.9816	0.9797	0.9776	0.9600	0.9394	0.9406	0.9462	0.9509	0.9414	0.9422	0.9423	0.9423	0.9422	0.9424	0.9425
42	0.9789	0.9766	0.9741	0.9547	0.9331	0.9344	0.9403	0.9450	0.9346	0.9353	0.9354	0.9354	0.9353	0.9357	0.9358
43	0.9761	0.9734	0.9706	0.9494	0.9268	0.9282	0.9343	0.9390	0.9277	0.9284	0.9284	0.9284	0.9284	0.9288	0.9290
44	0.9732	0.9701	0.9669	0.9439	0.9205	0.9220	0.9283	0.9330	0.9209	0.9214	0.9213	0.9213	0.9213	0.9219	0.9220
45	0.9701	0.9665	0.9630	0.9384	0.9142	0.9158	0.9222	0.9269	0.9139	0.9143	0.9142	0.9141	0.9142	0.9148	0.9150
46	0.9668	0.9629	0.9590	0.9328	0.9079	0.9096	0.9162	0.9207	0.9070	0.9072	0.9069	0.9069	0.9070	0.9077	0.9079
47	0.9634	0.9590	0.9548	0.9271	0.9016	0.9034	0.9100	0.9145	0.9000	0.9000	0.8996	0.8996	0.8997	0.9005	0.9008
48	0.9598	0.9551	0.9505	0.9213	0.8953	0.8971	0.9039	0.9082	0.8929	0.8927	0.8922	0.8922	0.8923	0.8932	0.8935
49	0.9561	0.9509	0.9460	0.9155	0.8890	0.8909	0.8977	0.9019	0.8858	0.8854	0.8847	0.8847	0.8848	0.8859	0.8862
50	0.9522	0.9466	0.9414	0.9095	0.8826	0.8845	0.8914	0.8954	0.8787	0.8780	0.8772	0.8771	0.8772	0.8784	0.8787
51	0.9481	0.9422	0.9366	0.9035	0.8762	0.8782	0.8851	0.8889	0.8714	0.8705	0.8695	0.8695	0.8696	0.8709	0.8712
52	0.9439	0.9376	0.9318	0.8975	0.8698	0.8718	0.8787	0.8823	0.8642	0.8630	0.8618	0.8617	0.8618	0.8632	0.8636
53	0.9395	0.9329	0.9267	0.8913	0.8633	0.8654	0.8723	0.8757	0.8568	0.8553	0.8539	0.8539	0.8540	0.8555	0.8559
54	0.9350	0.9280	0.9216	0.8851	0.8568	0.8589	0.8658	0.8689	0.8494	0.8476	0.8460	0.8459	0.8461	0.8477	0.8481
55	0.9303	0.9230	0.9163	0.8788	0.8502	0.8523	0.8592	0.8621	0.8419	0.8398	0.8380	0.8379	0.8380	0.8397	0.8402
56	0.9255	0.9178	0.9109	0.8724	0.8436	0.8457	0.8526	0.8551	0.8343	0.8319	0.8299	0.8298	0.8299	0.8317	0.8322
57	0.9205	0.9125	0.9053	0.8659	0.8369	0.8391	0.8459	0.8481	0.8266	0.8240	0.8216	0.8215	0.8217	0.8235	0.8241
58	0.9154	0.9071	0.8996	0.8593	0.8302	0.8323	0.8390	0.8410	0.8189	0.8159	0.8133	0.8132	0.8133	0.8153	0.8158
59	0.9101	0.9015	0.8937	0.8526	0.8234	0.8255	0.8321	0.8337	0.8110	0.8077	0.8048	0.8047	0.8048	0.8069	0.8075
60	0.9046	0.8957	0.8878	0.8459	0.8165	0.8186	0.8251	0.8263	0.8030	0.7994	0.7963	0.7961	0.7962	0.7984	0.7990
61	0.8990	0.8899	0.8817	0.8391	0.8095	0.8116	0.8180	0.8188	0.7950	0.7909	0.7876	0.7874	0.7875	0.7897	0.7903
62	0.8933	0.8838	0.8754	0.8321	0.8025	0.8045	0.8108	0.8112	0.7868	0.7824	0.7787	0.7785	0.7786	0.7809	0.7816
63	0.8873	0.8777	0.8690	0.8251	0.7954	0.7973	0.8035	0.8035	0.7785	0.7737	0.7697	0.7695	0.7696	0.7720	0.7727
64	0.8813	0.8713	0.8625	0.8180	0.7881	0.7900	0.7960	0.7956	0.7700	0.7649	0.7606	0.7604	0.7604	0.7629	0.7636
65	0.8751	0.8649	0.8559	0.8107	0.7808	0.7825	0.7884	0.7875	0.7614	0.7559	0.7513	0.7511	0.7511	0.7537	0.7544
66	0.8687	0.8583	0.8491	0.8034	0.7734	0.7750	0.7807	0.7794	0.7527	0.7468	0.7419	0.7416	0.7416	0.7443	0.7450
67	0.8622	0.8515	0.8422	0.7960	0.7658	0.7673	0.7728	0.7710	0.7438	0.7375	0.7323	0.7320	0.7320	0.7347	0.7355
68	0.8555	0.8447	0.8351	0.7884	0.7581	0.7595	0.7648	0.7625	0.7348	0.7281	0.7225	0.7222	0.7221	0.7250	0.7258
69	0.8487	0.8376	0.8280	0.7807	0.7503	0.7515	0.7566	0.7538	0.7256	0.7184	0.7126	0.7122	0.7121	0.7150	0.7159
70	0.8417	0.8305	0.8206	0.7730	0.7424	0.7434	0.7482	0.7449	0.7162	0.7086	0.7024	0.7021	0.7019	0.7049	0.7057
71	0.8346	0.8232	0.8132	0.7650	0.7343	0.7351	0.7397	0.7358	0.7066	0.6987	0.6921	0.6917	0.6915	0.6945	0.6954
72	0.8273	0.8157	0.8056	0.7570	0.7261	0.7267	0.7309	0.7265	0.6968	0.6885	0.6816	0.6811	0.6809	0.6840	0.6849
73	0.8199	0.8081	0.7979	0.7488	0.7177	0.7181	0.7220	0.7170	0.6868	0.6781	0.6708	0.6703	0.6701	0.6732	0.6741
74	0.8123	0.8004	0.7900	0.7405	0.7092	0.7092	0.7129	0.7072	0.6766	0.6674	0.6598	0.6593	0.6590	0.6622	0.6631
75	0.8046	0.7925	0.7820	0.7321	0.7004	0.7002	0.7035	0.6972	0.6662	0.6566	0.6486	0.6481	0.6477	0.6509	0.6519
76	0.7967	0.7844	0.7738	0.7235	0.6915	0.6910	0.6939	0.6870	0.6555	0.6455	0.6371	0.6366	0.6362	0.6394	0.6404
77	0.7887	0.7763	0.7655	0.7148	0.6824	0.6815	0.6841	0.6765	0.6445	0.6341	0.6254	0.6248	0.6243	0.6276	0.6286
78	0.7805	0.7680	0.7571	0.7059	0.6731	0.6718	0.6740	0.6657	0.6333	0.6225	0.6134	0.6128	0.6122	0.6155	0.6165
79	0.7722	0.7595	0.7485	0.6969	0.6636	0.6619	0.6636	0.6546	0.6218	0.6106	0.6011	0.6004	0.5999	0.6031	0.6041
80	0.7638	0.7509	0.7398	0.6877	0.6539	0.6516	0.6529	0.6432	0.6101	0.5983	0.5885	0.5878	0.5872	0.5904	0.5914
81	0.7551	0.7422	0.7310	0.6783	0.6439	0.6411	0.6420	0.6315	0.5980	0.5858	0.5756	0.5749	0.5742	0.5774	0.5784
82	0.7464	0.7333	0.7220	0.6687	0.6336	0.6304	0.6307	0.6194	0.5855	0.5730	0.5624	0.5616	0.5608	0.5640	0.5650
83	0.7375	0.7242	0.7128	0.6590	0.6231	0.6193	0.6191	0.6070	0.5728	0.5598	0.5488	0.5480	0.5471	0.5503	0.5513
84	0.7285	0.7151	0.7035	0.6491	0.6124	0.6078	0.6071	0.5942	0.5596	0.5462	0.5348	0.5340	0.5331	0.5362	0.5372
85	0.7193	0.7057	0.6941	0.6389	0.6013	0.5960	0.5947	0.5810	0.5461	0.5323	0.5205	0.5197	0.5186	0.5216	0.5227
86	0.7099	0.6963	0.6845	0.6286	0.5899	0.5839	0.5819	0.5673	0.5321	0.5179	0.5058	0.5049	0.5037	0.5067	0.5077
87	0.7005	0.6867	0.6747	0.6181	0.5782	0.5714	0.5687	0.5532	0.5178	0.5032	0.4906	0.4897	0.4885	0.4913	0.4923
88	0.6908	0.6769	0.6649	0.6073	0.5662	0.5584	0.5550	0.5386	0.5029	0.4880	0.4750	0.4741	0.4727	0.4754	0.4764
89	0.6811	0.6670	0.6548	0.5964	0.5537	0.5450	0.5409	0.5235	0.4876	0.4723	0.4590	0.4580	0.4565	0.4591	0.4601
90	0.6712	0.6570	0.6446	0.5852	0.5410	0.5312	0.5262	0.5078	0.4718	0.4561	0.4424	0.4414	0.4398	0.4422	0.4432
91	0.6612	0.6468	0.6343	0.5737	0.5278	0.5168	0.5110	0.4916	0.4554	0.4394	0.4254	0.4243	0.4225	0.4248	0.4257
92	0.6510	0.6364	0.6237	0.5620	0.5141	0.5020	0.4952	0.4747	0.4384	0.4222	0.4078	0.4066	0.4047	0.4067	0.4076
93	0.6407	0.6259	0.6131	0.5500	0.5001	0.4866	0.4788	0.4572	0.4209	0.4043	0.3896	0.3883	0.3863	0.3881	0.3890
94	0.6302	0.6153	0.6022	0.5378	0.4855	0.4705	0.4618	0.4390	0.4027	0.3858	0.3708	0.3695	0.3673	0.3688	0.3696
95	0.6197	0.6045	0.5912	0.5252	0.4705	0.4539	0.4440	0.4201	0.3838	0.3667	0.3513	0.3500	0.3477	0.3488	0.3496
96	0.6089	0.5936	0.5801	0.5124	0.4549	0.4366	0.4255	0.4003	0.3641	0.3469	0.3312	0.3298	0.3273	0.3281	0.3288
97	0.5981	0.5825	0.5688	0.4993	0.4387	0.4185	0.4062	0.3797	0.3437	0.3263	0.3103	0.3089	0.3062	0.3066	0.3072
98	0.5871	0.5713	0.5573	0.4858	0.4219	0.3997	0.3860	0.3582	0.3224	0.3049	0.2887	0.2872	0.2843	0.2842	0.2848
99	0.5760	0.5599	0.5456	0.4720	0.4045	0.3800	0.3648	0.3357	0.3003	0.2827	0.2662	0.2646	0.2615	0.2610	0.2614
100	0.5648	0.5484	0.5338	0.4579	0.3864	0.3595	0.3427	0.3122	0.2772	0.2596	0.2429	0.2412	0.2379	0.2368	0.2371

MEN'S LONG DISTANCE AGE FACTORS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	0.7089	0.7020	0.6993	0.6976	0.6963	0.6961	0.6961	0.6962	0.6971	0.6985	0.7015	0.7021	0.7037	0.7485
9	0.7539	0.7484	0.7466	0.7457	0.7455	0.7457	0.7469	0.7474	0.7494	0.7522	0.7577	0.7588	0.7620	0.7857
10	0.7922	0.7878	0.7865	0.7862	0.7867	0.7871	0.7891	0.7898	0.7924	0.7960	0.8027	0.8041	0.8083	0.8182
11	0.8252	0.8215	0.8206	0.8206	0.8215	0.8220	0.8244	0.8252	0.8282	0.8322	0.8395	0.8409	0.8455	0.8578
12	0.8538	0.8506	0.8500	0.8501	0.8512	0.8518	0.8544	0.8553	0.8584	0.8624	0.8699	0.8713	0.8759	0.8889
13	0.8788	0.8759	0.8754	0.8756	0.8768	0.8775	0.8801	0.8809	0.8840	0.8880	0.8952	0.8966	0.9010	0.9135
14	0.9007	0.8980	0.8976	0.8979	0.8991	0.8997	0.9022	0.9030	0.9059	0.9097	0.9165	0.9178	0.9219	0.9333
15	0.9199	0.9174	0.9170	0.9173	0.9184	0.9190	0.9214	0.9221	0.9248	0.9283	0.9345	0.9357	0.9394	0.9492
16	0.9369	0.9345	0.9341	0.9343	0.9353	0.9358	0.9380	0.9387	0.9411	0.9442	0.9498	0.9508	0.9541	0.9621
17	0.9518	0.9495	0.9491	0.9493	0.9501	0.9506	0.9525	0.9531	0.9552	0.9580	0.9628	0.9637	0.9664	0.9724
18	0.9650	0.9628	0.9623	0.9624	0.9631	0.9635	0.9651	0.9656	0.9674	0.9698	0.9738	0.9745	0.9767	0.9808
19	0.9766	0.9744	0.9740	0.9739	0.9744	0.9747	0.9760	0.9765	0.9780	0.9799	0.9831	0.9837	0.9854	0.9874
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9978	0.9984	0.9990	0.9996	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9924	0.9932	0.9939	0.9947	0.9959	0.9963	0.9978	0.9982	0.9995	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9868	0.9878	0.9886	0.9895	0.9909	0.9914	0.9931	0.9936	0.9951	0.9967	0.9991	0.9994	1.0000	0.9991
35	0.9810	0.9822	0.9831	0.9841	0.9857	0.9863	0.9882	0.9887	0.9905	0.9924	0.9952	0.9956	0.9969	0.9968
36	0.9751	0.9764	0.9775	0.9786	0.9804	0.9810	0.9832	0.9837	0.9857	0.9878	0.9911	0.9916	0.9931	0.9942
37	0.9690	0.9706	0.9717	0.9730	0.9749	0.9756	0.9779	0.9785	0.9806	0.9830	0.9867	0.9873	0.9890	0.9912
38	0.9629	0.9646	0.9659	0.9672	0.9693	0.9700	0.9725	0.9732	0.9755	0.9780	0.9820	0.9827	0.9847	0.9878
39	0.9566	0.9585	0.9599	0.9614	0.9635	0.9643	0.9670	0.9677	0.9701	0.9729	0.9772	0.9779	0.9801	0.9841
40	0.9502	0.9523	0.9538	0.9554	0.9577	0.9585	0.9614	0.9621	0.9647	0.9675	0.9721	0.9729	0.9753	0.9801
41	0.9437	0.9460	0.9477	0.9493	0.9518	0.9527	0.9556	0.9564	0.9591	0.9621	0.9668	0.9677	0.9703	0.9757
42	0.9371	0.9397	0.9415	0.9432	0.9458	0.9467	0.9498	0.9506	0.9533	0.9564	0.9614	0.9623	0.9650	0.9710
43	0.9304	0.9333	0.9351	0.9370	0.9397	0.9406	0.9438	0.9446	0.9474	0.9506	0.9558	0.9567	0.9595	0.9659
44	0.9237	0.9268	0.9288	0.9307	0.9335	0.9344	0.9377	0.9386	0.9415	0.9447	0.9500	0.9509	0.9537	0.9605
45	0.9169	0.9202	0.9223	0.9243	0.9272	0.9282	0.9316	0.9324	0.9354	0.9387	0.9440	0.9449	0.9478	0.9547
46	0.9100	0.9135	0.9158	0.9179	0.9208	0.9219	0.9253	0.9262	0.9292	0.9325	0.9378	0.9388	0.9417	0.9486
47	0.9030	0.9068	0.9091	0.9113	0.9144	0.9154	0.9189	0.9198	0.9228	0.9262	0.9315	0.9325	0.9354	0.9422
48	0.8960	0.9000	0.9024	0.9047	0.9079	0.9089	0.9125	0.9134	0.9164	0.9198	0.9250	0.9260	0.9288	0.9355
49	0.8888	0.8931	0.8957	0.8980	0.9013	0.9023	0.9059	0.9068	0.9099	0.9132	0.9184	0.9193	0.9221	0.9284
50	0.8816	0.8861	0.8888	0.8912	0.8945	0.8957	0.8993	0.9002	0.9032	0.9065	0.9116	0.9125	0.9152	0.9209
51	0.8743	0.8791	0.8819	0.8844	0.8877	0.8889	0.8925	0.8934	0.8964	0.8997	0.9046	0.9055	0.9081	0.9132
52	0.8669	0.8719	0.8748	0.8774	0.8809	0.8820	0.8856	0.8866	0.8895	0.8927	0.8975	0.8983	0.9008	0.9051
53	0.8594	0.8647	0.8677	0.8704	0.8739	0.8750	0.8787	0.8796	0.8825	0.8856	0.8902	0.8910	0.8933	0.8967
54	0.8518	0.8573	0.8605	0.8632	0.8668	0.8679	0.8716	0.8725	0.8754	0.8784	0.8828	0.8835	0.8856	0.8880
55	0.8441	0.8499	0.8531	0.8559	0.8596	0.8607	0.8644	0.8653	0.8681	0.8710	0.8752	0.8758	0.8777	0.8789
56	0.8363	0.8424	0.8457	0.8486	0.8522	0.8534	0.8570	0.8579	0.8607	0.8635	0.8674	0.8680	0.8696	0.8696
57	0.8284	0.8347	0.8381	0.8411	0.8448	0.8460	0.8496	0.8505	0.8531	0.8558	0.8594	0.8599	0.8613	0.8599
58	0.8204	0.8269	0.8305	0.8335	0.8372	0.8384	0.8420	0.8429	0.8455	0.8480	0.8513	0.8517	0.8529	0.8498
59	0.8122	0.8190	0.8227	0.8258	0.8296	0.8307	0.8343	0.8351	0.8377	0.8401	0.8429	0.8433	0.8442	0.8395
60	0.8040	0.8110	0.8148	0.8179	0.8217	0.8229	0.8264	0.8273	0.8297	0.8319	0.8344	0.8347	0.8353	0.8289
61	0.7955	0.8029	0.8067	0.8099	0.8138	0.8150	0.8184	0.8192	0.8216	0.8236	0.8258	0.8260	0.8262	0.8179
62	0.7870	0.7946	0.7985	0.8018	0.8057	0.8069	0.8103	0.8110	0.8133	0.8152	0.8169	0.8170	0.8168	0.8066
63	0.7783	0.7861	0.7902	0.7935	0.7974	0.7986	0.8020	0.8027	0.8048	0.8065	0.8078	0.8078	0.8073	0.7950
64	0.7695	0.7776	0.7817	0.7851	0.7890	0.7902	0.7935	0.7942	0.7962	0.7977	0.7985	0.7984	0.7975	0.7831
65	0.7605	0.7688	0.7730	0.7765	0.7804	0.7816	0.7848	0.7855	0.7873	0.7887	0.7890	0.7888	0.7876	0.7709
66	0.7513	0.7599	0.7642	0.7677	0.7716	0.7728	0.7760	0.7766	0.7783	0.7794	0.7793	0.7790	0.7773	0.7584
67	0.7420	0.7508	0.7552	0.7587	0.7627	0.7638	0.7669	0.7675	0.7691	0.7700	0.7694	0.7689	0.7669	0.7456
68	0.7324	0.7415	0.7460	0.7496	0.7536	0.7547	0.7577	0.7583	0.7597	0.7604	0.7592	0.7587	0.7561	0.7325
69	0.7227	0.7320	0.7366	0.7402	0.7442	0.7453	0.7482	0.7488	0.7501	0.7505	0.7488	0.7481	0.7452	0.7190
70	0.7128	0.7223	0.7270	0.7306	0.7346	0.7358	0.7386	0.7391	0.7402	0.7404	0.7382	0.7374	0.7340	0.7053
71	0.7026	0.7124	0.7171	0.7208	0.7249	0.7259	0.7287	0.7292	0.7301	0.7301	0.7273	0.7263	0.7225	0.6912
72	0.6923	0.7022	0.7071	0.7108	0.7148	0.7159	0.7185	0.7190	0.7198	0.7195	0.7161	0.7150	0.7107	0.6769
73	0.6817	0.6919	0.6968	0.7005	0.7045	0.7056	0.7081	0.7085	0.7092	0.7086	0.7046	0.7034	0.6986	0.6623
74	0.6709	0.6812	0.6862	0.6900	0.6940	0.6951	0.6975	0.6978	0.6983	0.6975	0.6929	0.6916	0.6863	0.6473
75	0.6598	0.6703	0.6754	0.6792	0.6832	0.6842	0.6865	0.6868	0.6871	0.6860	0.6809	0.6794	0.6737	0.6321
76	0.6484	0.6592	0.6643	0.6681	0.6721	0.6731	0.6753	0.6756	0.6757	0.6743	0.6685	0.6669	0.6607	0.6166
77	0.6368	0.6477	0.6529	0.6568	0.6607	0.6617	0.6637	0.6640	0.6639	0.6623	0.6559	0.6541	0.6474	0.6008
78	0.6248	0.6359	0.6412	0.6451	0.6490	0.6499	0.6518	0.6520	0.6518	0.6499	0.6429	0.6410	0.6338	0.5847
79	0.6126	0.6238	0.6291	0.6330	0.6369	0.6378	0.6396	0.6398	0.6393	0.6371	0.6296	0.6275	0.6199	0.5684
80	0.6000	0.6114	0.6167	0.6206	0.6245	0.6254	0.6270	0.6271	0.6265	0.6240	0.6158	0.6137	0.6056	0.5517
81	0.5871	0.5986	0.6039	0.6079	0.6117	0.6125	0.6141	0.6141	0.6133	0.6106	0.6018	0.5995	0.5909	0.5348
82	0.5738	0.5854	0.5908	0.5947	0.5985	0.5993	0.6007	0.6007	0.5997	0.5967	0.5873	0.5849	0.5758	0.5176
83	0.5601	0.5718	0.5772	0.5811	0.5848	0.5857	0.5869	0.5869	0.5857	0.5824	0.5724	0.5699	0.5604	0.5001
84	0.5460	0.5578	0.5632	0.5671	0.5708	0.5716	0.5727	0.5726	0.5712	0.5676	0.5571	0.5544	0.5445	0.4823
85	0.5315	0.5433	0.5488	0.5526	0.5562	0.5570	0.5579	0.5578	0.5562	0.5524	0.5413	0.5385	0.5282	0.4643
86	0.5166	0.5284	0.5338	0.5377	0.5412	0.5419	0.5427	0.5425	0.5407	0.5367	0.5251	0.5222	0.5115	0.4460
87	0.5011	0.5130	0.5184	0.5222	0.5256	0.5263	0.5269	0.5267	0.5248	0.5204	0.5083	0.5053	0.4942	0.4275
88	0.4852	0.4970	0.5024	0.5061	0.5095	0.5101	0.5106	0.5103	0.5082	0.5036	0.4910	0.4879	0.4766	0.4087
89	0.4687	0.4804	0.4858	0.4895	0.4927	0.4933	0.4937	0.4933	0.4911	0.4863	0.4732	0.4700	0.4584	0.3896
90	0.4517	0.4633	0.4686	0.4722	0.4754	0.4759	0.4761	0.4757	0.4733	0.4683	0.4548	0.4516	0.4397	0.3703
91	0.4341	0.4455	0.4507	0.4543	0.4573	0.4578	0.4579	0.4574	0.4548	0.4496	0.4358	0.4325	0.4204	0.3507
92	0.4158	0.4271	0.4322	0.4356	0.4385	0.4390	0.4389	0.4384	0.4357	0.4303	0.4162	0.4128	0.4006	0.3309
93	0.3969	0.4079	0.4128	0.4162	0.4190	0.4194	0.4191	0.4186	0.4157	0.4102	0.3959	0.3925	0.3801	0.3109
94	0.3772	0.3879	0.3927	0.3960	0.3986	0.3990	0.3986	0.3980	0.3950	0.3893	0.3749	0.3715	0.3591	0.2906
95	0.3568	0.3671	0.3718	0.3749	0.3773	0.3777	0.3771	0.3765	0.3734	0.3677	0.3532	0.3497	0.3374	0.2701
96	0.3356	0.3455	0.3499	0.3529	0.3551	0.3554	0.3547	0.3541	0.3509	0.3451	0.3306	0.3272	0.3150	0.2493
97	0.3136	0.3229	0.3271	0.3299	0.3319	0.3322	0.3313	0.3307	0.3274	0.3216	0.3073	0.3039	0.2919	0.2284
98	0.2906	0.2993	0.3032	0.3058	0.3076	0.3078	0.3068	0.3061	0.3028	0.2971	0.2830	0.2797	0.2681	0.2072
99	0.2666	0.2746	0.2782	0.2805	0.2821	0.2822	0.2811	0.2805	0.2772	0.2715	0.2578	0.2547	0.2435	0.1858
100	0.2415	0.2487	0.2519	0.2540	0.2554	0.2554	0.2542	0.2535	0.2503	0.2448	0.2316	0.2286	0.2180	0.1641

Age Handicapped Runs For Men

	Meters Run By Age		
AGE	100	200	400
8	75.7	143.5	305.4
9	80.8	153.2	322.4
10	84.7	161.2	336.3
11	87.8	168.0	347.9
12	90.4	173.7	357.7
13	92.6	178.7	366.0
14	94.4	183.1	373.1
15	96.0	186.9	379.3
16	97.3	190.3	384.6
17	98.5	193.2	389.3
18	99.4	195.9	393.3
19	100.0	198.2	396.9
OC	100.0	200.0	400.0
30	100.0	200.0	400.0
31	100.0	200.0	400.0
32	100.0	199.2	399.4
33	99.8	198.1	397.6
34	99.3	196.9	395.7
35	98.8	195.7	393.9
36	98.3	194.6	392.0
37	97.8	193.4	390.0
38	97.3	192.2	388.1
39	96.8	191.0	386.2
40	96.3	189.9	384.2
41	95.7	188.7	382.2
42	95.2	187.5	380.2
43	94.6	186.3	378.2
44	94.0	185.1	376.1
45	93.5	184.0	374.1
46	92.9	182.8	372.0
47	92.3	181.6	369.9
48	91.7	180.4	367.8
49	91.1	179.2	365.7
50	90.5	178.0	363.6
51	89.8	176.8	361.4
52	89.2	175.6	359.2
53	88.6	174.3	357.0
54	87.9	173.1	354.8
55	87.3	171.8	352.5
56	86.6	170.6	350.2
57	86.0	169.3	347.9
58	85.3	168.0	345.5
59	84.6	166.7	343.1
60	83.9	165.4	340.7
61	83.2	164.1	338.2
62	82.5	162.7	335.7
63	81.8	161.4	333.1
64	81.0	160.0	330.5
65	80.3	158.6	327.9
66	79.6	157.1	325.2
67	78.8	155.7	322.4
68	78.0	154.2	319.6
69	77.2	152.7	316.7
70	76.4	151.2	313.8
71	75.6	149.7	310.8
72	74.8	148.1	307.7
73	74.0	146.5	304.6
74	73.2	144.8	301.4
75	72.3	143.2	298.1
76	71.5	141.5	294.7
77	70.6	139.8	291.2
78	69.7	138.0	287.7
79	68.8	136.2	284.0
80	67.9	134.4	280.3
81	67.0	132.5	276.4
82	66.1	130.6	272.5
83	65.2	128.7	268.4
84	64.3	126.7	264.2
85	63.3	124.7	259.9
86	62.4	122.7	255.4
87	61.4	120.6	250.9
88	60.5	118.5	246.2
89	59.6	116.4	241.3
90	58.6	114.2	236.3
91	57.7	112.0	231.2
92	56.7	109.7	225.9
93	55.8	107.5	220.4
94	54.9	105.2	214.8
95	54.0	102.9	209.1
96	53.2	100.6	203.2
97	52.3	98.2	197.2
98	51.5	95.9	191.0
99	50.7	93.6	184.8
100	49.9	91.3	178.4

WOMEN'S TRACK RUNNING EVENT STANDARDS IN H;M;S

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	7.39	7.90	8.42	13.14	28.07	45.99	1:05.72	1:48.03	2:32.00	3:13.66	5:02.19	5:26.58	6:55.26	10:51.57	11:44.77
9	7.12	7.61	8.11	12.60	26.63	43.40	1:01.85	1:41.58	2:23.18	3:02.73	4:45.51	5:08.56	6:32.31	10:14.93	11:04.97
10	6.91	7.38	7.87	12.18	25.53	41.40	58.88	1:36.65	2:16.46	2:54.42	4:32.87	4:54.91	6:14.92	9:47.11	10:34.72
11	6.74	7.20	7.68	11.85	24.66	39.83	56.55	1:32.79	2:11.22	2:47.96	4:23.06	4:44.33	6:01.44	9:25.49	10:11.20
12	6.60	7.05	7.52	11.59	23.96	38.58	54.69	1:29.71	2:07.05	2:42.85	4:15.32	4:35.97	5:50.79	9:08.38	9:52.58
13	6.48	6.93	7.39	11.37	23.39	37.56	53.17	1:27.22	2:03.69	2:38.75	4:09.13	4:29.30	5:42.28	8:54.67	9:37.66
14	6.39	6.83	7.28	11.20	22.93	36.72	51.93	1:25.18	2:00.96	2:35.42	4:04.14	4:23.91	5:35.42	8:43.60	9:25.59
15	6.31	6.75	7.20	11.05	22.55	36.03	50.90	1:23.50	1:58.73	2:32.72	4:00.09	4:19.55	5:29.86	8:34.59	9:15.77
16	6.24	6.68	7.12	10.93	22.23	35.45	50.04	1:22.11	1:56.89	2:30.51	3:56.81	4:16.00	5:25.34	8:27.26	9:07.76
17	6.19	6.62	7.06	10.83	21.97	34.97	49.33	1:20.96	1:55.38	2:28.70	3:54.13	4:13.12	5:21.67	8:21.28	9:01.23
18	6.14	6.57	7.01	10.75	21.75	34.57	48.74	1:20.01	1:54.14	2:27.23	3:51.97	4:10.79	5:18.70	8:16.43	8:55.93
19	6.10	6.53	6.97	10.68	21.57	34.24	48.25	1:19.22	1:53.13	2:26.04	3:50.24	4:08.92	5:16.32	8:12.51	8:51.64
OC	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
30	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
31	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
32	6.05	6.48	6.92	10.61	21.34	33.81	47.60	1:18.22	1:51.90	2:24.62	3:47.96	4:06.42	5:12.89	8:06.11	8:44.48
33	6.07	6.50	6.93	10.62	21.37	33.86	47.66	1:18.23	1:51.90	2:24.62	3:47.96	4:06.46	5:13.09	8:06.92	8:45.45
34	6.09	6.52	6.95	10.66	21.46	34.02	47.89	1:18.59	1:52.31	2:25.07	3:48.74	4:07.29	5:14.14	8:08.61	8:47.30
35	6.11	6.54	6.98	10.70	21.56	34.19	48.14	1:19.00	1:52.83	2:25.69	3:49.63	4:08.25	5:15.35	8:10.54	8:49.41
36	6.13	6.57	7.01	10.74	21.67	34.38	48.42	1:19.44	1:53.41	2:26.38	3:50.63	4:09.32	5:16.71	8:12.72	8:51.78
37	6.16	6.59	7.03	10.79	21.78	34.58	48.72	1:19.92	1:54.04	2:27.13	3:51.75	4:10.52	5:18.23	8:15.14	8:54.42
38	6.19	6.62	7.06	10.84	21.91	34.80	49.04	1:20.44	1:54.73	2:27.96	3:52.98	4:11.85	5:19.90	8:17.81	8:57.31
39	6.22	6.65	7.10	10.89	22.04	35.03	49.37	1:20.99	1:55.46	2:28.86	3:54.32	4:13.29	5:21.73	8:20.72	9:00.47
40	6.25	6.69	7.13	10.94	22.18	35.27	49.73	1:21.57	1:56.25	2:29.83	3:55.78	4:14.86	5:23.71	8:23.87	9:03.89
41	6.28	6.72	7.17	11.00	22.32	35.53	50.10	1:22.19	1:57.09	2:30.87	3:57.35	4:16.55	5:25.86	8:27.26	9:07.58
42	6.31	6.76	7.21	11.07	22.48	35.80	50.50	1:22.84	1:57.99	2:31.98	3:59.03	4:18.37	5:28.16	8:30.91	9:11.53
43	6.35	6.79	7.25	11.13	22.64	36.08	50.91	1:23.52	1:58.93	2:33.16	4:00.84	4:20.32	5:30.63	8:34.80	9:15.75
44	6.38	6.83	7.29	11.20	22.81	36.38	51.35	1:24.24	1:59.93	2:34.42	4:02.76	4:22.39	5:33.26	8:38.95	9:20.25
45	6.42	6.87	7.33	11.28	22.99	36.69	51.80	1:25.00	2:00.98	2:35.75	4:04.81	4:24.60	5:36.07	8:43.37	9:25.03
46	6.46	6.92	7.38	11.35	23.18	37.01	52.27	1:25.79	2:02.09	2:37.15	4:06.98	4:26.94	5:39.04	8:48.04	9:30.09
47	6.50	6.96	7.43	11.43	23.37	37.35	52.77	1:26.62	2:03.26	2:38.63	4:09.27	4:29.42	5:42.19	8:52.99	9:35.44
48	6.55	7.01	7.48	11.52	23.58	37.70	53.28	1:27.48	2:04.48	2:40.19	4:11.70	4:32.05	5:45.53	8:58.21	9:41.10
49	6.59	7.05	7.53	11.61	23.79	38.07	53.82	1:28.38	2:05.75	2:41.83	4:14.27	4:34.82	5:49.05	9:03.72	9:47.05
50	6.64	7.10	7.58	11.70	24.01	38.45	54.37	1:29.32	2:07.09	2:43.55	4:16.97	4:37.74	5:52.76	9:09.53	9:53.33
51	6.68	7.16	7.64	11.80	24.25	38.84	54.95	1:30.30	2:08.50	2:45.36	4:19.82	4:40.82	5:56.67	9:15.64	9:59.93
52	6.73	7.21	7.70	11.90	24.49	39.26	55.56	1:31.33	2:09.96	2:47.26	4:22.81	4:44.06	6:00.79	9:22.06	10:06.86
53	6.79	7.27	7.76	12.01	24.74	39.69	56.18	1:32.39	2:11.50	2:49.25	4:25.96	4:47.46	6:05.12	9:28.81	10:14.15
54	6.84	7.33	7.82	12.12	25.00	40.13	56.84	1:33.50	2:13.10	2:51.34	4:29.27	4:51.04	6:09.67	9:35.89	10:21.79
55	6.89	7.39	7.89	12.23	25.28	40.60	57.52	1:34.66	2:14.77	2:53.53	4:32.75	4:54.80	6:14.45	9:43.33	10:29.81
56	6.95	7.45	7.96	12.35	25.56	41.08	58.22	1:35.86	2:16.52	2:55.82	4:36.40	4:58.75	6:19.47	9:51.13	10:38.23
57	7.01	7.52	8.03	12.48	25.86	41.58	58.96	1:37.12	2:18.35	2:58.22	4:40.23	5:02.90	6:24.74	9:59.31	10:47.05
58	7.08	7.59	8.10	12.61	26.17	42.11	59.73	1:38.43	2:20.26	3:00.73	4:44.25	5:07.25	6:30.28	10:07.89	10:56.30
59	7.14	7.66	8.18	12.75	26.49	42.65	1:00.52	1:39.80	2:22.26	3:03.36	4:48.47	5:11.81	6:36.09	10:16.89	11:06.00
60	7.21	7.73	8.26	12.89	26.83	43.22	1:01.35	1:41.22	2:24.35	3:06.12	4:52.89	5:16.61	6:42.18	10:26.33	11:16.17
61	7.28	7.81	8.35	13.04	27.18	43.82	1:02.22	1:42.71	2:26.53	3:09.01	4:57.54	5:21.64	6:48.58	10:36.23	11:26.83
62	7.35	7.89	8.44	13.20	27.54	44.44	1:03.13	1:44.27	2:28.82	3:12.04	5:02.42	5:26.92	6:55.30	10:46.61	11:38.01
63	7.43	7.98	8.53	13.36	27.93	45.08	1:04.07	1:45.89	2:31.21	3:15.21	5:07.54	5:32.46	7:02.36	10:57.50	11:49.73
64	7.51	8.06	8.63	13.53	28.33	45.76	1:05.05	1:47.58	2:33.71	3:18.54	5:12.92	5:38.29	7:09.77	11:08.93	12:02.03
65	7.59	8.16	8.73	13.71	28.75	46.46	1:06.08	1:49.36	2:36.33	3:22.04	5:18.57	5:44.41	7:17.56	11:20.93	12:14.95
66	7.68	8.25	8.84	13.90	29.19	47.20	1:07.16	1:51.21	2:39.06	3:25.70	5:24.51	5:50.84	7:25.74	11:33.53	12:28.51
67	7.77	8.36	8.95	14.10	29.65	47.97	1:08.28	1:53.16	2:41.97	3:29.56	5:30.76	5:57.61	7:34.35	11:46.77	12:42.75
68	7.87	8.46	9.07	14.31	30.13	48.78	1:09.46	1:55.19	2:44.99	3:33.60	5:37.33	6:04.73	7:43.41	12:00.70	12:57.72
69	7.97	8.58	9.19	14.53	30.64	49.63	1:10.70	1:57.33	2:48.17	3:37.86	5:44.25	6:12.23	7:52.94	12:15.34	13:13.47
70	8.08	8.69	9.32	14.76	31.17	50.52	1:12.00	1:59.57	2:51.51	3:42.35	5:51.55	6:20.13	8:02.99	12:30.77	13:30.05
71	8.19	8.82	9.46	15.00	31.73	51.45	1:13.36	2:01.93	2:55.03	3:47.07	5:59.24	6:28.46	8:13.59	12:47.01	13:47.51
72	8.31	8.95	9.60	15.26	32.32	52.44	1:14.80	2:04.41	2:58.73	3:52.05	6:07.35	6:37.25	8:24.77	13:04.15	14:05.92
73	8.43	9.09	9.75	15.53	32.94	53.48	1:16.31	2:07.03	3:02.64	3:57.30	6:15.93	6:46.54	8:36.58	13:22.23	14:25.34
74	8.56	9.23	9.91	15.82	33.60	54.57	1:17.90	2:09.79	3:06.76	4:02.86	6:24.99	6:56.36	8:49.06	13:41.33	14:45.86
75	8.70	9.39	10.08	16.12	34.29	55.73	1:19.58	2:12.70	3:11.12	4:08.73	6:34.59	7:06.75	9:02.28	14:01.53	15:07.55
76	8.85	9.55	10.26	16.44	35.03	56.95	1:21.36	2:15.78	3:15.73	4:14.96	6:44.76	7:17.77	9:16.28	14:22.91	15:30.51
77	9.00	9.72	10.45	16.78	35.80	58.24	1:23.24	2:19.04	3:20.62	4:21.56	6:55.55	7:29.46	9:31.13	14:45.58	15:54.85
78	9.17	9.91	10.66	17.15	36.63	59.62	1:25.24	2:22.50	3:25.81	4:28.57	7:07.02	7:41.88	9:46.92	15:09.64	16:20.67
79	9.35	10.10	10.87	17.53	37.51	1:01.08	1:27.36	2:26.17	3:31.33	4:36.02	7:19.22	7:55.10	10:03.70	15:35.22	16:48.11
80	9.53	10.31	11.10	17.95	38.45	1:02.63	1:29.62	2:30.08	3:37.20	4:43.97	7:32.22	8:09.18	10:21.59	16:02.44	17:17.32
81	9.74	10.54	11.35	18.39	39.45	1:04.29	1:32.03	2:34.25	3:43.47	4:52.45	7:46.10	8:24.22	10:40.68	16:31.47	17:48.45
82	9.95	10.78	11.62	18.86	40.53	1:06.07	1:34.60	2:38.71	3:50.16	5:01.52	8:00.95	8:40.30	11:01.09	17:02.48	18:21.70
83	10.18	11.04	11.90	19.37	41.68	1:07.97	1:37.36	2:43.48	3:57.34	5:11.24	8:16.86	8:57.53	11:22.95	17:35.66	18:57.28
84	10.43	11.31	12.21	19.92	42.92	1:10.01	1:40.32	2:48.61	4:05.04	5:21.67	8:33.94	9:16.03	11:46.41	18:11.23	19:35.41
85	10.70	11.62	12.54	20.52	44.25	1:12.21	1:43.51	2:54.12	4:13.33	5:32.91	8:52.33	9:35.94	12:11.66	18:49.47	20:16.39
86	11.00	11.94	12.90	21.16	45.70	1:14.59	1:46.95	3:00.07	4:22.27	5:45.03	9:12.17	9:57.42	12:38.88	19:30.65	21:00.52
87	11.32	12.30	13.30	21.86	47.27	1:17.17	1:50.68	3:06.50	4:31.95	5:58.15	9:33.63	10:20.66	13:08.31	20:15.13	21:48.16
88	11.67	12.69	13.73	22.63	48.97	1:19.97	1:54.73	3:13.49	4:42.46	6:12.39	9:56.92	10:45.87	13:40.22	21:03.30	22:39.74
89	12.05	13.12	14.20	23.47	50.84	1:23.03	1:59.14	3:21.10	4:53.90	6:27.90	10:22.26	11:13.29	14:14.93	21:55.61	23:35.76
90	12.47	13.59	14.72	24.39	52.89	1:26.38	2:03.97	3:29.43	5:06.40	6:44.86	10:49.94	11:43.25	14:52.80	22:52.63	24:36.79
91	12.94	14.11	15.29	25.41	55.15	1:30.07	2:09.28	3:38.57	5:20.13	7:03.45	11:20.28	12:16.07	15:34.29	23:54.98	25:43.51
92	13.46	14.69	15.93	26.54	57.65	1:34.14	2:15.15	3:48.65	5:35.26	7:23.95	11:53.68	12:52.20	16:19.91	25:03.45	26:56.76
93	14.05	15.34	16.65	27.81	1:00.43	1:38.68	2:21.66	3:59.82	5:52.02	7:46.64	12:30.62	13:32.14	17:10.31	26:18.95	28:17.50
94	14.71	16.08	17.46	29.23	1:03.56	1:43.75	2:28.94	4:12.28	6:10.68	8:11.89	13:11.67	14:16.52	18:06.25	27:42.60	29:46.93
95	15.46	16.91	18.38	30.85	1:07.08	1:49.45	2:37.11	4:26.25	6:31.59	8:40.16	13:57.55	15:06.11	19:08.70	29:15.78	31:26.51
96	16.32	17.87	19.44	32.70	1:11.09	1:55.93	2:46.37	4:42.03	6:55.18	9:12.02	14:49.16	16:01.87	20:18.83	31:00.19	33:18.04
97	17.33	18.98	20.66	34.83	1:15.69	2:03.33	2:56.93	5:00.00	7:21.99	9:48.19	15:47.62	17:05.00	21:38.13	32:57.96	35:23.79
98	18.50	20.29	22.10	37.32	1:21.02	2:11.88	3:09.10	5:20.64	7:52.72	10:29.61	16:54.37	18:17.05	23:08.51	35:11.79	37:46.61
99	19.90	21.84	23.80	40.26	1:27.27	2:21.86	3:23.28	5:44.59	8:28.31	11:17.49	18:11.31	19:40.05	24:52.44	37:45.19	40:30.22
100	21.60	23.72	25.86	43.79	1:34.71	2:33.68	3:40.00	6:12.72	9:10.00	12:13.46	19:40.92	21:16.67	26:53.17	40:42.72	43:39.46

WOMEN'S TRACK RUNNING EVENT STANDARDS IN SECONDS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	7.39	7.90	8.42	13.14	28.07	45.99	65.72	108.03	152.00	193.66	302.19	326.58	415.26	651.57	704.77
9	7.12	7.61	8.11	12.60	26.63	43.40	61.85	101.58	143.18	182.73	285.51	308.56	392.31	614.93	664.97
10	6.91	7.38	7.87	12.18	25.53	41.40	58.88	96.65	136.46	174.42	272.87	294.91	374.92	587.11	634.72
11	6.74	7.20	7.68	11.85	24.66	39.83	56.55	92.79	131.22	167.96	263.06	284.33	361.44	565.49	611.20
12	6.60	7.05	7.52	11.59	23.96	38.58	54.69	89.71	127.05	162.85	255.32	275.97	350.79	548.38	592.58
13	6.48	6.93	7.39	11.37	23.39	37.56	53.17	87.22	123.69	158.75	249.13	269.30	342.28	534.67	577.66
14	6.39	6.83	7.28	11.20	22.93	36.72	51.93	85.18	120.96	155.42	244.14	263.91	335.42	523.60	565.59
15	6.31	6.75	7.20	11.05	22.55	36.03	50.90	83.50	118.73	152.72	240.09	259.55	329.86	514.59	555.77
16	6.24	6.68	7.12	10.93	22.23	35.45	50.04	82.11	116.89	150.51	236.81	256.00	325.34	507.26	547.76
17	6.19	6.62	7.06	10.83	21.97	34.97	49.33	80.96	115.38	148.70	234.13	253.12	321.67	501.28	541.23
18	6.14	6.57	7.01	10.75	21.75	34.57	48.74	80.01	114.14	147.23	231.97	250.79	318.70	496.43	535.93
19	6.10	6.53	6.97	10.68	21.57	34.24	48.25	79.22	113.13	146.04	230.24	248.92	316.32	492.51	531.64
OC	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
30	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
31	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
32	6.05	6.48	6.92	10.61	21.34	33.81	47.60	78.22	111.90	144.62	227.96	246.42	312.89	486.11	524.48
33	6.07	6.50	6.93	10.62	21.37	33.86	47.66	78.23	111.90	144.62	227.96	246.46	313.09	486.92	525.45
34	6.09	6.52	6.95	10.66	21.46	34.02	47.89	78.59	112.31	145.07	228.74	247.29	314.14	488.61	527.30
35	6.11	6.54	6.98	10.70	21.56	34.19	48.14	79.00	112.83	145.69	229.63	248.25	315.35	490.54	529.41
36	6.13	6.57	7.01	10.74	21.67	34.38	48.42	79.44	113.41	146.38	230.63	249.32	316.71	492.72	531.78
37	6.16	6.59	7.03	10.79	21.78	34.58	48.72	79.92	114.04	147.13	231.75	250.52	318.23	495.14	534.42
38	6.19	6.62	7.06	10.84	21.91	34.80	49.04	80.44	114.73	147.96	232.98	251.85	319.90	497.81	537.31
39	6.22	6.65	7.10	10.89	22.04	35.03	49.37	80.99	115.46	148.86	234.32	253.29	321.73	500.72	540.47
40	6.25	6.69	7.13	10.94	22.18	35.27	49.73	81.57	116.25	149.83	235.78	254.86	323.71	503.87	543.89
41	6.28	6.72	7.17	11.00	22.32	35.53	50.10	82.19	117.09	150.87	237.35	256.55	325.86	507.26	547.58
42	6.31	6.76	7.21	11.07	22.48	35.80	50.50	82.84	117.99	151.98	239.03	258.37	328.16	510.91	551.53
43	6.35	6.79	7.25	11.13	22.64	36.08	50.91	83.52	118.93	153.16	240.84	260.32	330.63	514.80	555.75
44	6.38	6.83	7.29	11.20	22.81	36.38	51.35	84.24	119.93	154.42	242.76	262.39	333.26	518.95	560.25
45	6.42	6.87	7.33	11.28	22.99	36.69	51.80	85.00	120.98	155.75	244.81	264.60	336.07	523.37	565.03
46	6.46	6.92	7.38	11.35	23.18	37.01	52.27	85.79	122.09	157.15	246.98	266.94	339.04	528.04	570.09
47	6.50	6.96	7.43	11.43	23.37	37.35	52.77	86.62	123.26	158.63	249.27	269.42	342.19	532.99	575.44
48	6.55	7.01	7.48	11.52	23.58	37.70	53.28	87.48	124.48	160.19	251.70	272.05	345.53	538.21	581.10
49	6.59	7.05	7.53	11.61	23.79	38.07	53.82	88.38	125.75	161.83	254.27	274.82	349.05	543.72	587.05
50	6.64	7.10	7.58	11.70	24.01	38.45	54.37	89.32	127.09	163.55	256.97	277.74	352.76	549.53	593.33
51	6.68	7.16	7.64	11.80	24.25	38.84	54.95	90.30	128.50	165.36	259.82	280.82	356.67	555.64	599.93
52	6.73	7.21	7.70	11.90	24.49	39.26	55.56	91.33	129.96	167.26	262.81	284.06	360.79	562.06	606.86
53	6.79	7.27	7.76	12.01	24.74	39.69	56.18	92.39	131.50	169.25	265.96	287.46	365.12	568.81	614.15
54	6.84	7.33	7.82	12.12	25.00	40.13	56.84	93.50	133.10	171.34	269.27	291.04	369.67	575.89	621.79
55	6.89	7.39	7.89	12.23	25.28	40.60	57.52	94.66	134.77	173.53	272.75	294.80	374.45	583.33	629.81
56	6.95	7.45	7.96	12.35	25.56	41.08	58.22	95.86	136.52	175.82	276.40	298.75	379.47	591.13	638.23
57	7.01	7.52	8.03	12.48	25.86	41.58	58.96	97.12	138.35	178.22	280.23	302.90	384.74	599.31	647.05
58	7.08	7.59	8.10	12.61	26.17	42.11	59.73	98.43	140.26	180.73	284.25	307.25	390.28	607.89	656.30
59	7.14	7.66	8.18	12.75	26.49	42.65	60.52	99.80	142.26	183.36	288.47	311.81	396.09	616.89	666.00
60	7.21	7.73	8.26	12.89	26.83	43.22	61.35	101.22	144.35	186.12	292.89	316.61	402.18	626.33	676.17
61	7.28	7.81	8.35	13.04	27.18	43.82	62.22	102.71	146.53	189.01	297.54	321.64	408.58	636.23	686.83
62	7.35	7.89	8.44	13.20	27.54	44.44	63.13	104.27	148.82	192.04	302.42	326.92	415.30	646.61	698.01
63	7.43	7.98	8.53	13.36	27.93	45.08	64.07	105.89	151.21	195.21	307.54	332.46	422.36	657.50	709.73
64	7.51	8.06	8.63	13.53	28.33	45.76	65.05	107.58	153.71	198.54	312.92	338.29	429.77	668.93	722.03
65	7.59	8.16	8.73	13.71	28.75	46.46	66.08	109.36	156.33	202.04	318.57	344.41	437.56	680.93	734.95
66	7.68	8.25	8.84	13.90	29.19	47.20	67.16	111.21	159.08	205.70	324.51	350.84	445.74	693.53	748.51
67	7.77	8.36	8.95	14.10	29.65	47.97	68.28	113.16	161.97	209.56	330.76	357.61	454.35	706.77	762.75
68	7.87	8.46	9.07	14.31	30.13	48.78	69.46	115.19	164.99	213.60	337.33	364.73	463.41	720.70	777.72
69	7.97	8.58	9.19	14.53	30.64	49.63	70.70	117.33	168.17	217.86	344.25	372.23	472.94	735.34	793.47
70	8.08	8.69	9.32	14.76	31.17	50.52	72.00	119.57	171.51	222.35	351.55	380.13	482.99	750.77	810.05
71	8.19	8.82	9.46	15.00	31.73	51.45	73.36	121.93	175.03	227.07	359.24	388.46	493.59	767.01	827.51
72	8.31	8.95	9.60	15.26	32.32	52.44	74.80	124.41	178.73	232.05	367.35	397.25	504.77	784.15	845.92
73	8.43	9.09	9.75	15.53	32.94	53.48	76.31	127.03	182.64	237.30	375.93	406.54	516.58	802.23	865.34
74	8.56	9.23	9.91	15.82	33.60	54.57	77.90	129.79	186.76	242.86	384.99	416.36	529.06	821.33	885.86
75	8.70	9.39	10.08	16.12	34.29	55.73	79.58	132.70	191.12	248.73	394.59	426.75	542.28	841.53	907.55
76	8.85	9.55	10.26	16.44	35.03	56.95	81.36	135.78	195.73	254.96	404.76	437.77	556.28	862.91	930.51
77	9.00	9.72	10.45	16.78	35.80	58.24	83.24	139.04	200.62	261.56	415.55	449.46	571.13	885.58	954.85
78	9.17	9.91	10.66	17.15	36.63	59.62	85.24	142.50	205.81	268.57	427.02	461.88	586.92	909.64	980.67
79	9.35	10.10	10.87	17.53	37.51	61.08	87.36	146.17	211.33	276.02	439.22	475.10	603.70	935.22	1008.11
80	9.53	10.31	11.10	17.95	38.45	62.63	89.62	150.08	217.20	283.97	452.22	489.18	621.59	962.44	1037.32
81	9.74	10.54	11.35	18.39	39.45	64.29	92.03	154.25	223.47	292.45	466.10	504.22	640.68	991.47	1068.45
82	9.95	10.78	11.62	18.86	40.53	66.07	94.60	158.71	230.16	301.52	480.95	520.30	661.09	1022.48	1101.70
83	10.18	11.04	11.90	19.37	41.68	67.97	97.36	163.48	237.34	311.24	496.86	537.53	682.95	1055.66	1137.28
84	10.43	11.31	12.21	19.92	42.92	70.01	100.32	168.61	245.04	321.67	513.94	556.03	706.41	1091.23	1175.41
85	10.70	11.62	12.54	20.52	44.25	72.21	103.51	174.12	253.33	332.91	532.33	575.94	731.66	1129.47	1216.39
86	11.00	11.94	12.90	21.16	45.70	74.59	106.95	180.07	262.27	345.03	552.17	597.42	758.88	1170.65	1260.52
87	11.32	12.30	13.30	21.86	47.27	77.17	110.68	186.50	271.95	358.15	573.63	620.66	788.31	1215.13	1308.16
88	11.67	12.69	13.73	22.63	48.97	79.97	114.73	193.49	282.46	372.39	596.92	645.87	820.22	1263.30	1359.74
89	12.05	13.12	14.20	23.47	50.84	83.03	119.14	201.10	293.90	387.90	622.26	673.29	854.93	1315.61	1415.76
90	12.47	13.59	14.72	24.39	52.89	86.38	123.97	209.43	306.40	404.86	649.94	703.25	892.80	1372.63	1476.79
91	12.94	14.11	15.29	25.41	55.15	90.07	129.28	218.57	320.13	423.45	680.28	736.07	934.29	1434.98	1543.51
92	13.46	14.69	15.93	26.54	57.65	94.14	135.15	228.65	335.26	443.95	713.68	772.20	979.91	1503.45	1616.76
93	14.05	15.34	16.65	27.81	60.43	98.68	141.66	239.82	352.02	466.64	750.62	812.14	1030.31	1578.95	1697.50
94	14.71	16.08	17.46	29.23	63.56	103.75	148.94	252.28	370.68	491.89	791.67	856.52	1086.25	1662.60	1786.93
95	15.46	16.91	18.38	30.85	67.08	109.45	157.11	266.25	391.59	520.16	837.55	906.11	1148.70	1755.78	1886.51
96	16.32	17.87	19.44	32.70	71.09	115.93	166.37	282.03	415.18	552.02	889.16	961.87	1218.83	1860.19	1998.04
97	17.33	18.98	20.66	34.83	75.69	123.33	176.93	300.00	441.99	588.19	947.62	1025.00	1298.13	1977.96	2123.79
98	18.50	20.29	22.10	37.32	81.02	131.88	189.10	320.64	472.72	629.61	1014.37	1097.05	1388.51	2111.79	2266.61
99	19.90	21.84	23.80	40.26	87.27	141.86	203.28	344.59	508.31	677.49	1091.31	1180.05	1492.44	2265.19	2430.22
100	21.60	23.72	25.86	43.79	94.71	153.68	220.00	372.72	550.00	733.46	1180.92	1276.67	1613.17	2442.72	2619.46

WOMEN'S LONG DISTANCE RUNNING STANDARDS IN H;M;S

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	19:14.3	32:38.3	41:55.1	51:21.8	1:05:42	1:10:56	1:29:40	1:34:55	1:53:30	2:17:04	3:03:25	3:13:29	3:49:01	7:34:32
9	18:06.8	30:39.5	39:20.1	48:09.8	1:01:34	1:06:28	1:24:01	1:28:56	1:46:23	2:08:34	2:52:23	3:01:55	3:35:44	7:13:03
10	17:15.4	29:08.3	37:20.9	45:42.0	58:22.8	1:03:01	1:19:39	1:24:20	1:40:54	2:02:01	2:43:55	2:53:05	3:25:36	6:57:04
11	16:35.2	27:56.7	35:47.1	43:45.5	55:52.2	1:00:18	1:16:13	1:20:41	1:36:35	1:56:53	2:37:19	2:46:11	3:17:44	6:44:59
12	16:03.3	26:59.5	34:32.0	42:12.1	53:51.3	58:07.6	1:13:28	1:17:46	1:33:07	1:52:46	2:32:04	2:40:42	3:11:32	6:35:46
13	15:37.6	26:13.2	33:31.0	40:56.2	52:12.9	56:21.2	1:11:13	1:15:24	1:30:19	1:49:27	2:27:51	2:36:20	3:06:36	6:28:42
14	15:16.6	25:35.4	32:41.1	39:53.9	50:52.1	54:53.7	1:09:22	1:13:27	1:28:01	1:46:44	2:24:27	2:32:48	3:02:39	6:23:15
15	14:59.5	25:04.2	31:59.8	39:02.4	49:45.2	53:41.4	1:07:51	1:11:51	1:26:07	1:44:31	2:21:42	2:29:56	2:59:29	6:19:05
16	14:45.5	24:38.4	31:25.6	38:19.6	48:49.7	52:41.3	1:06:35	1:10:31	1:24:34	1:42:42	2:19:27	2:27:37	2:56:56	6:15:53
17	14:34.0	24:17.0	30:57.2	37:44.1	48:03.5	51:51.3	1:05:33	1:09:25	1:23:16	1:41:12	2:17:38	2:25:44	2:54:53	6:13:28
18	14:24.5	23:59.4	30:33.7	37:14.5	47:25.0	51:09.7	1:04:40	1:08:30	1:22:12	1:39:58	2:16:10	2:24:14	2:53:16	6:11:40
19	14:16.8	23:44.9	30:14.2	36:50.0	46:53.2	50:35.3	1:03:57	1:07:45	1:21:20	1:38:58	2:14:59	2:23:01	2:51:59	6:10:20
OC	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
30	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
31	14:02.3	23:14.4	29:31.8	35:55.6	45:41.8	49:18.2	1:02:23	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
32	14:02.3	23:15.4	29:33.6	35:58.1	45:44.5	49:20.7	1:02:24	1:06:07	1:19:31	1:37:02	2:13:02	2:21:06	2:50:11	6:08:30
33	14:04.9	23:20.7	29:40.7	36:06.9	45:55.9	49:33.0	1:02:39	1:06:22	1:19:44	1:37:09	2:13:02	2:21:06	2:50:11	6:08:30
34	14:08.2	23:26.7	29:48.8	36:17.0	46:08.9	49:47.0	1:02:56	1:06:40	1:20:05	1:37:32	2:13:21	2:21:21	2:50:15	6:08:44
35	14:11.9	23:33.5	29:57.8	36:28.3	46:23.4	50:02.7	1:03:16	1:07:00	1:20:28	1:37:59	2:13:52	2:21:53	2:50:48	6:09:14
36	14:16.0	23:41.0	30:07.7	36:40.6	46:39.4	50:20.0	1:03:37	1:07:23	1:20:55	1:38:29	2:14:28	2:22:30	2:51:27	6:09:54
37	14:20.5	23:49.2	30:18.5	36:54.1	46:56.8	50:38.7	1:04:01	1:07:48	1:21:24	1:39:03	2:15:08	2:23:11	2:52:12	6:10:44
38	14:25.5	23:58.1	30:30.2	37:08.6	47:15.5	50:59.0	1:04:26	1:08:15	1:21:55	1:39:40	2:15:53	2:23:58	2:53:04	6:11:45
39	14:30.9	24:07.7	30:42.7	37:24.2	47:35.6	51:20.7	1:04:54	1:08:44	1:22:29	1:40:20	2:16:44	2:24:50	2:54:02	6:12:59
40	14:36.7	24:17.9	30:56.1	37:40.7	47:57.1	51:43.9	1:05:23	1:09:15	1:23:06	1:41:04	2:17:39	2:25:48	2:55:06	6:14:27
41	14:42.9	24:28.8	31:10.3	37:58.4	48:19.8	52:08.5	1:05:54	1:09:48	1:23:45	1:41:51	2:18:40	2:26:51	2:56:18	6:16:10
42	14:49.5	24:40.4	31:25.4	38:17.0	48:43.9	52:34.6	1:06:27	1:10:23	1:24:27	1:42:41	2:19:45	2:27:60	2:57:37	6:18:09
43	14:56.5	24:52.6	31:41.3	38:36.6	49:09.2	53:02.0	1:07:02	1:10:60	1:25:12	1:43:35	2:20:56	2:29:14	2:59:03	6:20:26
44	15:04.0	25:05.5	31:58.0	38:57.3	49:35.9	53:30.9	1:07:39	1:11:39	1:25:59	1:44:32	2:22:12	2:30:34	3:00:36	6:23:02
45	15:11.9	25:19.1	32:15.6	39:19.0	50:03.9	54:01.3	1:08:18	1:12:20	1:26:49	1:45:33	2:23:34	2:32:00	3:02:18	6:25:58
46	15:20.3	25:33.4	32:34.1	39:41.7	50:33.3	54:33.1	1:08:59	1:13:04	1:27:41	1:46:37	2:25:01	2:33:33	3:04:07	6:29:16
47	15:29.0	25:48.4	32:53.4	40:05.5	51:04.0	55:06.4	1:09:41	1:13:49	1:28:36	1:47:45	2:26:34	2:35:11	3:06:05	6:32:58
48	15:38.3	26:04.1	33:13.6	40:30.4	51:36.1	55:41.2	1:10:26	1:14:37	1:29:34	1:48:56	2:28:13	2:36:56	3:08:11	6:37:04
49	15:48.0	26:20.6	33:34.7	40:56.4	52:09.7	56:17.6	1:11:13	1:15:27	1:30:35	1:50:12	2:29:59	2:38:48	3:10:26	6:41:36
50	15:58.2	26:37.8	33:56.8	41:23.5	52:44.7	56:55.6	1:12:02	1:16:19	1:31:39	1:51:31	2:31:50	2:40:47	3:12:50	6:46:37
51	16:08.9	26:55.7	34:19.8	41:51.8	53:21.2	57:35.2	1:12:53	1:17:13	1:32:46	1:52:54	2:33:48	2:42:53	3:15:24	6:52:07
52	16:20.1	27:14.5	34:43.9	42:21.2	53:59.2	58:16.5	1:13:46	1:18:10	1:33:56	1:54:21	2:35:53	2:45:06	3:18:08	6:58:09
53	16:31.9	27:34.1	35:08.9	42:52.0	54:38.9	58:59.5	1:14:42	1:19:09	1:35:09	1:55:53	2:38:04	2:47:26	3:21:02	7:04:45
54	16:44.2	27:54.5	35:35.0	43:24.0	55:20.2	59:44.3	1:15:40	1:20:11	1:36:25	1:57:29	2:40:23	2:49:55	3:24:07	7:11:56
55	16:57.1	28:15.9	36:02.3	43:57.3	56:03.2	1:00:31	1:16:41	1:21:16	1:37:45	1:59:10	2:42:49	2:52:32	3:27:23	7:19:46
56	17:10.5	28:38.1	36:30.6	44:32.1	56:48.0	1:01:20	1:17:44	1:22:23	1:39:08	2:00:55	2:45:23	2:55:17	3:30:50	7:28:15
57	17:24.6	29:01.4	37:00.2	45:08.3	57:34.7	1:02:10	1:18:50	1:23:34	1:40:35	2:02:45	2:48:05	2:58:12	3:34:30	7:37:26
58	17:39.4	29:25.6	37:31.0	45:46.0	58:23.3	1:03:03	1:19:58	1:24:47	1:42:06	2:04:41	2:50:56	3:01:15	3:38:22	7:47:23
59	17:54.8	29:50.9	38:03.2	46:25.2	59:13.9	1:03:58	1:21:10	1:26:03	1:43:41	2:06:42	2:53:55	3:04:29	3:42:28	7:58:08
60	18:10.9	30:17.3	38:36.7	47:06.2	1:00:07	1:04:55	1:22:24	1:27:23	1:45:20	2:08:48	2:57:04	3:07:52	3:46:47	8:09:43
61	18:27.8	30:44.8	39:11.6	47:48.8	1:01:02	1:05:55	1:23:42	1:28:46	1:47:04	2:11:01	3:00:23	3:11:27	3:51:21	8:22:13
62	18:45.5	31:13.6	39:48.1	48:33.3	1:01:59	1:06:57	1:25:03	1:30:13	1:48:52	2:13:19	3:03:51	3:15:12	3:56:11	8:35:40
63	19:04.0	31:43.6	40:26.1	49:19.7	1:02:59	1:08:02	1:26:28	1:31:44	1:50:45	2:15:45	3:07:31	3:19:09	4:01:17	8:50:07
64	19:23.3	32:15.0	41:05.9	50:08.2	1:04:01	1:09:10	1:27:56	1:33:19	1:52:44	2:18:17	3:11:21	3:23:19	4:06:39	9:05:39
65	19:43.6	32:47.9	41:47.4	50:58.8	1:05:06	1:10:21	1:29:29	1:34:58	1:54:47	2:20:56	3:15:24	3:27:42	4:12:20	9:22:21
66	20:04.9	33:22.2	42:30.8	51:51.6	1:06:14	1:11:35	1:31:06	1:36:41	1:56:57	2:23:43	3:19:39	3:32:19	4:18:20	9:40:15
67	20:27.2	33:58.2	43:16.2	52:46.9	1:07:26	1:12:52	1:32:47	1:38:29	1:59:13	2:26:38	3:24:08	3:37:10	4:24:40	9:59:28
68	20:50.6	34:35.8	44:03.6	53:44.7	1:08:40	1:14:13	1:34:32	1:40:22	2:01:35	2:29:42	3:28:50	3:42:17	4:31:21	10:20:05
69	21:15.2	35:15.3	44:53.4	54:45.2	1:09:58	1:15:38	1:36:23	1:42:21	2:04:04	2:32:55	3:33:48	3:47:41	4:38:25	10:42:10
70	21:41.1	35:56.7	45:45.5	55:48.7	1:11:20	1:17:06	1:38:19	1:44:25	2:06:40	2:36:17	3:39:01	3:53:22	4:45:53	11:05:51
71	22:08.2	36:40.2	46:40.3	56:55.2	1:12:45	1:18:39	1:40:21	1:46:36	2:09:24	2:39:50	3:44:32	3:59:21	4:53:46	11:31:14
72	22:36.8	37:25.8	47:37.7	58:05.0	1:14:15	1:20:17	1:42:29	1:48:53	2:12:16	2:43:34	3:50:20	4:05:41	5:02:07	11:58:27
73	23:07.0	38:13.9	48:38.1	59:18.3	1:15:49	1:21:59	1:44:43	1:51:17	2:15:18	2:47:30	3:56:28	4:12:22	5:10:58	12:27:37
74	23:38.8	39:04.4	49:41.6	1:00:35	1:17:28	1:23:47	1:47:04	1:53:48	2:18:28	2:51:38	4:02:56	4:19:25	5:20:19	12:58:52
75	24:12.3	39:57.7	50:48.5	1:01:57	1:19:13	1:25:41	1:49:33	1:56:28	2:21:49	2:56:00	4:09:47	4:26:54	5:30:14	
76	24:47.8	40:54.0	51:59.1	1:03:22	1:21:03	1:27:40	1:52:09	1:59:16	2:25:21	3:00:36	4:17:01	4:34:48	5:40:45	
77	25:25.3	41:53.4	53:13.6	1:04:53	1:22:59	1:29:46	1:54:55	2:02:13	2:29:05	3:05:29	4:24:41	4:43:10	5:51:55	
78	26:05.1	42:56.3	54:32.4	1:06:28	1:25:02	1:31:60	1:57:49	2:05:20	2:33:02	3:10:38	4:32:49	4:52:04	6:03:47	
79	26:47.3	44:02.9	55:55.8	1:08:09	1:27:11	1:34:21	2:00:54	2:08:39	2:37:12	3:16:05	4:41:27	5:01:30	6:16:24	
80	27:32.2	45:13.6	57:24.3	1:09:56	1:29:29	1:36:50	2:04:10	2:12:09	2:41:38	3:21:53	4:50:37	5:11:31	6:29:51	
81	28:19.9	46:28.8	58:58.3	1:11:50	1:31:55	1:39:29	2:07:38	2:15:52	2:46:19	3:28:02	5:00:23	5:22:12	6:44:11	
82	29:10.9	47:48.8	1:00:38	1:13:51	1:34:30	1:42:17	2:11:19	2:19:49	2:51:19	3:34:35	5:10:47	5:33:35	6:59:28	
83	30:05.3	49:14.1	1:02:25	1:16:00	1:37:15	1:45:17	2:15:15	2:24:02	2:56:39	3:41:33	5:21:53	5:45:45	7:15:50	
84	31:03.5	50:45.3	1:04:19	1:18:18	1:40:12	1:48:28	2:19:26	2:28:31	3:02:19	3:49:00	5:33:45	5:58:45	7:33:21	
85	32:06.0	52:23.0	1:06:20	1:20:45	1:43:20	1:51:53	2:23:54	2:33:19	3:08:24	3:56:58	5:46:27	6:12:40	7:52:08	
86	33:13.2	54:07.8	1:08:31	1:23:23	1:46:43	1:55:33	2:28:42	2:38:28	3:14:54	4:05:31	6:00:06	6:27:38	8:12:19	
87	34:25.6	56:00.6	1:10:52	1:26:13	1:50:20	1:59:28	2:33:51	2:43:60	3:21:54	4:14:41	6:14:46	6:43:43	8:34:04	
88	35:43.9	58:02.4	1:13:23	1:29:15	1:54:14	2:03:42	2:39:24	2:49:56	3:29:25	4:24:34	6:30:35	7:01:03	8:57:32	
89	37:08.8	1:00:14	1:16:07	1:32:33	1:58:26	2:08:17	2:45:23	2:56:22	3:37:33	4:35:15	6:47:40	7:19:48	9:22:54	
90	38:41.1	1:02:37	1:19:05	1:36:07	2:02:60	2:13:14	2:51:52	3:03:19	3:46:21	4:46:48	7:06:11	7:40:07	9:50:26	
91	40:21.8	1:05:13	1:22:18	1:40:00	2:07:57	2:18:36	2:58:54	3:10:52	3:55:54	4:59:21	7:26:18	8:02:11	10:20:22	
92	42:12.2	1:08:03	1:25:49	1:44:14	2:13:22	2:24:28	3:06:34	3:19:06	4:06:19	5:13:01	7:48:14	8:26:15	10:53:02	
93	44:13.6	1:11:10	1:29:41	1:48:53	2:19:17	2:30:54	3:14:58	3:28:06	4:17:42	5:27:59	8:12:14	8:52:35	11:28:47	
94	46:27.8	1:14:36	1:33:56	1:53:60	2:25:48	2:37:57	3:24:12	3:38:00	4:30:12	5:44:24	8:38:34	9:21:31	12:08:03	
95	48:56.8	1:18:25	1:38:39	1:59:39	2:32:59	2:45:45	3:34:23	3:48:55	4:43:60	6:02:30	9:07:38	9:53:24		
96	51:43.3	1:22:39	1:43:53	2:05:56	2:40:59	2:54:25	3:45:40	4:01:02	4:59:17	6:22:34	9:39:49	10:28:44		
97	54:50.5	1:27:25	1:49:45	2:12:58	2:49:54	3:04:05	3:58:16	4:14:32	5:16:20	6:44:56	10:15:40	11:08:05		
98	58:22.5	1:32:46	1:56:21	2:20:52	2:59:56	3:14:57	4:12:25	4:29:41	5:35:27	7:09:59	10:55:48	11:52:09		
99	1:02:24	1:38:53	2:03:51	2:29:51	3:11:18	3:27:15	4:28:25	4:46:49	5:57:02	7:38:15	11:41:04	12:41:50		
100	1:07:03	1:45:53	2:12:27	2:40:06	3:24:16	3:41:17	4:46:38	5:06:20	6:21:36	8:10:24	12:32:28	13:38:14		

WOMEN'S LONG DISTANCE RUNNING STANDARDS IN SECONDS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	1154.3	1958.3	2515.1	3081.8	3941.5	4256.1	5380	5695	6810	8224	11005	11609	13741	27272
9	1086.8	1839.5	2360.1	2889.8	3693.8	3988.1	5041	5336	6383	7714	10343	10915	12944	25983
10	1035.4	1748.3	2240.9	2742.0	3502.8	3781.5	4779	5060	6054	7321	9835	10385	12336	25024
11	995.2	1676.7	2147.1	2625.5	3352.2	3618.5	4573	4841	5795	7013	9439	9971	11864	24299
12	963.3	1619.5	2072.0	2532.1	3231.3	3487.6	4408	4666	5587	6766	9124	9642	11492	23746
13	937.6	1573.2	2011.0	2456.2	3132.9	3381.2	4273	4524	5419	6567	8871	9380	11196	23322
14	916.6	1535.4	1961.1	2393.9	3052.1	3293.7	4162	4407	5281	6404	8667	9168	10959	22995
15	899.5	1504.2	1919.8	2342.4	2985.2	3221.4	4071	4311	5167	6271	8502	8996	10769	22745
16	885.5	1478.4	1885.6	2299.6	2929.7	3161.3	3995	4231	5074	6162	8367	8857	10616	22553
17	874.0	1457.0	1857.2	2264.1	2883.5	3111.3	3933	4165	4996	6072	8258	8744	10493	22408
18	864.5	1439.4	1833.7	2234.5	2845.0	3069.7	3880	4110	4932	5998	8170	8654	10396	22300
19	856.8	1424.9	1814.2	2210.0	2813.2	3035.3	3837	4065	4880	5938	8099	8581	10319	22220
OC	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
30	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
31	842.3	1394.4	1771.8	2155.6	2741.8	2958.2	3743	3967	4771	5822	7982	8466	10211	22110
32	842.3	1395.4	1773.6	2158.1	2744.5	2960.7	3744	3967	4771	5822	7982	8466	10211	22110
33	844.9	1400.7	1780.7	2166.9	2755.9	2973.0	3759	3982	4784	5829	7982	8466	10211	22110
34	848.2	1406.7	1788.8	2177.0	2768.9	2987.0	3776	4000	4805	5852	8001	8481	10215	22124
35	851.9	1413.5	1797.8	2188.3	2783.4	3002.7	3796	4020	4828	5879	8032	8513	10248	22154
36	856.0	1421.0	1807.7	2200.6	2799.4	3020.0	3817	4043	4855	5909	8068	8550	10287	22194
37	860.5	1429.2	1818.5	2214.1	2816.8	3038.7	3841	4068	4884	5943	8108	8591	10332	22244
38	865.5	1438.1	1830.2	2228.6	2835.5	3059.0	3866	4095	4915	5980	8153	8638	10384	22305
39	870.9	1447.7	1842.7	2244.2	2855.6	3080.7	3894	4124	4949	6020	8204	8690	10442	22379
40	876.7	1457.9	1856.1	2260.7	2877.1	3103.9	3923	4155	4986	6064	8259	8748	10506	22467
41	882.9	1468.8	1870.3	2278.4	2899.8	3128.5	3954	4188	5025	6111	8320	8811	10578	22570
42	889.5	1480.4	1885.4	2297.0	2923.9	3154.6	3987	4223	5067	6161	8385	8880	10657	22689
43	896.5	1492.6	1901.3	2316.6	2949.2	3182.0	4022	4260	5112	6215	8456	8954	10743	22826
44	904.0	1505.5	1918.0	2337.3	2975.9	3210.9	4059	4299	5159	6272	8532	9034	10836	22982
45	911.9	1519.1	1935.6	2359.0	3003.9	3241.3	4098	4340	5209	6333	8614	9120	10938	23158
46	920.3	1533.4	1954.1	2381.7	3033.3	3273.1	4139	4384	5261	6397	8701	9213	11047	23356
47	929.0	1548.4	1973.4	2405.5	3064.0	3306.4	4181	4429	5316	6465	8794	9311	11165	23578
48	938.3	1564.1	1993.6	2430.4	3096.1	3341.2	4226	4477	5374	6536	8893	9416	11291	23824
49	948.0	1580.6	2014.7	2456.4	3129.7	3377.6	4273	4527	5435	6612	8999	9528	11426	24096
50	958.2	1597.8	2036.8	2483.5	3164.7	3415.6	4322	4579	5499	6691	9110	9647	11570	24397
51	968.9	1615.7	2059.8	2511.8	3201.2	3455.2	4373	4633	5566	6774	9228	9773	11724	24727
52	980.1	1634.5	2083.9	2541.2	3239.2	3496.5	4426	4690	5636	6861	9353	9906	11888	25089
53	991.9	1654.1	2108.9	2572.0	3278.9	3539.5	4482	4749	5709	6953	9484	10046	12062	25485
54	1004.2	1674.5	2135.0	2604.0	3320.2	3584.3	4540	4811	5785	7049	9623	10195	12247	25916
55	1017.1	1695.9	2162.3	2637.3	3363.2	3631.0	4601	4876	5865	7150	9769	10352	12443	26386
56	1030.5	1718.1	2190.6	2672.1	3408.0	3679.7	4664	4943	5948	7255	9923	10517	12650	26895
57	1044.6	1741.4	2220.2	2708.3	3454.7	3730.3	4730	5014	6035	7365	10085	10692	12870	27446
58	1059.4	1765.6	2251.0	2746.0	3503.3	3783.1	4798	5087	6126	7481	10256	10875	13102	28043
59	1074.8	1790.9	2283.2	2785.2	3553.9	3838.1	4870	5163	6221	7602	10435	11069	13348	28688
60	1090.9	1817.3	2316.7	2826.2	3606.7	3895.4	4944	5243	6320	7728	10624	11272	13607	29383
61	1107.8	1844.8	2351.6	2868.8	3661.7	3955.1	5022	5326	6424	7861	10823	11487	13881	30133
62	1125.5	1873.6	2388.1	2913.3	3719.0	4017.4	5103	5413	6532	7999	11031	11712	14171	30940
63	1144.0	1903.6	2426.1	2959.7	3778.8	4082.4	5188	5504	6645	8145	11251	11949	14477	31807
64	1163.3	1935.0	2465.9	3008.2	3841.2	4150.2	5276	5599	6764	8297	11481	12199	14799	32739
65	1183.6	1967.9	2507.4	3058.8	3906.4	4221.0	5369	5698	6887	8456	11724	12462	15140	33741
66	1204.9	2002.2	2550.8	3111.6	3974.5	4294.9	5466	5801	7017	8623	11979	12739	15500	34815
67	1227.2	2038.2	2596.2	3166.9	4045.6	4372.2	5567	5909	7153	8798	12248	13030	15880	35968
68	1250.6	2075.8	2643.6	3224.7	4120.1	4453.1	5672	6022	7295	8982	12530	13337	16281	37205
69	1275.2	2115.3	2693.4	3285.2	4198.0	4537.8	5783	6141	7444	9175	12828	13661	16705	38530
70	1301.1	2156.7	2745.5	3348.7	4279.6	4626.4	5899	6265	7600	9377	13141	14002	17153	39951
71	1328.2	2200.2	2800.3	3415.2	4365.2	4719.4	6021	6396	7764	9590	13472	14361	17626	41474
72	1356.8	2245.8	2857.7	3485.0	4455.0	4817.0	6149	6533	7936	9814	13820	14741	18127	43107
73	1387.0	2293.9	2918.1	3558.3	4549.3	4919.5	6283	6677	8118	10050	14188	15142	18658	44857
74	1418.8	2344.4	2981.6	3635.5	4648.5	5027.3	6424	6828	8308	10298	14576	15565	19219	46732
75	1452.3	2397.7	3048.5	3716.7	4752.9	5140.7	6573	6988	8509	10560	14987	16014	19814	48744
76	1487.8	2454.0	3119.1	3802.3	4862.9	5260.3	6729	7156	8721	10836	15421	16488	20445	50902
77	1525.3	2513.4	3193.6	3892.7	4979.0	5386.4	6895	7333	8945	11129	15881	16990	21115	53217
78	1565.1	2576.3	3272.4	3988.2	5101.7	5519.7	7069	7520	9182	11438	16369	17524	21827	55704
79	1607.3	2642.9	3355.8	4089.3	5231.5	5660.7	7254	7719	9432	11765	16887	18090	22584	58375
80	1652.2	2713.6	3444.3	4196.5	5369.0	5810.1	7450	7929	9698	12113	17437	18691	23391	61248
81	1699.9	2788.8	3538.3	4310.2	5515.0	5968.7	7658	8152	9979	12482	18023	19332	24251	64339
82	1750.9	2868.8	3638.2	4431.2	5670.1	6137.2	7879	8389	10279	12875	18647	20015	25168	67668
83	1805.3	2954.1	3744.8	4560.1	5835.4	6316.8	8115	8642	10599	13293	19313	20745	26150	71257
84	1863.5	3045.3	3858.6	4697.8	6011.8	6508.3	8366	8911	10939	13740	20025	21525	27201	75132
85	1926.0	3143.0	3980.4	4845.0	6200.4	6713.1	8634	9199	11304	14218	20787	22360	28328	79321
86	1993.2	3247.8	4111.1	5002.8	6402.5	6932.6	8922	9508	11694	14731	21606	23258	29539	83855
87	2065.6	3360.6	4251.6	5172.5	6619.7	7168.4	9231	9840	12114	15281	22486	24223	30844	88772
88	2143.9	3482.4	4403.1	5355.4	6853.6	7422.3	9564	10196	12565	15874	23435	25263	32252	94112
89	2228.8	3614.2	4567.0	5553.0	7106.2	7696.6	9923	10582	13053	16515	24460	26388	33774	99923
90	2321.1	3757.2	4744.7	5767.2	7379.9	7993.6	10312	10999	13581	17208	25571	27607	35426	106261
91	2421.8	3913.0	4938.1	6000.1	7677.4	8316.4	10734	11452	14154	17961	26778	28931	37222	113191
92	2532.2	4083.3	5149.3	6254.4	8001.8	8668.4	11194	11946	14779	18781	28094	30375	39182	120787
93	2653.6	4270.2	5381.0	6533.1	8357.1	9053.7	11698	12486	15462	19679	29534	31955	41327	129137
94	2787.8	4476.4	5636.1	6839.8	8747.8	9477.4	12252	13080	16212	20664	31114	33691	43683	138347
95	2936.8	4704.8	5918.5	7178.9	9179.5	9945.4	12863	13735	17040	21750	32858	35604	46282	148540
96	3103.3	4959.3	6232.8	7556.0	9658.8	10464.9	13540	14462	17957	22954	34789	37724	49163	159868
97	3290.5	5244.5	6584.6	7977.7	10194.3	11045.1	14296	15272	18980	24296	36940	40085	52371	172511
98	3502.5	5566.4	6981.1	8452.4	10796.3	11697.0	15145	16181	20127	25799	39348	42729	55963	186694
99	3744.4	5932.6	7431.2	8990.7	11478.0	12435.0	16105	17209	21422	27495	42064	45710	60012	202692
100	4023.1	6352.7	7946.8	9606.3	12256.3	13277.1	17198	18380	22896	29424	45148	49094	64606	220852

WOMEN'S TRACK RUNNING EVENT AGE FACTORS

AGE	50	55	60	100	200	300	400	600	800	1000	1500	MILE	2K	3K	2 MILE
8	0.8191	0.8208	0.8214	0.8073	0.7603	0.7351	0.7243	0.7240	0.7362	0.7468	0.7544	0.7545	0.7535	0.7461	0.7442
9	0.8500	0.8519	0.8528	0.8418	0.8013	0.7790	0.7696	0.7700	0.7815	0.7914	0.7984	0.7986	0.7975	0.7905	0.7887
10	0.8760	0.8780	0.8790	0.8706	0.8360	0.8165	0.8084	0.8092	0.8200	0.8291	0.8354	0.8356	0.8345	0.8280	0.8263
11	0.8981	0.9001	0.9012	0.8948	0.8655	0.8487	0.8417	0.8429	0.8528	0.8610	0.8666	0.8667	0.8657	0.8596	0.8581
12	0.9169	0.9189	0.9199	0.9152	0.8906	0.8763	0.8704	0.8719	0.8808	0.8881	0.8928	0.8929	0.8919	0.8865	0.8851
13	0.9331	0.9349	0.9359	0.9325	0.9122	0.9001	0.8952	0.8968	0.9047	0.9110	0.9150	0.9150	0.9141	0.9092	0.9079
14	0.9470	0.9486	0.9496	0.9472	0.9307	0.9207	0.9167	0.9183	0.9251	0.9305	0.9337	0.9337	0.9328	0.9284	0.9273
15	0.9589	0.9604	0.9613	0.9596	0.9465	0.9384	0.9352	0.9367	0.9425	0.9470	0.9495	0.9494	0.9485	0.9446	0.9437
16	0.9692	0.9705	0.9712	0.9701	0.9600	0.9536	0.9512	0.9526	0.9573	0.9609	0.9627	0.9626	0.9617	0.9583	0.9575
17	0.9780	0.9791	0.9797	0.9790	0.9715	0.9667	0.9649	0.9661	0.9699	0.9726	0.9736	0.9735	0.9727	0.9697	0.9691
18	0.9855	0.9864	0.9868	0.9865	0.9813	0.9778	0.9766	0.9776	0.9804	0.9823	0.9827	0.9826	0.9818	0.9792	0.9786
19	0.9919	0.9925	0.9928	0.9926	0.9894	0.9872	0.9864	0.9873	0.9892	0.9903	0.9901	0.9899	0.9892	0.9870	0.9865
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9973	0.9977	0.9979	0.9983	0.9984	0.9985	0.9988	0.9998	1.0000	1.0000	1.0000	0.9998	0.9993	0.9983	0.9982
34	0.9939	0.9944	0.9947	0.9950	0.9942	0.9938	0.9940	0.9952	0.9964	0.9969	0.9966	0.9965	0.9960	0.9949	0.9947
35	0.9902	0.9908	0.9911	0.9914	0.9897	0.9887	0.9887	0.9901	0.9918	0.9927	0.9927	0.9926	0.9922	0.9910	0.9907
36	0.9862	0.9869	0.9874	0.9875	0.9848	0.9833	0.9830	0.9845	0.9867	0.9880	0.9884	0.9883	0.9879	0.9866	0.9863
37	0.9821	0.9828	0.9833	0.9833	0.9796	0.9775	0.9770	0.9786	0.9812	0.9829	0.9837	0.9836	0.9832	0.9818	0.9814
38	0.9777	0.9785	0.9791	0.9789	0.9741	0.9714	0.9707	0.9724	0.9754	0.9774	0.9785	0.9784	0.9781	0.9765	0.9761
39	0.9731	0.9740	0.9746	0.9741	0.9683	0.9650	0.9641	0.9658	0.9691	0.9715	0.9729	0.9729	0.9725	0.9708	0.9704
40	0.9683	0.9693	0.9699	0.9691	0.9622	0.9584	0.9572	0.9589	0.9626	0.9652	0.9669	0.9669	0.9666	0.9648	0.9643
41	0.9634	0.9644	0.9650	0.9639	0.9559	0.9515	0.9500	0.9517	0.9556	0.9586	0.9605	0.9605	0.9602	0.9583	0.9578
42	0.9583	0.9593	0.9599	0.9584	0.9493	0.9443	0.9426	0.9442	0.9484	0.9516	0.9537	0.9537	0.9534	0.9515	0.9510
43	0.9530	0.9540	0.9546	0.9527	0.9425	0.9369	0.9349	0.9364	0.9409	0.9442	0.9465	0.9466	0.9463	0.9443	0.9437
44	0.9476	0.9485	0.9491	0.9467	0.9354	0.9293	0.9270	0.9284	0.9330	0.9365	0.9390	0.9391	0.9389	0.9367	0.9362
45	0.9420	0.9429	0.9434	0.9405	0.9282	0.9214	0.9189	0.9202	0.9249	0.9286	0.9312	0.9313	0.9310	0.9288	0.9282
46	0.9362	0.9371	0.9375	0.9341	0.9207	0.9134	0.9106	0.9117	0.9165	0.9203	0.9230	0.9231	0.9229	0.9206	0.9200
47	0.9303	0.9311	0.9315	0.9275	0.9129	0.9051	0.9021	0.9030	0.9079	0.9117	0.9145	0.9146	0.9144	0.9120	0.9114
48	0.9242	0.9250	0.9253	0.9207	0.9050	0.8967	0.8934	0.8941	0.8990	0.9028	0.9057	0.9058	0.9055	0.9032	0.9026
49	0.9180	0.9187	0.9189	0.9137	0.8969	0.8881	0.8845	0.8850	0.8898	0.8937	0.8965	0.8966	0.8964	0.8940	0.8934
50	0.9116	0.9122	0.9123	0.9064	0.8886	0.8793	0.8754	0.8757	0.8804	0.8842	0.8871	0.8872	0.8870	0.8846	0.8840
51	0.9051	0.9056	0.9056	0.8990	0.8801	0.8703	0.8662	0.8662	0.8708	0.8746	0.8774	0.8775	0.8772	0.8749	0.8742
52	0.8984	0.8988	0.8987	0.8913	0.8714	0.8612	0.8568	0.8565	0.8610	0.8646	0.8674	0.8675	0.8672	0.8649	0.8643
53	0.8916	0.8918	0.8916	0.8835	0.8626	0.8518	0.8472	0.8466	0.8510	0.8545	0.8571	0.8572	0.8569	0.8546	0.8540
54	0.8846	0.8847	0.8843	0.8754	0.8535	0.8424	0.8375	0.8365	0.8407	0.8441	0.8466	0.8467	0.8464	0.8441	0.8435
55	0.8775	0.8774	0.8769	0.8672	0.8443	0.8327	0.8276	0.8263	0.8303	0.8334	0.8358	0.8359	0.8356	0.8333	0.8328
56	0.8702	0.8699	0.8693	0.8587	0.8349	0.8229	0.8175	0.8159	0.8196	0.8226	0.8248	0.8248	0.8245	0.8223	0.8218
57	0.8627	0.8623	0.8614	0.8500	0.8253	0.8130	0.8073	0.8053	0.8088	0.8115	0.8135	0.8135	0.8132	0.8111	0.8106
58	0.8551	0.8544	0.8535	0.8412	0.8156	0.8028	0.7970	0.7946	0.7978	0.8002	0.8020	0.8020	0.8017	0.7997	0.7991
59	0.8473	0.8464	0.8453	0.8321	0.8056	0.7926	0.7865	0.7837	0.7866	0.7887	0.7903	0.7903	0.7899	0.7880	0.7875
60	0.8393	0.8383	0.8369	0.8229	0.7955	0.7821	0.7758	0.7727	0.7752	0.7770	0.7783	0.7783	0.7780	0.7761	0.7757
61	0.8311	0.8299	0.8284	0.8134	0.7852	0.7715	0.7650	0.7615	0.7636	0.7651	0.7661	0.7661	0.7658	0.7641	0.7636
62	0.8228	0.8213	0.8197	0.8037	0.7748	0.7608	0.7541	0.7502	0.7519	0.7531	0.7538	0.7538	0.7534	0.7518	0.7514
63	0.8143	0.8126	0.8107	0.7938	0.7641	0.7499	0.7430	0.7387	0.7400	0.7408	0.7412	0.7412	0.7408	0.7393	0.7390
64	0.8056	0.8036	0.8016	0.7837	0.7533	0.7388	0.7317	0.7270	0.7280	0.7284	0.7285	0.7284	0.7280	0.7267	0.7264
65	0.7967	0.7945	0.7922	0.7734	0.7423	0.7276	0.7203	0.7152	0.7158	0.7158	0.7156	0.7155	0.7151	0.7139	0.7136
66	0.7875	0.7851	0.7826	0.7629	0.7312	0.7163	0.7088	0.7033	0.7034	0.7030	0.7025	0.7024	0.7019	0.7009	0.7007
67	0.7782	0.7756	0.7729	0.7521	0.7198	0.7047	0.6971	0.6912	0.6909	0.6901	0.6892	0.6891	0.6886	0.6878	0.6876
68	0.7687	0.7658	0.7629	0.7412	0.7083	0.6930	0.6852	0.6790	0.6782	0.6770	0.6758	0.6756	0.6752	0.6745	0.6744
69	0.7589	0.7558	0.7526	0.7300	0.6966	0.6812	0.6733	0.6666	0.6654	0.6638	0.6622	0.6620	0.6616	0.6611	0.6610
70	0.7490	0.7455	0.7422	0.7186	0.6847	0.6692	0.6611	0.6541	0.6524	0.6504	0.6485	0.6482	0.6478	0.6475	0.6475
71	0.7387	0.7350	0.7315	0.7069	0.6726	0.6570	0.6488	0.6415	0.6393	0.6369	0.6346	0.6343	0.6339	0.6338	0.6338
72	0.7283	0.7243	0.7205	0.6951	0.6603	0.6447	0.6364	0.6287	0.6261	0.6232	0.6206	0.6203	0.6199	0.6199	0.6200
73	0.7176	0.7133	0.7093	0.6829	0.6478	0.6322	0.6238	0.6157	0.6127	0.6094	0.6064	0.6061	0.6057	0.6060	0.6061
74	0.7066	0.7021	0.6978	0.6706	0.6352	0.6195	0.6110	0.6027	0.5992	0.5955	0.5921	0.5918	0.5914	0.5919	0.5921
75	0.6953	0.6905	0.6861	0.6579	0.6223	0.6066	0.5981	0.5894	0.5855	0.5814	0.5777	0.5774	0.5770	0.5777	0.5779
76	0.6838	0.6787	0.6740	0.6451	0.6093	0.5936	0.5851	0.5761	0.5717	0.5672	0.5632	0.5629	0.5625	0.5633	0.5636
77	0.6720	0.6666	0.6617	0.6320	0.5960	0.5804	0.5718	0.5625	0.5578	0.5529	0.5486	0.5482	0.5478	0.5489	0.5493
78	0.6598	0.6542	0.6491	0.6186	0.5826	0.5670	0.5584	0.5489	0.5437	0.5385	0.5338	0.5335	0.5331	0.5344	0.5348
79	0.6474	0.6415	0.6362	0.6049	0.5689	0.5535	0.5449	0.5351	0.5295	0.5239	0.5190	0.5187	0.5183	0.5198	0.5203
80	0.6346	0.6285	0.6229	0.5910	0.5550	0.5397	0.5311	0.5211	0.5152	0.5093	0.5041	0.5037	0.5034	0.5051	0.5056
81	0.6215	0.6151	0.6093	0.5767	0.5409	0.5258	0.5172	0.5071	0.5007	0.4945	0.4891	0.4887	0.4884	0.4903	0.4909
82	0.6080	0.6014	0.5954	0.5622	0.5266	0.5117	0.5032	0.4928	0.4862	0.4796	0.4740	0.4736	0.4733	0.4754	0.4761
83	0.5941	0.5873	0.5811	0.5474	0.5120	0.4974	0.4889	0.4784	0.4715	0.4647	0.4588	0.4584	0.4581	0.4605	0.4612
84	0.5799	0.5728	0.5665	0.5323	0.4972	0.4829	0.4745	0.4639	0.4567	0.4496	0.4436	0.4432	0.4429	0.4455	0.4462
85	0.5652	0.5579	0.5514	0.5169	0.4822	0.4681	0.4599	0.4492	0.4417	0.4344	0.4282	0.4278	0.4276	0.4304	0.4312
86	0.5501	0.5426	0.5360	0.5012	0.4670	0.4532	0.4451	0.4344	0.4267	0.4191	0.4128	0.4125	0.4123	0.4152	0.4161
87	0.5346	0.5269	0.5202	0.4851	0.4515	0.4381	0.4301	0.4194	0.4115	0.4038	0.3974	0.3970	0.3969	0.4000	0.4009
88	0.5186	0.5108	0.5039	0.4687	0.4357	0.4227	0.4149	0.4042	0.3962	0.3883	0.3819	0.3815	0.3815	0.3848	0.3857
89	0.5021	0.4941	0.4872	0.4520	0.4198	0.4072	0.3995	0.3889	0.3807	0.3728	0.3663	0.3660	0.3660	0.3695	0.3705
90	0.4850	0.4770	0.4700	0.4349	0.4035	0.3914	0.3840	0.3735	0.3652	0.3572	0.3507	0.3504	0.3505	0.3541	0.3552
91	0.4675	0.4594	0.4523	0.4174	0.3870	0.3753	0.3682	0.3579	0.3495	0.3415	0.3351	0.3348	0.3349	0.3388	0.3398
92	0.4494	0.4412	0.4341	0.3996	0.3702	0.3591	0.3522	0.3421	0.3338	0.3258	0.3194	0.3191	0.3193	0.3233	0.3244
93	0.4307	0.4225	0.4154	0.3814	0.3531	0.3426	0.3360	0.3261	0.3179	0.3099	0.3037	0.3034	0.3037	0.3079	0.3090
94	0.4113	0.4032	0.3961	0.3628	0.3358	0.3258	0.3196	0.3100	0.3019	0.2940	0.2880	0.2877	0.2880	0.2924	0.2935
95	0.3913	0.3832	0.3763	0.3438	0.3181	0.3089	0.3030	0.2938	0.2858	0.2780	0.2722	0.2719	0.2724	0.2769	0.2780
96	0.3706	0.3627	0.3559	0.3244	0.3002	0.2916	0.2861	0.2773	0.2695	0.2620	0.2564	0.2562	0.2567	0.2613	0.2625
97	0.3492	0.3414	0.3348	0.3045	0.2819	0.2741	0.2690	0.2607	0.2532	0.2459	0.2406	0.2404	0.2410	0.2458	0.2470
98	0.3270	0.3194	0.3130	0.2842	0.2634	0.2563	0.2517	0.2439	0.2367	0.2297	0.2247	0.2246	0.2253	0.2302	0.2314
99	0.3040	0.2967	0.2906	0.2634	0.2445	0.2383	0.2342	0.2270	0.2201	0.2135	0.2089	0.2088	0.2096	0.2146	0.2158
100	0.2801	0.2732	0.2675	0.2422	0.2253	0.2200	0.2164	0.2099	0.2035	0.1972	0.1930	0.1930	0.1940	0.1990	0.2002

WOMEN'S LONG DISTANCE AGE FACTORS

AGE	5K	8K	10K	12K	15K	10 MILE	20K	H. MAR	25K	30K	40K	MAR	50K	100K
8	0.7297	0.7120	0.7044	0.6995	0.6956	0.6951	0.6957	0.6965	0.7006	0.7079	0.7253	0.7293	0.7431	0.8107
9	0.7750	0.7580	0.7507	0.7459	0.7423	0.7418	0.7425	0.7433	0.7474	0.7547	0.7718	0.7756	0.7889	0.8510
10	0.8135	0.7976	0.7907	0.7861	0.7827	0.7823	0.7832	0.7840	0.7881	0.7952	0.8116	0.8152	0.8277	0.8836
11	0.8463	0.8316	0.8252	0.8210	0.8179	0.8175	0.8185	0.8193	0.8233	0.8302	0.8457	0.8491	0.8606	0.9099
12	0.8744	0.8610	0.8551	0.8513	0.8485	0.8482	0.8493	0.8501	0.8539	0.8604	0.8749	0.8780	0.8885	0.9311
13	0.8984	0.8863	0.8810	0.8776	0.8752	0.8749	0.8760	0.8768	0.8805	0.8865	0.8998	0.9026	0.9120	0.9480
14	0.9189	0.9082	0.9035	0.9004	0.8983	0.8981	0.8993	0.9000	0.9034	0.9090	0.9210	0.9235	0.9317	0.9615
15	0.9364	0.9270	0.9229	0.9202	0.9184	0.9183	0.9194	0.9201	0.9233	0.9283	0.9389	0.9411	0.9482	0.9721
16	0.9512	0.9432	0.9396	0.9374	0.9359	0.9358	0.9369	0.9375	0.9403	0.9448	0.9540	0.9559	0.9618	0.9803
17	0.9638	0.9570	0.9540	0.9521	0.9509	0.9508	0.9518	0.9524	0.9549	0.9588	0.9666	0.9682	0.9731	0.9867
18	0.9743	0.9687	0.9662	0.9647	0.9637	0.9637	0.9646	0.9651	0.9673	0.9706	0.9771	0.9783	0.9822	0.9915
19	0.9830	0.9786	0.9766	0.9754	0.9746	0.9746	0.9755	0.9759	0.9777	0.9805	0.9856	0.9866	0.9895	0.9950
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	0.9993	0.9989	0.9988	0.9990	0.9992	0.9999	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9969	0.9955	0.9950	0.9948	0.9949	0.9950	0.9959	0.9962	0.9973	0.9987	1.0000	1.0000	1.0000	1.0000
34	0.9931	0.9912	0.9905	0.9901	0.9902	0.9903	0.9913	0.9916	0.9930	0.9947	0.9977	0.9982	0.9995	0.9994
35	0.9888	0.9865	0.9855	0.9851	0.9850	0.9852	0.9862	0.9866	0.9881	0.9902	0.9938	0.9945	0.9963	0.9980
36	0.9840	0.9812	0.9801	0.9795	0.9794	0.9796	0.9806	0.9811	0.9828	0.9851	0.9894	0.9902	0.9926	0.9962
37	0.9788	0.9756	0.9743	0.9736	0.9734	0.9735	0.9746	0.9751	0.9770	0.9796	0.9845	0.9854	0.9882	0.9940
38	0.9732	0.9696	0.9681	0.9672	0.9669	0.9671	0.9682	0.9687	0.9707	0.9735	0.9790	0.9801	0.9834	0.9913
39	0.9672	0.9632	0.9615	0.9605	0.9601	0.9602	0.9614	0.9619	0.9640	0.9670	0.9730	0.9742	0.9779	0.9880
40	0.9608	0.9564	0.9546	0.9535	0.9530	0.9531	0.9542	0.9547	0.9569	0.9601	0.9665	0.9678	0.9719	0.9841
41	0.9541	0.9493	0.9473	0.9461	0.9455	0.9456	0.9467	0.9472	0.9494	0.9527	0.9595	0.9608	0.9653	0.9796
42	0.9470	0.9419	0.9397	0.9384	0.9377	0.9378	0.9388	0.9393	0.9415	0.9449	0.9520	0.9534	0.9582	0.9745
43	0.9395	0.9342	0.9319	0.9305	0.9297	0.9297	0.9306	0.9311	0.9333	0.9367	0.9440	0.9455	0.9505	0.9686
44	0.9317	0.9261	0.9238	0.9223	0.9213	0.9213	0.9222	0.9227	0.9248	0.9282	0.9355	0.9371	0.9423	0.9621
45	0.9237	0.9179	0.9154	0.9138	0.9127	0.9127	0.9135	0.9139	0.9160	0.9193	0.9267	0.9282	0.9336	0.9547
46	0.9153	0.9093	0.9067	0.9051	0.9039	0.9038	0.9045	0.9049	0.9068	0.9101	0.9174	0.9189	0.9243	0.9466
47	0.9066	0.9005	0.8978	0.8961	0.8948	0.8947	0.8952	0.8956	0.8974	0.9005	0.9076	0.9092	0.9146	0.9378
48	0.8977	0.8915	0.8887	0.8869	0.8856	0.8854	0.8857	0.8860	0.8877	0.8907	0.8975	0.8991	0.9043	0.9281
49	0.8885	0.8822	0.8794	0.8775	0.8761	0.8758	0.8760	0.8763	0.8778	0.8805	0.8871	0.8885	0.8936	0.9176
50	0.8790	0.8727	0.8699	0.8680	0.8664	0.8661	0.8661	0.8663	0.8676	0.8701	0.8762	0.8776	0.8825	0.9063
51	0.8693	0.8630	0.8602	0.8582	0.8565	0.8562	0.8560	0.8561	0.8572	0.8594	0.8650	0.8663	0.8709	0.8942
52	0.8594	0.8531	0.8502	0.8482	0.8464	0.8461	0.8457	0.8458	0.8466	0.8485	0.8535	0.8547	0.8589	0.8812
53	0.8492	0.8430	0.8401	0.8381	0.8362	0.8358	0.8352	0.8352	0.8358	0.8373	0.8416	0.8427	0.8465	0.8676
54	0.8388	0.8327	0.8299	0.8278	0.8258	0.8253	0.8245	0.8244	0.8247	0.8259	0.8295	0.8304	0.8337	0.8531
55	0.8282	0.8222	0.8194	0.8173	0.8152	0.8147	0.8136	0.8135	0.8135	0.8143	0.8171	0.8178	0.8206	0.8380
56	0.8173	0.8116	0.8088	0.8067	0.8045	0.8039	0.8026	0.8024	0.8021	0.8024	0.8044	0.8050	0.8072	0.8221
57	0.8063	0.8007	0.7980	0.7959	0.7936	0.7930	0.7915	0.7912	0.7905	0.7904	0.7915	0.7918	0.7934	0.8056
58	0.7951	0.7897	0.7871	0.7850	0.7826	0.7820	0.7801	0.7798	0.7788	0.7782	0.7783	0.7785	0.7793	0.7884
59	0.7837	0.7786	0.7760	0.7739	0.7715	0.7707	0.7687	0.7682	0.7669	0.7658	0.7649	0.7649	0.7650	0.7707
60	0.7721	0.7673	0.7648	0.7627	0.7602	0.7594	0.7571	0.7565	0.7549	0.7533	0.7513	0.7511	0.7504	0.7525
61	0.7603	0.7558	0.7534	0.7514	0.7488	0.7479	0.7453	0.7447	0.7427	0.7406	0.7375	0.7370	0.7356	0.7338
62	0.7484	0.7442	0.7419	0.7399	0.7372	0.7363	0.7335	0.7328	0.7304	0.7278	0.7236	0.7228	0.7205	0.7146
63	0.7363	0.7325	0.7303	0.7283	0.7256	0.7246	0.7215	0.7207	0.7179	0.7148	0.7095	0.7085	0.7053	0.6951
64	0.7240	0.7206	0.7185	0.7166	0.7138	0.7128	0.7094	0.7085	0.7054	0.7017	0.6952	0.6940	0.6899	0.6753
65	0.7116	0.7086	0.7066	0.7047	0.7019	0.7008	0.6972	0.6962	0.6927	0.6885	0.6808	0.6793	0.6744	0.6553
66	0.6991	0.6964	0.6946	0.6927	0.6898	0.6888	0.6849	0.6838	0.6799	0.6751	0.6663	0.6646	0.6588	0.6351
67	0.6863	0.6841	0.6825	0.6807	0.6777	0.6766	0.6724	0.6713	0.6670	0.6617	0.6517	0.6497	0.6430	0.6147
68	0.6735	0.6717	0.6702	0.6685	0.6655	0.6643	0.6599	0.6586	0.6540	0.6482	0.6370	0.6348	0.6272	0.5943
69	0.6605	0.6592	0.6578	0.6561	0.6531	0.6519	0.6473	0.6459	0.6409	0.6345	0.6223	0.6197	0.6112	0.5738
70	0.6474	0.6465	0.6453	0.6437	0.6407	0.6394	0.6345	0.6331	0.6278	0.6208	0.6074	0.6046	0.5953	0.5534
71	0.6341	0.6338	0.6327	0.6312	0.6281	0.6268	0.6217	0.6202	0.6145	0.6070	0.5925	0.5895	0.5793	0.5331
72	0.6208	0.6209	0.6200	0.6185	0.6154	0.6141	0.6088	0.6072	0.6012	0.5932	0.5776	0.5743	0.5633	0.5129
73	0.6073	0.6079	0.6072	0.6058	0.6027	0.6013	0.5958	0.5941	0.5877	0.5793	0.5626	0.5591	0.5473	0.4929
74	0.5937	0.5948	0.5942	0.5929	0.5898	0.5884	0.5827	0.5809	0.5742	0.5653	0.5476	0.5439	0.5313	0.4731
75	0.5800	0.5815	0.5812	0.5800	0.5769	0.5755	0.5695	0.5677	0.5607	0.5513	0.5326	0.5287	0.5153	0.4536
76	0.5661	0.5682	0.5680	0.5669	0.5638	0.5624	0.5562	0.5543	0.5471	0.5372	0.5176	0.5135	0.4994	0.4344
77	0.5522	0.5548	0.5548	0.5537	0.5507	0.5492	0.5429	0.5409	0.5334	0.5231	0.5026	0.4983	0.4836	0.4155
78	0.5382	0.5412	0.5414	0.5405	0.5374	0.5359	0.5295	0.5274	0.5196	0.5090	0.4876	0.4831	0.4678	0.3969
79	0.5240	0.5276	0.5280	0.5271	0.5241	0.5226	0.5160	0.5139	0.5058	0.4948	0.4727	0.4680	0.4521	0.3788
80	0.5098	0.5138	0.5144	0.5137	0.5107	0.5092	0.5024	0.5003	0.4920	0.4806	0.4578	0.4529	0.4365	0.3610
81	0.4955	0.5000	0.5007	0.5001	0.4972	0.4956	0.4888	0.4866	0.4781	0.4664	0.4429	0.4379	0.4211	0.3437
82	0.4811	0.4861	0.4870	0.4864	0.4835	0.4820	0.4751	0.4728	0.4641	0.4522	0.4281	0.4230	0.4057	0.3267
83	0.4666	0.4720	0.4731	0.4727	0.4699	0.4683	0.4613	0.4590	0.4502	0.4379	0.4133	0.4081	0.3905	0.3103
84	0.4520	0.4579	0.4592	0.4588	0.4561	0.4545	0.4474	0.4451	0.4361	0.4237	0.3986	0.3933	0.3754	0.2943
85	0.4373	0.4436	0.4451	0.4449	0.4422	0.4407	0.4335	0.4312	0.4221	0.4095	0.3840	0.3786	0.3604	0.2787
86	0.4226	0.4293	0.4310	0.4309	0.4282	0.4267	0.4196	0.4172	0.4080	0.3952	0.3694	0.3640	0.3457	0.2637
87	0.4078	0.4149	0.4167	0.4167	0.4142	0.4127	0.4055	0.4031	0.3938	0.3810	0.3550	0.3495	0.3310	0.2491
88	0.3929	0.4004	0.4024	0.4025	0.4000	0.3986	0.3914	0.3890	0.3797	0.3667	0.3406	0.3351	0.3166	0.2349
89	0.3779	0.3858	0.3880	0.3882	0.3858	0.3844	0.3772	0.3748	0.3655	0.3525	0.3263	0.3208	0.3023	0.2213
90	0.3629	0.3711	0.3734	0.3738	0.3715	0.3701	0.3630	0.3606	0.3513	0.3383	0.3122	0.3067	0.2882	0.2081
91	0.3478	0.3563	0.3588	0.3593	0.3571	0.3557	0.3487	0.3464	0.3371	0.3241	0.2981	0.2926	0.2743	0.1953
92	0.3326	0.3415	0.3441	0.3446	0.3426	0.3413	0.3344	0.3320	0.3228	0.3100	0.2841	0.2787	0.2606	0.1831
93	0.3174	0.3265	0.3293	0.3299	0.3281	0.3267	0.3200	0.3177	0.3086	0.2958	0.2703	0.2649	0.2471	0.1712
94	0.3021	0.3115	0.3144	0.3152	0.3134	0.3121	0.3055	0.3033	0.2943	0.2817	0.2565	0.2513	0.2337	0.1598
95	0.2868	0.2964	0.2994	0.3003	0.2987	0.2974	0.2910	0.2888	0.2800	0.2677	0.2429	0.2378	0.2206	0.1488
96	0.2714	0.2812	0.2843	0.2853	0.2839	0.2827	0.2764	0.2743	0.2657	0.2536	0.2294	0.2244	0.2077	0.1383
97	0.2560	0.2659	0.2691	0.2702	0.2690	0.2678	0.2618	0.2597	0.2514	0.2396	0.2161	0.2112	0.1950	0.1282
98	0.2405	0.2505	0.2538	0.2550	0.2540	0.2529	0.2472	0.2451	0.2370	0.2257	0.2029	0.1981	0.1825	0.1184
99	0.2249	0.2350	0.2384	0.2398	0.2389	0.2379	0.2324	0.2305	0.2227	0.2117	0.1898	0.1852	0.1701	0.1091
100	0.2094	0.2195	0.2230	0.2244	0.2237	0.2228	0.2177	0.2158	0.2084	0.1979	0.1768	0.1724	0.1580	0.1001

Age Handicapped Runs For Women

	Meters Run By Age		
AGE	100	200	400
8	73.3	144.4	286.1
9	76.6	150.8	299.8
10	79.3	156.2	311.6
11	81.7	160.9	321.7
12	83.7	164.9	330.4
13	85.3	168.3	337.9
14	86.8	171.3	344.4
15	88.0	173.8	350.0
16	89.0	176.0	354.8
17	89.9	177.9	359.0
18	90.7	179.4	362.6
19	91.3	180.8	365.6
OC	92.0	182.5	369.6
30	92.0	182.5	369.6
31	92.0	182.5	369.6
32	92.0	182.5	369.6
33	91.8	182.2	369.3
34	91.5	181.5	367.8
35	91.2	180.8	366.2
36	90.8	180.0	364.4
37	90.3	179.1	362.6
38	89.9	178.2	360.7
39	89.4	177.2	358.7
40	88.9	176.2	356.5
41	88.4	175.2	354.3
42	87.8	174.1	352.1
43	87.3	173.0	349.7
44	86.7	171.8	347.3
45	86.1	170.6	344.8
46	85.4	169.4	342.3
47	84.8	168.1	339.6
48	84.1	166.8	337.0
49	83.4	165.5	334.2
50	82.7	164.1	331.4
51	81.9	162.7	328.6
52	81.2	161.3	325.7
53	80.4	159.8	322.7
54	79.6	158.4	319.7
55	78.8	156.8	316.7
56	78.0	155.3	313.5
57	77.1	153.7	310.4
58	76.2	152.1	307.1
59	75.3	150.4	303.9
60	74.4	148.7	300.5
61	73.5	147.0	297.1
62	72.5	145.3	293.7
63	71.6	143.5	290.2
64	70.6	141.7	286.6
65	69.6	139.9	283.0
66	68.5	138.0	279.4
67	67.5	136.1	275.6
68	66.4	134.1	271.9
69	65.3	132.1	268.0
70	64.2	130.1	264.1
71	63.0	128.0	260.1
72	61.9	125.9	256.1
73	60.7	123.8	252.0
74	59.4	121.6	247.8
75	58.2	119.4	243.5
76	56.9	117.1	239.2
77	55.6	114.8	234.8
78	54.3	112.4	230.3
79	52.9	110.0	225.7
80	51.5	107.5	221.1
81	50.1	105.0	216.3
82	48.7	102.4	211.5
83	47.2	99.7	206.5
84	45.7	97.0	201.5
85	44.1	94.2	196.3
86	42.5	91.4	191.0
87	40.9	88.5	185.6
88	39.2	85.5	180.1
89	37.5	82.4	174.4
90	35.8	79.3	168.6
91	33.9	76.0	162.6
92	32.1	72.7	156.4
93	30.2	69.2	150.1
94	28.3	65.7	143.5
95	26.2	62.0	136.8
96	24.2	58.2	129.8
97	22.1	54.2	122.6
98	19.9	50.1	115.0
99	17.7	45.8	107.1
100	15.4	41.4	98.9

MEN'S HURDLE STANDARDS AND AGE FACTORS

		STANDARDS					AGE FACTORS		
AGE	SPRINT	INTER	STEEPLE	STEEPLE	AGE	SPRINT	INTER	STEEPLE
	110/39	400/36	3000/SC	3000/SC		110/39	400/36	3000/SC
			(H:M:S)	(Seconds)				
14	14.24	51.80	8:46.34	526.34	14	0.9065	0.9031	0.9038
15	13.84	50.60	8:35.58	515.58	15	0.9329	0.9246	0.9227
16	13.50	49.59	8:26.60	506.60	16	0.9562	0.9434	0.9390
17	13.22	48.74	8:19.08	499.08	17	0.9766	0.9599	0.9532
18	12.98	48.02	8:12.79	492.79	18	0.9943	0.9742	0.9654
19	12.79	47.42	8:07.53	487.53	19	1.0095	0.9865	0.9758
	110/42					110/42		
OC	12.91	46.78	7:55.72	475.72	OC	1.0000	1.0000	1.0000
	110/39					110/39		
30	12.48	46.78	7:55.72	475.72	30	1.0345	1.0000	1.0000
31	12.48	46.91	7:55.89	475.89	31	1.0345	0.9973	0.9997
32	12.51	47.23	7:57.86	477.86	32	1.0322	0.9905	0.9955
33	12.60	47.57	8:00.10	480.10	33	1.0246	0.9833	0.9909
34	12.70	47.94	8:02.59	482.59	34	1.0165	0.9758	0.9858
35	12.81	48.32	8:05.30	485.30	35	1.0077	0.9681	0.9803
36	12.93	48.73	8:08.24	488.24	36	0.9985	0.9601	0.9744
37	13.06	49.15	8:11.40	491.40	37	0.9888	0.9518	0.9681
38	13.19	49.59	8:14.76	494.76	38	0.9787	0.9433	0.9615
39	13.33	50.05	8:18.34	498.34	39	0.9683	0.9347	0.9546
40	13.48	50.53	8:22.13	502.13	40	0.9575	0.9259	0.9474
41	13.64	51.02	8:26.12	506.12	41	0.9464	0.9169	0.9399
42	13.81	51.53	8:30.32	510.32	42	0.9350	0.9078	0.9322
43	13.98	52.07	8:34.74	514.74	43	0.9233	0.8985	0.9242
44	14.17	52.62	8:39.37	519.37	44	0.9114	0.8891	0.9160
45	14.36	53.19	8:44.23	524.23	45	0.8992	0.8795	0.9075
46	14.56	53.78	8:49.31	529.31	46	0.8869	0.8698	0.8987
47	14.77	54.39	8:54.63	534.63	47	0.8743	0.8600	0.8898
48	14.98	55.03	9:00.20	540.20	48	0.8616	0.8501	0.8806
49	15.21	55.69	9:06.02	546.02	49	0.8487	0.8400	0.8712
	100/36	400/33				100/36	400/33	
50	13.03	53.78	9:12.11	552.11	50	0.9906	0.8699	0.8616
51	13.21	54.35	9:18.48	558.48	51	0.9771	0.8607	0.8518
52	13.40	54.95	9:25.14	565.14	52	0.9634	0.8513	0.8418
53	13.60	55.57	9:32.11	572.11	53	0.9495	0.8419	0.8315
54	13.80	56.21	9:39.40	579.40	54	0.9353	0.8323	0.8210
55	14.02	56.87	9:47.04	587.04	55	0.9210	0.8226	0.8104
56	14.24	57.56	9:55.05	595.05	56	0.9065	0.8128	0.7995
57	14.48	58.27	10:03.44	603.44	57	0.8918	0.8028	0.7883
58	14.72	59.01	10:12.25	612.25	58	0.8769	0.7927	0.7770
59	14.98	59.79	10:21.51	621.51	59	0.8618	0.7824	0.7654
	100/33	300/30	2000/SC	2000/SC		100/33	300/30	2000/SC
60	13.64	41.35	6:50.44	410.44	60	0.9462	1.1314	1.1590
61	13.82	41.85	6:56.56	416.56	61	0.9344	1.1178	1.1420
62	14.00	42.38	7:02.99	422.99	62	0.9222	1.1039	1.1247
63	14.19	42.93	7:09.73	429.73	63	0.9098	1.0897	1.1070
64	14.39	43.51	7:16.82	436.82	64	0.8971	1.0752	1.0890
65	14.60	44.11	7:24.30	444.30	65	0.8841	1.0604	1.0707
66	14.83	44.75	7:32.19	452.19	66	0.8708	1.0453	1.0520
67	15.06	45.43	7:40.53	460.53	67	0.8571	1.0298	1.0330
68	15.31	46.14	7:49.36	469.36	68	0.8431	1.0139	1.0135
69	15.58	46.89	7:58.74	478.74	69	0.8286	0.9976	0.9937
	80/30					80/30		
70	12.24	47.69	8:08.72	488.72	70	1.0545	0.9809	0.9734
71	12.45	48.54	8:19.35	499.35	71	1.0371	0.9637	0.9527
72	12.67	49.45	8:30.72	510.72	72	1.0192	0.9460	0.9315
73	12.90	50.42	8:42.90	522.90	73	1.0007	0.9277	0.9098
74	13.15	51.47	8:55.98	535.98	74	0.9816	0.9089	0.8876
75	13.42	52.59	9:10.08	550.08	75	0.9618	0.8895	0.8648
76	13.72	53.80	9:25.32	565.32	76	0.9413	0.8695	0.8415
77	14.03	55.11	9:41.86	581.86	77	0.9200	0.8488	0.8176
78	14.38	56.54	9:59.86	599.86	78	0.8979	0.8274	0.7930
79	14.76	58.10	10:19.54	619.54	79	0.8749	0.8052	0.7679
80	15.17	59.81	10:41.16	641.16	80	0.8510	0.7821	0.7420
81	15.63	1:01.70	11:05.01	665.01	81	0.8260	0.7582	0.7154
82	16.14	1:03.79	11:31.48	691.48	82	0.8001	0.7334	0.6880
83	16.70	1:06.12	12:01.01	721.01	83	0.7729	0.7075	0.6598
84	17.34	1:08.74	12:34.20	754.20	84	0.7445	0.6805	0.6308
85	18.06	1:11.70	13:11.76	791.76	85	0.7148	0.6524	0.6008
86	18.88	1:15.08	13:54.64	834.64	86	0.6837	0.6230	0.5700
87	19.83	1:18.98	14:44.07	884.07	87	0.6510	0.5923	0.5381
88	20.94	1:23.52	15:41.69	941.69	88	0.6167	0.5601	0.5052
89	22.24	1:28.88	16:49.72	1009.72	89	0.5805	0.5263	0.4711
90	23.80	1:35.30	18:11.29	1091.29	90	0.5424	0.4909	0.4359

BOY'S HURDLE TIME STANDARDS

AGE	80/30	100/33	100/36	110/39	110/42	300/30	300/33	400/33	400/36	2K/SC	3K/SC
14	9.49	11.80	12.19	14.24	14.58	35.53	38.40	50.49	51.80	349.5	526.3
15	9.33	11.58	11.88	13.84	14.19	34.68	37.15	49.30	50.60	341.1	515.6
16	9.19	11.39	11.62	13.50	13.87	33.95	36.07	48.29	49.59	333.9	506.6
17	9.07	11.23	11.41	13.22	13.61	33.32	35.13	47.42	48.74	327.8	499.1
18	8.97	11.10	11.22	12.98	13.39	32.77	34.30	46.68	48.02	322.5	492.8
19	8.88	10.98	11.07	12.79	13.22	32.29	33.56	46.04	47.42	318.1	487.5
OC					12.91				46.78		475.7

AGE	2K/SC	3K/SC
14	5:49.5	8:46.3
15	5:41.1	8:35.6
16	5:33.9	8:26.6
17	5:27.8	8:19.1
18	5:22.5	8:12.8
19	5:18.1	8:07.5
OC		7:55.72

WOMEN'S HURDLE STANDARDS AND AGE FACTORS

	STANDARDS					AGE FACTORS			
AGE	SPRINT 100/33	INTER 400/30	STEEPLE 2000/SC (H:M:S)	STEEPLE 2000/SC (Seconds)	AGE	SPRINT 100/33	INTER 400/30	STEEPLE 2000/SC
14	14.57	1:00.74	6:22.24	382.24	14	0.8383	0.8662	0.9418
15	14.02	58.91	6:16.02	376.02	15	0.8710	0.8930	0.9574
16	13.56	57.38	6:11.08	371.08	16	0.9007	0.9169	0.9702
17	13.17	56.08	6:07.17	367.17	17	0.9274	0.9382	0.9805
18	12.83	54.98	6:04.12	364.12	18	0.9514	0.9570	0.9887
19	12.55	54.04	6:01.77	361.77	19	0.9726	0.9735	0.9951
OC	12.21	52.61	6:00.00	360.00	OC	1.0000	1.0000	1.0000
30	12.21	52.61	6:00.00	360.00	30	1.0000	1.0000	1.0000
31	12.24	52.61	6:00.31	360.31	31	0.9976	1.0000	0.9991
32	12.38	52.71	6:01.63	361.63	32	0.9861	0.9980	0.9955
33	12.53	53.16	6:03.19	363.19	33	0.9741	0.9896	0.9912
34	12.69	53.64	6:04.98	364.98	34	0.9618	0.9808	0.9864
35	12.86	54.15	6:07.00	367.00	35	0.9492	0.9716	0.9809
36	13.04	54.69	6:09.27	369.27	36	0.9363	0.9620	0.9749
37	13.22	55.25	6:11.79	371.79	37	0.9233	0.9522	0.9683
38	13.41	55.84	6:14.55	374.55	38	0.9102	0.9422	0.9611
39	13.61	56.46	6:17.57	377.57	39	0.8970	0.9319	0.9535
	80/30					80/30		
40	10.40	57.10	6:20.85	380.85	40	1.1741	0.9214	0.9452
41	10.50	57.76	6:24.40	384.40	41	1.1630	0.9108	0.9365
42	10.60	58.46	6:28.21	388.21	42	1.1514	0.9000	0.9273
43	10.72	59.18	6:32.31	392.31	43	1.1394	0.8890	0.9176
44	10.84	59.92	6:36.69	396.69	44	1.1269	0.8780	0.9075
45	10.96	1:00.70	6:41.37	401.37	45	1.1140	0.8668	0.8969
46	11.09	1:01.50	6:46.36	406.36	46	1.1007	0.8555	0.8859
47	11.23	1:02.33	6:51.66	411.66	47	1.0870	0.8440	0.8745
48	11.38	1:03.19	6:57.29	417.29	48	1.0729	0.8325	0.8627
49	11.54	1:04.09	7:03.27	423.27	49	1.0585	0.8209	0.8505
	80/30	300/30				80/30	300/30	
50	11.70	45.30	7:09.60	429.60	50	1.0437	1.1614	0.8380
51	11.87	45.94	7:16.30	436.30	51	1.0286	1.1452	0.8251
52	12.05	46.61	7:23.39	443.39	52	1.0132	1.1288	0.8119
53	12.24	47.30	7:30.89	450.89	53	0.9975	1.1123	0.7984
54	12.44	48.02	7:38.81	458.81	54	0.9814	1.0956	0.7846
55	12.65	48.77	7:47.19	467.19	55	0.9651	1.0787	0.7706
56	12.87	49.55	7:56.03	476.03	56	0.9484	1.0617	0.7563
57	13.11	50.37	8:05.38	485.38	57	0.9315	1.0445	0.7417
58	13.35	51.22	8:15.25	495.25	58	0.9143	1.0271	0.7269
59	13.62	52.12	8:25.68	505.68	59	0.8968	1.0095	0.7119
60	13.89	53.05	8:36.70	516.70	60	0.8790	0.9917	0.6967
61	14.18	54.03	8:48.35	528.35	61	0.8611	0.9737	0.6814
62	14.49	55.06	9:00.68	540.68	62	0.8428	0.9555	0.6658
63	14.81	56.14	9:13.71	553.71	63	0.8243	0.9371	0.6502
64	15.16	57.28	9:27.51	567.51	64	0.8056	0.9185	0.6343
65	15.52	58.48	9:42.13	582.13	65	0.7866	0.8997	0.6184
66	15.91	59.75	9:57.63	597.63	66	0.7674	0.8806	0.6024
67	16.32	1:01.09	10:14.08	614.08	67	0.7480	0.8612	0.5862
68	16.76	1:02.51	10:31.54	631.54	68	0.7283	0.8416	0.5700
69	17.23	1:04.02	10:50.10	650.10	69	0.7085	0.8218	0.5538
70	17.74	1:05.63	11:09.86	669.86	70	0.6884	0.8017	0.5374
71	18.28	1:07.34	11:30.91	690.91	71	0.6681	0.7813	0.5210
72	18.85	1:09.17	11:53.38	713.38	72	0.6476	0.7606	0.5046
73	19.48	1:11.14	12:17.38	737.38	73	0.6269	0.7395	0.4882
74	20.15	1:13.25	12:43.07	763.07	74	0.6060	0.7182	0.4718
75	20.88	1:15.53	13:10.61	790.61	75	0.5849	0.6966	0.4553
76	21.66	1:17.99	13:40.20	820.20	76	0.5636	0.6746	0.4389
77	22.52	1:20.66	14:12.04	852.04	77	0.5421	0.6522	0.4225
78	23.46	1:23.57	14:46.39	886.39	78	0.5204	0.6295	0.4061
79	24.49	1:26.76	15:23.53	923.53	79	0.4986	0.6064	0.3898
80	25.62	1:30.25	16:03.80	963.80	80	0.4765	0.5829	0.3735
81	26.88	1:34.11	16:47.58	1007.58	81	0.4543	0.5590	0.3573
82	28.27	1:38.40	17:35.32	1055.32	82	0.4319	0.5347	0.3411
83	29.83	1:43.18	18:27.58	1107.58	83	0.4093	0.5099	0.3250
84	31.59	1:48.55	19:24.99	1164.99	84	0.3865	0.4846	0.3090
85	33.58	1:54.64	20:28.31	1228.31	85	0.3636	0.4589	0.2931
86	35.86	2:01.58	21:38.48	1298.48	86	0.3405	0.4327	0.2772
87	38.49	2:09.59	22:56.64	1376.64	87	0.3172	0.4060	0.2615
88	41.56	2:18.93	24:24.20	1464.20	88	0.2938	0.3787	0.2459
89	45.19	2:29.96	26:02.91	1562.91	89	0.2702	0.3508	0.2303
90	49.55	2:43.18	27:55.00	1675.00	90	0.2464	0.3224	0.2149

GIRL'S HURDLE TIME STANDARDS

AGE	80/30	100/33	300/30	400/30	2K/SC
14	10.55	14.57	42.46	60.74	382.2
15	10.34	14.02	41.25	58.91	376.0
16	10.18	13.56	40.23	57.38	371.1
17	10.05	13.17	39.37	56.08	367.2
18	9.94	12.83	38.64	54.98	364.1
19	9.85	12.55	38.02	54.04	361.8
OC		12.21		52.61	360.0

AGE	2K/SC
14	6:22.24
15	6:16.02
16	6:11.08
17	6:07.17
18	6:04.12
19	6:01.77
OC	6:00.00

MEN'S FIELD EVENT STANDARDS AND AGE FACTORS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		1.32	4.62						
9		1.55	5.31						
10		1.74	5.90						
11		1.88	6.40		SP/16 or	HT/16 or			
12	4.24	2.01	6.82		7.26k	7.26k	DT/2k	JT/800	WT/35
13	4.66	2.11	7.19	14.51					
14	5.00	2.20	7.52	15.38	16.74	65.12	53.52	70.61	17.35
15	5.26	2.27	7.80	16.09	18.01	68.95	56.66	75.57	18.49
16	5.48	2.33	8.05	16.68	19.14	72.35	59.47	79.93	19.51
17	5.66	2.38	8.26	17.17	20.15	75.37	61.99	83.77	20.43
18	5.80	2.43	8.45	17.57	21.06	78.05	64.25	87.16	21.25
19	5.92	2.45	8.62	17.89	21.89	80.44	66.28	90.16	22.00
OC	6.14	2.45	8.95	18.29	23.12	86.74	74.08	98.48	25.00
30	6.14	2.44	8.91	18.29	23.12	86.74	74.08	98.48	25.00
31	6.14	2.42	8.83	18.28	23.12	86.74	74.08	98.48	25.00
32	6.12	2.40	8.75	18.14	23.12	86.74	74.08	98.48	25.00
33	6.08	2.38	8.67	18.00	22.96	86.47	74.08	97.33	25.00
34	6.04	2.36	8.58	17.85	22.60	85.45	74.08	96.11	24.99
35	5.99	2.33	8.50	17.70	22.23	84.41	74.08	94.87	24.72
36	5.95	2.31	8.41	17.54	21.88	83.34	73.47	93.60	24.43
37	5.90	2.29	8.33	17.38	21.52	82.25	72.72	92.31	24.14
38	5.85	2.27	8.24	17.21	21.18	81.15	71.93	91.01	23.83
39	5.79	2.24	8.16	17.04	20.83	80.03	71.12	89.70	23.53
40	5.74	2.22	8.07	16.87	20.49	78.91	70.29	88.38	23.21
41	5.68	2.20	7.99	16.70	20.16	77.77	69.43	87.06	22.89
42	5.62	2.18	7.90	16.53	19.83	76.63	68.56	85.73	22.57
43	5.56	2.15	7.81	16.35	19.51	75.49	67.68	84.40	22.25
44	5.50	2.13	7.73	16.17	19.19	74.34	66.78	83.07	21.92
45	5.44	2.11	7.64	15.99	18.87	73.19	65.87	81.74	21.59
46	5.37	2.09	7.56	15.81	18.56	72.03	64.95	80.40	21.26
47	5.31	2.07	7.47	15.63	18.26	70.87	64.02	79.07	20.93
48	5.24	2.04	7.39	15.45	17.95	69.71	63.08	77.73	20.60
49	5.18	2.02	7.30	15.26	17.65	68.54	62.13	76.40	20.26
					SP/6k	HT/6k	DT/1.5k		WT/25
50	5.11	2.00	7.22	15.08	19.09	74.12	70.63	75.07	23.57
51	5.04	1.98	7.13	14.89	18.76	72.83	69.52	73.73	23.18
52	4.97	1.96	7.05	14.70	18.44	71.54	68.40	72.40	22.78
53	4.90	1.93	6.96	14.52	18.13	70.26	67.27	71.07	22.37
54	4.83	1.91	6.88	14.33	17.81	68.96	66.14	69.74	21.97
55	4.76	1.89	6.79	14.14	17.50	67.67	64.99	68.40	21.57
56	4.69	1.87	6.71	13.95	17.19	66.38	63.85	67.07	21.16
57	4.61	1.85	6.63	13.76	16.88	65.08	62.69	65.74	20.76
58	4.54	1.82	6.54	13.56	16.58	63.78	61.53	64.41	20.35
59	4.47	1.80	6.46	13.37	16.27	62.48	60.36	63.07	19.95
					SP/5k	HT/5k	DT/1k	JT/600	WT/20
60	4.39	1.78	6.37	13.18	17.50	67.01	72.49	71.29	21.85
61	4.32	1.76	6.29	12.98	17.17	65.57	71.04	69.75	21.39
62	4.24	1.74	6.21	12.79	16.84	64.14	69.59	68.21	20.93
63	4.16	1.71	6.12	12.59	16.52	62.70	68.13	66.66	20.47
64	4.08	1.69	6.04	12.39	16.19	61.25	66.66	65.11	20.01
65	4.00	1.67	5.95	12.20	15.87	59.80	65.18	63.56	19.55
66	3.92	1.65	5.87	12.00	15.55	58.35	63.70	62.01	19.08
67	3.84	1.62	5.78	11.80	15.23	56.89	62.20	60.46	18.62
68	3.76	1.60	5.70	11.60	14.91	55.42	60.70	58.90	18.15
69	3.68	1.58	5.61	11.40	14.59	53.95	59.20	57.33	17.68
					SP/4k	HT/4k			WT/16
70	3.60	1.56	5.53	11.19	15.96	58.67	57.68	55.77	19.25
71	3.52	1.53	5.44	10.99	15.60	57.02	56.15	54.20	18.72
72	3.43	1.51	5.36	10.79	15.25	55.35	54.62	52.62	18.19
73	3.35	1.49	5.27	10.58	14.90	53.68	53.07	51.04	17.66
74	3.26	1.47	5.19	10.38	14.54	52.00	51.52	49.45	17.13
75	3.18	1.44	5.10	10.17	14.19	50.32	49.96	47.86	16.59
76	3.09	1.42	5.01	9.96	13.83	48.62	48.39	46.27	16.05
77	3.00	1.40	4.93	9.75	13.48	46.91	46.81	44.66	15.51
78	2.92	1.37	4.84	9.54	13.13	45.20	45.22	43.05	14.97
79	2.83	1.35	4.75	9.33	12.77	43.47	43.61	41.43	14.42
									WT/12
80	2.74	1.33	4.66	9.12	12.42	41.74	42.00	39.81	16.02
81	2.65	1.30	4.57	8.90	12.06	39.99	40.38	38.17	15.39
82	2.56	1.28	4.49	8.69	11.70	38.24	38.74	36.53	14.75
83	2.47	1.26	4.40	8.47	11.35	36.47	37.10	34.88	14.10
84	2.37	1.23	4.31	8.26	10.99	34.69	35.44	33.22	13.45
85	2.28	1.21	4.22	8.04	10.63	32.90	33.77	31.55	12.80
86	2.19	1.18	4.12	7.82	10.27	31.09	32.09	29.88	12.15
87	2.09	1.16	4.03	7.60	9.90	29.27	30.39	28.19	11.49
88	2.00	1.13	3.94	7.38	9.54	27.44	28.69	26.49	10.82
89	1.90	1.11	3.85	7.15	9.18	25.59	26.96	24.78	10.15
90	1.80	1.08	3.76	6.93	8.81	23.73	25.23	23.06	9.48
91	1.70	1.06	3.66	6.70	8.44	21.86	23.46	21.33	8.80
92	1.61	1.03	3.57	6.47	8.07	19.96	21.72	19.58	8.12
93	1.51	1.01	3.47	6.24	7.70	18.06	19.94	17.82	7.43
94	1.41	0.98	3.38	6.01	7.33	16.13	18.14	16.05	6.74
95	1.30	0.95	3.28	5.78	6.95	14.19	16.34	14.27	6.04
96	1.20	0.93	3.18	5.55	6.57	12.23	14.51	12.47	5.34
97	1.10	0.90	3.08	5.31	6.19	10.25	12.67	10.66	4.63
98	0.99	0.88	2.99	5.08	5.81	8.25	10.81	8.84	3.91
99	0.89	0.85	2.89	4.84	5.42	6.24	8.93	6.99	3.19
100	0.78	0.82	2.79	4.60	5.03	4.20	7.04	5.14	2.46

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		0.5383	0.5164						
9		0.6330	0.5938						
10		0.7083	0.6590						
11		0.7693	0.7146		SP/16 or	HT/16 or			
12	0.6907	0.8196	0.7624		7.26k	7.26k	DT/2k	JT/800	WT/35
13	0.7593	0.8613	0.8038	0.7931					
14	0.8137	0.8964	0.8398	0.8409	0.7240	0.7508	0.7224	0.7170	0.6942
15	0.8572	0.9260	0.8713	0.8800	0.7788	0.7949	0.7646	0.7674	0.7396
16	0.8925	0.9510	0.8989	0.9120	0.8278	0.8341	0.8027	0.8116	0.7804
17	0.9211	0.9723	0.9231	0.9385	0.8716	0.8689	0.8368	0.8506	0.8171
18	0.9445	0.9902	0.9444	0.9604	0.9111	0.8999	0.8673	0.8851	0.8502
19	0.9634	1.0000	0.9630	0.9784	0.9466	0.9274	0.8947	0.9155	0.8800
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	0.9965	0.9955	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	0.9879	0.9867	0.9993	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9967	0.9791	0.9777	0.9919	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9904	0.9703	0.9685	0.9841	0.9933	0.9969	1.0000	0.9883	1.0000
34	0.9835	0.9613	0.9592	0.9759	0.9774	0.9851	1.0000	0.9760	0.9997
35	0.9762	0.9523	0.9497	0.9675	0.9617	0.9731	1.0000	0.9633	0.9887
36	0.9685	0.9432	0.9402	0.9589	0.9462	0.9608	0.9918	0.9504	0.9772
37	0.9604	0.9342	0.9306	0.9501	0.9309	0.9482	0.9816	0.9373	0.9654
38	0.9520	0.9251	0.9211	0.9410	0.9159	0.9355	0.9710	0.9241	0.9533
39	0.9433	0.9160	0.9114	0.9319	0.9011	0.9227	0.9600	0.9108	0.9410
40	0.9342	0.9069	0.9018	0.9226	0.8864	0.9097	0.9488	0.8975	0.9285
41	0.9250	0.8978	0.8922	0.9131	0.8720	0.8966	0.9373	0.8840	0.9158
42	0.9154	0.8887	0.8826	0.9036	0.8578	0.8835	0.9255	0.8706	0.9029
43	0.9057	0.8796	0.8730	0.8939	0.8438	0.8703	0.9136	0.8570	0.8899
44	0.8958	0.8705	0.8634	0.8842	0.8300	0.8570	0.9014	0.8435	0.8769
45	0.8856	0.8615	0.8539	0.8744	0.8164	0.8437	0.8891	0.8300	0.8637
46	0.8753	0.8524	0.8443	0.8645	0.8029	0.8304	0.8767	0.8164	0.8505
47	0.8648	0.8434	0.8348	0.8546	0.7896	0.8170	0.8641	0.8029	0.8372
48	0.8541	0.8343	0.8253	0.8446	0.7764	0.8036	0.8514	0.7893	0.8238
49	0.8433	0.8253	0.8158	0.8345	0.7634	0.7902	0.8386	0.7758	0.8104
					SP/6k	HT/6k	DT/1.5k		WT/25
50	0.8323	0.8163	0.8063	0.8244	0.8256	0.8545	0.9535	0.7623	0.9430
51	0.8212	0.8073	0.7968	0.8142	0.8116	0.8396	0.9385	0.7487	0.9270
52	0.8099	0.7983	0.7874	0.8039	0.7978	0.8248	0.9233	0.7352	0.9110
53	0.7985	0.7894	0.7779	0.7937	0.7840	0.8100	0.9081	0.7217	0.8950
54	0.7870	0.7804	0.7685	0.7833	0.7704	0.7951	0.8928	0.7081	0.8789
55	0.7753	0.7714	0.7591	0.7730	0.7569	0.7802	0.8774	0.6946	0.8627
56	0.7635	0.7624	0.7497	0.7626	0.7435	0.7652	0.8618	0.6811	0.8466
57	0.7516	0.7534	0.7403	0.7521	0.7302	0.7503	0.8463	0.6675	0.8304
58	0.7396	0.7444	0.7309	0.7416	0.7170	0.7353	0.8306	0.6540	0.8141
59	0.7274	0.7354	0.7215	0.7310	0.7039	0.7203	0.8148	0.6405	0.7979
					SP/5k	HT/5k	DT/1k	JT/600	WT/20
60	0.7152	0.7264	0.7121	0.7204	0.7568	0.7725	0.9785	0.7239	0.8738
61	0.7028	0.7174	0.7027	0.7098	0.7426	0.7560	0.9590	0.7083	0.8555
62	0.6903	0.7084	0.6933	0.6991	0.7285	0.7394	0.9394	0.6926	0.8372
63	0.6777	0.6994	0.6839	0.6884	0.7144	0.7228	0.9196	0.6769	0.8188
64	0.6649	0.6903	0.6745	0.6776	0.7004	0.7061	0.8998	0.6612	0.8004
65	0.6521	0.6812	0.6651	0.6668	0.6865	0.6894	0.8799	0.6454	0.7819
66	0.6391	0.6721	0.6556	0.6560	0.6726	0.6727	0.8598	0.6297	0.7634
67	0.6261	0.6630	0.6462	0.6450	0.6588	0.6558	0.8397	0.6139	0.7448
68	0.6129	0.6539	0.6367	0.6341	0.6449	0.6390	0.8194	0.5981	0.7261
69	0.5996	0.6447	0.6272	0.6231	0.6312	0.6220	0.7991	0.5822	0.7074
					SP/4k	HT/4k			WT/16
70	0.5862	0.6355	0.6177	0.6120	0.6903	0.6764	0.7786	0.5663	0.7699
71	0.5727	0.6263	0.6082	0.6009	0.6749	0.6573	0.7580	0.5503	0.7488
72	0.5591	0.6170	0.5986	0.5898	0.6596	0.6381	0.7373	0.5343	0.7277
73	0.5453	0.6077	0.5890	0.5786	0.6443	0.6189	0.7165	0.5183	0.7064
74	0.5315	0.5983	0.5794	0.5673	0.6290	0.5995	0.6955	0.5022	0.6851
75	0.5175	0.5890	0.5698	0.5560	0.6137	0.5801	0.6744	0.4860	0.6637
76	0.5034	0.5796	0.5601	0.5446	0.5984	0.5605	0.6532	0.4698	0.6421
77	0.4892	0.5701	0.5504	0.5332	0.5831	0.5409	0.6318	0.4535	0.6205
78	0.4749	0.5606	0.5406	0.5217	0.5677	0.5211	0.6104	0.4371	0.5988
79	0.4605	0.5510	0.5308	0.5101	0.5524	0.5012	0.5887	0.4207	0.5770
									WT/12
80	0.4459	0.5414	0.5210	0.4985	0.5370	0.4812	0.5670	0.4042	0.6409
81	0.4313	0.5318	0.5111	0.4869	0.5216	0.4611	0.5451	0.3876	0.6154
82	0.4165	0.5220	0.5012	0.4751	0.5062	0.4408	0.5230	0.3710	0.5898
83	0.4015	0.5123	0.4912	0.4633	0.4907	0.4204	0.5008	0.3542	0.5641
84	0.3865	0.5024	0.4811	0.4515	0.4752	0.3999	0.4784	0.3373	0.5382
85	0.3713	0.4925	0.4710	0.4395	0.4597	0.3793	0.4559	0.3204	0.5121
86	0.3560	0.4826	0.4609	0.4275	0.4441	0.3584	0.4332	0.3034	0.4859
87	0.3406	0.4726	0.4507	0.4154	0.4284	0.3375	0.4103	0.2862	0.4595
88	0.3251	0.4625	0.4404	0.4033	0.4127	0.3163	0.3872	0.2690	0.4329
89	0.3094	0.4523	0.4300	0.3911	0.3969	0.2951	0.3640	0.2516	0.4062
90	0.2936	0.4421	0.4196	0.3788	0.3811	0.2736	0.3406	0.2341	0.3793
91	0.2776	0.4318	0.4091	0.3664	0.3651	0.2520	0.3170	0.2165	0.3522
92	0.2615	0.4214	0.3986	0.3540	0.3491	0.2302	0.2931	0.1988	0.3248
93	0.2453	0.4109	0.3880	0.3414	0.3330	0.2082	0.2691	0.1810	0.2973
94	0.2289	0.4003	0.3773	0.3288	0.3169	0.1860	0.2449	0.1630	0.2696
95	0.2124	0.3897	0.3665	0.3161	0.3006	0.1636	0.2205	0.1449	0.2417
96	0.1958	0.3790	0.3556	0.3034	0.2842	0.1410	0.1959	0.1267	0.2135
97	0.1790	0.3682	0.3447	0.2905	0.2678	0.1182	0.1710	0.1083	0.1852
98	0.1620	0.3572	0.3336	0.2775	0.2512	0.0952	0.1459	0.0897	0.1565
99	0.1449	0.3462	0.3225	0.2645	0.2345	0.0719	0.1206	0.0710	0.1277
100	0.1277	0.3351	0.3113	0.2513	0.2177	0.0484	0.0950	0.0522	0.0988

BOY'S FIELD EVENT STANDARDS

(DISTANCE IN METERS)

AGE	PV	HJ	LJ	TJ
8		1.32	4.62	
9		1.55	5.31	
10		1.74	5.90	
11		1.88	6.40	
12	4.24	2.01	6.82	
13	4.66	2.11	7.19	14.51
14	5.00	2.20	7.52	15.38
15	5.26	2.27	7.80	16.09
16	5.48	2.33	8.05	16.68
17	5.66	2.38	8.26	17.17
18	5.80	2.43	8.45	17.57
19	5.92	2.45	8.62	17.89
OC	6.14	2.45	8.95	18.29

AGE	SP 16 LB or 7.26 KG	SP 6 KG (13.23 LB)	SP 12 LB	SP 5 KG (11.02 LB)	SP 10 LB	HT 16 LB or 7.26 KG	HT 6 KG (13.23 LB)	HT 12 LB	HT 5 KG (11.02 LB)	HT 10 LB	DT 2 KG	DT 1.5 KG	DT 1 KG	JT 800 G	JT 600 G
14	16.74	18.41	19.33	20.17	21.17	65.12	71.63	75.20	78.47	82.37	53.52	61.80	75.68	70.61	81.54
15	18.01	19.81	20.79	21.70	22.78	68.95	75.84	79.62	83.08	87.21	56.66	65.42	80.12	75.57	87.26
16	19.14	21.05	22.10	23.06	24.21	72.35	79.58	83.54	87.18	91.51	59.47	68.67	84.10	79.93	92.29
17	20.15	22.17	23.27	24.28	25.49	75.37	82.90	87.03	90.82	95.33	61.99	71.58	87.66	83.77	96.73
18	21.06	23.17	24.32	25.38	26.64	78.05	85.86	90.13	94.05	98.73	64.25	74.19	90.86	87.16	100.65
19	21.89	24.07	25.27	26.37	27.68	80.44	88.49	92.89	96.93	101.75	66.28	76.53	93.73	90.16	104.10
OC	23.12					86.74					74.08			98.48	

(DISTANCE IN FEET-INCHES)

AGE	PV	HJ	LJ	TJ
8		4-03.9	15-01.9	
9		5-01.1	17-05.2	
10		5-08.3	19-04.2	
11		6-02.2	20-11.8	
12	13-11.0	6-07.1	22-04.7	
13	15-03.6	6-11.1	23-07.2	47-07.1
14	16-04.7	7-02.5	24-07.9	50-05.5
15	17-03.2	7-05.3	25-07.0	52-09.6
16	17-11.7	7-07.7	26-04.7	54-08.7
17	18-06.7	7-09.8	27-01.3	56-03.8
18	19-00.3	7-11.5	27-08.8	57-07.5
19	19-04.9	8-00.5	28-03.3	58-08.5
OC	20-01.7	8-00.5	29-04.4	60-00.1

AGE	SP 16 LB or 7.26 KG	SP 6 KG (13.23 LB)	SP 12 LB	SP 5 KG (11.02 LB)	SP 10 LB	HT 16 LB or 7.26 KG	HT 6 KG (13.23 LB)	HT 12 LB	HT 5 KG (11.02 LB)	HT 10 LB	DT 2 KG	DT 1.5 KG	DT 1 KG	JT 800 G	JT 600 G
14	54-11.0	60-04.9	63-05.0	66-02.1	69-05.6	213-07.8	235-00.2	246-08.5	257-05.4	270-03.0	175-07.0	202-08.9	248-03.7	231-08.1	267-06.1
15	59-00.9	64-11.8	68-02.6	71-02.2	74-08.7	226-02.5	248-10.0	261-02.5	272-07.0	286-01.6	185-10.6	214-07.6	262-10.5	247-11.2	286-03.5
16	62-09.5	69-00.8	72-06.0	75-07.9	79-05.1	237-04.3	261-01.1	274-00.9	286-00.1	300-02.8	195-01.2	225-03.4	275-11.0	262-02.8	302-09.6
17	66-01.4	72-08.7	76-04.1	79-08.0	83-07.6	247-03.2	271-11.9	285-06.2	297-11.4	312-09.2	203-04.5	234-10.0	287-07.3	274-10.0	317-04.2
18	69-01.3	76-00.2	79-09.6	83-03.3	87-05.0	256-01.0	281-08.3	295-08.4	308-06.9	323-11.0	210-09.5	243-04.8	298-01.3	285-11.5	330-02.4
19	71-09.6	78-11.8	82-10.9	86-06.3	90-09.9	263-11.0	290-03.7	304-09.0	318-00.2	333-10.0	217-05.4	251-01.1	307-06.2	295-09.4	341-06.5
OC	75-10.2					284-07.0					243-00.5			323-01.2	

MEN'S FIELD EVENT STANDARDS AND AGE FACTORS (USATF EVENTS)

AGE	WT SUPER	WT		AGE	WT SUPER	WT
8				8		
9				9		
10				10		
11				11		
12				12		
13				13		
14				14		
	WT/56	WT/35			WT/56	WT/35
15				15		
16				16		
17				17		
18				18		
19	14.55	22.00		19	0.5820	0.8800
OC		25.00		OC		1.0000
30	15.42	25.00		30	0.6170	1.0000
31	15.42	25.00		31	0.6170	1.0000
32	15.42	25.00		32	0.6170	1.0000
33	15.35	25.00		33	0.6140	1.0000
34	15.22	24.99		34	0.6090	0.9997
35	15.09	24.72		35	0.6035	0.9887
36	14.94	24.43		36	0.5978	0.9772
37	14.79	24.14		37	0.5917	0.9654
38	14.63	23.83		38	0.5854	0.9533
39	14.47	23.53		39	0.5788	0.9410
40	14.30	23.21		40	0.5720	0.9285
41	14.12	22.89		41	0.5650	0.9158
42	13.94	22.57		42	0.5578	0.9029
43	13.76	22.25		43	0.5504	0.8899
44	13.57	21.92		44	0.5428	0.8769
45	13.38	21.59		45	0.5351	0.8637
46	13.18	21.26		46	0.5272	0.8505
47	12.98	20.93		47	0.5192	0.8372
48	12.78	20.60		48	0.5110	0.8238
49	12.57	20.26		49	0.5027	0.8104
50	12.36	19.92		50	0.4943	0.7970
51	12.14	19.59		51	0.4858	0.7835
52	11.93	19.25		52	0.4771	0.7699
53	11.71	18.91		53	0.4684	0.7564
54	11.49	18.57		54	0.4595	0.7428
55	11.26	18.23		55	0.4505	0.7292
56	11.03	17.89		56	0.4414	0.7155
57	10.80	17.55		57	0.4322	0.7018
58	10.57	17.20		58	0.4229	0.6881
59	10.34	16.86		59	0.4135	0.6743
		WT/25				WT/25
60	10.10	19.54		60	0.4039	0.7816
61	9.86	19.13		61	0.3943	0.7652
62	9.61	18.72		62	0.3846	0.7488
63	9.37	18.31		63	0.3748	0.7324
64	9.12	17.90		64	0.3648	0.7159
65	8.87	17.48		65	0.3548	0.6993
66	8.62	17.07		66	0.3447	0.6828
67	8.36	16.65		67	0.3344	0.6661
68	8.10	16.24		68	0.3241	0.6494
69	7.84	15.82		69	0.3137	0.6327
	WT/35				WT/35	
70	13.01	15.40		70	0.5205	0.6159
71	12.66	14.98		71	0.5063	0.5990
72	12.30	14.55		72	0.4920	0.5821
73	11.94	14.13		73	0.4776	0.5651
74	11.58	13.70		74	0.4632	0.5481
75	11.22	13.27		75	0.4487	0.5309
76	10.85	12.84		76	0.4342	0.5137
77	10.49	12.41		77	0.4196	0.4964
78	10.12	11.98		78	0.4049	0.4790
79	9.75	11.54		79	0.3901	0.4616
80	9.38	11.10		80	0.3753	0.4440
81	9.01	10.66		81	0.3604	0.4264
82	8.63	10.22		82	0.3454	0.4086
83	8.26	9.77		83	0.3303	0.3908
84	7.88	9.32		84	0.3151	0.3728
85	7.50	8.87		85	0.2999	0.3548
86	7.11	8.42		86	0.2845	0.3366
87	6.73	7.96		87	0.2690	0.3183
88	6.34	7.50		88	0.2535	0.2999
89	5.95	7.04		89	0.2378	0.2814
90	5.55	6.57		90	0.2221	0.2628
91	5.16	6.10		91	0.2062	0.2440
92	4.76	5.63		92	0.1902	0.2251
93	4.35	5.15		93	0.1741	0.2060
94	3.95	4.67		94	0.1579	0.1868
95	3.54	4.19		95	0.1415	0.1674
96	3.13	3.70		96	0.1250	0.1479
97	2.71	3.21		97	0.1084	0.1283
98	2.29	2.71		98	0.0917	0.1085
99	1.87	2.21		99	0.0748	0.0885
100	1.44	1.71		100	0.0577	0.0683

WOMEN'S FIELD EVENT STANDARDS AND AGE FACTORS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		1.06	3.55						
9		1.22	4.03						
10		1.36	4.47						
11		1.48	4.87						
12		1.59	5.25		SP/4k	HT/4k	DT/1k	JT/600	WT/20
13		1.68	5.59						
14	3.57	1.76	5.91	11.86	15.97	66.46	61.05	54.88	18.07
15	3.79	1.83	6.20	13.17	17.20	72.39	65.23	59.63	19.50
16	3.99	1.90	6.48	13.73	18.37	78.00	68.90	64.05	20.79
17	4.16	1.96	6.74	14.22	19.48	83.32	72.12	68.17	21.97
18	4.31	2.01	6.98	14.66	20.53	88.41	74.96	72.01	23.03
19	4.44	2.06	7.21	15.06	21.54	93.29	76.80	75.61	24.00
						HT/16lb			WT/35
OC	4.59	2.09	7.52	15.50	22.63	72.64	76.80	80.00	19.15
						HT/4k			WT/20
30	4.58	2.07	7.52	15.50	22.63	93.72	74.86	80.00	25.33
31	4.51	2.04	7.52	15.35	22.52	91.03	73.48	79.89	25.33
32	4.44	2.02	7.47	15.15	21.96	88.48	72.12	77.92	24.87
33	4.37	1.99	7.35	14.94	21.43	86.05	70.78	76.02	24.39
34	4.30	1.97	7.23	14.74	20.92	83.73	69.45	74.16	23.91
35	4.23	1.94	7.12	14.54	20.43	81.51	68.15	72.37	23.43
36	4.17	1.92	7.01	14.34	19.96	79.39	66.87	70.62	22.96
37	4.10	1.90	6.90	14.14	19.51	77.34	65.60	68.91	22.50
38	4.03	1.87	6.79	13.94	19.08	75.37	64.36	67.26	22.05
39	3.96	1.85	6.69	13.75	18.66	73.47	63.13	65.64	21.60
40	3.89	1.83	6.59	13.56	18.25	71.64	61.92	64.06	21.16
41	3.83	1.80	6.50	13.37	17.86	69.87	60.73	62.52	20.72
42	3.76	1.78	6.40	13.18	17.48	68.15	59.55	61.01	20.29
43	3.69	1.76	6.31	12.99	17.11	66.48	58.39	59.54	19.87
44	3.63	1.74	6.22	12.81	16.75	64.86	57.24	58.09	19.45
45	3.56	1.71	6.13	12.62	16.40	63.28	61.69	56.68	19.04
46	3.50	1.69	6.04	12.44	16.06	61.74	60.13	55.29	18.63
47	3.44	1.67	5.96	12.26	15.72	60.25	58.64	53.92	18.23
48	3.37	1.65	5.87	12.08	15.40	58.79	57.23	52.59	17.84
49	3.31	1.63	5.79	11.91	15.08	57.36	55.88	51.27	17.45
					SP/3k	HT/3k		JT/400	WT/16
50	3.25	1.61	5.71	11.73	17.06	64.62	50.63	61.21	19.07
51	3.18	1.59	5.63	11.56	16.70	63.04	49.57	59.64	18.65
52	3.12	1.57	5.55	11.38	16.36	61.49	48.51	58.10	18.22
53	3.06	1.55	5.47	11.21	16.02	59.97	47.47	56.59	17.80
54	3.00	1.53	5.40	11.04	15.69	58.48	46.43	55.09	17.39
55	2.94	1.51	5.32	10.87	15.36	57.02	45.40	53.61	16.98
56	2.88	1.49	5.25	10.70	15.04	55.58	44.38	52.15	16.57
57	2.82	1.47	5.17	10.53	14.72	54.16	43.36	50.71	16.17
58	2.76	1.45	5.10	10.36	14.41	52.76	42.35	49.28	15.77
59	2.70	1.43	5.03	10.20	14.10	51.38	41.34	47.87	15.37
									WT/12
60	2.64	1.41	4.96	10.03	13.80	50.02	40.34	46.47	17.30
61	2.58	1.39	4.89	9.86	13.50	48.68	39.34	45.08	16.85
62	2.52	1.37	4.82	9.70	13.20	47.35	38.35	43.70	16.40
63	2.46	1.35	4.75	9.53	12.91	46.04	37.36	42.34	15.95
64	2.40	1.33	4.68	9.37	12.62	44.74	36.38	40.99	15.51
65	2.34	1.31	4.61	9.21	12.33	43.46	35.39	39.64	15.07
66	2.28	1.29	4.55	9.04	12.04	42.18	34.41	38.31	14.63
67	2.22	1.27	4.48	8.88	11.76	40.92	33.43	36.98	14.19
68	2.16	1.26	4.41	8.72	11.48	39.66	32.46	35.66	13.76
69	2.10	1.24	4.35	8.55	11.20	38.42	31.48	34.34	13.33
70	2.04	1.22	4.28	8.39	10.93	37.18	30.50	33.04	12.90
71	1.98	1.20	4.22	8.23	10.65	35.96	29.53	31.73	12.47
72	1.92	1.18	4.15	8.06	10.38	34.73	28.56	30.43	12.04
73	1.86	1.16	4.08	7.90	10.11	33.52	27.58	29.14	11.61
74	1.80	1.14	4.02	7.74	9.83	32.31	26.61	27.85	11.19
75	1.74	1.12	3.96	7.57	9.57	31.10	25.63	26.56	10.76
76	1.68	1.10	3.89	7.41	9.30	29.90	24.65	25.28	10.34
77	1.62	1.08	3.83	7.25	9.03	28.70	23.67	23.99	9.91
78	1.56	1.06	3.76	7.08	8.76	27.51	22.69	22.71	9.49
79	1.50	1.05	3.70	6.92	8.50	26.31	21.71	21.43	9.07
80	1.44	1.03	3.63	6.75	8.23	25.12	20.73	20.15	8.65
81	1.38	1.01	3.57	6.59	7.96	23.93	19.74	18.87	8.23
82	1.32	0.99	3.50	6.42	7.70	22.75	18.75	17.59	7.80
83	1.26	0.97	3.44	6.25	7.43	21.56	17.76	16.31	7.38
84	1.20	0.95	3.38	6.09	7.17	20.37	16.76	15.03	6.96
85	1.13	0.93	3.31	5.92	6.90	19.18	15.76	13.74	6.54
86	1.07	0.91	3.25	5.75	6.64	17.99	14.75	12.45	6.11
87	1.01	0.89	3.18	5.58	6.37	16.79	13.74	11.16	5.69
88	0.95	0.87	3.12	5.41	6.10	15.60	12.73	9.87	5.27
89	0.88	0.85	3.05	5.24	5.84	14.40	11.71	8.57	4.84
90	0.82	0.83	2.99	5.07	5.57	13.20	10.69	7.27	4.42
91	0.76	0.81	2.92	4.90	5.30	11.99	9.66	5.96	3.99
92	0.69	0.79	2.86	4.72	5.03	10.79	8.62	4.65	3.56
93	0.63	0.77	2.79	4.55	4.76	9.57	7.58	3.34	3.14
94	0.56	0.75	2.72	4.37	4.49	8.35	6.54	2.01	2.71
95	0.50	0.73	2.66	4.20	4.22	7.13	5.48	0.69	2.27
96	0.43	0.71	2.59	4.02	3.94	5.90	4.42		1.84
97	0.37	0.69	2.52	3.84	3.67	4.67	3.35		1.41
98	0.30	0.67	2.46	3.66	3.39	3.42	2.28		0.97
99	0.23	0.65	2.39	3.48	3.11	2.17	1.19		0.54
100	0.16	0.63	2.32	3.29	2.83	0.92	0.10		0.10

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		0.5087	0.4723						
9		0.5852	0.5363						
10		0.6512	0.5946						
11		0.7086	0.6482						
12		0.7590	0.6975		SP/4k	HT/4k	DT/1k	JT/600	WT/20
13		0.8034	0.7431						
14	0.7786	0.8428	0.7854	0.7649	0.7057	0.9149	0.7950	0.6860	0.9438
15	0.8262	0.8778	0.8248	0.8499	0.7602	0.9965	0.8494	0.7454	1.0183
16	0.8683	0.9090	0.8615	0.8856	0.8117	1.0737	0.8971	0.8006	1.0858
17	0.9056	0.9370	0.8959	0.9175	0.8607	1.1471	0.9391	0.8521	1.1470
18	0.9387	0.9619	0.9282	0.9460	0.9073	1.2171	0.9760	0.9002	1.2026
19	0.9679	0.9842	0.9586	0.9715	0.9520	1.2843	1.0000	0.9452	1.2531
						HT/16lb			WT/35
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
						HT/4k			WT/20
30	0.9981	0.9902	1.0000	1.0000	1.0000	1.2901	0.9747	1.0000	1.3229
31	0.9831	0.9780	1.0000	0.9903	0.9950	1.2531	0.9568	0.9986	1.3229
32	0.9680	0.9659	0.9939	0.9772	0.9703	1.2180	0.9391	0.9740	1.2988
33	0.9528	0.9539	0.9777	0.9640	0.9468	1.1846	0.9216	0.9502	1.2734
34	0.9377	0.9420	0.9620	0.9510	0.9243	1.1527	0.9044	0.9271	1.2483
35	0.9226	0.9303	0.9467	0.9380	0.9028	1.1222	0.8874	0.9046	1.2235
36	0.9075	0.9187	0.9319	0.9251	0.8821	1.0929	0.8707	0.8827	1.1990
37	0.8926	0.9072	0.9176	0.9123	0.8622	1.0647	0.8542	0.8614	1.1749
38	0.8777	0.8959	0.9036	0.8997	0.8430	1.0376	0.8380	0.8407	1.1512
39	0.8630	0.8847	0.8900	0.8871	0.8244	1.0115	0.8220	0.8205	1.1278
40	0.8483	0.8736	0.8767	0.8747	0.8065	0.9862	0.8062	0.8008	1.1047
41	0.8338	0.8627	0.8638	0.8624	0.7892	0.9618	0.7907	0.7815	1.0820
42	0.8193	0.8519	0.8511	0.8502	0.7723	0.9381	0.7754	0.7626	1.0596
43	0.8050	0.8412	0.8388	0.8382	0.7560	0.9152	0.7603	0.7442	1.0375
44	0.7908	0.8307	0.8267	0.8262	0.7401	0.8928	0.7454	0.7261	1.0157
45	0.7767	0.8202	0.8149	0.8144	0.7246	0.8711	0.8033	0.7085	0.9942
46	0.7626	0.8099	0.8033	0.8027	0.7096	0.8500	0.7829	0.6911	0.9730
47	0.7487	0.7997	0.7920	0.7911	0.6949	0.8294	0.7636	0.6741	0.9521
48	0.7349	0.7896	0.7808	0.7796	0.6805	0.8093	0.7452	0.6573	0.9314
49	0.7211	0.7795	0.7699	0.7681	0.6664	0.7896	0.7276	0.6409	0.9110
					SP/3k	HT/3k		JT/400	WT/16
50	0.7075	0.7696	0.7591	0.7568	0.7537	0.8896	0.6593	0.7651	0.9960
51	0.6939	0.7597	0.7485	0.7455	0.7381	0.8678	0.6454	0.7455	0.9737
52	0.6804	0.7500	0.7381	0.7343	0.7229	0.8465	0.6317	0.7263	0.9516
53	0.6669	0.7402	0.7278	0.7232	0.7079	0.8256	0.6181	0.7073	0.9297
54	0.6536	0.7306	0.7177	0.7122	0.6932	0.8051	0.6046	0.6886	0.9081
55	0.6402	0.7210	0.7077	0.7012	0.6787	0.7849	0.5912	0.6701	0.8867
56	0.6270	0.7115	0.6978	0.6903	0.6645	0.7651	0.5778	0.6519	0.8654
57	0.6138	0.7021	0.6881	0.6794	0.6505	0.7456	0.5646	0.6338	0.8444
58	0.6006	0.6926	0.6784	0.6686	0.6367	0.7263	0.5514	0.6160	0.8235
59	0.5875	0.6833	0.6689	0.6578	0.6231	0.7074	0.5383	0.5983	0.8028
									WT/12
60	0.5744	0.6740	0.6595	0.6471	0.6097	0.6886	0.5253	0.5808	0.9033
61	0.5613	0.6647	0.6501	0.6364	0.5964	0.6701	0.5123	0.5635	0.8797
62	0.5483	0.6554	0.6409	0.6258	0.5833	0.6519	0.4994	0.5463	0.8563
63	0.5353	0.6462	0.6317	0.6151	0.5703	0.6338	0.4865	0.5292	0.8330
64	0.5223	0.6370	0.6226	0.6045	0.5575	0.6159	0.4737	0.5123	0.8099
65	0.5093	0.6279	0.6136	0.5940	0.5448	0.5982	0.4609	0.4955	0.7869
66	0.4964	0.6187	0.6046	0.5834	0.5322	0.5807	0.4481	0.4788	0.7640
67	0.4834	0.6096	0.5957	0.5729	0.5197	0.5633	0.4353	0.4622	0.7412
68	0.4705	0.6005	0.5869	0.5623	0.5073	0.5460	0.4226	0.4457	0.7185
69	0.4575	0.5914	0.5780	0.5518	0.4950	0.5289	0.4099	0.4293	0.6959
70	0.4446	0.5823	0.5693	0.5413	0.4828	0.5119	0.3972	0.4129	0.6734
71	0.4316	0.5732	0.5606	0.5308	0.4706	0.4950	0.3845	0.3967	0.6510
72	0.4186	0.5641	0.5519	0.5203	0.4586	0.4782	0.3718	0.3804	0.6287
73	0.4056	0.5550	0.5432	0.5097	0.4466	0.4614	0.3591	0.3643	0.6064
74	0.3926	0.5459	0.5346	0.4992	0.4346	0.4448	0.3464	0.3481	0.5842
75	0.3796	0.5368	0.5260	0.4887	0.4227	0.4282	0.3337	0.3320	0.5620
76	0.3665	0.5277	0.5174	0.4781	0.4108	0.4116	0.3210	0.3160	0.5398
77	0.3534	0.5186	0.5088	0.4675	0.3990	0.3951	0.3083	0.2999	0.5177
78	0.3403	0.5095	0.5002	0.4569	0.3872	0.3787	0.2955	0.2839	0.4956
79	0.3271	0.5003	0.4917	0.4463	0.3754	0.3623	0.2827	0.2679	0.4736
80	0.3139	0.4911	0.4831	0.4357	0.3636	0.3459	0.2699	0.2519	0.4515
81	0.3007	0.4819	0.4746	0.4250	0.3519	0.3295	0.2570	0.2359	0.4295
82	0.2874	0.4727	0.4661	0.4143	0.3402	0.3131	0.2441	0.2199	0.4075
83	0.2740	0.4634	0.4575	0.4035	0.3284	0.2968	0.2312	0.2039	0.3855
84	0.2606	0.4542	0.4489	0.3928	0.3167	0.2804	0.2182	0.1878	0.3634
85	0.2472	0.4448	0.4404	0.3819	0.3050	0.2640	0.2052	0.1718	0.3414
86	0.2336	0.4355	0.4318	0.3711	0.2932	0.2476	0.1921	0.1557	0.3193
87	0.2200	0.4261	0.4232	0.3601	0.2814	0.2312	0.1790	0.1395	0.2972
88	0.2064	0.4166	0.4146	0.3492	0.2697	0.2147	0.1658	0.1234	0.2751
89	0.1927	0.4072	0.4059	0.3382	0.2579	0.1982	0.1525	0.1071	0.2529
90	0.1788	0.3976	0.3973	0.3271	0.2460	0.1817	0.1392	0.0909	0.2307
91	0.1650	0.3880	0.3886	0.3159	0.2342	0.1651	0.1258	0.0745	0.2084
92	0.1510	0.3784	0.3799	0.3047	0.2222	0.1485	0.1123	0.0582	0.1861
93	0.1369	0.3687	0.3711	0.2935	0.2103	0.1318	0.0987	0.0417	0.1637
94	0.1228	0.3590	0.3623	0.2821	0.1983	0.1150	0.0851	0.0252	0.1413
95	0.1085	0.3492	0.3535	0.2707	0.1863	0.0982	0.0714	0.0086	0.1188
96	0.0942	0.3393	0.3446	0.2593	0.1742	0.0812	0.0575		0.0962
97	0.0797	0.3294	0.3357	0.2477	0.1620	0.0642	0.0436		0.0735
98	0.0652	0.3193	0.3267	0.2361	0.1498	0.0471	0.0296		0.0508
99	0.0505	0.3093	0.3177	0.2244	0.1375	0.0299	0.0155		0.0280
100	0.0357	0.2991	0.3086	0.2125	0.1252	0.0126	0.0013		0.0050

GIRL'S FIELD EVENT STANDARDS

							(DISTANCE IN METERS)								
AGE	PV	HJ	LJ	TJ	SP	SP	SP	SP	HT	HT	HT	HT	DT	JT	JT
					4 KG	8 LB	3 KG	6 LB	4 KG	8 LB	3-KG	6 LB	1 KG	600 G	400 G
					(8.82 LB)		(6.61 LB)		(8.82 LB)		(6.61 LB)				
14	3.57	1.76	5.91	12.55	15.97	16.77	18.44	19.36	66.46	69.78	76.74	80.57	61.05	54.88	67.21
15	3.79	1.83	6.20	13.17	17.20	18.06	19.86	20.86	72.39	76.00	83.59	87.76	65.23	59.63	73.03
16	3.99	1.90	6.48	13.73	18.37	19.29	21.21	22.27	78.00	81.89	90.06	94.56	68.90	64.05	78.44
17	4.16	1.96	6.74	14.22	19.48	20.45	22.49	23.61	83.32	87.48	96.21	101.02	72.12	68.17	83.49
18	4.31	2.01	6.98	14.66	20.53	21.56	23.71	24.89	88.41	92.82	102.09	107.18	74.96	72.01	88.20
19	4.44	2.06	7.21	15.06	21.54	22.62	24.88	26.12	93.29	97.94	107.72	113.10	76.80	75.61	92.61
OC	4.59	2.09	7.52	15.50	22.63				72.64				76.80	80.00	
							(DISTANCE IN FEET-INCHES)								
AGE	PV	HJ	LJ	TJ	SP	SP	SP	SP	HT	HT	HT	HT	DT	JT	JT
					4 KG	8 LB	3 KG	6 LB	4 KG	8 LB	3-KG	6 LB	1 KG	600 G	400 G
					(8.82 LB)		(6.61 LB)		(8.82 LB)		(6.61 LB)				
14	11-08.7	5-09.3	19-04.5	41-02.2	52-04.8	55-00.1	60-06.0	63-06.3	218-00.6	228-11.2	251-09.4	264-04.1	200-03.7	180-00.5	220-06.1
15	12-05.3	6-00.2	20-04.2	43-02.6	56-05.3	59-03.1	65-02.1	68-05.1	237-06.0	249-04.2	274-02.9	287-11.1	214-00.3	195-07.7	239-07.3
16	13-00.9	6-02.8	21-03.1	45-00.4	60-03.2	63-03.3	69-07.1	73-00.7	255-10.7	268-08.0	295-05.8	310-02.7	226-00.6	210-01.6	257-04.3
17	13-07.7	6-05.1	22-01.3	46-07.9	63-10.8	67-01.1	73-09.4	77-05.6	273-04.5	287-00.2	315-07.9	331-05.0	236-07.5	223-07.7	273-10.9
18	14-01.6	6-07.2	22-10.8	48-01.3	67-04.4	70-08.7	77-09.4	81-08.0	290-00.7	304-06.4	334-11.1	351-07.7	245-11.0	236-03.2	289-04.3
19	14-06.9	6-09.0	23-07.8	49-04.9	70-08.2	74-02.5	81-07.4	85-08.3	306-00.8	321-04.1	353-05.0	371-00.6	251-11.6	248-00.9	303-10.0
OC	15-00.7	6-10.3	24-08.1	50-10.2	74-02.9				238-03.8				251-11.6	262-05.6	

WOMEN'S FIELD EVENT STANDARDS AND AGE FACTORS (USATF EVENTS)

AGE	WT SUPER	WT		AGE	WT SUPER	WT
8				8		
9				9		
10				10		
11				11		
12				12		
13				13		
14				14		
15	WT/35	WT/20		15	WT/35	WT/20
16				16		
17				17		
18				18		
19	18.14	24.00		19	0.9472	1.2531
OC	19.15			OC	1.0000	
30	19.15	25.33		30	1.0000	1.3229
31	19.15	25.33		31	1.0000	1.3229
32	18.80	24.87		32	0.9818	1.2988
33	18.43	24.39		33	0.9626	1.2734
34	18.07	23.91		34	0.9436	1.2483
35	17.71	23.43		35	0.9249	1.2235
36	17.36	22.96		36	0.9064	1.1990
37	17.01	22.50		37	0.8882	1.1749
38	16.66	22.05		38	0.8702	1.1512
39	16.33	21.60		39	0.8525	1.1278
40	15.99	21.16		40	0.8351	1.1047
41	15.66	20.72		41	0.8179	1.0820
42	15.34	20.29		42	0.8010	1.0596
43	15.02	19.87		43	0.7843	1.0375
44	14.70	19.45		44	0.7678	1.0157
45	14.39	19.04		45	0.7516	0.9942
46	14.09	18.63		46	0.7356	0.9730
47	13.78	18.23		47	0.7197	0.9521
48	13.48	17.84		48	0.7041	0.9314
49	13.19	17.45		49	0.6887	0.9110
	WT/25	WT/16			WT/25	WT/16
50	15.26	19.07		50	0.7968	0.9960
51	14.92	18.65		51	0.7789	0.9737
52	14.58	18.22		52	0.7613	0.9516
53	14.24	17.80		53	0.7438	0.9297
54	13.91	17.39		54	0.7265	0.9081
55	13.58	16.98		55	0.7093	0.8867
56	13.26	16.57		56	0.6924	0.8654
57	12.94	16.17		57	0.6755	0.8444
58	12.62	15.77		58	0.6588	0.8235
59	12.30	15.37		59	0.6422	0.8028
60	11.98	14.98		60	0.6258	0.7822
61	11.67	14.59		61	0.6095	0.7618
62	11.36	14.20		62	0.5932	0.7415
63	11.05	13.81		63	0.5771	0.7214
64	10.74	13.43		64	0.5611	0.7014
65	10.44	13.05		65	0.5451	0.6814
66	10.14	12.67		66	0.5293	0.6616
67	9.83	12.29		67	0.5135	0.6419
68	9.53	11.92		68	0.4978	0.6223
69	9.23	11.54		69	0.4822	0.6027
70	8.93	11.17		70	0.4666	0.5832
71	8.64	10.80		71	0.4510	0.5638
72	8.34	10.43		72	0.4356	0.5444
73	8.05	10.06		73	0.4201	0.5251
74	7.75	9.69		74	0.4047	0.5059
75	7.46	9.32		75	0.3893	0.4867
76	7.16	8.95		76	0.3740	0.4675
77	6.87	8.59		77	0.3587	0.4484
78	6.58	8.22		78	0.3434	0.4292
79	6.28	7.85		79	0.3281	0.4101
80	5.99	7.49		80	0.3128	0.3911
81	5.70	7.12		81	0.2976	0.3720
82	5.41	6.76		82	0.2823	0.3529
83	5.11	6.39		83	0.2671	0.3338
84	4.82	6.03		84	0.2518	0.3147
85	4.53	5.66		85	0.2365	0.2956
86	4.24	5.30		86	0.2212	0.2765
87	3.94	4.93		87	0.2059	0.2574
88	3.65	4.56		88	0.1906	0.2382
89	3.36	4.19		89	0.1752	0.2190
90	3.06	3.83		90	0.1598	0.1998
91	2.77	3.46		91	0.1444	0.1805
92	2.47	3.09		92	0.1289	0.1612
93	2.17	2.72		93	0.1134	0.1418
94	1.87	2.34		94	0.0979	0.1224
95	1.58	1.97		95	0.0823	0.1029
96	1.28	1.60		96	0.0667	0.0833
97	0.98	1.22		97	0.0510	0.0637
98	0.67	0.84		98	0.0352	0.0440
99	0.37	0.46		99	0.0194	0.0242
100	0.07	0.08		100	0.0035	0.0044

MEN'S WALK EVENT STANDARDS IN H:M:S

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	8:20.5	8:56.1	16:46.3	18:02.9	28:50.7	48:17.5	1:01:58	1:38:13	2:17:10	2:58:45	3:43:06	5:20:48	7:12:07
9	7:30.6	8:02.9	15:09.4	16:18.9	26:03.6	43:28.6	55:37.8	1:27:34	2:01:32	2:37:37	3:15:59	4:40:43	6:18:06
10	6:56.7	7:26.8	14:04.1	15:08.7	24:11.2	40:14.9	51:23.1	1:20:26	1:51:06	2:23:30	2:57:54	4:13:58	5:42:07
11	6:32.3	7:00.8	13:17.2	14:18.4	22:50.9	37:56.5	48:21.2	1:15:20	1:43:38	2:13:25	2:44:59	3:54:54	5:16:26
12	6:13.9	6:41.3	12:42.1	13:40.7	21:50.8	36:13.2	46:05.5	1:11:32	1:38:04	2:05:53	2:35:19	3:40:36	4:57:13
13	5:59.6	6:26.1	12:15.0	13:11.6	21:04.5	34:53.5	44:20.8	1:08:36	1:33:45	2:00:03	2:27:50	3:29:31	4:42:17
14	5:48.3	6:14.1	11:53.6	12:48.6	20:27.9	33:50.6	42:58.0	1:06:17	1:30:20	1:55:25	2:21:52	3:20:42	4:30:23
15	5:39.1	6:04.3	11:36.3	12:30.1	19:58.5	32:60.0	41:51.4	1:04:24	1:27:34	1:51:39	2:17:02	3:13:30	4:20:41
16	5:31.6	5:56.4	11:22.2	12:15.0	19:34.6	32:18.7	40:57.0	1:02:52	1:25:18	1:48:33	2:13:03	3:07:34	4:12:38
17	5:25.4	5:49.8	11:10.7	12:02.6	19:14.9	31:44.7	40:12.1	1:01:36	1:23:25	1:45:59	2:09:43	3:02:34	4:05:52
18	5:20.2	5:44.3	11:01.1	11:52.3	18:58.6	31:16.5	39:34.9	1:00:32	1:21:50	1:43:48	2:06:54	2:58:21	4:00:07
19	5:15.9	5:39.7	10:53.1	11:43.8	18:45.1	30:53.1	39:03.8	59:38.4	1:20:30	1:41:58	2:04:30	2:54:44	3:55:12
OC	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
30	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
31	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
32	5:12.6	5:35.9	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
33	5:14.5	5:37.9	10:45.2	11:34.8	18:25.4	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
34	5:16.5	5:40.0	10:48.7	11:38.4	18:30.7	30:17.6	38:10.0	57:45.0	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
35	5:18.5	5:42.1	10:52.2	11:42.2	18:36.4	30:26.7	38:21.7	58:03.7	1:17:44	1:37:45	1:58:33	2:44:53	3:40:58
36	5:20.6	5:44.3	10:56.0	11:46.2	18:42.4	30:36.3	38:33.9	58:23.4	1:18:12	1:38:22	1:59:20	2:45:48	3:41:52
37	5:22.7	5:46.6	10:59.8	11:50.3	18:48.6	30:46.4	38:46.8	58:44.0	1:18:42	1:39:01	2:00:09	2:46:59	3:43:26
38	5:24.9	5:48.9	11:03.8	11:54.6	18:55.1	30:56.9	39:00.2	59:05.4	1:19:12	1:39:41	2:01:00	2:48:12	3:45:03
39	5:27.2	5:51.3	11:08.0	11:59.0	19:01.8	31:07.8	39:14.2	59:27.7	1:19:43	1:40:22	2:01:52	2:49:27	3:46:41
40	5:29.4	5:53.7	11:12.2	12:03.5	19:08.7	31:19.1	39:28.6	59:50.6	1:20:16	1:41:05	2:02:45	2:50:43	3:48:21
41	5:31.8	5:56.2	11:16.5	12:08.2	19:15.9	31:30.8	39:43.6	1:00:14	1:20:49	1:41:49	2:03:40	2:52:01	3:50:03
42	5:34.1	5:58.7	11:21.0	12:12.9	19:23.3	31:42.9	39:59.0	1:00:39	1:21:24	1:42:34	2:04:36	2:53:20	3:51:47
43	5:36.5	6:01.3	11:25.6	12:17.9	19:30.9	31:55.4	40:14.9	1:01:04	1:21:59	1:43:19	2:05:33	2:54:41	3:53:32
44	5:39.0	6:03.9	11:30.3	12:22.9	19:38.7	32:08.2	40:31.3	1:01:30	1:22:35	1:44:06	2:06:31	2:56:03	3:55:18
45	5:41.5	6:06.6	11:35.1	12:28.1	19:46.8	32:21.5	40:48.1	1:01:56	1:23:12	1:44:55	2:07:31	2:57:26	3:57:07
46	5:44.0	6:09.3	11:40.1	12:33.4	19:55.1	32:35.1	41:05.5	1:02:24	1:23:50	1:45:44	2:08:32	2:58:51	3:58:57
47	5:46.6	6:12.0	11:45.2	12:38.8	20:03.6	32:49.1	41:23.3	1:02:52	1:24:29	1:46:34	2:09:34	3:00:18	4:00:49
48	5:49.3	6:14.9	11:50.3	12:44.4	20:12.3	33:03.4	41:41.7	1:03:21	1:25:09	1:47:26	2:10:38	3:01:46	4:02:43
49	5:51.9	6:17.8	11:55.7	12:50.1	20:21.3	33:18.2	42:00.6	1:03:50	1:25:50	1:48:19	2:11:43	3:03:17	4:04:39
50	5:54.7	6:20.7	12:01.1	12:55.9	20:30.5	33:33.5	42:20.0	1:04:21	1:26:32	1:49:13	2:12:49	3:04:49	4:06:38
51	5:57.5	6:23.7	12:06.7	13:01.9	20:40.0	33:49.1	42:40.0	1:04:52	1:27:15	1:50:08	2:13:57	3:06:23	4:08:39
52	6:00.4	6:26.8	12:12.5	13:08.1	20:49.8	34:05.2	43:00.5	1:05:24	1:27:59	1:51:05	2:15:07	3:07:59	4:10:42
53	6:03.3	6:29.9	12:18.3	13:14.4	20:59.8	34:21.8	43:21.6	1:05:57	1:28:45	1:52:03	2:16:18	3:09:37	4:12:48
54	6:06.3	6:33.1	12:24.4	13:20.9	21:10.1	34:38.9	43:43.4	1:06:31	1:29:32	1:53:03	2:17:32	3:11:18	4:14:57
55	6:09.3	6:36.4	12:30.6	13:27.6	21:20.7	34:56.5	44:05.8	1:07:06	1:30:20	1:54:05	2:18:47	3:13:01	4:17:09
56	6:12.5	6:39.8	12:37.0	13:34.5	21:31.6	35:14.6	44:28.9	1:07:42	1:31:09	1:55:08	2:20:04	3:14:47	4:19:24
57	6:15.7	6:43.2	12:43.5	13:41.5	21:42.9	35:33.2	44:52.7	1:08:19	1:31:60	1:56:13	2:21:23	3:16:35	4:21:43
58	6:19.0	6:46.8	12:50.3	13:48.8	21:54.5	35:52.5	45:17.2	1:08:58	1:32:52	1:57:20	2:22:45	3:18:27	4:24:05
59	6:22.4	6:50.4	12:57.2	13:56.3	22:06.4	36:12.3	45:42.6	1:09:37	1:33:46	1:58:28	2:24:09	3:20:22	4:26:32
60	6:25.8	6:54.1	13:04.4	14:04.0	22:18.8	36:32.9	46:08.7	1:10:18	1:34:42	1:59:39	2:25:35	3:22:20	4:29:02
61	6:29.4	6:58.0	13:11.7	14:11.9	22:31.5	36:54.0	46:35.7	1:10:60	1:35:40	2:00:53	2:27:04	3:24:21	4:31:37
62	6:33.1	7:01.9	13:19.3	14:20.1	22:44.6	37:15.9	47:03.7	1:11:43	1:36:39	2:02:08	2:28:37	3:26:27	4:34:17
63	6:36.8	7:05.9	13:27.1	14:28.5	22:58.2	37:38.6	47:32.6	1:12:28	1:37:41	2:03:27	2:30:12	3:28:37	4:37:02
64	6:40.7	7:10.1	13:35.2	14:37.3	23:12.3	38:02.0	48:02.5	1:13:15	1:38:44	2:04:48	2:31:50	3:30:51	4:39:53
65	6:44.7	7:14.4	13:43.6	14:46.3	23:26.8	38:26.3	48:33.5	1:14:03	1:39:50	2:06:11	2:33:32	3:33:09	4:42:49
66	6:48.8	7:18.9	13:52.3	14:55.6	23:41.9	38:51.5	49:05.7	1:14:53	1:40:58	2:07:38	2:35:18	3:35:33	4:45:52
67	6:53.1	7:23.5	14:01.2	15:05.3	23:57.5	39:17.7	49:39.0	1:15:45	1:42:09	2:09:08	2:37:07	3:38:02	4:49:02
68	6:57.5	7:28.2	14:10.5	15:15.3	24:13.7	39:44.8	50:13.7	1:16:39	1:43:23	2:10:42	2:39:01	3:40:37	4:52:19
69	7:02.0	7:33.1	14:20.1	15:25.7	24:30.5	40:13.1	50:49.8	1:17:35	1:44:40	2:12:19	2:40:59	3:43:18	4:55:43
70	7:06.7	7:38.2	14:30.1	15:36.5	24:48.0	40:42.4	51:27.3	1:18:34	1:45:59	2:14:01	2:43:03	3:46:05	4:59:16
71	7:11.6	7:43.5	14:40.5	15:47.7	25:06.3	41:13.0	52:06.4	1:19:35	1:47:23	2:15:46	2:45:11	3:48:60	5:02:59
72	7:16.7	7:48.9	14:51.3	15:59.4	25:25.2	41:44.9	52:47.2	1:20:38	1:48:49	2:17:37	2:47:25	3:52:02	5:06:51
73	7:21.9	7:54.6	15:02.5	16:11.5	25:45.0	42:18.2	53:29.8	1:21:45	1:50:20	2:19:32	2:49:45	3:55:13	5:10:53
74	7:27.4	8:00.5	15:14.2	16:24.1	26:05.6	42:53.0	54:14.4	1:22:54	1:51:55	2:21:33	2:52:12	3:58:32	5:15:07
75	7:33.1	8:06.6	15:26.4	16:37.3	26:27.2	43:29.4	55:01.0	1:24:07	1:53:35	2:23:39	2:54:46	4:02:01	5:19:34
76	7:39.0	8:13.0	15:39.1	16:51.1	26:49.7	44:07.5	55:49.9	1:25:23	1:55:19	2:25:52	2:57:27	4:05:41	5:24:14
77	7:45.2	8:19.7	15:52.4	17:05.5	27:13.4	44:47.5	56:41.1	1:26:43	1:57:09	2:28:12	3:00:17	4:09:32	5:29:09
78	7:51.6	8:26.6	16:06.4	17:20.6	27:38.2	45:29.5	57:35.0	1:28:08	1:59:04	2:30:38	3:03:15	4:13:36	5:34:19
79	7:58.4	8:33.9	16:21.0	17:36.4	28:04.2	46:13.7	58:31.7	1:29:37	2:01:06	2:33:13	3:06:24	4:17:53	5:39:48
80	8:05.4	8:41.5	16:36.4	17:53.1	28:31.5	47:00.2	59:31.4	1:31:10	2:03:14	2:35:57	3:09:43	4:22:25	5:45:35
81	8:12.8	8:49.5	16:52.5	18:10.5	29:00.4	47:49.3	1:00:35	1:32:49	2:05:30	2:38:50	3:13:14	4:27:13	5:51:44
82	8:20.5	8:57.9	17:09.5	18:28.9	29:30.7	48:41.2	1:01:41	1:34:34	2:07:54	2:41:54	3:16:58	4:32:19	5:58:15
83	8:28.7	9:06.7	17:27.4	18:48.3	30:02.9	49:36.1	1:02:52	1:36:25	2:10:27	2:45:09	3:20:56	4:37:45	6:05:13
84	8:37.3	9:16.0	17:46.3	19:08.8	30:36.9	50:34.3	1:04:07	1:38:24	2:13:10	2:48:37	3:25:10	4:43:33	6:12:39
85	8:46.3	9:25.8	18:06.2	19:30.5	31:12.9	51:36.2	1:05:27	1:40:30	2:16:03	2:52:19	3:29:41	4:49:45	6:20:36
86	8:55.9	9:36.2	18:27.4	19:53.5	31:51.2	52:42.0	1:06:52	1:42:44	2:19:09	2:56:16	3:34:31	4:56:24	6:29:09
87	9:06.0	9:47.1	18:49.9	20:17.9	32:32.0	53:52.3	1:08:23	1:45:08	2:22:28	3:00:31	3:39:43	5:03:33	6:38:21
88	9:16.7	9:58.8	19:13.9	20:43.9	33:15.5	55:07.5	1:09:60	1:47:43	2:26:01	3:05:06	3:45:19	5:11:16	6:48:18
89	9:28.1	10:11.1	19:39.4	21:11.6	34:02.0	56:28.1	1:11:44	1:50:29	2:29:52	3:10:02	3:51:22	5:19:38	6:59:06
90	9:40.2	10:24.3	20:06.7	21:41.2	34:51.8	57:54.8	1:13:37	1:53:29	2:34:01	3:15:22	3:57:56	5:28:43	7:10:50
91	9:53.1	10:38.3	20:35.9	22:13.0	35:45.5	59:28.2	1:15:38	1:56:43	2:38:31	3:21:11	4:05:04	5:38:37	7:23:40
92	10:07.0	10:53.3	21:07.3	22:47.2	36:43.2	1:01:09	1:17:50	2:00:15	2:43:26	3:27:31	4:12:53	5:49:29	7:37:46
93	10:21.8	11:09.4	21:41.2	23:24.0	37:45.7	1:02:59	1:20:13	2:04:05	2:48:48	3:34:28	4:21:27	6:01:26	7:53:19
94	10:37.7	11:26.8	22:17.7	24:03.8	38:53.6	1:04:59	1:22:49	2:08:17	2:54:42	3:42:06	4:30:54	6:14:39	8:10:34
95	10:54.9	11:45.5	22:57.4	24:47.0	40:07.4	1:07:09	1:25:40	2:12:55	3:01:12	3:50:34	4:41:22	6:29:22	8:29:49
96	11:13.5	12:05.7	23:40.5	25:34.0	41:28.1	1:09:33	1:28:48	2:18:02	3:08:25	3:59:58	4:53:03	6:45:50	8:51:27
97	11:33.7	12:27.7	24:27.6	26:25.4	42:56.8	1:12:11	1:32:17	2:23:44	3:16:29	4:10:31	5:06:10	7:04:25	9:15:56
98	11:55.7	12:51.6	25:19.3	27:21.8	44:34.6	1:15:07	1:36:08	2:30:06	3:25:32	4:22:23	5:21:00	7:25:32	9:43:52
99	12:19.8	13:17.9	26:16.3	28:24.1	46:23.1	1:18:23	1:40:28	2:37:17	3:35:47	4:35:53	5:37:55	7:49:45	10:16:04
100	12:46.2	13:46.7	27:19.4	29:33.1	48:24.1	1:22:04	1:45:21	2:45:26	3:47:29	4:51:22	5:57:23	8:17:49	10:53:36

MEN'S WALK EVENT STANDARDS IN SECONDS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	500.5	536.1	1006.3	1082.9	1730.7	2897.5	3717.9	5893	8230	10725	13386	19248	25927
9	450.6	482.9	909.4	978.9	1563.6	2608.6	3337.8	5254	7292	9457	11759	16843	22686
10	416.7	446.8	844.1	908.7	1451.2	2414.9	3083.1	4826	6666	8610	10674	15238	20527
11	392.3	420.8	797.2	858.4	1370.9	2276.5	2901.2	4520	6218	8005	9899	14094	18986
12	373.9	401.3	762.1	820.7	1310.8	2173.2	2765.5	4292	5884	7553	9319	13236	17833
13	359.6	386.1	735.0	791.6	1264.5	2093.5	2660.8	4116	5625	7203	8870	12571	16937
14	348.3	374.1	713.6	768.6	1227.9	2030.6	2578.0	3977	5420	6925	8512	12042	16223
15	339.1	364.3	696.3	750.1	1198.5	1980.0	2511.4	3864	5254	6699	8222	11610	15641
16	331.6	356.4	682.2	735.0	1174.6	1938.7	2457.0	3772	5118	6513	7983	11254	15158
17	325.4	349.8	670.7	722.6	1154.9	1904.7	2412.1	3696	5005	6359	7783	10954	14752
18	320.2	344.3	661.1	712.3	1138.6	1876.5	2374.9	3632	4910	6228	7614	10701	14407
19	315.9	339.7	653.1	703.8	1125.1	1853.1	2343.8	3578	4830	6118	7470	10484	14112
OC	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
30	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
31	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
32	312.6	335.9	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
33	314.5	337.9	645.2	694.8	1105.4	1809.6	2282.6	3463	4646	5851	7107	9893	13258
34	316.5	340.0	648.7	698.4	1110.7	1817.6	2290.0	3465	4646	5851	7107	9893	13258
35	318.5	342.1	652.2	702.2	1116.4	1826.7	2301.7	3484	4664	5865	7113	9893	13258
36	320.6	344.3	656.0	706.2	1122.4	1836.3	2313.9	3503	4692	5902	7160	9948	13312
37	322.7	346.6	659.8	710.3	1128.6	1846.4	2326.8	3524	4722	5941	7209	10019	13406
38	324.9	348.9	663.8	714.6	1135.1	1856.9	2340.2	3545	4752	5981	7260	10092	13503
39	327.2	351.3	668.0	719.0	1141.8	1867.8	2354.2	3568	4783	6022	7312	10167	13601
40	329.4	353.7	672.2	723.5	1148.7	1879.1	2368.6	3591	4816	6065	7365	10243	13701
41	331.8	356.2	676.5	728.2	1155.9	1890.8	2383.6	3614	4849	6109	7420	10321	13803
42	334.1	358.7	681.0	732.9	1163.3	1902.9	2399.0	3639	4884	6154	7476	10400	13907
43	336.5	361.3	685.6	737.9	1170.9	1915.4	2414.9	3664	4919	6199	7533	10481	14012
44	339.0	363.9	690.3	742.9	1178.7	1928.2	2431.3	3690	4955	6246	7591	10563	14118
45	341.5	366.6	695.1	748.1	1186.8	1941.5	2448.1	3716	4992	6295	7651	10646	14227
46	344.0	369.3	700.1	753.4	1195.1	1955.1	2465.5	3744	5030	6344	7712	10731	14337
47	346.6	372.0	705.2	758.8	1203.6	1969.1	2483.3	3772	5069	6394	7774	10818	14449
48	349.3	374.9	710.3	764.4	1212.3	1983.4	2501.7	3801	5109	6446	7838	10906	14563
49	351.9	377.8	715.7	770.1	1221.3	1998.2	2520.6	3830	5150	6499	7903	10997	14679
50	354.7	380.7	721.1	775.9	1230.5	2013.5	2540.0	3861	5192	6553	7969	11089	14798
51	357.5	383.7	726.7	781.9	1240.0	2029.1	2560.0	3892	5235	6608	8037	11183	14919
52	360.4	386.8	732.5	788.1	1249.8	2045.2	2580.5	3924	5279	6665	8107	11279	15042
53	363.3	389.9	738.3	794.4	1259.8	2061.8	2601.6	3957	5325	6723	8178	11377	15168
54	366.3	393.1	744.4	800.9	1270.1	2078.9	2623.4	3991	5372	6783	8252	11478	15297
55	369.3	396.4	750.6	807.6	1280.7	2096.5	2645.8	4026	5420	6845	8327	11581	15429
56	372.5	399.8	757.0	814.5	1291.6	2114.6	2668.9	4062	5469	6908	8404	11687	15564
57	375.7	403.2	763.5	821.5	1302.9	2133.2	2692.7	4099	5520	6973	8483	11795	15703
58	379.0	406.8	770.3	828.8	1314.5	2152.5	2717.2	4138	5572	7040	8565	11907	15845
59	382.4	410.4	777.2	836.3	1326.4	2172.3	2742.6	4177	5626	7108	8649	12022	15992
60	385.8	414.1	784.4	844.0	1338.8	2192.9	2768.7	4218	5682	7179	8735	12140	16142
61	389.4	418.0	791.7	851.9	1351.5	2214.0	2795.7	4260	5740	7253	8824	12261	16297
62	393.1	421.9	799.3	860.1	1364.6	2235.9	2823.7	4303	5799	7328	8917	12387	16457
63	396.8	425.9	807.1	868.5	1378.2	2258.6	2852.6	4348	5861	7407	9012	12517	16622
64	400.7	430.1	815.2	877.3	1392.3	2282.0	2882.5	4395	5924	7488	9110	12651	16793
65	404.7	434.4	823.6	886.3	1406.8	2306.3	2913.5	4443	5990	7571	9212	12789	16969
66	408.8	438.9	832.3	895.6	1421.9	2331.5	2945.7	4493	6058	7658	9318	12933	17152
67	413.1	443.5	841.2	905.3	1437.5	2357.7	2979.0	4545	6129	7748	9427	13082	17342
68	417.5	448.2	850.5	915.3	1453.7	2384.8	3013.7	4599	6203	7842	9541	13237	17539
69	422.0	453.1	860.1	925.7	1470.5	2413.1	3049.8	4655	6280	7939	9659	13398	17743
70	426.7	458.2	870.1	936.5	1488.0	2442.4	3087.3	4714	6359	8041	9783	13565	17956
71	431.6	463.5	880.5	947.7	1506.3	2473.0	3126.4	4775	6443	8146	9911	13740	18179
72	436.7	468.9	891.3	959.4	1525.2	2504.9	3167.2	4838	6529	8257	10045	13922	18411
73	441.9	474.6	902.5	971.5	1545.0	2538.2	3209.8	4905	6620	8372	10185	14113	18653
74	447.4	480.5	914.2	984.1	1565.6	2573.0	3254.4	4974	6715	8493	10332	14312	18907
75	453.1	486.6	926.4	997.3	1587.2	2609.4	3301.0	5047	6815	8619	10486	14521	19174
76	459.0	493.0	939.1	1011.1	1609.7	2647.5	3349.9	5123	6919	8752	10647	14741	19454
77	465.2	499.7	952.4	1025.5	1633.4	2687.5	3401.1	5203	7029	8892	10817	14972	19749
78	471.6	506.6	966.4	1040.6	1658.2	2729.5	3455.0	5288	7144	9038	10995	15216	20059
79	478.4	513.9	981.0	1056.4	1684.2	2773.7	3511.7	5377	7266	9193	11184	15473	20388
80	485.4	521.5	996.4	1073.1	1711.5	2820.2	3571.4	5470	7394	9357	11383	15745	20735
81	492.8	529.5	1012.5	1090.5	1740.4	2869.3	3634.5	5569	7530	9530	11594	16033	21104
82	500.5	537.9	1029.5	1108.9	1770.7	2921.2	3701.2	5674	7674	9714	11818	16339	21495
83	508.7	546.7	1047.4	1128.3	1802.9	2976.1	3771.9	5785	7827	9909	12056	16665	21913
84	517.3	556.0	1066.3	1148.8	1836.9	3034.3	3846.9	5904	7990	10117	12310	17013	22359
85	526.3	565.8	1086.2	1170.5	1872.9	3096.2	3926.7	6030	8163	10339	12581	17385	22836
86	535.9	576.2	1107.4	1193.5	1911.2	3162.0	4011.7	6164	8349	10576	12871	17784	23349
87	546.0	587.1	1129.9	1217.9	1952.0	3232.3	4102.6	6308	8548	10831	13183	18213	23901
88	556.7	598.8	1153.9	1243.9	1995.5	3307.5	4199.6	6463	8761	11106	13519	18676	24498
89	568.1	611.1	1179.4	1271.6	2042.0	3388.1	4304.3	6629	8992	11402	13882	19178	25146
90	580.2	624.3	1206.7	1301.2	2091.8	3474.8	4416.7	6809	9241	11722	14276	19723	25850
91	593.1	638.3	1235.9	1333.0	2145.5	3568.2	4538.1	7003	9511	12071	14704	20317	26620
92	607.0	653.3	1267.3	1367.2	2203.2	3669.3	4669.7	7215	9806	12451	15173	20969	27466
93	621.8	669.4	1301.2	1404.0	2265.7	3779.0	4812.7	7445	10128	12868	15687	21686	28399
94	637.7	686.8	1337.7	1443.8	2333.6	3898.5	4968.8	7697	10482	13326	16254	22479	29434
95	654.9	705.5	1377.4	1487.0	2407.4	4029.2	5139.9	7975	10872	13834	16882	23362	30589
96	673.5	725.7	1420.5	1534.0	2488.1	4172.8	5328.2	8282	11305	14398	17583	24350	31887
97	693.7	747.7	1467.6	1585.4	2576.8	4331.2	5536.6	8624	11789	15031	18370	25465	33356
98	715.7	771.6	1519.3	1641.8	2674.6	4507.0	5768.5	9006	12332	15743	19260	26732	35032
99	739.8	797.9	1576.3	1704.1	2783.1	4703.2	6028.1	9437	12947	16553	20275	28185	36964
100	766.2	826.7	1639.4	1773.1	2904.1	4923.5	6320.7	9926	13649	17482	21443	29869	39216

MEN'S WALK EVENT AGE FACTORS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	0.6233	0.6256	0.6389	0.6395	0.6376	0.6245	0.6139	0.5876	0.5645	0.5455	0.5309	0.5140	0.5114
9	0.6924	0.6946	0.7069	0.7074	0.7058	0.6937	0.6839	0.6591	0.6371	0.6187	0.6044	0.5874	0.5844
10	0.7487	0.7507	0.7617	0.7621	0.7604	0.7494	0.7404	0.7176	0.6970	0.6796	0.6659	0.6492	0.6459
11	0.7954	0.7971	0.8064	0.8068	0.8050	0.7949	0.7868	0.7661	0.7471	0.7309	0.7180	0.7020	0.6983
12	0.8345	0.8359	0.8436	0.8438	0.8419	0.8327	0.8254	0.8068	0.7895	0.7747	0.7627	0.7474	0.7435
13	0.8676	0.8687	0.8747	0.8748	0.8727	0.8644	0.8579	0.8413	0.8258	0.8124	0.8013	0.7870	0.7828
14	0.8958	0.8967	0.9010	0.9010	0.8987	0.8912	0.8854	0.8708	0.8571	0.8450	0.8349	0.8216	0.8172
15	0.9200	0.9207	0.9233	0.9232	0.9208	0.9140	0.9089	0.8962	0.8841	0.8734	0.8644	0.8521	0.8477
16	0.9408	0.9412	0.9424	0.9422	0.9395	0.9334	0.9290	0.9181	0.9077	0.8983	0.8903	0.8791	0.8746
17	0.9588	0.9590	0.9586	0.9584	0.9556	0.9501	0.9463	0.9370	0.9282	0.9202	0.9132	0.9031	0.8987
18	0.9742	0.9742	0.9725	0.9722	0.9692	0.9643	0.9612	0.9535	0.9462	0.9394	0.9335	0.9246	0.9202
19	0.9875	0.9873	0.9843	0.9839	0.9808	0.9765	0.9739	0.9677	0.9619	0.9564	0.9514	0.9437	0.9395
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9982	0.9987	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9921	0.9927	0.9964	0.9967	0.9984	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9859	0.9866	0.9911	0.9915	0.9935	0.9956	0.9968	0.9994	1.0000	1.0000	1.0000	1.0000	1.0000
35	0.9796	0.9804	0.9857	0.9861	0.9885	0.9906	0.9917	0.9940	0.9960	0.9977	0.9992	1.0000	1.0000
36	0.9732	0.9741	0.9801	0.9806	0.9832	0.9855	0.9865	0.9884	0.9900	0.9914	0.9926	0.9945	0.9960
37	0.9667	0.9677	0.9744	0.9749	0.9778	0.9801	0.9810	0.9827	0.9839	0.9849	0.9858	0.9874	0.9889
38	0.9602	0.9613	0.9685	0.9691	0.9722	0.9745	0.9754	0.9767	0.9776	0.9783	0.9789	0.9803	0.9819
39	0.9537	0.9548	0.9625	0.9632	0.9665	0.9688	0.9696	0.9706	0.9712	0.9716	0.9720	0.9731	0.9748
40	0.9471	0.9482	0.9564	0.9571	0.9607	0.9630	0.9637	0.9644	0.9646	0.9647	0.9649	0.9658	0.9676
41	0.9404	0.9417	0.9503	0.9510	0.9547	0.9570	0.9577	0.9581	0.9580	0.9578	0.9578	0.9586	0.9605
42	0.9338	0.9351	0.9440	0.9448	0.9486	0.9510	0.9515	0.9517	0.9513	0.9509	0.9507	0.9513	0.9534
43	0.9271	0.9284	0.9377	0.9385	0.9425	0.9448	0.9452	0.9451	0.9445	0.9438	0.9435	0.9440	0.9462
44	0.9204	0.9217	0.9313	0.9322	0.9362	0.9385	0.9389	0.9385	0.9376	0.9367	0.9362	0.9366	0.9391
45	0.9137	0.9150	0.9249	0.9257	0.9299	0.9321	0.9324	0.9318	0.9306	0.9296	0.9289	0.9293	0.9319
46	0.9069	0.9083	0.9183	0.9192	0.9234	0.9256	0.9258	0.9250	0.9236	0.9224	0.9216	0.9219	0.9247
47	0.9001	0.9015	0.9117	0.9126	0.9169	0.9190	0.9192	0.9181	0.9165	0.9151	0.9142	0.9145	0.9176
48	0.8933	0.8948	0.9051	0.9060	0.9103	0.9124	0.9124	0.9111	0.9093	0.9078	0.9068	0.9071	0.9104
49	0.8865	0.8879	0.8983	0.8992	0.9036	0.9056	0.9056	0.9041	0.9021	0.9004	0.8993	0.8997	0.9032
50	0.8796	0.8811	0.8915	0.8925	0.8968	0.8987	0.8987	0.8969	0.8948	0.8929	0.8918	0.8922	0.8959
51	0.8727	0.8742	0.8847	0.8856	0.8899	0.8918	0.8917	0.8897	0.8874	0.8855	0.8843	0.8847	0.8887
52	0.8658	0.8672	0.8777	0.8787	0.8830	0.8848	0.8846	0.8825	0.8799	0.8779	0.8767	0.8772	0.8814
53	0.8588	0.8602	0.8708	0.8717	0.8760	0.8777	0.8774	0.8751	0.8724	0.8703	0.8690	0.8696	0.8741
54	0.8518	0.8532	0.8637	0.8646	0.8689	0.8705	0.8701	0.8676	0.8648	0.8626	0.8613	0.8619	0.8667
55	0.8447	0.8461	0.8565	0.8574	0.8617	0.8632	0.8627	0.8601	0.8572	0.8549	0.8535	0.8543	0.8593
56	0.8376	0.8390	0.8493	0.8502	0.8544	0.8558	0.8553	0.8525	0.8494	0.8471	0.8457	0.8465	0.8518
57	0.8305	0.8318	0.8420	0.8429	0.8470	0.8483	0.8477	0.8448	0.8416	0.8392	0.8378	0.8387	0.8443
58	0.8232	0.8246	0.8347	0.8355	0.8395	0.8407	0.8400	0.8369	0.8337	0.8312	0.8298	0.8309	0.8367
59	0.8160	0.8173	0.8272	0.8281	0.8320	0.8330	0.8323	0.8290	0.8257	0.8231	0.8218	0.8230	0.8291
60	0.8086	0.8100	0.8197	0.8205	0.8243	0.8252	0.8244	0.8210	0.8176	0.8150	0.8136	0.8150	0.8213
61	0.8012	0.8025	0.8120	0.8129	0.8165	0.8173	0.8165	0.8129	0.8094	0.8068	0.8054	0.8069	0.8135
62	0.7938	0.7950	0.8043	0.8051	0.8087	0.8093	0.8084	0.8047	0.8011	0.7984	0.7971	0.7987	0.8056
63	0.7862	0.7875	0.7965	0.7973	0.8007	0.8012	0.8002	0.7964	0.7927	0.7900	0.7887	0.7904	0.7976
64	0.7786	0.7798	0.7886	0.7894	0.7926	0.7930	0.7919	0.7880	0.7842	0.7815	0.7801	0.7820	0.7895
65	0.7709	0.7721	0.7806	0.7813	0.7844	0.7846	0.7835	0.7794	0.7756	0.7728	0.7715	0.7736	0.7813
66	0.7632	0.7643	0.7725	0.7732	0.7761	0.7761	0.7749	0.7707	0.7668	0.7640	0.7628	0.7650	0.7730
67	0.7553	0.7564	0.7643	0.7649	0.7677	0.7675	0.7662	0.7619	0.7579	0.7552	0.7539	0.7563	0.7645
68	0.7473	0.7484	0.7559	0.7566	0.7591	0.7588	0.7574	0.7530	0.7489	0.7461	0.7449	0.7474	0.7559
69	0.7393	0.7403	0.7475	0.7481	0.7504	0.7499	0.7484	0.7439	0.7398	0.7370	0.7358	0.7384	0.7472
70	0.7311	0.7320	0.7389	0.7395	0.7416	0.7409	0.7393	0.7347	0.7305	0.7277	0.7265	0.7293	0.7383
71	0.7228	0.7237	0.7302	0.7307	0.7326	0.7317	0.7301	0.7253	0.7211	0.7182	0.7171	0.7201	0.7293
72	0.7145	0.7153	0.7214	0.7218	0.7235	0.7224	0.7207	0.7158	0.7115	0.7087	0.7075	0.7106	0.7201
73	0.7060	0.7068	0.7124	0.7128	0.7143	0.7129	0.7111	0.7061	0.7017	0.6989	0.6978	0.7010	0.7108
74	0.6974	0.6981	0.7033	0.7037	0.7049	0.7033	0.7014	0.6962	0.6918	0.6890	0.6879	0.6913	0.7012
75	0.6886	0.6893	0.6940	0.6943	0.6953	0.6935	0.6915	0.6862	0.6817	0.6789	0.6778	0.6813	0.6915
76	0.6797	0.6803	0.6846	0.6849	0.6855	0.6835	0.6814	0.6759	0.6714	0.6686	0.6675	0.6711	0.6815
77	0.6707	0.6713	0.6750	0.6753	0.6756	0.6733	0.6711	0.6655	0.6610	0.6581	0.6571	0.6608	0.6713
78	0.6616	0.6620	0.6653	0.6655	0.6655	0.6630	0.6607	0.6549	0.6503	0.6474	0.6464	0.6502	0.6609
79	0.6522	0.6527	0.6554	0.6555	0.6552	0.6524	0.6500	0.6441	0.6394	0.6365	0.6355	0.6394	0.6503
80	0.6428	0.6431	0.6453	0.6453	0.6448	0.6416	0.6391	0.6330	0.6283	0.6253	0.6244	0.6284	0.6394
81	0.6331	0.6334	0.6350	0.6350	0.6341	0.6307	0.6280	0.6218	0.6169	0.6140	0.6130	0.6171	0.6282
82	0.6233	0.6235	0.6245	0.6245	0.6232	0.6195	0.6167	0.6103	0.6054	0.6024	0.6014	0.6055	0.6168
83	0.6133	0.6135	0.6138	0.6137	0.6121	0.6080	0.6052	0.5986	0.5935	0.5905	0.5895	0.5937	0.6050
84	0.6032	0.6032	0.6030	0.6028	0.6008	0.5964	0.5934	0.5866	0.5815	0.5784	0.5774	0.5815	0.5930
85	0.5928	0.5928	0.5919	0.5916	0.5892	0.5845	0.5813	0.5743	0.5691	0.5659	0.5649	0.5691	0.5806
86	0.5822	0.5821	0.5805	0.5802	0.5774	0.5723	0.5690	0.5618	0.5564	0.5532	0.5522	0.5563	0.5678
87	0.5714	0.5713	0.5690	0.5686	0.5654	0.5598	0.5564	0.5489	0.5435	0.5402	0.5391	0.5432	0.5547
88	0.5604	0.5602	0.5572	0.5567	0.5530	0.5471	0.5435	0.5358	0.5302	0.5269	0.5257	0.5297	0.5412
89	0.5492	0.5489	0.5451	0.5446	0.5404	0.5341	0.5303	0.5224	0.5166	0.5132	0.5120	0.5159	0.5272
90	0.5377	0.5373	0.5328	0.5322	0.5275	0.5208	0.5168	0.5086	0.5027	0.4992	0.4978	0.5016	0.5129
91	0.5260	0.5255	0.5202	0.5195	0.5144	0.5071	0.5030	0.4945	0.4884	0.4847	0.4833	0.4869	0.4980
92	0.5140	0.5134	0.5073	0.5065	0.5009	0.4932	0.4888	0.4800	0.4736	0.4699	0.4684	0.4718	0.4827
93	0.5018	0.5010	0.4941	0.4932	0.4871	0.4789	0.4743	0.4651	0.4587	0.4547	0.4531	0.4562	0.4668
94	0.4892	0.4884	0.4806	0.4796	0.4729	0.4642	0.4594	0.4499	0.4432	0.4391	0.4373	0.4401	0.4504
95	0.4764	0.4755	0.4668	0.4657	0.4584	0.4491	0.4441	0.4342	0.4273	0.4230	0.4210	0.4235	0.4334
96	0.4632	0.4622	0.4526	0.4514	0.4435	0.4337	0.4284	0.4181	0.4109	0.4064	0.4042	0.4063	0.4158
97	0.4497	0.4486	0.4381	0.4368	0.4283	0.4178	0.4123	0.4015	0.3941	0.3893	0.3869	0.3885	0.3975
98	0.4359	0.4347	0.4232	0.4218	0.4126	0.4015	0.3957	0.3845	0.3767	0.3717	0.3690	0.3701	0.3785
99	0.4218	0.4204	0.4079	0.4064	0.3965	0.3848	0.3787	0.3670	0.3588	0.3535	0.3505	0.3510	0.3587
100	0.4072	0.4057	0.3922	0.3906	0.3800	0.3675	0.3611	0.3489	0.3404	0.3347	0.3314	0.3312	0.3381

WOMEN'S WALK EVENT STANDARDS IN H:M:S

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	8:37.0	9:16.5	17:56.4	19:20.2	30:55.4	50:50.2	1:04:12	1:37:42	2:11:48	2:47:29	3:25:52	4:54:38	6:44:58
9	7:44.7	8:19.9	15:59.4	17:13.4	27:25.7	44:58.3	56:46.3	1:26:31	1:57:01	2:29:03	3:03:29	4:22:35	5:59:33
10	7:11.4	7:43.7	14:45.8	15:53.6	25:15.2	41:22.2	52:14.6	1:19:48	1:48:15	2:18:15	2:50:31	4:04:21	5:34:06
11	6:48.8	7:19.2	13:56.3	15:00.1	23:48.3	38:59.3	49:15.9	1:15:27	1:42:37	2:11:23	2:42:21	3:53:03	5:18:29
12	6:32.9	7:02.0	13:21.7	14:22.6	22:47.6	37:20.4	47:12.6	1:12:28	1:38:49	2:06:47	2:36:56	3:45:39	5:08:22
13	6:21.3	6:49.5	12:56.7	13:55.6	22:04.1	36:09.6	45:44.8	1:10:22	1:36:09	2:03:36	2:33:12	3:40:38	5:01:36
14	6:12.8	6:40.3	12:38.3	13:35.7	21:32.1	35:18.0	44:40.9	1:08:50	1:34:15	2:01:21	2:30:36	3:37:11	4:56:59
15	6:06.5	6:33.4	12:24.6	13:21.0	21:08.4	34:39.8	43:53.8	1:07:44	1:32:53	1:59:44	2:28:45	3:34:47	4:53:48
16	6:01.7	6:28.3	12:14.4	13:10.0	20:50.7	34:11.4	43:18.9	1:06:55	1:31:53	1:58:35	2:27:26	3:33:05	4:51:36
17	5:58.2	6:24.4	12:06.7	13:01.7	20:37.5	33:50.2	42:52.9	1:06:19	1:31:09	1:57:45	2:26:30	3:31:55	4:50:05
18	5:55.5	6:21.6	12:01.0	12:55.5	20:27.7	33:34.5	42:33.6	1:05:53	1:30:37	1:57:09	2:25:50	3:31:06	4:49:03
19	5:53.6	6:19.5	11:56.8	12:51.0	20:20.4	33:22.9	42:19.5	1:05:33	1:30:15	1:56:44	2:25:22	3:30:32	4:48:21
OC	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
30	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
31	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
32	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
33	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
34	5:50.5	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
35	5:51.0	6:16.7	11:51.0	12:44.6	20:09.9	33:05.8	41:58.6	1:05:05	1:29:42	1:56:08	2:24:44	3:29:48	4:47:27
36	5:51.6	6:17.3	11:52.2	12:46.0	20:12.0	33:09.0	42:02.4	1:05:10	1:29:47	1:56:14	2:24:51	3:29:55	4:47:36
37	5:52.4	6:18.1	11:53.8	12:47.6	20:14.5	33:12.9	42:07.0	1:05:16	1:29:54	1:56:22	2:24:59	3:30:05	4:47:47
38	5:53.2	6:19.1	11:55.6	12:49.6	20:17.6	33:17.6	42:12.7	1:05:24	1:30:03	1:56:31	2:25:09	3:30:17	4:48:03
39	5:54.3	6:20.2	11:57.7	12:51.9	20:21.1	33:23.1	42:19.4	1:05:33	1:30:14	1:56:44	2:25:23	3:30:34	4:48:23
40	5:55.5	6:21.5	12:00.2	12:54.5	20:25.3	33:29.5	42:27.2	1:05:43	1:30:27	1:56:58	2:25:39	3:30:54	4:48:49
41	5:56.9	6:23.0	12:03.0	12:57.6	20:30.0	33:36.9	42:36.1	1:05:56	1:30:42	1:57:16	2:25:59	3:31:20	4:49:22
42	5:58.4	6:24.7	12:06.2	13:01.0	20:35.3	33:45.2	42:46.2	1:06:10	1:30:59	1:57:36	2:26:23	3:31:50	4:50:02
43	6:00.2	6:26.5	12:09.8	13:04.8	20:41.2	33:54.5	42:57.7	1:06:26	1:31:20	1:58:00	2:26:50	3:32:27	4:50:51
44	6:02.1	6:28.6	12:13.7	13:09.0	20:47.8	34:04.9	43:10.4	1:06:44	1:31:42	1:58:28	2:27:23	3:33:10	4:51:49
45	6:04.2	6:30.9	12:18.1	13:13.7	20:55.1	34:16.4	43:24.6	1:07:04	1:32:08	1:58:59	2:27:59	3:34:01	4:52:58
46	6:06.5	6:33.4	12:22.8	13:18.8	21:03.1	34:29.1	43:40.1	1:07:27	1:32:37	1:59:34	2:28:42	3:34:59	4:54:18
47	6:09.0	6:36.1	12:28.0	13:24.4	21:11.8	34:42.9	43:57.1	1:07:51	1:33:09	2:00:14	2:29:29	3:36:06	4:55:51
48	6:11.8	6:39.1	12:33.7	13:30.5	21:21.3	34:57.9	44:15.7	1:08:19	1:33:45	2:00:58	2:30:23	3:37:22	4:57:37
49	6:14.8	6:42.3	12:39.7	13:37.0	21:31.5	35:14.1	44:35.8	1:08:48	1:34:24	2:01:47	2:31:23	3:38:48	4:59:39
50	6:18.0	6:45.7	12:46.3	13:44.1	21:42.6	35:31.6	44:57.6	1:09:20	1:35:06	2:02:41	2:32:29	3:40:25	5:01:57
51	6:21.4	6:49.4	12:53.4	13:51.7	21:54.4	35:50.5	45:21.0	1:09:55	1:35:53	2:03:40	2:33:42	3:42:14	5:04:32
52	6:25.1	6:53.3	13:00.9	13:59.8	22:07.1	36:10.7	45:46.2	1:10:33	1:36:44	2:04:45	2:35:03	3:44:14	5:07:27
53	6:29.0	6:57.5	13:08.9	14:08.4	22:20.6	36:32.3	46:13.1	1:11:13	1:37:39	2:05:56	2:36:32	3:46:28	5:10:41
54	6:33.1	7:02.0	13:17.5	14:17.6	22:35.0	36:55.3	46:41.9	1:11:57	1:38:38	2:07:12	2:38:09	3:48:55	5:14:17
55	6:37.6	7:06.8	13:26.6	14:27.4	22:50.3	37:19.8	47:12.5	1:12:43	1:39:41	2:08:36	2:39:54	3:51:37	5:18:16
56	6:42.3	7:11.8	13:36.2	14:37.7	23:06.5	37:45.8	47:45.0	1:13:33	1:40:50	2:10:05	2:41:49	3:54:35	5:22:40
57	6:47.2	7:17.2	13:46.4	14:48.7	23:23.6	38:13.3	48:19.5	1:14:25	1:42:03	2:11:42	2:43:53	3:57:49	5:27:30
58	6:52.5	7:22.8	13:57.2	15:00.3	23:41.7	38:42.4	48:56.1	1:15:22	1:43:21	2:13:26	2:46:07	4:01:20	5:32:47
59	6:58.0	7:28.8	14:08.5	15:12.4	24:00.8	39:13.1	49:34.7	1:16:21	1:44:45	2:15:17	2:48:31	4:05:09	5:38:33
60	7:03.8	7:35.0	14:20.4	15:25.3	24:20.9	39:45.5	50:15.4	1:17:24	1:46:13	2:17:16	2:51:06	4:09:18	5:44:51
61	7:09.9	7:41.6	14:33.0	15:38.8	24:42.1	40:19.6	50:58.4	1:18:31	1:47:48	2:19:23	2:53:53	4:13:46	5:51:41
62	7:16.3	7:48.5	14:46.2	15:52.9	25:04.3	40:55.4	51:43.5	1:19:41	1:49:28	2:21:39	2:56:51	4:18:35	5:59:05
63	7:23.1	7:55.8	14:60.0	16:07.8	25:27.6	41:33.0	52:31.0	1:20:56	1:51:14	2:24:03	3:00:01	4:23:47	6:07:06
64	7:30.1	8:03.4	15:14.5	16:23.4	25:52.0	42:12.4	53:20.8	1:22:14	1:53:06	2:26:36	3:03:24	4:29:21	6:15:44
65	7:37.5	8:11.3	15:29.6	16:39.6	26:17.5	42:53.7	54:13.0	1:23:36	1:55:04	2:29:19	3:06:60	4:35:20	6:25:03
66	7:45.2	8:19.6	15:45.5	16:56.7	26:44.2	43:36.9	55:07.7	1:25:03	1:57:09	2:32:11	3:10:50	4:41:43	6:35:04
67	7:53.3	8:28.3	16:02.0	17:14.4	27:12.0	44:22.1	56:04.9	1:26:34	1:59:21	2:35:13	3:14:54	4:48:34	6:45:49
68	8:01.7	8:37.3	16:19.2	17:33.0	27:41.1	45:09.3	57:04.7	1:28:09	2:01:39	2:38:25	3:19:12	4:55:51	6:57:20
69	8:10.5	8:46.8	16:37.2	17:52.3	28:11.5	45:58.5	58:07.2	1:29:49	2:04:05	2:41:48	3:23:46	5:03:38	7:09:39
70	8:19.6	8:56.6	16:56.0	18:12.5	28:43.1	46:49.9	59:12.4	1:31:33	2:06:38	2:45:22	3:28:36	5:11:54	7:22:49
71	8:29.1	9:06.8	17:15.5	18:33.4	29:16.0	47:43.4	1:00:20	1:33:22	2:09:18	2:49:07	3:33:43	5:20:41	7:36:53
72	8:39.0	9:17.5	17:35.8	18:55.3	29:50.3	48:39.1	1:01:31	1:35:16	2:12:07	2:53:04	3:39:06	5:30:01	7:51:51
73	8:49.3	9:28.6	17:56.9	19:18.0	30:25.9	49:37.0	1:02:45	1:37:15	2:15:03	2:57:14	3:44:48	5:39:55	8:07:48
74	9:00.0	9:40.1	18:18.9	19:41.6	31:02.9	50:37.3	1:04:02	1:39:19	2:18:08	3:01:36	3:50:47	5:50:24	8:24:45
75	9:11.1	9:52.1	18:41.7	20:06.1	31:41.4	51:40.0	1:05:22	1:41:29	2:21:21	3:06:10	3:57:06	6:01:30	8:42:45
76	9:22.7	10:04.5	19:05.3	20:31.5	32:21.3	52:45.1	1:06:45	1:43:44	2:24:43	3:10:59	4:03:44	6:13:13	9:01:51
77	9:34.6	10:17.4	19:29.9	20:57.9	33:02.7	53:52.7	1:08:11	1:46:05	2:28:14	3:16:01	4:10:42	6:25:36	9:22:05
78	9:47.1	10:30.7	19:55.3	21:25.3	33:45.7	55:02.9	1:09:41	1:48:31	2:31:54	3:21:17	4:18:02	6:38:41	9:43:31
79	9:59.9	10:44.6	20:21.7	21:53.6	34:30.3	56:15.7	1:11:14	1:51:04	2:35:43	3:26:48	4:25:43	6:52:28	10:06:12
80	10:13.3	10:59.0	20:49.1	22:23.1	35:16.4	57:31.2	1:12:50	1:53:42	2:39:43	3:32:34	4:33:47	7:06:59	10:30:10
81	10:27.1	11:13.8	21:17.4	22:53.5	36:04.3	58:49.4	1:14:30	1:56:27	2:43:53	3:38:36	4:42:14	7:22:17	10:55:29
82	10:41.4	11:29.2	21:46.8	23:25.1	36:53.9	1:00:11	1:16:14	1:59:18	2:48:13	3:44:54	4:51:06	7:38:22	11:22:13
83	10:56.3	11:45.2	22:17.2	23:57.7	37:45.2	1:01:35	1:18:02	2:02:16	2:52:44	3:51:29	5:00:22	7:55:17	11:50:24
84	11:11.6	12:01.7	22:48.6	24:31.5	38:38.3	1:03:01	1:19:53	2:05:20	2:57:26	3:58:21	5:10:04	8:13:04	12:20:06
85	11:27.5	12:18.8	23:21.2	25:06.5	39:33.2	1:04:32	1:21:49	2:08:32	3:02:19	4:05:31	5:20:13	8:31:44	12:51:23
86	11:43.9	12:36.5	23:54.8	25:42.7	40:30.0	1:06:05	1:23:49	2:11:51	3:07:25	4:12:60	5:30:49	8:51:20	13:24:19
87	12:00.9	12:54.8	24:29.6	26:20.1	41:28.8	1:07:41	1:25:52	2:15:17	3:12:42	4:20:47	5:41:54	9:11:53	13:58:58
88	12:18.5	13:13.7	25:05.6	26:58.8	42:29.6	1:09:21	1:28:00	2:18:51	3:18:12	4:28:54	5:53:28	9:33:26	14:35:23
89	12:36.6	13:33.2	25:42.8	27:38.8	43:32.4	1:11:04	1:30:13	2:22:33	3:23:55	4:37:21	6:05:33	9:56:01	15:13:39
90	12:55.4	13:53.4	26:21.2	28:20.1	44:37.3	1:12:51	1:32:30	2:26:22	3:29:51	4:46:09	6:18:09	10:19:41	15:53:51
91	13:14.8	14:14.2	27:00.9	29:02.7	45:44.4	1:14:41	1:34:52	2:30:20	3:36:00	4:55:19	6:31:19	10:44:27	16:36:02
92	13:34.8	14:35.8	27:42.0	29:46.8	46:53.7	1:16:35	1:37:19	2:34:27	3:42:24	5:04:50	6:45:01	11:10:22	17:20:19
93	13:55.5	14:58.1	28:24.3	30:32.4	48:05.3	1:18:33	1:39:50	2:38:42	3:49:02	5:14:45	6:59:19	11:37:29	18:06:44
94	14:16.8	15:21.0	29:08.1	31:19.4	49:19.2	1:20:34	1:42:27	2:43:06	3:55:56	5:25:04	7:14:13	12:05:51	18:55:25
95	14:38.9	15:44.8	29:53.3	32:08.0	50:35.6	1:22:40	1:45:09	2:47:40	4:03:05	5:35:47	7:29:44	12:35:30	19:46:25
96	15:01.7	16:09.3	30:39.9	32:58.1	51:54.4	1:24:50	1:47:57	2:52:23	4:10:29	5:46:55	7:45:54	13:06:28	20:39:50
97	15:25.2	16:34.6	31:28.1	33:49.9	53:15.8	1:27:04	1:50:50	2:57:17	4:18:10	5:58:30	8:02:44	13:38:50	21:35:47
98	15:49.5	17:00.7	32:17.8	34:43.3	54:39.8	1:29:22	1:53:49	3:02:20	4:26:08	6:10:32	8:20:15	14:12:38	22:34:21
99	16:14.5	17:27.7	33:09.1	35:38.5	56:06.5	1:31:45	1:56:53	3:07:34	4:34:24	6:23:01	8:38:29	14:47:55	23:35:37
100	16:40.4	17:55.5	34:02.1	36:35.4	57:36.0	1:34:13	2:00:04	3:12:59	4:42:58	6:35:60	8:57:27	15:24:45	24:39:44

WOMEN'S WALK EVENT STANDARDS IN SECONDS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	517.0	556.5	1076.4	1160.2	1855.4	3050.2	3851.9	5862	7908	10049	12352	17678	24298
9	464.7	499.9	959.4	1033.4	1645.7	2698.3	3406.3	5191	7021	8943	11009	15755	21573
10	431.4	463.7	885.8	953.6	1515.2	2482.2	3134.6	4788	6495	8295	10231	14661	20046
11	408.8	439.2	836.3	900.1	1428.3	2339.3	2955.9	4527	6157	7883	9741	13963	19109
12	392.9	422.0	801.7	862.6	1367.6	2240.4	2832.6	4348	5929	7607	9416	13539	18502
13	381.3	409.5	776.7	835.6	1324.1	2169.6	2744.8	4222	5769	7416	9192	13238	18096
14	372.8	400.3	758.3	815.7	1292.1	2118.0	2680.9	4130	5655	7281	9036	13031	17819
15	366.5	393.4	744.6	801.0	1268.4	2079.8	2633.8	4064	5573	7184	8925	12887	17628
16	361.7	388.3	734.4	790.0	1250.7	2051.4	2598.9	4015	5513	7115	8846	12785	17496
17	358.2	384.4	726.7	781.7	1237.5	2030.2	2572.9	3979	5469	7065	8790	12715	17405
18	355.5	381.6	721.0	775.5	1227.7	2014.5	2553.6	3953	5437	7029	8750	12666	17343
19	353.6	379.5	716.8	771.0	1220.4	2002.9	2539.5	3933	5415	7004	8722	12632	17301
OC	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
30	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
31	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
32	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
33	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
34	350.5	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
35	351.0	376.7	711.0	764.6	1209.9	1985.8	2518.6	3905	5382	6968	8684	12588	17247
36	351.6	377.3	712.2	766.0	1212.0	1989.0	2522.4	3910	5387	6974	8691	12595	17256
37	352.4	378.1	713.8	767.6	1214.5	1992.9	2527.0	3916	5394	6982	8699	12605	17267
38	353.2	379.1	715.6	769.6	1217.6	1997.6	2532.7	3924	5403	6991	8709	12617	17283
39	354.3	380.2	717.7	771.9	1221.1	2003.1	2539.4	3933	5414	7004	8723	12634	17303
40	355.5	381.5	720.2	774.5	1225.3	2009.5	2547.2	3943	5427	7018	8739	12654	17329
41	356.9	383.0	723.0	777.6	1230.0	2016.9	2556.1	3956	5442	7036	8759	12680	17362
42	358.4	384.7	726.2	781.0	1235.3	2025.2	2566.2	3970	5459	7056	8783	12710	17402
43	360.2	386.5	729.8	784.8	1241.2	2034.5	2577.7	3986	5480	7080	8810	12747	17451
44	362.1	388.6	733.7	789.0	1247.8	2044.9	2590.4	4004	5502	7108	8843	12790	17509
45	364.2	390.9	738.1	793.7	1255.1	2056.4	2604.6	4024	5528	7139	8879	12841	17578
46	366.5	393.4	742.8	798.8	1263.1	2069.1	2620.1	4047	5557	7174	8922	12899	17658
47	369.0	396.1	748.0	804.4	1271.8	2082.9	2637.1	4071	5589	7214	8969	12966	17751
48	371.8	399.1	753.7	810.5	1281.3	2097.9	2655.7	4099	5625	7258	9023	13042	17857
49	374.8	402.3	759.7	817.0	1291.5	2114.1	2675.8	4128	5664	7307	9083	13128	17979
50	378.0	405.7	766.3	824.1	1302.6	2131.6	2697.6	4160	5706	7361	9149	13225	18117
51	381.4	409.4	773.4	831.7	1314.4	2150.5	2721.0	4195	5753	7420	9222	13334	18272
52	385.1	413.3	780.9	839.8	1327.1	2170.7	2746.2	4233	5804	7485	9303	13454	18447
53	389.0	417.5	788.9	848.4	1340.6	2192.3	2773.1	4273	5859	7556	9392	13588	18641
54	393.1	422.0	797.5	857.6	1355.0	2215.3	2801.9	4317	5918	7632	9489	13735	18857
55	397.6	426.8	806.6	867.4	1370.3	2239.8	2832.5	4363	5981	7716	9594	13897	19096
56	402.3	431.8	816.2	877.7	1386.5	2265.8	2865.0	4413	6050	7805	9709	14075	19360
57	407.2	437.2	826.4	888.7	1403.6	2293.3	2899.5	4465	6123	7902	9833	14269	19650
58	412.5	442.8	837.2	900.3	1421.7	2322.4	2936.1	4522	6201	8006	9967	14480	19967
59	418.0	448.8	848.5	912.4	1440.8	2353.1	2974.7	4581	6285	8117	10111	14709	20313
60	423.8	455.0	860.4	925.3	1460.9	2385.5	3015.4	4644	6373	8236	10266	14958	20691
61	429.9	461.6	873.0	938.8	1482.1	2419.6	3058.4	4711	6468	8363	10433	15226	21101
62	436.3	468.5	886.2	952.9	1504.3	2455.4	3103.5	4781	6568	8499	10611	15515	21545
63	443.1	475.8	900.0	967.8	1527.6	2493.0	3151.0	4856	6674	8643	10801	15827	22026
64	450.1	483.4	914.5	983.4	1552.0	2532.4	3200.8	4934	6786	8796	11004	16161	22544
65	457.5	491.3	929.6	999.6	1577.5	2573.7	3253.0	5016	6904	8959	11220	16520	23103
66	465.2	499.6	945.5	1016.7	1604.2	2616.9	3307.7	5103	7029	9131	11450	16903	23704
67	473.3	508.3	962.0	1034.4	1632.0	2662.1	3364.9	5194	7161	9313	11694	17314	24349
68	481.7	517.3	979.2	1053.0	1661.1	2709.3	3424.7	5289	7299	9505	11952	17751	25040
69	490.5	526.8	997.2	1072.3	1691.5	2758.5	3487.2	5389	7445	9708	12226	18218	25779
70	499.6	536.6	1016.0	1092.5	1723.1	2809.9	3552.4	5493	7598	9922	12516	18714	26569
71	509.1	546.8	1035.5	1113.4	1756.0	2863.4	3620.4	5602	7758	10147	12823	19241	27413
72	519.0	557.5	1055.8	1135.3	1790.3	2919.1	3691.2	5716	7927	10384	13146	19801	28311
73	529.3	568.6	1076.9	1158.0	1825.9	2977.0	3765.0	5835	8103	10634	13488	20395	29268
74	540.0	580.1	1098.9	1181.6	1862.9	3037.3	3841.8	5959	8288	10896	13847	21024	30285
75	551.1	592.1	1121.7	1206.1	1901.4	3100.0	3921.7	6089	8481	11170	14226	21690	31365
76	562.7	604.5	1145.3	1231.5	1941.3	3165.1	4004.7	6224	8683	11459	14624	22393	32511
77	574.6	617.4	1169.9	1257.9	1982.7	3232.7	4091.0	6365	8894	11761	15042	23136	33725
78	587.1	630.7	1195.3	1285.3	2025.7	3302.9	4180.7	6511	9114	12077	15482	23921	35011
79	599.9	644.6	1221.7	1313.6	2070.3	3375.7	4273.7	6664	9343	12408	15943	24748	36372
80	613.3	659.0	1249.1	1343.1	2116.4	3451.2	4370.3	6822	9583	12754	16427	25619	37810
81	627.1	673.8	1277.4	1373.5	2164.3	3529.4	4470.4	6987	9833	13116	16934	26537	39329
82	641.4	689.2	1306.8	1405.1	2213.9	3610.5	4574.2	7158	10093	13494	17466	27502	40933
83	656.3	705.2	1337.2	1437.7	2265.2	3694.5	4681.9	7336	10364	13889	18022	28517	42624
84	671.6	721.7	1368.6	1471.5	2318.3	3781.5	4793.4	7520	10646	14301	18604	29584	44406
85	687.5	738.8	1401.2	1506.5	2373.2	3871.5	4908.9	7712	10939	14731	19213	30704	46283
86	703.9	756.5	1434.8	1542.7	2430.0	3964.7	5028.5	7911	11245	15180	19849	31880	48259
87	720.9	774.8	1469.6	1580.1	2488.8	4061.1	5152.3	8117	11562	15647	20514	33113	50338
88	738.5	793.7	1505.6	1618.8	2549.6	4160.9	5280.5	8331	11892	16134	21208	34406	52523
89	756.6	813.2	1542.8	1658.8	2612.4	4264.0	5413.1	8553	12235	16641	21933	35761	54819
90	775.4	833.4	1581.2	1700.1	2677.3	4370.7	5550.2	8782	12591	17169	22689	37181	57231
91	794.8	854.2	1620.9	1742.7	2744.4	4480.9	5692.1	9020	12960	17719	23479	38667	59762
92	814.8	875.8	1662.0	1786.8	2813.7	4594.8	5838.8	9267	13344	18290	24301	40222	62419
93	835.5	898.1	1704.3	1832.4	2885.3	4712.6	5990.5	9522	13742	18885	25159	41849	65204
94	856.8	921.0	1748.1	1879.4	2959.2	4834.2	6147.2	9786	14156	19504	26053	43551	68125
95	878.9	944.8	1793.3	1928.0	3035.6	4959.9	6309.3	10060	14585	20147	26984	45330	71185
96	901.7	969.3	1839.9	1978.1	3114.4	5089.7	6476.7	10343	15029	20815	27954	47188	74390
97	925.2	994.6	1888.1	2029.9	3195.8	5223.8	6649.8	10637	15490	21510	28964	49130	77747
98	949.5	1020.7	1937.8	2083.3	3279.8	5362.3	6828.5	10940	15968	22232	30015	51158	81261
99	974.5	1047.7	1989.1	2138.5	3366.5	5505.3	7013.2	11254	16464	22981	31109	53275	84937
100	1000.4	1075.5	2042.1	2195.4	3456.0	5652.9	7204	11579	16978	23760	32247	55485	88784

WOMEN'S WALK EVENT AGE FACTORS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	0.6776	0.6757	0.6596	0.6581	0.6513	0.6503	0.6532	0.6658	0.6803	0.6932	0.7030	0.7119	0.7096
9	0.7540	0.7523	0.7400	0.7389	0.7343	0.7352	0.7387	0.7518	0.7663	0.7790	0.7887	0.7988	0.7993
10	0.8122	0.8110	0.8015	0.8007	0.7975	0.7992	0.8027	0.8151	0.8283	0.8398	0.8487	0.8584	0.8601
11	0.8571	0.8562	0.8489	0.8483	0.8461	0.8480	0.8512	0.8622	0.8737	0.8837	0.8914	0.9001	0.9023
12	0.8919	0.8912	0.8856	0.8852	0.8836	0.8854	0.8883	0.8977	0.9074	0.9158	0.9222	0.9296	0.9319
13	0.9189	0.9184	0.9142	0.9138	0.9126	0.9143	0.9167	0.9245	0.9325	0.9394	0.9446	0.9507	0.9528
14	0.9399	0.9395	0.9363	0.9361	0.9352	0.9366	0.9386	0.9449	0.9514	0.9568	0.9609	0.9658	0.9676
15	0.9562	0.9559	0.9535	0.9533	0.9527	0.9538	0.9554	0.9604	0.9654	0.9697	0.9729	0.9766	0.9781
16	0.9687	0.9685	0.9668	0.9666	0.9661	0.9670	0.9682	0.9721	0.9760	0.9792	0.9816	0.9844	0.9855
17	0.9783	0.9782	0.9769	0.9768	0.9765	0.9771	0.9780	0.9809	0.9838	0.9861	0.9879	0.9899	0.9907
18	0.9856	0.9855	0.9847	0.9846	0.9843	0.9847	0.9854	0.9874	0.9895	0.9911	0.9923	0.9937	0.9942
19	0.9911	0.9910	0.9904	0.9904	0.9902	0.9904	0.9908	0.9922	0.9936	0.9947	0.9955	0.9963	0.9966
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9997	0.9998	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
35	0.9983	0.9984	0.9986	0.9986	0.9987	0.9989	0.9991	0.9994	0.9997	0.9998	0.9998	0.9998	0.9997
36	0.9966	0.9966	0.9968	0.9969	0.9970	0.9973	0.9976	0.9982	0.9986	0.9989	0.9991	0.9992	0.9992
37	0.9945	0.9945	0.9947	0.9947	0.9950	0.9954	0.9957	0.9966	0.9973	0.9978	0.9982	0.9985	0.9986
38	0.9920	0.9920	0.9922	0.9922	0.9925	0.9931	0.9935	0.9947	0.9957	0.9964	0.9970	0.9975	0.9977
39	0.9891	0.9891	0.9892	0.9892	0.9896	0.9903	0.9909	0.9924	0.9937	0.9947	0.9954	0.9962	0.9965
40	0.9857	0.9857	0.9858	0.9859	0.9862	0.9871	0.9879	0.9897	0.9914	0.9926	0.9936	0.9946	0.9950
41	0.9819	0.9819	0.9820	0.9820	0.9825	0.9836	0.9844	0.9866	0.9886	0.9902	0.9913	0.9926	0.9931
42	0.9777	0.9776	0.9777	0.9777	0.9782	0.9795	0.9805	0.9831	0.9854	0.9873	0.9886	0.9902	0.9908
43	0.9729	0.9729	0.9729	0.9730	0.9735	0.9750	0.9762	0.9791	0.9818	0.9840	0.9855	0.9874	0.9880
44	0.9678	0.9677	0.9677	0.9677	0.9684	0.9701	0.9714	0.9747	0.9777	0.9802	0.9820	0.9840	0.9848
45	0.9622	0.9621	0.9620	0.9620	0.9628	0.9646	0.9661	0.9698	0.9732	0.9759	0.9779	0.9801	0.9809
46	0.9561	0.9560	0.9558	0.9559	0.9567	0.9588	0.9604	0.9645	0.9681	0.9711	0.9733	0.9757	0.9765
47	0.9495	0.9494	0.9492	0.9492	0.9501	0.9524	0.9542	0.9586	0.9626	0.9658	0.9681	0.9707	0.9714
48	0.9425	0.9424	0.9421	0.9421	0.9431	0.9456	0.9475	0.9523	0.9565	0.9599	0.9623	0.9650	0.9656
49	0.9350	0.9349	0.9345	0.9346	0.9356	0.9383	0.9404	0.9454	0.9499	0.9534	0.9560	0.9587	0.9590
50	0.9271	0.9270	0.9265	0.9266	0.9277	0.9306	0.9328	0.9381	0.9428	0.9465	0.9491	0.9516	0.9517
51	0.9188	0.9186	0.9181	0.9181	0.9193	0.9225	0.9247	0.9303	0.9352	0.9389	0.9415	0.9439	0.9436
52	0.9100	0.9098	0.9092	0.9093	0.9106	0.9139	0.9163	0.9221	0.9270	0.9308	0.9333	0.9354	0.9347
53	0.9009	0.9006	0.8999	0.9000	0.9014	0.9049	0.9074	0.9133	0.9183	0.9220	0.9245	0.9262	0.9250
54	0.8913	0.8911	0.8903	0.8904	0.8918	0.8955	0.8981	0.9042	0.9091	0.9128	0.9151	0.9163	0.9144
55	0.8814	0.8811	0.8803	0.8803	0.8819	0.8857	0.8883	0.8945	0.8995	0.9029	0.9050	0.9056	0.9029
56	0.8711	0.8708	0.8699	0.8699	0.8716	0.8755	0.8783	0.8845	0.8893	0.8925	0.8943	0.8942	0.8906
57	0.8605	0.8602	0.8591	0.8592	0.8609	0.8650	0.8678	0.8740	0.8787	0.8816	0.8830	0.8820	0.8775
58	0.8496	0.8492	0.8481	0.8482	0.8499	0.8542	0.8570	0.8632	0.8676	0.8702	0.8712	0.8692	0.8635
59	0.8383	0.8380	0.8368	0.8369	0.8387	0.8430	0.8459	0.8519	0.8561	0.8583	0.8587	0.8556	0.8488
60	0.8268	0.8264	0.8251	0.8252	0.8271	0.8316	0.8345	0.8404	0.8441	0.8458	0.8458	0.8414	0.8333
61	0.8151	0.8147	0.8133	0.8134	0.8153	0.8199	0.8227	0.8285	0.8318	0.8330	0.8323	0.8266	0.8171
62	0.8031	0.8026	0.8012	0.8013	0.8033	0.8079	0.8108	0.8162	0.8191	0.8197	0.8183	0.8112	0.8003
63	0.7909	0.7904	0.7889	0.7890	0.7911	0.7957	0.7986	0.8038	0.8061	0.8060	0.8039	0.7952	0.7828
64	0.7785	0.7780	0.7764	0.7765	0.7786	0.7833	0.7861	0.7910	0.7928	0.7920	0.7891	0.7788	0.7648
65	0.7659	0.7654	0.7637	0.7639	0.7660	0.7708	0.7735	0.7780	0.7792	0.7776	0.7739	0.7619	0.7463
66	0.7532	0.7527	0.7510	0.7511	0.7533	0.7580	0.7607	0.7648	0.7654	0.7630	0.7584	0.7446	0.7274
67	0.7404	0.7399	0.7380	0.7382	0.7404	0.7452	0.7478	0.7515	0.7513	0.7481	0.7425	0.7269	0.7081
68	0.7275	0.7269	0.7250	0.7252	0.7275	0.7322	0.7347	0.7379	0.7370	0.7329	0.7265	0.7090	0.6886
69	0.7145	0.7139	0.7120	0.7121	0.7144	0.7191	0.7216	0.7243	0.7226	0.7176	0.7102	0.6908	0.6688
70	0.7014	0.7008	0.6988	0.6990	0.7013	0.7060	0.7083	0.7105	0.7081	0.7021	0.6937	0.6725	0.6490
71	0.6883	0.6877	0.6857	0.6856	0.6882	0.6928	0.6950	0.6967	0.6934	0.6865	0.6771	0.6541	0.6290
72	0.6751	0.6745	0.6725	0.6726	0.6750	0.6796	0.6817	0.6828	0.6787	0.6709	0.6605	0.6356	0.6090
73	0.6620	0.6614	0.6593	0.6594	0.6618	0.6663	0.6683	0.6688	0.6639	0.6551	0.6438	0.6171	0.5891
74	0.6489	0.6483	0.6461	0.6463	0.6487	0.6531	0.6550	0.6549	0.6492	0.6394	0.6271	0.5986	0.5693
75	0.6358	0.6352	0.6330	0.6331	0.6355	0.6399	0.6416	0.6410	0.6344	0.6237	0.6104	0.5803	0.5497
76	0.6228	0.6221	0.6199	0.6200	0.6225	0.6267	0.6283	0.6271	0.6196	0.6080	0.5938	0.5620	0.5304
77	0.6098	0.6091	0.6069	0.6070	0.6095	0.6136	0.6151	0.6132	0.6049	0.5924	0.5772	0.5440	0.5113
78	0.5969	0.5962	0.5940	0.5941	0.5965	0.6006	0.6019	0.5994	0.5903	0.5769	0.5608	0.5261	0.4925
79	0.5841	0.5834	0.5811	0.5813	0.5837	0.5876	0.5888	0.5857	0.5758	0.5615	0.5446	0.5086	0.4741
80	0.5714	0.5707	0.5684	0.5685	0.5710	0.5748	0.5758	0.5721	0.5614	0.5462	0.5286	0.4913	0.4560
81	0.5588	0.5581	0.5558	0.5559	0.5583	0.5621	0.5629	0.5586	0.5471	0.5311	0.5127	0.4743	0.4384
82	0.5463	0.5456	0.5433	0.5434	0.5458	0.5494	0.5501	0.5452	0.5330	0.5163	0.4971	0.4576	0.4212
83	0.5339	0.5333	0.5310	0.5311	0.5335	0.5369	0.5374	0.5320	0.5191	0.5016	0.4818	0.4413	0.4045
84	0.5217	0.5211	0.5188	0.5189	0.5213	0.5246	0.5249	0.5190	0.5054	0.4871	0.4667	0.4254	0.3883
85	0.5097	0.5090	0.5067	0.5069	0.5092	0.5124	0.5126	0.5061	0.4918	0.4729	0.4519	0.4099	0.3725
86	0.4978	0.4971	0.4948	0.4950	0.4973	0.5003	0.5004	0.4934	0.4784	0.4589	0.4375	0.3948	0.3573
87	0.4861	0.4854	0.4831	0.4833	0.4855	0.4885	0.4884	0.4808	0.4653	0.4452	0.4233	0.3801	0.3425
88	0.4745	0.4738	0.4716	0.4717	0.4740	0.4768	0.4765	0.4685	0.4524	0.4318	0.4094	0.3658	0.3283
89	0.4631	0.4624	0.4602	0.4603	0.4626	0.4652	0.4648	0.4563	0.4397	0.4186	0.3959	0.3519	0.3145
90	0.4519	0.4512	0.4490	0.4492	0.4513	0.4539	0.4534	0.4444	0.4273	0.4058	0.3827	0.3385	0.3013
91	0.4409	0.4402	0.4380	0.4382	0.4403	0.4427	0.4421	0.4327	0.4151	0.3932	0.3698	0.3255	0.2885
92	0.4301	0.4294	0.4272	0.4273	0.4295	0.4317	0.4310	0.4212	0.4032	0.3809	0.3573	0.3129	0.2762
93	0.4194	0.4188	0.4166	0.4167	0.4188	0.4209	0.4200	0.4099	0.3915	0.3689	0.3451	0.3007	0.2644
94	0.4090	0.4083	0.4062	0.4063	0.4083	0.4103	0.4093	0.3988	0.3801	0.3572	0.3333	0.2890	0.2531
95	0.3987	0.3980	0.3959	0.3961	0.3981	0.3999	0.3988	0.3880	0.3689	0.3458	0.3218	0.2776	0.2422
96	0.3886	0.3880	0.3859	0.3860	0.3880	0.3897	0.3885	0.3773	0.3580	0.3347	0.3106	0.2667	0.2318
97	0.3787	0.3781	0.3760	0.3762	0.3781	0.3797	0.3784	0.3669	0.3473	0.3239	0.2998	0.2562	0.2218
98	0.3691	0.3684	0.3664	0.3665	0.3684	0.3699	0.3685	0.3568	0.3369	0.3134	0.2893	0.2460	0.2122
99	0.3596	0.3589	0.3569	0.3571	0.3589	0.3603	0.3588	0.3468	0.3268	0.3031	0.2791	0.2362	0.2030
100	0.3503	0.3497	0.3477	0.3478	0.3497	0.3509	0.3493	0.3371	0.3169	0.2932	0.2693	0.2268	0.1942

Refer to the table of page 64 which shows performance level of actual records for a quick view of how many "world record" level performances are identified by the hurdle event standards. Those listed as 100% made it outright, while those listed as 99% and 98% are also considered to be at that level. The chart also illustrates the distribution of those records across all ages and events.

It is difficult to qualitatively evaluate a table of standards just on the basis of the feeling one gets in looking at the numerical progression of values therein. To get a better feel for the quality of the standards, the running rates for all hurdle events must be examined and compared. For the standards of this book, refer to the hurdle running rate graphs provided at figures 29, 34 and 38. The graphs must have a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered good.

The age-factors are then computer generated by dividing the open class standard by the standard for each age, doing this for every event. Since there is no open class event for the 110/39", 100/36", 100/33" and 80/30" events, time for the open class 110/42" event is used in determining the age-factor for all of those events. Because of this, age-factors result which are greater than 1.000. The same convention holds for the intermediate distance hurdles and steeplechase events.

Age-factor results are looked at early on in the standards generating process. When it is seen that an undesirable distribution of age-factor values has resulted, the problem areas are refitted until the resulting age-factors are acceptable. Hence the age-factors are another tool like the rate results, and by using both tools, the best possible standards are obtained.

The table on the next page is the listing of performance level in percent for actual records. The percentages listed in the table are determined by dividing the time standard by the actual record for every age of every event having a listed record. The percentage values have been rounded to the nearest whole integer. Only records having a percentage of 100 were used in determining the standards that resulted. This table provides an excellent quick look concerning whether certain ages or certain events are favored or disadvantaged by the fitting process used.

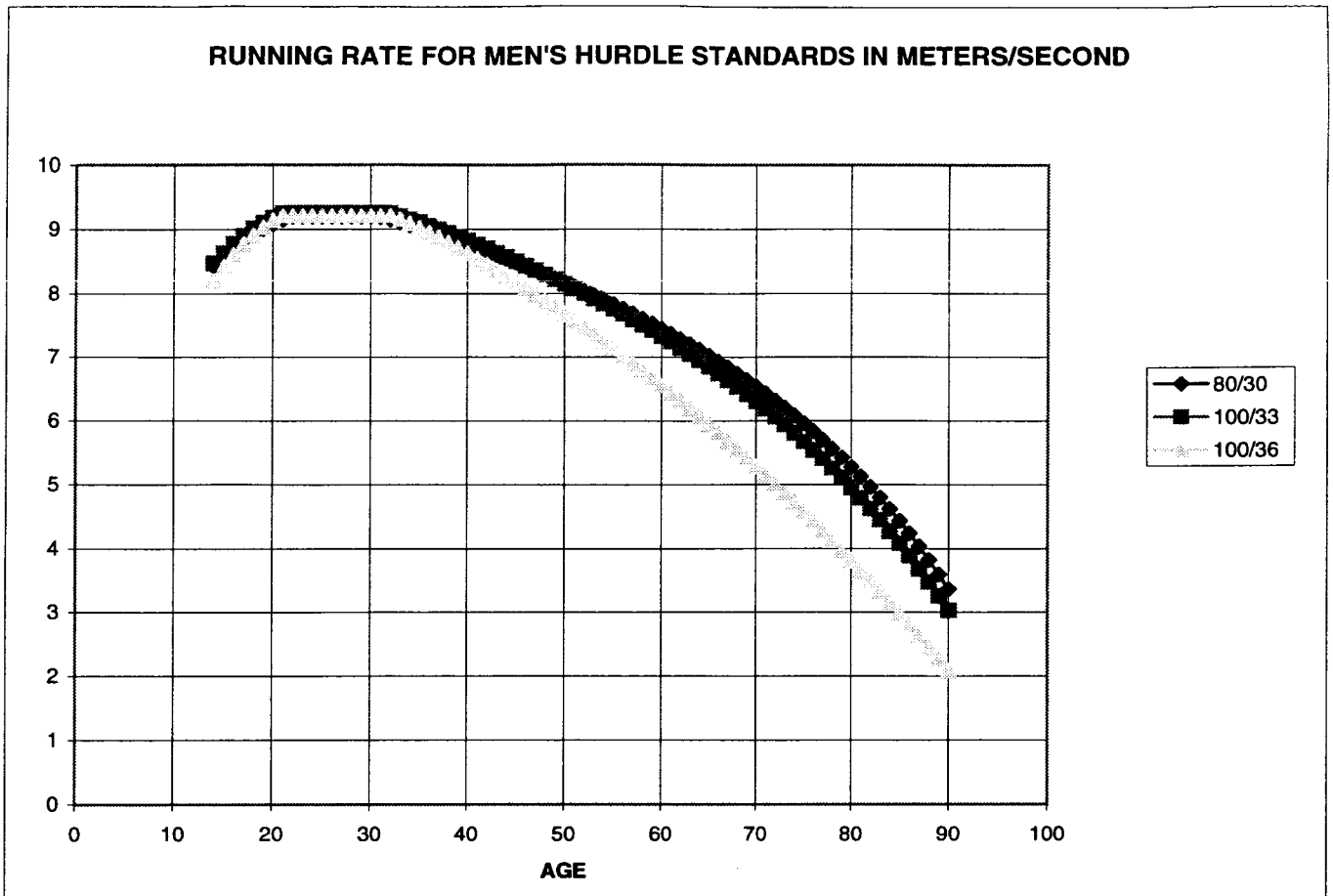
PERFORMANCE LEVEL OF MEN'S HURDLE RECORDS

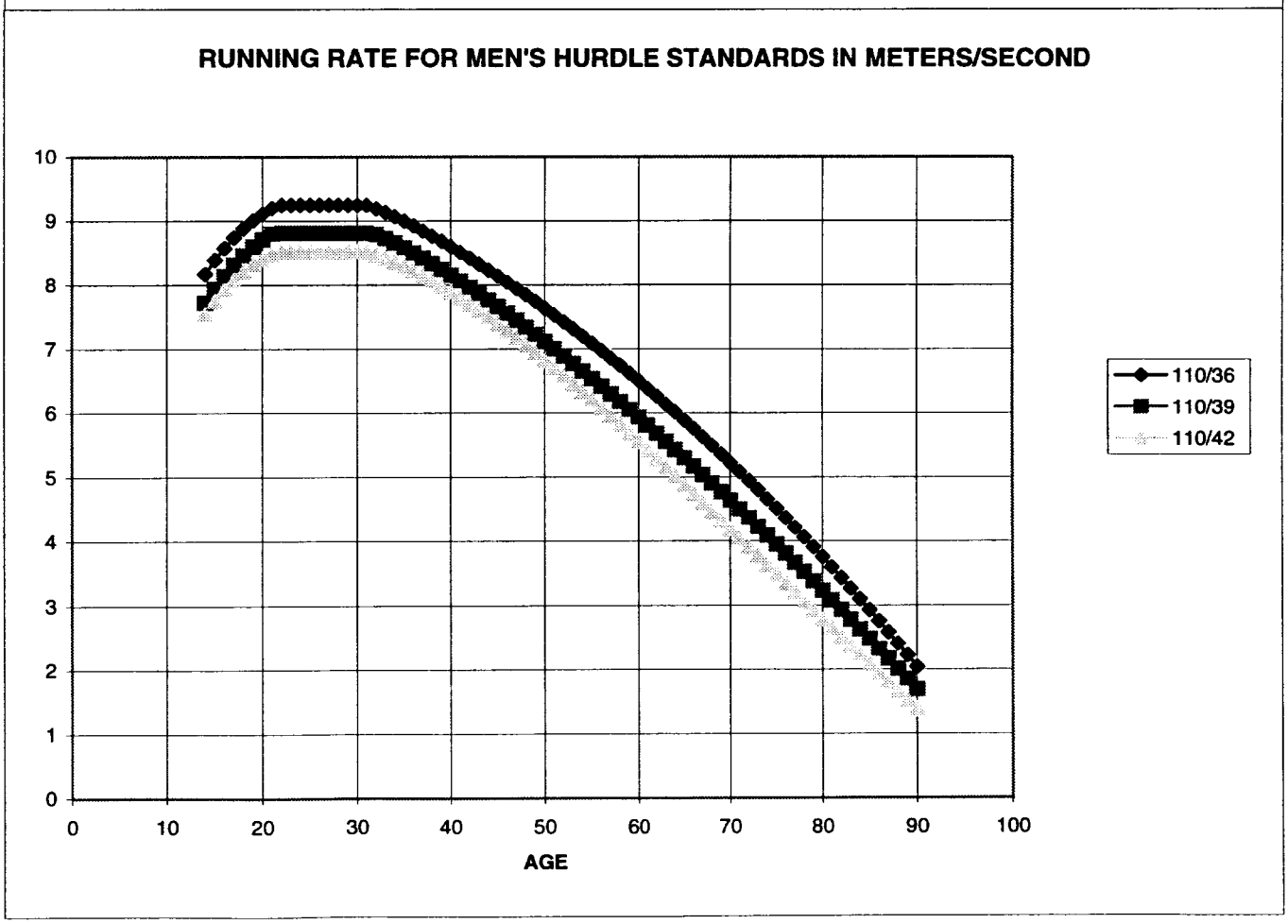
AGE	80/30	100/33	100/36	110/36	110/39	110/42	300/30	300/33	400/30	400/33	400/36	2K/SC	3K/SC
14											93	97	
15											98	96	
16						99					98	100	
17						98					97	99	98
18						99					100	98	98
19						100					100	98	100
OC						100					100	100	100
30													
31													
32													
33													
34													
35				86	95	97					96		96
36				90	94	94					93		96
37				91	94	96					97		92
38				91	94	89					96		92
39				90	95	97					95		93
40				92	98	98					96		94
41				89	97	100					97		94
42				87	96	92					99		94
43				90	97	99					96		95
44				86	98	93					100		95
45			96	93	94	88		100		93	91		95
46			95	97	100	84		99		93	96		95
47			92	94	85	84		95		100	85		95
48			92	97	85	86		93		94	84		92
49			97	95	83	90		98		90	89		98
50			97	95	96	79		98		92	95		98
51			92	100	93	94		97		98	92		100
52			95	94	96	78		96		97	74		93
53			97	94		77				91	81		94
54			100	100		79				92	82		89
55			97	95	96	79		98		92	95		98
56			92	100	93	94		97		98	92		100
57			95	94	96	78		96		97	74		93
58			97	94		77				91	81		94
59			100	100		79				92	82		89
60		91		82	67	86	91		90	83	82	97	89
61		89		80		85	95		89			96	91
62		93		89	87	91	93		90			93	88
63		94		90	78	83	99		87	97		92	88
64		87		78	89	89	92		88		75	92	90
65		90		89		83	98		91	79	83	94	92
66		87		89	84		98		89	76		95	92
67		90		88			95		85	75	71	90	94
68		87		86	80	77	92		89	73	83	94	93
69		89		81			92		87	69		94	96
70	93	87		83			95		87	65	70	94	95
71	89	77		62			94		85			96	100
72	88	82		89			94		88	64	75	97	98
73	93	81					89		82			98	98
74	91			79	84				70		78	100	94
75	90	79					93		82			94	95
76	90	69					97		80			99	88
77	90	81					100		87			87	76
78	97	83					98		83			96	
79	89						100		83			92	
80	89	100					92		76			96	
81	90	91					83		71			93	
82	87						85						
83	82						89		75				
84	91												
85	100						80						
86	92						79						
87													
88													
89													
90													
91													
92													
93													
94													
95													
96													
97													
98													
99													
100													

For purposes of further discussion and presentation the hurdles have been broken out into three categories: sprint hurdles, intermediate distance hurdles and steeplechase. The same arrangement of graphs is presented in each of the three packages, but the discussion here will refer only to the graphs of the sprint hurdle package.

At the next page figure 29 presents graphs displaying the rates in meters per second for the sprint hurdle event standards generated. It was mentioned earlier that these rate graphs must show a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered suitable or good. As a general rule, hurdle rate curves should not cross each other. However, in the special case of the 80 and 100 meter hurdles, rate curve crossover can occur below age 60 because for most runners the 100 meter flat distance is run at a faster rate than is 80 meters due to the zero velocity start phenomenon, but over age 60 the 3 inch difference in lower hurdle height becomes the paramount effect.

Figure 29

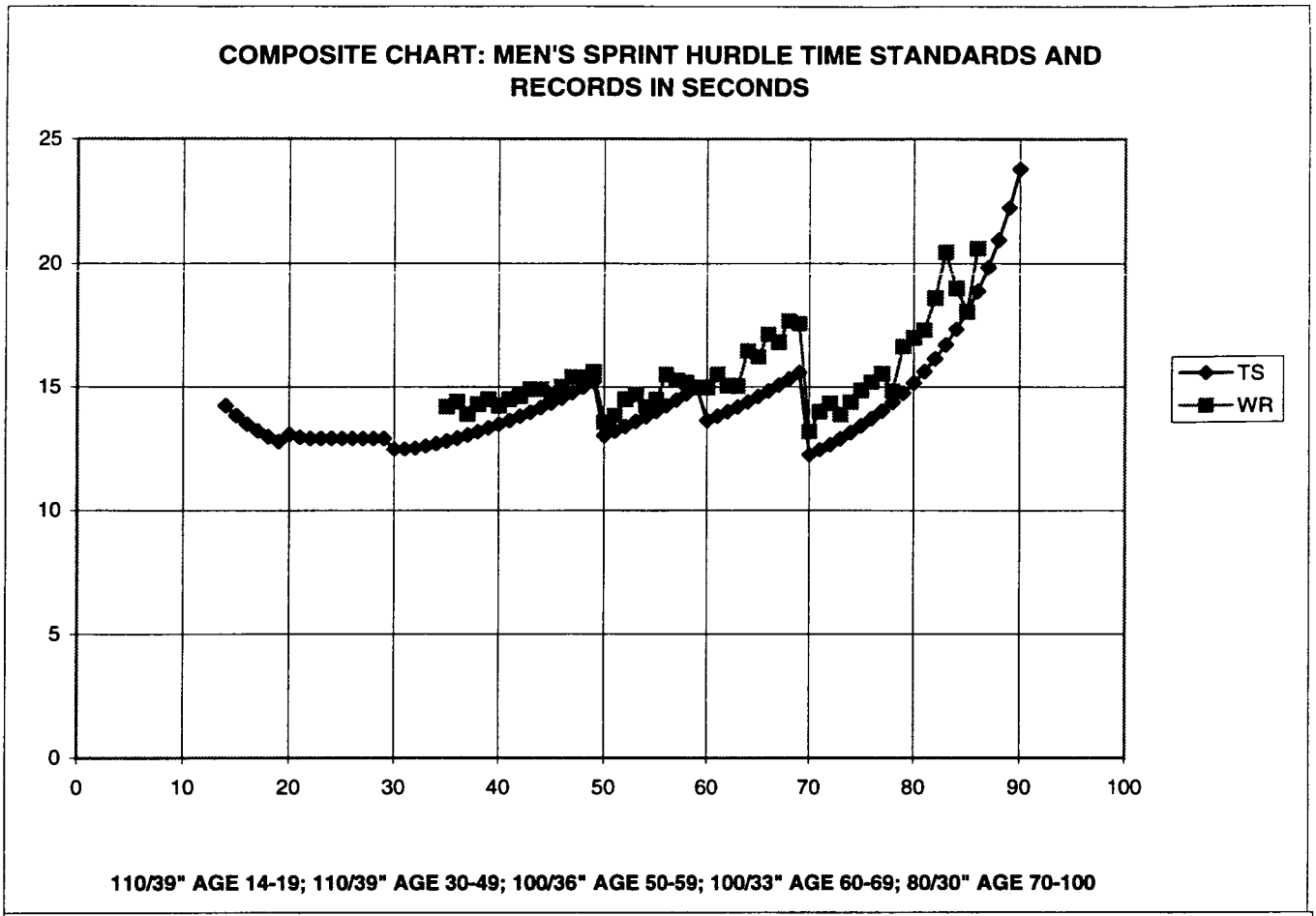

RUNNING RATE FOR MEN'S HURDLE STANDARDS IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30
100/33
100/36

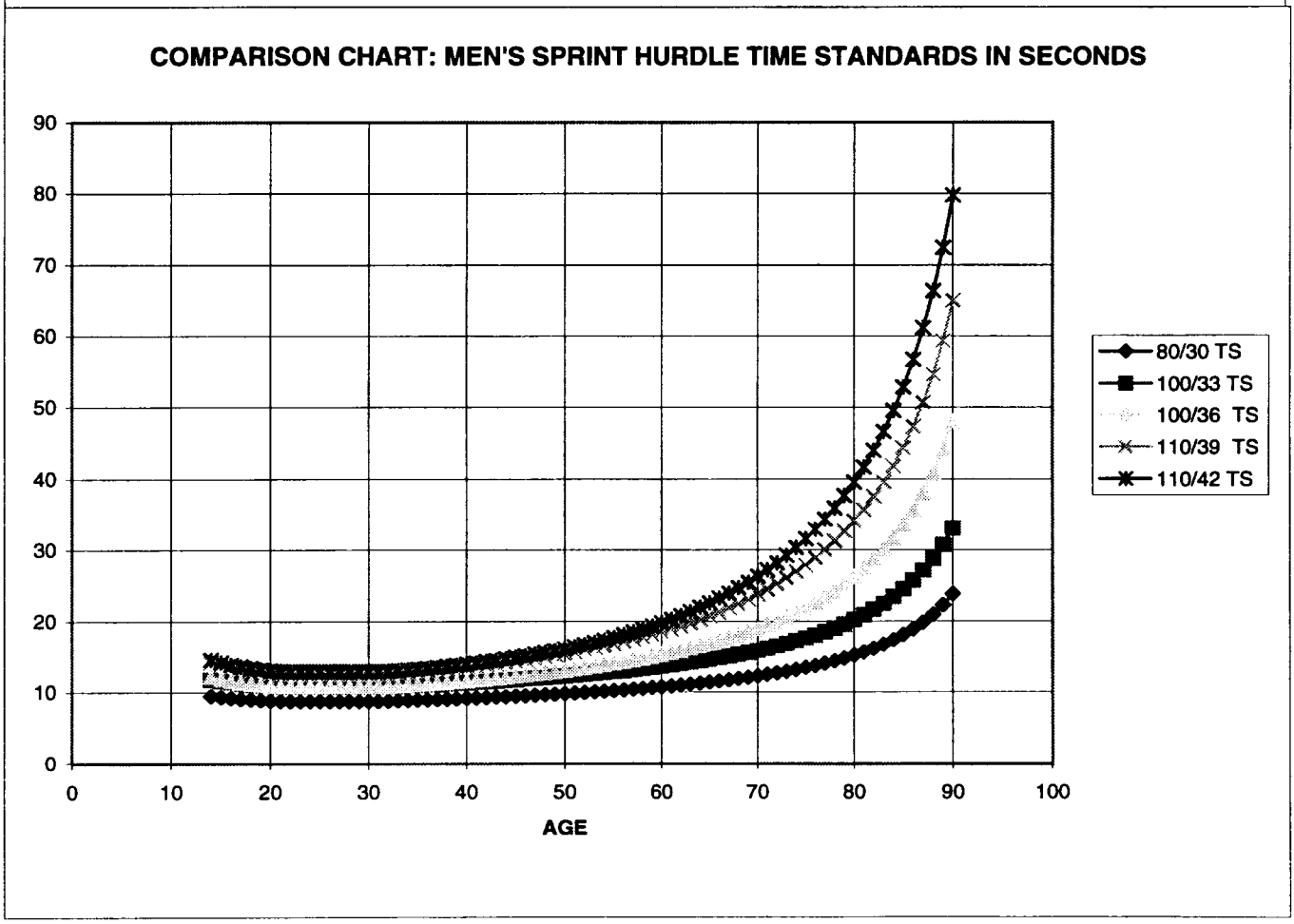

RUNNING RATE FOR MEN'S HURDLE STANDARDS IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
110/36
110/39
110/42

At the next page figure 30 presents combination graphs pertaining to the sprint hurdles. The upper graph is a composite graph of standards and actual records versus age for events using only age segments of applicability per the existing WAVA/USATF hurdles specifications. The specified event distances, hurdle heights and ages of applicability are listed underneath the graph.

The lower graph is a comparison graph of curves plotting the standards (less the records) of the events in the previous composite graph for ages 14 to 90 in order to show that the extended curves are properly behaved and do not cross each other.

Figure 30


COMPOSITE CHART: MEN'S SPRINT HURDLE TIME STANDARDS AND RECORDS IN SECONDS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
TS
WR
110/39" AGE 14-19; 110/39" AGE 30-49; 100/36" AGE 50-59; 100/33" AGE 60-69; 80/30" AGE 70-100

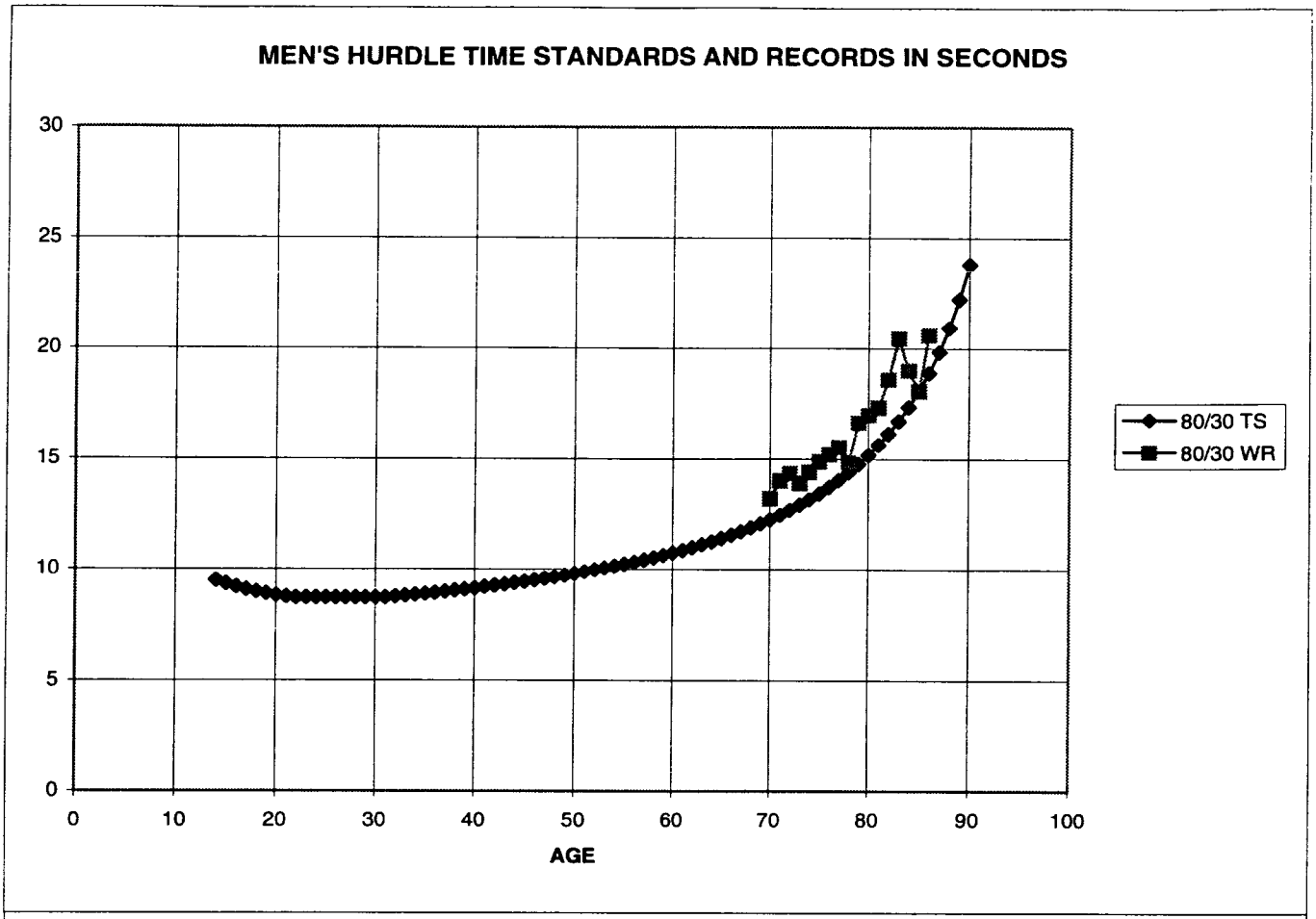

COMPARISON CHART: MEN'S SPRINT HURDLE TIME STANDARDS IN SECONDS
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30 TS
100/33 TS
100/36 TS
110/39 TS
110/42 TS

At the next page graphs are presented which plot time standards and actual records versus age for sprint hurdle events. These graphs are shown in figures 31, 32 and 33. The resulting graphs do not reflect attempts to curve fit the events on a stand alone basis. Previously discussed hurdle factor values were generated along with the standards. The hurdle factor values were then compared between the various events and adjustments were made when required to obtain the necessary numerical progression in the distribution of the resulting hurdle factor values. Thus, the separate hurdle events within a hurdle family are curve fitted with a measure of dependence between the events.

It is to be noted here that some events were included in the curve fitting even though they are not WAVA/USATF specified events. This does not create a problem of any kind and is a desirable thing to do. The larger the quantity of excellent performances there are to use for curve fitting purposes, the better the quality of the standards that result. Note also that the table of performance level percentages for hurdle records does not restrict the listing of performances to only the age ranges specified by WAVA/USATF.

Refer to chapter 5 for a discussion of what records are included in or removed from the data base, and which records, if any, are not included in the plots of standards and records versus age graphs or in the tables listing performance level for actual records. The discussion in chapter 5 addresses running, hurdles, field events and walks in one coverage to preclude needless repetition of the discussion in each chapter while at the same time improving the overall understanding of which events are most and which are least impacted in this regard.

Figure 31


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30 TS
80/30 WR

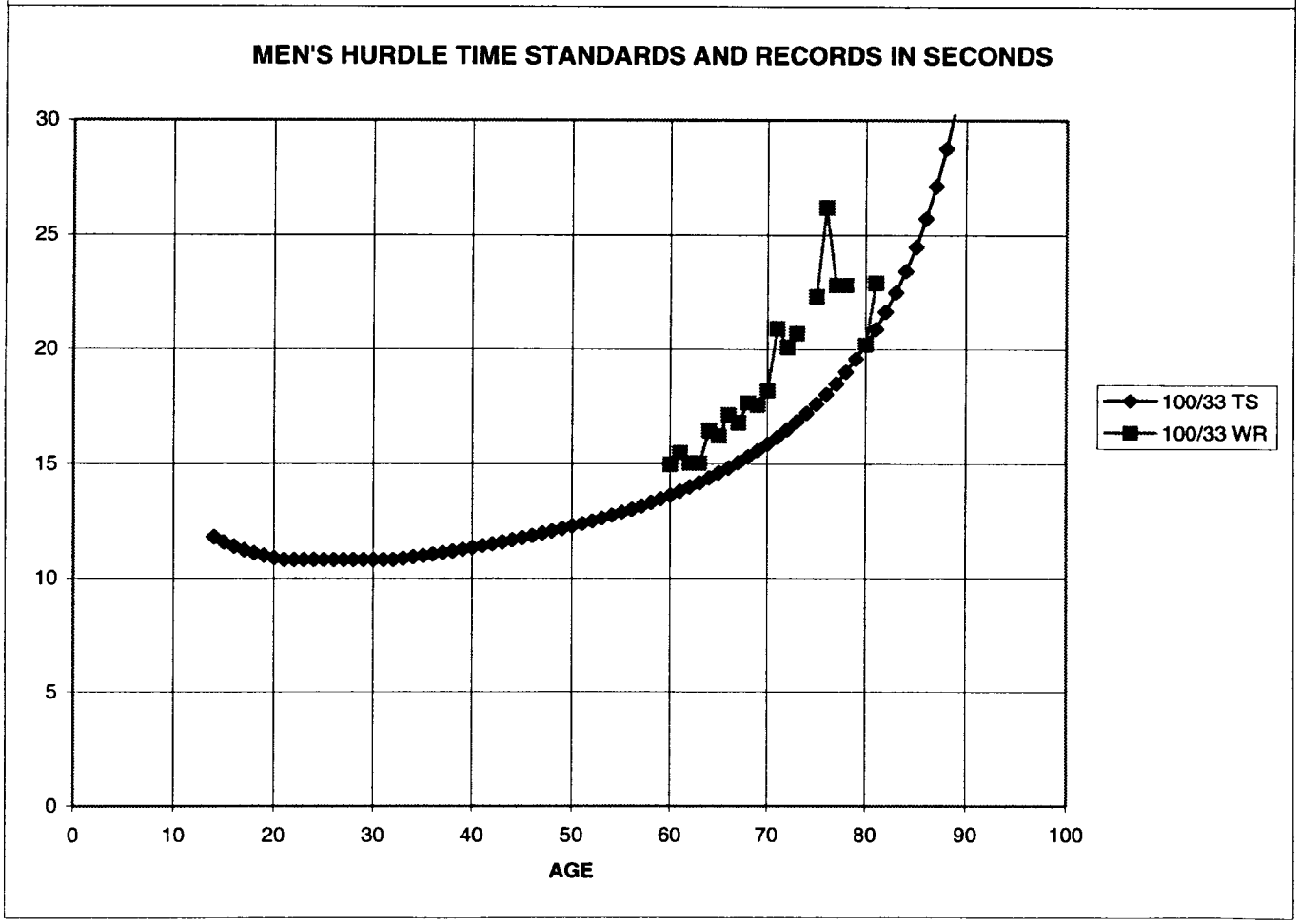
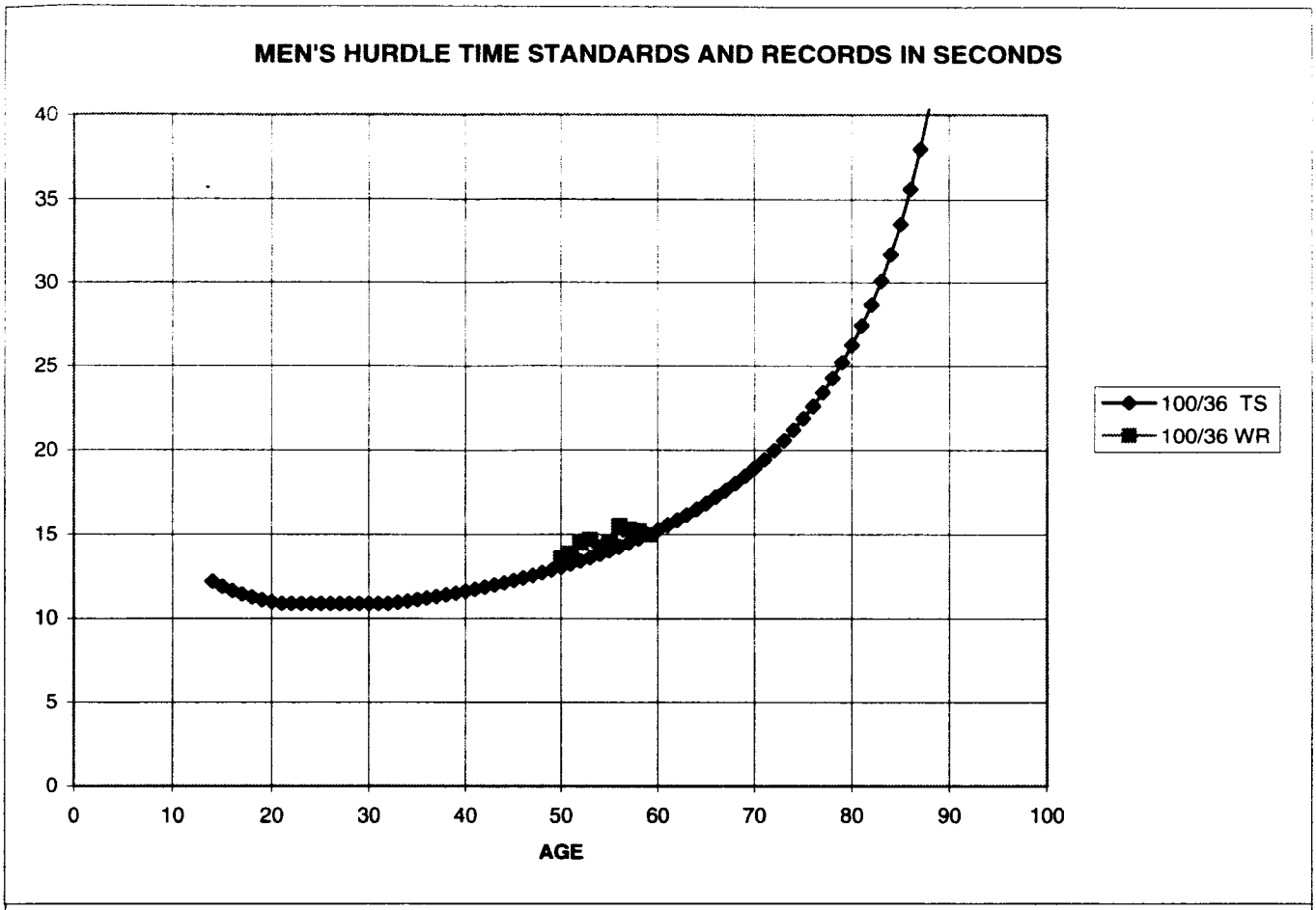

MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
100/33 TS
100/33 WR

Figure 32


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
100/36 TS
100/36 WR

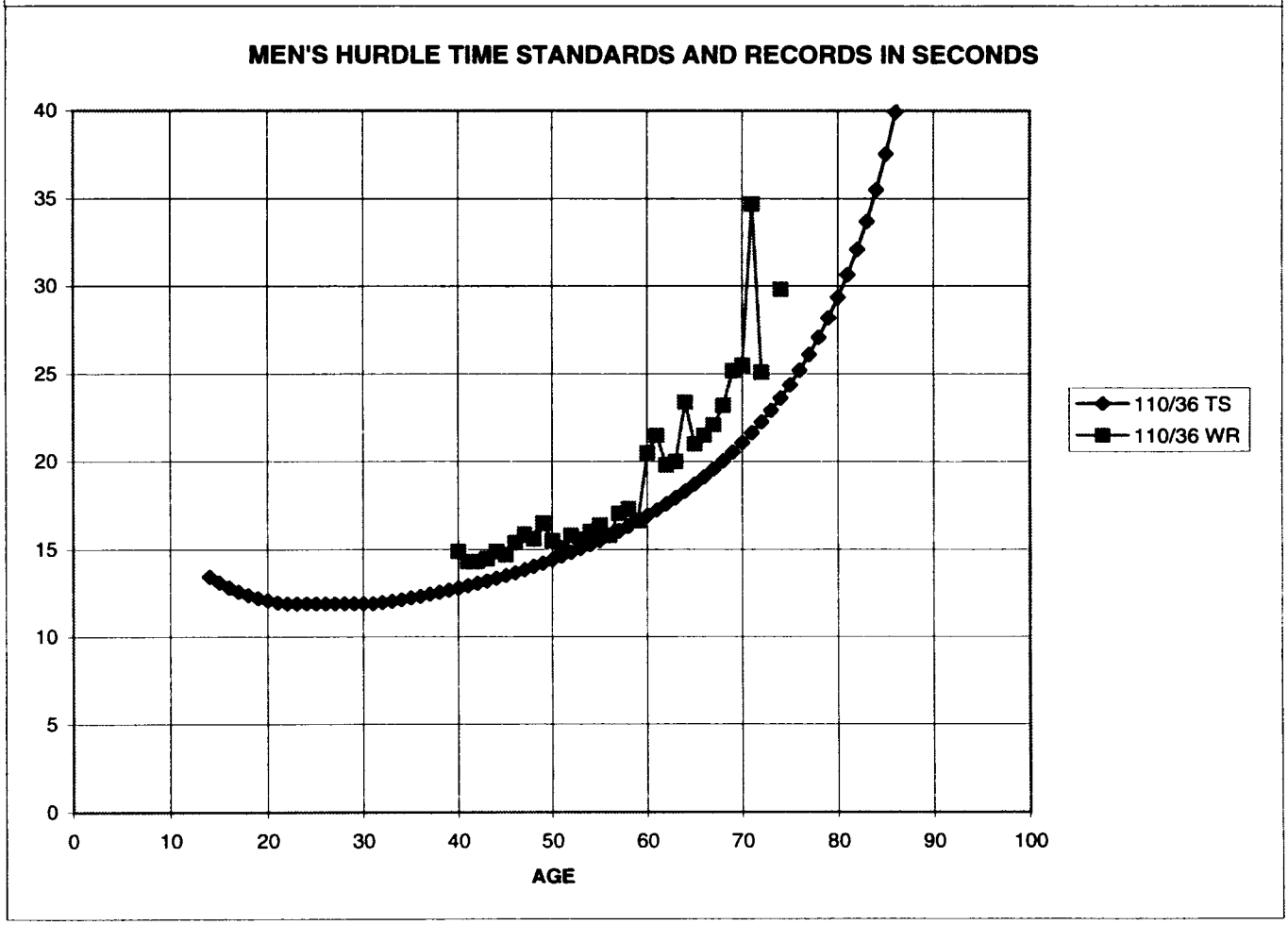
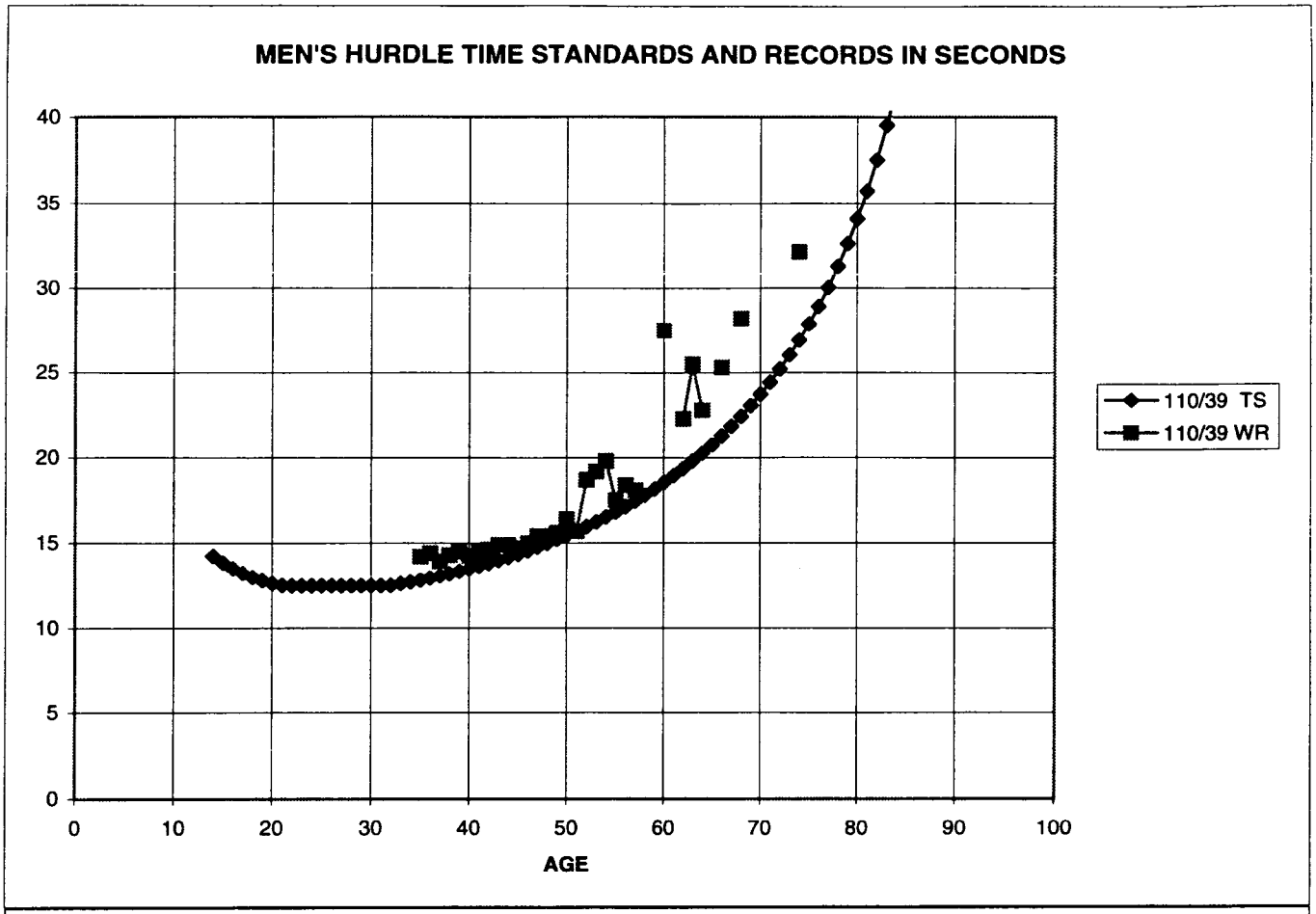
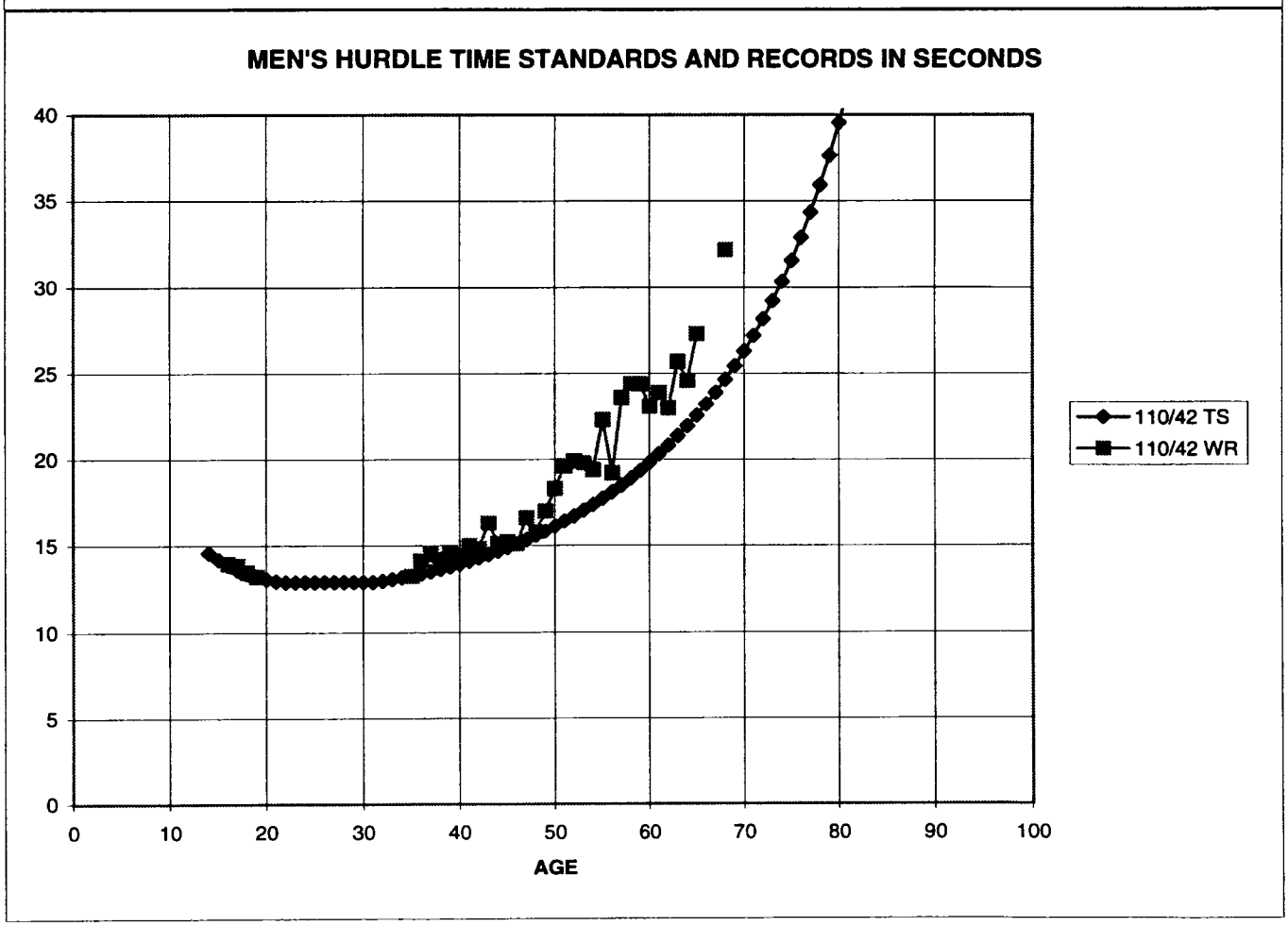

MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
110/36 TS
110/36 WR

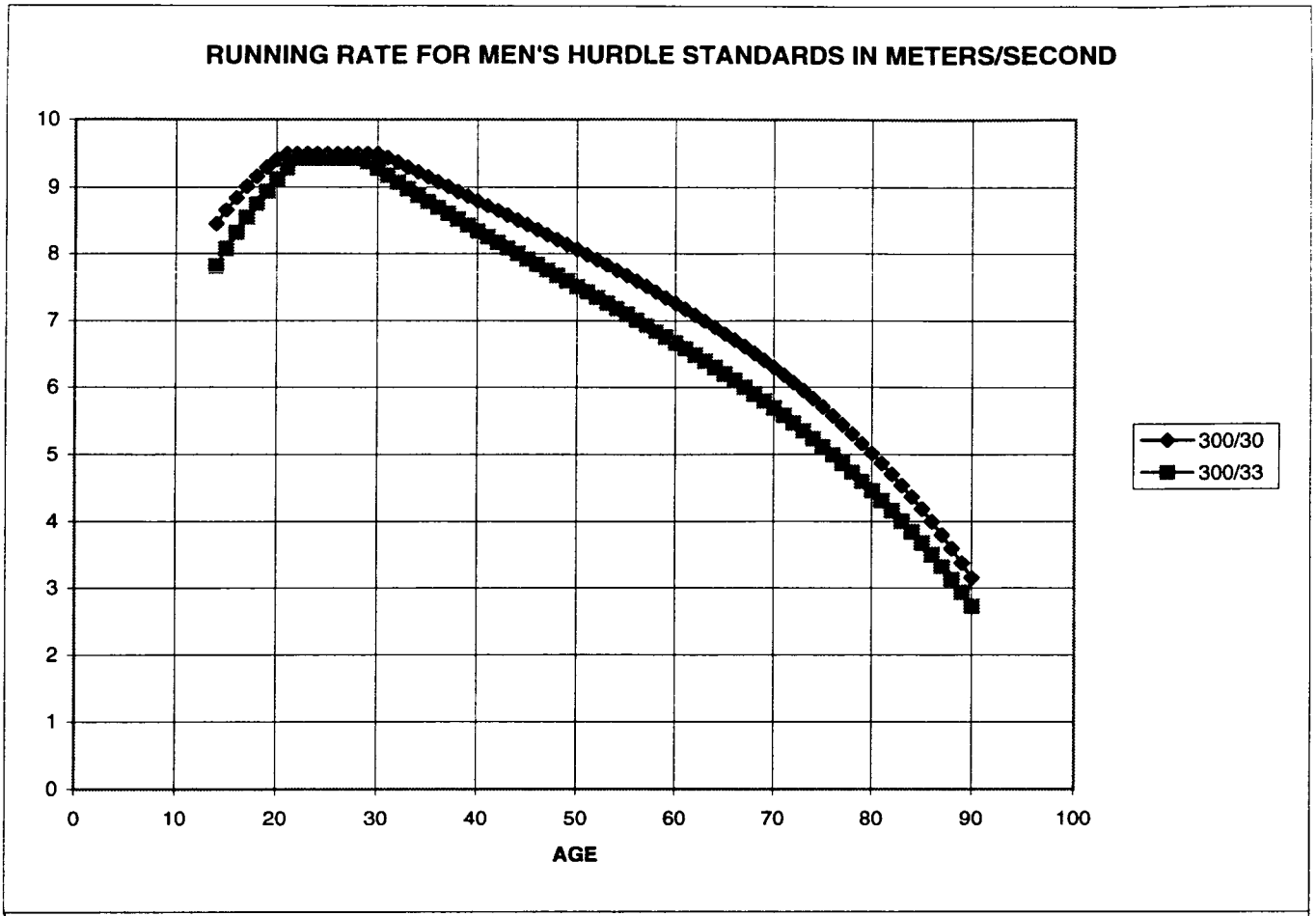
Figure 33


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
110/39 TS
110/39 WR


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
110/42 TS
110/42 WR

The remaining men's hurdle event packages (intermediate hurdles and steeplechase) will not be given the graph by graph review as done above for the men's sprint hurdle events because the same explanations and discussion apply to them.

Figure 34


RUNNING RATE FOR MEN'S HURDLE STANDARDS IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30
300/33

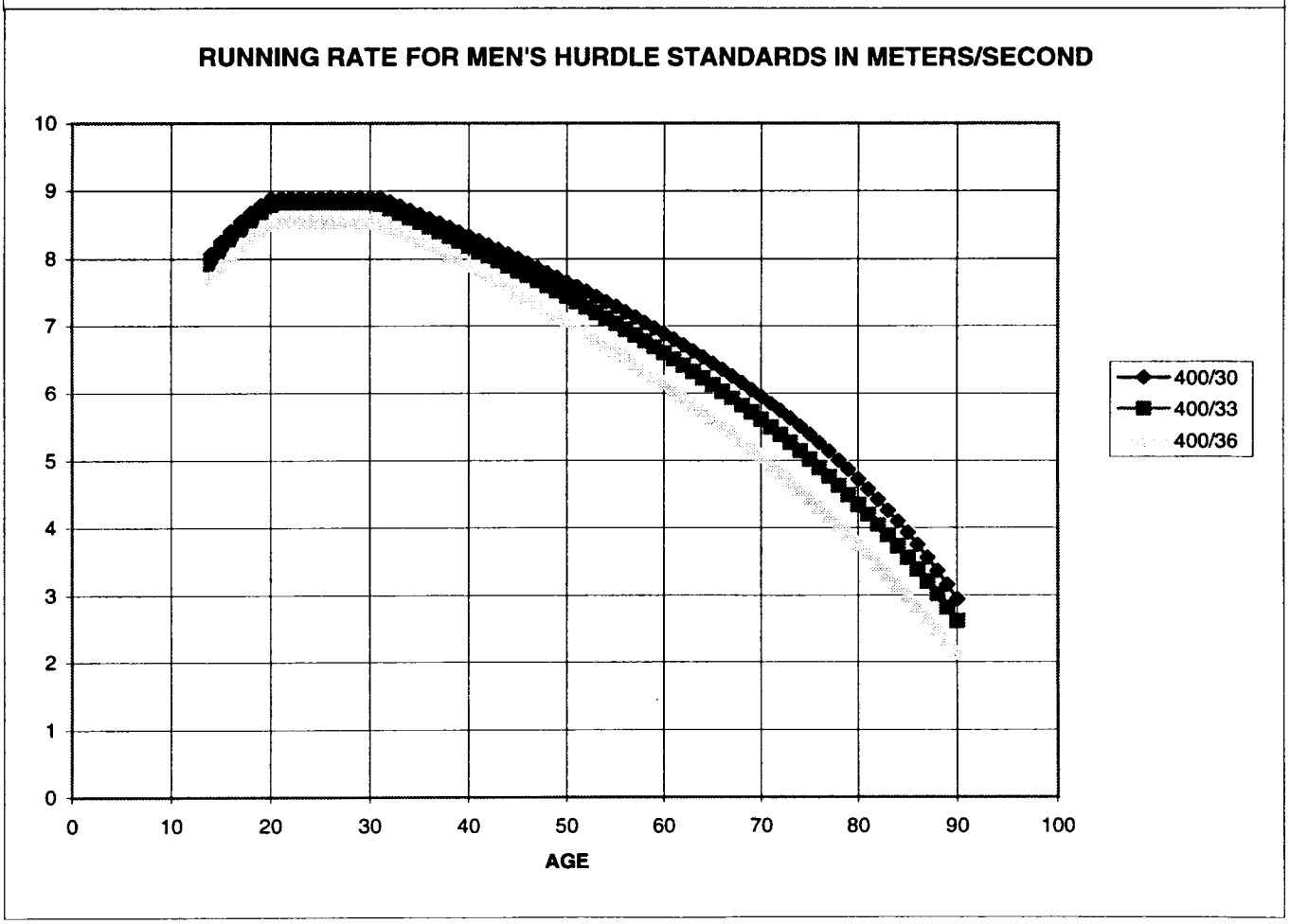
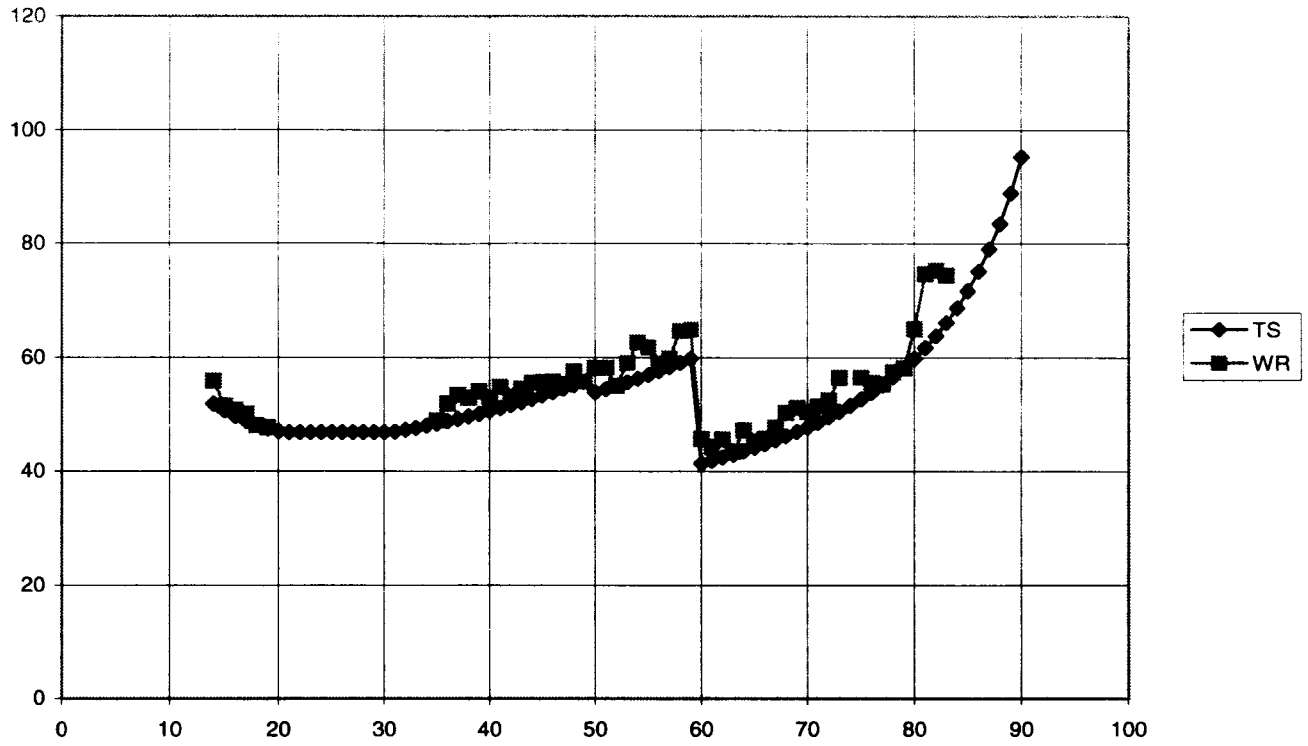

RUNNING RATE FOR MEN'S HURDLE STANDARDS IN METERS/SECOND
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400/30
400/33
400/36

Figure 35

COMPOSITE CHART: MEN'S INTERMEDIATE HURDLE TIME STANDARDS AND RECORDS IN SECONDS



COMPARISON CHART: MEN'S INTERMEDIATE HURDLE TIME STANDARDS IN SECONDS

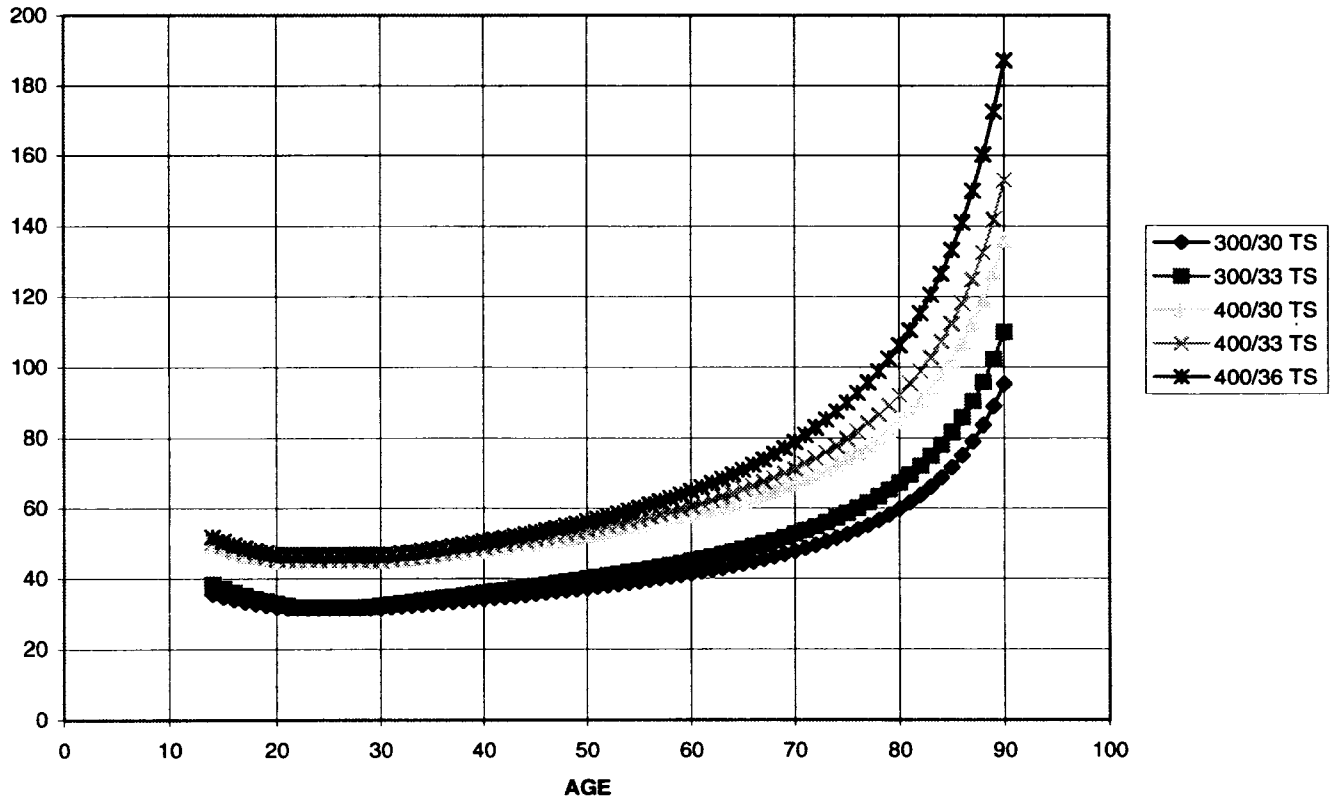
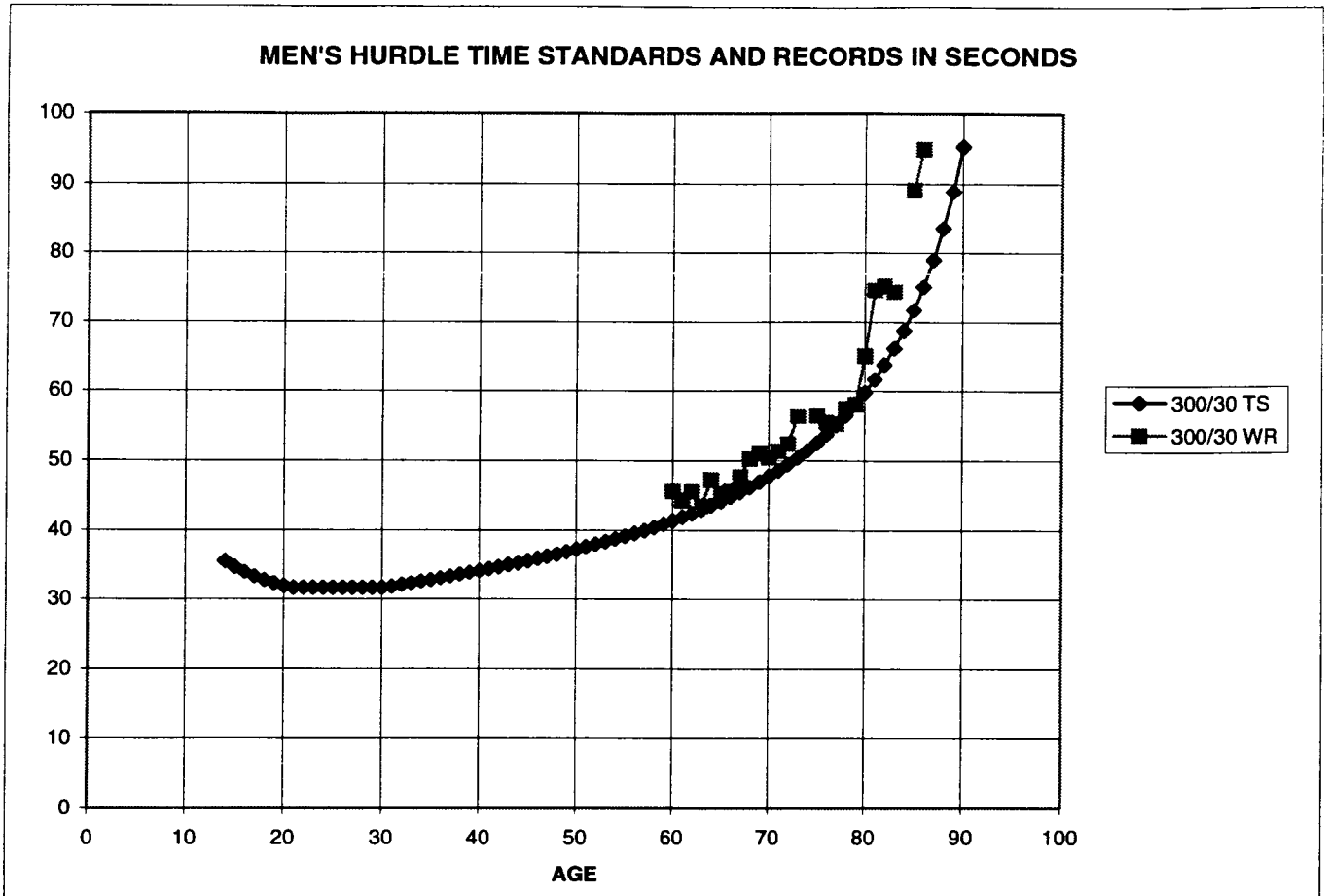


Figure 36


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30 TS
300/30 WR

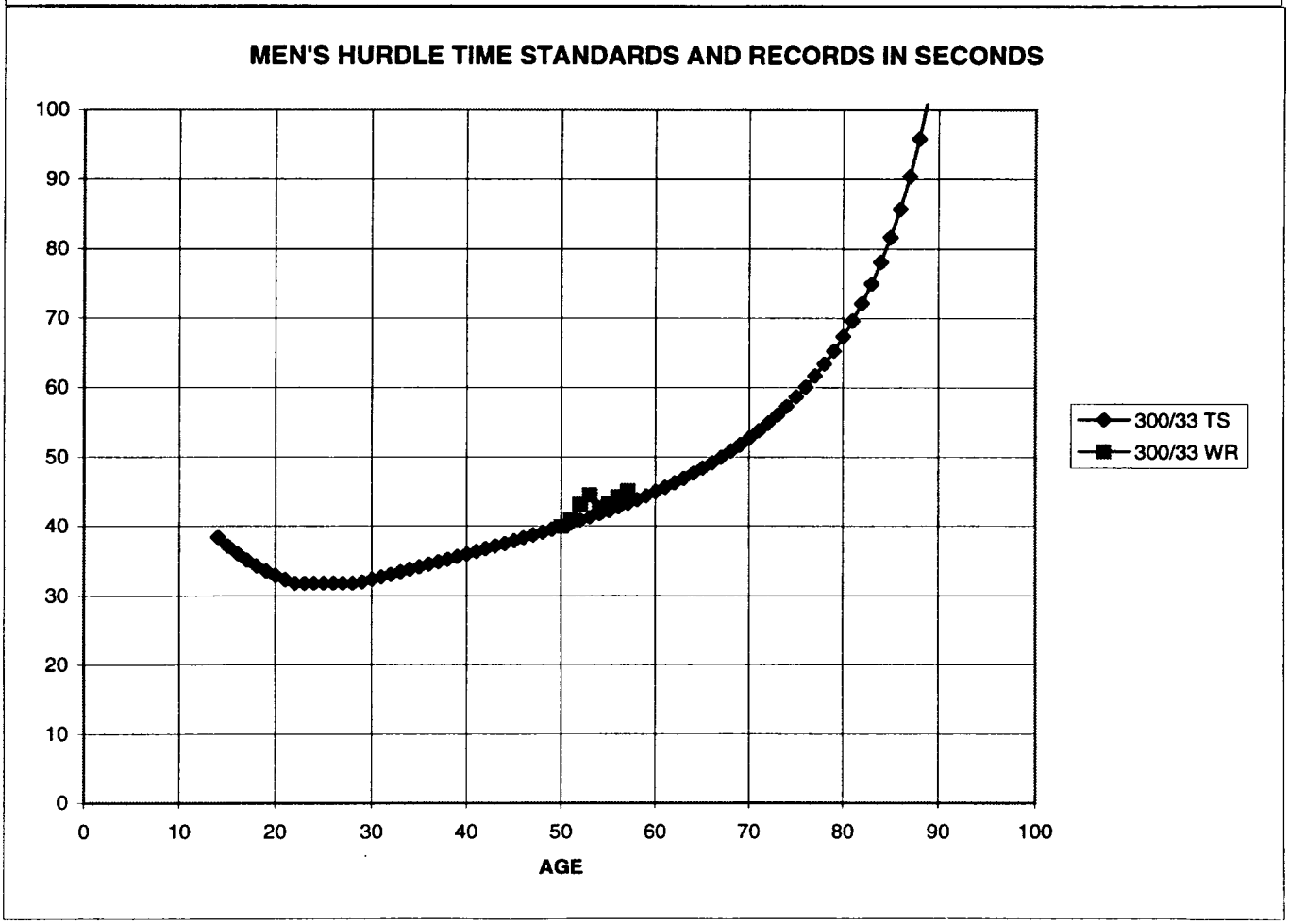
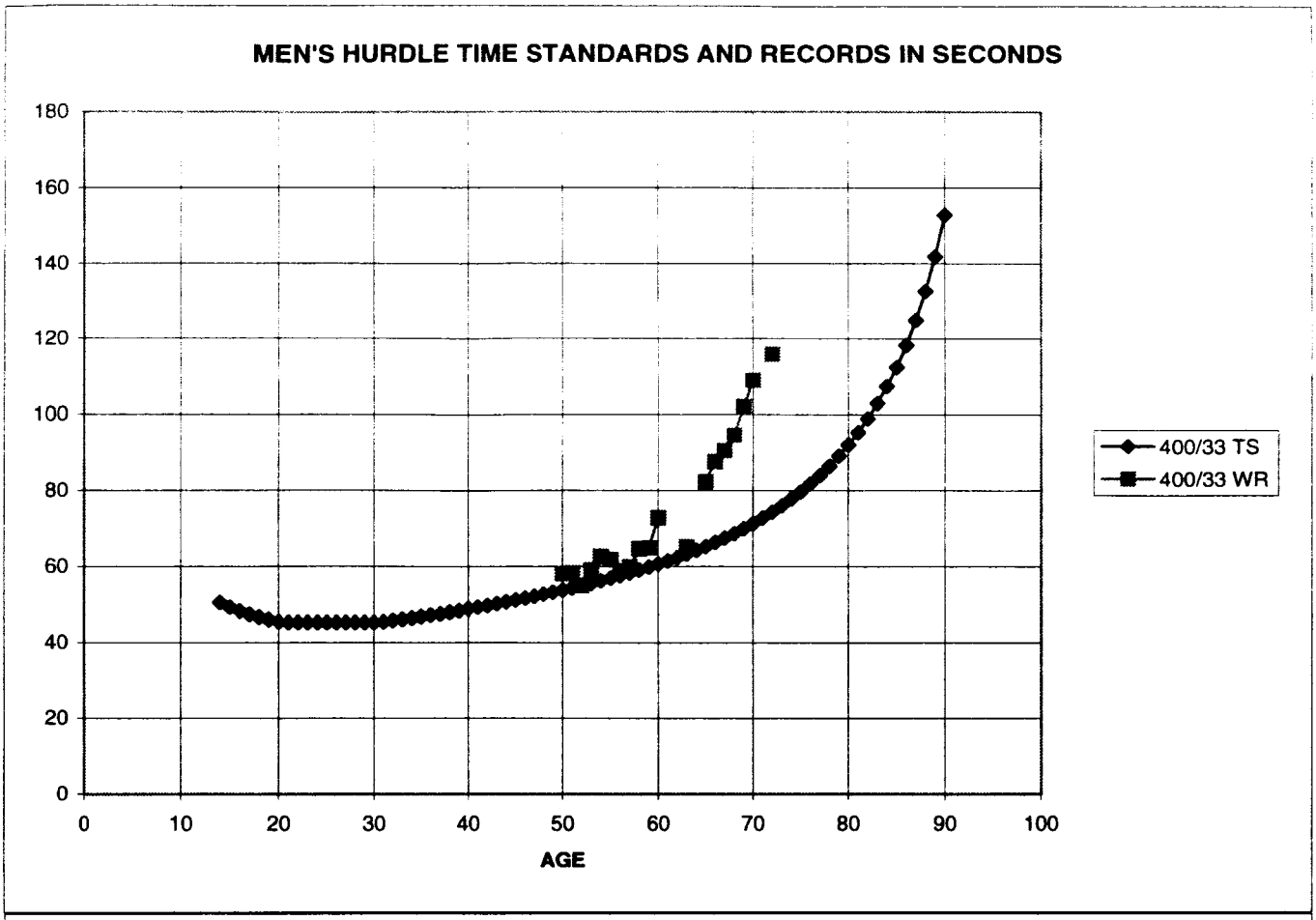

MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/33 TS
300/33 WR

Figure 37


MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400/33 TS
400/33 WR

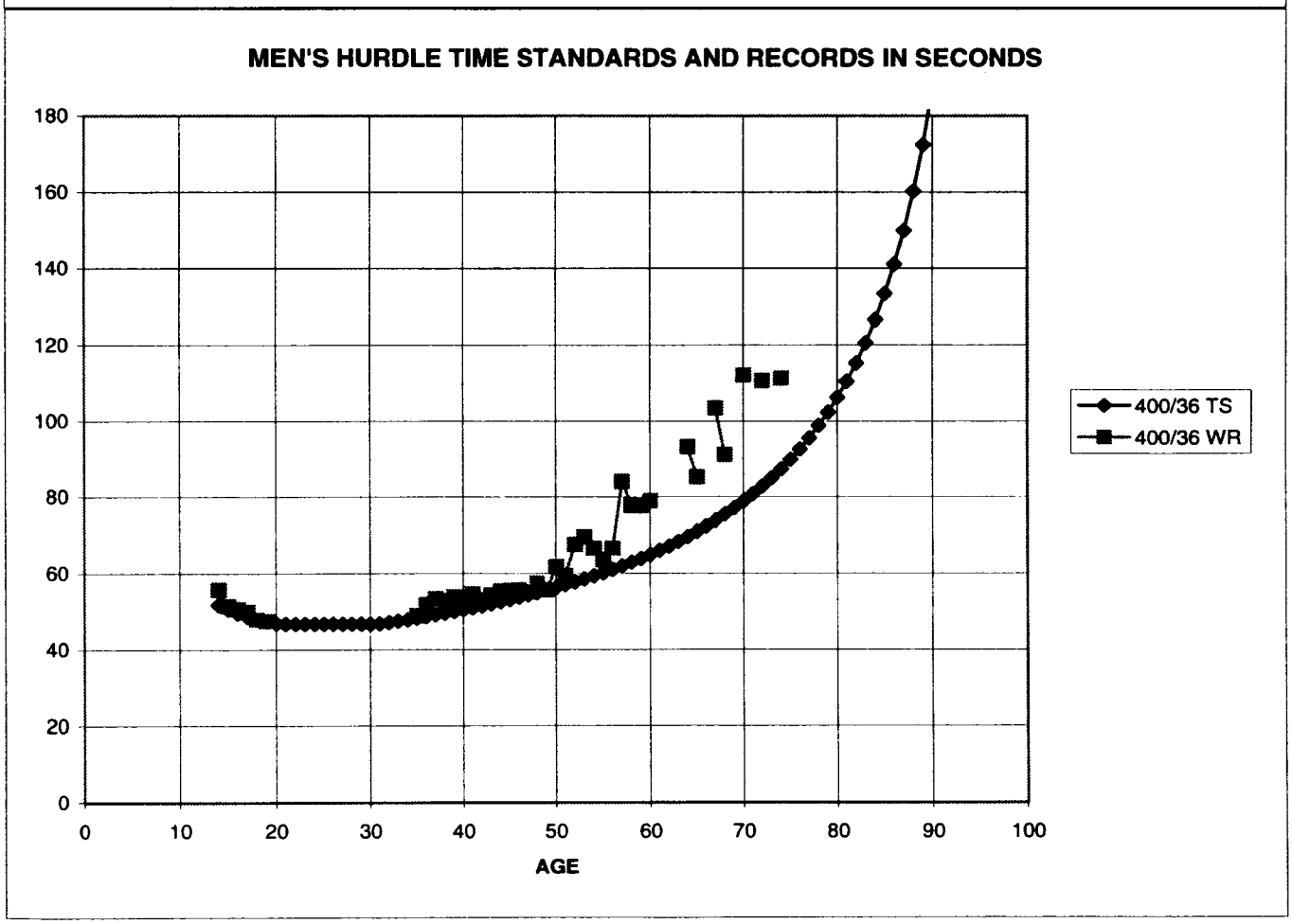

MEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400/36 TS
400/36 WR

Figure 38

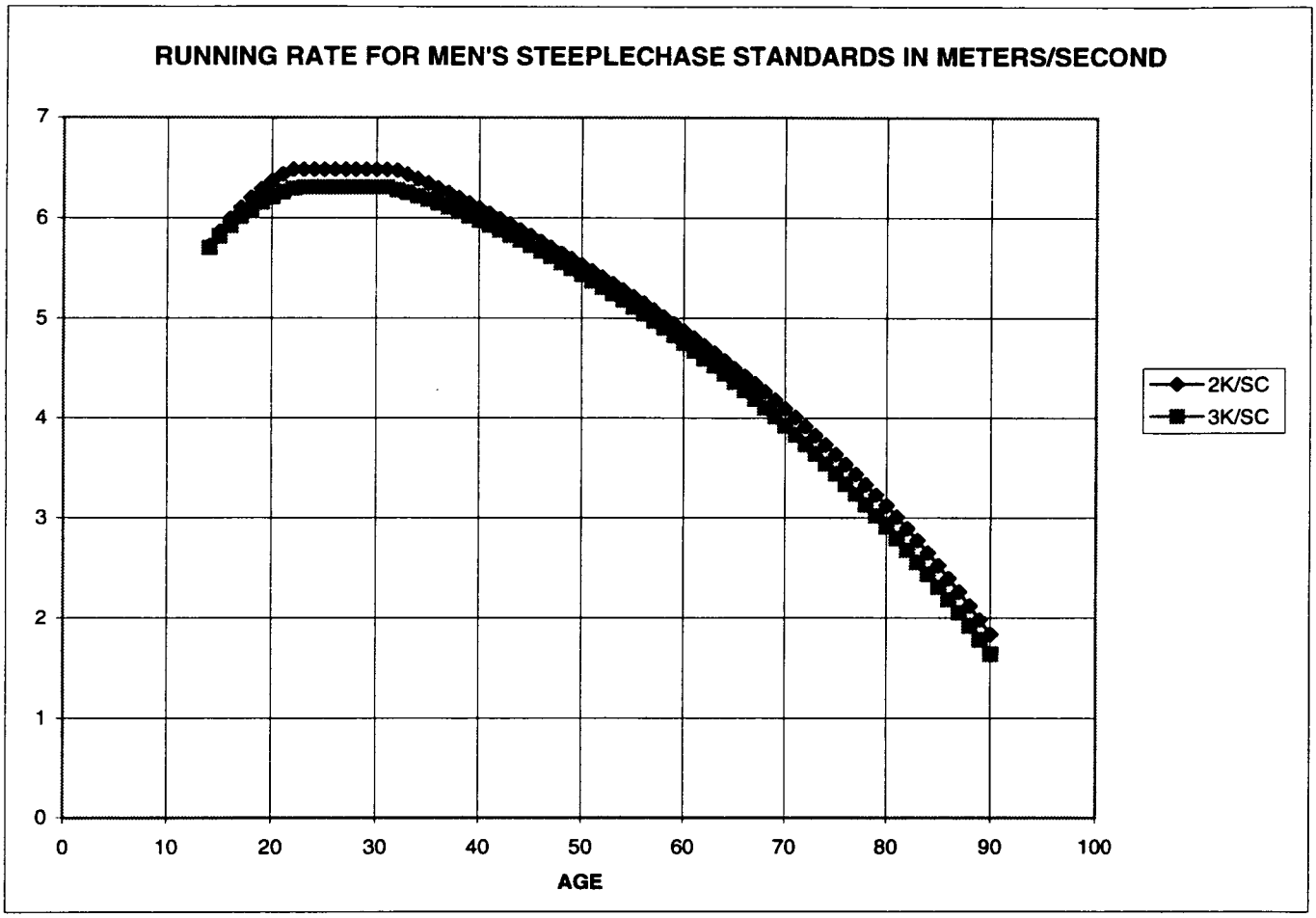
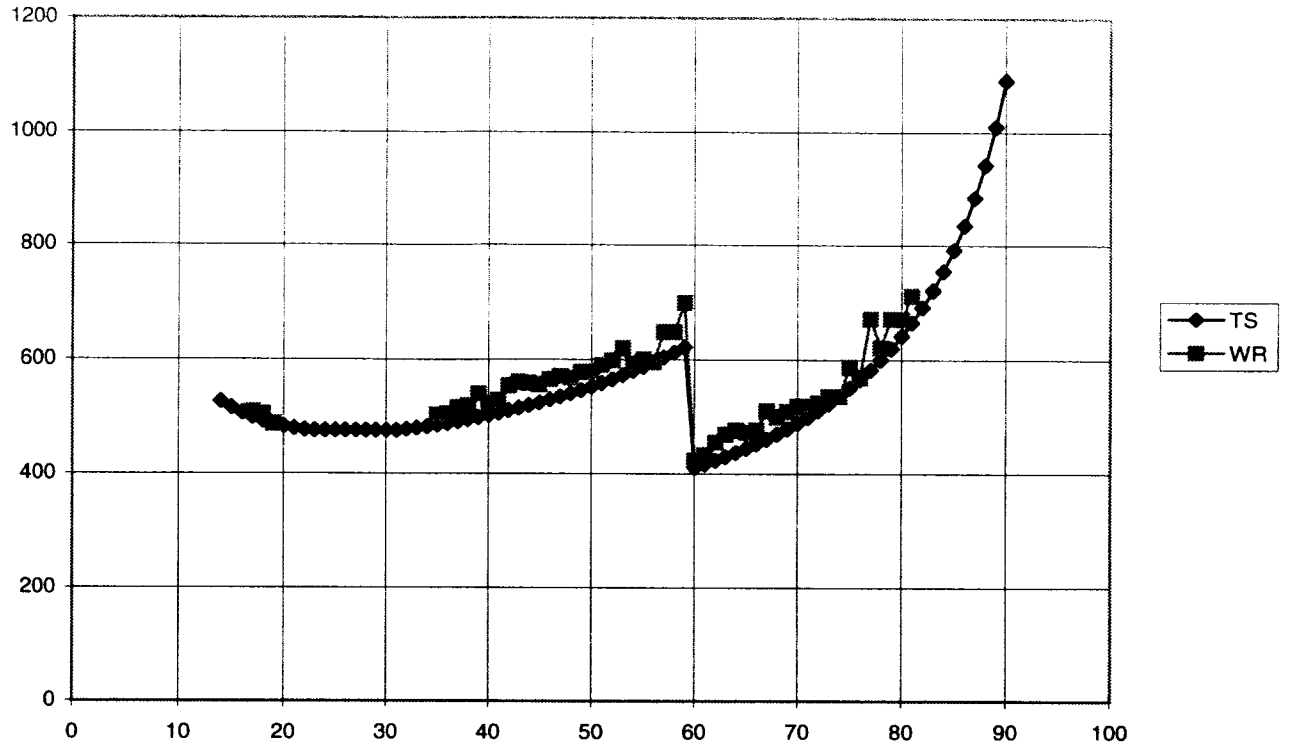

RUNNING RATE FOR MEN'S STEEPLECHASE STANDARDS IN METERS/SECOND
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K/SC
3K/SC

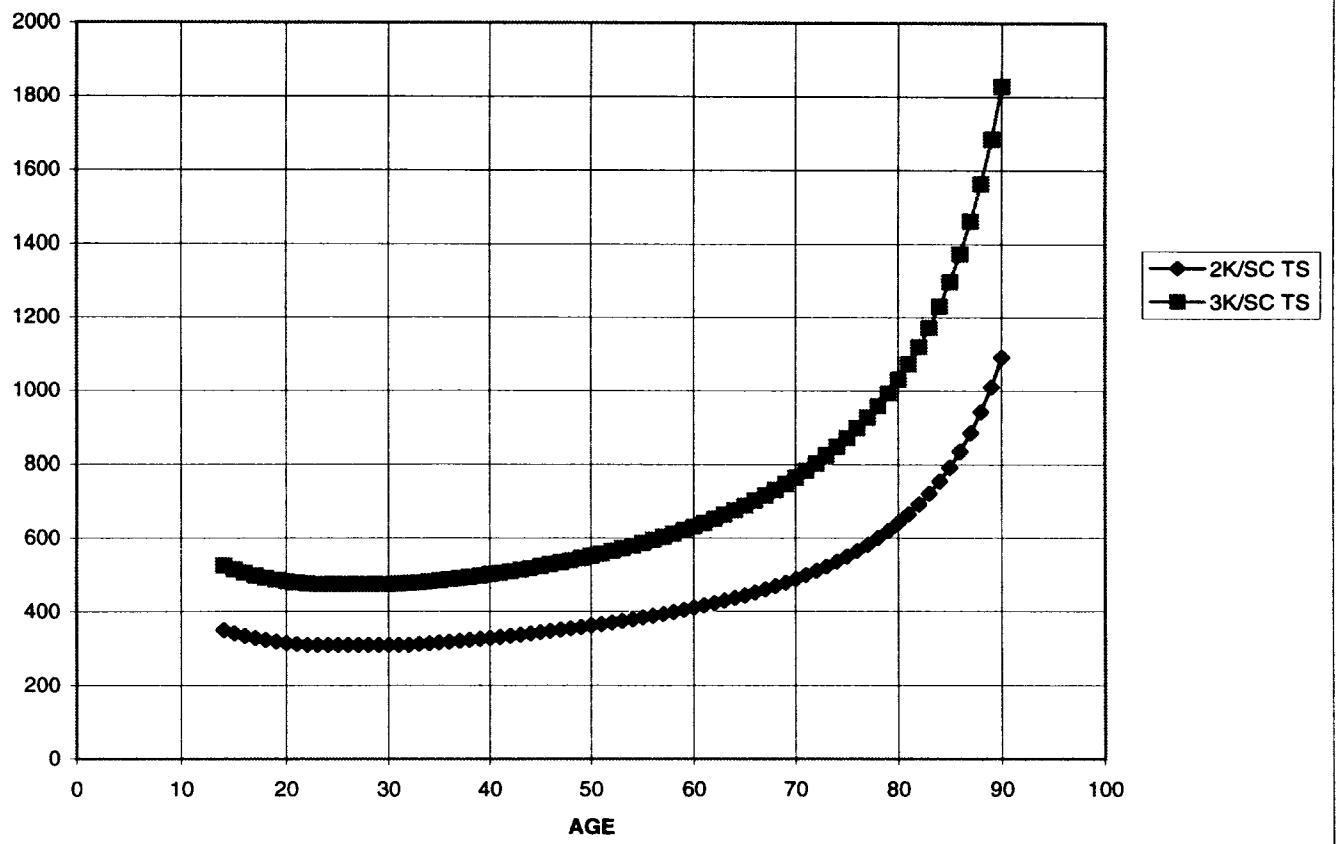
Figure 39

COMPOSITE CHART: MEN'S STEEPLECHASE TIME STANDARDS AND RECORDS IN SECONDS



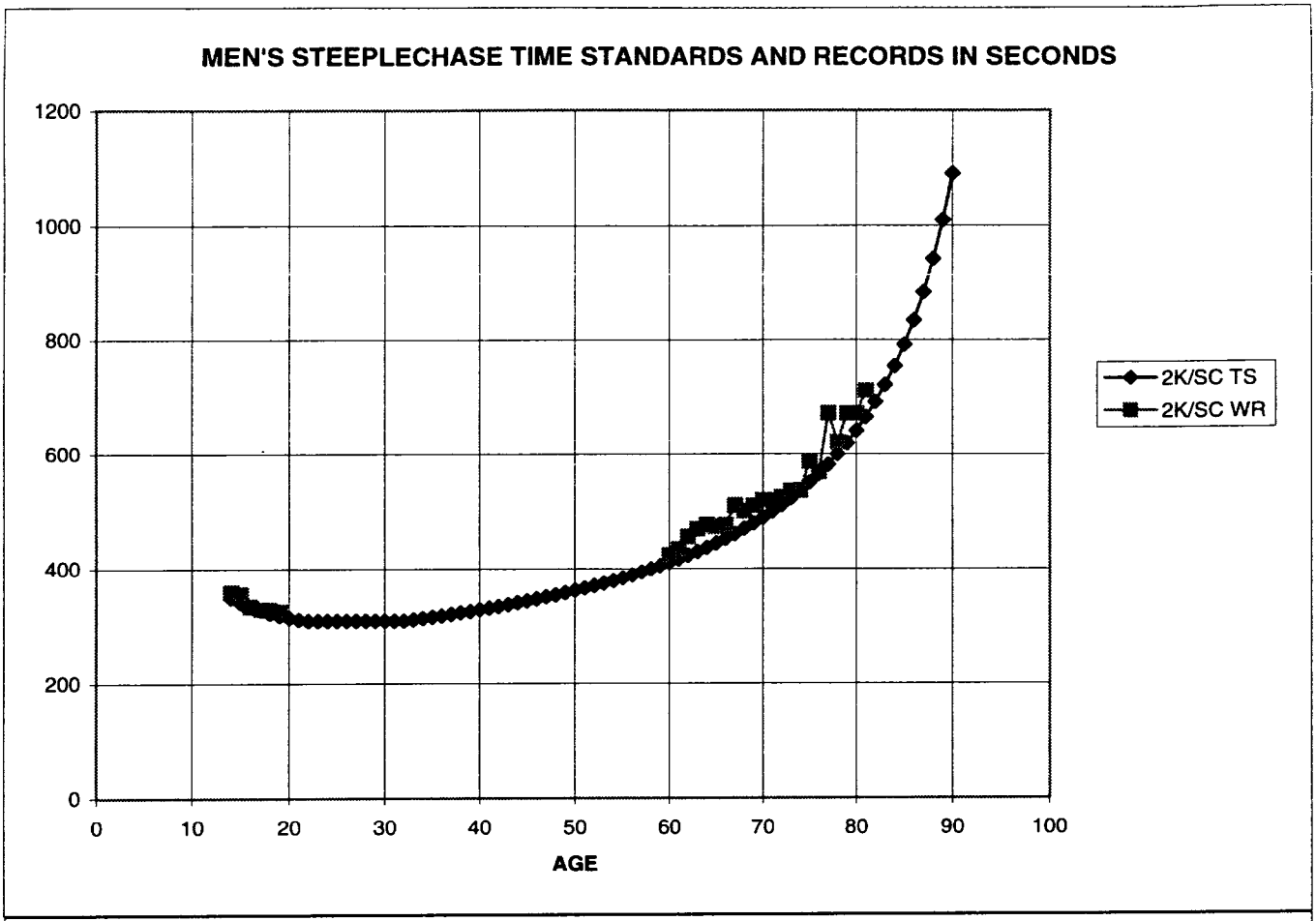
3K/SC AGE 14-59; 2K/SC AGE 60-100

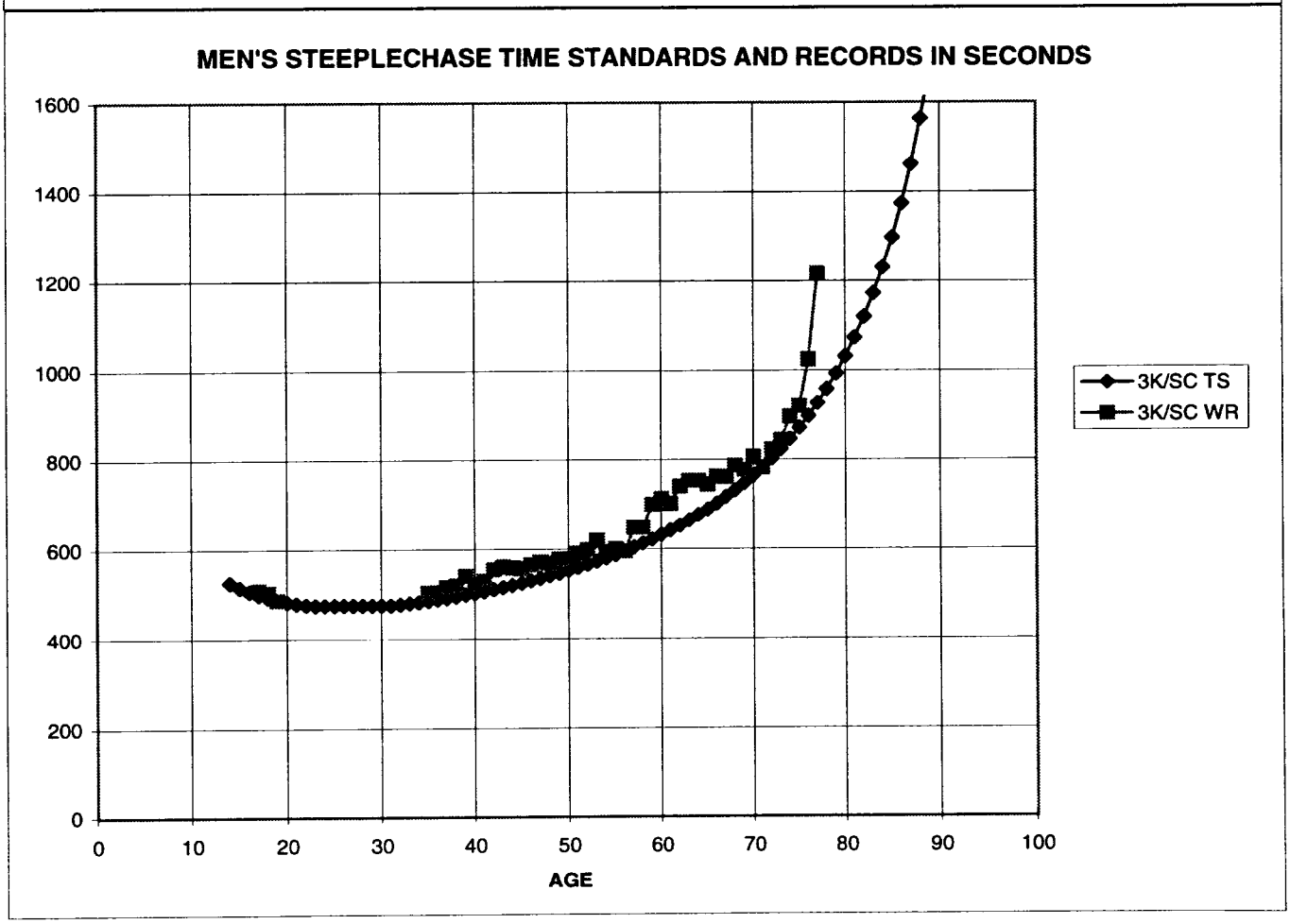
COMPARISON CHART: MEN'S STEEPLECHASE TIME STANDARDS IN SECONDS



AGE

Figure 40


MEN'S STEEPLECHASE TIME STANDARDS AND RECORDS IN SECONDS
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K/SC TS
2K/SC WR


MEN'S STEEPLECHASE TIME STANDARDS AND RECORDS IN SECONDS
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K/SC TS
3K/SC WR

Age-factor material is presented here in support and explanation of the age-factor standards table included at the beginning of the chapter. A discussion previously covered what age-factors represent, how they are derived and what some of the peculiarities are that characterize the derived results. The purpose here is to present the tabulated age-factor values in extended graphic plots which can be more easily visualized and interpreted.

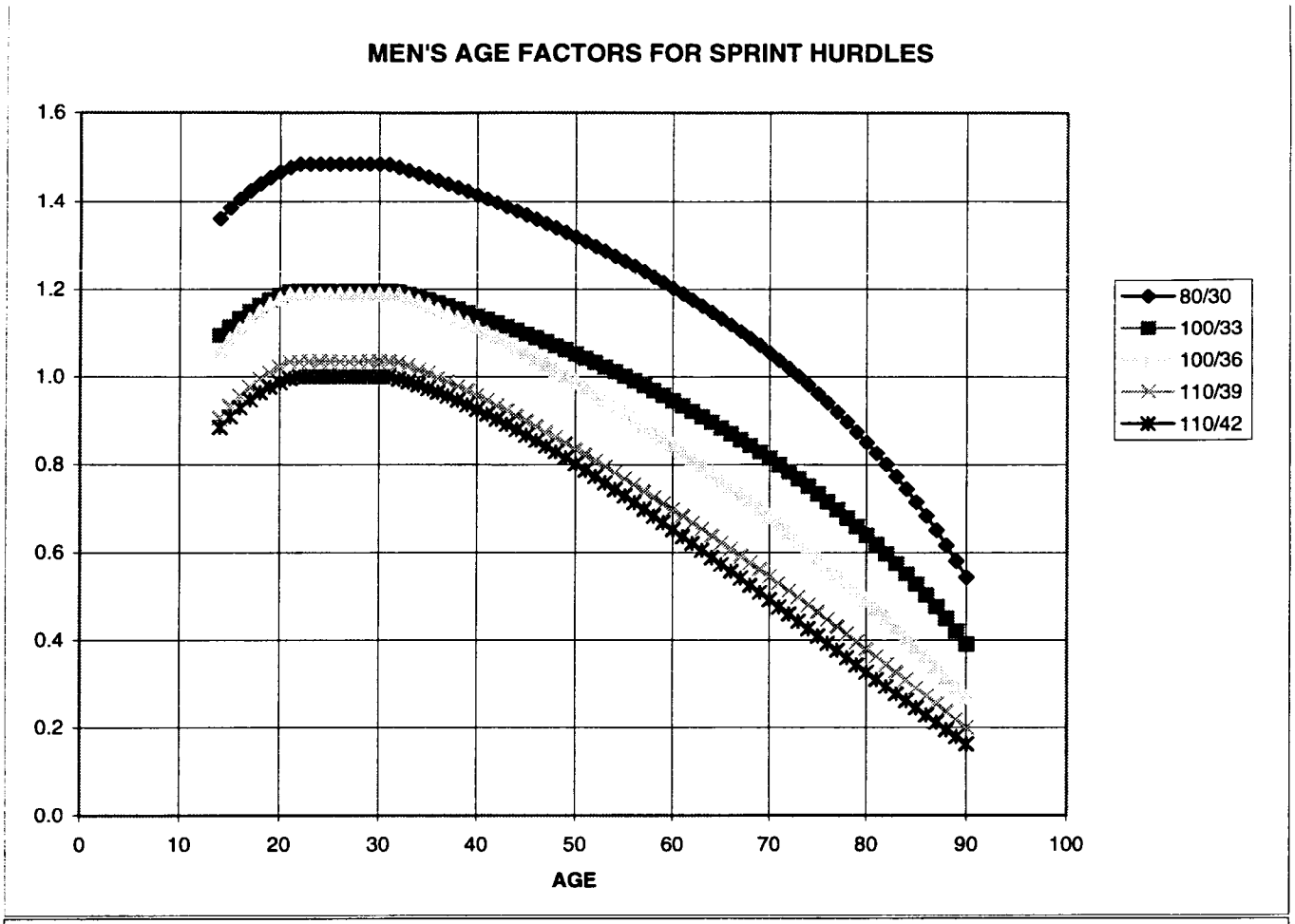
Two pages of graphs follow at figures 41 and 42. These graphs are plots of age-factor values determined from the standards. In these graphs the relationship is age-factor value versus age for WAVA/USATF events. As previously discussed, the age range of the plotted age-factor values is 14 to 90 years of age rather than being just the age range specified by WAVA/USATF for event competition, so that the mathematical behavior of the extended curves can be determined and examined. These extended curves are not meant to imply that 90 year old hurdlers are expected to run the 110/39" and 110/42" hurdle events.

The resulting age-factor curves depicted in the three figures are really quite well behaved.

ASSESSMENT OF HURDLE STANDARDS FOR MEN.

In summary, masters hurdle event standards and age-factors for men have high levels of statistical confidence, but are not as consistent yet as running is in terms of the amount of variation between the standards and the records. Youth results are also strong and well documented for the hurdles, with records provided for ages 14 and up.

Figure 41


MEN'S AGE FACTORS FOR SPRINT HURDLES
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30
100/33
100/36
110/39
110/42

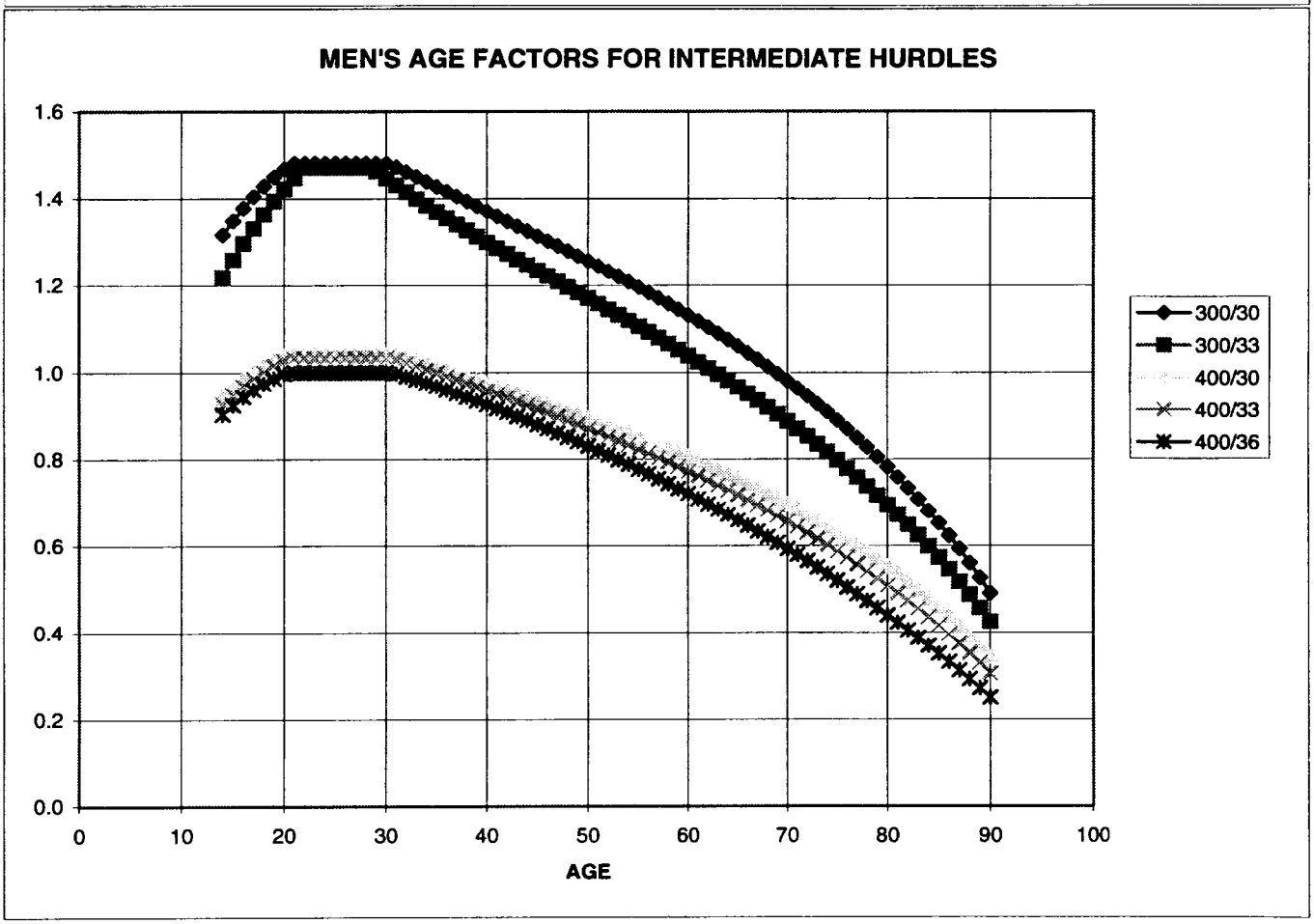
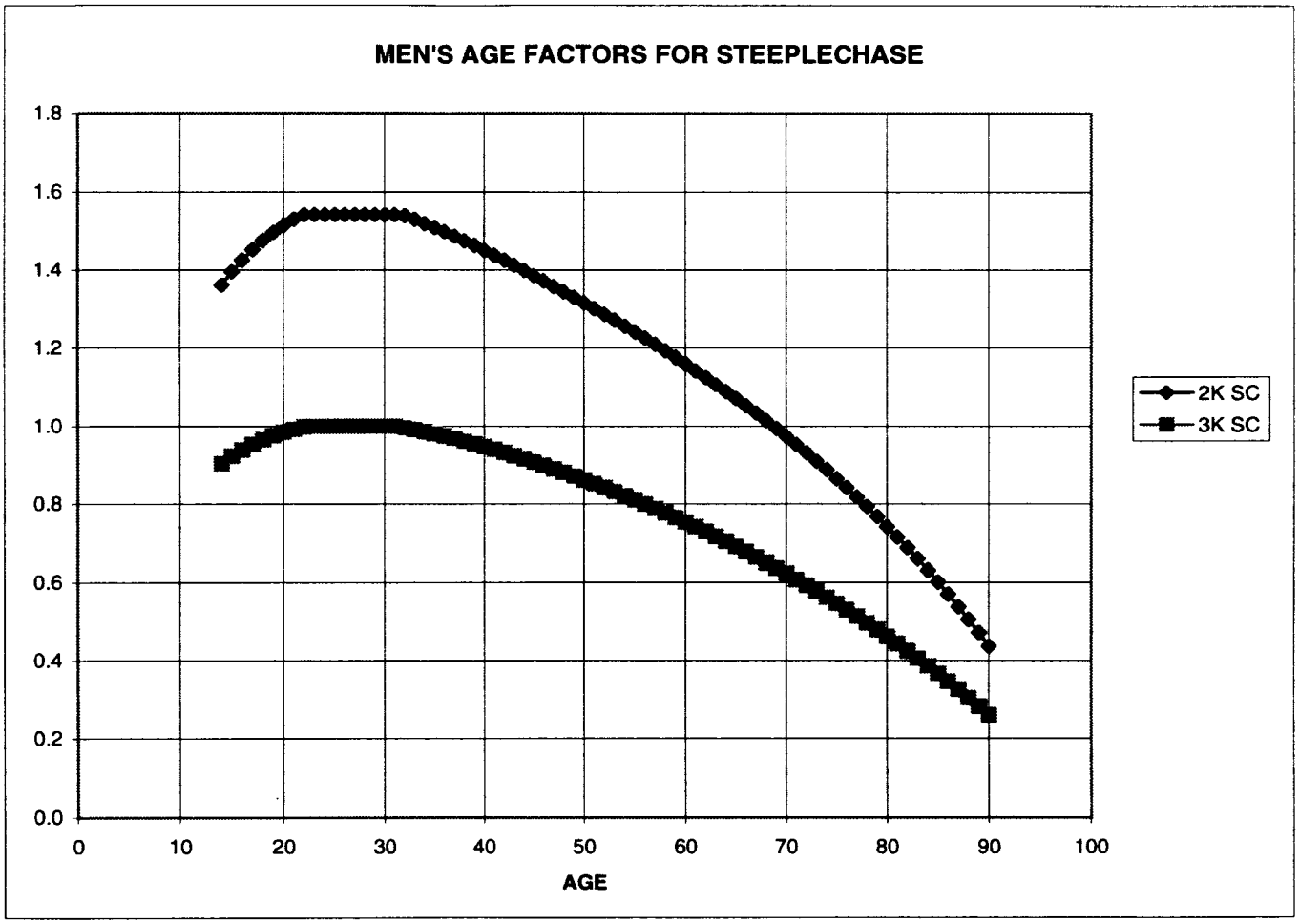

MEN'S AGE FACTORS FOR INTERMEDIATE HURDLES
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30
300/33
400/30
400/33
400/36

Figure 42


MEN'S AGE FACTORS FOR STEEPLECHASE
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K SC
3K SC

The remainder of the chapter will include the same tables and graphs for women as were presented and discussed for men's hurdle events. The same discussion applies to the material in the women's portion of the chapter and hence it will not be repeated. For an explanation of a specific table or graph for women, refer to the same table or graph for men and its narrative at the beginning of the chapter.

Refer to the table of Performance Level Of Actual Records for women at page 87 to see which women's records determined their resulting standards. The table shows performance level of actual records for a quick view of how many "world record" level performances are identified by the hurdle standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The table also illustrates the distribution of those records across all ages and events.

ASSESSMENT OF HURDLE STANDARDS FOR WOMEN.

In summary, masters hurdle event standards and age-factors for women have good levels of statistical confidence, being similar to their running events in terms of the amount of variation between the standards and the records. Youth hurdle standards for women in this study are weak in statistical confidence because only world junior records were available for curve fitting. The women's records are less competitively mature than the men's simply because participation has been less for women than for men over the years, but their better records fully define and support the standards and age factors that have resulted. Women's hurdle standards are based solely on their records as a completely separate effort and are not adjusted or otherwise modeled on the men's standards.

WOMEN'S HURDLE STANDARDS AND AGE FACTORS

	STANDARDS					AGE FACTORS			
AGE	SPRINT 100/33	INTER 400/30	STEEPLE 2000/SC (H:M:S)	STEEPLE 2000/SC (Seconds)	AGE	SPRINT 100/33	INTER 400/30	STEEPLE 2000/SC
14	14.57	1:00.74	6:22.24	382.24	14	0.8383	0.8662	0.9418
15	14.02	58.91	6:16.02	376.02	15	0.8710	0.8930	0.9574
16	13.56	57.38	6:11.08	371.08	16	0.9007	0.9169	0.9702
17	13.17	56.08	6:07.17	367.17	17	0.9274	0.9382	0.9805
18	12.83	54.98	6:04.12	364.12	18	0.9514	0.9570	0.9887
19	12.55	54.04	6:01.77	361.77	19	0.9726	0.9735	0.9951
OC	12.21	52.61	6:00.00	360.00	OC	1.0000	1.0000	1.0000
30	12.21	52.61	6:00.00	360.00	30	1.0000	1.0000	1.0000
31	12.24	52.61	6:00.31	360.31	31	0.9976	1.0000	0.9991
32	12.38	52.71	6:01.63	361.63	32	0.9861	0.9980	0.9955
33	12.53	53.16	6:03.19	363.19	33	0.9741	0.9896	0.9912
34	12.69	53.64	6:04.98	364.98	34	0.9618	0.9808	0.9864
35	12.86	54.15	6:07.00	367.00	35	0.9492	0.9716	0.9809
36	13.04	54.69	6:09.27	369.27	36	0.9363	0.9620	0.9749
37	13.22	55.25	6:11.79	371.79	37	0.9233	0.9522	0.9683
38	13.41	55.84	6:14.55	374.55	38	0.9102	0.9422	0.9611
39	13.61	56.46	6:17.57	377.57	39	0.8970	0.9319	0.9535
	80/30					80/30		
40	10.40	57.10	6:20.85	380.85	40	1.1741	0.9214	0.9452
41	10.50	57.76	6:24.40	384.40	41	1.1630	0.9108	0.9365
42	10.60	58.46	6:28.21	388.21	42	1.1514	0.9000	0.9273
43	10.72	59.18	6:32.31	392.31	43	1.1394	0.8890	0.9176
44	10.84	59.92	6:36.69	396.69	44	1.1269	0.8780	0.9075
45	10.96	1:00.70	6:41.37	401.37	45	1.1140	0.8668	0.8969
46	11.09	1:01.50	6:46.36	406.36	46	1.1007	0.8555	0.8859
47	11.23	1:02.33	6:51.66	411.66	47	1.0870	0.8440	0.8745
48	11.38	1:03.19	6:57.29	417.29	48	1.0729	0.8325	0.8627
49	11.54	1:04.09	7:03.27	423.27	49	1.0585	0.8209	0.8505
	80/30	300/30				80/30	300/30	
50	11.70	45.30	7:09.60	429.60	50	1.0437	1.1614	0.8380
51	11.87	45.94	7:16.30	436.30	51	1.0286	1.1452	0.8251
52	12.05	46.61	7:23.39	443.39	52	1.0132	1.1288	0.8119
53	12.24	47.30	7:30.89	450.89	53	0.9975	1.1123	0.7984
54	12.44	48.02	7:38.81	458.81	54	0.9814	1.0956	0.7846
55	12.65	48.77	7:47.19	467.19	55	0.9651	1.0787	0.7706
56	12.87	49.55	7:56.03	476.03	56	0.9484	1.0617	0.7563
57	13.11	50.37	8:05.38	485.38	57	0.9315	1.0445	0.7417
58	13.35	51.22	8:15.25	495.25	58	0.9143	1.0271	0.7269
59	13.62	52.12	8:25.68	505.68	59	0.8968	1.0095	0.7119
60	13.89	53.05	8:36.70	516.70	60	0.8790	0.9917	0.6967
61	14.18	54.03	8:48.35	528.35	61	0.8611	0.9737	0.6814
62	14.49	55.06	9:00.68	540.68	62	0.8428	0.9555	0.6658
63	14.81	56.14	9:13.71	553.71	63	0.8243	0.9371	0.6502
64	15.16	57.28	9:27.51	567.51	64	0.8056	0.9185	0.6343
65	15.52	58.48	9:42.13	582.13	65	0.7866	0.8997	0.6184
66	15.91	59.75	9:57.63	597.63	66	0.7674	0.8806	0.6024
67	16.32	1:01.09	10:14.08	614.08	67	0.7480	0.8612	0.5862
68	16.76	1:02.51	10:31.54	631.54	68	0.7283	0.8416	0.5700
69	17.23	1:04.02	10:50.10	650.10	69	0.7085	0.8218	0.5538
70	17.74	1:05.63	11:09.86	669.86	70	0.6884	0.8017	0.5374
71	18.28	1:07.34	11:30.91	690.91	71	0.6681	0.7813	0.5210
72	18.85	1:09.17	11:53.38	713.38	72	0.6476	0.7606	0.5046
73	19.48	1:11.14	12:17.38	737.38	73	0.6269	0.7395	0.4882
74	20.15	1:13.25	12:43.07	763.07	74	0.6060	0.7182	0.4718
75	20.88	1:15.53	13:10.61	790.61	75	0.5849	0.6966	0.4553
76	21.66	1:17.99	13:40.20	820.20	76	0.5636	0.6746	0.4389
77	22.52	1:20.66	14:12.04	852.04	77	0.5421	0.6522	0.4225
78	23.46	1:23.57	14:46.39	886.39	78	0.5204	0.6295	0.4061
79	24.49	1:26.76	15:23.53	923.53	79	0.4986	0.6064	0.3898
80	25.62	1:30.25	16:03.80	963.80	80	0.4765	0.5829	0.3735
81	26.88	1:34.11	16:47.58	1007.58	81	0.4543	0.5590	0.3573
82	28.27	1:38.40	17:35.32	1055.32	82	0.4319	0.5347	0.3411
83	29.83	1:43.18	18:27.58	1107.58	83	0.4093	0.5099	0.3250
84	31.59	1:48.55	19:24.99	1164.99	84	0.3865	0.4846	0.3090
85	33.58	1:54.64	20:28.31	1228.31	85	0.3636	0.4589	0.2931
86	35.86	2:01.58	21:38.48	1298.48	86	0.3405	0.4327	0.2772
87	38.49	2:09.59	22:56.64	1376.64	87	0.3172	0.4060	0.2615
88	41.56	2:18.93	24:24.20	1464.20	88	0.2938	0.3787	0.2459
89	45.19	2:29.96	26:02.91	1562.91	89	0.2702	0.3508	0.2303
90	49.55	2:43.18	27:55.00	1675.00	90	0.2464	0.3224	0.2149

GIRL'S HURDLE TIME STANDARDS

AGE	80/30	100/33	300/30	400/30	2K/SC
14	10.55	14.57	42.46	60.74	382.2
15	10.34	14.02	41.25	58.91	376.0
16	10.18	13.56	40.23	57.38	371.1
17	10.05	13.17	39.37	56.08	367.2
18	9.94	12.83	38.64	54.98	364.1
19	9.85	12.55	38.02	54.04	361.8
OC		12.21		52.61	360.0

AGE	2K/SC
14	6:22.24
15	6:16.02
16	6:11.08
17	6:07.17
18	6:04.12
19	6:01.77
OC	6:00.00

PERFORMANCE LEVEL OF WOMEN'S HURDLE RECORDS

AGE	80/30	100/33	300/30	400/30	2K/SC
14					
15					
16					
17					
18		100		100	
19					
OC		100		100	100
30		90			
31		89			
32		82			
33		88			
34		88			
35		98		100	86
36		100			83
37		97		100	83
38		94		89	85
39		95		91	84
40	88	95		91	86
41	89	91		92	80
42	87	75		89	83
43	89	89		94	83
44	91	97		89	85
45	89	92		94	86
46	91	88		89	83
47	92	80		97	87
48	92			91	89
49	91			100	92
50	92		99	96	90
51	90	86	83		94
52	93	86	91	81	90
53	86		88		70
54	90	84	94		73
55	92		92		95
56	97		95		79
57	94		93		84
58	94		94		81
59	89		91		100
60	100		100		78
61	99		92		84
62	95		92		79
63	95		92		
64	88		89		
65	95		89		81
66	85		96		78
67	94		91		
68	90				
69	91		94		
70					
71	90				
72	68				
73	93				
74					
75	75				
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Figure 43

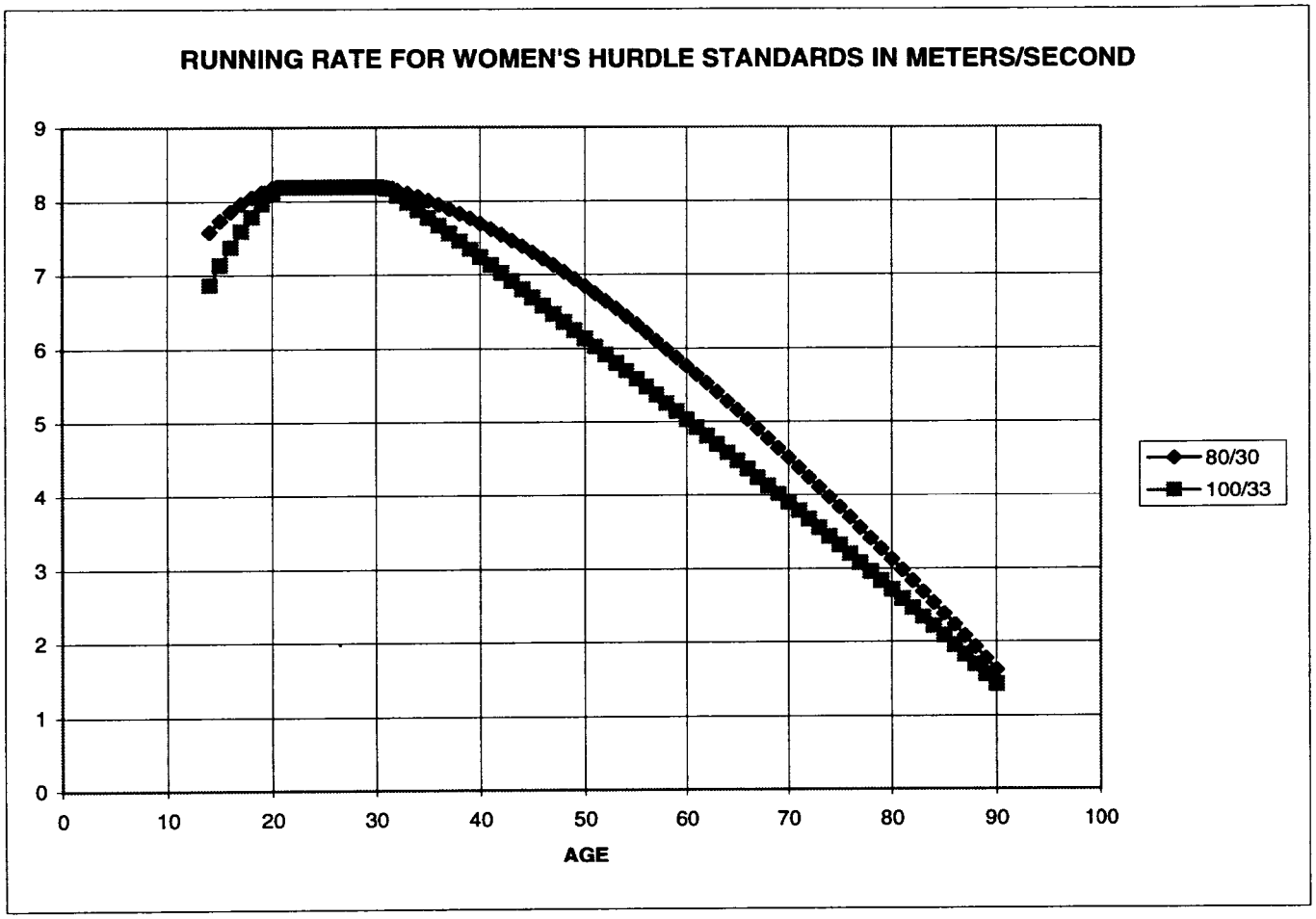
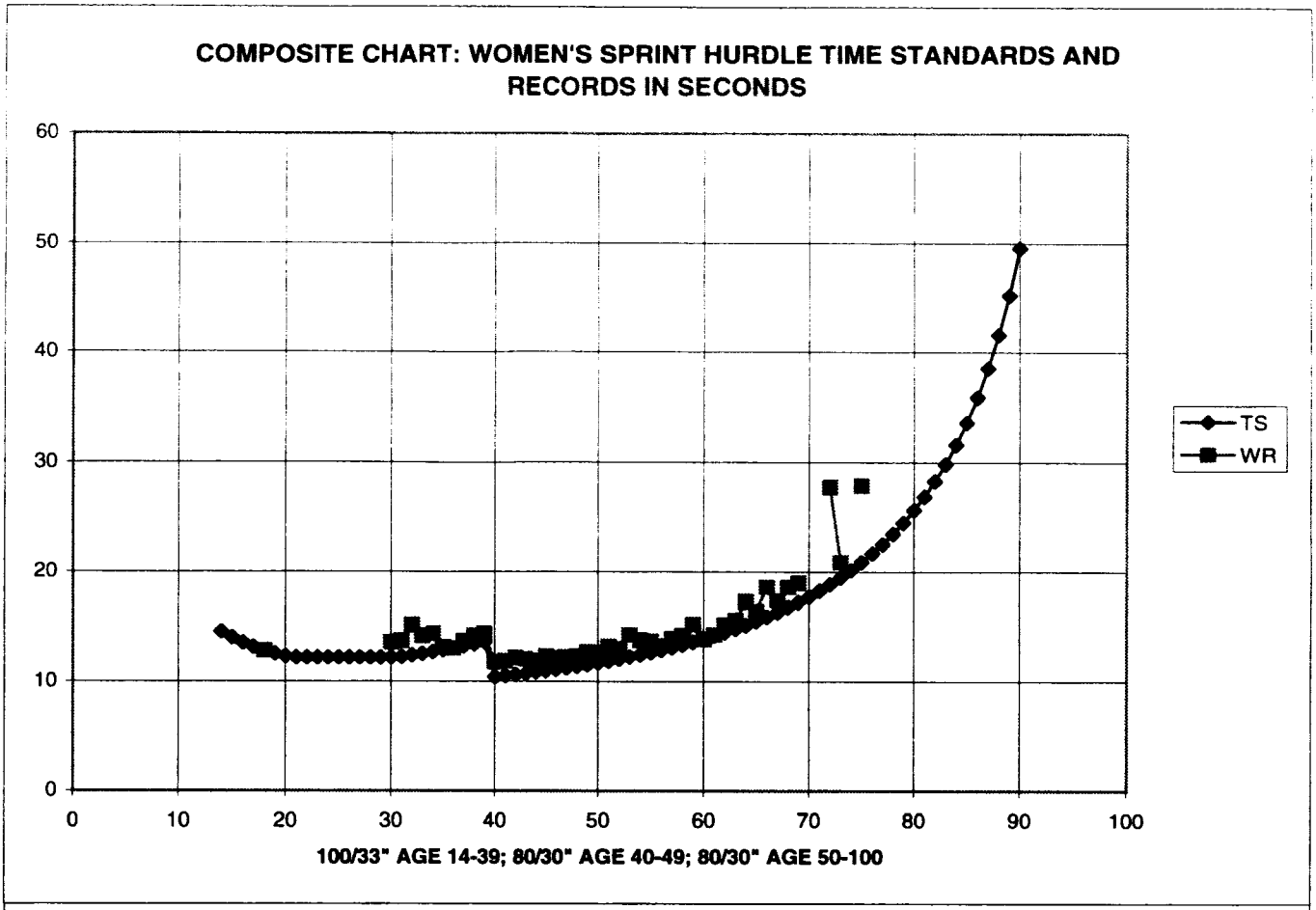

RUNNING RATE FOR WOMEN'S HURDLE STANDARDS IN METERS/SECOND
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30
100/33

Figure 44


COMPOSITE CHART: WOMEN'S SPRINT HURDLE TIME STANDARDS AND RECORDS IN SECONDS
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
TS
WR
100/33" AGE 14-39; 80/30" AGE 40-49; 80/30" AGE 50-100

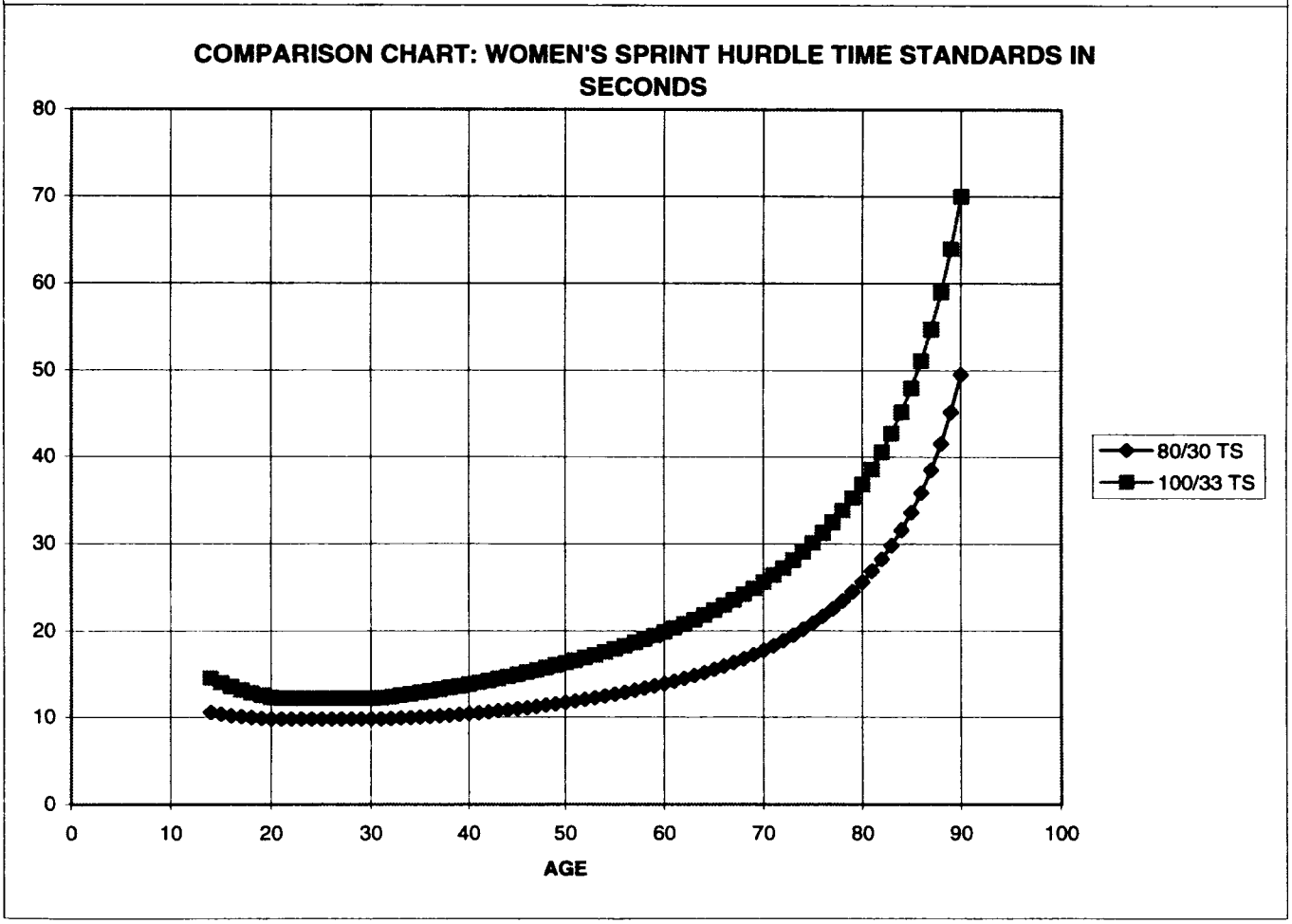
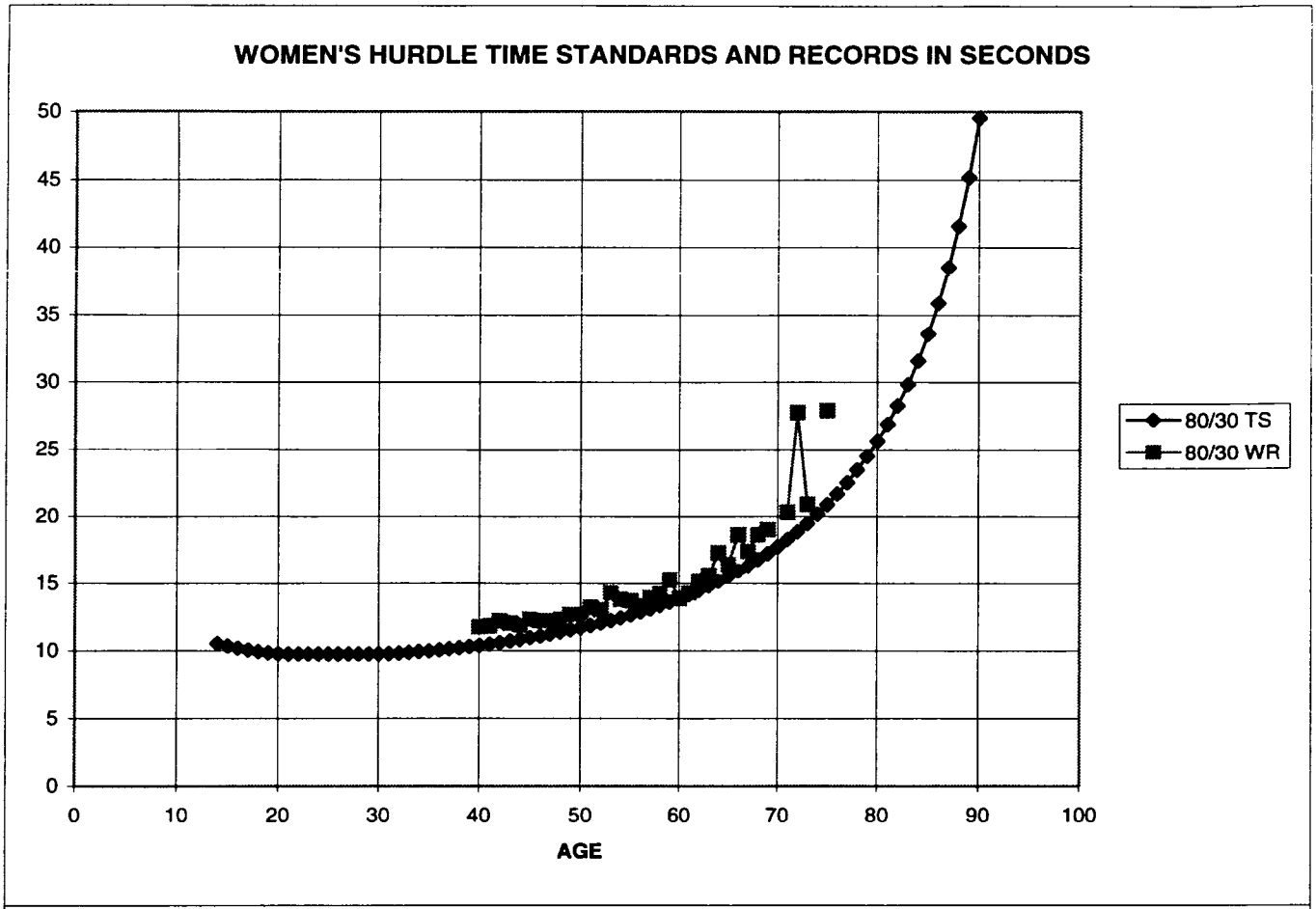

COMPARISON CHART: WOMEN'S SPRINT HURDLE TIME STANDARDS IN SECONDS
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
80/30 TS
100/33 TS
AGE

Figure 45


WOMEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
50
45
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30 TS
80/30 WR

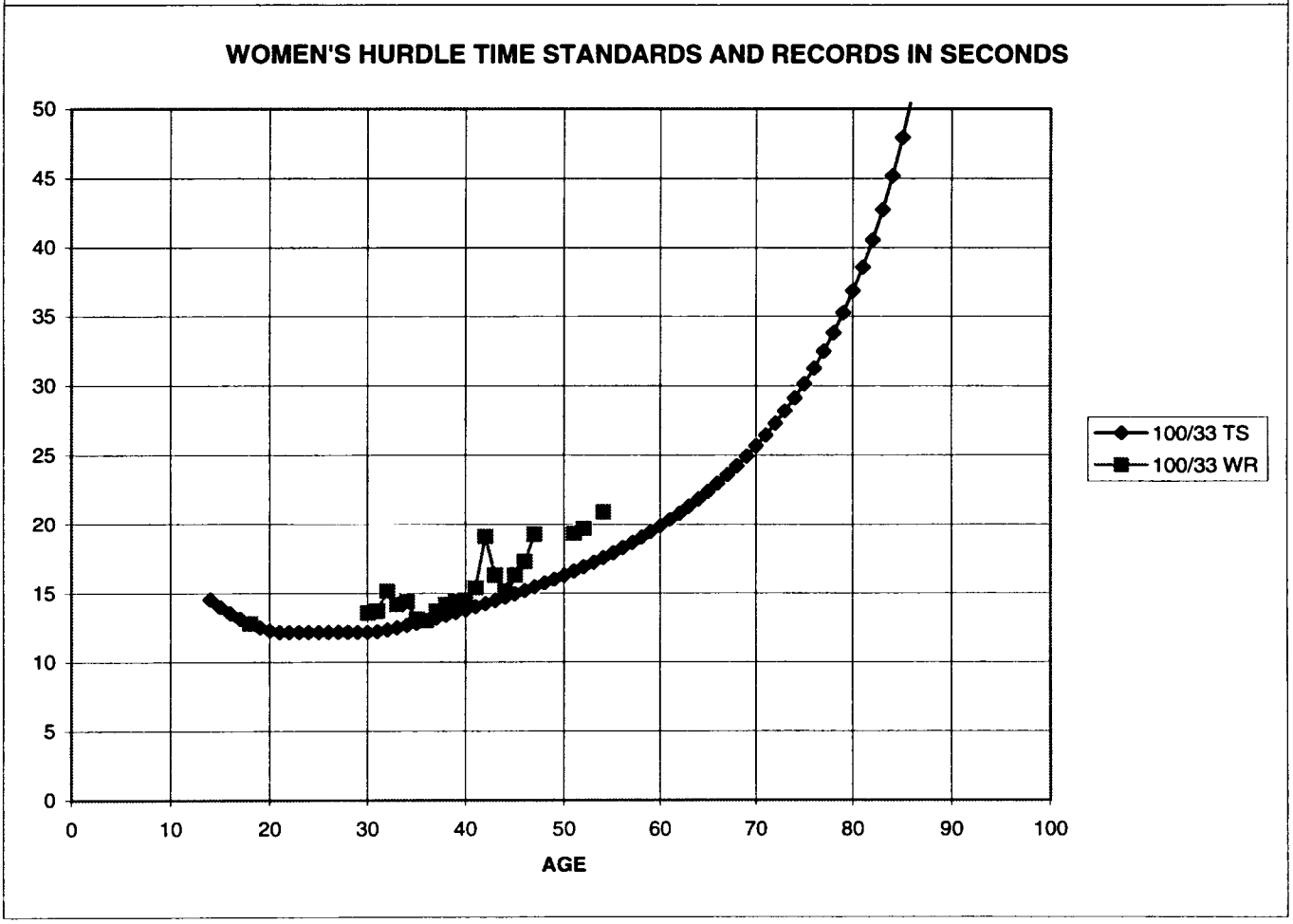

WOMEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
50
45
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
100/33 TS
100/33 WR

Figure 46

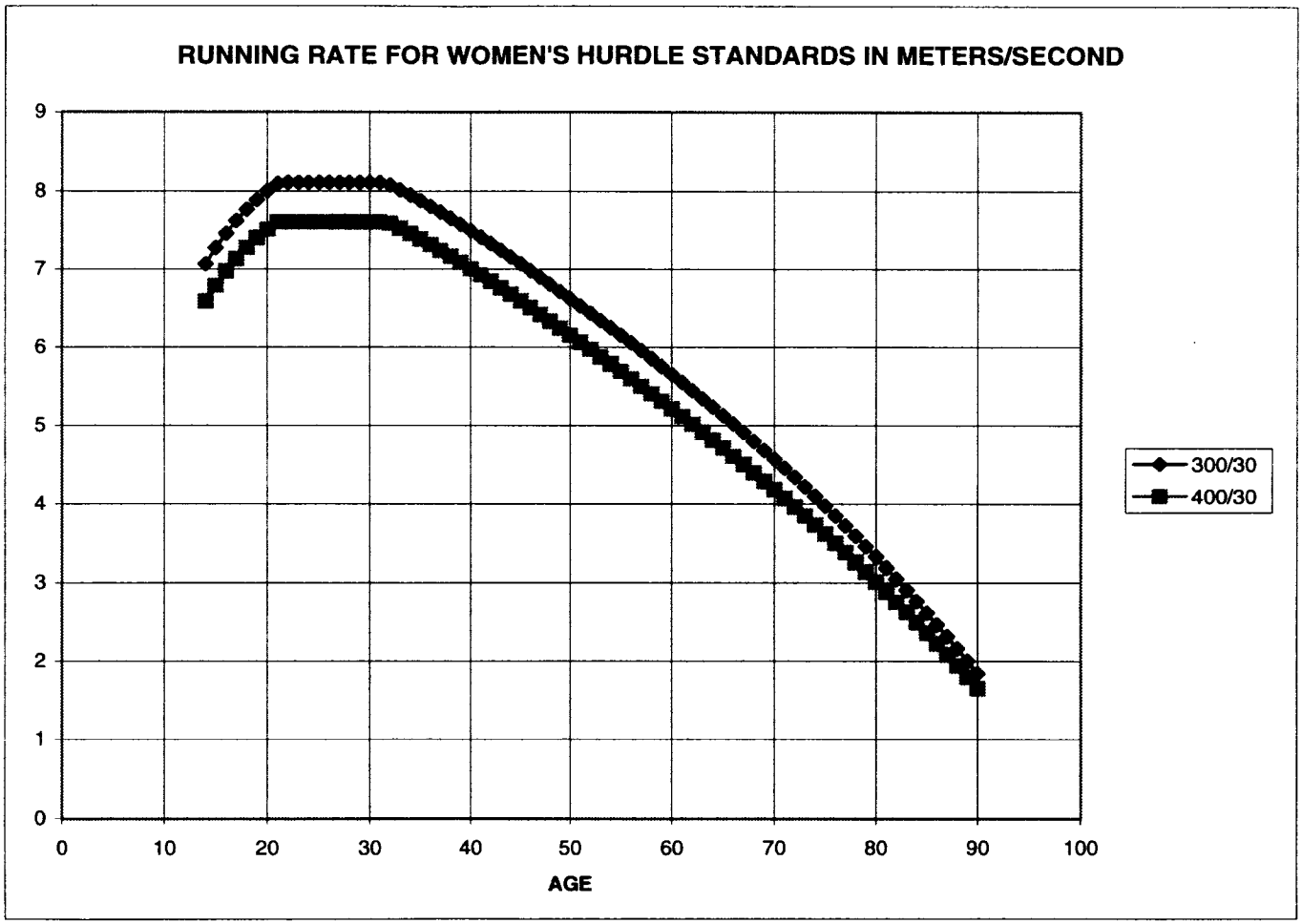
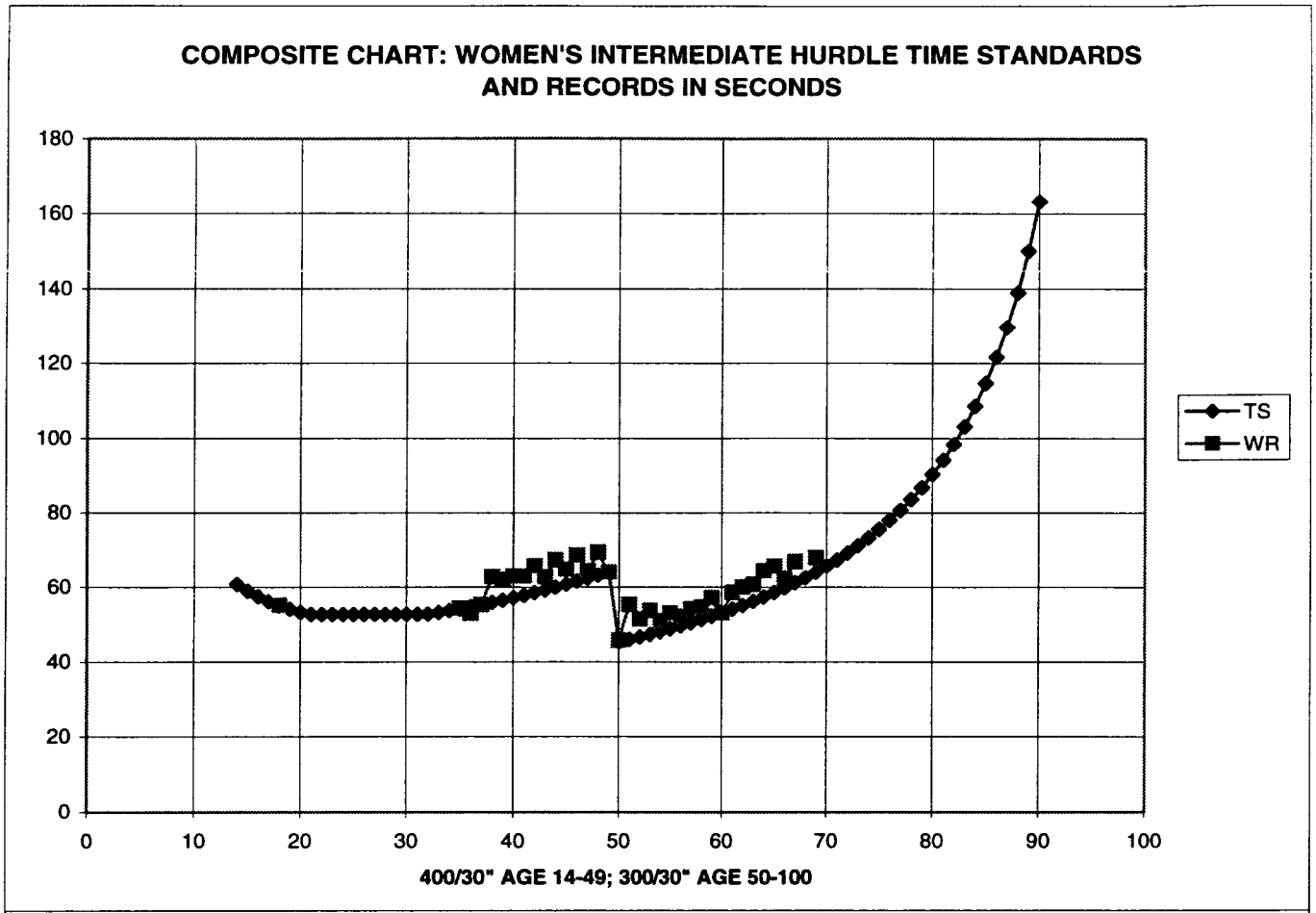

RUNNING RATE FOR WOMEN'S HURDLE STANDARDS IN METERS/SECOND
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30
400/30

Figure 47


COMPOSITE CHART: WOMEN'S INTERMEDIATE HURDLE TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
TS
WR
400/30" AGE 14-49; 300/30" AGE 50-100

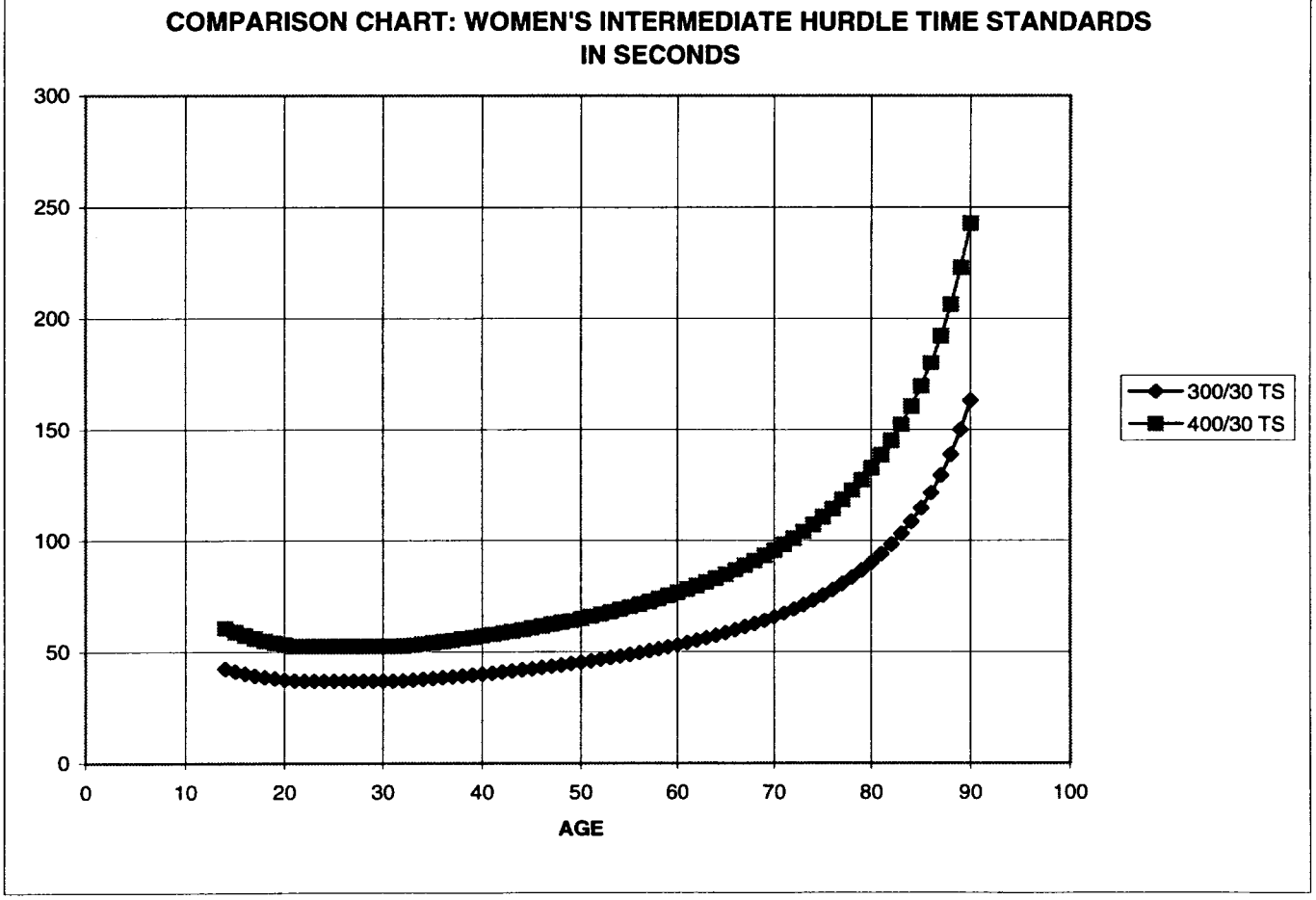
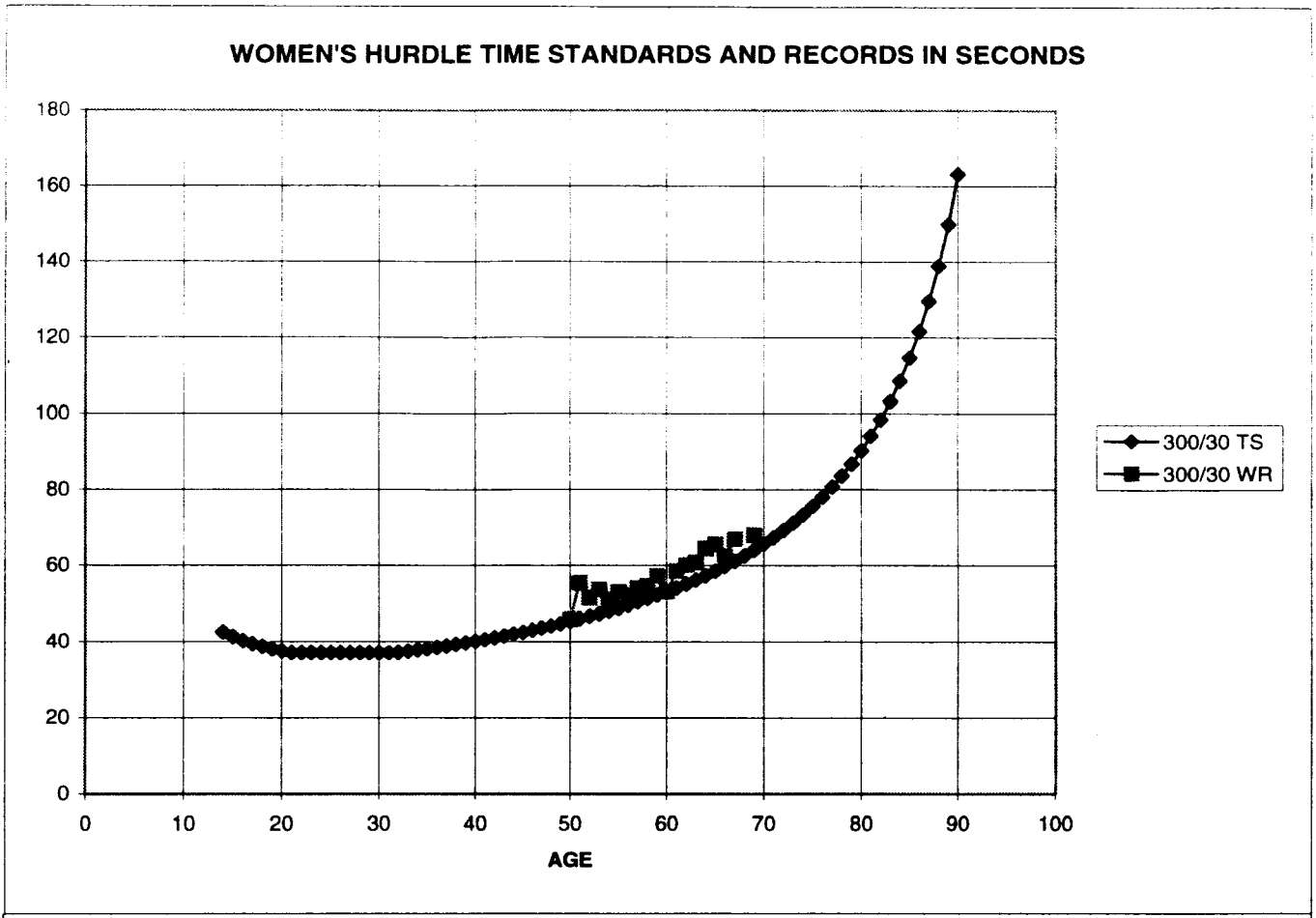

COMPARISON CHART: WOMEN'S INTERMEDIATE HURDLE TIME STANDARDS IN SECONDS
300
250
200
150
100
50
0
0
10
20
30
40
50
60
70
80
90
100
300/30 TS
400/30 TS
AGE

Figure 48


WOMEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30 TS
300/30 WR

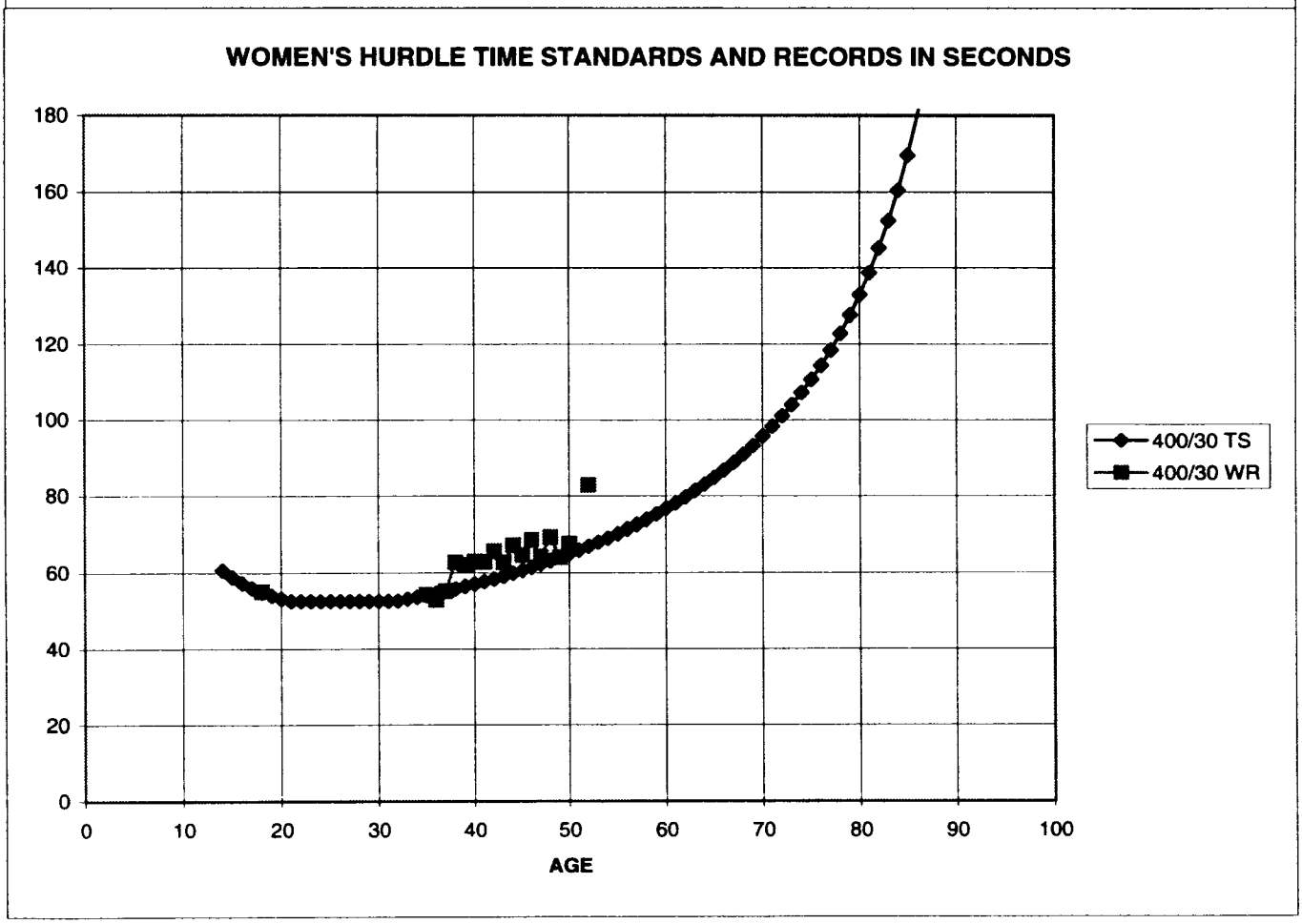

WOMEN'S HURDLE TIME STANDARDS AND RECORDS IN SECONDS
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
400/30 TS
400/30 WR

Figure 49

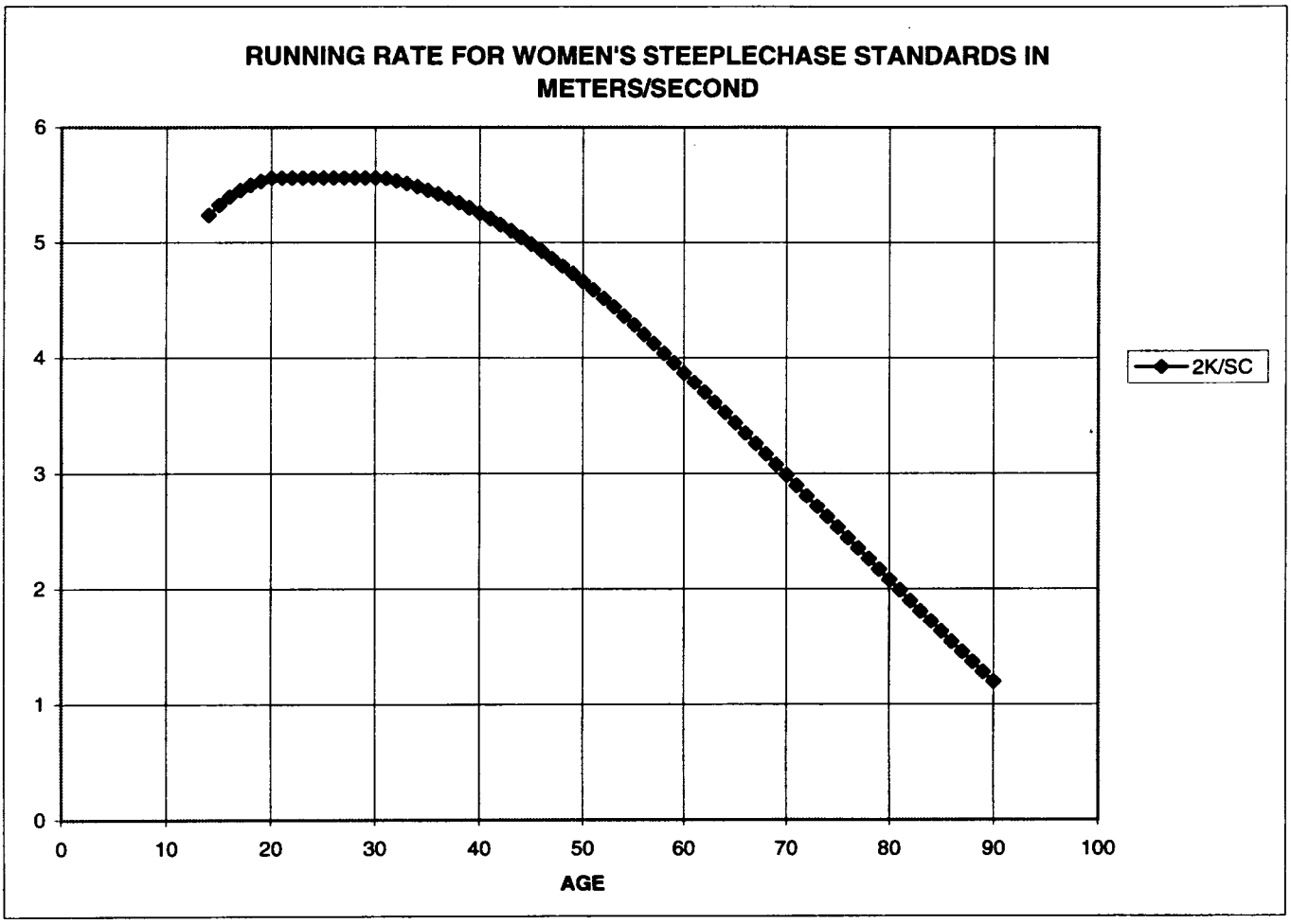
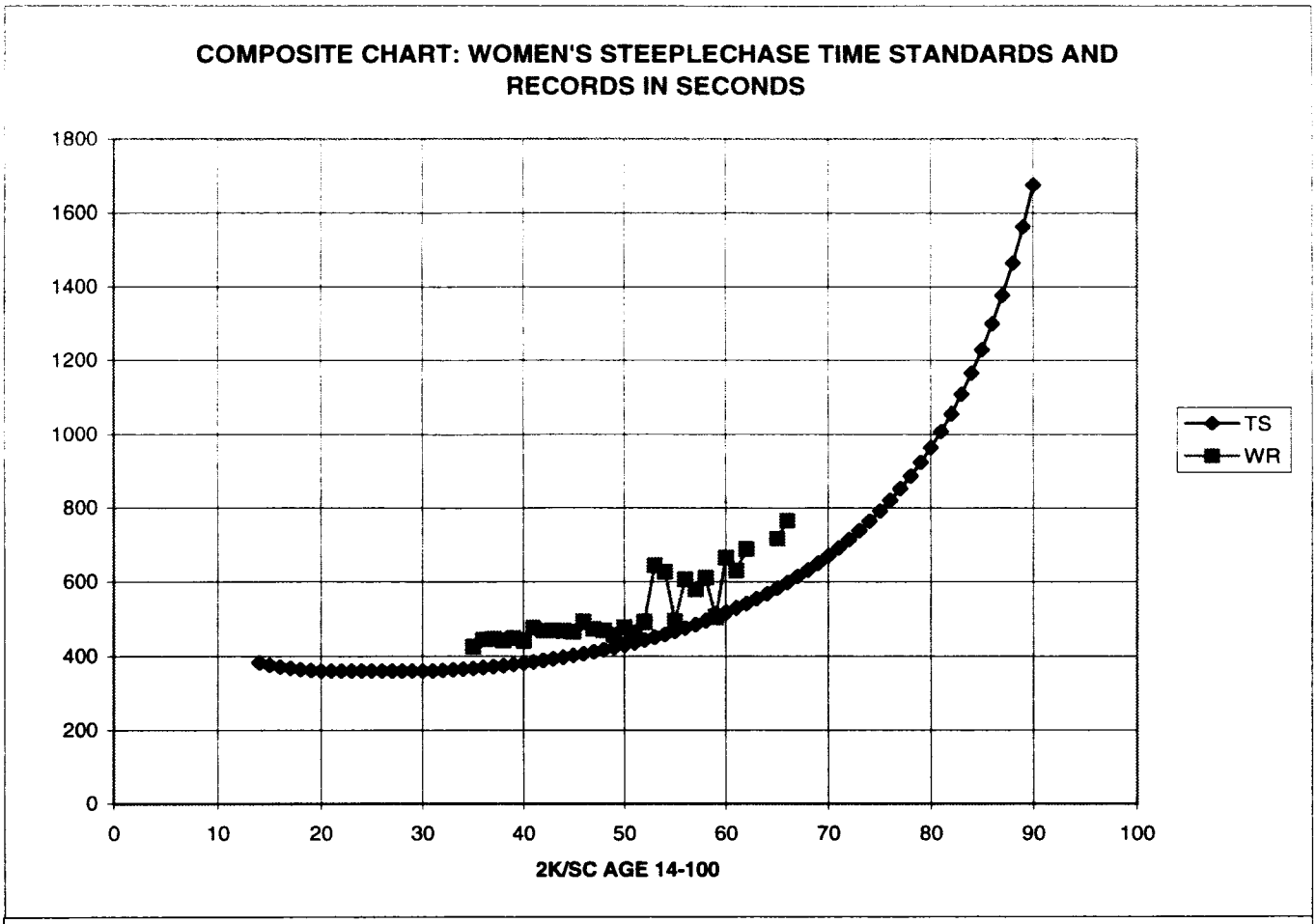

RUNNING RATE FOR WOMEN'S STEEPLECHASE STANDARDS IN METERS/SECOND
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K/SC

Figure 50


COMPOSITE CHART: WOMEN'S STEEPLECHASE TIME STANDARDS AND RECORDS IN SECONDS
1800
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
2K/SC AGE 14-100
TS
WR

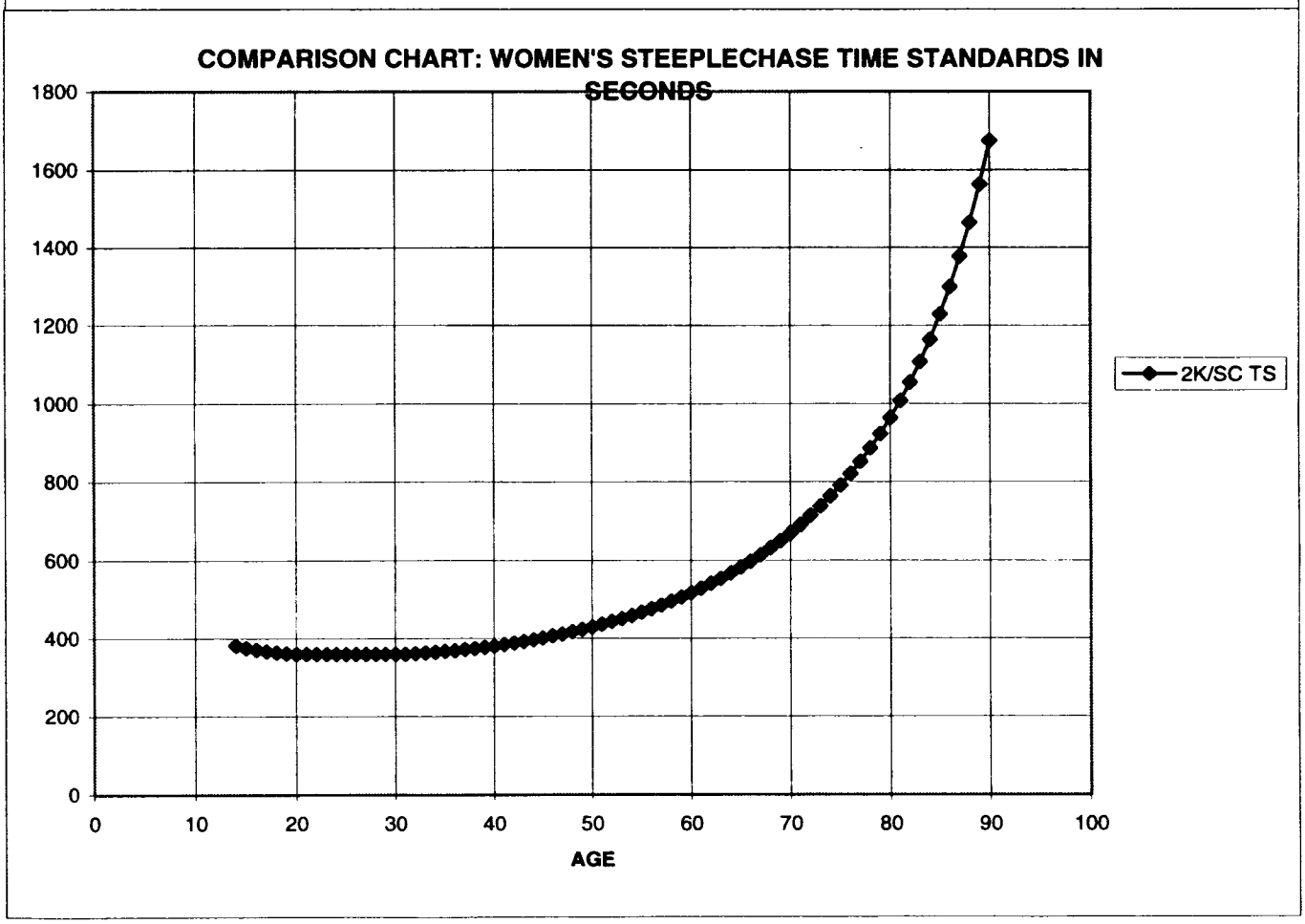

COMPARISON CHART: WOMEN'S STEEPLECHASE TIME STANDARDS IN SECONDS
1800
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K/SC TS

Figure 51

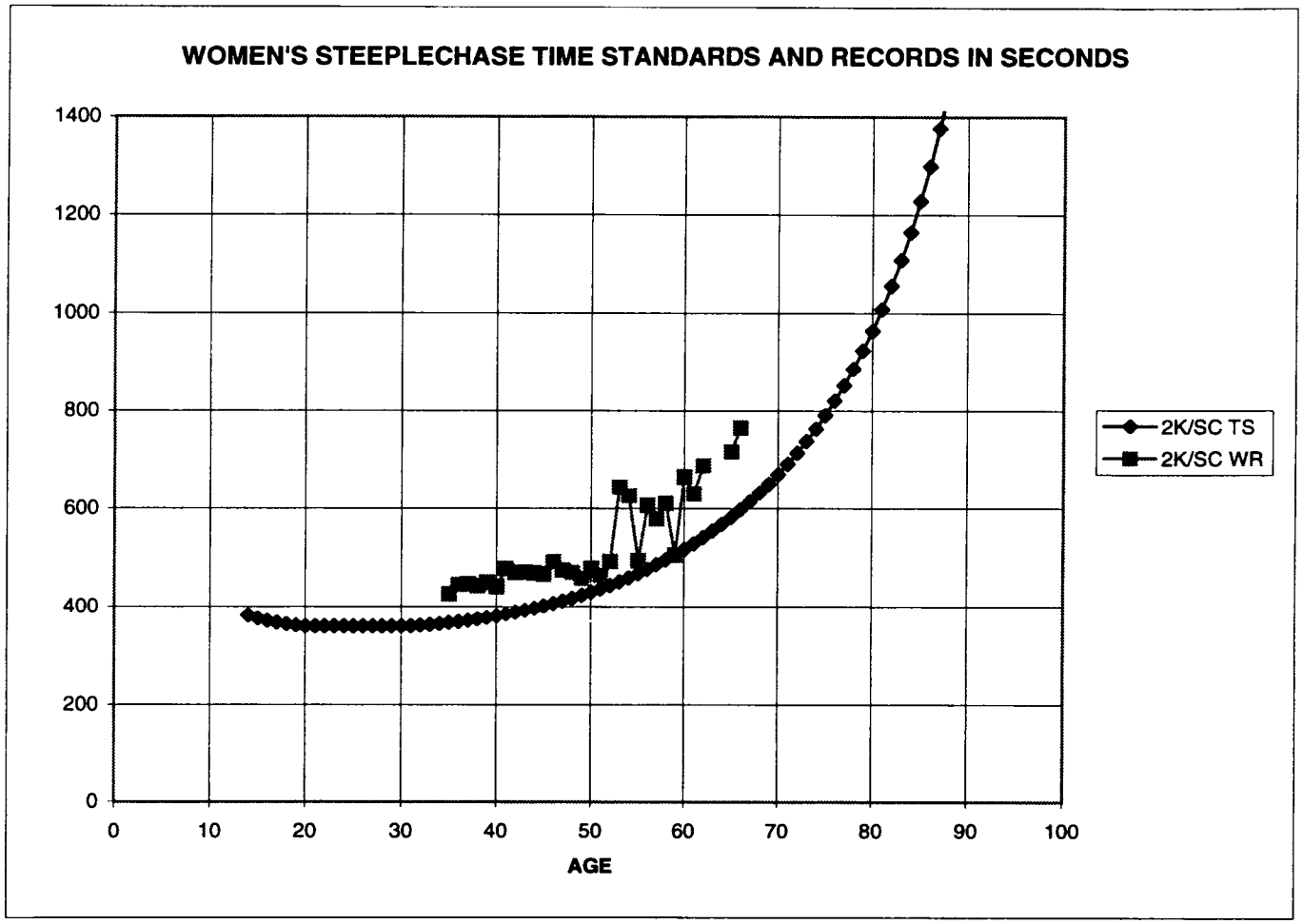
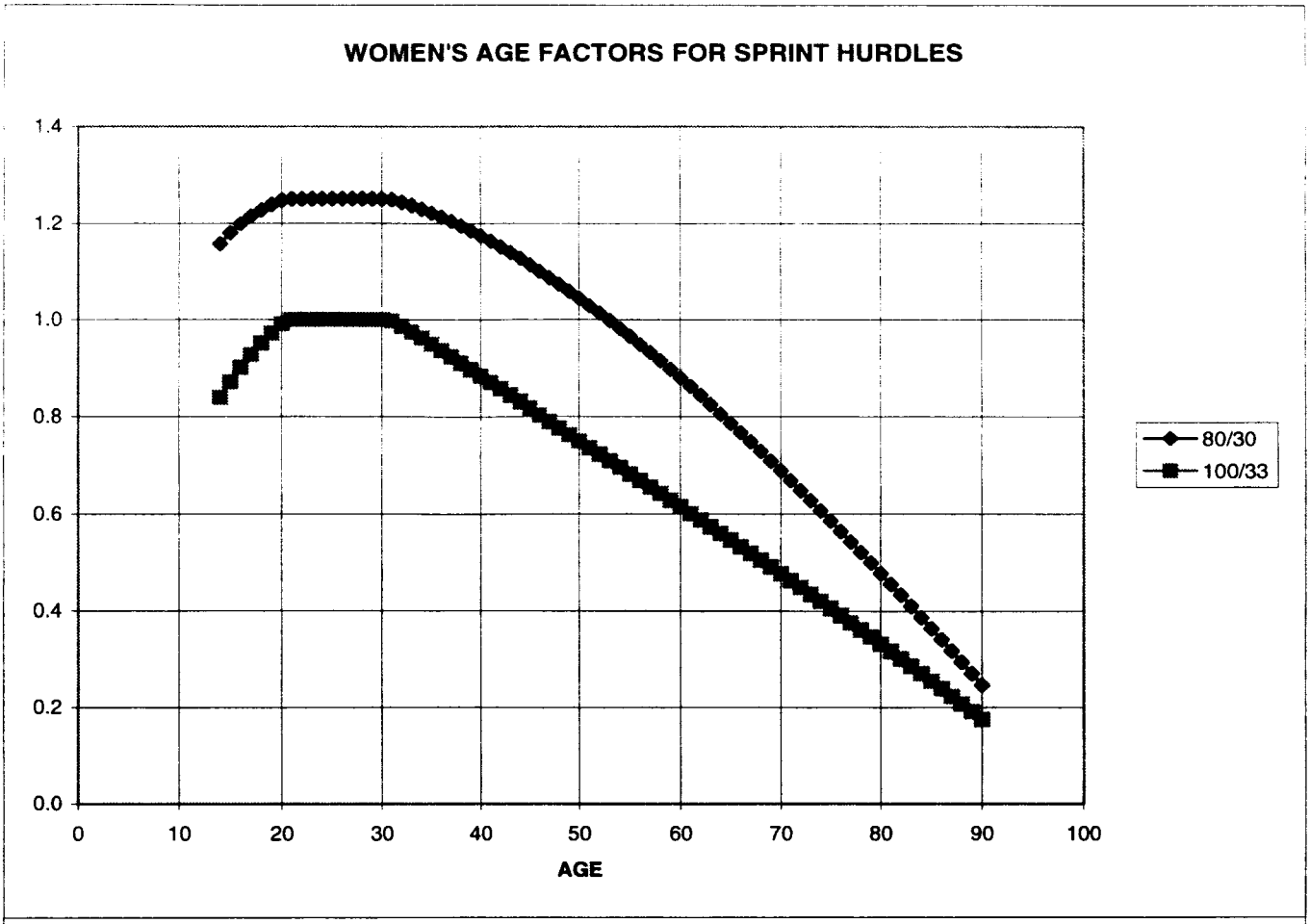

WOMEN'S STEEPLECHASE TIME STANDARDS AND RECORDS IN SECONDS
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K/SC TS
2K/SC WR

Figure 52


WOMEN'S AGE FACTORS FOR SPRINT HURDLES
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
80/30
100/33

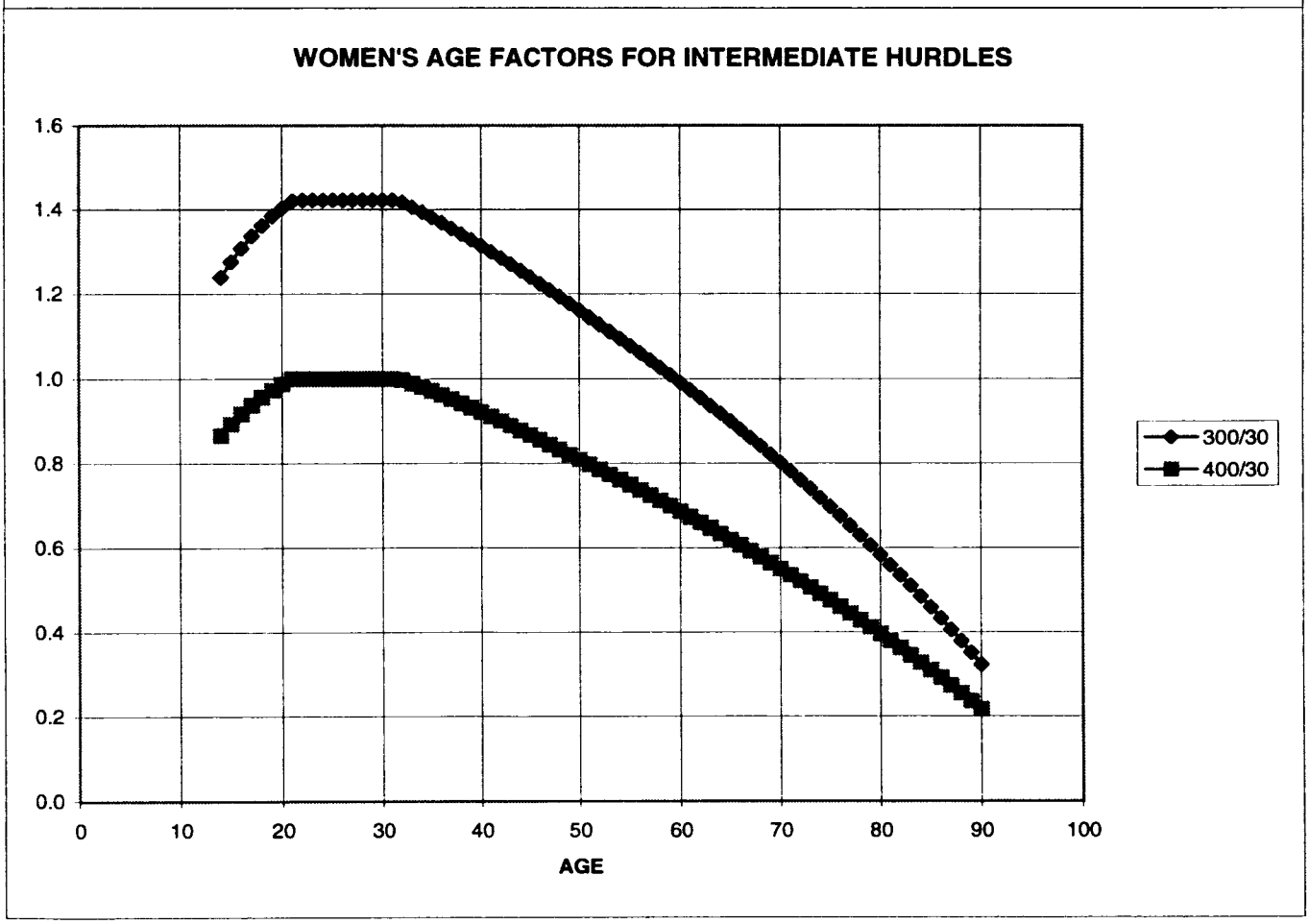
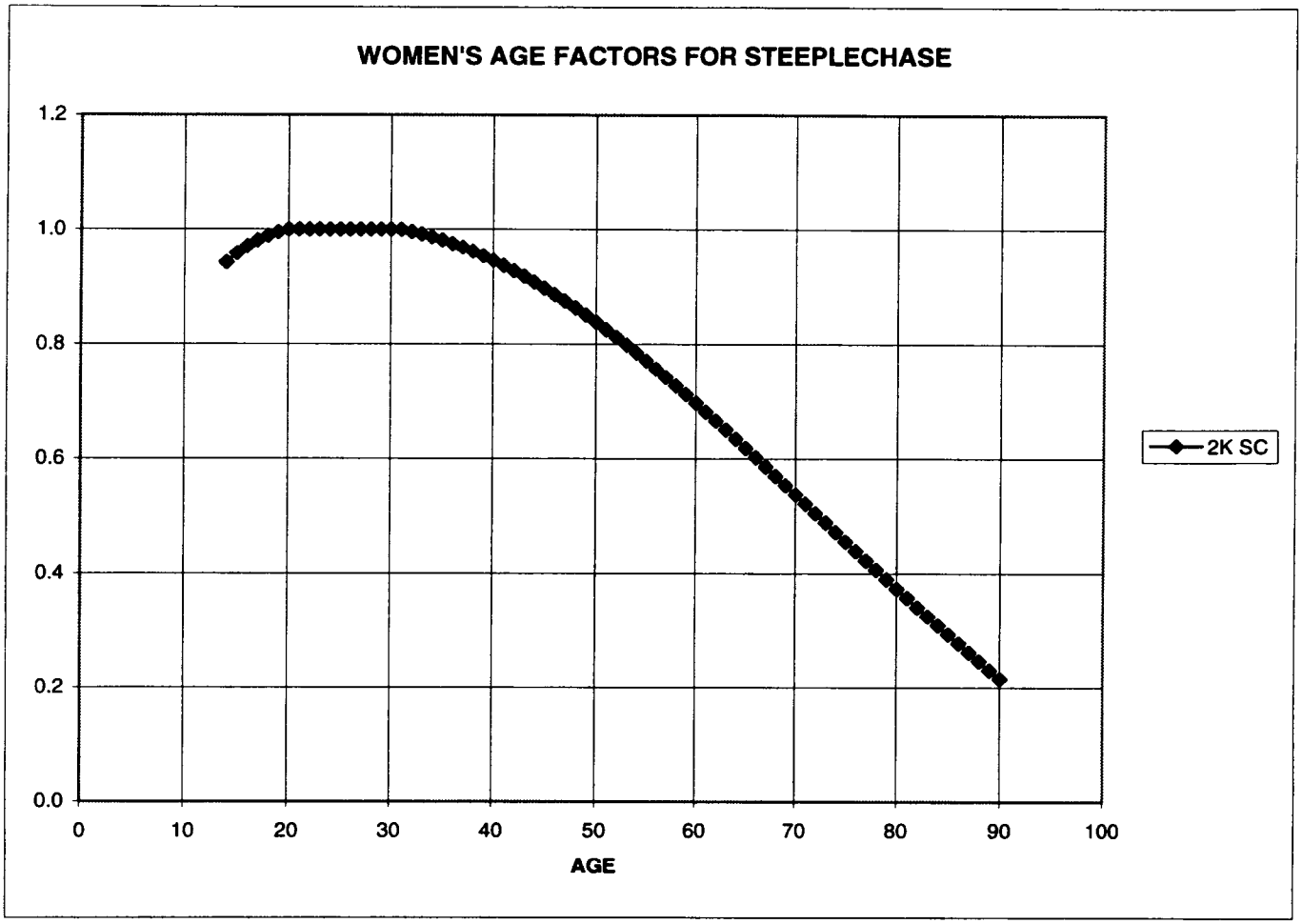

WOMEN'S AGE FACTORS FOR INTERMEDIATE HURDLES
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
300/30
400/30

Figure 53


WOMEN'S AGE FACTORS FOR STEEPLECHASE
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
2K SC

Chapter Three

Field Events

Standards are provided for selected field events most frequently included in sanctioned meets. The standards reflect distances jumped or thrown by world record level competitors. The standards apply to performers of all ability levels, however, through application of the performance level percentage concept.

The performance level percentage concept is that a competitor's performance level is expressed as a percentage of the world record standard which is found by dividing the competitor's distance for the event by the event standard. By listing standards for all events in meters, units of measure are always compatible for calculation purposes. A fifty-seven year old performer uses the standard listed for age 57. Performers twenty to twenty-nine years old use the standard listed for OC which is the open class performer standard.

Calculating a field eventer's performance level percentage. Determine the PL% for a 53 year old man who puts the 6K shot 16.12 meters. Find the standard on page 100 for the age 53 men's 6K shot which is listed as 18.13 meters. Divide 16.12 by 18.13 obtaining a value of 0.8891 which is a percentage of 88.91%.

The primary purpose of performance level percentages is to facilitate comparison of performances. An individual competitor's performances can be compared against themselves, or performances of many competitors can be compared. Since the standards for all events are adjusted to a world record level, comparison of performances for different events is valid. While this effort does not set standards as such for average field event performers, that doesn't mean the standards aren't applicable to field event jumpers and throwers of average ability regardless of what the term average may imply.

The field event standards and age-factors are on the next page. The event implement weight and age range listed are those set forth by WAVA/USATF specification. The standards are listed as metric distances (meters).

Age-factors are used to convert the performances of non-open class (e.g., masters age) competitors to their equivalent performance as an open class effort. Specifically, age-factors for field events are factors which convert records for non-open class competitors to the value of the open class record in the corresponding open class event. Thus the age-factor is obtained by dividing the open class world record distance into the distance of the records for the other ages. For this book, age-factor is defined to be division of the open class distance standard into the distance standard for the other ages.

MEN'S FIELD EVENT STANDARDS AND AGE FACTORS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT	AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		1.32	4.62							8		0.5383	0.5164						
9		1.55	5.31							9		0.6330	0.5938						
10		1.74	5.90							10		0.7083	0.6590						
11		1.88	6.40		SP/16 or	HT/16 or				11		0.7693	0.7146		SP/16 or	HT/16 or			
12	4.24	2.01	6.82		7.26k	7.26k	DT/2k	JT/800	WT/35	12	0.6907	0.8196	0.7624		7.26k	7.26k	DT/2k	JT/800	WT/35
13	4.66	2.11	7.19	14.51						13	0.7593	0.8613	0.8038	0.7931					
14	5.00	2.20	7.52	15.38	16.74	65.12	53.52	70.61	17.35	14	0.8137	0.8964	0.8398	0.8409	0.7240	0.7508	0.7224	0.7170	0.6942
15	5.26	2.27	7.80	16.09	18.01	68.95	56.66	75.57	18.49	15	0.8572	0.9260	0.8713	0.8800	0.7788	0.7949	0.7648	0.7674	0.7396
16	5.48	2.33	8.05	16.68	19.14	72.35	59.47	79.93	19.51	16	0.8925	0.9510	0.8989	0.9120	0.8278	0.8341	0.8027	0.8116	0.7804
17	5.66	2.38	8.26	17.17	20.15	75.37	61.99	83.77	20.43	17	0.9211	0.9723	0.9231	0.9385	0.8716	0.8689	0.8368	0.8506	0.8171
18	5.80	2.43	8.45	17.57	21.06	78.05	64.25	87.16	21.25	18	0.9445	0.9902	0.9444	0.9604	0.9111	0.8999	0.8673	0.8851	0.8502
19	5.92	2.45	8.62	17.89	21.89	80.44	66.28	90.16	22.00	19	0.9634	1.0000	0.9630	0.9784	0.9466	0.9274	0.8947	0.9155	0.8800
OC	6.14	2.45	8.95	18.29	23.12	86.74	74.08	98.48	25.00	OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	6.14	2.44	8.91	18.29	23.12	86.74	74.08	98.48	25.00	30	1.0000	0.9965	0.9955	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	6.14	2.42	8.83	18.28	23.12	86.74	74.08	98.48	25.00	31	1.0000	0.9879	0.9867	0.9993	1.0000	1.0000	1.0000	1.0000	1.0000
32	6.12	2.40	8.75	18.14	23.12	86.74	74.08	98.48	25.00	32	0.9967	0.9791	0.9777	0.9919	1.0000	1.0000	1.0000	1.0000	1.0000
33	6.08	2.38	8.67	18.00	22.96	86.47	74.08	97.33	25.00	33	0.9904	0.9703	0.9685	0.9841	0.9933	0.9969	1.0000	0.9883	1.0000
34	6.04	2.36	8.58	17.85	22.60	85.45	74.08	96.11	24.99	34	0.9835	0.9613	0.9592	0.9759	0.9774	0.9851	1.0000	0.9760	0.9997
35	5.99	2.33	8.50	17.70	22.23	84.41	74.08	94.87	24.72	35	0.9762	0.9523	0.9497	0.9675	0.9617	0.9731	1.0000	0.9633	0.9887
36	5.95	2.31	8.41	17.54	21.88	83.34	73.47	93.60	24.43	36	0.9685	0.9432	0.9402	0.9589	0.9462	0.9608	0.9918	0.9504	0.9772
37	5.90	2.29	8.33	17.38	21.52	82.25	72.72	92.31	24.14	37	0.9604	0.9342	0.9306	0.9501	0.9309	0.9482	0.9816	0.9373	0.9654
38	5.85	2.27	8.24	17.21	21.18	81.15	71.93	91.01	23.83	38	0.9520	0.9251	0.9211	0.9410	0.9159	0.9355	0.9710	0.9241	0.9533
39	5.79	2.24	8.16	17.04	20.83	80.03	71.12	89.70	23.53	39	0.9433	0.9160	0.9114	0.9319	0.9011	0.9227	0.9600	0.9108	0.9410
40	5.74	2.22	8.07	16.87	20.49	78.91	70.29	88.38	23.21	40	0.9342	0.9069	0.9018	0.9226	0.8864	0.9097	0.9488	0.8975	0.9285
41	5.68	2.20	7.99	16.70	20.16	77.77	69.43	87.06	22.89	41	0.9250	0.8978	0.8922	0.9131	0.8720	0.8966	0.9373	0.8840	0.9158
42	5.62	2.18	7.90	16.53	19.83	76.63	68.56	85.73	22.57	42	0.9154	0.8887	0.8826	0.9036	0.8578	0.8835	0.9255	0.8706	0.9029
43	5.56	2.15	7.81	16.35	19.51	75.49	67.68	84.40	22.25	43	0.9057	0.8796	0.8730	0.8939	0.8438	0.8703	0.9136	0.8570	0.8899
44	5.50	2.13	7.73	16.17	19.19	74.34	66.78	83.07	21.92	44	0.8958	0.8705	0.8634	0.8842	0.8300	0.8570	0.9014	0.8435	0.8769
45	5.44	2.11	7.64	15.99	18.87	73.19	65.87	81.74	21.59	45	0.8856	0.8615	0.8539	0.8744	0.8164	0.8437	0.8891	0.8300	0.8637
46	5.37	2.09	7.56	15.81	18.56	72.03	64.95	80.40	21.26	46	0.8753	0.8524	0.8443	0.8645	0.8029	0.8304	0.8767	0.8164	0.8505
47	5.31	2.07	7.47	15.63	18.26	70.87	64.02	79.07	20.93	47	0.8648	0.8434	0.8348	0.8546	0.7896	0.8170	0.8641	0.8029	0.8372
48	5.24	2.04	7.39	15.45	17.95	69.71	63.08	77.73	20.60	48	0.8541	0.8343	0.8253	0.8446	0.7764	0.8036	0.8514	0.7893	0.8236
49	5.18	2.02	7.30	15.26	17.65	68.54	62.13	76.40	20.26	49	0.8433	0.8253	0.8158	0.8345	0.7634	0.7902	0.8386	0.7758	0.8104
					SP/6k	HT/6k	DT/1.5k		WT/25						SP/6k	HT/6k	DT/1.5k		WT/25
50	5.11	2.00	7.22	15.08	19.09	74.12	70.63	75.07	23.57	50	0.8323	0.8163	0.8063	0.8244	0.8256	0.8545	0.9535	0.7623	0.9430
51	5.04	1.98	7.13	14.89	18.76	72.83	69.52	73.73	23.18	51	0.8212	0.8073	0.7968	0.8142	0.8116	0.8396	0.9385	0.7487	0.9270
52	4.97	1.96	7.05	14.70	18.44	71.54	68.40	72.40	22.78	52	0.8099	0.7983	0.7874	0.8039	0.7978	0.8248	0.9233	0.7352	0.9110
53	4.90	1.93	6.96	14.52	18.13	70.26	67.27	71.07	22.37	53	0.7985	0.7894	0.7779	0.7937	0.7840	0.8100	0.9081	0.7217	0.8950
54	4.83	1.91	6.88	14.33	17.81	68.96	66.14	69.74	21.97	54	0.7870	0.7804	0.7685	0.7833	0.7704	0.7951	0.8928	0.7081	0.8789
55	4.76	1.89	6.79	14.14	17.50	67.67	64.99	68.40	21.57	55	0.7753	0.7714	0.7591	0.7730	0.7569	0.7802	0.8774	0.6946	0.8627
56	4.69	1.87	6.71	13.95	17.19	66.38	63.85	67.07	21.16	56	0.7635	0.7624	0.7497	0.7626	0.7435	0.7652	0.8618	0.6811	0.8466
57	4.61	1.85	6.63	13.76	16.88	65.06	62.69	65.74	20.76	57	0.7516	0.7534	0.7403	0.7521	0.7302	0.7503	0.8463	0.6675	0.8304
58	4.54	1.82	6.54	13.56	16.58	63.78	61.53	64.41	20.35	58	0.7396	0.7444	0.7309	0.7416	0.7170	0.7353	0.8306	0.6540	0.8141
59	4.47	1.80	6.46	13.37	16.27	62.48	60.36	63.07	19.95	59	0.7274	0.7354	0.7215	0.7310	0.7039	0.7203	0.8148	0.6405	0.7979
					SP/5k	HT/5k	DT/1k	JT/600	WT/20						SP/5k	HT/5k	DT/1k	JT/600	WT/20
60	4.39	1.78	6.37	13.18	17.50	67.01	72.49	71.29	21.85	60	0.7152	0.7264	0.7121	0.7204	0.7568	0.7725	0.9765	0.7239	0.8738
61	4.32	1.76	6.29	12.98	17.17	65.57	71.04	69.75	21.39	61	0.7028	0.7174	0.7027	0.7098	0.7426	0.7560	0.9590	0.7083	0.8555
62	4.24	1.74	6.21	12.79	16.84	64.14	69.59	68.21	20.93	62	0.6903	0.7084	0.6933	0.6991	0.7285	0.7394	0.9394	0.6926	0.8372
63	4.16	1.71	6.12	12.59	16.52	62.70	68.13	66.66	20.47	63	0.6777	0.6994	0.6839	0.6884	0.7144	0.7228	0.9196	0.6769	0.8188
64	4.08	1.69	6.04	12.39	16.19	61.25	66.66	65.11	20.01	64	0.6649	0.6903	0.6745	0.6776	0.7004	0.7061	0.8998	0.6612	0.8004
65	4.00	1.67	5.95	12.20	15.87	59.80	65.18	63.56	19.55	65	0.6521	0.6812	0.6651	0.6668	0.6865	0.6894	0.8799	0.6454	0.7819
66	3.92	1.65	5.87	12.00	15.55	58.35	63.70	62.01	19.08	66	0.6391	0.6721	0.6556	0.6560	0.6726	0.6727	0.8598	0.6297	0.7634
67	3.84	1.62	5.78	11.80	15.23	56.89	62.20	60.46	18.62	67	0.6261	0.6630	0.6462	0.6450	0.6588	0.6558	0.8397	0.6139	0.7448
68	3.76	1.60	5.70	11.60	14.91	55.42	60.70	58.90	18.15	68	0.6129	0.6539	0.6367	0.6341	0.6449	0.6390	0.8194	0.5981	0.7261
69	3.68	1.58	5.61	11.40	14.59	53.95	59.20	57.33	17.68	69	0.5996	0.6447	0.6272	0.6231	0.6312	0.6220	0.7991	0.5822	0.7074
					SP/4k	HT/4k			WT/16						SP/4k	HT/4k			WT/16
70	3.60	1.56	5.53	11.19	15.96	58.67	57.68	55.77	19.25	70	0.5862	0.6355	0.6177	0.6120	0.6903	0.6764	0.7786	0.5663	0.7699
71	3.52	1.53	5.44	10.99	15.60	57.02	56.15	54.20	18.72	71	0.5727	0.6263	0.6082	0.6009	0.6749	0.6573	0.7580	0.5503	0.7488
72	3.43	1.51	5.36	10.79	15.25	55.35	54.62	52.62	18.19	72	0.5591	0.6170	0.5986	0.5898	0.6596	0.6381	0.7373	0.5343	0.7277
73	3.35	1.49	5.27	10.58	14.90	53.68	53.07	51.04	17.66	73	0.5453	0.6077	0.5890	0.5786	0.6443	0.6189	0.7165	0.5183	0.7064
74	3.26	1.47	5.19	10.38	14.54	52.00	51.52	49.45	17.13	74	0.5315	0.5983	0.5794	0.5673	0.6290	0.5995	0.6955	0.5022	0.6851
75	3.18	1.44	5.10	10.17	14.19	50.32	49.96	47.86	16.59	75	0.5175	0.5890	0.5698	0.5560	0.6137	0.5801	0.6744	0.4860	0.6637
76	3.09	1.42	5.01	9.96	13.83	48.62	48.39	46.27	16.05	76	0.5034	0.5796	0.5601	0.5446	0.5984	0.5605	0.6532	0.4698	0.6421
77	3.00	1.40	4.93	9.75	13.48	46.91	46.81	44.66	15.51	77	0.4892	0.5701	0.5504	0.5332	0.5831	0.5409	0.6318	0.4535	0.6205
78	2.92	1.37	4.84	9.54	13.13	45.20	45.22	43.05	14.97	78	0.4749	0.5606	0.5406	0.5217	0.5677	0.5211	0.6104	0.4371	0.5988
79	2.83	1.35	4.75	9.33	12.77	43.47	43.61	41.43	14.42	79	0.4605	0.5510	0.5308	0.5101	0.5524	0.5012	0.5887	0.4207	0.5770
									WT/12										WT/12
80	2.74	1.33	4.66	9.12	12.42	41.74	42.00	39.81	16.02	80	0.4459	0.5414	0.5210	0.4985	0.5370	0.4812	0.5670	0.4042	0.6409
81	2.65	1.30	4.57	8.90	12.06	39.99	40.38	38.17	15.39	81	0.4313	0.5318	0.5111	0.4869	0.5216	0.4611	0.5451	0.3876	0.6154
82	2.56	1.28	4.49	8.69	11.70	38.24	38.74	36.53	14.75	82	0.4165	0.5220	0.5012	0.4751	0.5062	0.4408	0.5230	0.3710	0.5898
83	2.47	1.26	4.40	8.47	11.35	36.47	37.10	34.88	14.10	83	0.4015	0.5123	0.4912	0.4633	0.4907	0.4204	0.5008	0.3542	0.5641
84	2.37	1.23	4.31	8.26	10.99	34.69	35.44	33.22	13.45	84	0.3865	0.5024	0.4811	0.4515	0.4752	0.3999	0.4784	0.3373	0.5382
85	2.28	1.21	4.22	8.04	10.63	32.90	33.77	31.55	12.80	85	0.3713	0.4925	0.4710	0.4395	0.4597	0.3793	0.4559	0.3204	0.5121
86	2.19	1.18	4.12	7.82	10.27	31.09	32.09	29.88	12.15	86	0.3560	0.4826	0.4609	0.4275	0.4441	0.3584	0.4332	0.3034	0.4859
87	2.09	1.16	4.03	7.60	9.90	29.27	30.39	28.19	11.49	87	0.3406	0.4726	0.4507	0.4154	0.4284	0.3375	0.4103	0.2862	0.4595
88	2.00	1.13	3.94	7.38	9.54	27.44	28.69	26.49	10.82	88	0.3251	0.4625	0.4404	0.4033	0.4127	0.3163	0.3872	0.2690	0.4329
89	1.90	1.11	3.85	7.15	9.18	25.59	26.96	24.78	10.15	89	0.3094	0.4523	0.4300	0.3911	0.3969	0.2951	0.3640	0.2516	0.4062
90	1.80	1.08	3.76	6.93	8.81	23.73	25.23	23.06	9.48	90	0.2936	0.4421	0.4196	0.3788	0.3811	0.2736	0.3406	0.2341	0.3793
91	1.70	1.06	3.66	6.70	8.44	21.86	23.48	21.33	8.80	91	0.2776	0.4318	0.4091	0.3664	0.3651	0.2520	0.3170	0.2165	0.3522
92	1.61	1.03	3.57	6.47	8.07	19.96	21.72	19.58	8.12	92	0.2615	0.4214	0.3986	0.3540	0.3491	0.2302	0.2931	0.1988	0.3248
93	1.51	1.01	3.47	6.24	7.70	18.06	19.94	17.82	7.43	93	0.2453	0.4109	0.3880	0.3414	0.3330	0.2082	0.2691	0.1810	0.2973
94	1.41	0.98	3.38	6.01	7.33	16.13	18.14	16.05	6.74	94	0.2289	0.4003	0.3773	0.3288	0.3169	0.1860	0.2449	0.1630	0.2696
95	1.30	0.95	3.28	5.78	6.95	14.19	16.34	14.27	6.04	95	0.2124	0.3897	0.3665	0.3161	0.3006	0.1636	0.2205	0.1449	0.2417
96	1.20	0.93	3.16	5.55	6.57	12.23	14.51	12.47	5.34	96	0.1958	0.3790	0.3556	0.3034	0.2842	0.1410	0.1959	0.1267	0.2135
97	1.10	0.90	3.08	5.31	6.19	10.25	12.67	10.66	4.63	97	0.1790	0.3682	0.3447	0.2905	0.2678	0.1182	0.1710	0.1083	0.1852
98	0.99	0.88	2.99	5.08	5.81	8.25	10.81	8.84	3.91	98	0.1620	0.3572	0.3336	0.2775	0.2512	0.0952	0.1459	0.0897	0.1565
99	0.89	0.85	2.89	4.84	5.42	6.24	8.93	6.99	3.19	99	0.1449	0.3462	0.3225	0.2645	0.2345	0.0719	0.1206	0.0710	0.1277
100	0.78	0.82	2.79	4.60	5.03	4.20	7.04	5.14	2.46	100	0.1277	0.3351	0.3113	0.2513	0.2177	0.0484	0.0950	0.0522	0.0986

A special set of youth standards has been prepared for boys which has some additional events whose records are not included in the listing of World Junior Men All-Time Age Year Records. Because the dynamics theory for masses is used in generating standards for field event throws, standards for implement weights not used by masters age performers could be properly generated for boys. Therefore standards are included for events using 12 pound shots and hammers, and for events using 10 pound shots and hammers.

In the same manner, 8 and 6 pound implement standards were generated for girls and are included in their youth standards which are in the women's section later in the chapter.

The youth field event standards for boys are at the next page. Standards are listed in both metric and English distance measures. In the table the format for listing feet and inches is FFF-II.I where F is feet and I is inches.

BOY'S FIELD EVENT STANDARDS

(DISTANCE IN METERS)

AGE	PV	HJ	LJ	TJ
8		1.32	4.62	
9		1.55	5.31	
10		1.74	5.90	
11		1.88	6.40	
12	4.24	2.01	6.82	
13	4.66	2.11	7.19	14.51
14	5.00	2.20	7.52	15.38
15	5.26	2.27	7.80	16.09
16	5.48	2.33	8.05	16.68
17	5.66	2.38	8.26	17.17
18	5.80	2.43	8.45	17.57
19	5.92	2.45	8.62	17.89
OC	6.14	2.45	8.95	18.29

AGE	SP 16 LB or 7.26 KG	SP 6 KG (13.23 LB)	SP 12 LB	SP 5 KG (11.02 LB)	SP 10 LB	HT 16 LB or 7.26 KG	HT 6 KG (13.23 LB)	HT 12 LB	HT 5 KG (11.02 LB)	HT 10 LB	DT 2 KG	DT 1.5 KG	DT 1 KG	JT 800 G	JT 600 G
14	16.74	18.41	19.33	20.17	21.17	65.12	71.63	75.20	78.47	82.37	53.52	61.80	75.68	70.61	81.54
15	18.01	19.81	20.79	21.70	22.78	68.95	75.84	79.62	83.08	87.21	56.66	65.42	80.12	75.57	87.26
16	19.14	21.05	22.10	23.06	24.21	72.35	79.58	83.54	87.18	91.51	59.47	68.67	84.10	79.93	92.29
17	20.15	22.17	23.27	24.28	25.49	75.37	82.90	87.03	90.82	95.33	61.99	71.58	87.66	83.77	96.73
18	21.06	23.17	24.32	25.38	26.64	78.05	85.86	90.13	94.05	98.73	64.25	74.19	90.86	87.16	100.65
19	21.89	24.07	25.27	26.37	27.68	80.44	88.49	92.89	96.93	101.75	66.28	76.53	93.73	90.16	104.10
OC	23.12					86.74					74.08			98.48	

(DISTANCE IN FEET-INCHES)

AGE	PV	HJ	LJ	TJ
8		4-03.9	15-01.9	
9		5-01.1	17-05.2	
10		5-08.3	19-04.2	
11		6-02.2	20-11.8	
12	13-11.0	6-07.1	22-04.7	
13	15-03.6	6-11.1	23-07.2	47-07.1
14	16-04.7	7-02.5	24-07.9	50-05.5
15	17-03.2	7-05.3	25-07.0	52-09.6
16	17-11.7	7-07.7	26-04.7	54-08.7
17	18-06.7	7-09.8	27-01.3	56-03.8
18	19-00.3	7-11.5	27-08.8	57-07.5
19	19-04.9	8-00.5	28-03.3	58-08.5
OC	20-01.7	8-00.5	29-04.4	60-00.1

AGE	SP 16 LB or 7.26 KG	SP 6 KG (13.23 LB)	SP 12 LB	SP 5 KG (11.02 LB)	SP 10 LB	HT 16 LB or 7.26 KG	HT 6 KG (13.23 LB)	HT 12 LB	HT 5 KG (11.02 LB)	HT 10 LB	DT 2 KG	DT 1.5 KG	DT 1 KG	JT 800 G	JT 600 G
14	54-11.0	60-04.9	63-05.0	66-02.1	69-05.6	213-07.8	235-00.2	246-08.5	257-05.4	270-03.0	175-07.0	202-08.9	248-03.7	231-08.1	267-06.1
15	59-00.9	64-11.8	68-02.6	71-02.2	74-08.7	226-02.5	248-10.0	261-02.5	272-07.0	286-01.6	185-10.6	214-07.6	262-10.5	247-11.2	286-03.5
16	62-09.5	69-00.8	72-06.0	75-07.9	79-05.1	237-04.3	261-01.1	274-00.9	286-00.1	300-02.8	195-01.2	225-03.4	275-11.0	262-02.8	302-09.6
17	66-01.4	72-08.7	76-04.1	79-08.0	83-07.6	247-03.2	271-11.9	285-06.2	297-11.4	312-09.2	203-04.5	234-10.0	287-07.3	274-10.0	317-04.2
18	69-01.3	76-00.2	79-09.6	83-03.3	87-05.0	256-01.0	281-08.3	295-08.4	308-06.9	323-11.0	210-09.5	243-04.8	298-01.3	285-11.5	330-02.4
19	71-09.6	78-11.8	82-10.9	86-06.3	90-09.9	263-11.0	290-03.7	304-09.0	318-00.2	333-10.0	217-05.4	251-01.1	307-06.2	295-09.4	341-06.5
OC	75-10.2					284-07.0					243-00.5			323-01.2	

MEN'S FIELD EVENT STANDARDS AND AGE FACTORS (USATF EVENTS)

AGE	WT SUPER	WT		AGE	WT SUPER	WT
8				8		
9				9		
10				10		
11				11		
12				12		
13				13		
14				14		
	WT/56	WT/35			WT/56	WT/35
15				15		
16				16		
17				17		
18				18		
19	14.55	22.00		19	0.5820	0.8800
OC		25.00		OC		1.0000
30	15.42	25.00		30	0.6170	1.0000
31	15.42	25.00		31	0.6170	1.0000
32	15.42	25.00		32	0.6170	1.0000
33	15.35	25.00		33	0.6140	1.0000
34	15.22	24.99		34	0.6090	0.9997
35	15.09	24.72		35	0.6035	0.9887
36	14.94	24.43		36	0.5978	0.9772
37	14.79	24.14		37	0.5917	0.9654
38	14.63	23.83		38	0.5854	0.9533
39	14.47	23.53		39	0.5788	0.9410
40	14.30	23.21		40	0.5720	0.9285
41	14.12	22.89		41	0.5650	0.9158
42	13.94	22.57		42	0.5578	0.9029
43	13.76	22.25		43	0.5504	0.8899
44	13.57	21.92		44	0.5428	0.8769
45	13.38	21.59		45	0.5351	0.8637
46	13.18	21.26		46	0.5272	0.8505
47	12.98	20.93		47	0.5192	0.8372
48	12.78	20.60		48	0.5110	0.8238
49	12.57	20.26		49	0.5027	0.8104
50	12.36	19.92		50	0.4943	0.7970
51	12.14	19.59		51	0.4858	0.7835
52	11.93	19.25		52	0.4771	0.7699
53	11.71	18.91		53	0.4684	0.7564
54	11.49	18.57		54	0.4595	0.7428
55	11.26	18.23		55	0.4505	0.7292
56	11.03	17.89		56	0.4414	0.7155
57	10.80	17.55		57	0.4322	0.7018
58	10.57	17.20		58	0.4229	0.6881
59	10.34	16.86		59	0.4135	0.6743
		WT/25				WT/25
60	10.10	19.54		60	0.4039	0.7816
61	9.86	19.13		61	0.3943	0.7652
62	9.61	18.72		62	0.3846	0.7488
63	9.37	18.31		63	0.3748	0.7324
64	9.12	17.90		64	0.3648	0.7159
65	8.87	17.48		65	0.3548	0.6993
66	8.62	17.07		66	0.3447	0.6828
67	8.36	16.65		67	0.3344	0.6661
68	8.10	16.24		68	0.3241	0.6494
69	7.84	15.82		69	0.3137	0.6327
	WT/35				WT/35	
70	13.01	15.40		70	0.5205	0.6159
71	12.66	14.98		71	0.5063	0.5990
72	12.30	14.55		72	0.4920	0.5821
73	11.94	14.13		73	0.4776	0.5651
74	11.58	13.70		74	0.4632	0.5481
75	11.22	13.27		75	0.4487	0.5309
76	10.85	12.84		76	0.4342	0.5137
77	10.49	12.41		77	0.4196	0.4964
78	10.12	11.98		78	0.4049	0.4790
79	9.75	11.54		79	0.3901	0.4616
80	9.38	11.10		80	0.3753	0.4440
81	9.01	10.66		81	0.3604	0.4264
82	8.63	10.22		82	0.3454	0.4086
83	8.26	9.77		83	0.3303	0.3908
84	7.88	9.32		84	0.3151	0.3728
85	7.50	8.87		85	0.2999	0.3548
86	7.11	8.42		86	0.2845	0.3366
87	6.73	7.96		87	0.2690	0.3183
88	6.34	7.50		88	0.2535	0.2999
89	5.95	7.04		89	0.2378	0.2814
90	5.55	6.57		90	0.2221	0.2628
91	5.16	6.10		91	0.2062	0.2440
92	4.76	5.63		92	0.1902	0.2251
93	4.35	5.15		93	0.1741	0.2060
94	3.95	4.67		94	0.1579	0.1868
95	3.54	4.19		95	0.1415	0.1674
96	3.13	3.70		96	0.1250	0.1479
97	2.71	3.21		97	0.1084	0.1283
98	2.29	2.71		98	0.0917	0.1085
99	1.87	2.21		99	0.0748	0.0885
100	1.44	1.71		100	0.0577	0.0683

The distance standards for the jump events are generated by curve fitting the actual records data for the pole vault, high jump, long jump and triple jump as separate stand alone events. Distance standards for the throw events which include shot put, hammer throw, discus throw, javelin throw and weight throw are developed using a unique approach. Rather than simply curve fitting each event separately and independently of other events, the approach used here applies factors of equivalence relating performances of equal effort when implements of different weight are employed.

Dynamics theory for masses is that the distance two similar objects can be displaced by the same force is inversely proportional to the square root of their masses, subject to the condition that the masses are within reasonable limits of each other. The differences in masses (or weight) of the similar implements specified by WAVA/USATF certainly are within such reasonable limits of each other, and hence are properly comparable under the theory. This theory would be improperly applied if it was attempting to equate the shot put to a baseball put, the discus throw to a frisbee throw, or the javelin throw to an arrow throw.

The guiding rule for standards for throwing implements of different weight is that for any age, the lighter implement is always thrown/put farther than the heavier implement. Thus for standards purposes, the distance standard for older ages for a heavier implement must be less than the standard for younger ages for a lighter weight implement for that event. This condition is a requirement of the distance standards generated for field events, and is the reason that standards are calculated over the entire age range of 14 to 100 years even though no one has, or is expected to, throw/put implements of such weights at such ages.

The same performance-versus-age curve fitting equation is used for field event jumps and throws as is used for runs, hurdles and walks. Of course minor changes to its form are required because it is distance versus age for field events rather that time versus age. The field event curve equation must meet certain general requirements. It must be an equation that lends itself to direct parametric solution of coefficient and exponent values, and inherently has the shape or distribution of the data involved so that a minimum number of coefficients or exponents are required to form the curve. The benefit of this requirement is that a minimum number of data points suffice to obtain statistically good curve fits over the entire range of the curve. Curve shaping terms also are employed in the equations to mathematically proportion the resulting curve so that records for youths and masters can be fitted together to produce a single set of curve fitted standards for the entire, continuous age range of 8 to 100 years for any event. Only two points are required to fit the curve for any jump event with ages ranging from 8 to 100. Similarly, only two points are required to curve fit an entire family of throwing events (a family has two or more implements of different weight) with ages ranging from 14 to 100. The non-linear equations are combined for operation in an interdependent manner within the program for each family of events (shot, hammer, discus, javelin and weight).

For jump events, the standards are computer generated as follows. The existing distance-age equation remains or is pre-loaded into the field event jump portion of the computer program. New youth, masters age and open class world records are manually entered into the records data base and the program then calculates the standards for the jump events and also identifies (if there are any) all data base records for jump events which are better (farther) than the existing distance standards. The four jumping events are then separately and independently curve fitted one at a time if any require refitting. Selected records are manually entered into the program which then calculates a new distance-age curve, from which the program then produces a new set of distance standards for the event, and in addition the program then identifies all data base records which are still better than the newly generated standards. This iteration process is continued for each event until no records in the data base are identified as being better than the standards generated. (This is the algorithm that removes arbitrariness or bias from the best record selection process.) The resulting age-factors are evaluated at this point for suitability.

For throw events the standards are computer generated as follows. Existing distance-age equations are pre-loaded into the field event throw portion of the computer program. New youth, masters age and open class world records are manually entered into the records data base and the program then computes the standards and also identifies (if there are any) all data base records for throw events which are better (farther) than the existing distance standards. The five families of throwing events are then fitted separately. While the shot, hammer, discus, javelin and weight throw are fitted independently of each other, within each family the several curves for the different weight implements (e.g., discus of 2, 1.5 and 1 kilograms) are dependently fitted by the requirement of the distance-implement weight equation. Selected records are manually entered into the program, from which new distance-implement weight curves are determined, from which new distance-age curves are calculated, from which the program then produces a new set of distance standards for all implements of the event, and in addition the program then identifies (if there are any) all data base records which are better than the newly generated distance standards for that family of events. If required, selected records are again manually entered into the program, and the process is repeated to where the program then identifies (if there are any) all data base records which are better than the newly generated distance standards for that family of events. This iteration process is continued until no records in the data base are identified as being better than the standards generated, while at the same time ensuring that there are a suitable number of actual records included as standards and that those records are distributed over as many of the implement weights as possible. (This is the algorithm that removes arbitrariness or bias from the best record selection process.) The generated standards are then checked for curve crossover. If curve crossover has occurred the standards for that family must be refitted. Resulting age-factors are then evaluated for suitability.

Refer to the table (see next page) which shows performance level of actual records for a quick view of how many "world record" level performances are identified by the field event standards. Those listed as 100% made it outright, while those listed as 99% and 98% are also considered to be at that level. The chart also illustrates the distribution of those records across all ages and events.

The age-factors are then computer generated by dividing the open class standard into the standard for each age, doing this for each jump event. Since there are no open class records for implements of lesser weight for the throw events, the one open class event standard is divided into the standards of all implements for that event to determine the age-factors for that event. Because of this, age-factors result which are greater than 1.000 for the throws.

Age-factor results are looked at early on in the standards generating process. When it is seen that an undesirable distribution of age-factor values has resulted, the problem areas are refitted until the resulting age-factors are acceptable. Hence the age-factors are another tool to assist the curve fitting process, and by using it the best possible standards are obtained.

The table on the next page is the listing of performance level in percent for actual records. The percentages listed in the table are determined by dividing the distance standard into the actual record for every age of every event having a listed record. The percentage values have been rounded to the nearest whole integer. Only records having a percentage of 100 were used in determining the standards that resulted.

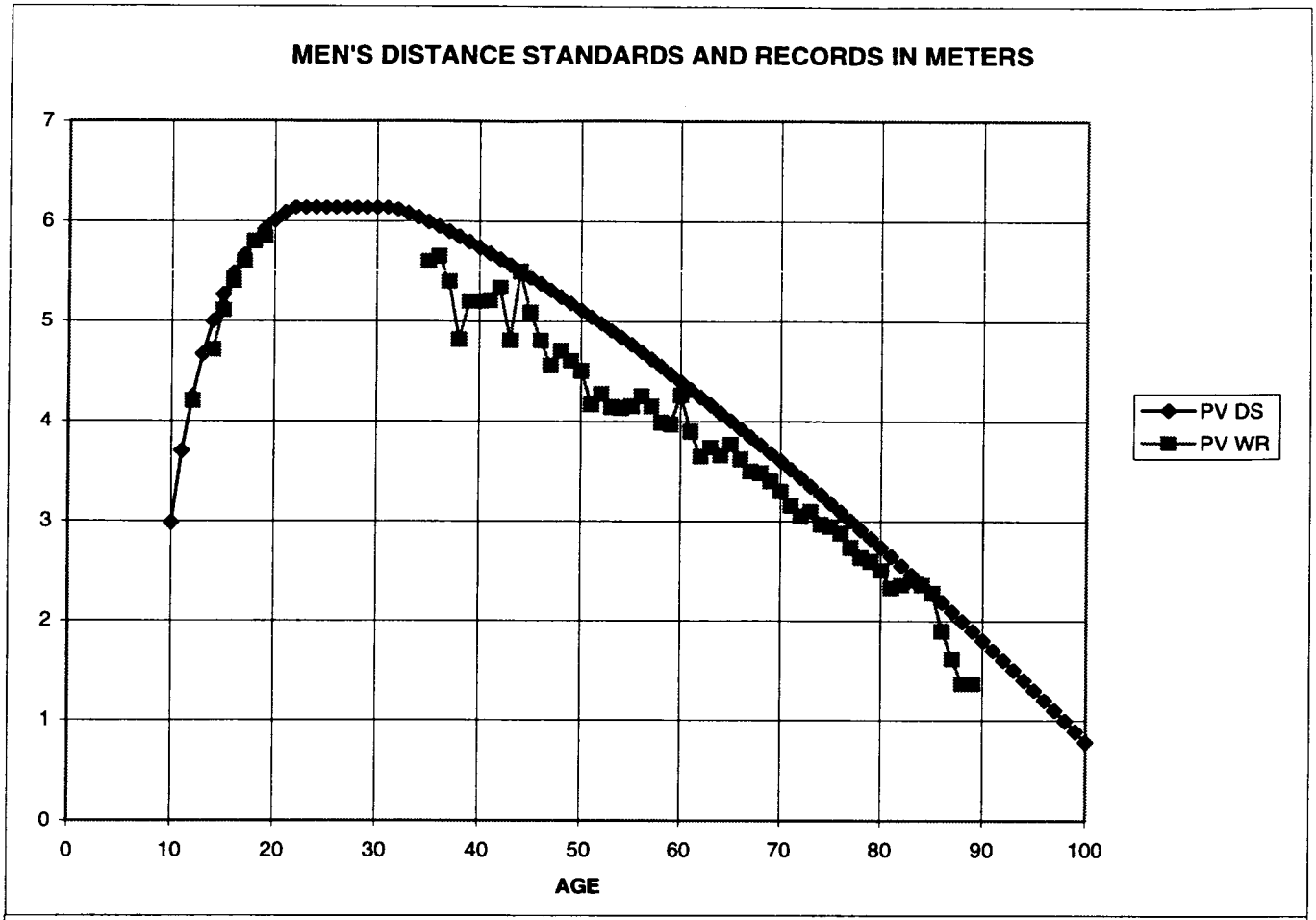
PERFORMANCE LEVEL OF MEN'S FIELD EVENT RECORDS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT	Super W USATF	WT USATF
8		100	100								
9		95	91								
10		93	89		SP/16 or	HT/16 or					
11		93	92		7.26k	7.26k	DT/2k	JT/800	WT/35	WT/56	WT/35
12	99	92	94								
13		96	96	93							
14	94	94	99	95	81	67	77	90			
15	97	96	99	97	96	80	92	94			
16	99	100	99	100	98	95	92	100			
17	99	98	100	99	100	96	100	97			
18	100	97		98	98	98	97	93			
19	99	97	100	98	100	100	99	92			
OC	100	100	100	100	100	100	100	100	100		100
30											
31											
32											
33											
34											
35	93	93	100	96		98	96	92	85	94	85
36	95	93	96	95		99	97	92	84	90	84
37	92	94	99	94		100	93	94	86	82	86
38	82	94	92	96		99	99	89	90	94	90
39	90	92	92	99		98	93	92	87	96	87
40	91	97	93	98		90	96	89	89	100	89
41	92	95	95	97		92	94	91	93	95	93
42	95	92	91	97		96		92	97	85	97
43	86	90	93	100		98		90		87	
44	100	93	91	88		100		89	89	85	89
45	94	95	93	88		86		87	91	88	91
46	89	90	96	94		90		91	83	88	83
47	86	91	91	91	97	87		84	92	89	92
48	90	93	88	92		91		94	83	90	83
49	89	93	89	90	95	89		88	88		88
					SP/6k	HT/6k	DT/1.5k		WT/25		
50	88	100	95	90	97	86		88			95
51	83	95	92	91	90	90		89			100
52	86	96	87	89	95	86	100	89			
53	84	95	90	90	90	88		92			93
54	85	96	89	91	91	92	83	92			90
55	87	95	93	98	100	92	84	93			96
56	91	93	89	92	93	91	96	85		94	
57	90	94	94	96	91	98	86	100		97	97
58	88	94	92	92	93	89	80	98		89	89
59	89	93	94	92	97	92	87	84		88	91
					SP/5k	HT/5k	DT/1k	JT/600	WT/20		WT/25
60	97	96	95	94	93	89	79	82		87	90
61	90	96	92	93	93	88	85	81		94	98
62	86	96	91	93	90	82	81	79		91	100
63	90	96	91	90	95	89	78	84		100	96
64	90	99	85	92	89	90	79	88		100	98
65	94	98	89	95	93	87	85	87		72	85
66	92	95	90	91	88	91	82	83		77	99
67	91	97	90	92	97	87	78	82		91	83
68	92	96	88	90	89	77	79	89		84	83
69	92	95	91	89	91	75	78	95		99	90
					SP/4k	HT/4k			WT/16	WT/35	
70	92	98	94	93	88	83	86	88		81	88
71	90	95	88	94	87	85	85	83		85	94
72	89	96	85	95	88	85	80	88		81	87
73	93	97	87	93	92	86	82	82		81	89
74	91	96	83	93	89	77	84	86		87	82
75	93	100	94	99	90	89	88	86		79	89
76	93	95	87	92	92	80	86	83		84	90
77	91	97	88	94	89	79	87	82		69	91
78	91	92	90	98	90	81	82	82		78	95
79	92	100	84	91	93	84	87	84		75	78
									WT/12		
80	92	99	88	98	99	83	90	85		69	71
81	88	91	92	89	100	93	89	72		69	80
82	92	95	93	100	98	90	87	89		69	78
83	98	96	90	93	99	81	91	93		58	75
84	99	91	91	96	82	81	82	70		60	79
85	100	99	83	91	80	83	80	87		64	84
86	87	90	78	86	81	81	83	79		62	60
87	77	94	70	80	85	57	86	69			62
88	69	85	68	77	84	49	84	80			63
89	72	92	52	67	83	61	81	64			71
90		96	65	80	85	72	87	76			65
91		89	66	69	61	77	81	46			77
92		95	54	62	83	70	71	73			86
93		93	63	74	100	93	66	70		88	89
94		82	61	68	78	100	82	74		79	100
95			100		92	80	91	100		88	88
96			68		97		100	95			
97					78		88	97			
98					70		85	86			
99											
100											

Figures 54 and 55 on the next two pages present four graphs which plot standards and actual records versus age for the pole vault, high jump, long jump and triple jump. Standards for the jumps are generated as stand alone curve fits.

A single curve fit for each event includes both youth and masters performances.

Figure 54


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
PV DS
PV WR

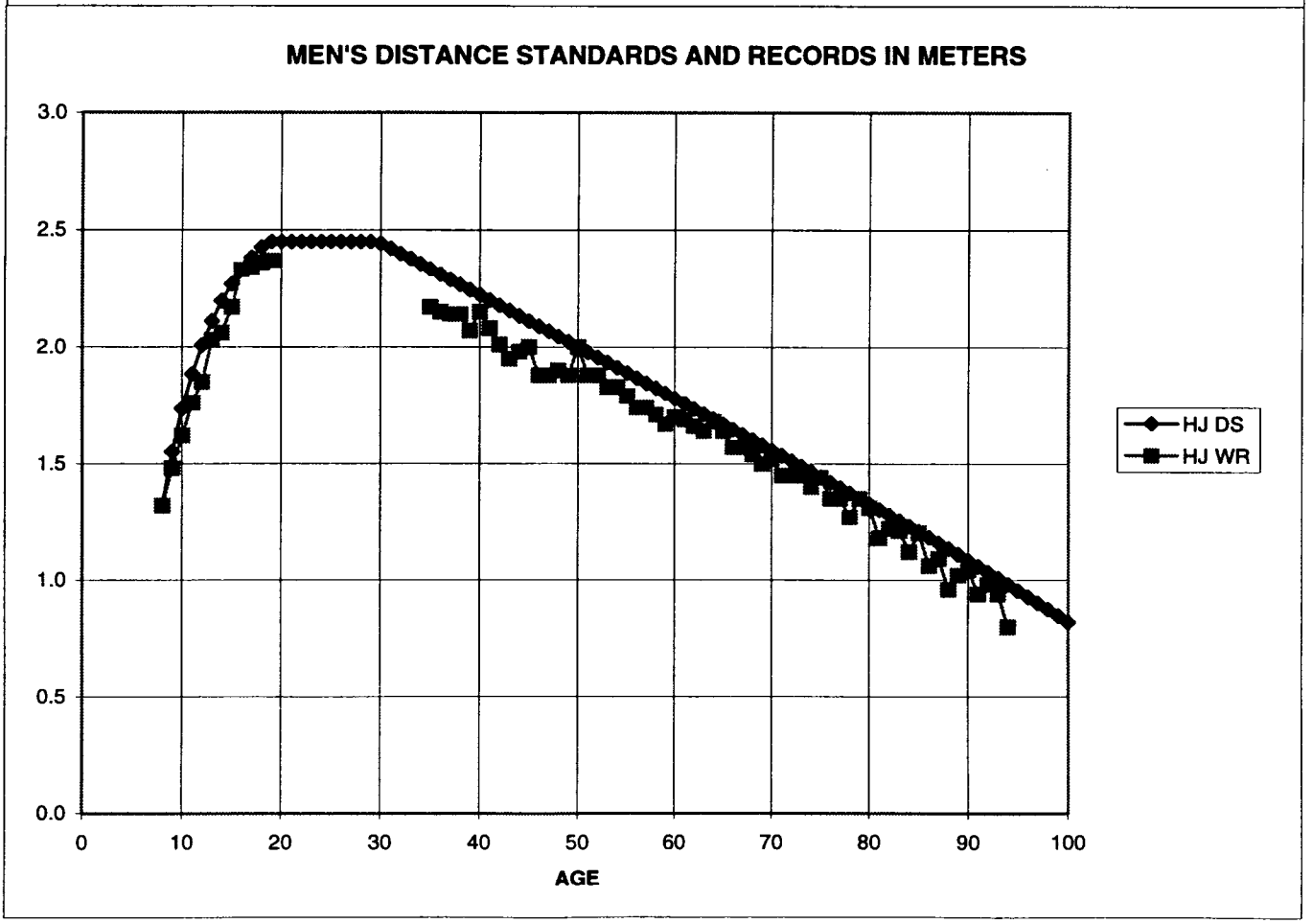
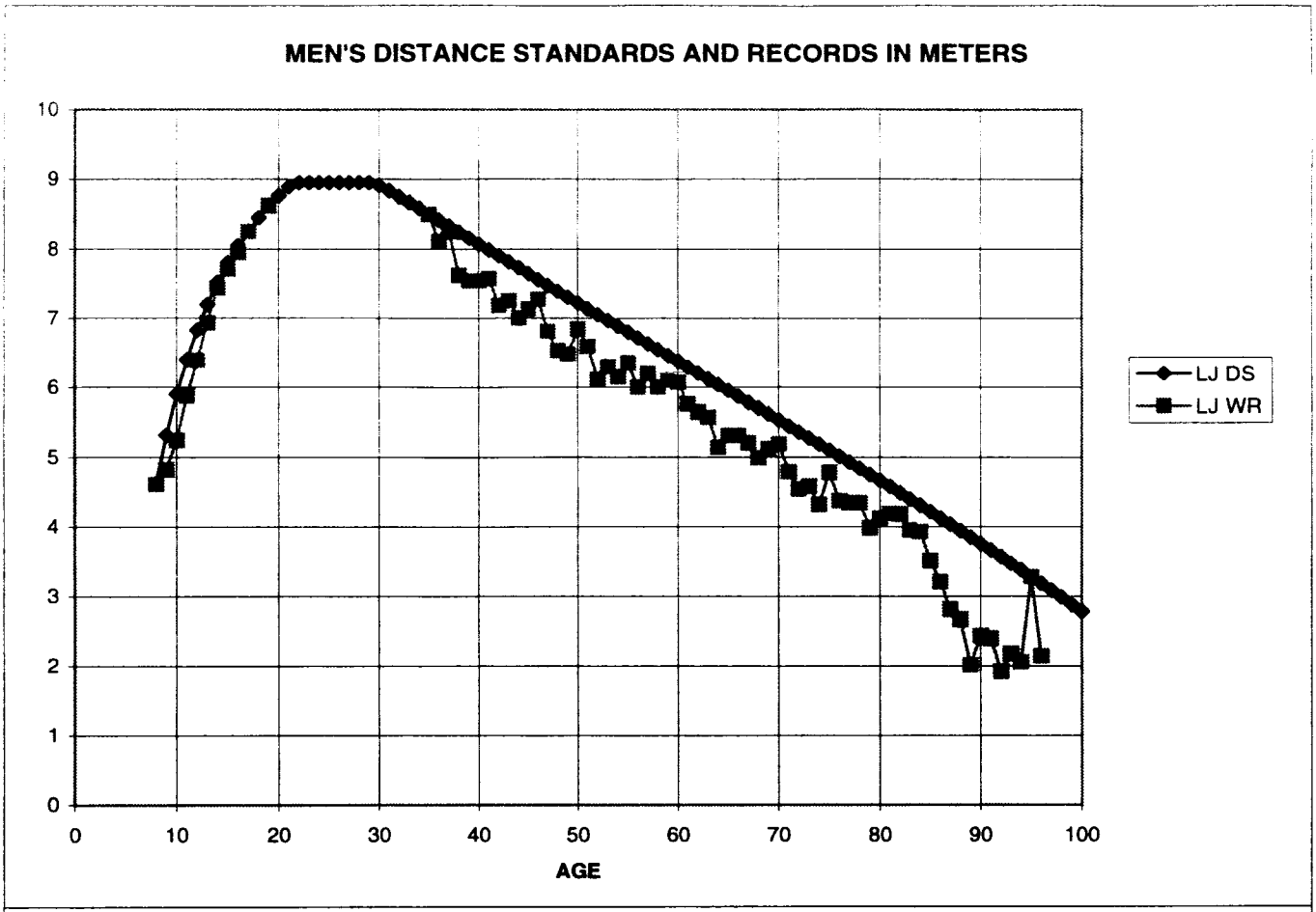
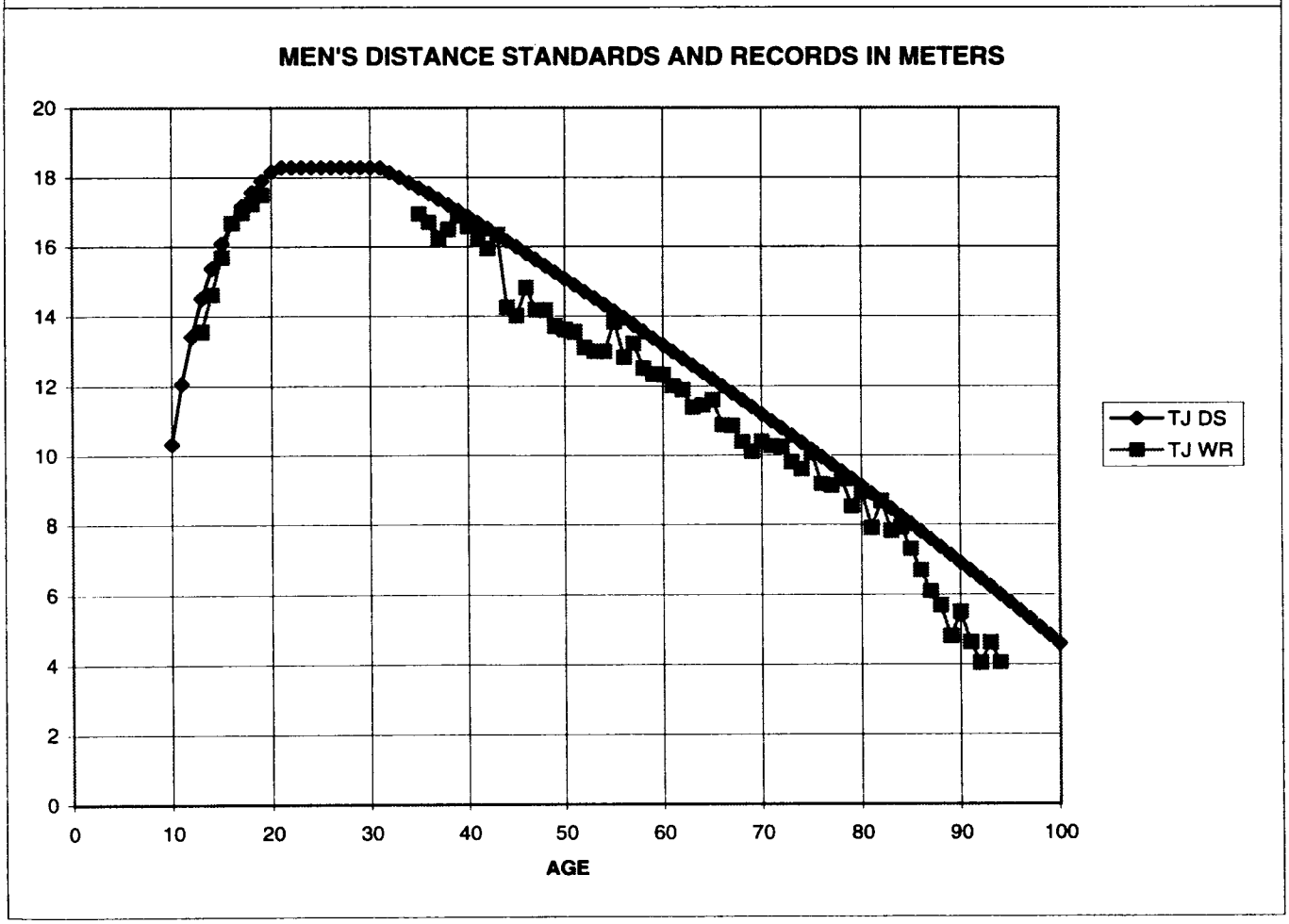

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
HJ DS
HJ WR

Figure 55


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
10
9
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
LJ DS
LJ WR


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
20
18
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
TJ DS
TJ WR

The men's throwing events which follow are arranged so as to cover each throw event separately. The discussion here will explain only the graphs of the first throw event which is the shot put. The explanation will apply also to the other events. In addition, the other events have the same graphs prepared and they are presented in the same sequence.

Two combination graphs are in figure 56 for the shot put at the next page. The upper composite graph includes standards and actual records for each implement but only for the specified ages of applicability per the existing WAVA/USATF implement specifications. The specified implement weight and ages of applicability are listed underneath the graph. The lower comparison graph plots curves of the standards (less the records) of each shot in the previous composite graph for ages 14 to 100 in order to show that the extended curves are properly behaved and do not cross each other.

Figures 57 and 58 which follow present individual event graphs plotting distance standards and actual records versus age for all implement weights specified for the shot put. These graphs do not reflect attempts to curve fit the individual events (16lb, 6kg, 5kg and 4kg shot) on a stand alone basis. Under the dynamics theory concept employed, performances using the various implements are related (inversely to square root of masses) and the resulting curves are dependent upon each other.

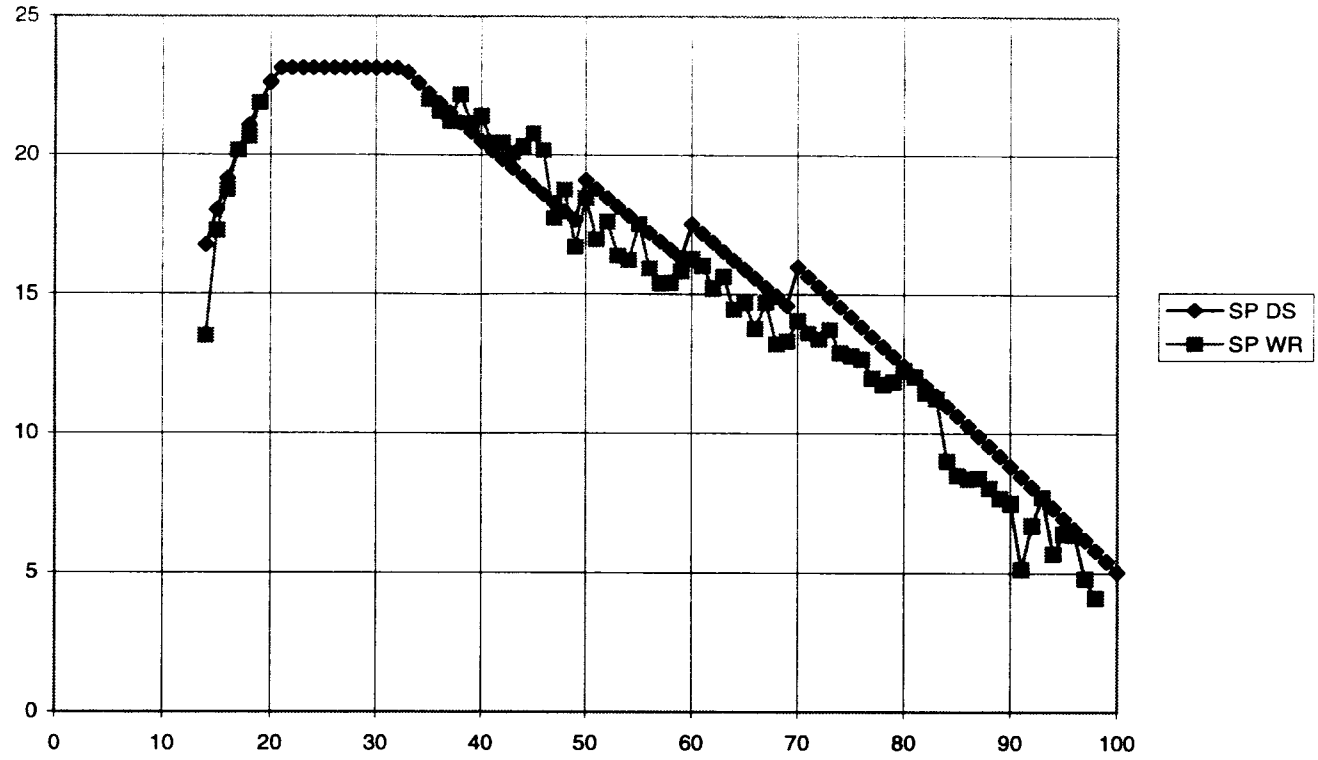
It is obviously noted in the upper graph of figure 57 that something is amiss in the plotted curve of standards and records versus age for the 16lb/7.26kg shot put (and also is noted in those graphs for the hammer, discus and weight throws farther along in the chapter). This is because not all data base records were accepted for use in fitting performance curves for some of the field event throws. However, since removing records from the data base arbitrarily is an undesirable thing to do, all were left in the data base; but they are used only when plotting the event graphs of standards and actual records versus age, and their percentages are not included in the listing of performance level for actual records.

Refer to chapter 5 for a discussion of what records are included in or removed from the data base, and which records, if any, are not included in the plots of standards and records versus age graphs or in the tables listing performance level for actual records. The discussion in chapter 5 addresses running, hurdles, field events and walks in one coverage to preclude needless repetition of the discussion in each chapter while at the same time improving the overall understanding of which events are most and least impacted in this regard.

The chapter 5 discussion includes a specific explanation of how the field event throws were curve fitted, and discusses the methodology used to determine how certain records could be identified as being "too good".

Figure 56

COMPOSITE CHART: MEN'S SHOT PUT DISTANCE STANDARDS AND RECORDS IN METERS



16LB OR 7.26KG AGE 14-49; 6KG AGE 50-59; 5KG AGE 60-69; 4KG AGE 70-100

COMPARISON CHART: MEN'S SHOT PUT DISTANCE STANDARDS IN METERS

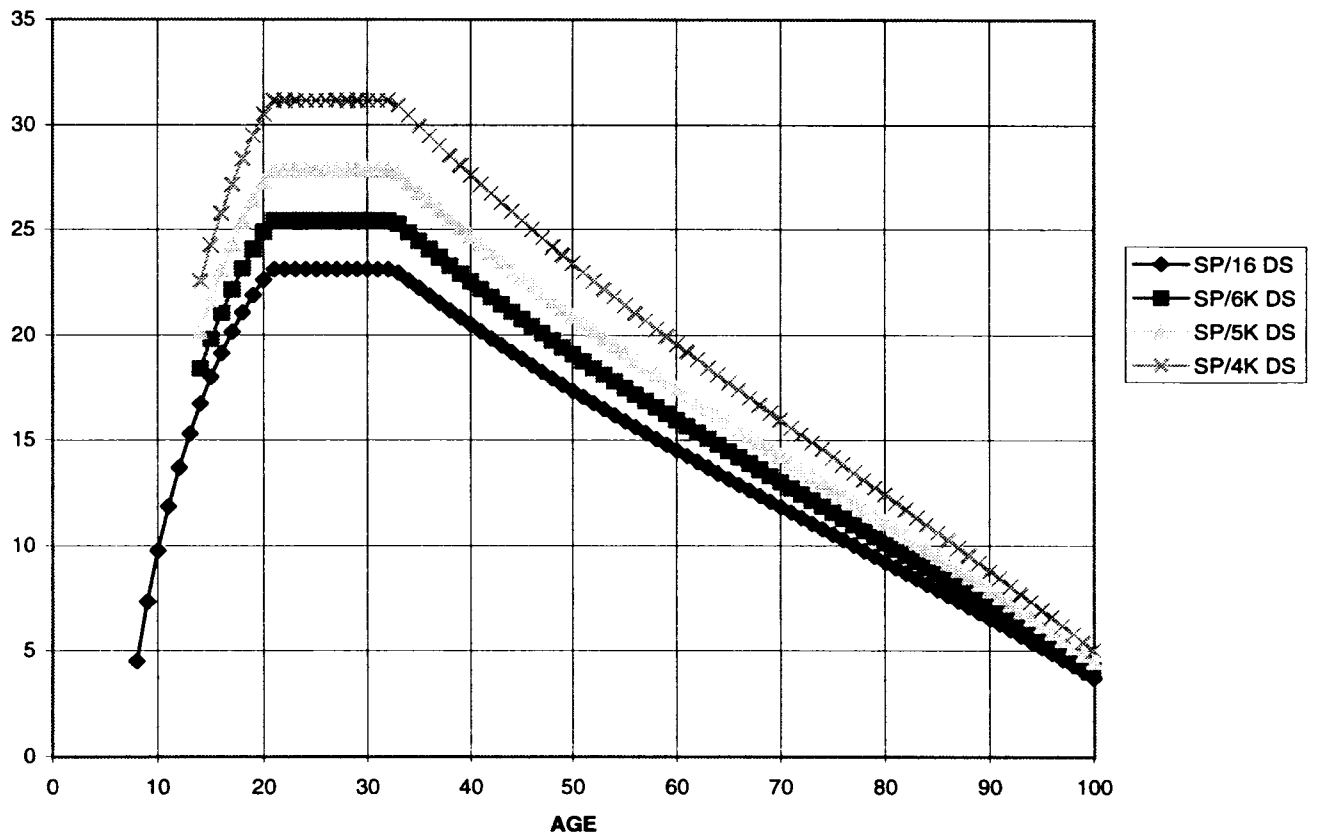
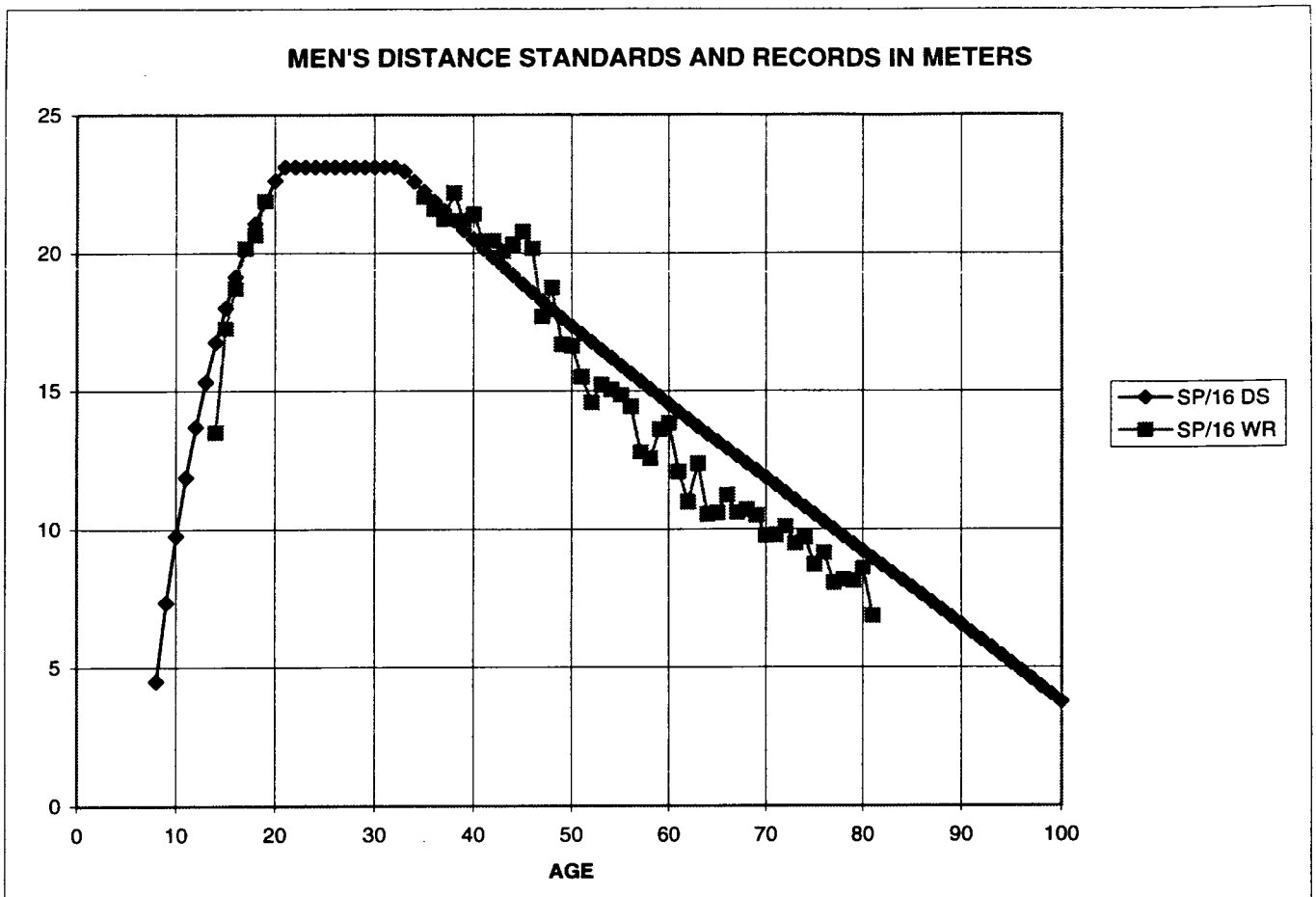


Figure 57


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/16 DS
SP/16 WR

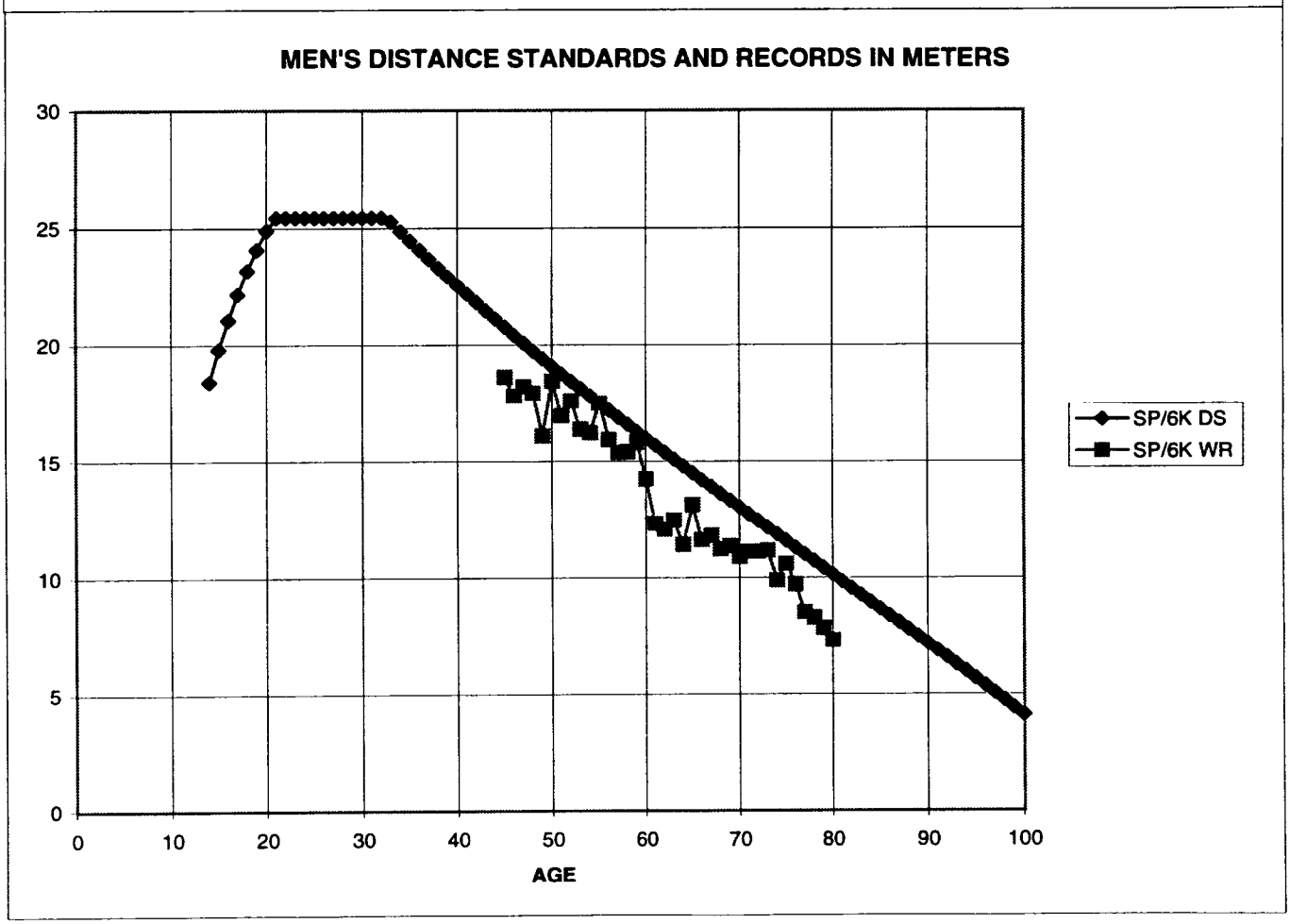
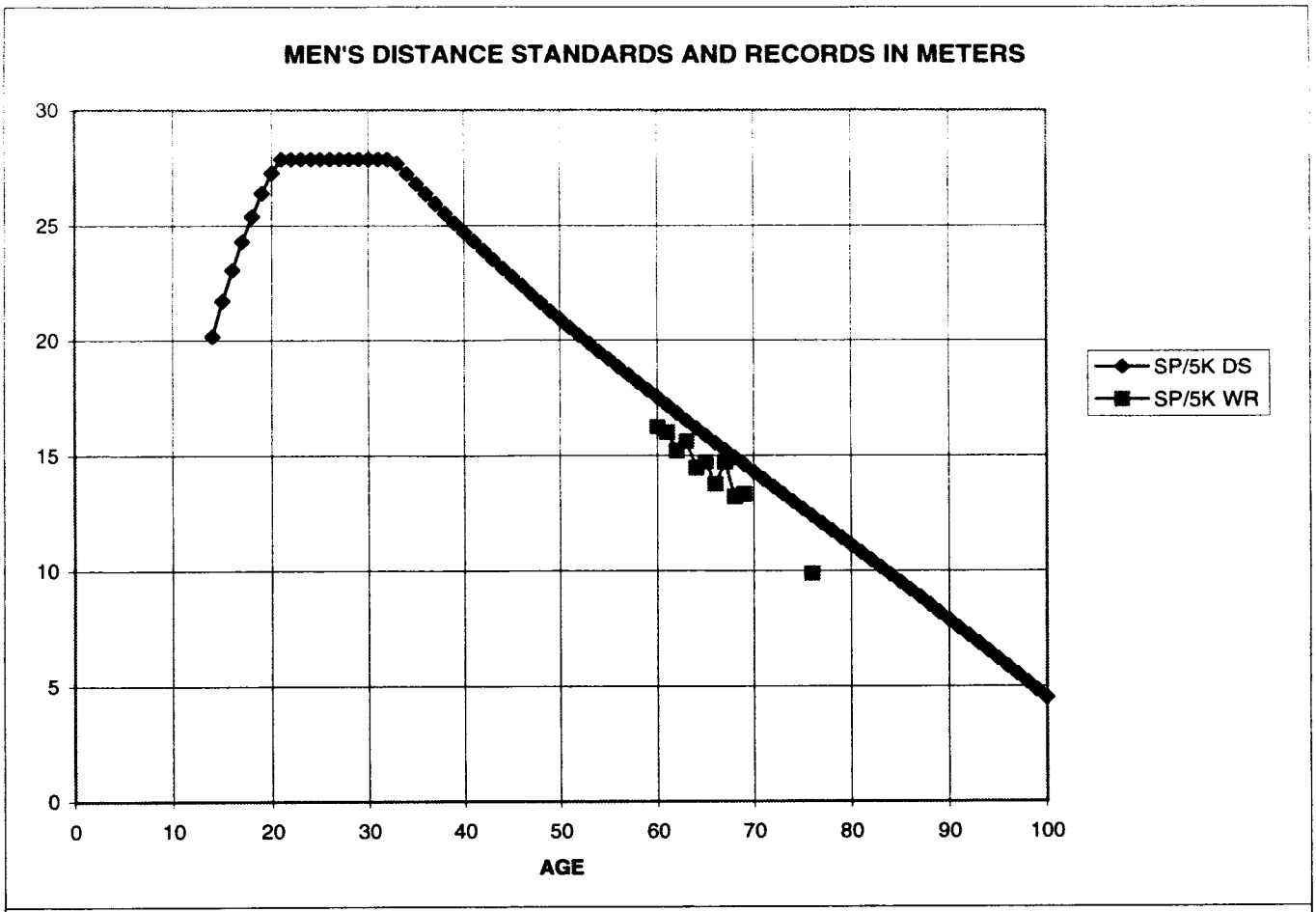
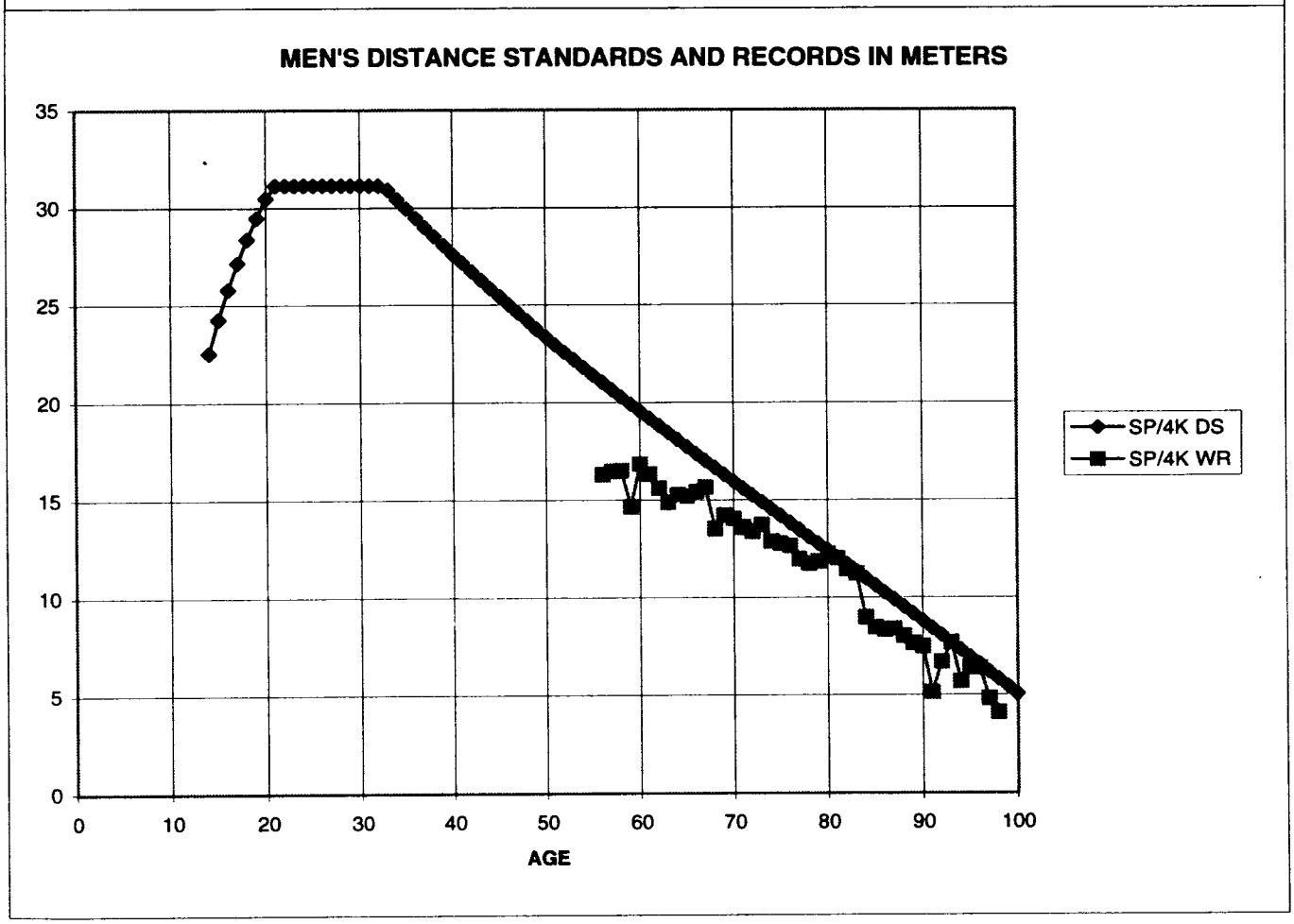

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/6K DS
SP/6K WR

Figure 58


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/5K DS
SP/5K WR

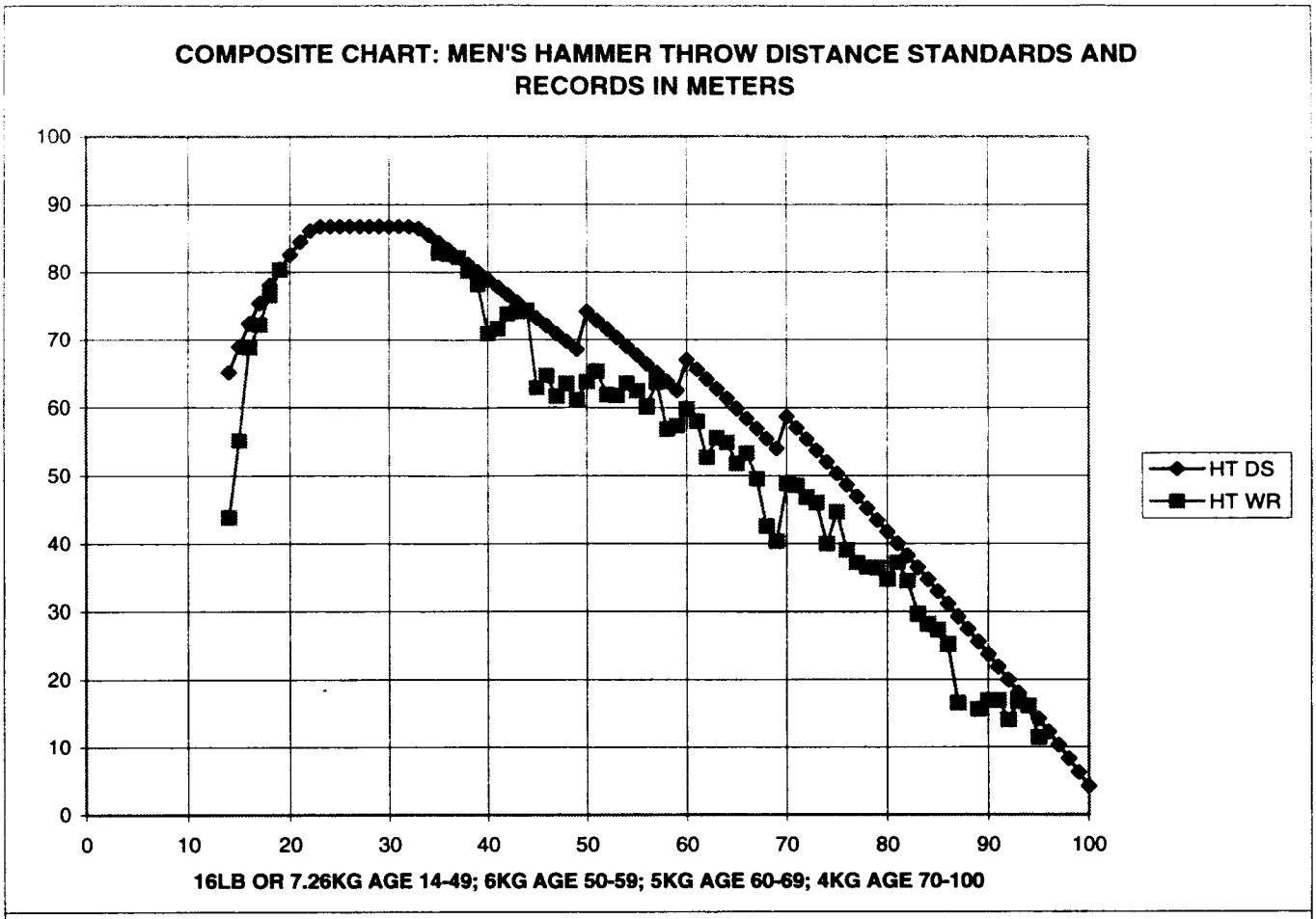

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/4K DS
SP/4K WR

While the remaining men's throw events will not be given the same graph by graph review as was done for the men's shot put, the following comments address some of those events.

The hammer throw, discus throw, javelin throw and weight throw were curve fitted with the same records data treatment as was given the shot put; refer to chapter 5 page 203 for details.

For the men's weight throw the existing WAVA implement specifications call for the 35, 25, 20, 16 and 12 pound implements, while the USATF implement specifications call for only the 35 and 25 pound implements. In addition, however, the USATF specification also calls for the 56 pound implement for use in the USATF superweight event. At this time official records are available for only the 56, 35 and 25 pound implement events. Standards are included here for all WAVA and USATF specified events. Standards for the implements not yet having masters records available were derived as a consequence of applying the theory of dynamics for masses concept to the records which produced the curve fit for the 35 and 25 pound implements.

Figure 59


COMPOSITE CHART: MEN'S HAMMER THROW DISTANCE STANDARDS AND RECORDS IN METERS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
HT DS
HT WR
16LB OR 7.26KG AGE 14-49; 6KG AGE 50-59; 5KG AGE 60-69; 4KG AGE 70-100

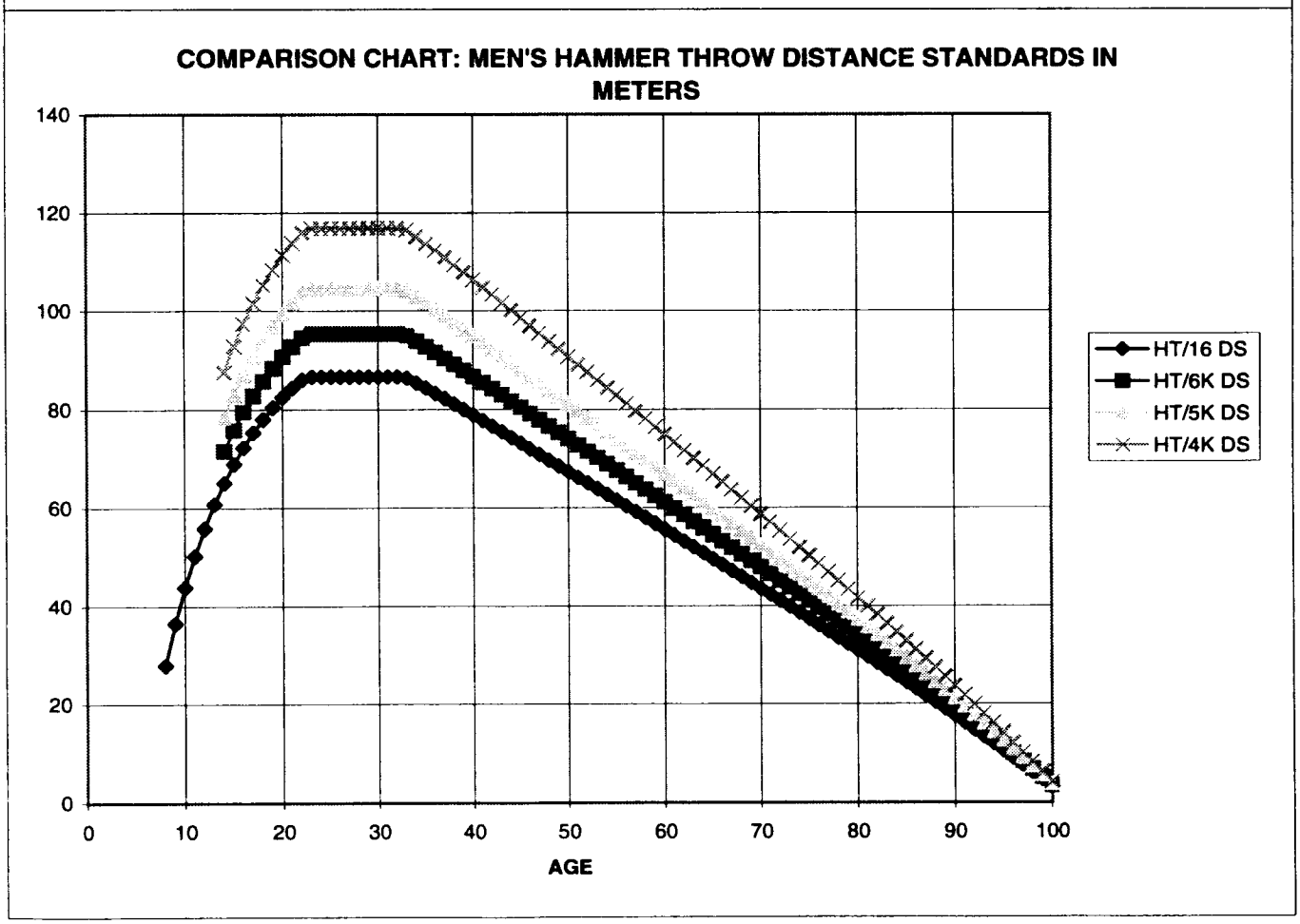
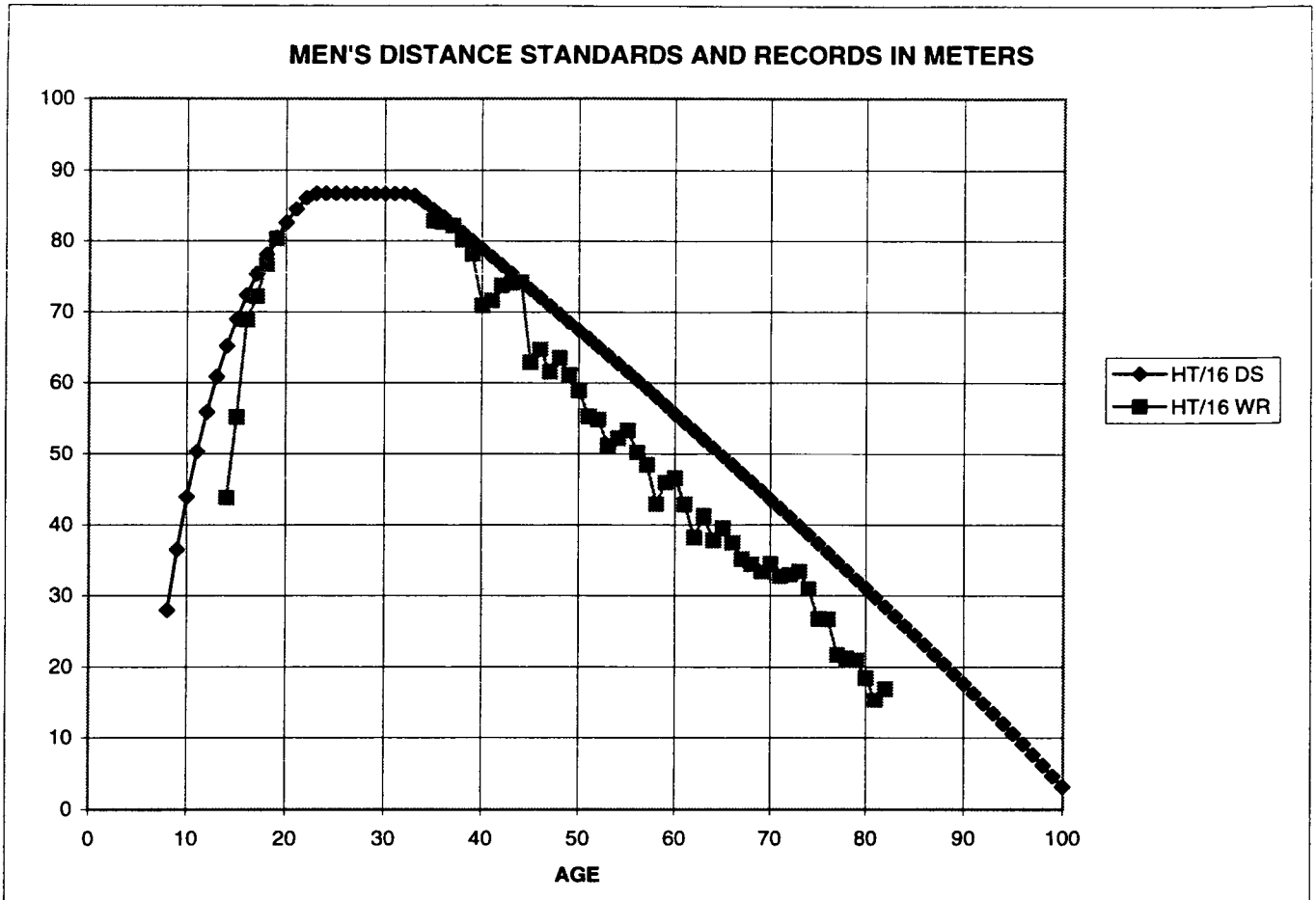

COMPARISON CHART: MEN'S HAMMER THROW DISTANCE STANDARDS IN METERS
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/16 DS
HT/6K DS
HT/5K DS
HT/4K DS

Figure 60


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/16 DS
HT/16 WR

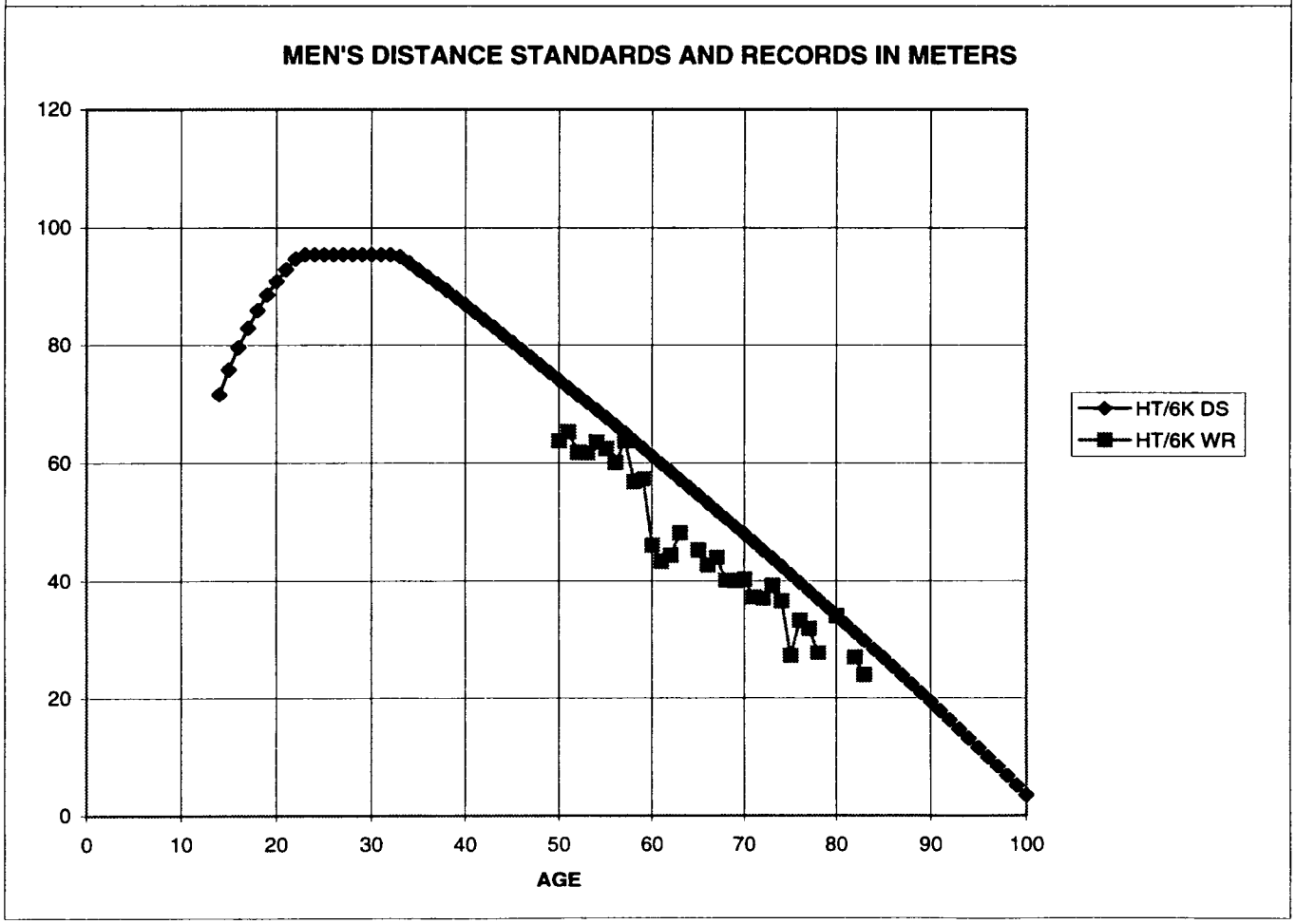
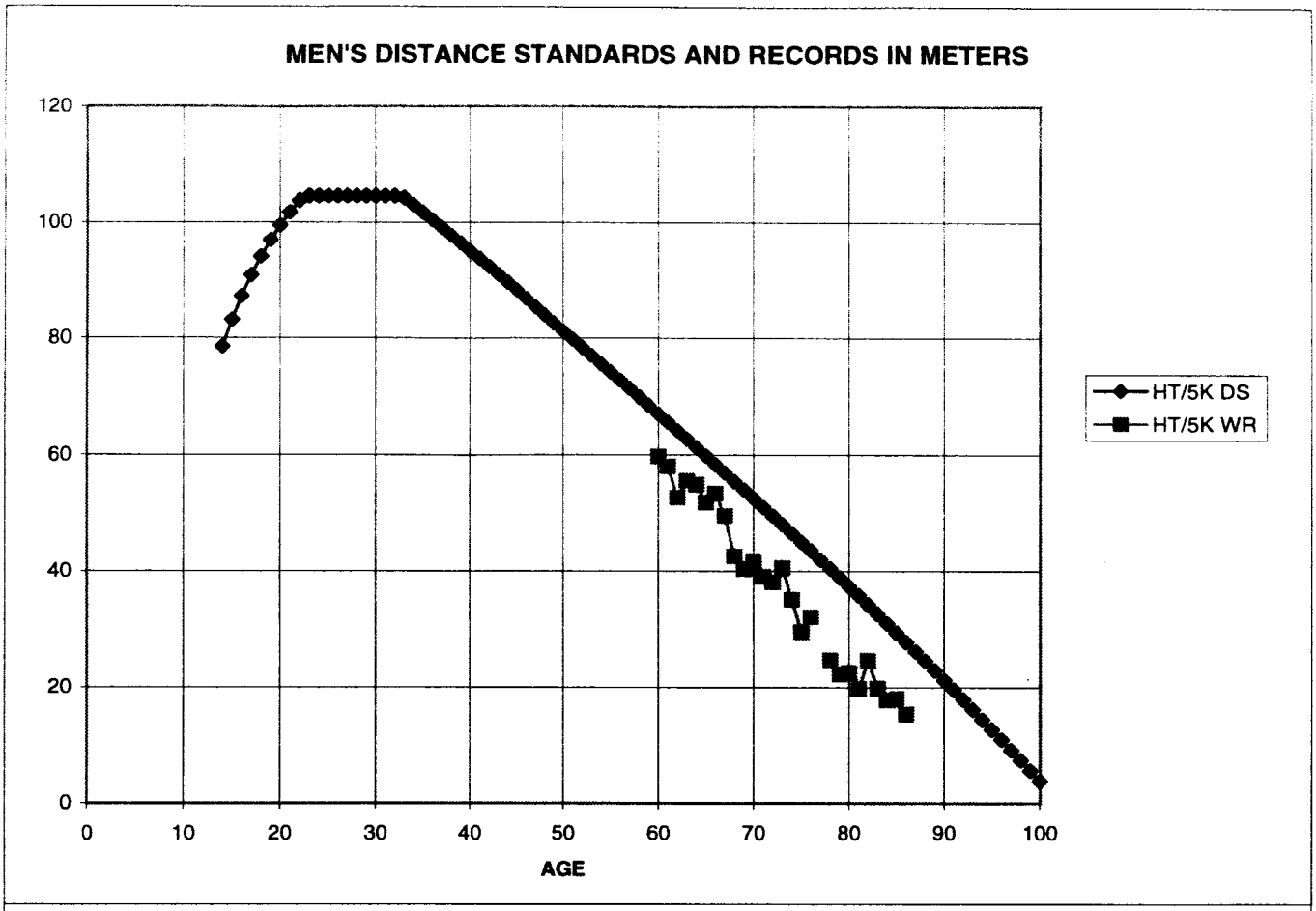

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/6K DS
HT/6K WR

Figure 61


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/5K DS
HT/5K WR

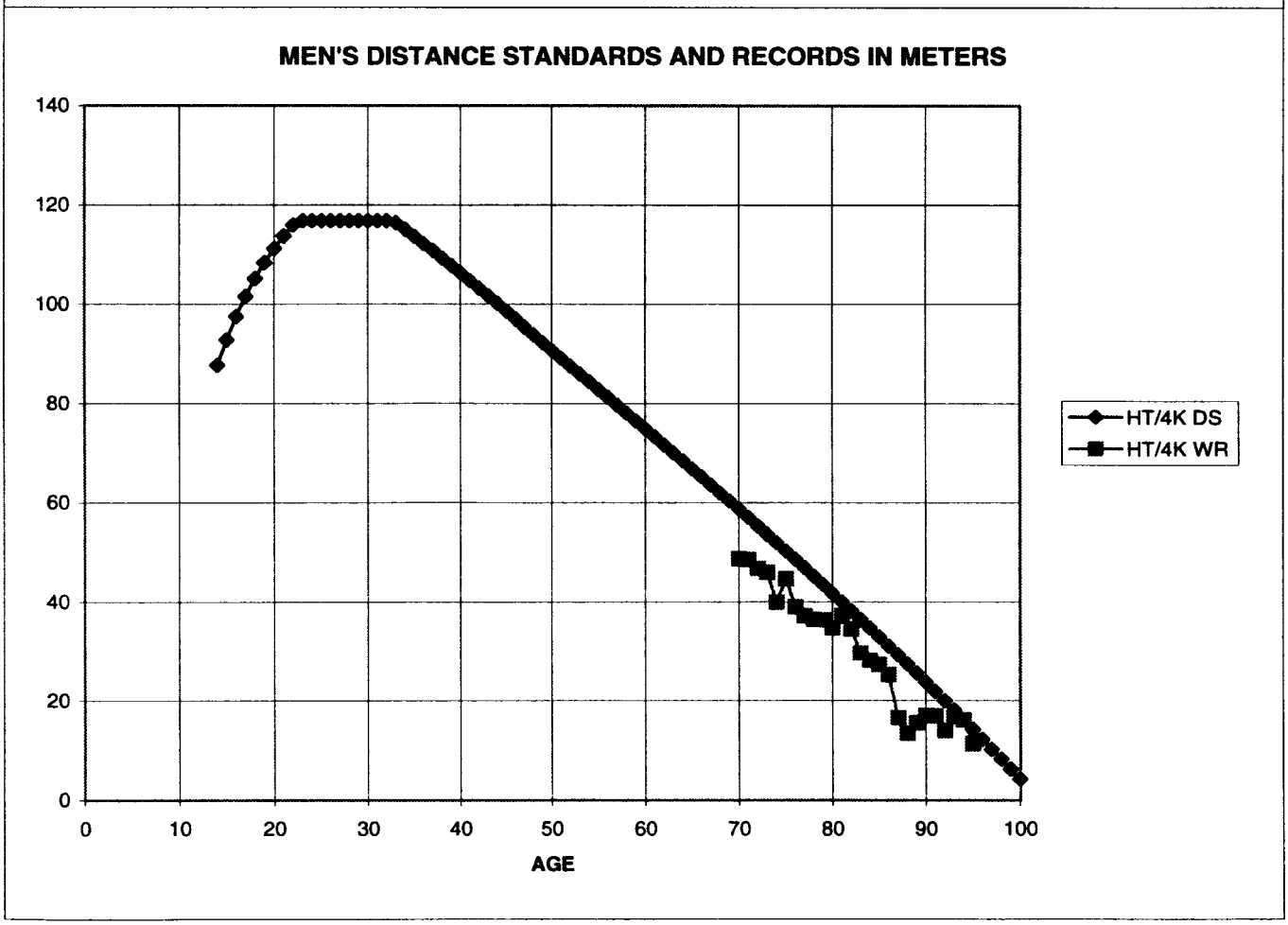
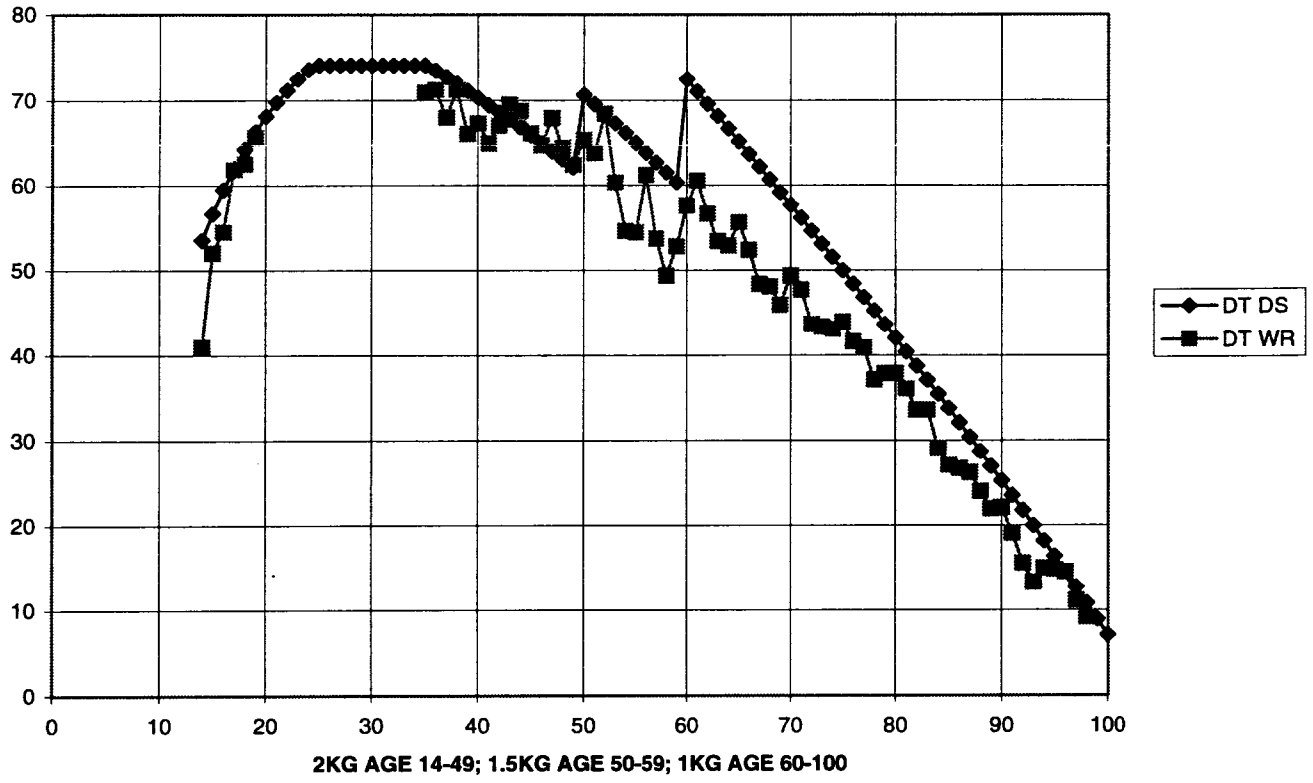

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/4K DS
HT/4K WR

Figure 62

COMPOSITE CHART: MEN'S DISCUS THROW DISTANCE STANDARDS AND RECORDS IN METERS



COMPARISON CHART: MEN'S DISCUS THROW DISTANCE STANDARDS IN METERS

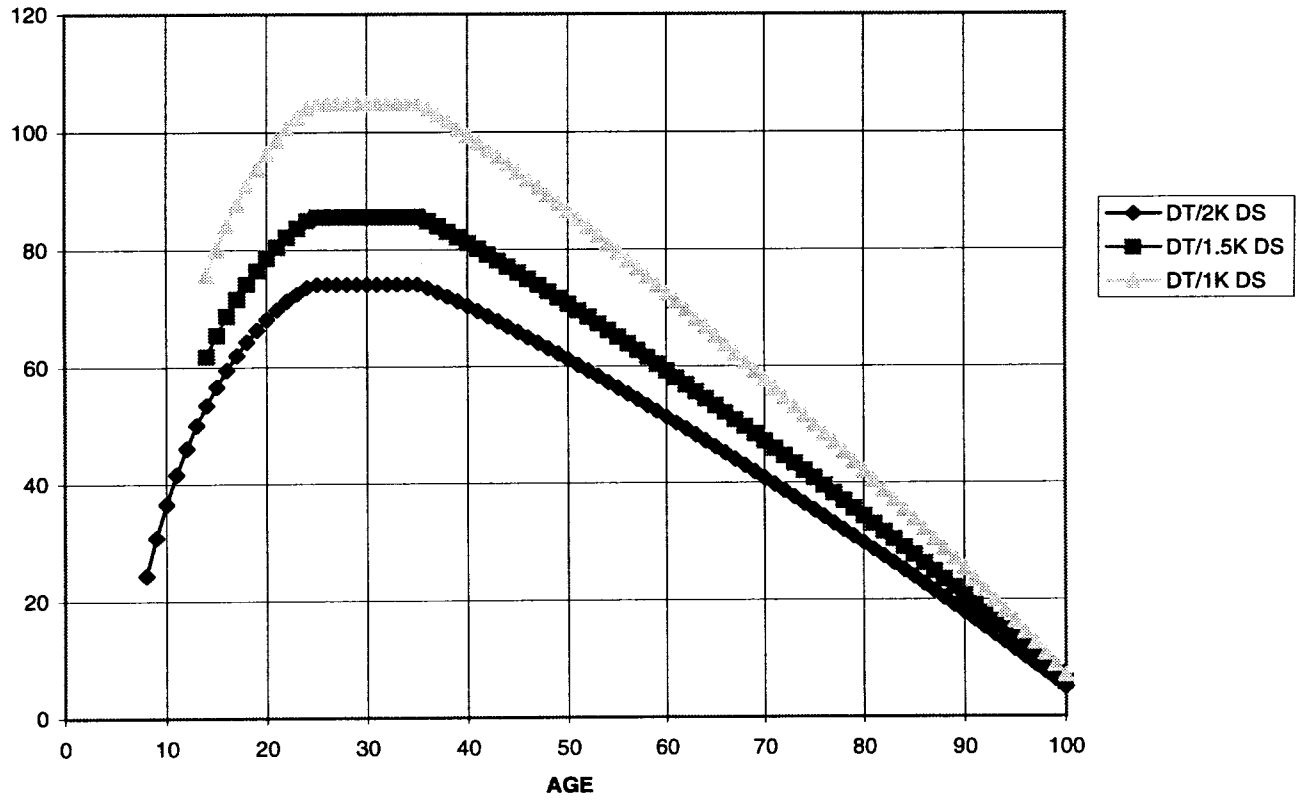
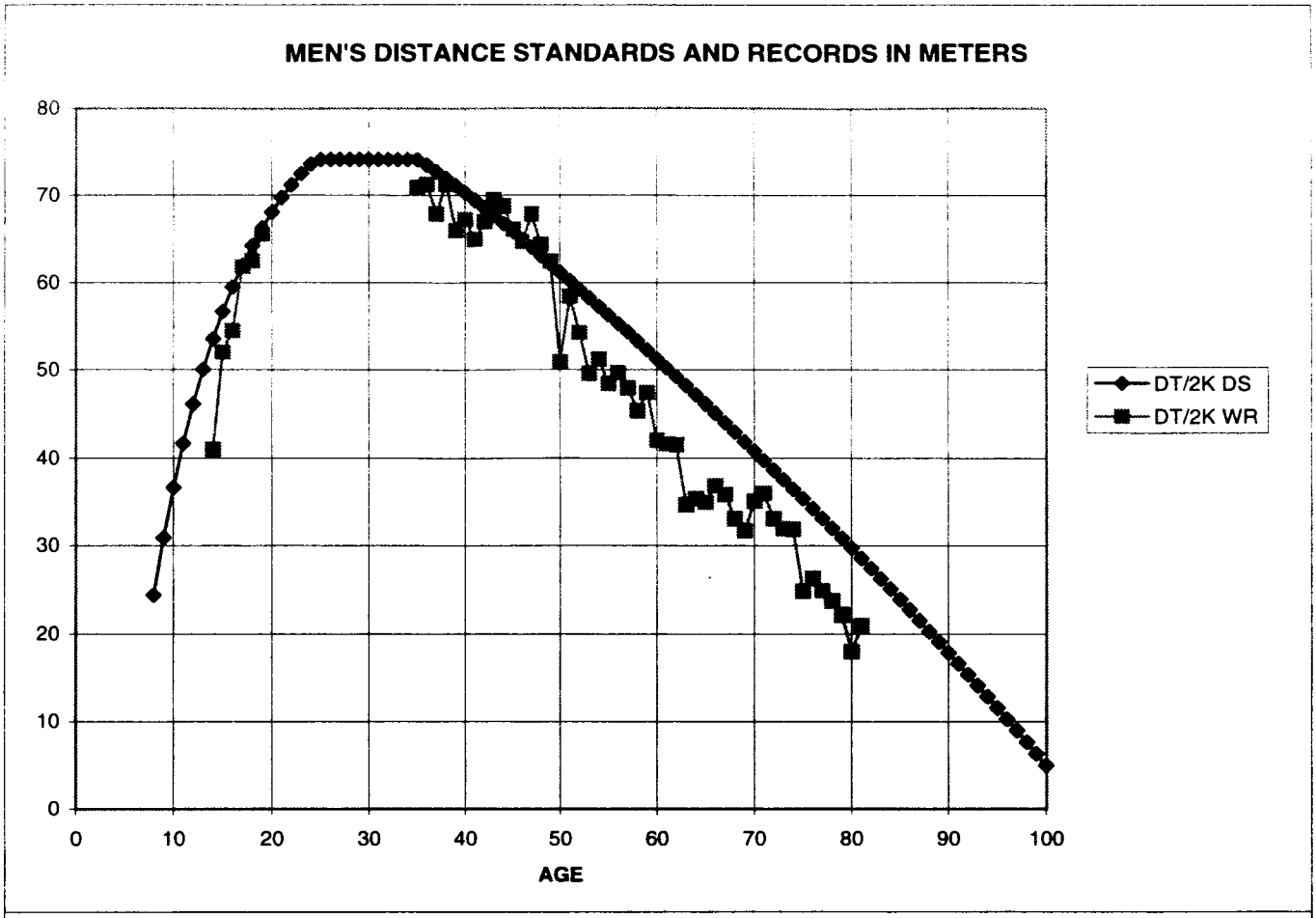


Figure 63


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/2K DS
DT/2K WR

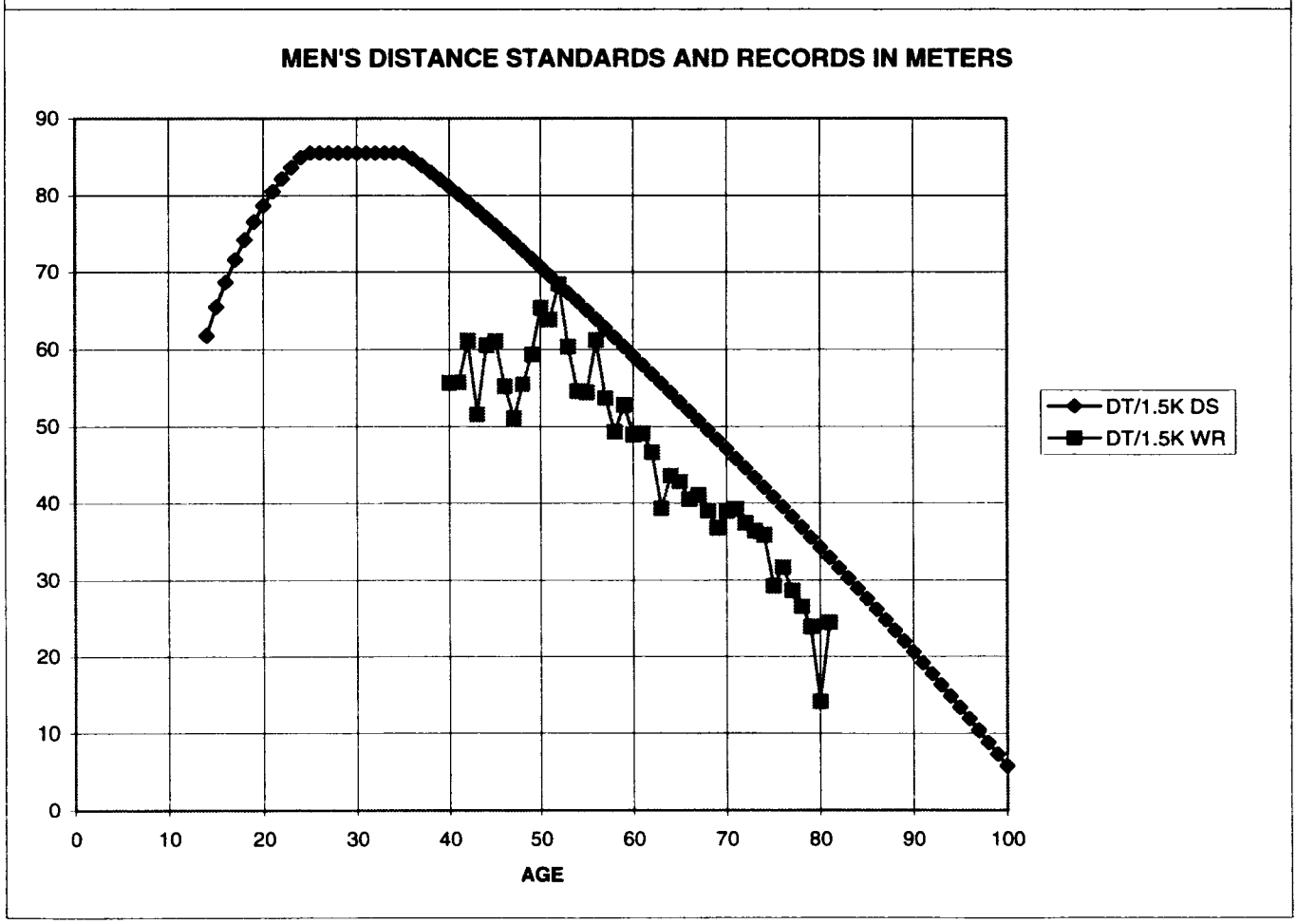

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/1.5K DS
DT/1.5K WR

Figure 64

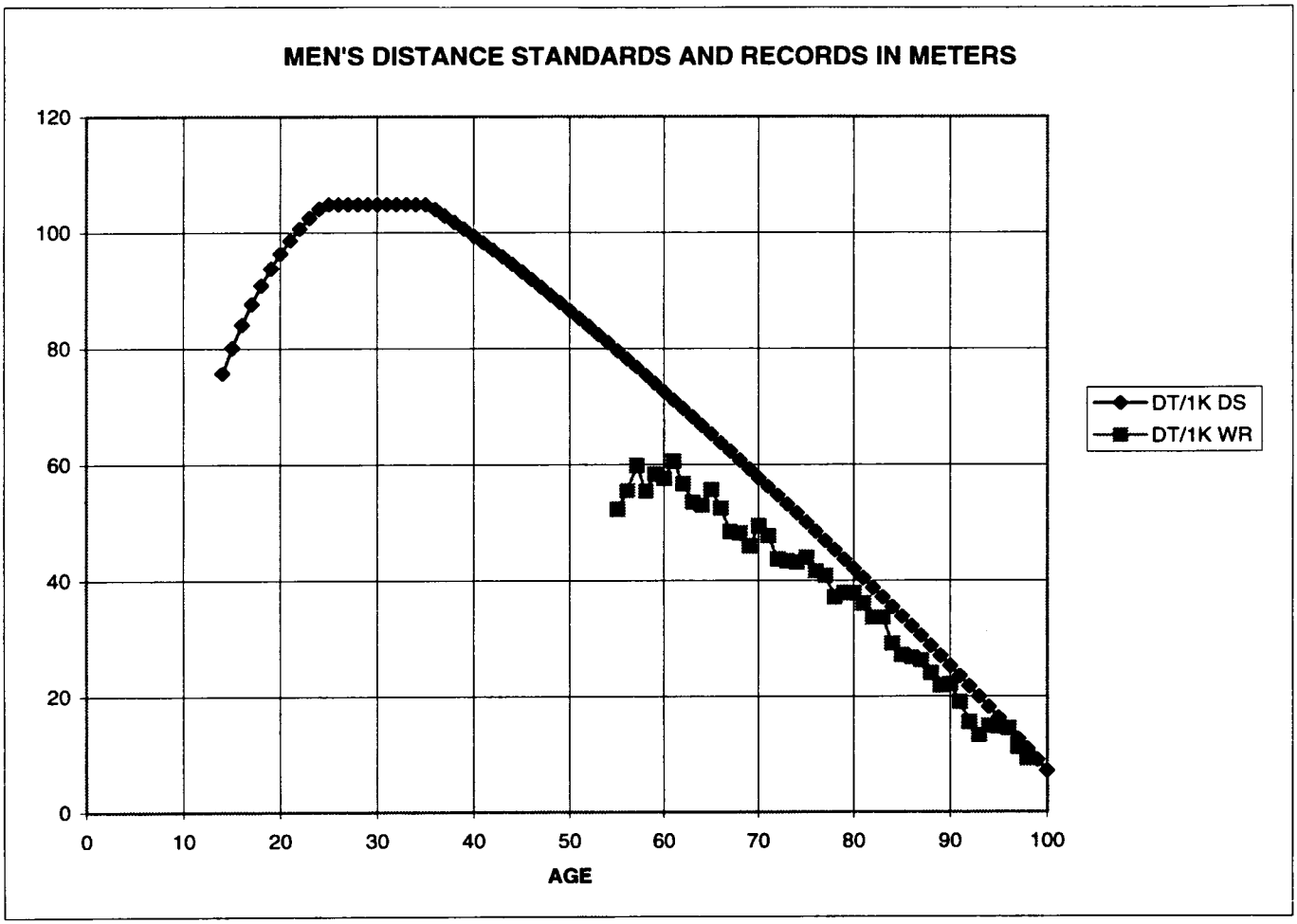
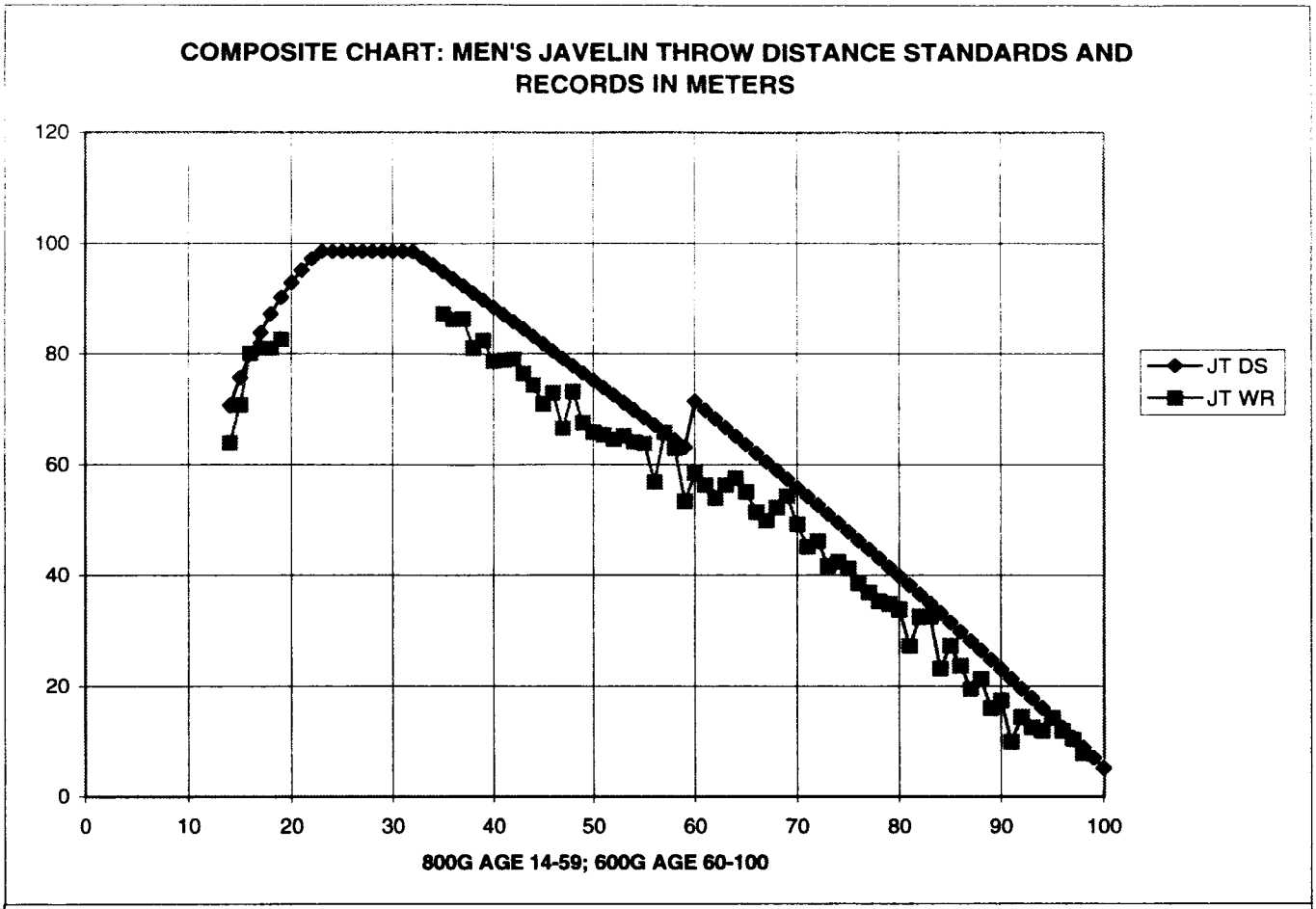

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/1K DS
DT/1K WR

Figure 65


COMPOSITE CHART: MEN'S JAVELIN THROW DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
800G AGE 14-59; 600G AGE 60-100
JT DS
JT WR

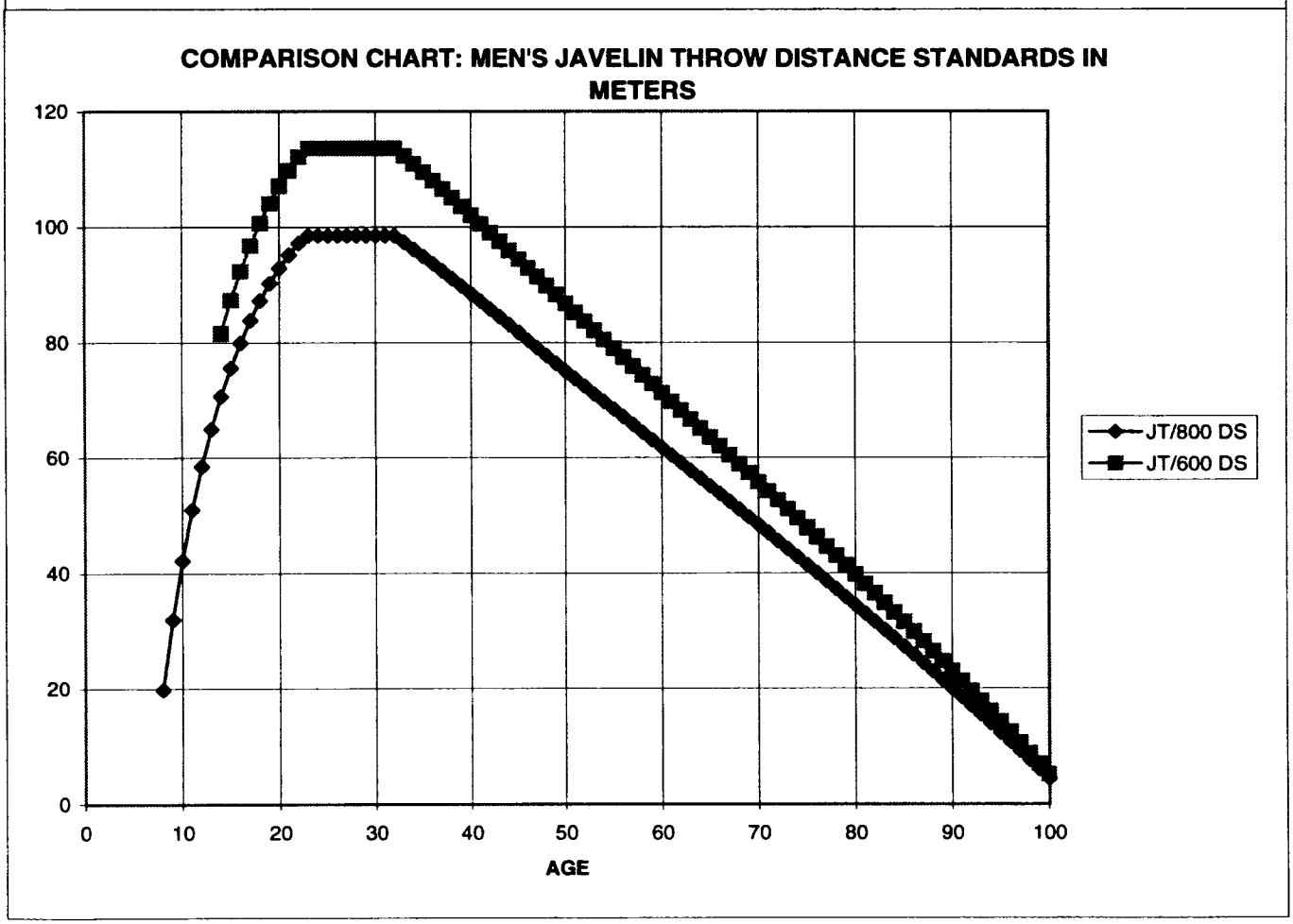
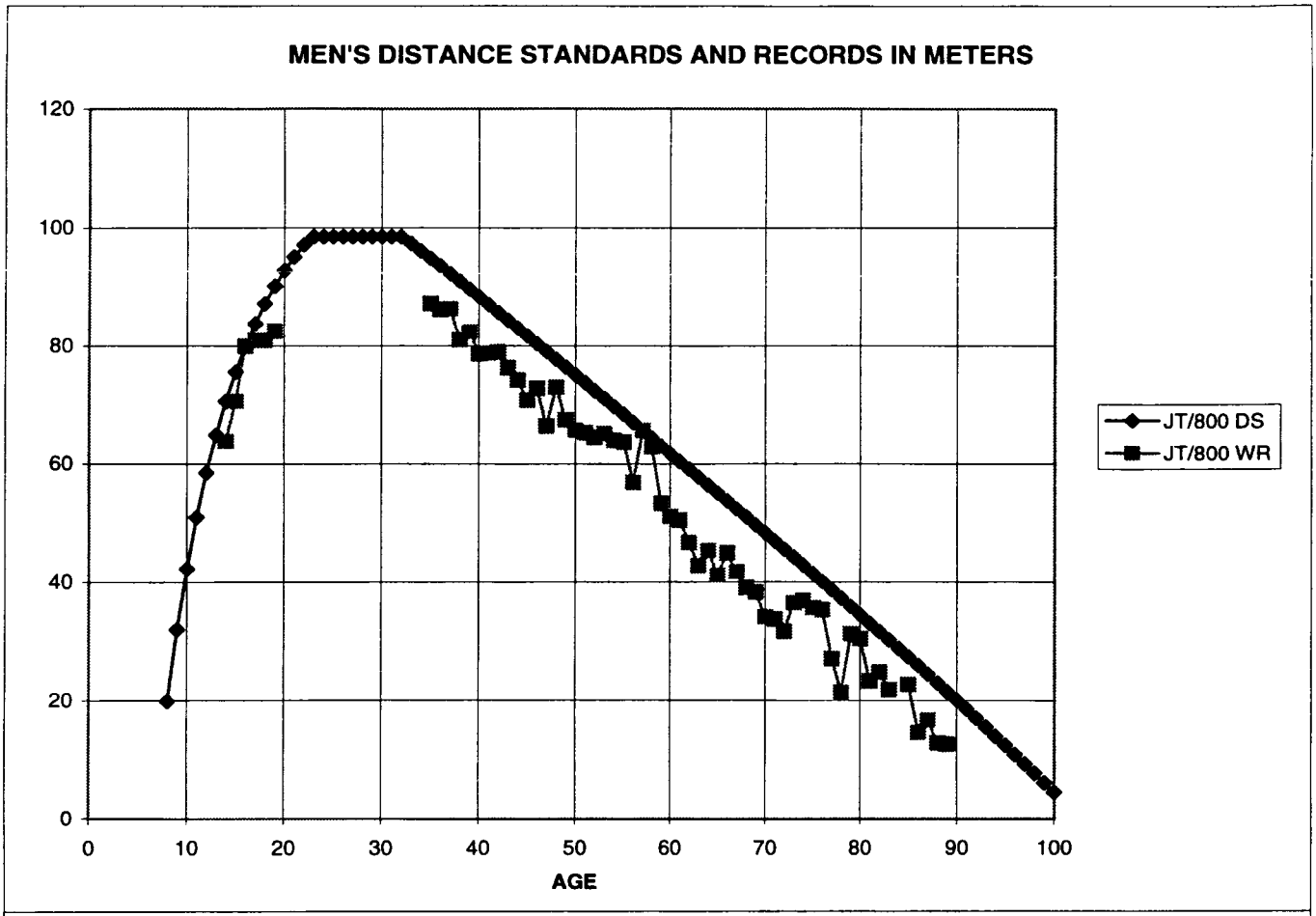

COMPARISON CHART: MEN'S JAVELIN THROW DISTANCE STANDARDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/800 DS
JT/600 DS

Figure 66


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/800 DS
JT/800 WR

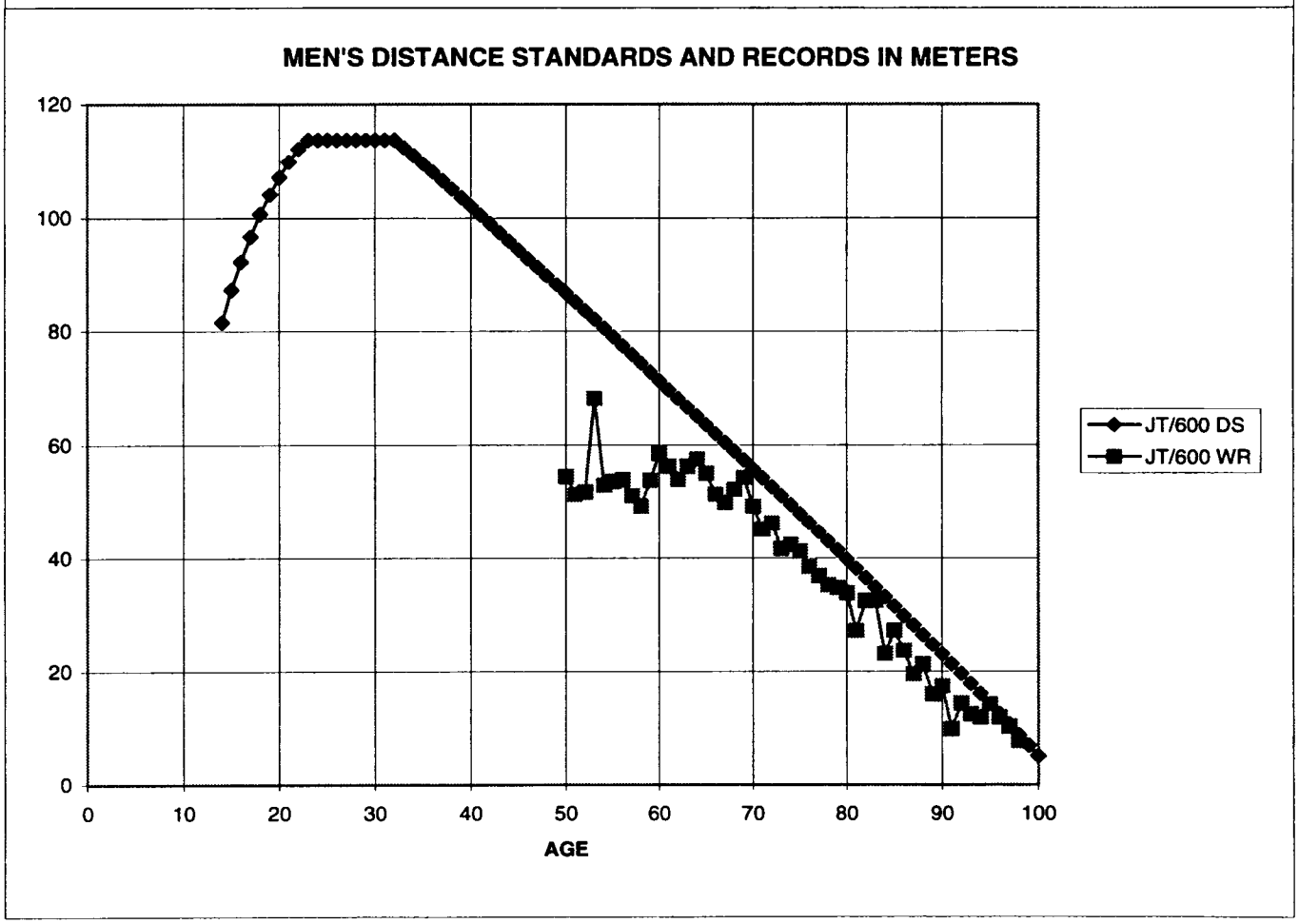
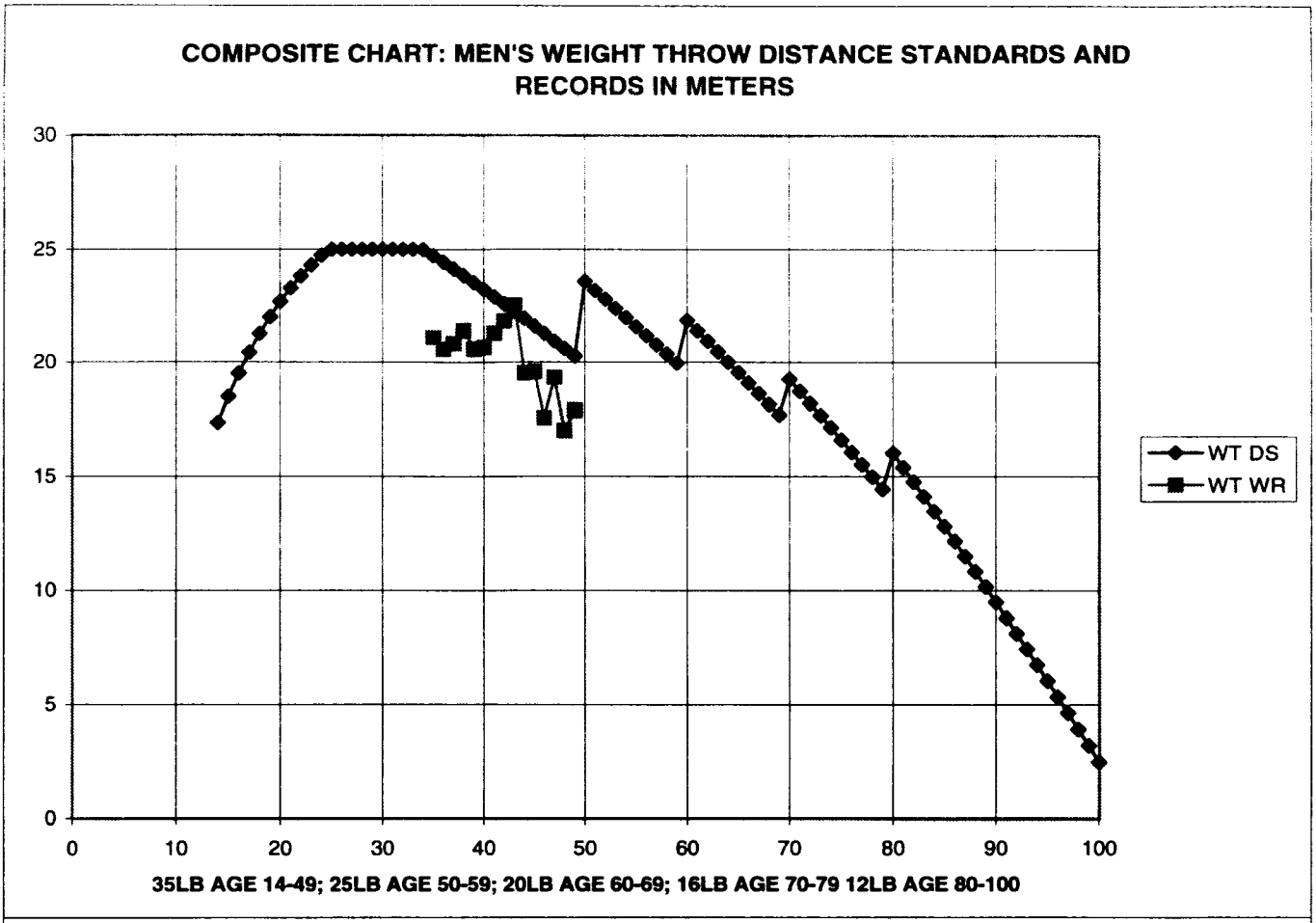

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/600 DS
JT/600 WR

Figure 67


COMPOSITE CHART: MEN'S WEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
WT DS
WT WR
35LB AGE 14-49; 25LB AGE 50-59; 20LB AGE 60-69; 16LB AGE 70-79 12LB AGE 80-100

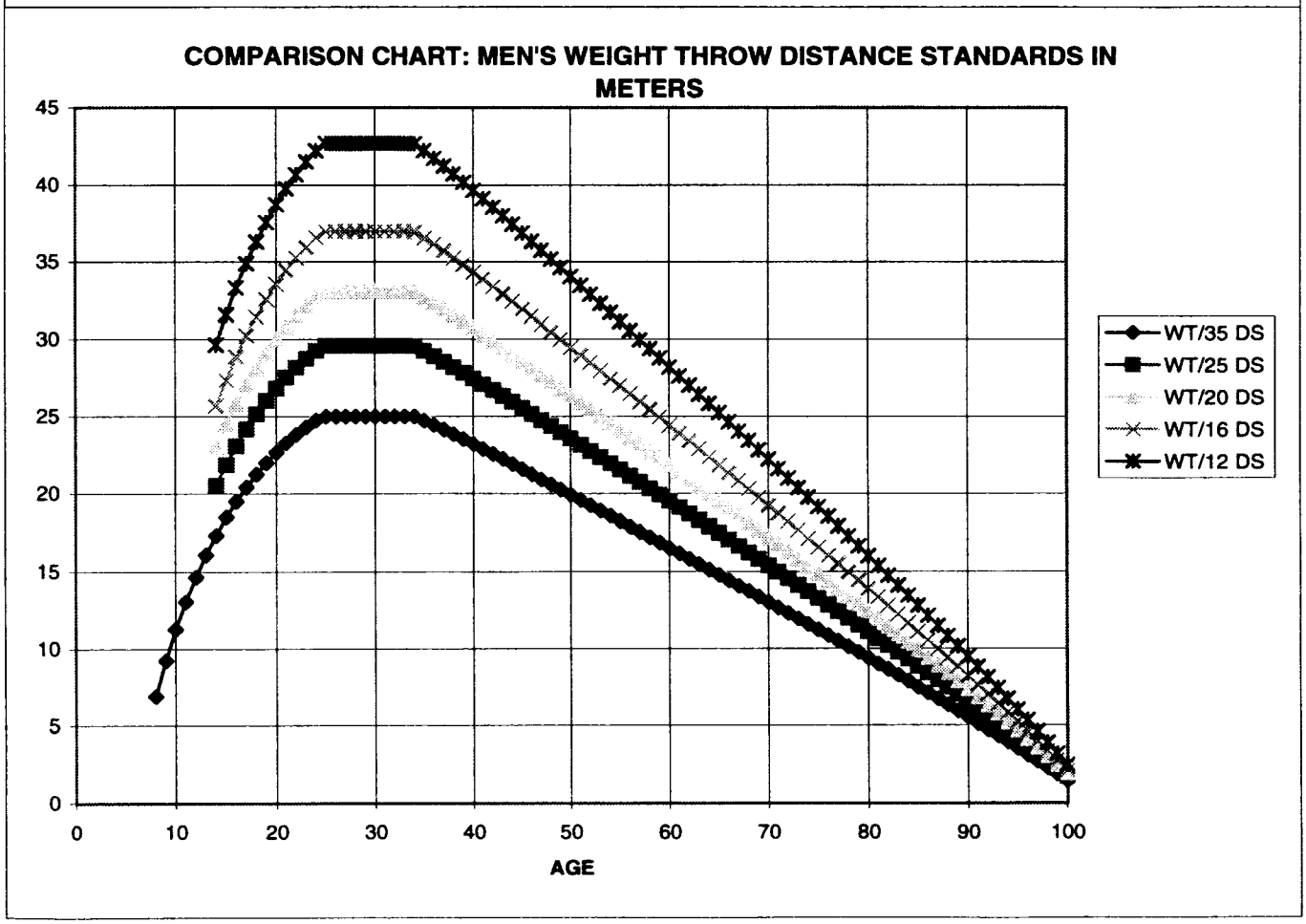
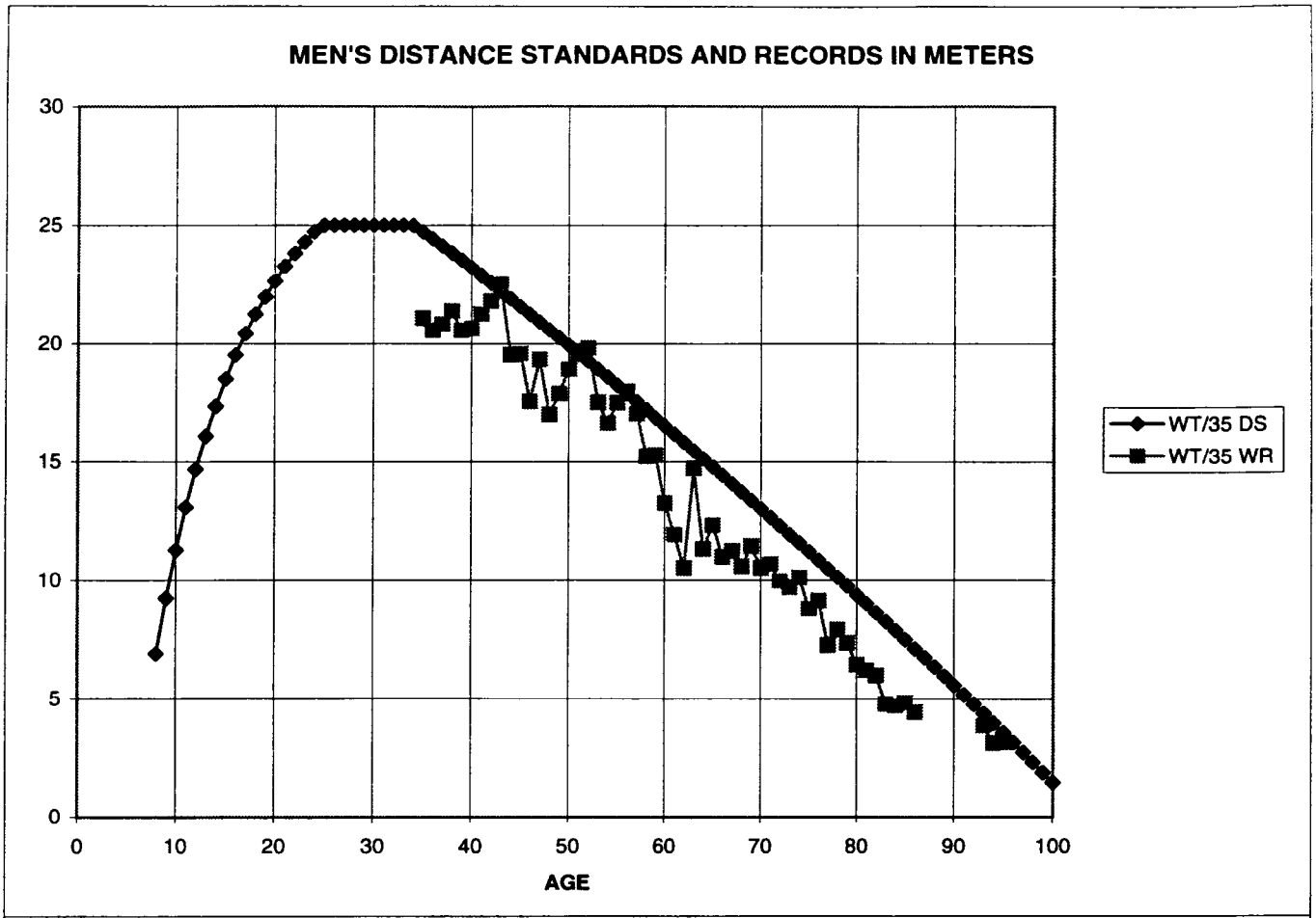

COMPARISON CHART: MEN'S WEIGHT THROW DISTANCE STANDARDS IN METERS
45
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35 DS
WT/25 DS
WT/20 DS
WT/16 DS
WT/12 DS

Figure 68


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35 DS
WT/35 WR

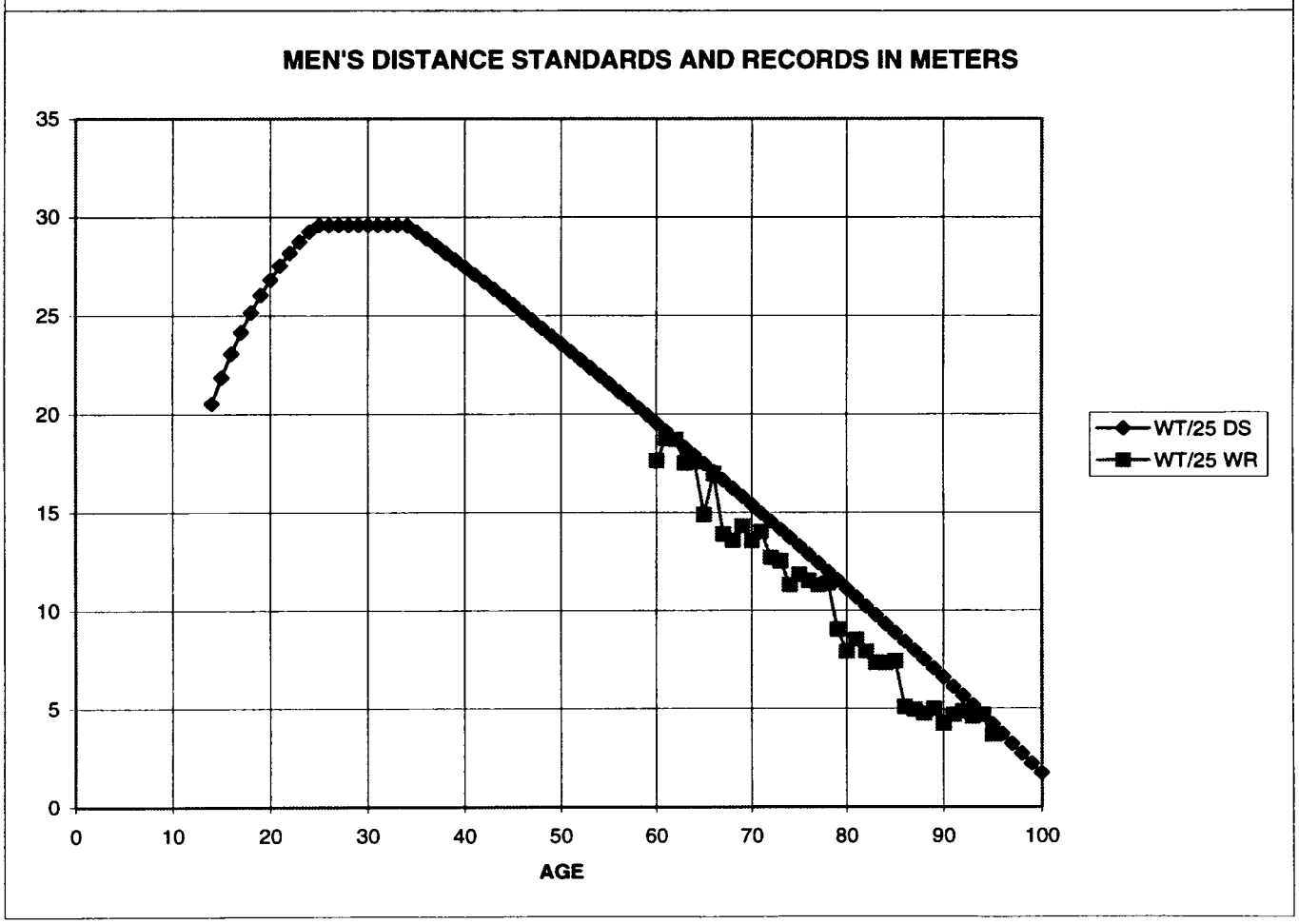
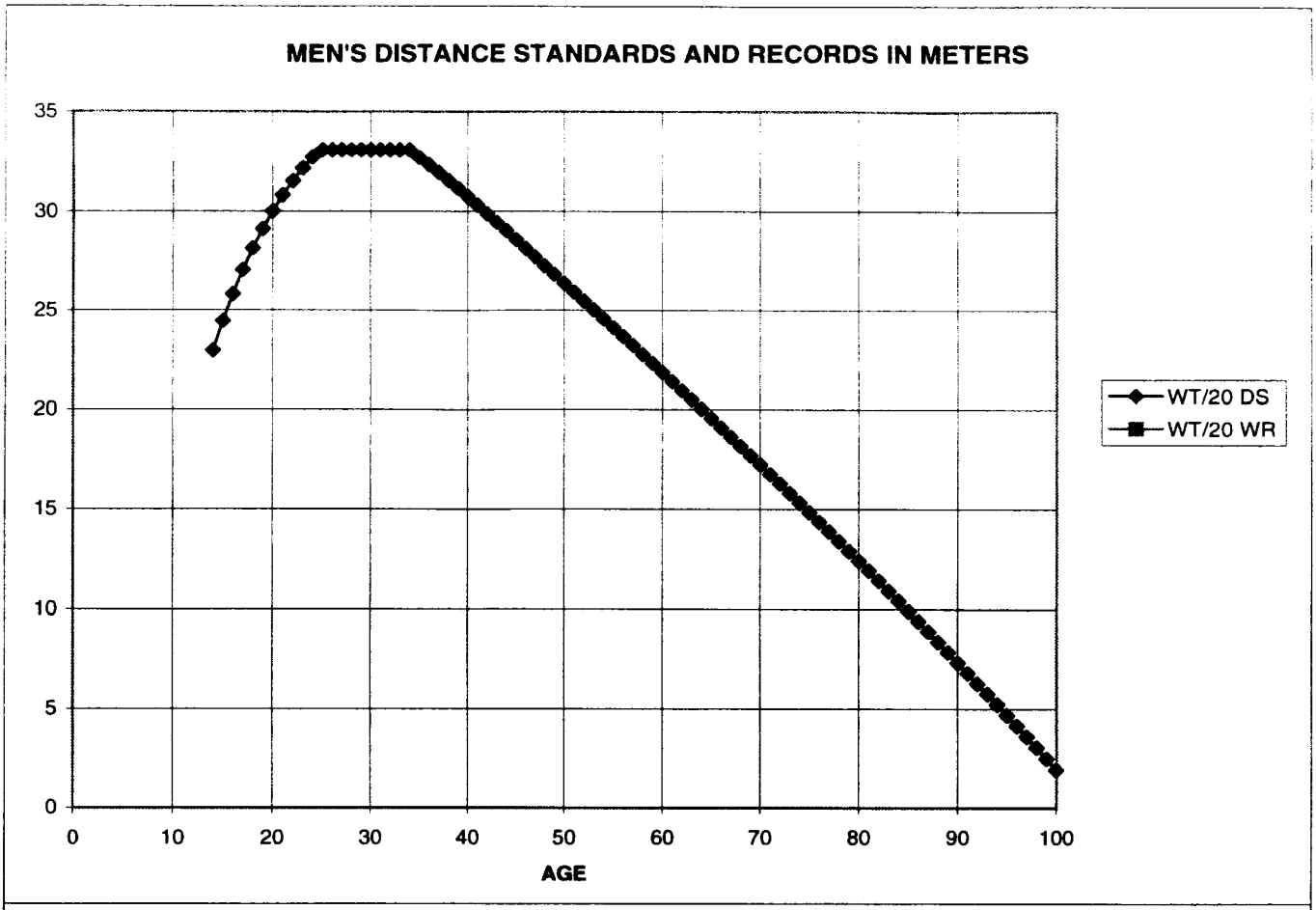

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/25 DS
WT/25 WR

Figure 69


MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/20 DS
WT/20 WR

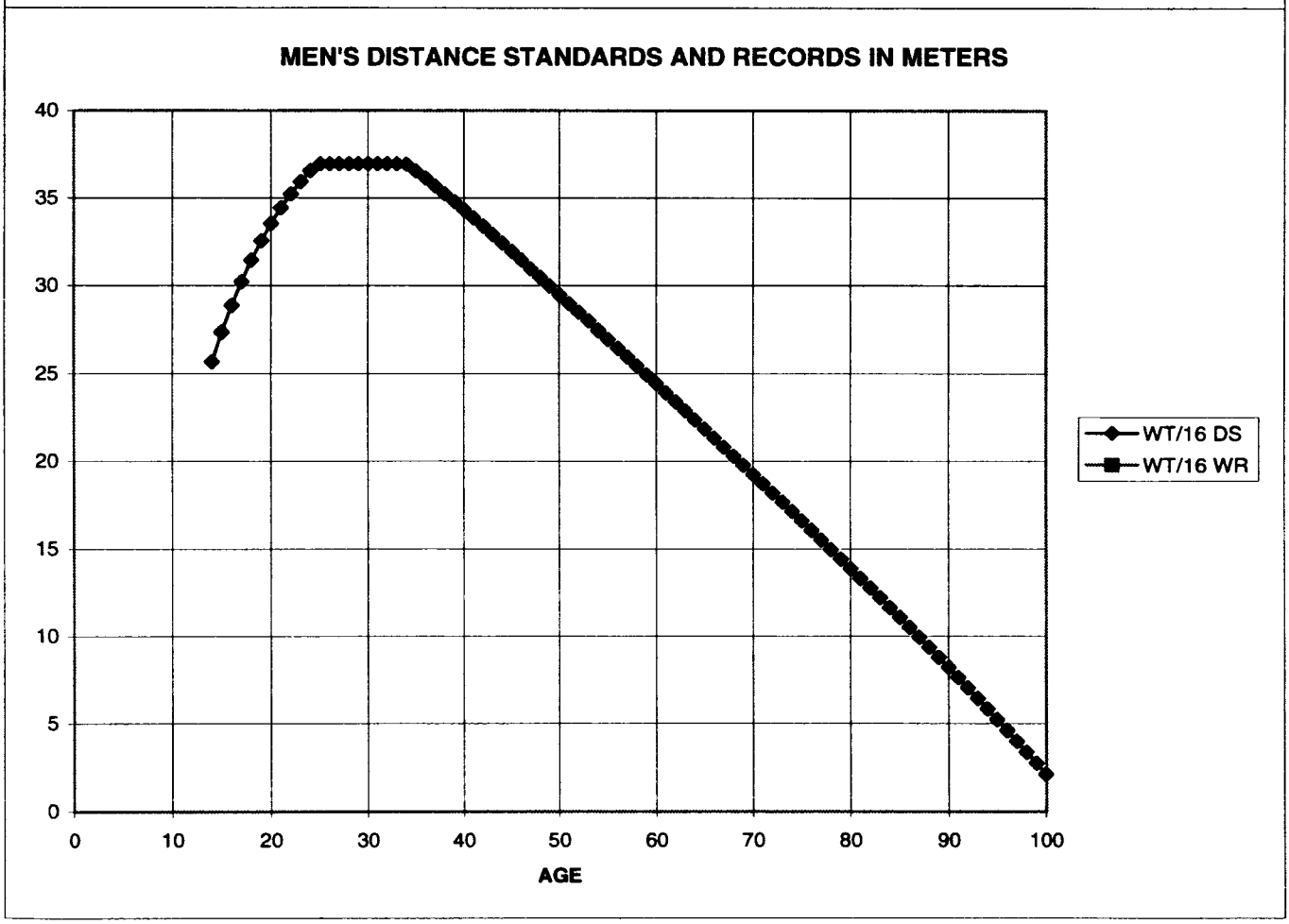

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/16 DS
WT/16 WR

Figure 70

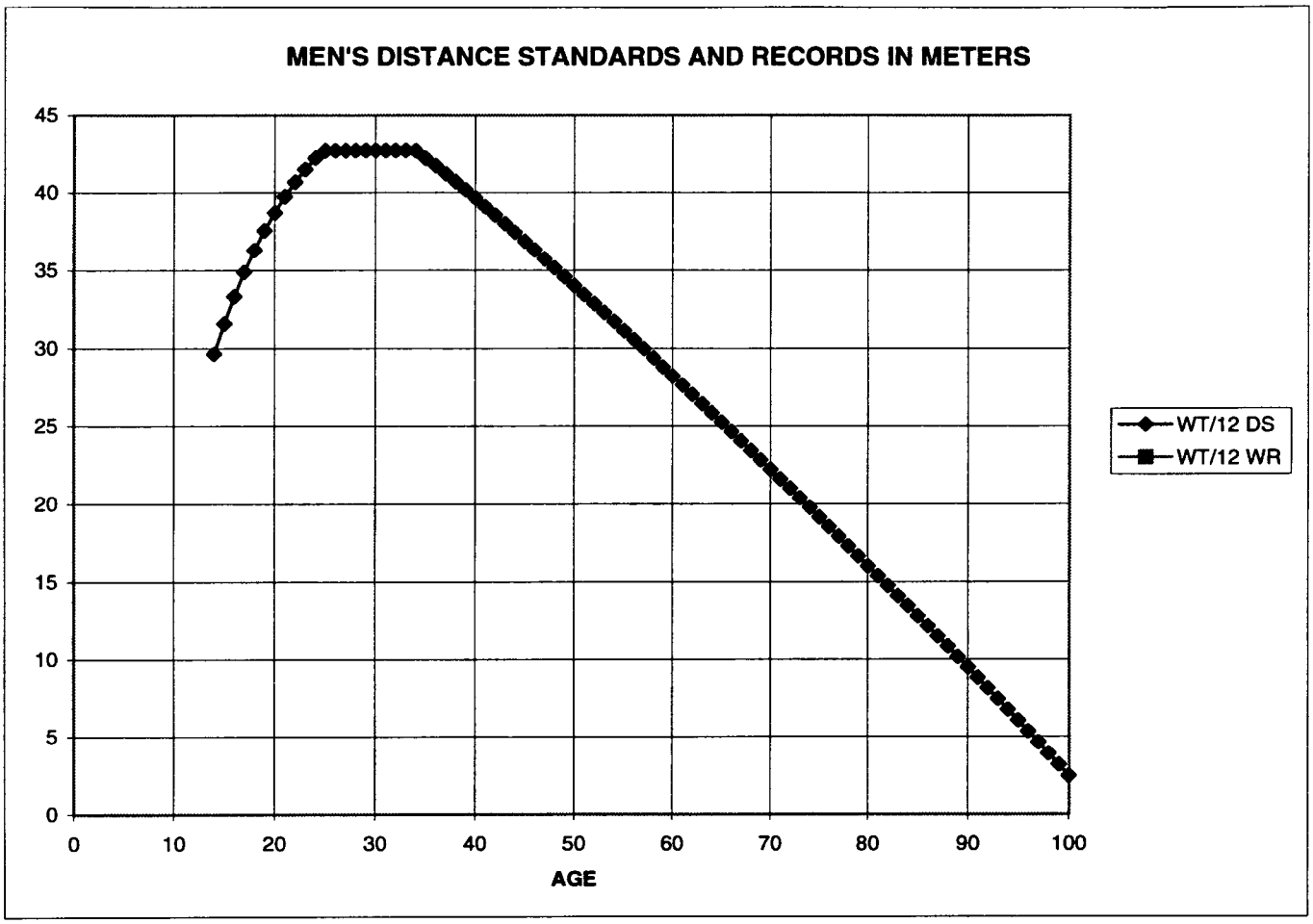
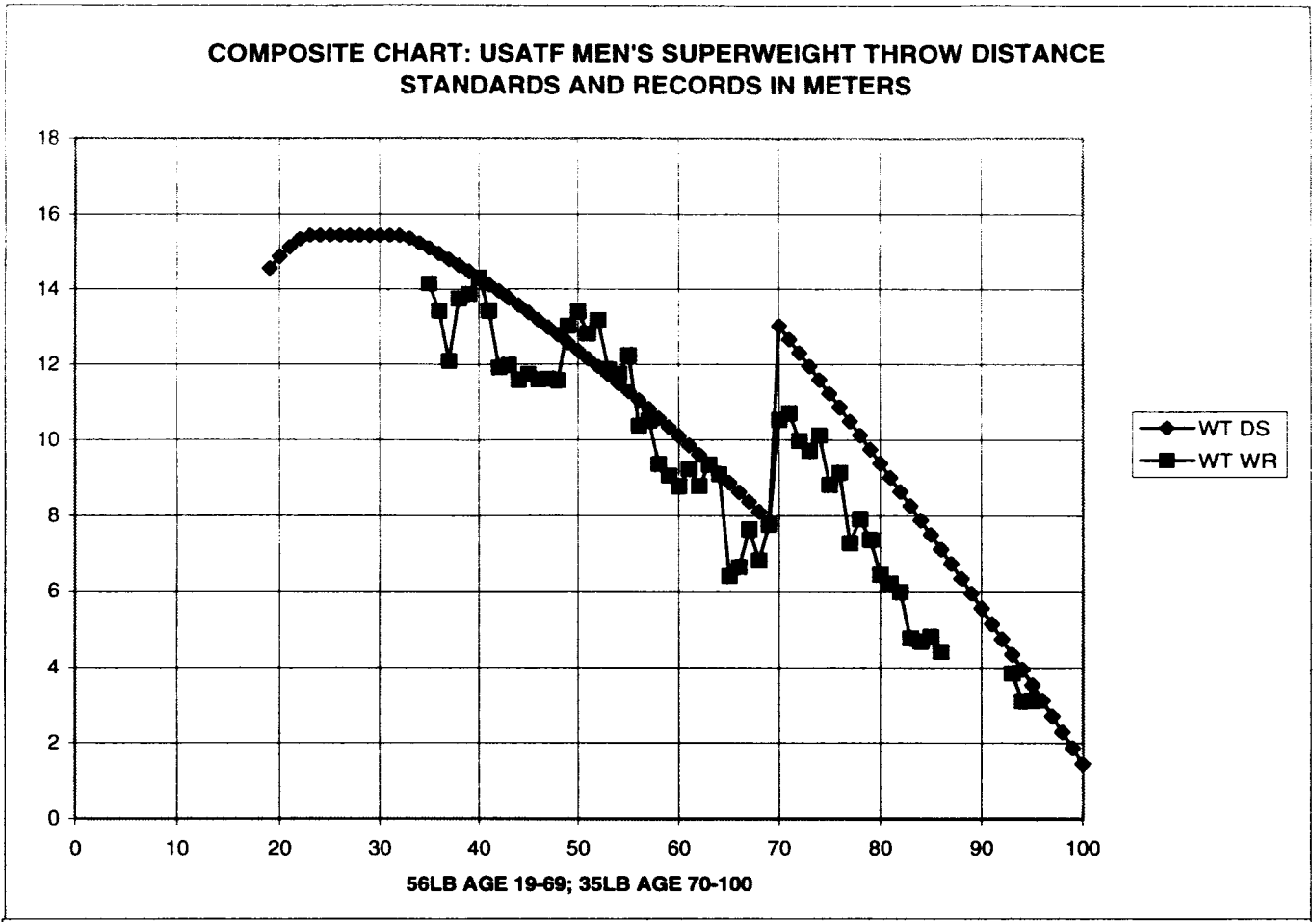

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
45
40
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/12 DS
WT/12 WR

Figure 71


COMPOSITE CHART: USATF MEN'S SUPERWEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS
18
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
56LB AGE 19-69; 35LB AGE 70-100
WT DS
WT WR

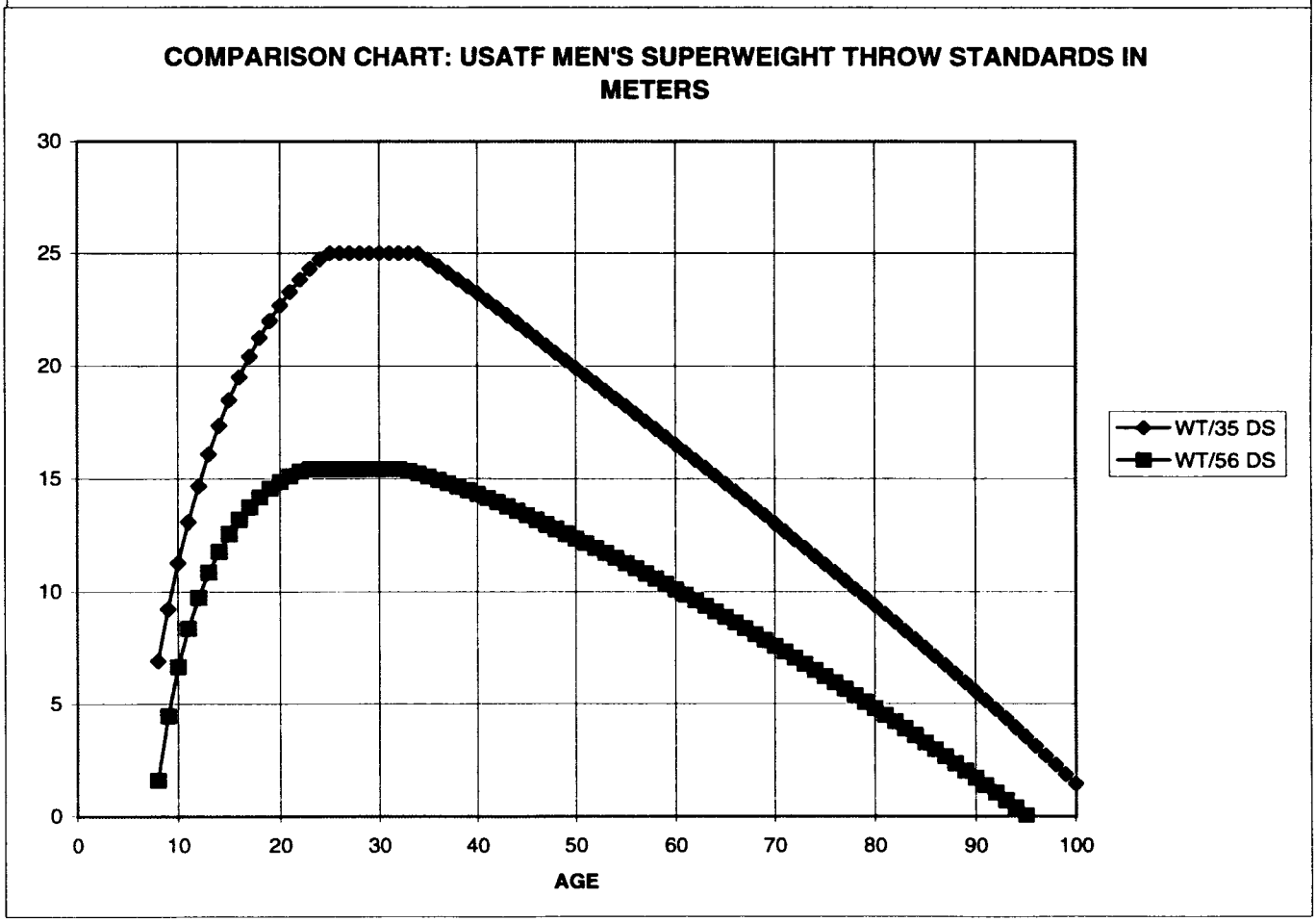
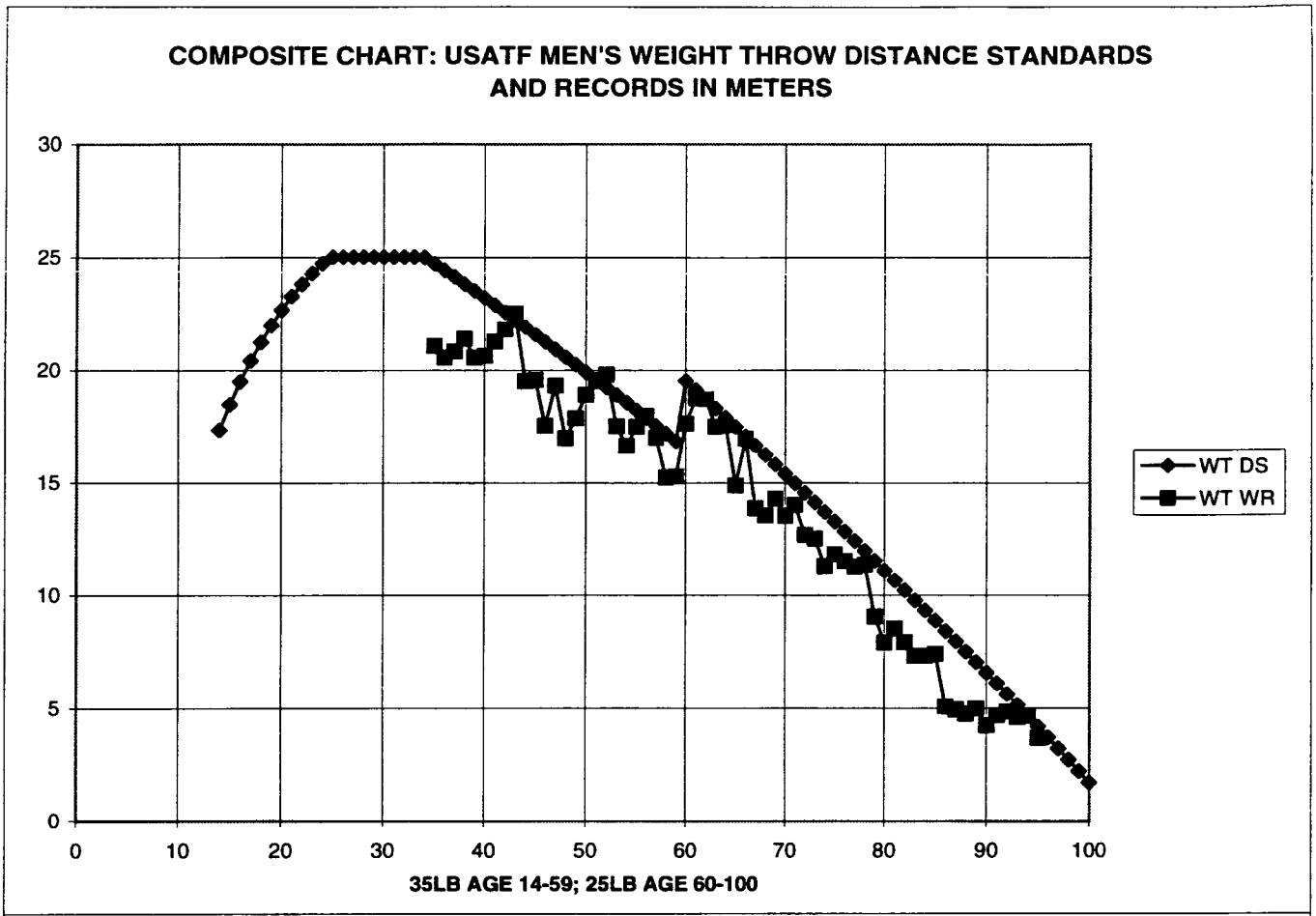

COMPARISON CHART: USATF MEN'S SUPERWEIGHT THROW STANDARDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35 DS
WT/56 DS

Figure 72


COMPOSITE CHART: USATF MEN'S WEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
35LB AGE 14-59; 25LB AGE 60-100
WT DS
WT WR

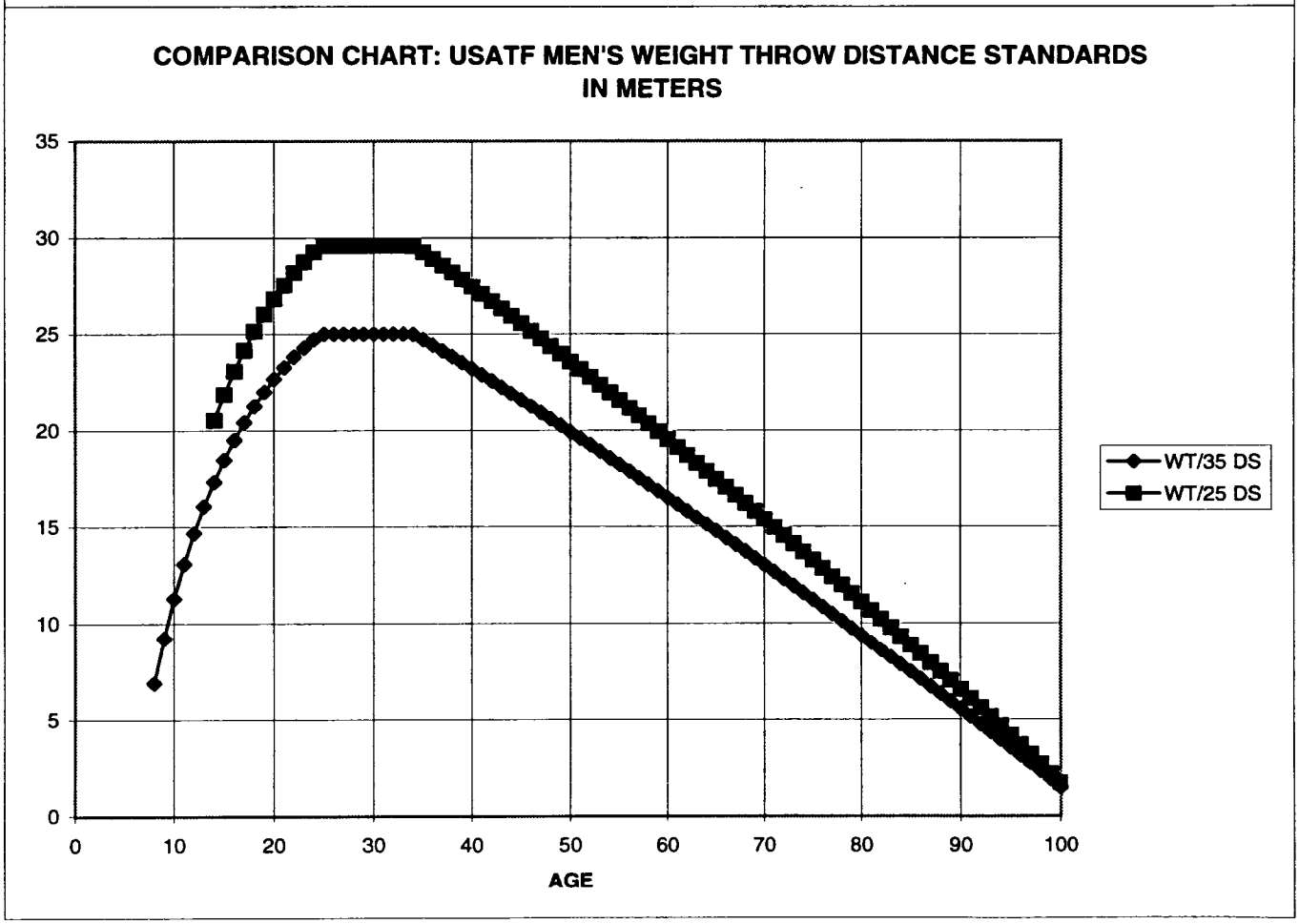
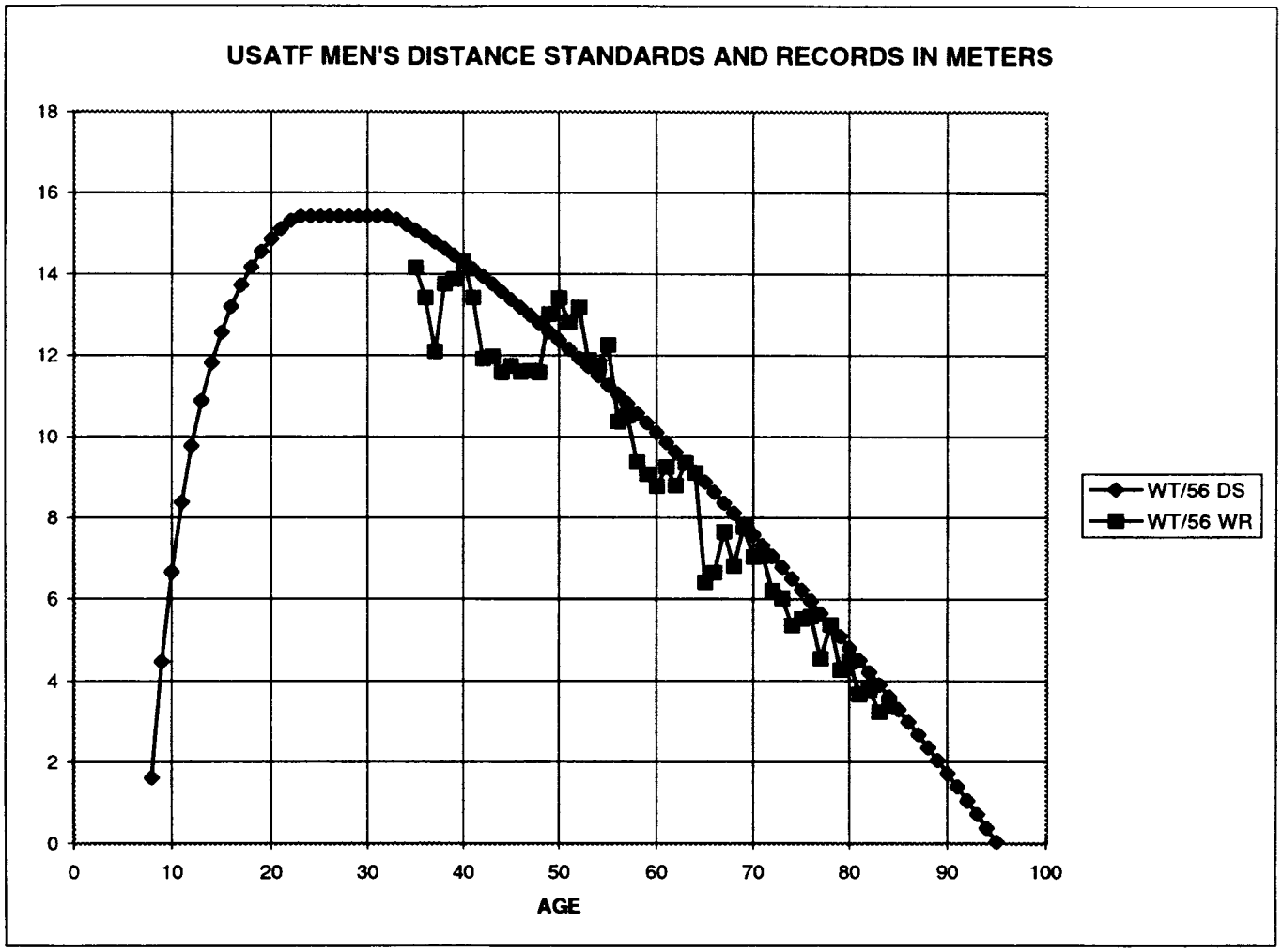

COMPARISON CHART: USATF MEN'S WEIGHT THROW DISTANCE STANDARDS IN METERS
35
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35 DS
WT/25 DS

Figure 73


USATF MEN'S DISTANCE STANDARDS AND RECORDS IN METERS
18
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/56 DS
WT/56 WR

Age-factor material is presented here in support of the age-factor standards table included at the beginning of the chapter. A discussion previously covered what age-factors represent, how they are derived and what some of the peculiarities are that characterize the derived results. The purpose here is to present the tabulated age-factor values in extended graphic plots which can be more easily visualized and interpreted.

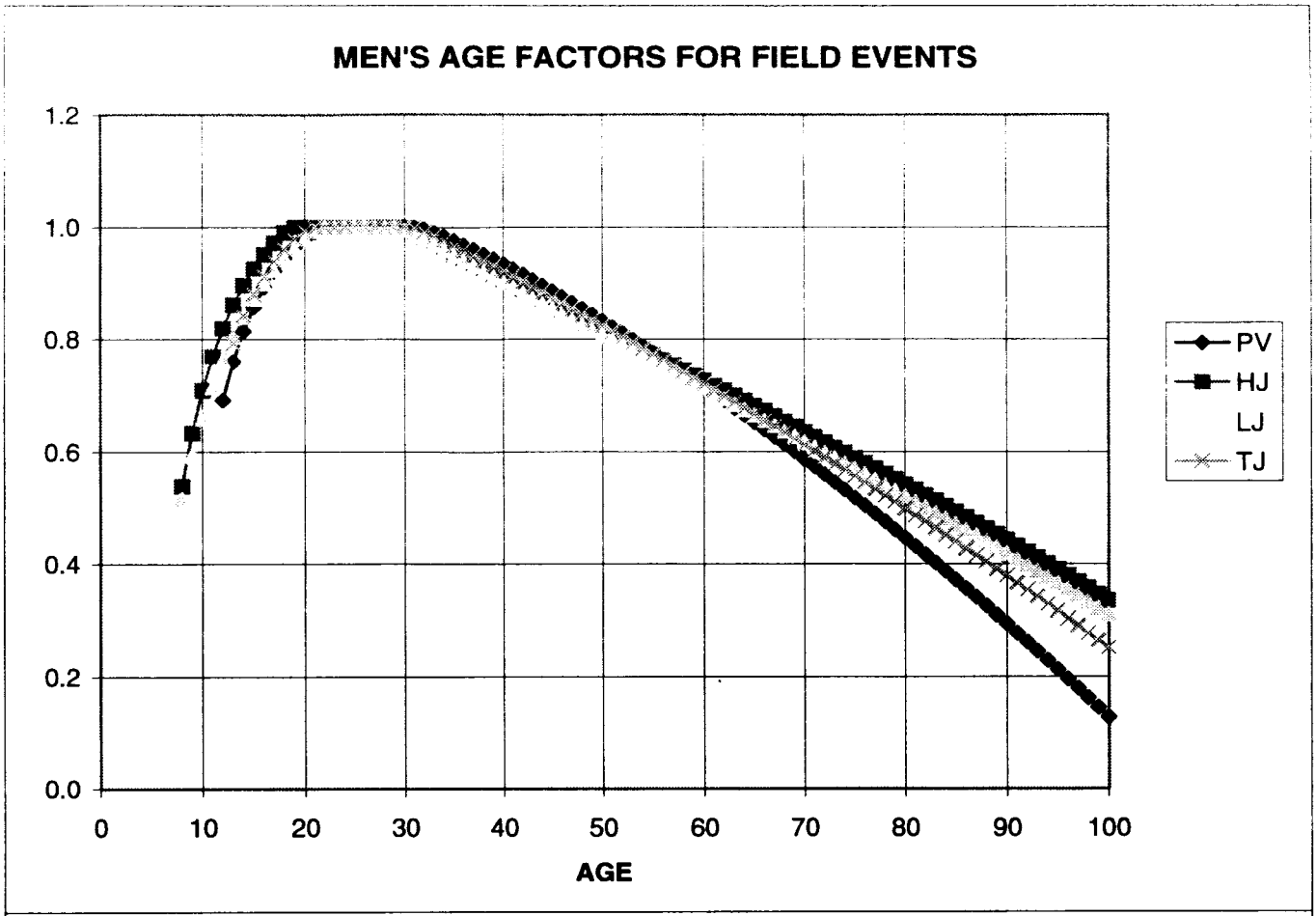
Three pages of graphs follow at figures 74, 75 and 77. These graphs are plots of age-factor values determined from the standards. In these graphs the relationship is age-factor value versus age for WAVA/USATF events. As previously discussed, the age range of the plotted age-factor values is 14 to 100 years of age rather than being just the age range specified by WAVA/USATF for event competition, so that the mathematical behavior of the extended curves can be determined and examined. These extended curves are not meant to imply that 99 year old shot putters are expected to put the 6k and 16 pound shots, or that 99 year old hammer, discus, javelin or weight throwers will use the heaviest implement of their events.

The resulting age-factor curves depicted in the three figures are really quite well behaved. It is also noted that the resulting male age-factor curves for field events are very nearly linear, especially those for throws.

ASSESSMENT OF FIELD EVENT STANDARDS FOR MEN.

In summary, masters and youth field event standards and age-factors for men have high levels of statistical confidence, but are not as consistent yet as running is in terms of the amount of variation between the standards and the records. Youth standards for the jumps are statistically strong and well documented for ages 8 and up. Youth standards are also statistically strong and well documented for the throwing events, with records provided for ages 14 and up - but are applicable to use of only the open class implement.

Figure 74


MEN'S AGE FACTORS FOR FIELD EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
PV
HJ
LJ
TJ

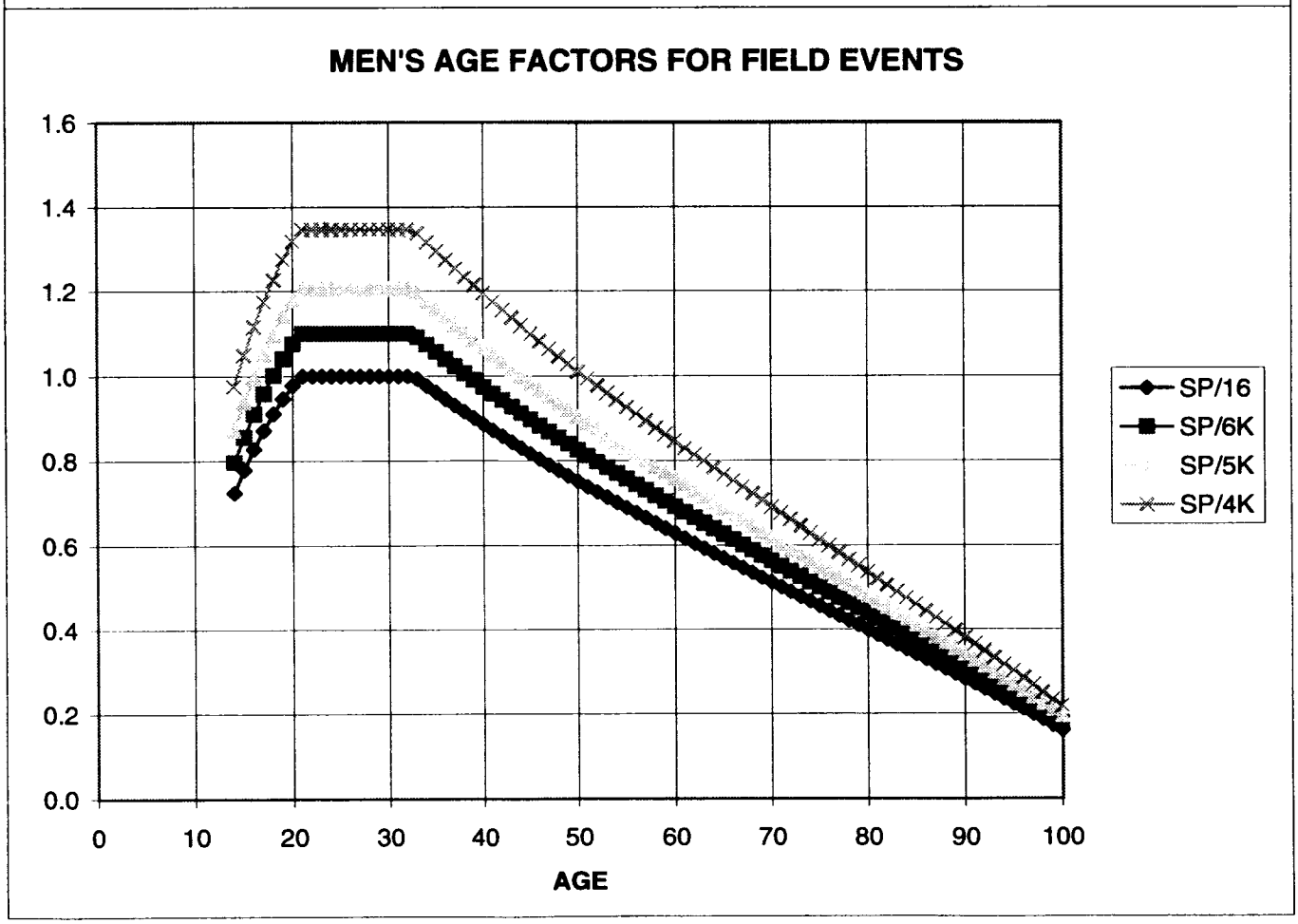
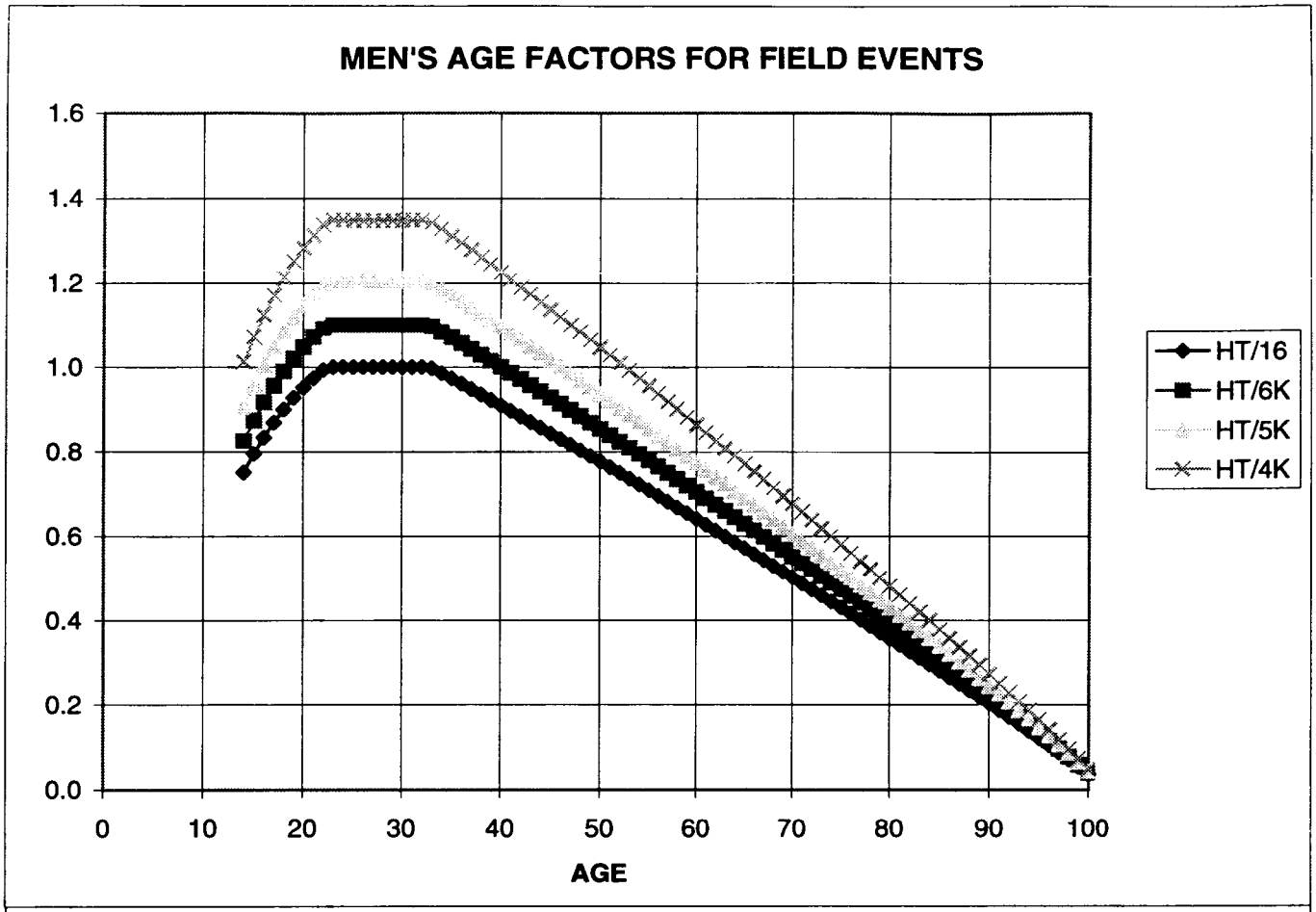

MEN'S AGE FACTORS FOR FIELD EVENTS
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/16
SP/6K
SP/5K
SP/4K

Figure 75


MEN'S AGE FACTORS FOR FIELD EVENTS
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/16
HT/6K
HT/5K
HT/4K

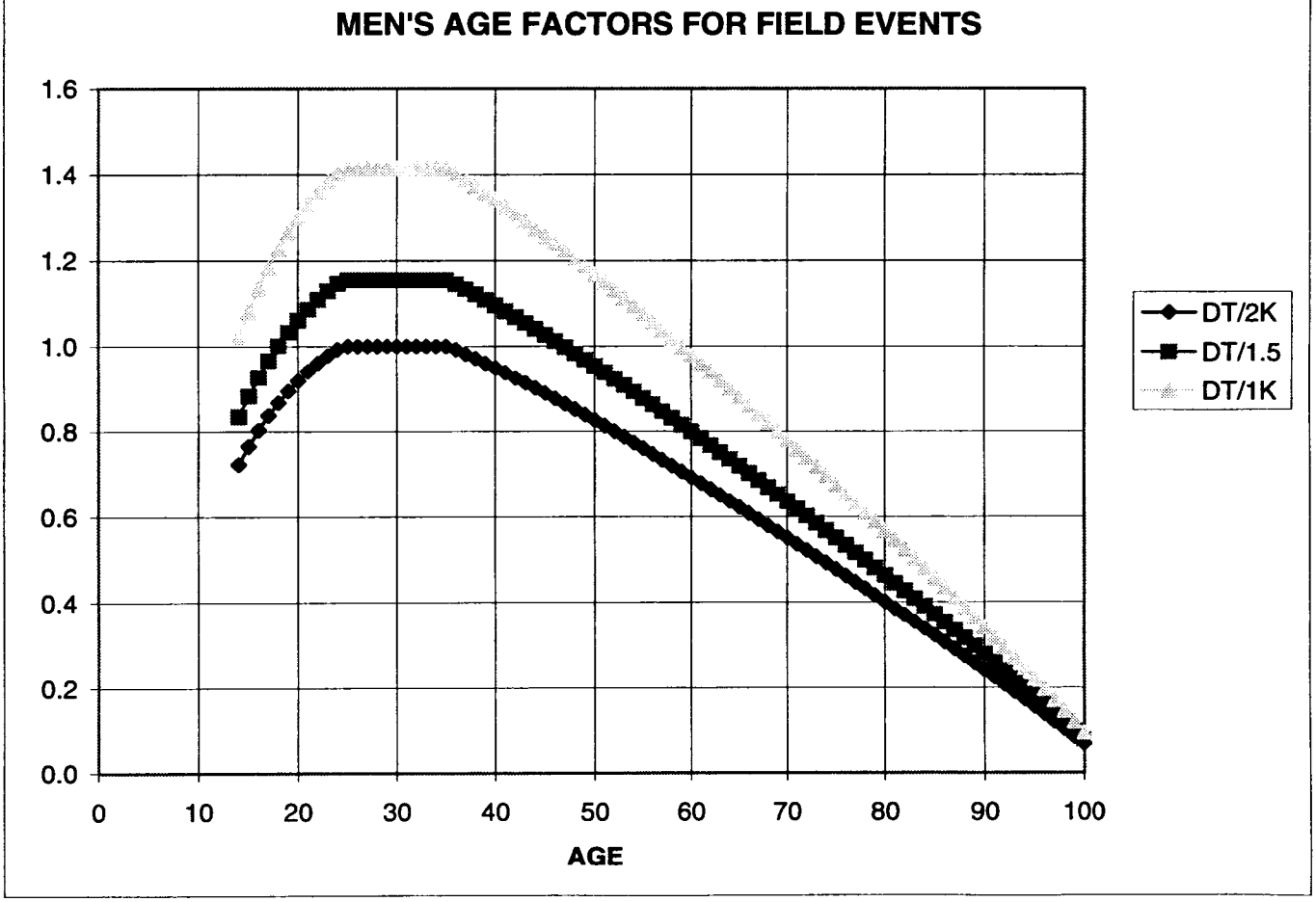
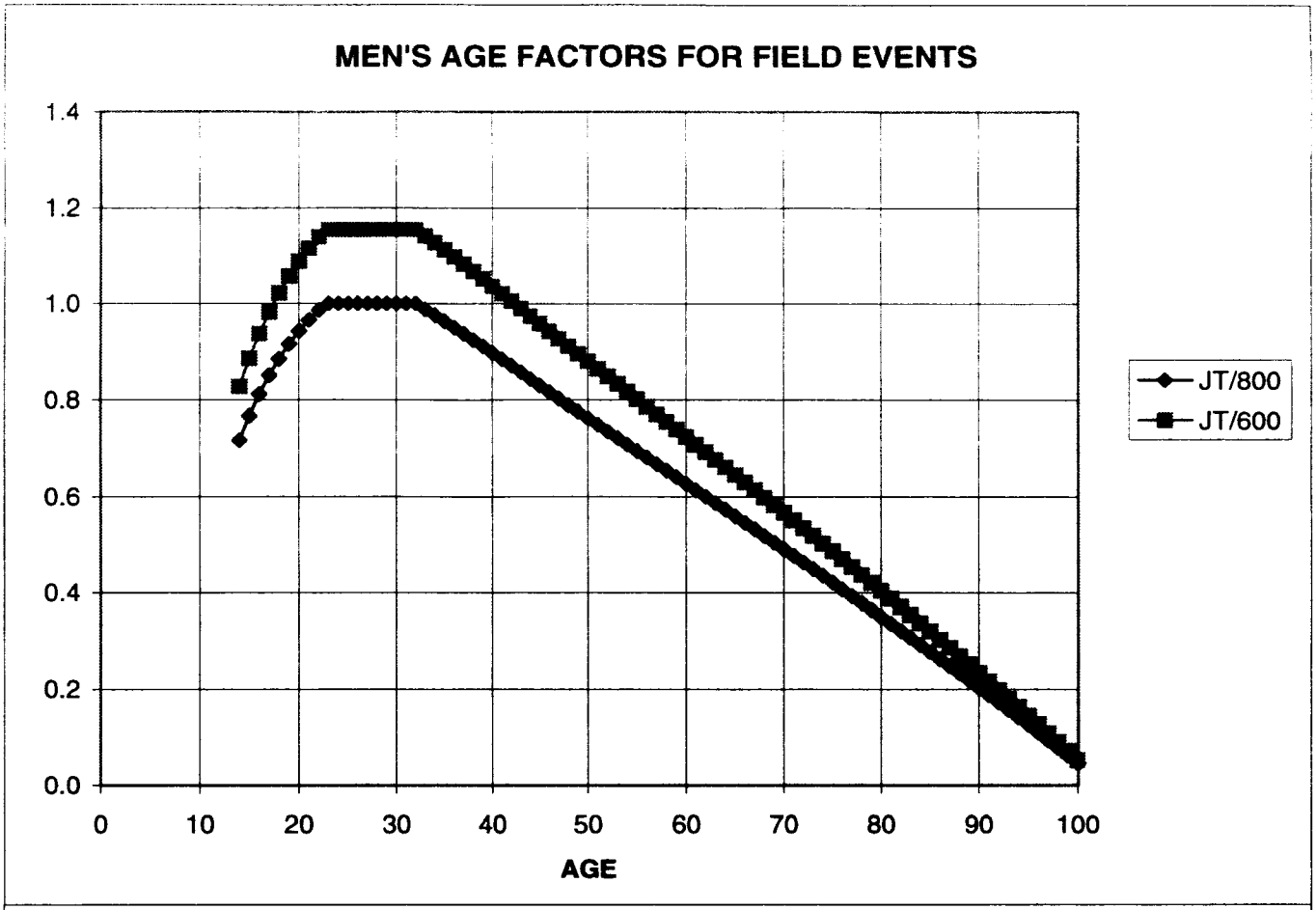
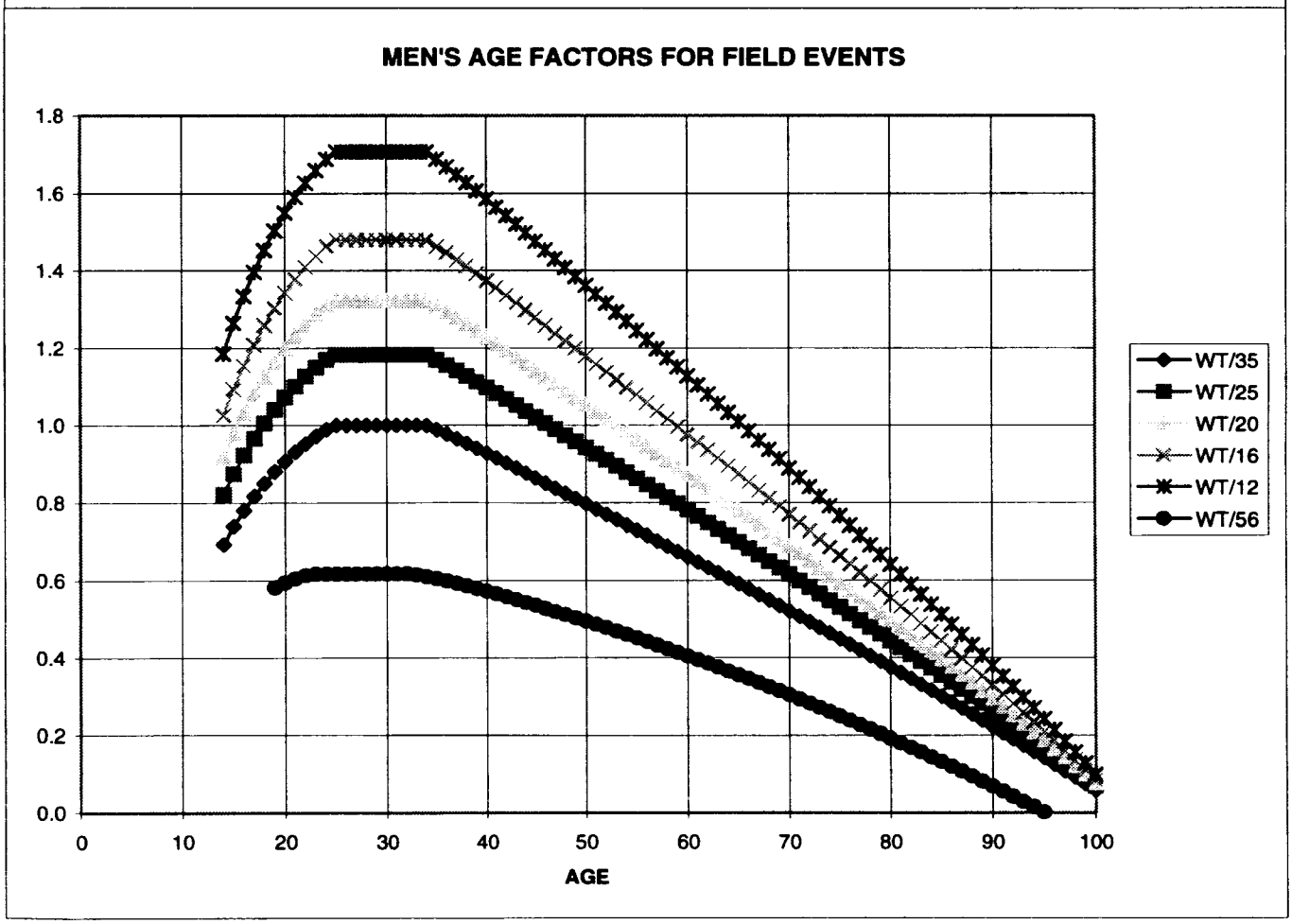

MEN'S AGE FACTORS FOR FIELD EVENTS
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/2K
DT/1.5
DT/1K

Figure 76


MEN'S AGE FACTORS FOR FIELD EVENTS
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/800
JT/600


MEN'S AGE FACTORS FOR FIELD EVENTS
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35
WT/25
WT/20
WT/16
WT/12
WT/56

The remainder of the chapter will include the same tables and graphs for women as were presented and discussed for men's field events. The same discussion applies to the material in the women's portion of the chapter and hence it will not be repeated. For an explanation of a specific table or graph for women, refer to the same table or graph for men and its narrative at the beginning of the chapter.

Refer to the table of Performance Level Of Actual Records for women at page 138 to see which women's records determined their resulting standards. The table shows performance level of actual records for a quick view of how many "world record" level performances are identified by the field event standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The table also illustrates the distribution of those records across all ages and events.

Refer to chapter 5 for a discussion of what records are included in or removed from the data base, and which records, if any, are not included in the plots of standards and records versus age graphs or in the tables listing performance level for actual records. The discussion in chapter 5 addresses running, hurdles, field events and walks in one coverage to preclude needless repetition of the discussion in each chapter while at the same time improving the overall understanding of which events are most and least impacted in this regard.

The chapter 5 discussion includes a specific explanation of how the field event throws were curve fitted, and discusses the methodology used to determine how certain records could be identified as being "too good". The women's shot put and discus throw are included in this discussion.

As was added for the men, there is now a USATF Superweight Throw event for women.

ASSESSMENT OF FIELD EVENT STANDARDS FOR WOMEN.

In summary, masters field events and age-factors for women have good levels of statistical confidence, being similar to their running events in terms of the amount of variation between the standards and the records. However, introduction of the pole vault, hammer throw and weight throw for women in 1993 leaves those events still somewhat weak in terms of the maturity and stability of their records. Youth standards for women in this study are statistically weak because only world junior records were available for curve fitting purposes. The women's records are less competitively mature than the men's simply because participation has been less for women than for men over the years, but their better records fully define and support the standards and age factors that have resulted. Women's field event standards are based solely on their records as a completely separate effort and are not adjusted or otherwise modeled on the men's standards.

WOMEN'S FIELD EVENT STANDARDS AND AGE FACTORS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		1.06	3.55						
9		1.22	4.03						
10		1.36	4.47						
11		1.48	4.87						
12		1.59	5.25		SP/4k	HT/4k	DT/1k	JT/600	WT/20
13		1.68	5.59						
14	3.57	1.76	5.91	11.86	15.97	66.46	61.05	54.88	18.07
15	3.79	1.83	6.20	13.17	17.20	72.39	65.23	59.63	19.50
16	3.99	1.90	6.48	13.73	18.37	78.00	68.90	64.05	20.79
17	4.16	1.96	6.74	14.22	19.48	83.32	72.12	68.17	21.97
18	4.31	2.01	6.98	14.66	20.53	88.41	74.96	72.01	23.03
19	4.44	2.06	7.21	15.06	21.54	93.29	76.80	75.61	24.00
						HT/16lb			WT/35
OC	4.59	2.09	7.52	15.50	22.63	72.64	76.80	80.00	19.15
						HT/4k			WT/20
30	4.58	2.07	7.52	15.50	22.63	93.72	74.86	80.00	25.33
31	4.51	2.04	7.52	15.35	22.52	91.03	73.48	79.89	25.33
32	4.44	2.02	7.47	15.15	21.96	88.48	72.12	77.92	24.87
33	4.37	1.99	7.35	14.94	21.43	86.05	70.78	76.02	24.39
34	4.30	1.97	7.23	14.74	20.92	83.73	69.45	74.16	23.91
35	4.23	1.94	7.12	14.54	20.43	81.51	68.15	72.37	23.43
36	4.17	1.92	7.01	14.34	19.96	79.39	66.87	70.62	22.96
37	4.10	1.90	6.90	14.14	19.51	77.34	65.60	68.91	22.50
38	4.03	1.87	6.79	13.94	19.08	75.37	64.36	67.26	22.05
39	3.96	1.85	6.69	13.75	18.66	73.47	63.13	65.64	21.60
40	3.89	1.83	6.59	13.56	18.25	71.64	61.92	64.06	21.16
41	3.83	1.80	6.50	13.37	17.86	69.87	60.73	62.52	20.72
42	3.76	1.78	6.40	13.18	17.48	68.15	59.55	61.01	20.29
43	3.69	1.76	6.31	12.99	17.11	66.48	58.39	59.54	19.87
44	3.63	1.74	6.22	12.81	16.75	64.86	57.24	58.09	19.45
45	3.56	1.71	6.13	12.62	16.40	63.28	61.69	56.68	19.04
46	3.50	1.69	6.04	12.44	16.06	61.74	60.13	55.29	18.63
47	3.44	1.67	5.96	12.26	15.72	60.25	58.64	53.92	18.23
48	3.37	1.65	5.87	12.08	15.40	58.79	57.23	52.59	17.84
49	3.31	1.63	5.79	11.91	15.08	57.36	55.88	51.27	17.45
					SP/3k	HT/3k		JT/400	WT/16
50	3.25	1.61	5.71	11.73	17.06	64.62	50.63	61.21	19.07
51	3.18	1.59	5.63	11.56	16.70	63.04	49.57	59.64	18.65
52	3.12	1.57	5.55	11.38	16.36	61.49	48.51	58.10	18.22
53	3.06	1.55	5.47	11.21	16.02	59.97	47.47	56.59	17.80
54	3.00	1.53	5.40	11.04	15.69	58.48	46.43	55.09	17.39
55	2.94	1.51	5.32	10.87	15.36	57.02	45.40	53.61	16.98
56	2.88	1.49	5.25	10.70	15.04	55.58	44.38	52.15	16.57
57	2.82	1.47	5.17	10.53	14.72	54.16	43.36	50.71	16.17
58	2.76	1.45	5.10	10.36	14.41	52.76	42.35	49.28	15.77
59	2.70	1.43	5.03	10.20	14.10	51.38	41.34	47.87	15.37
									WT/12
60	2.64	1.41	4.96	10.03	13.80	50.02	40.34	46.47	17.30
61	2.58	1.39	4.89	9.86	13.50	48.68	39.34	45.08	16.85
62	2.52	1.37	4.82	9.70	13.20	47.35	38.35	43.70	16.40
63	2.46	1.35	4.75	9.53	12.91	46.04	37.36	42.34	15.95
64	2.40	1.33	4.68	9.37	12.62	44.74	36.38	40.99	15.51
65	2.34	1.31	4.61	9.21	12.33	43.46	35.39	39.64	15.07
66	2.28	1.29	4.55	9.04	12.04	42.18	34.41	38.31	14.63
67	2.22	1.27	4.48	8.88	11.76	40.92	33.43	36.98	14.19
68	2.16	1.26	4.41	8.72	11.48	39.66	32.46	35.66	13.76
69	2.10	1.24	4.35	8.55	11.20	38.42	31.48	34.34	13.33
70	2.04	1.22	4.28	8.39	10.93	37.18	30.50	33.04	12.90
71	1.98	1.20	4.22	8.23	10.65	35.96	29.53	31.73	12.47
72	1.92	1.18	4.15	8.06	10.38	34.73	28.56	30.43	12.04
73	1.86	1.16	4.08	7.90	10.11	33.52	27.58	29.14	11.61
74	1.80	1.14	4.02	7.74	9.83	32.31	26.61	27.85	11.19
75	1.74	1.12	3.96	7.57	9.57	31.10	25.63	26.56	10.76
76	1.68	1.10	3.89	7.41	9.30	29.90	24.65	25.28	10.34
77	1.62	1.08	3.83	7.25	9.03	28.70	23.67	23.99	9.91
78	1.56	1.06	3.76	7.08	8.76	27.51	22.69	22.71	9.49
79	1.50	1.05	3.70	6.92	8.50	26.31	21.71	21.43	9.07
80	1.44	1.03	3.63	6.75	8.23	25.12	20.73	20.15	8.65
81	1.38	1.01	3.57	6.59	7.96	23.93	19.74	18.87	8.23
82	1.32	0.99	3.50	6.42	7.70	22.75	18.75	17.59	7.80
83	1.26	0.97	3.44	6.25	7.43	21.56	17.76	16.31	7.38
84	1.20	0.95	3.38	6.09	7.17	20.37	16.76	15.03	6.96
85	1.13	0.93	3.31	5.92	6.90	19.18	15.76	13.74	6.54
86	1.07	0.91	3.25	5.75	6.64	17.99	14.75	12.45	6.11
87	1.01	0.89	3.18	5.58	6.37	16.79	13.74	11.16	5.69
88	0.95	0.87	3.12	5.41	6.10	15.60	12.73	9.87	5.27
89	0.88	0.85	3.05	5.24	5.84	14.40	11.71	8.57	4.84
90	0.82	0.83	2.99	5.07	5.57	13.20	10.69	7.27	4.42
91	0.76	0.81	2.92	4.90	5.30	11.99	9.66	5.96	3.99
92	0.69	0.79	2.86	4.72	5.03	10.79	8.62	4.65	3.56
93	0.63	0.77	2.79	4.55	4.76	9.57	7.58	3.34	3.14
94	0.56	0.75	2.72	4.37	4.49	8.35	6.54	2.01	2.71
95	0.50	0.73	2.66	4.20	4.22	7.13	5.48	0.69	2.27
96	0.43	0.71	2.59	4.02	3.94	5.90	4.42		1.84
97	0.37	0.69	2.52	3.84	3.67	4.67	3.35		1.41
98	0.30	0.67	2.46	3.66	3.39	3.42	2.28		0.97
99	0.23	0.65	2.39	3.48	3.11	2.17	1.19		0.54
100	0.16	0.63	2.32	3.29	2.83	0.92	0.10		0.10

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT
8		0.5087	0.4723						
9		0.5852	0.5363						
10		0.6512	0.5946						
11		0.7086	0.6482						
12		0.7590	0.6975		SP/4k	HT/4k	DT/1k	JT/600	WT/20
13		0.8034	0.7431						
14	0.7786	0.8428	0.7854	0.7649	0.7057	0.9149	0.7950	0.6860	0.9438
15	0.8262	0.8778	0.8248	0.8499	0.7602	0.9965	0.8494	0.7454	1.0183
16	0.8683	0.9090	0.8615	0.8856	0.8117	1.0737	0.8971	0.8006	1.0858
17	0.9056	0.9370	0.8959	0.9175	0.8607	1.1471	0.9391	0.8521	1.1470
18	0.9387	0.9619	0.9282	0.9460	0.9073	1.2171	0.9760	0.9002	1.2026
19	0.9679	0.9842	0.9586	0.9715	0.9520	1.2843	1.0000	0.9452	1.2531
						HT/16lb			WT/35
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
						HT/4k			WT/20
30	0.9981	0.9902	1.0000	1.0000	1.0000	1.2901	0.9747	1.0000	1.3229
31	0.9831	0.9780	1.0000	0.9903	0.9950	1.2531	0.9568	0.9986	1.3229
32	0.9680	0.9659	0.9939	0.9772	0.9703	1.2180	0.9391	0.9740	1.2988
33	0.9528	0.9539	0.9777	0.9640	0.9468	1.1846	0.9216	0.9502	1.2734
34	0.9377	0.9420	0.9620	0.9510	0.9243	1.1527	0.9044	0.9271	1.2483
35	0.9226	0.9303	0.9467	0.9380	0.9028	1.1222	0.8874	0.9046	1.2235
36	0.9075	0.9187	0.9319	0.9251	0.8821	1.0929	0.8707	0.8827	1.1990
37	0.8926	0.9072	0.9176	0.9123	0.8622	1.0647	0.8542	0.8614	1.1749
38	0.8777	0.8959	0.9036	0.8997	0.8430	1.0376	0.8380	0.8407	1.1512
39	0.8630	0.8847	0.8900	0.8871	0.8244	1.0115	0.8220	0.8205	1.1278
40	0.8483	0.8736	0.8767	0.8747	0.8065	0.9862	0.8062	0.8008	1.1047
41	0.8338	0.8627	0.8638	0.8624	0.7892	0.9618	0.7907	0.7815	1.0820
42	0.8193	0.8519	0.8511	0.8502	0.7723	0.9381	0.7754	0.7626	1.0596
43	0.8050	0.8412	0.8388	0.8382	0.7560	0.9152	0.7603	0.7442	1.0375
44	0.7908	0.8307	0.8267	0.8262	0.7401	0.8928	0.7454	0.7261	1.0157
45	0.7767	0.8202	0.8149	0.8144	0.7246	0.8711	0.8033	0.7085	0.9942
46	0.7626	0.8099	0.8033	0.8027	0.7096	0.8500	0.7829	0.6911	0.9730
47	0.7487	0.7997	0.7920	0.7911	0.6949	0.8294	0.7636	0.6741	0.9521
48	0.7349	0.7896	0.7808	0.7796	0.6805	0.8093	0.7452	0.6573	0.9314
49	0.7211	0.7795	0.7699	0.7681	0.6664	0.7896	0.7276	0.6409	0.9110
					SP/3k	HT/3k		JT/400	WT/16
50	0.7075	0.7696	0.7591	0.7568	0.7537	0.8896	0.6593	0.7651	0.9960
51	0.6939	0.7597	0.7485	0.7455	0.7381	0.8678	0.6454	0.7455	0.9737
52	0.6804	0.7500	0.7381	0.7343	0.7229	0.8465	0.6317	0.7263	0.9516
53	0.6669	0.7402	0.7278	0.7232	0.7079	0.8256	0.6181	0.7073	0.9297
54	0.6536	0.7306	0.7177	0.7122	0.6932	0.8051	0.6046	0.6886	0.9081
55	0.6402	0.7210	0.7077	0.7012	0.6787	0.7849	0.5912	0.6701	0.8867
56	0.6270	0.7115	0.6978	0.6903	0.6645	0.7651	0.5778	0.6519	0.8654
57	0.6138	0.7021	0.6881	0.6794	0.6505	0.7456	0.5646	0.6338	0.8444
58	0.6006	0.6926	0.6784	0.6686	0.6367	0.7263	0.5514	0.6160	0.8235
59	0.5875	0.6833	0.6689	0.6578	0.6231	0.7074	0.5383	0.5983	0.8028
									WT/12
60	0.5744	0.6740	0.6595	0.6471	0.6097	0.6886	0.5253	0.5808	0.9033
61	0.5613	0.6647	0.6501	0.6364	0.5964	0.6701	0.5123	0.5635	0.8797
62	0.5483	0.6554	0.6409	0.6258	0.5833	0.6519	0.4994	0.5463	0.8563
63	0.5353	0.6462	0.6317	0.6151	0.5703	0.6338	0.4865	0.5292	0.8330
64	0.5223	0.6370	0.6226	0.6045	0.5575	0.6159	0.4737	0.5123	0.8099
65	0.5093	0.6279	0.6136	0.5940	0.5448	0.5982	0.4609	0.4955	0.7869
66	0.4964	0.6187	0.6046	0.5834	0.5322	0.5807	0.4481	0.4788	0.7640
67	0.4834	0.6096	0.5957	0.5729	0.5197	0.5633	0.4353	0.4622	0.7412
68	0.4705	0.6005	0.5869	0.5623	0.5073	0.5460	0.4226	0.4457	0.7185
69	0.4575	0.5914	0.5780	0.5518	0.4950	0.5289	0.4099	0.4293	0.6959
70	0.4446	0.5823	0.5693	0.5413	0.4828	0.5119	0.3972	0.4129	0.6734
71	0.4316	0.5732	0.5606	0.5308	0.4706	0.4950	0.3845	0.3967	0.6510
72	0.4186	0.5641	0.5519	0.5203	0.4586	0.4782	0.3718	0.3804	0.6287
73	0.4056	0.5550	0.5432	0.5097	0.4466	0.4614	0.3591	0.3643	0.6064
74	0.3926	0.5459	0.5346	0.4992	0.4346	0.4448	0.3464	0.3481	0.5842
75	0.3796	0.5368	0.5260	0.4887	0.4227	0.4282	0.3337	0.3320	0.5620
76	0.3665	0.5277	0.5174	0.4781	0.4108	0.4116	0.3210	0.3160	0.5398
77	0.3534	0.5186	0.5088	0.4675	0.3990	0.3951	0.3083	0.2999	0.5177
78	0.3403	0.5095	0.5002	0.4569	0.3872	0.3787	0.2955	0.2839	0.4956
79	0.3271	0.5003	0.4917	0.4463	0.3754	0.3623	0.2827	0.2679	0.4736
80	0.3139	0.4911	0.4831	0.4357	0.3636	0.3459	0.2699	0.2519	0.4515
81	0.3007	0.4819	0.4746	0.4250	0.3519	0.3295	0.2570	0.2359	0.4295
82	0.2874	0.4727	0.4661	0.4143	0.3402	0.3131	0.2441	0.2199	0.4075
83	0.2740	0.4634	0.4575	0.4035	0.3284	0.2968	0.2312	0.2039	0.3855
84	0.2606	0.4542	0.4489	0.3928	0.3167	0.2804	0.2182	0.1878	0.3634
85	0.2472	0.4448	0.4404	0.3819	0.3050	0.2640	0.2052	0.1718	0.3414
86	0.2336	0.4355	0.4318	0.3711	0.2932	0.2476	0.1921	0.1557	0.3193
87	0.2200	0.4261	0.4232	0.3601	0.2814	0.2312	0.1790	0.1395	0.2972
88	0.2064	0.4166	0.4146	0.3492	0.2697	0.2147	0.1658	0.1234	0.2751
89	0.1927	0.4072	0.4059	0.3382	0.2579	0.1982	0.1525	0.1071	0.2529
90	0.1788	0.3976	0.3973	0.3271	0.2460	0.1817	0.1392	0.0909	0.2307
91	0.1650	0.3880	0.3886	0.3159	0.2342	0.1651	0.1258	0.0745	0.2084
92	0.1510	0.3784	0.3799	0.3047	0.2222	0.1485	0.1123	0.0582	0.1861
93	0.1369	0.3687	0.3711	0.2935	0.2103	0.1318	0.0987	0.0417	0.1637
94	0.1228	0.3590	0.3623	0.2821	0.1983	0.1150	0.0851	0.0252	0.1413
95	0.1085	0.3492	0.3535	0.2707	0.1863	0.0982	0.0714	0.0086	0.1188
96	0.0942	0.3393	0.3446	0.2593	0.1742	0.0812	0.0575		0.0962
97	0.0797	0.3294	0.3357	0.2477	0.1620	0.0642	0.0436		0.0735
98	0.0652	0.3193	0.3267	0.2361	0.1498	0.0471	0.0296		0.0508
99	0.0505	0.3093	0.3177	0.2244	0.1375	0.0299	0.0155		0.0280
100	0.0357	0.2991	0.3086	0.2125	0.1252	0.0126	0.0013		0.0050

GIRL'S FIELD EVENT STANDARDS

							(DISTANCE IN METERS)								
AGE	PV	HJ	LJ	TJ	SP	SP	SP	SP	HT	HT	HT	HT	DT	JT	JT
					4 KG	8 LB	3 KG	6 LB	4 KG	8 LB	3-KG	6 LB	1 KG	600 G	400 G
					(8.82 LB)		(6.61 LB)		(8.82 LB)		(6.61 LB)				
14	3.57	1.76	5.91	12.55	15.97	16.77	18.44	19.36	66.46	69.78	76.74	80.57	61.05	54.88	67.21
15	3.79	1.83	6.20	13.17	17.20	18.06	19.86	20.86	72.39	76.00	83.59	87.76	65.23	59.63	73.03
16	3.99	1.90	6.48	13.73	18.37	19.29	21.21	22.27	78.00	81.89	90.06	94.56	68.90	64.05	78.44
17	4.16	1.96	6.74	14.22	19.48	20.45	22.49	23.61	83.32	87.48	96.21	101.02	72.12	68.17	83.49
18	4.31	2.01	6.98	14.66	20.53	21.56	23.71	24.89	88.41	92.82	102.09	107.18	74.96	72.01	88.20
19	4.44	2.06	7.21	15.06	21.54	22.62	24.88	26.12	93.29	97.94	107.72	113.10	76.80	75.61	92.61
OC	4.59	2.09	7.52	15.50	22.63				72.64				76.80	80.00	

							(DISTANCE IN FEET-INCHES)								
AGE	PV	HJ	LJ	TJ	SP	SP	SP	SP	HT	HT	HT	HT	DT	JT	JT
					4 KG	8 LB	3 KG	6 LB	4 KG	8 LB	3-KG	6 LB	1 KG	600 G	400 G
					(8.82 LB)		(6.61 LB)		(8.82 LB)		(6.61 LB)				
14	11-08.7	5-09.3	19-04.5	41-02.2	52-04.8	55-00.1	60-06.0	63-06.3	218-00.6	228-11.2	251-09.4	264-04.1	200-03.7	180-00.5	220-06.1
15	12-05.3	6-00.2	20-04.2	43-02.6	56-05.3	59-03.1	65-02.1	68-05.1	237-06.0	249-04.2	274-02.9	287-11.1	214-00.3	195-07.7	239-07.3
16	13-00.9	6-02.8	21-03.1	45-00.4	60-03.2	63-03.3	69-07.1	73-00.7	255-10.7	268-08.0	295-05.8	310-02.7	226-00.6	210-01.6	257-04.3
17	13-07.7	6-05.1	22-01.3	46-07.9	63-10.8	67-01.1	73-09.4	77-05.6	273-04.5	287-00.2	315-07.9	331-05.0	236-07.5	223-07.7	273-10.9
18	14-01.6	6-07.2	22-10.8	48-01.3	67-04.4	70-08.7	77-09.4	81-08.0	290-00.7	304-06.4	334-11.1	351-07.7	245-11.0	236-03.2	289-04.3
19	14-06.9	6-09.0	23-07.8	49-04.9	70-08.2	74-02.5	81-07.4	85-08.3	306-00.8	321-04.1	353-05.0	371-00.6	251-11.6	248-00.9	303-10.0
OC	15-00.7	6-10.3	24-08.1	50-10.2	74-02.9				238-03.8				251-11.6	262-05.6	

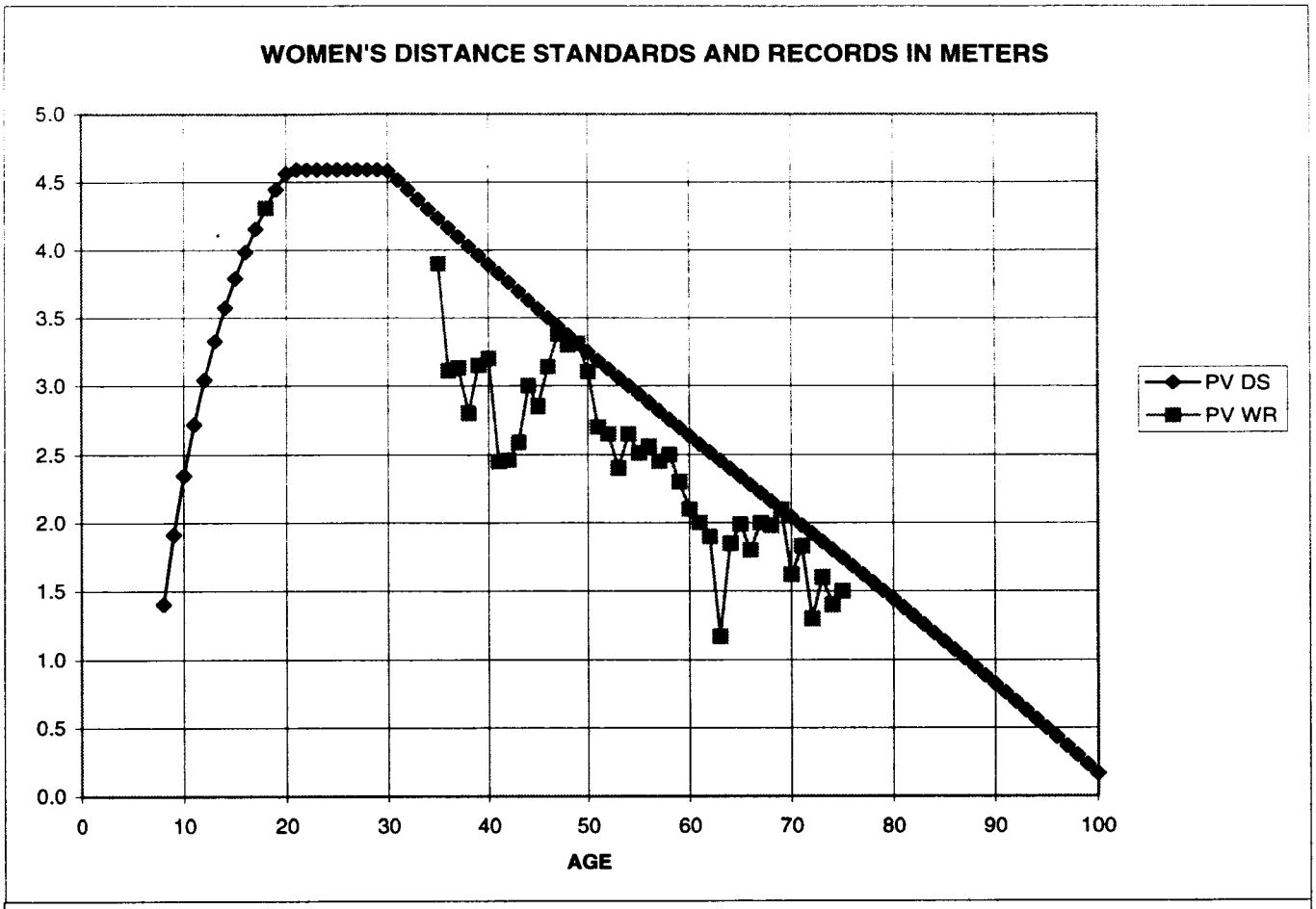
WOMEN'S FIELD EVENT STANDARDS AND AGE FACTORS (USATF EVENTS)

AGE	WT SUPER	WT		AGE	WT SUPER	WT
8				8		
9				9		
10				10		
11				11		
12				12		
13				13		
14				14		
15	WT/35	WT/20		15	WT/35	WT/20
16				16		
17				17		
18				18		
19	18.14	24.00		19	0.9472	1.2531
OC	19.15			OC	1.0000	
30	19.15	25.33		30	1.0000	1.3229
31	19.15	25.33		31	1.0000	1.3229
32	18.80	24.87		32	0.9818	1.2988
33	18.43	24.39		33	0.9626	1.2734
34	18.07	23.91		34	0.9436	1.2483
35	17.71	23.43		35	0.9249	1.2235
36	17.36	22.96		36	0.9064	1.1990
37	17.01	22.50		37	0.8882	1.1749
38	16.66	22.05		38	0.8702	1.1512
39	16.33	21.60		39	0.8525	1.1278
40	15.99	21.16		40	0.8351	1.1047
41	15.66	20.72		41	0.8179	1.0820
42	15.34	20.29		42	0.8010	1.0596
43	15.02	19.87		43	0.7843	1.0375
44	14.70	19.45		44	0.7678	1.0157
45	14.39	19.04		45	0.7516	0.9942
46	14.09	18.63		46	0.7356	0.9730
47	13.78	18.23		47	0.7197	0.9521
48	13.48	17.84		48	0.7041	0.9314
49	13.19	17.45		49	0.6887	0.9110
	WT/25	WT/16			WT/25	WT/16
50	15.26	19.07		50	0.7968	0.9960
51	14.92	18.65		51	0.7789	0.9737
52	14.58	18.22		52	0.7613	0.9516
53	14.24	17.80		53	0.7438	0.9297
54	13.91	17.39		54	0.7265	0.9081
55	13.58	16.98		55	0.7093	0.8867
56	13.26	16.57		56	0.6924	0.8654
57	12.94	16.17		57	0.6755	0.8444
58	12.62	15.77		58	0.6588	0.8235
59	12.30	15.37		59	0.6422	0.8028
60	11.98	14.98		60	0.6258	0.7822
61	11.67	14.59		61	0.6095	0.7618
62	11.36	14.20		62	0.5932	0.7415
63	11.05	13.81		63	0.5771	0.7214
64	10.74	13.43		64	0.5611	0.7014
65	10.44	13.05		65	0.5451	0.6814
66	10.14	12.67		66	0.5293	0.6616
67	9.83	12.29		67	0.5135	0.6419
68	9.53	11.92		68	0.4978	0.6223
69	9.23	11.54		69	0.4822	0.6027
70	8.93	11.17		70	0.4666	0.5832
71	8.64	10.80		71	0.4510	0.5638
72	8.34	10.43		72	0.4356	0.5444
73	8.05	10.06		73	0.4201	0.5251
74	7.75	9.69		74	0.4047	0.5059
75	7.46	9.32		75	0.3893	0.4867
76	7.16	8.95		76	0.3740	0.4675
77	6.87	8.59		77	0.3587	0.4484
78	6.58	8.22		78	0.3434	0.4292
79	6.28	7.85		79	0.3281	0.4101
80	5.99	7.49		80	0.3128	0.3911
81	5.70	7.12		81	0.2976	0.3720
82	5.41	6.76		82	0.2823	0.3529
83	5.11	6.39		83	0.2671	0.3338
84	4.82	6.03		84	0.2518	0.3147
85	4.53	5.66		85	0.2365	0.2956
86	4.24	5.30		86	0.2212	0.2765
87	3.94	4.93		87	0.2059	0.2574
88	3.65	4.56		88	0.1906	0.2382
89	3.36	4.19		89	0.1752	0.2190
90	3.06	3.83		90	0.1598	0.1998
91	2.77	3.46		91	0.1444	0.1805
92	2.47	3.09		92	0.1289	0.1612
93	2.17	2.72		93	0.1134	0.1418
94	1.87	2.34		94	0.0979	0.1224
95	1.58	1.97		95	0.0823	0.1029
96	1.28	1.60		96	0.0667	0.0833
97	0.98	1.22		97	0.0510	0.0637
98	0.67	0.84		98	0.0352	0.0440
99	0.37	0.46		99	0.0194	0.0242
100	0.07	0.08		100	0.0035	0.0044

PERFORMANCE LEVEL OF WOMEN'S FIELD EVENT RECORDS

AGE	PV	HJ	LJ	TJ	SP	HT	DT	JT	WT	Super WT USATF	WT USATF
8											
9											
10											
11											
12					SP/4k	HT/4k	DT/1k	JT/600	WT/20	WT/35	WT/20
13											
14											
15											
16											
17											
18	100	100	100	100	100	100	99	100			
19											
						HT/16lb			WT/35lb		
OC	100	100	100	100	100	100	100	100	100	100	
						HT/4k			WT/20lb		
30											
31											
32											
33											
34											
35	92	100	96	95		73		93	34		34
36	75	100	94	92		55		92	54		54
37	76	94	100	97		80	97	86	56		56
38	69	91	87	85		55	98	83	57		57
39	80	92	89	83		69	99	80	60		60
40	82	94	94	89		59	98	100	58		58
41	64	95	91	93		57		93	57		57
42	65	94	86	91		63		84	55		55
43	70	100	89	92		63		81	62		62
44	83	99	93	82		69		80	64		64
45	80	92	90	95	92	72		84	64		64
46	90	95	91	90	87	73	88	79	50		50
47	98	94	97	90	81	73		87	50		50
48	98	96	91	89	76	66	85	77	66		66
49	100	94	91	87	82	75	88	86	67		67
					SP/3k	HT/3k		JT/400	WT/16	WT/25	WT/16
50	95	96	95	89	87	67	90	62	78		78
51	85	96	88	86	83	78	93	81	72		72
52	85	92	84	87	83	83	99	75	59		59
53	78	98	84	95	86	79	85	79	85		85
54	88	95	93	90	82	83	86	81	96		96
55	85	95	88	89	84	87	90	86	100		100
56	89	93	91	92	96	85	93	89	100		100
57	87	89	87	88	82	83	100	84	75		75
58	91	95	94	96	88	77	88	86	72		72
59	85	91	90	82	85	86	93	100	68		68
									WT/12		
60	80	97	96	100	91	88	93	89			72
61	78	90	89	85	86	83	98	76			76
62	75	93	88	87	100	87	94	77			65
63	48	96	89	92	90	100	94	87			73
64	77	93	92	89	72	67	87	86			67
65	85	97	86	98	91	90	85	81			70
66	79	94	98	97	79	72	84	79			79
67	90	94	92	94	84	75	90	79			62
68	92	92	90	96	74	76	78	77			64
69	100	97	92	83	77	76	79	71			62
70	79	95	89	82	78	82	85	85			29
71	92	94	90	87	73	76	84	76			74
72	68	89	100	75	75	71	84	82			81
73	86	100	90	84	78	72	79	82			65
74	78	94	78	82	78	67	88	85			66
75	86	90	84	83	81	75	72	85			66
76		87	70	68	79	76	85	89			69
77		95	64		88	72	72	96			
78		90	72	80	89	66	94	100			100
79		91	64		87	76	98	84			73
80		87	59	69	86	76	99	99			79
81			62	79	97	84	90	91			
82		89	61	83	87	77	99	86			76
83					64	44	61	68			
84			67	93	85		34	38			
85		86	66	100	86	95	88	100			
86					47		40	52			
87					87	85	89	39			
88											
89						100					
90											
91											
92											
93											
94											
95											
96											
97											
98					100						
99											
100											

Figure 77


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
PV DS
PV WR

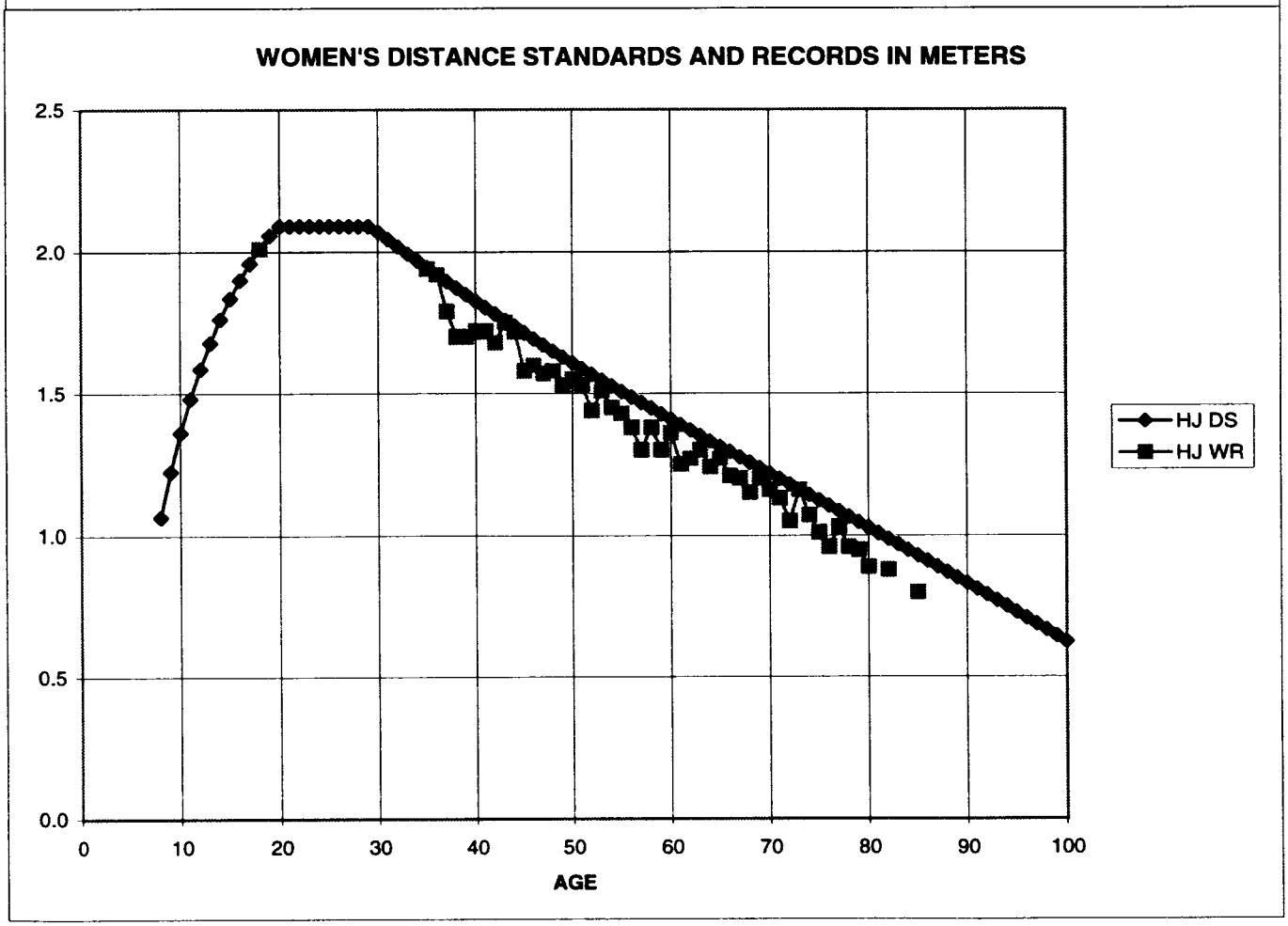
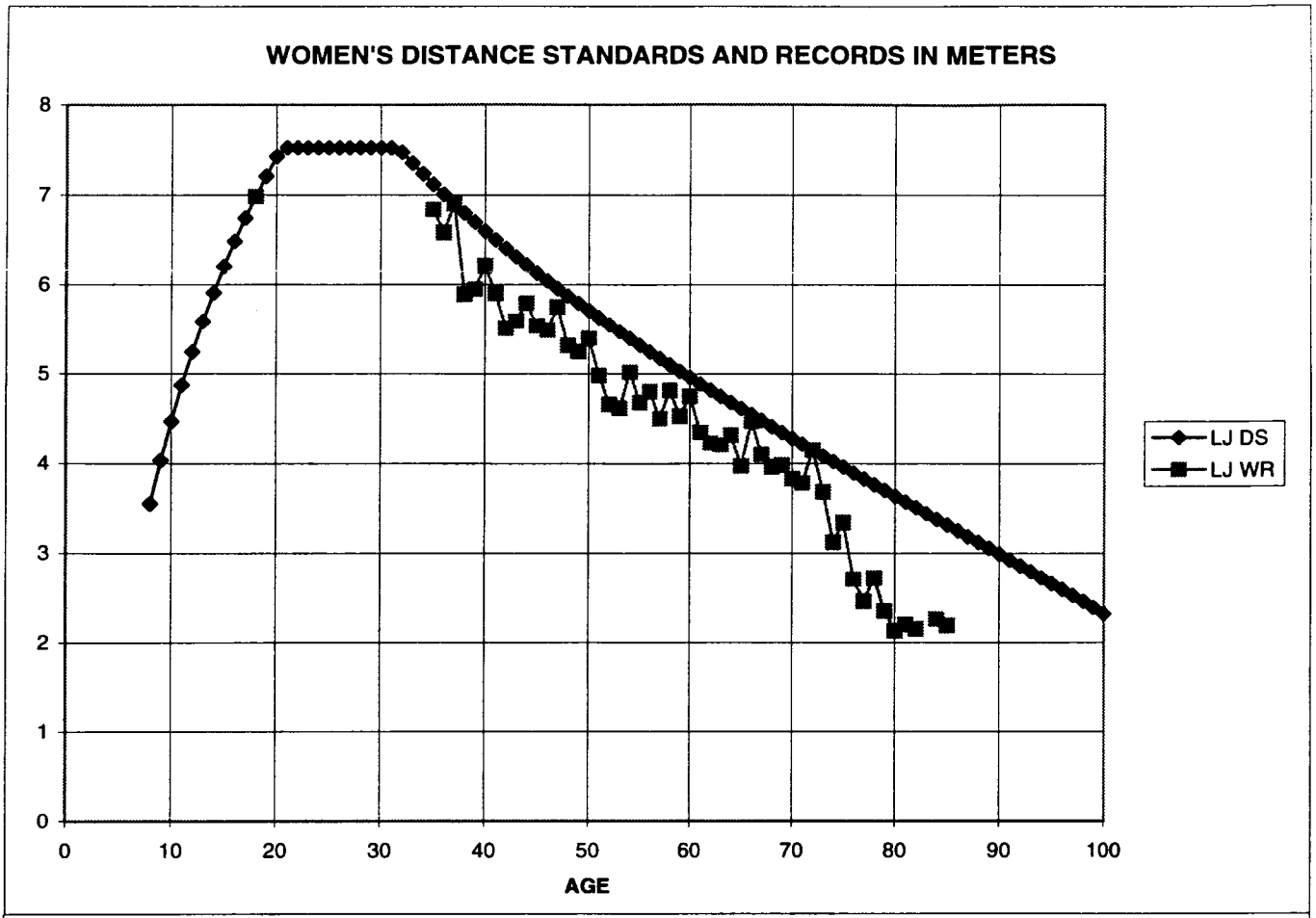

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
HJ DS
HJ WR

Figure 78


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
LJ DS
LJ WR

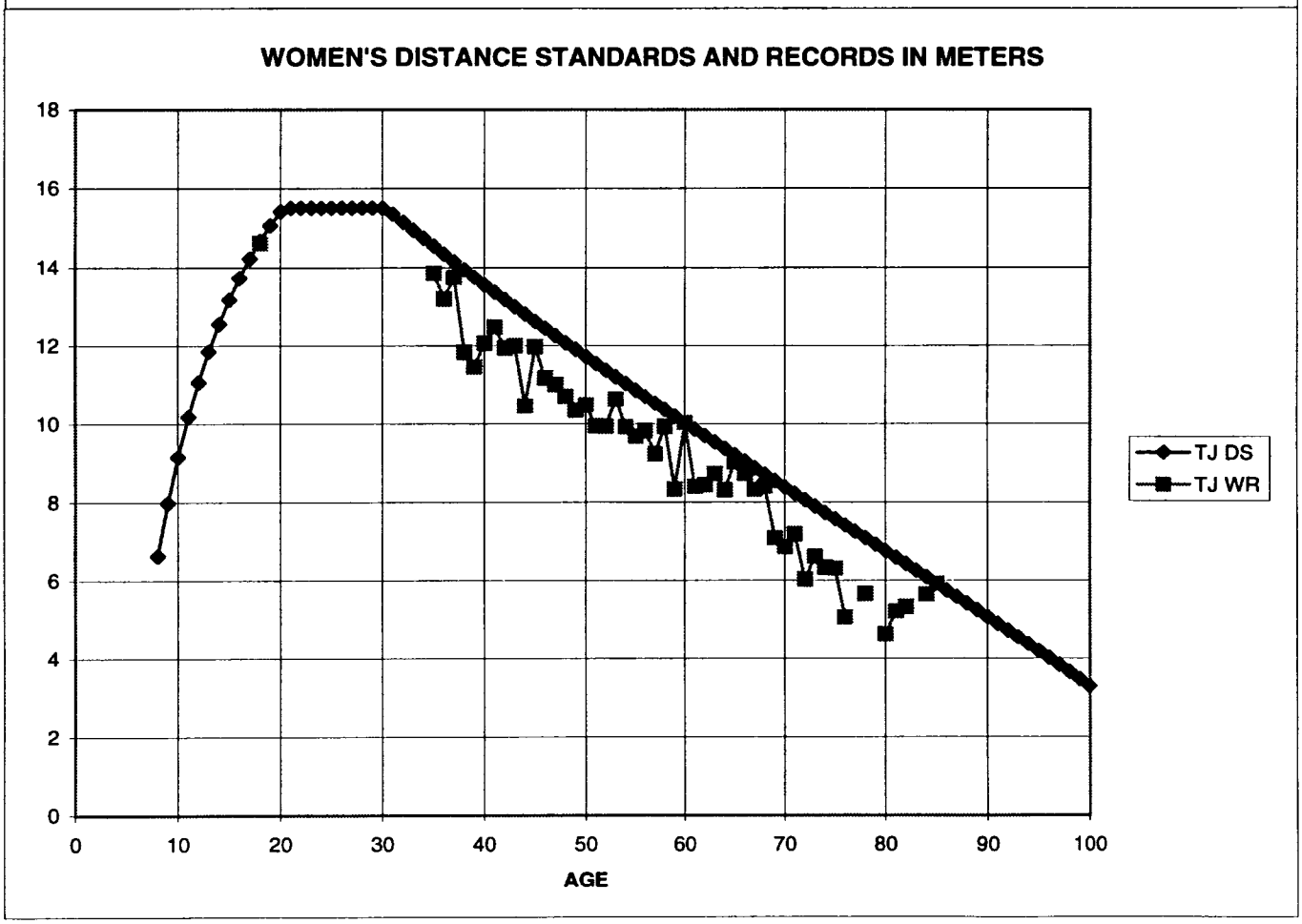
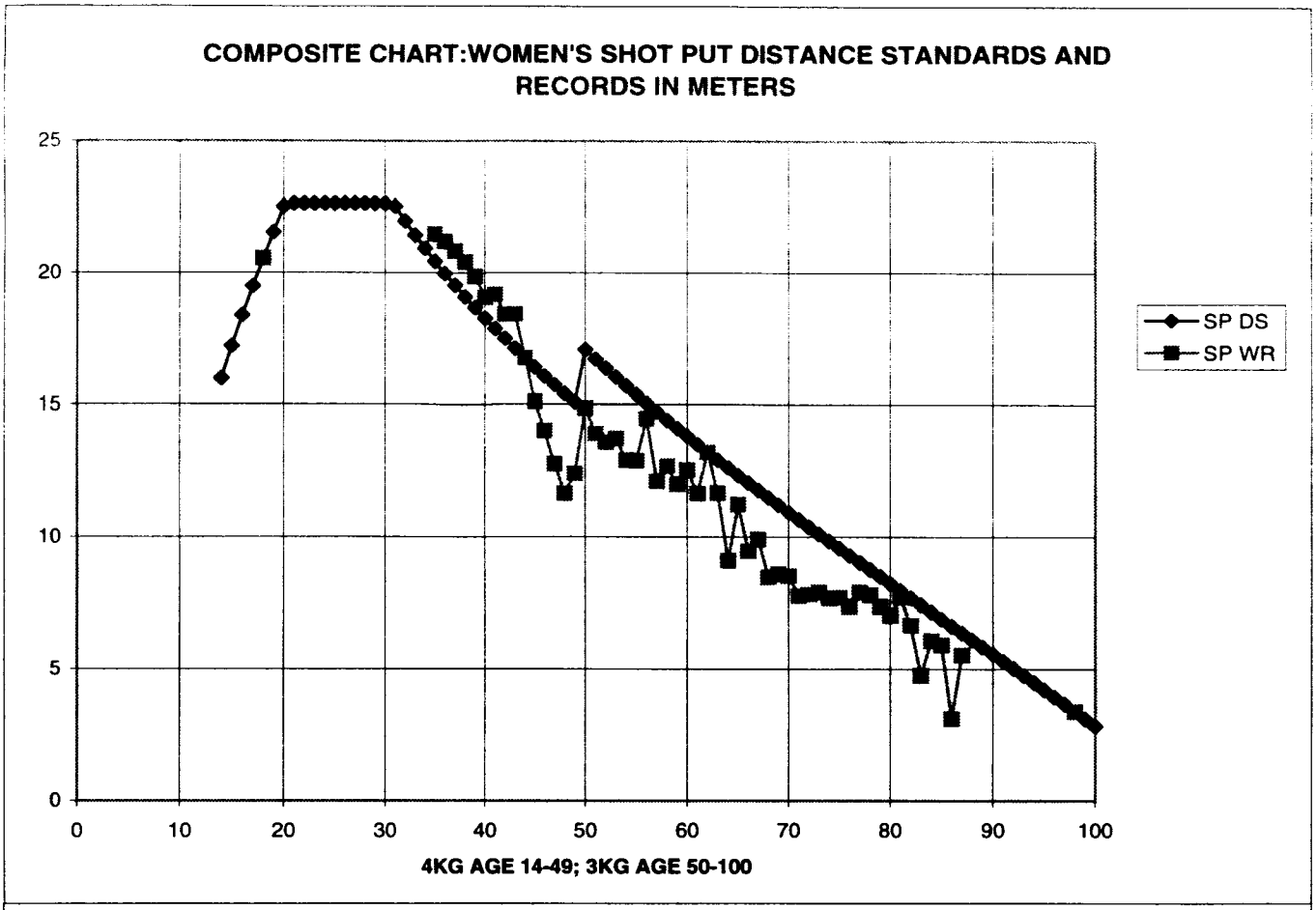

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
18
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
TJ DS
TJ WR

Figure 79


COMPOSITE CHART:WOMEN'S SHOT PUT DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
SP DS
SP WR
4KG AGE 14-49; 3KG AGE 50-100

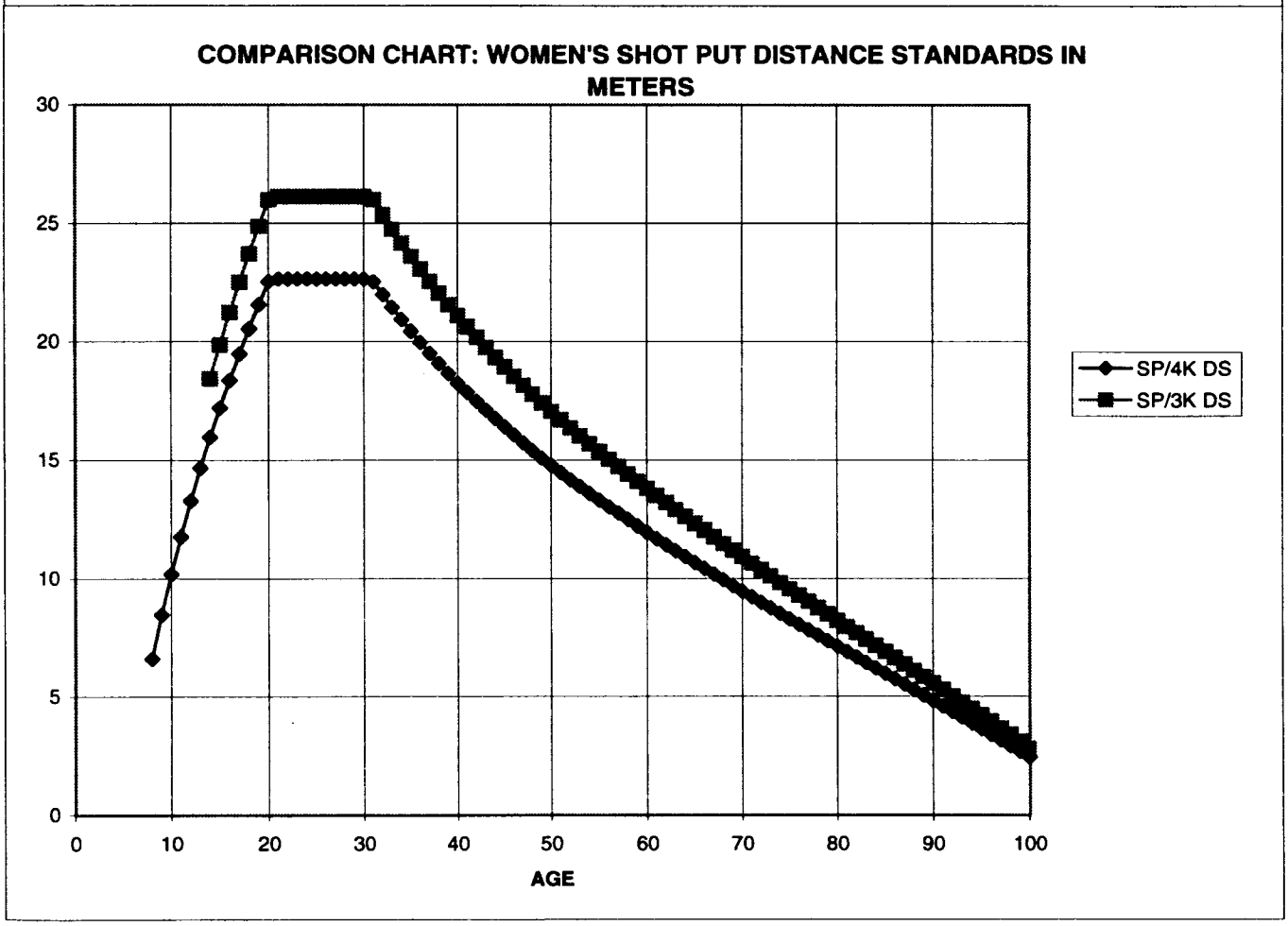
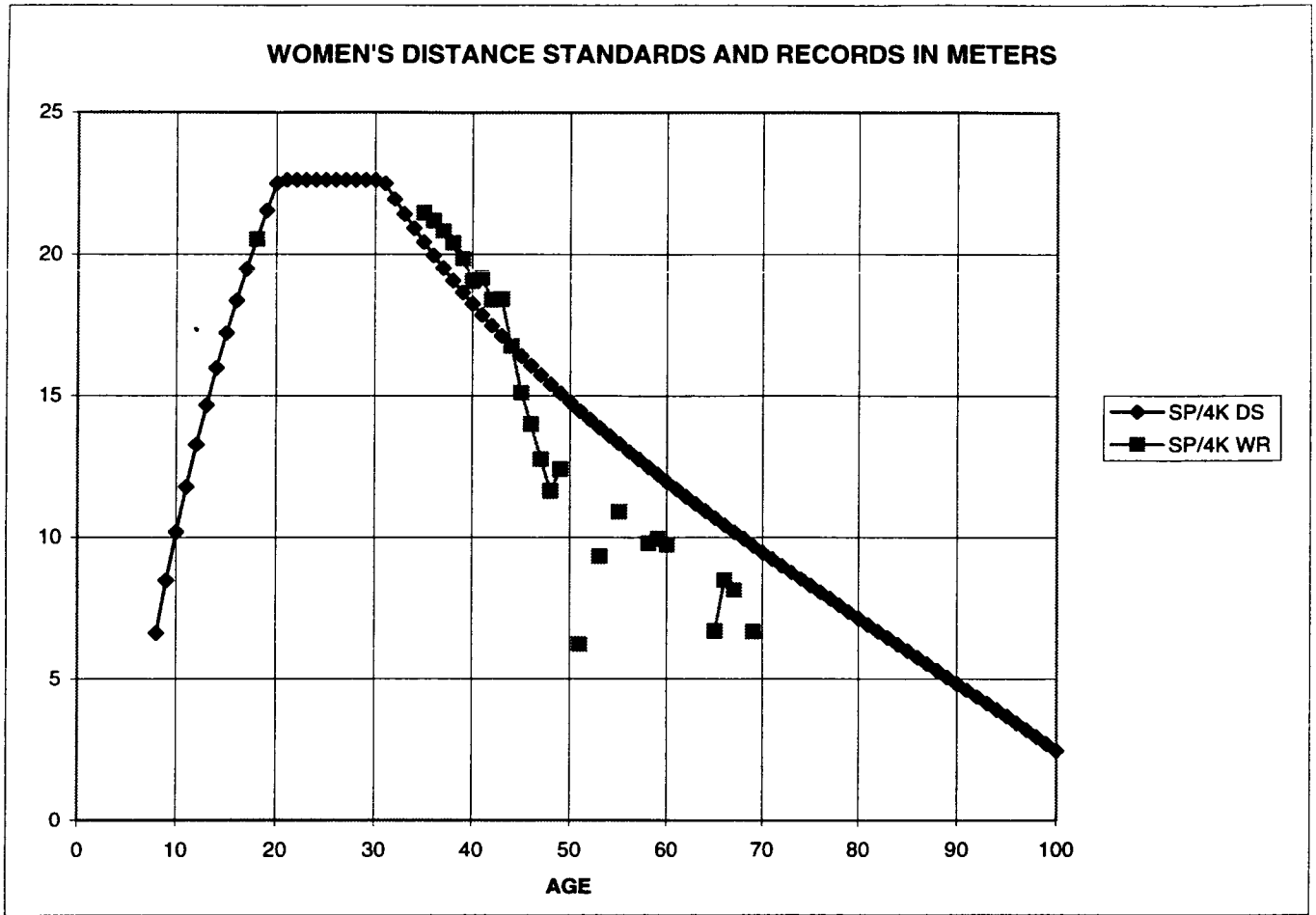

COMPARISON CHART: WOMEN'S SHOT PUT DISTANCE STANDARDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
SP/4K DS
SP/3K DS
AGE

Figure 80


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/4K DS
SP/4K WR

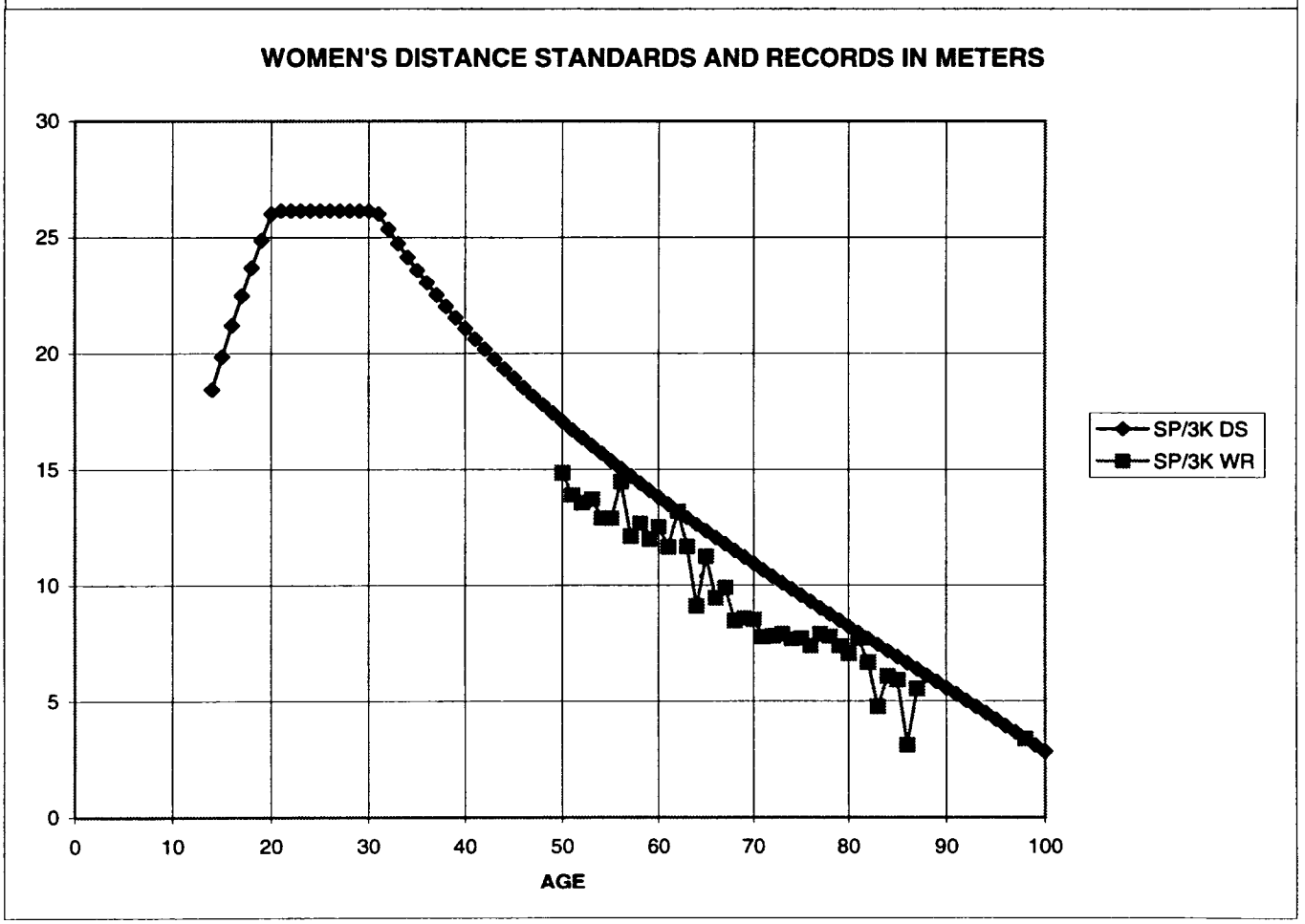
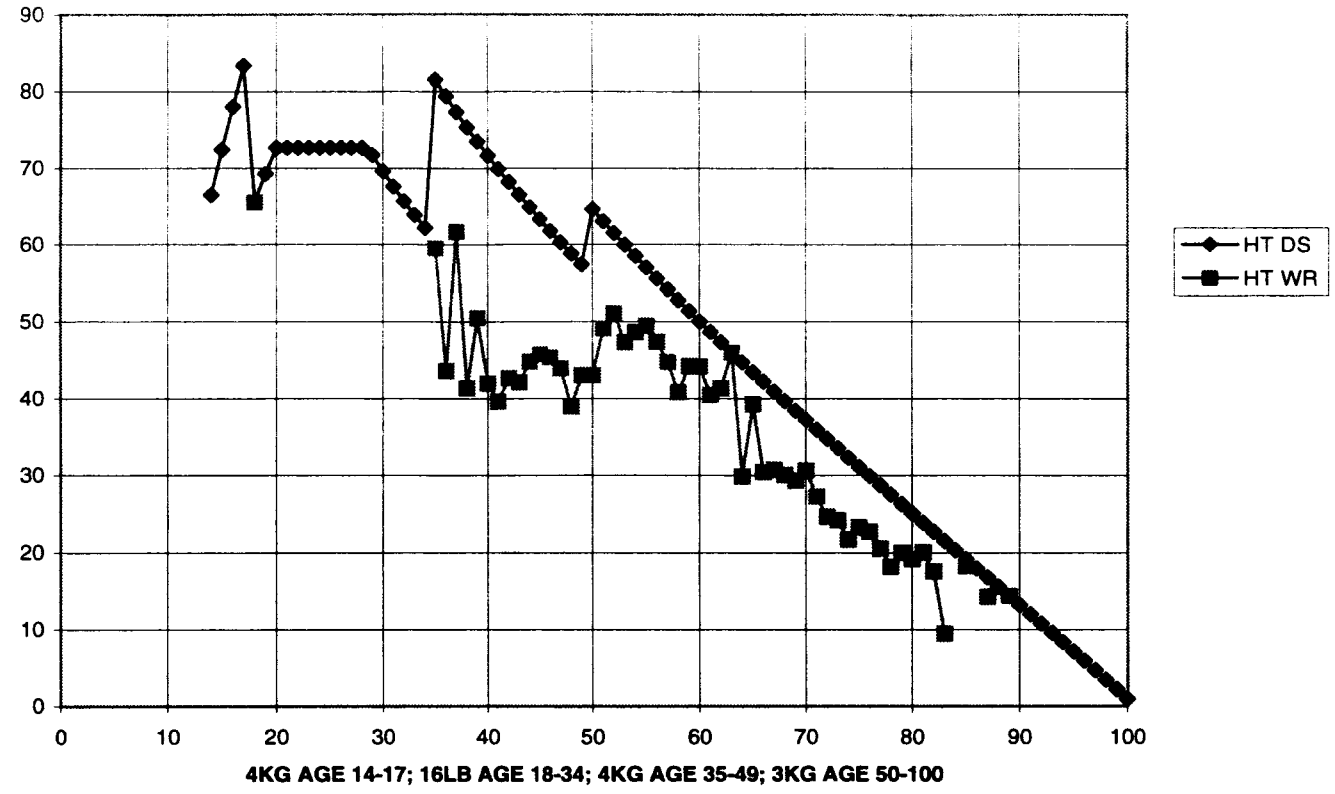

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/3K DS
SP/3K WR

Figure 81

COMPOSITE CHART: WOMEN'S HAMMER THROW DISTANCE STANDARDS AND RECORDS IN METERS



COMPARISON CHART: WOMEN'S HAMMER THROW DISTANCE STANDARDS IN METERS

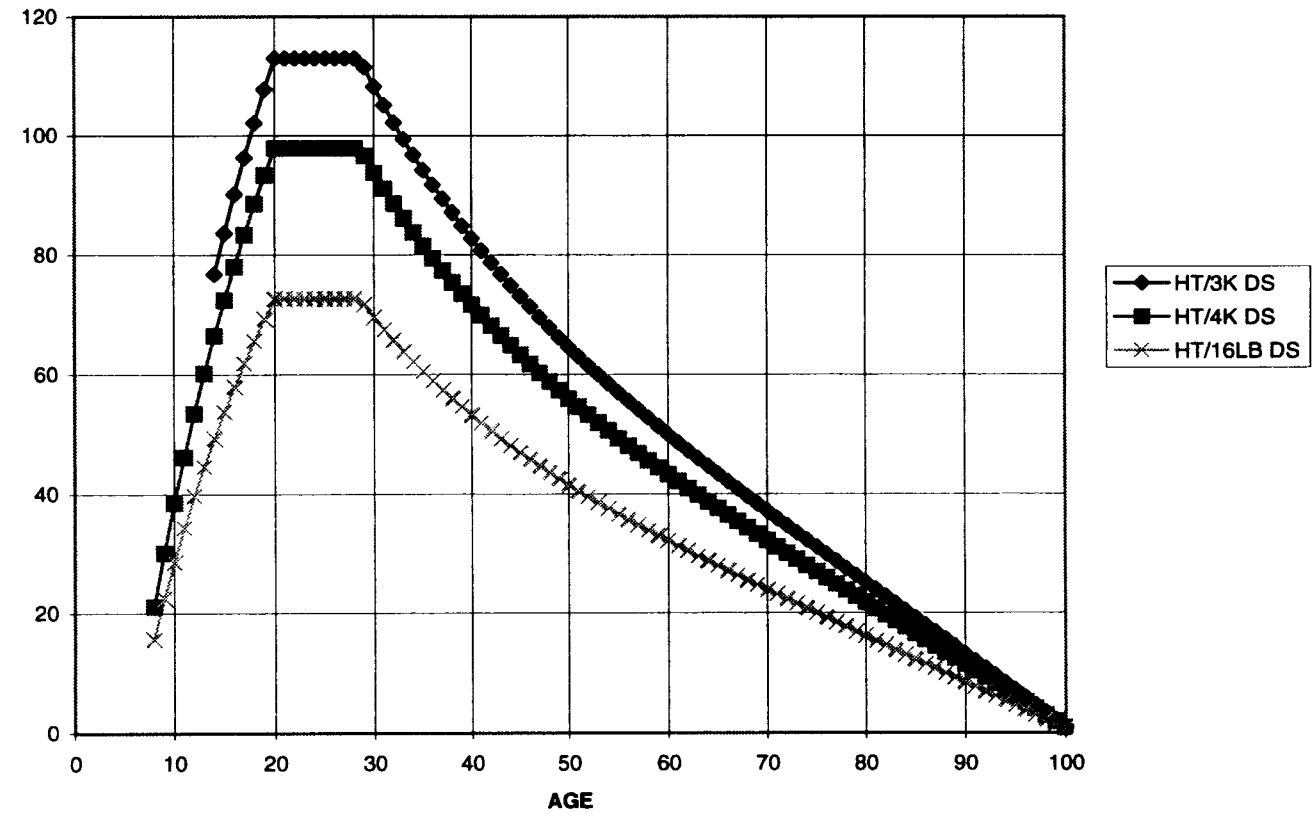
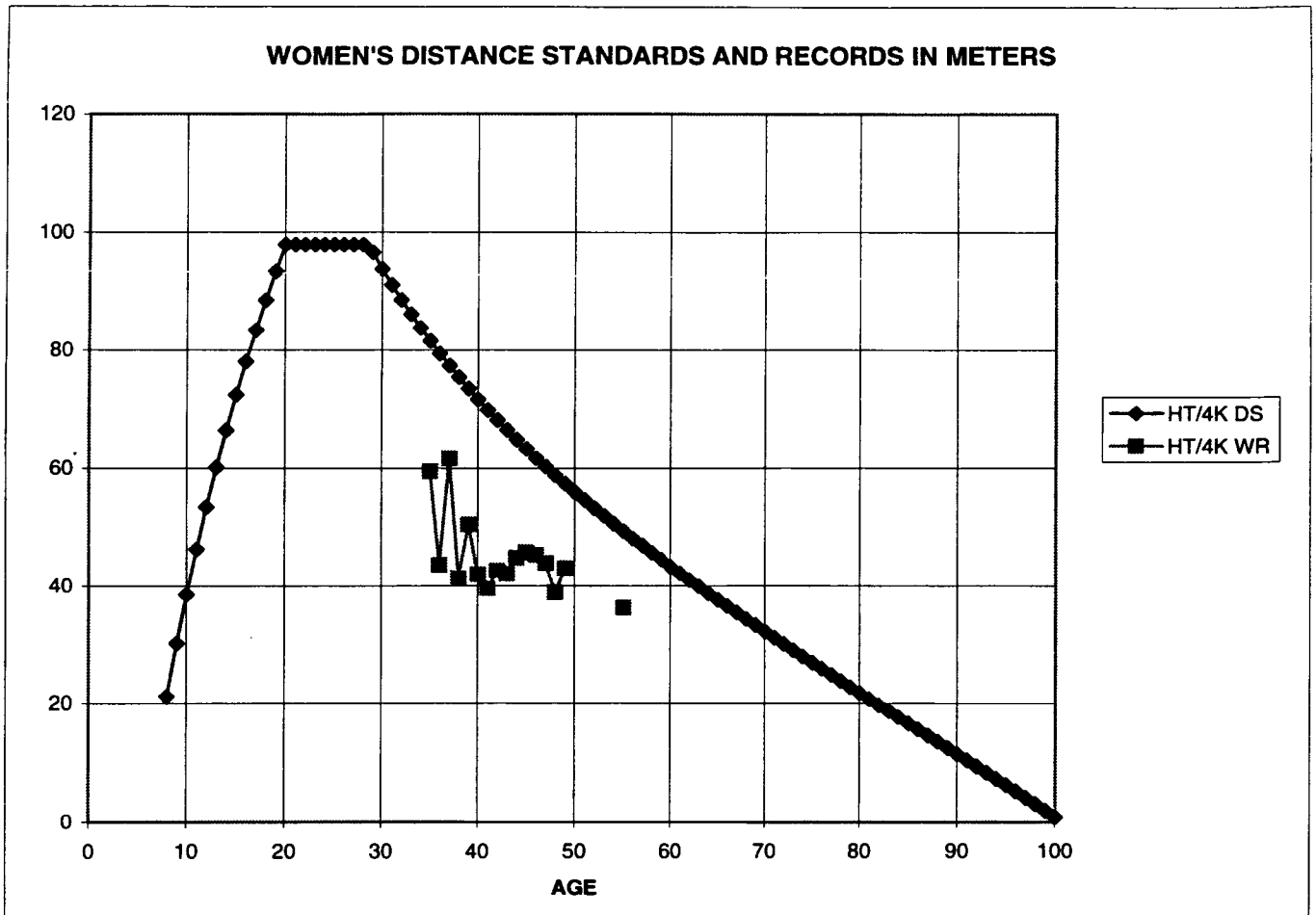


Figure 82


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/4K DS
HT/4K WR

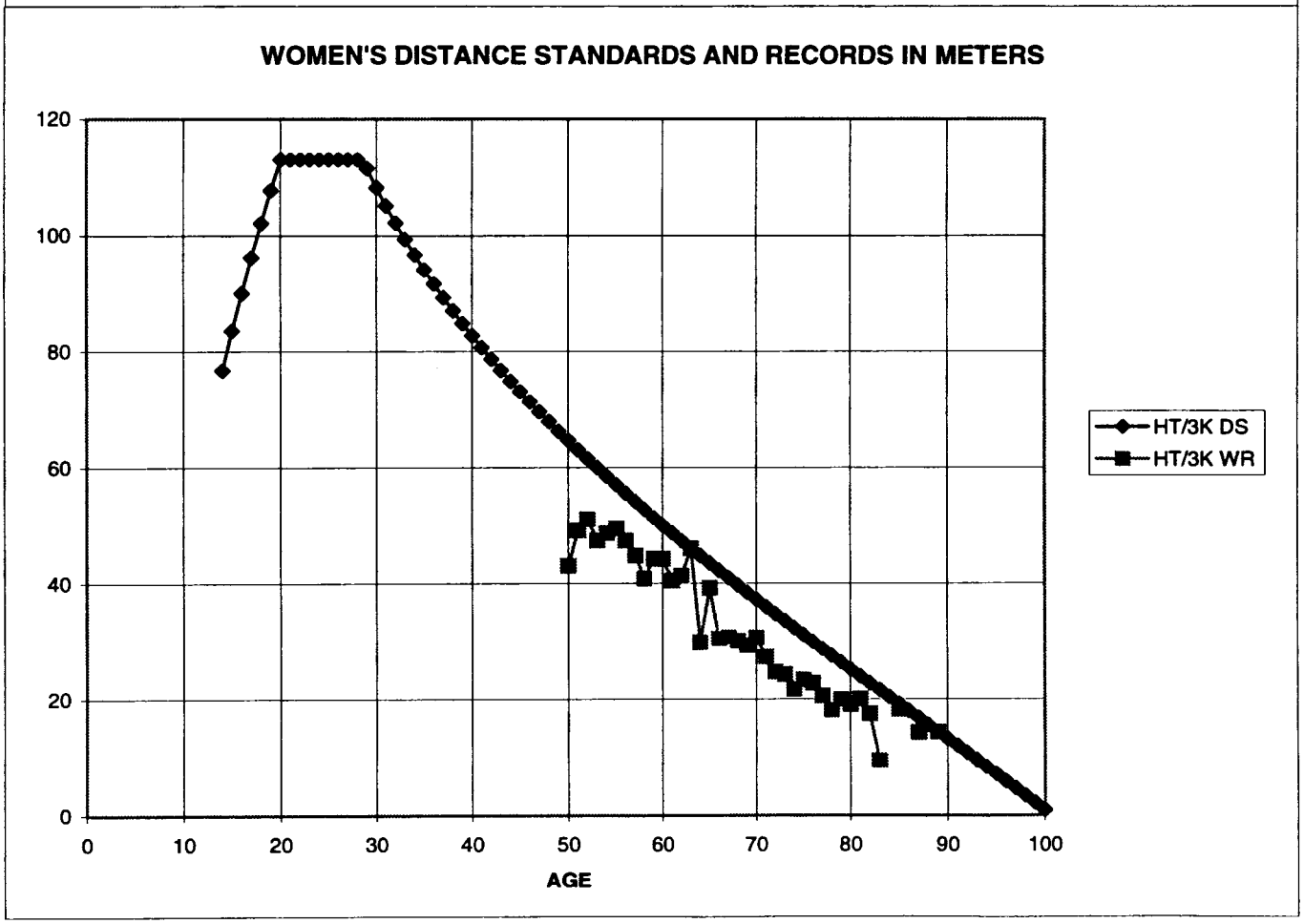
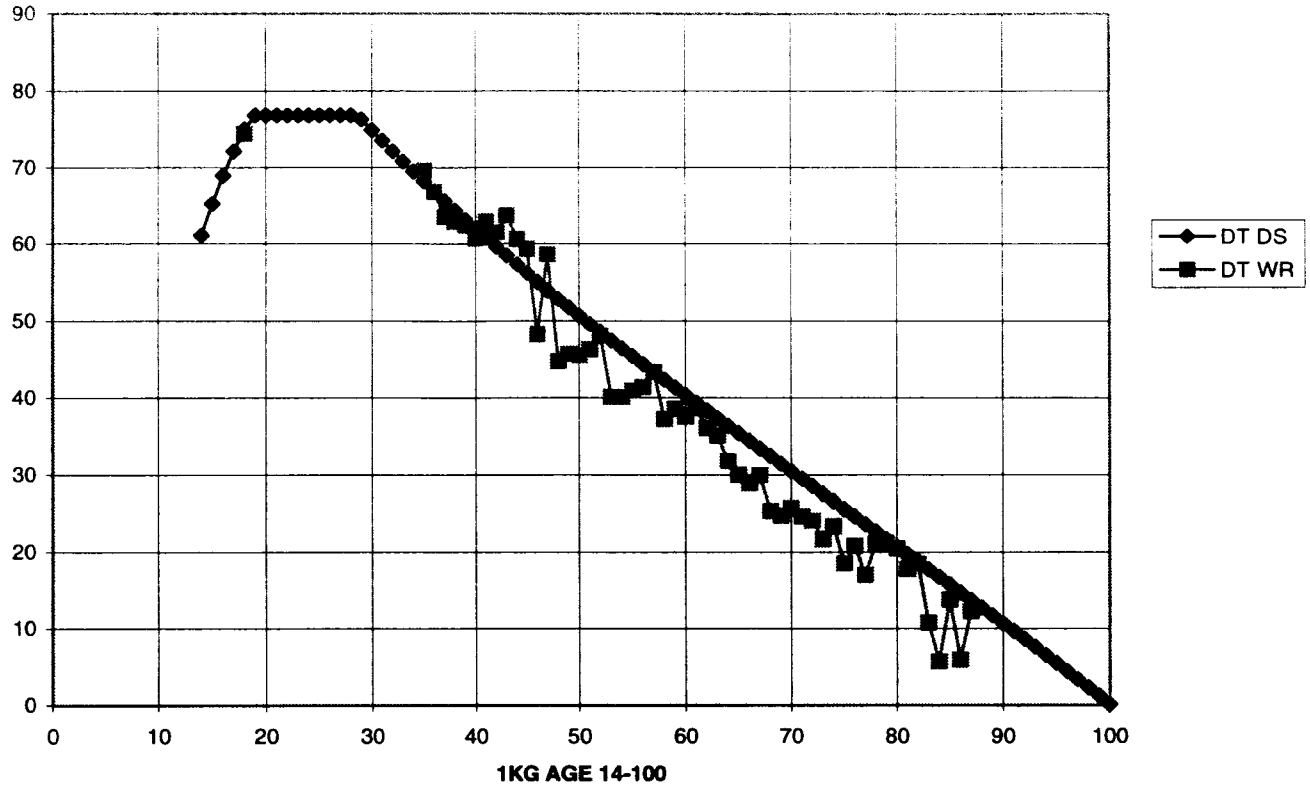

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/3K DS
HT/3K WR

Figure 83

COMPOSITE CHART: WOMEN'S DISCUS THROW DISTANCE STANDARDS AND RECORDS IN METERS



COMPARISON CHART: WOMEN'S DISCUS THROW DISTANCE STANDARDS IN METERS

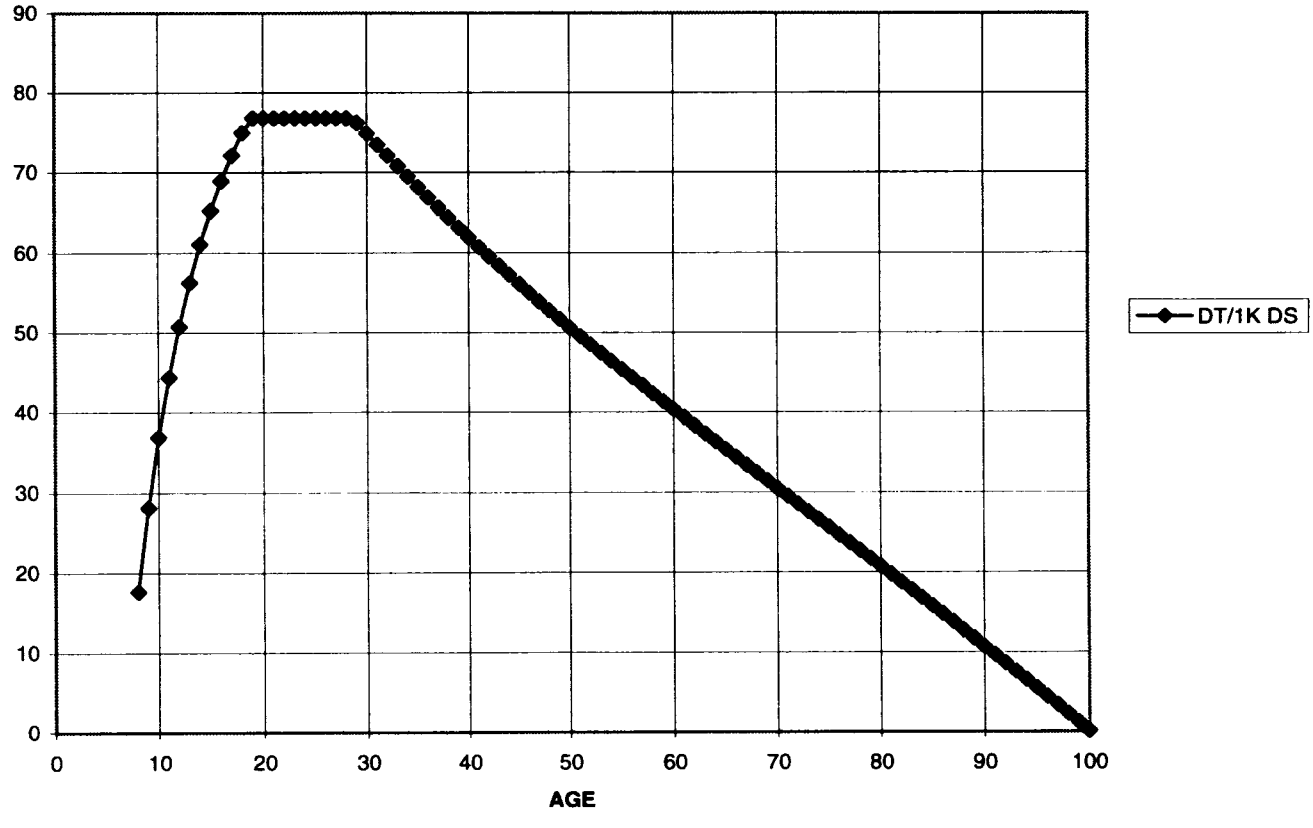
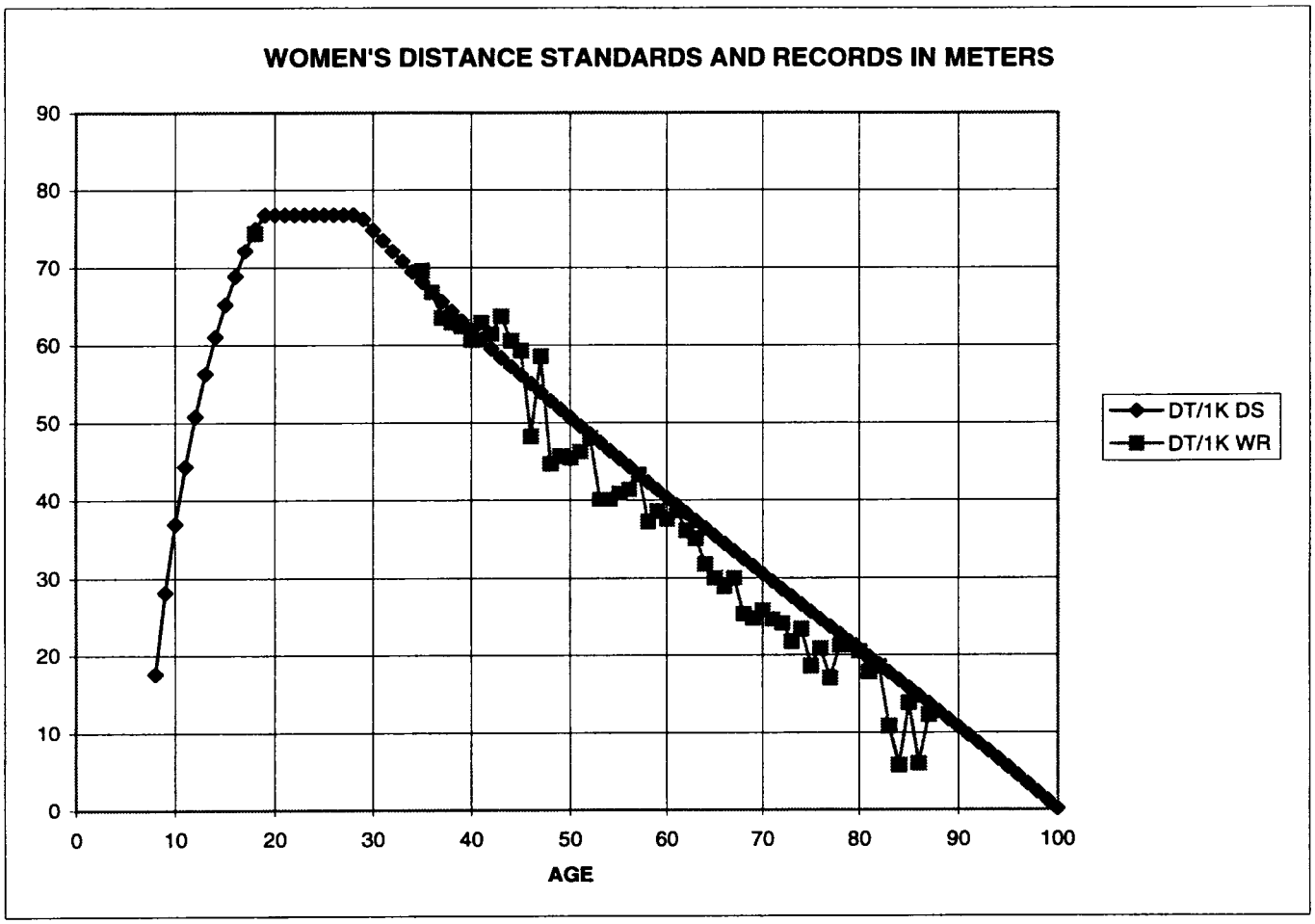
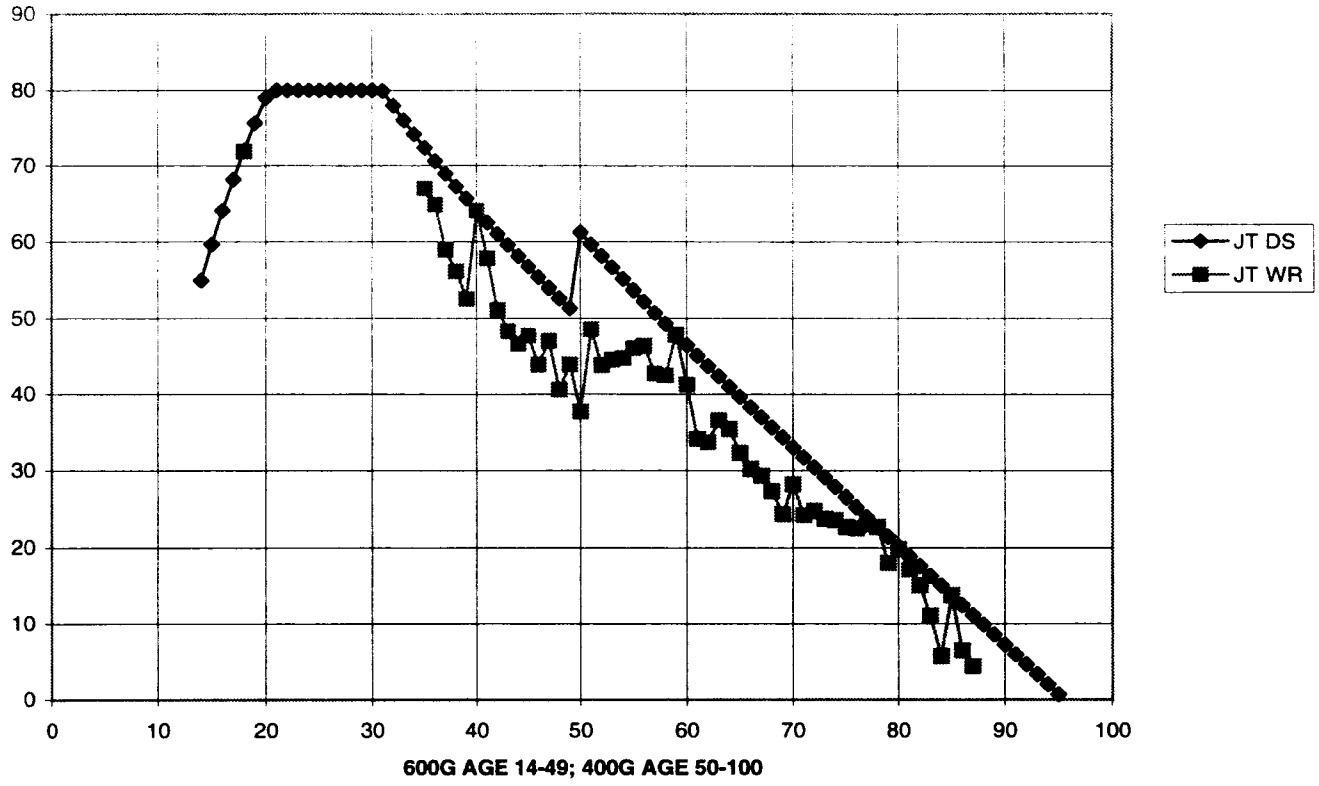


Figure 84


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/1K DS
DT/1K WR

COMPOSITE CHART: WOMEN'S JAVELIN THROW DISTANCE STANDARDS AND RECORDS IN METERS



COMPARISON CHART: WOMEN'S JAVELIN THROW DISTANCE STANDARDS IN METERS

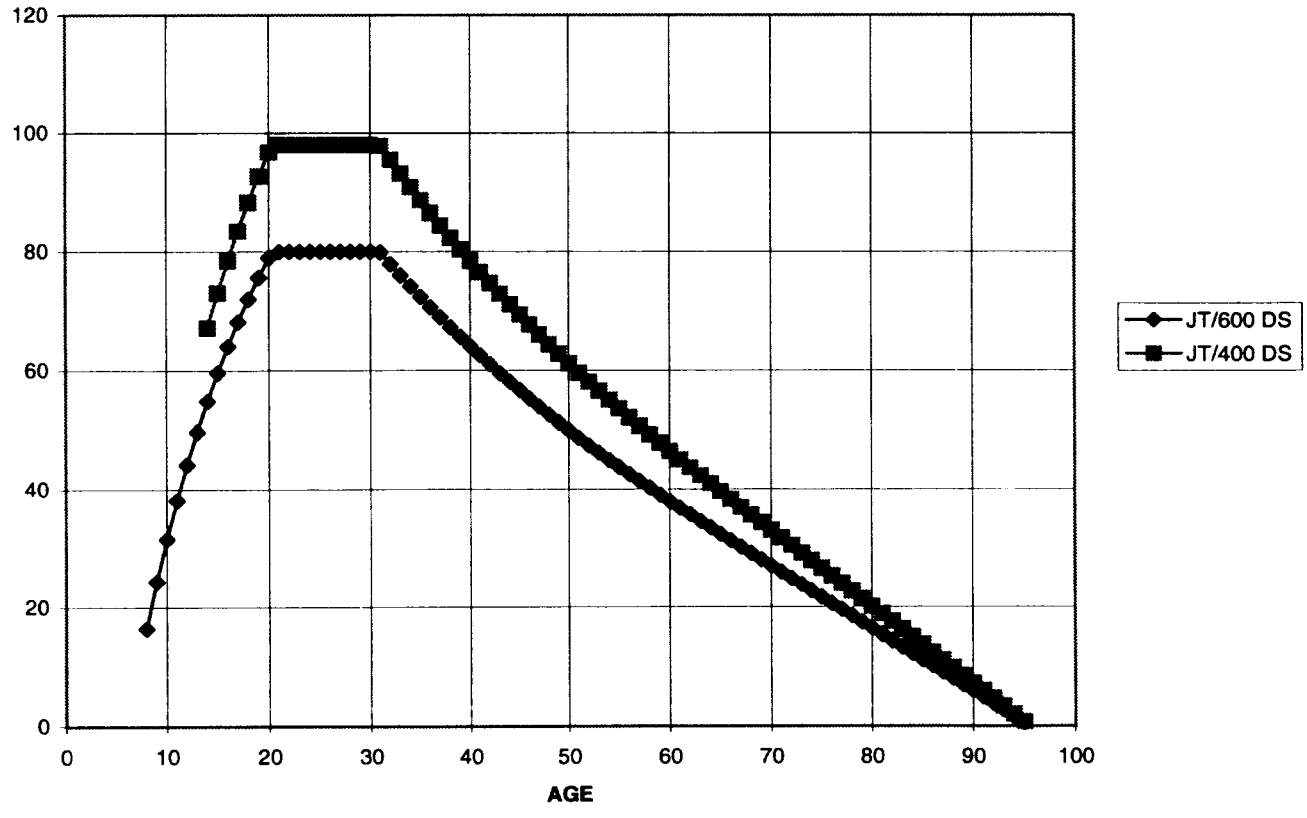
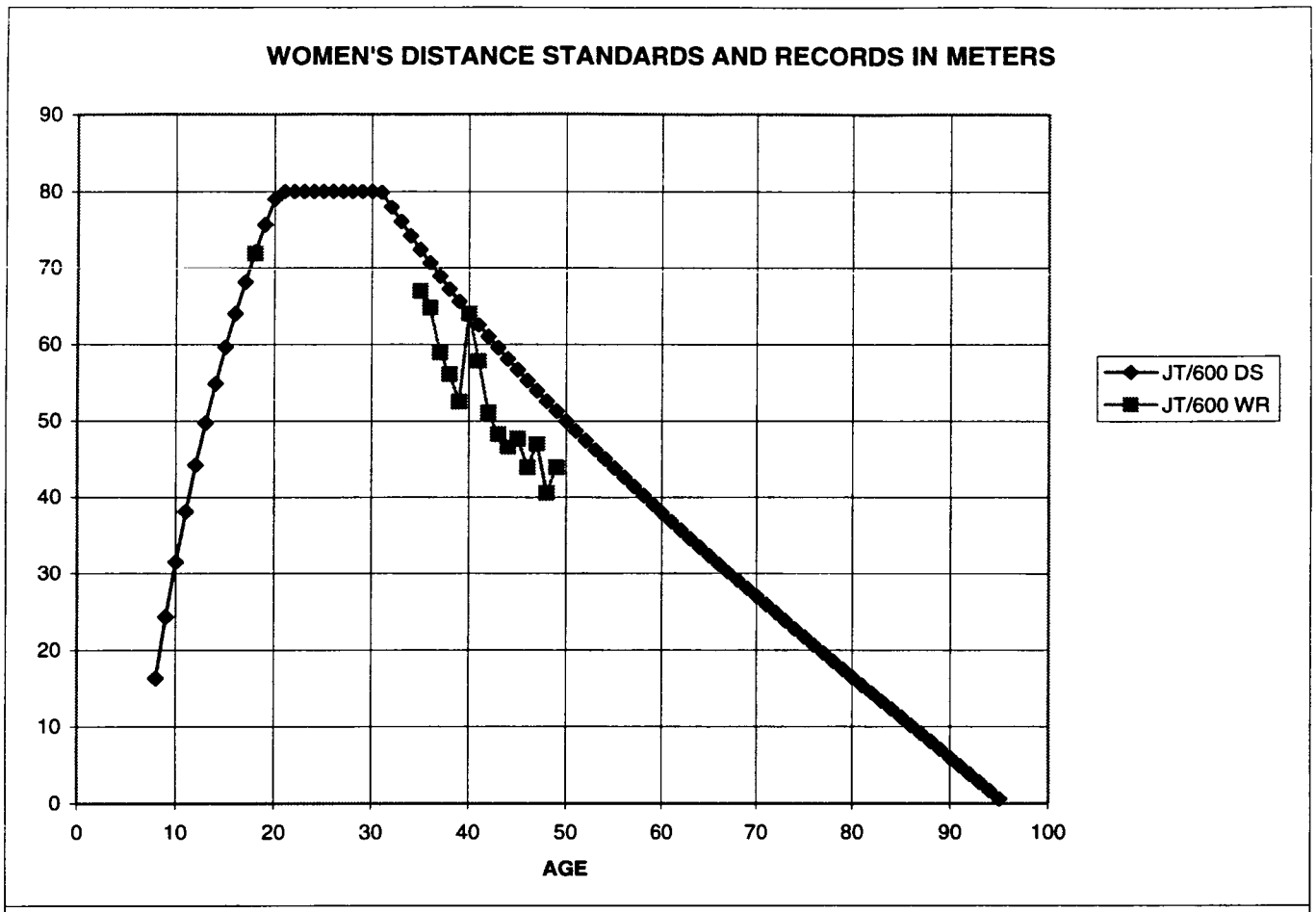


Figure 86


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/600 DS
JT/600 WR

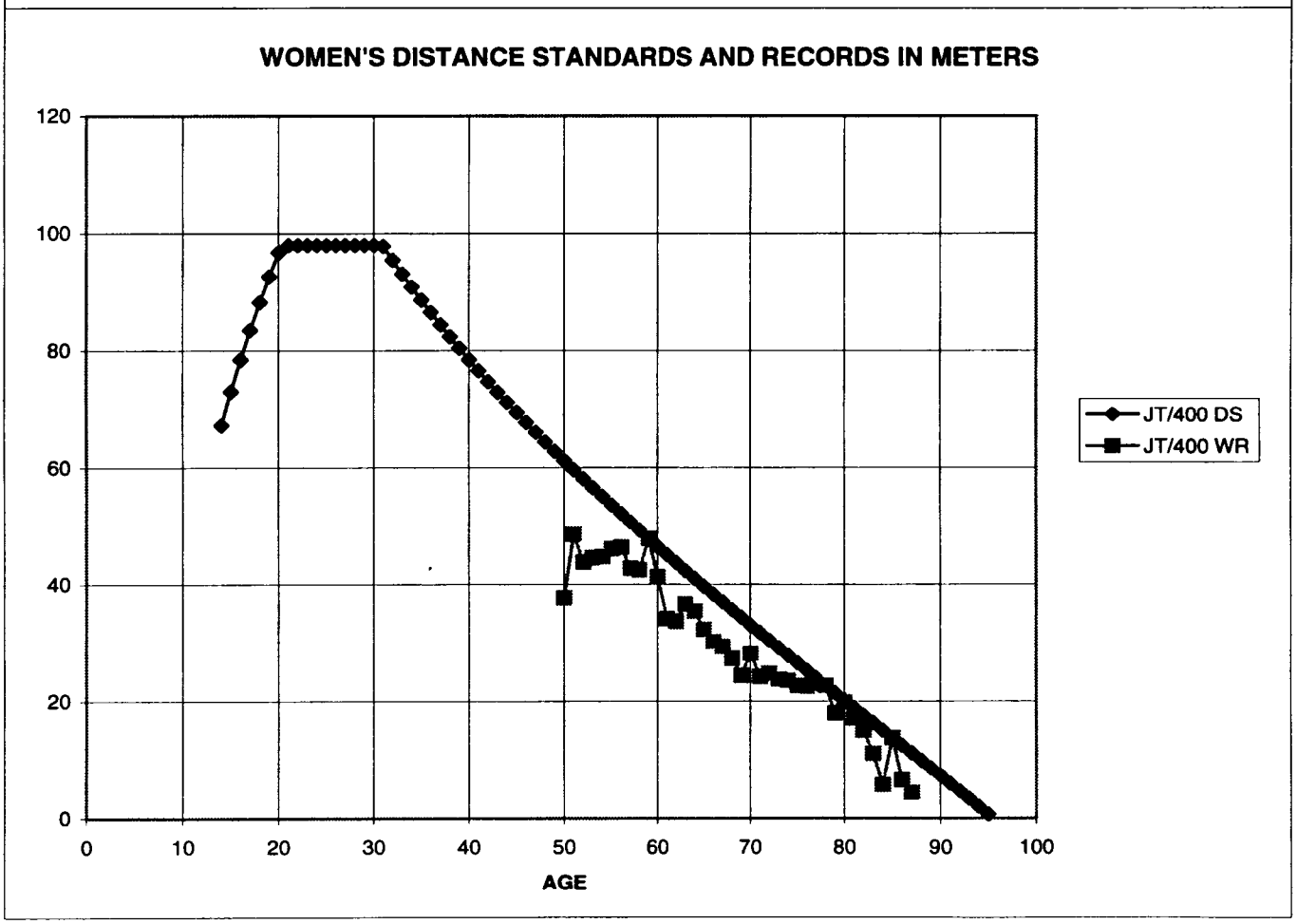
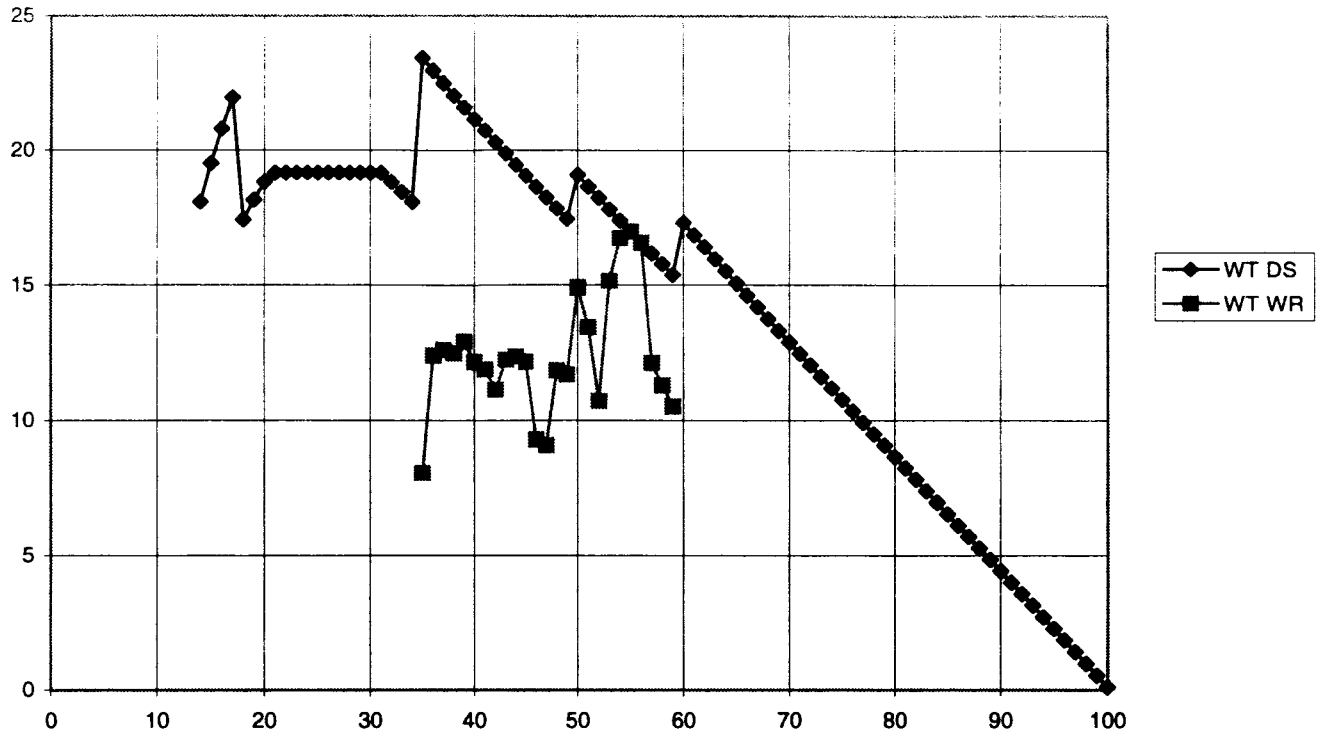

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/400 DS
JT/400 WR

Figure 87

COMPOSITE CHART: WOMEN'S WEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS



20LB AGE 14-17; 35LB AGE 18-34; 20LB AGE 35-49; 16LB AGE 50-59; 12LB AGE 60-100

COMPARISON CHART: WOMEN'S WEIGHT THROW DISTANCE STANDARDS IN METERS

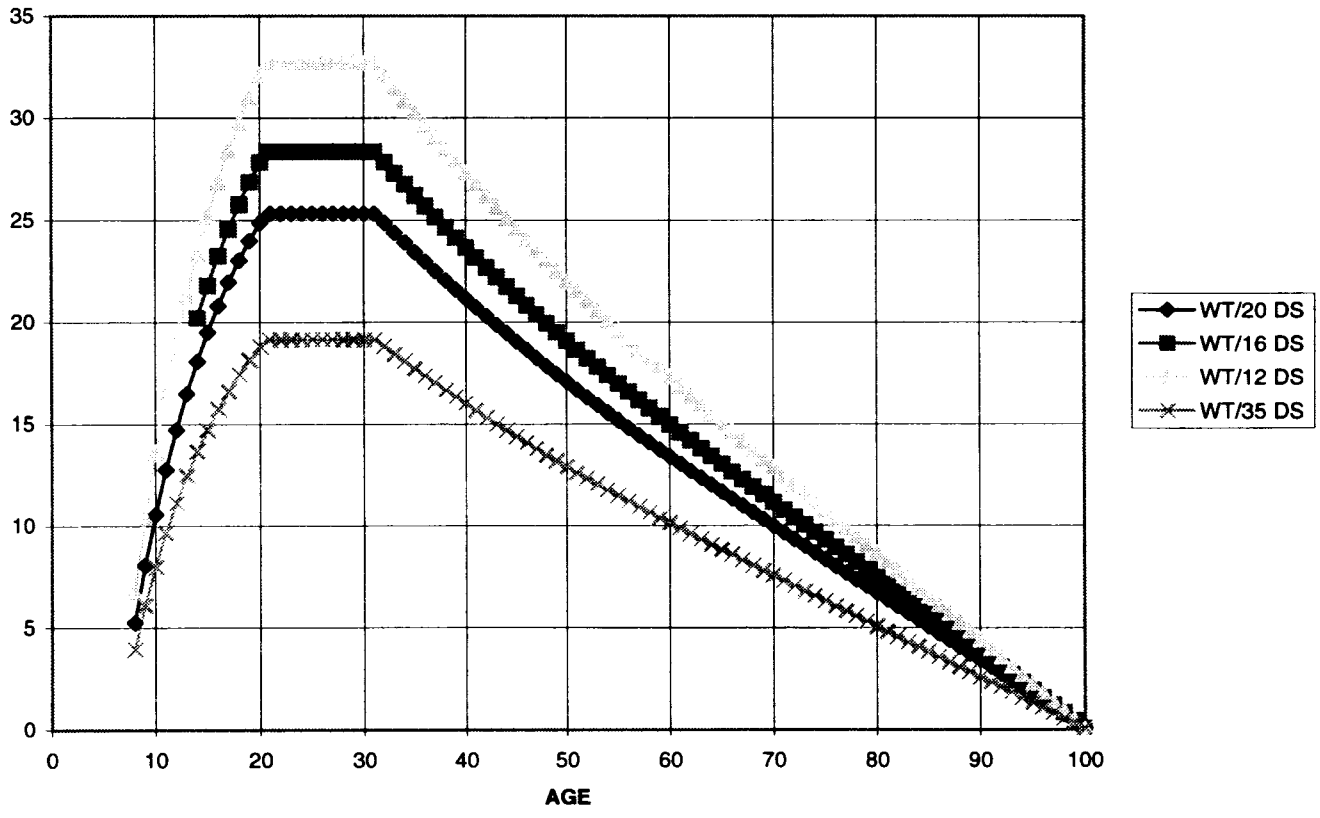
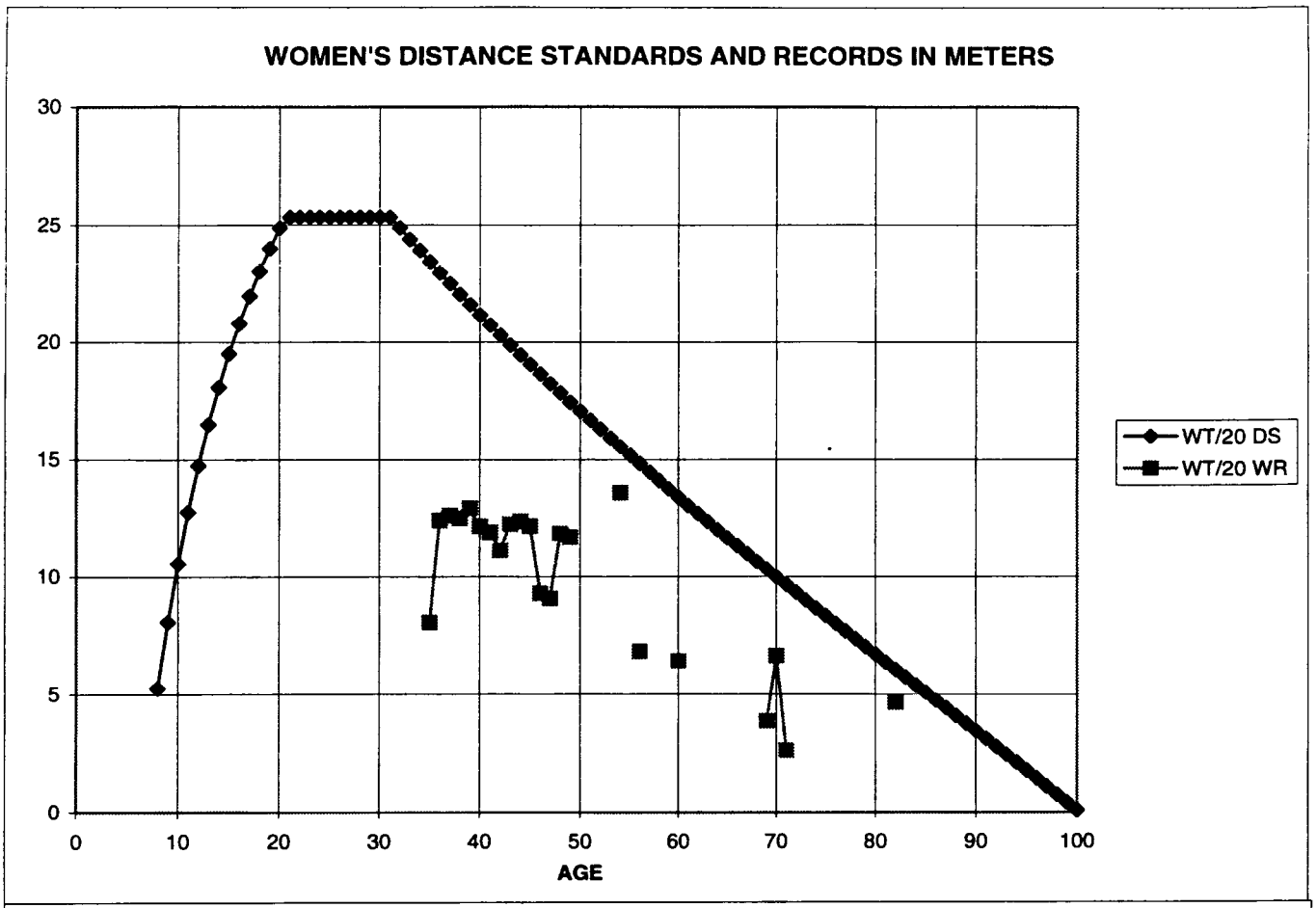


Figure 88


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/20 DS
WT/20 WR

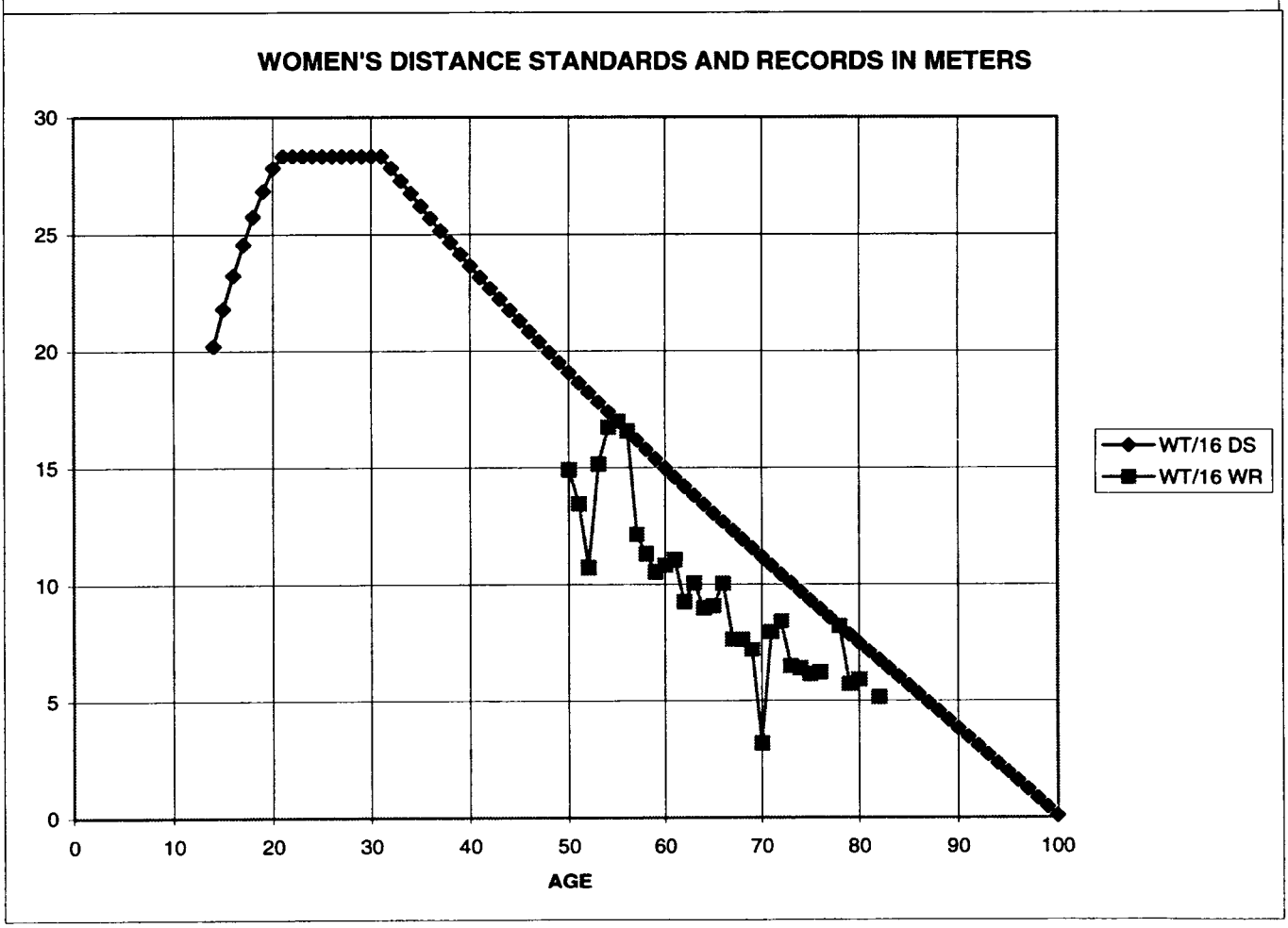

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
30
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/16 DS
WT/16 WR

Figure 89

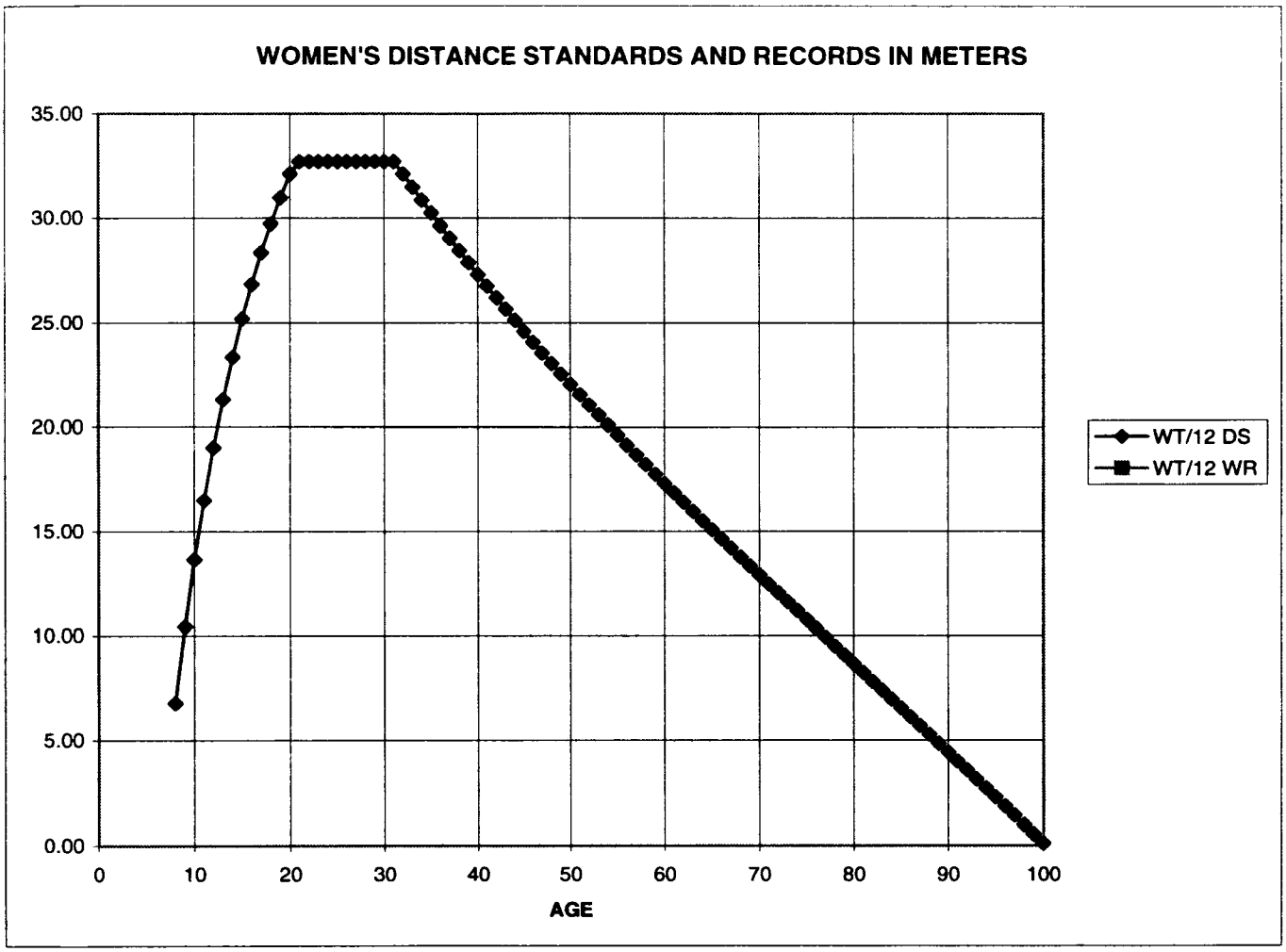
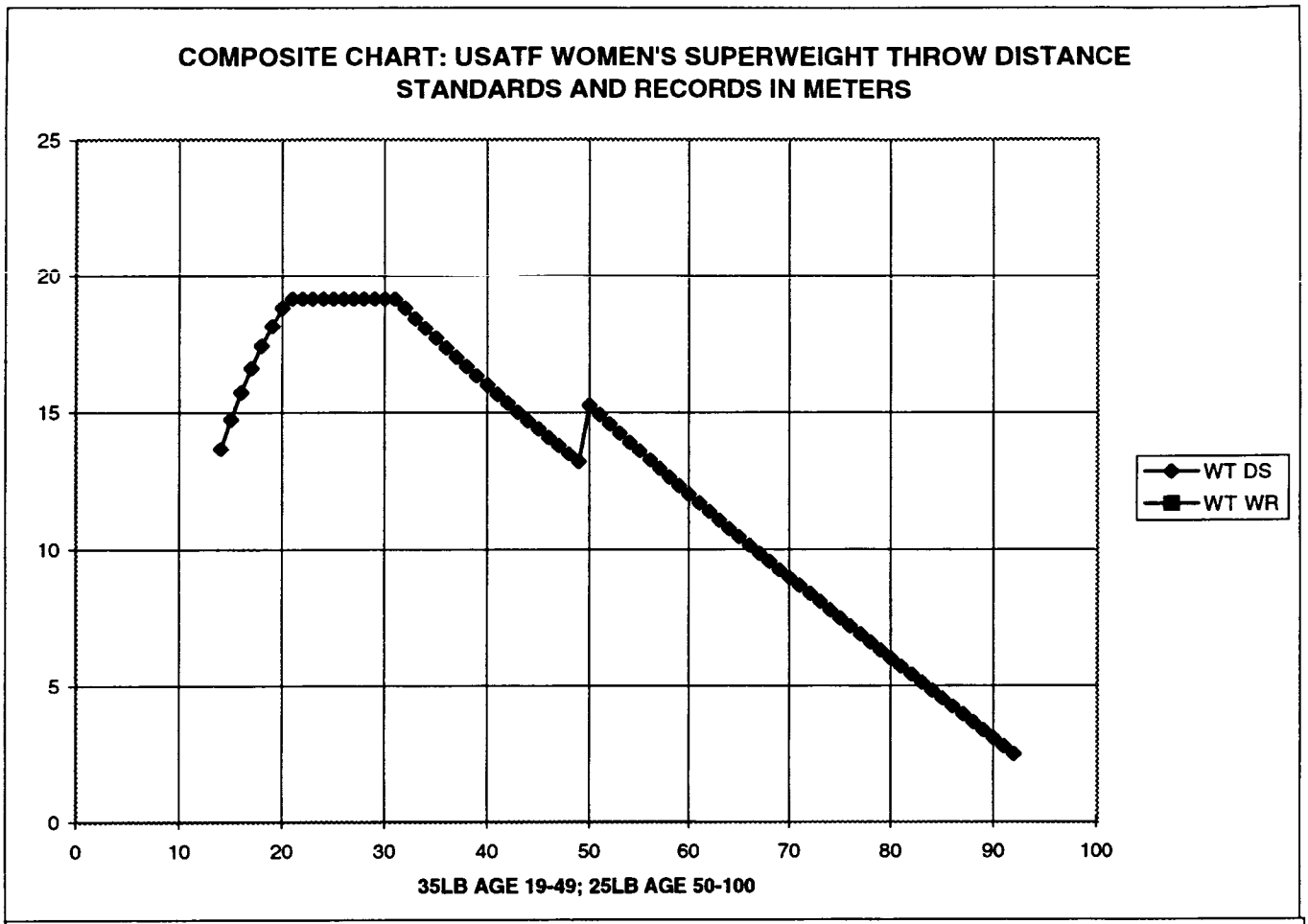

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/12 DS
WT/12 WR

Figure 90


COMPOSITE CHART: USATF WOMEN'S SUPERWEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
WT DS
WT WR
35LB AGE 19-49; 25LB AGE 50-100

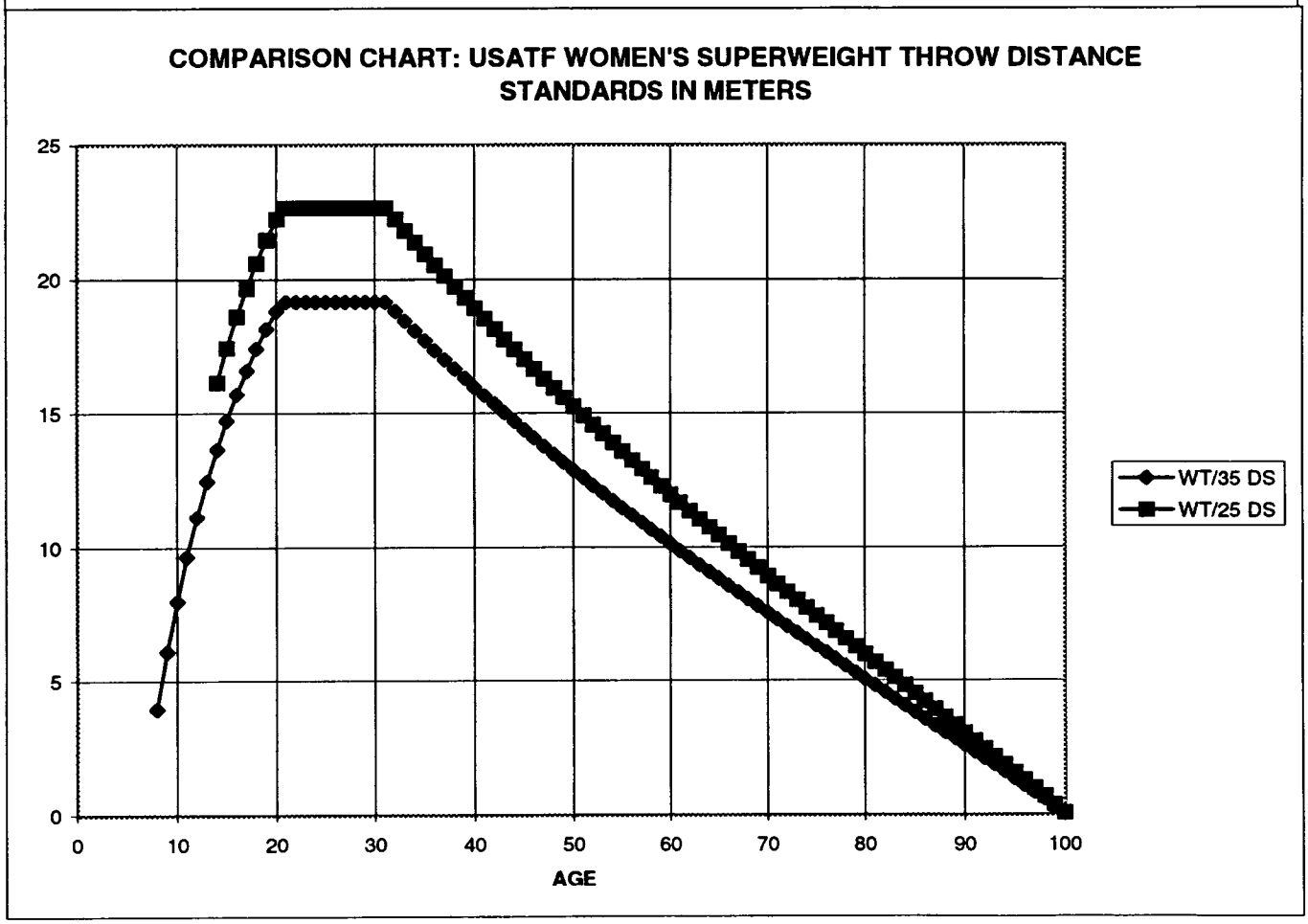
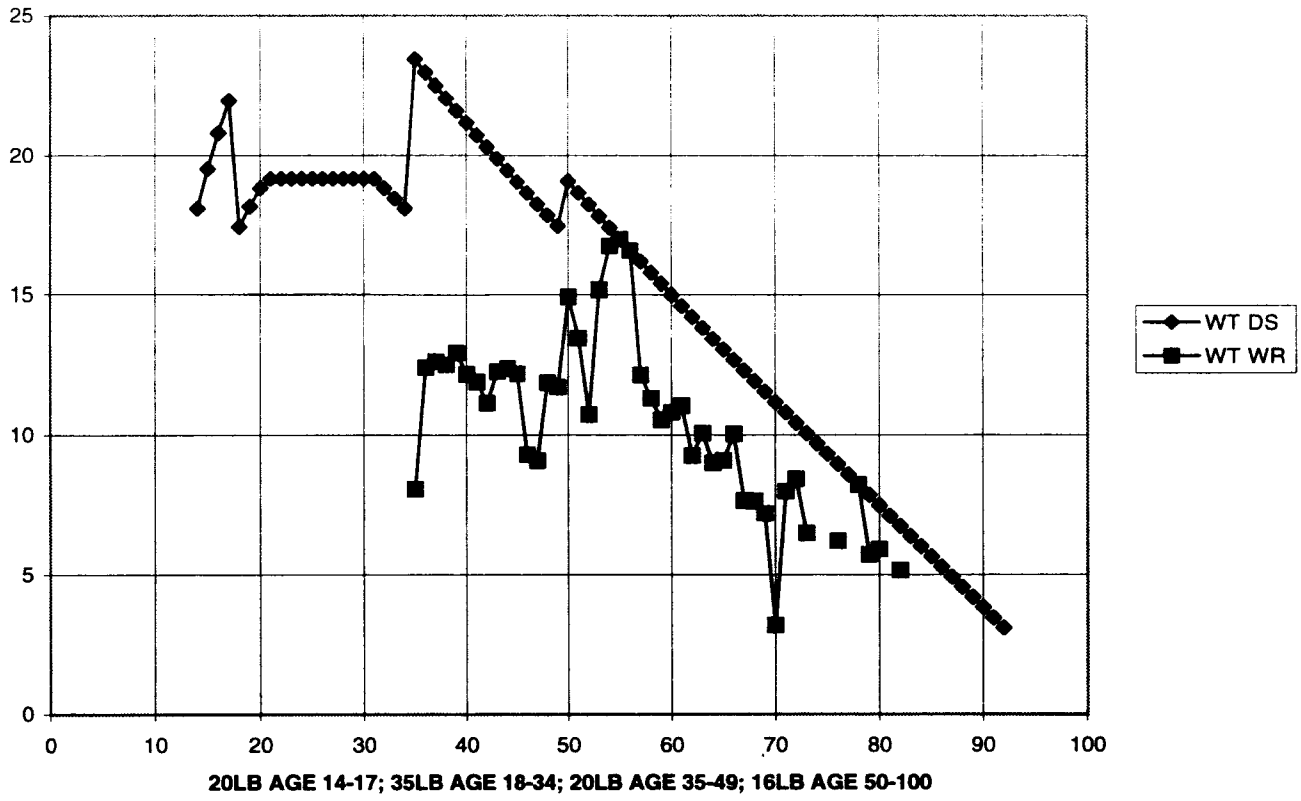

COMPARISON CHART: USATF WOMEN'S SUPERWEIGHT THROW DISTANCE STANDARDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
WT/35 DS
WT/25 DS
AGE

Figure 91

COMPOSITE CHART: USATF WOMEN'S WEIGHT THROW DISTANCE STANDARDS AND RECORDS IN METERS



COMPARISON CHART: USATF WOMEN'S WEIGHT THROW DISTANCE STANDARDS IN METERS

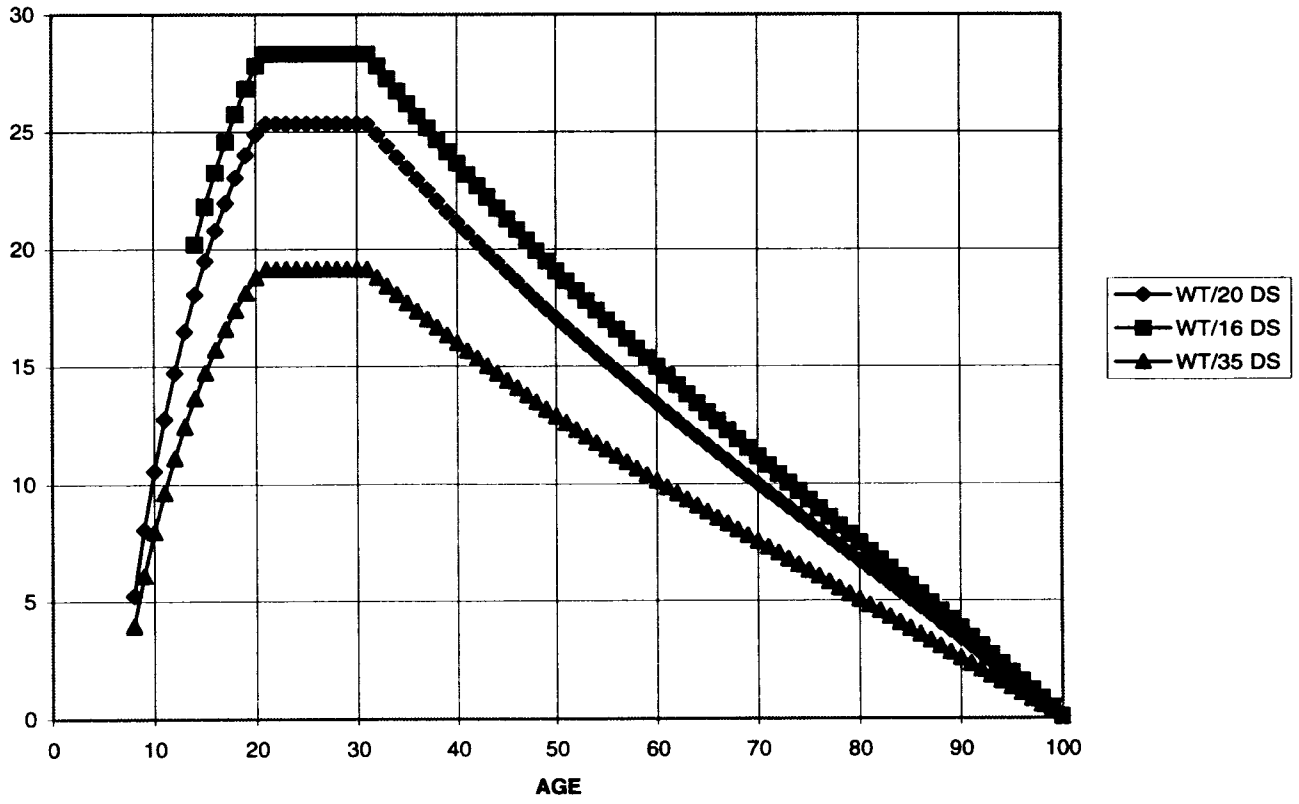
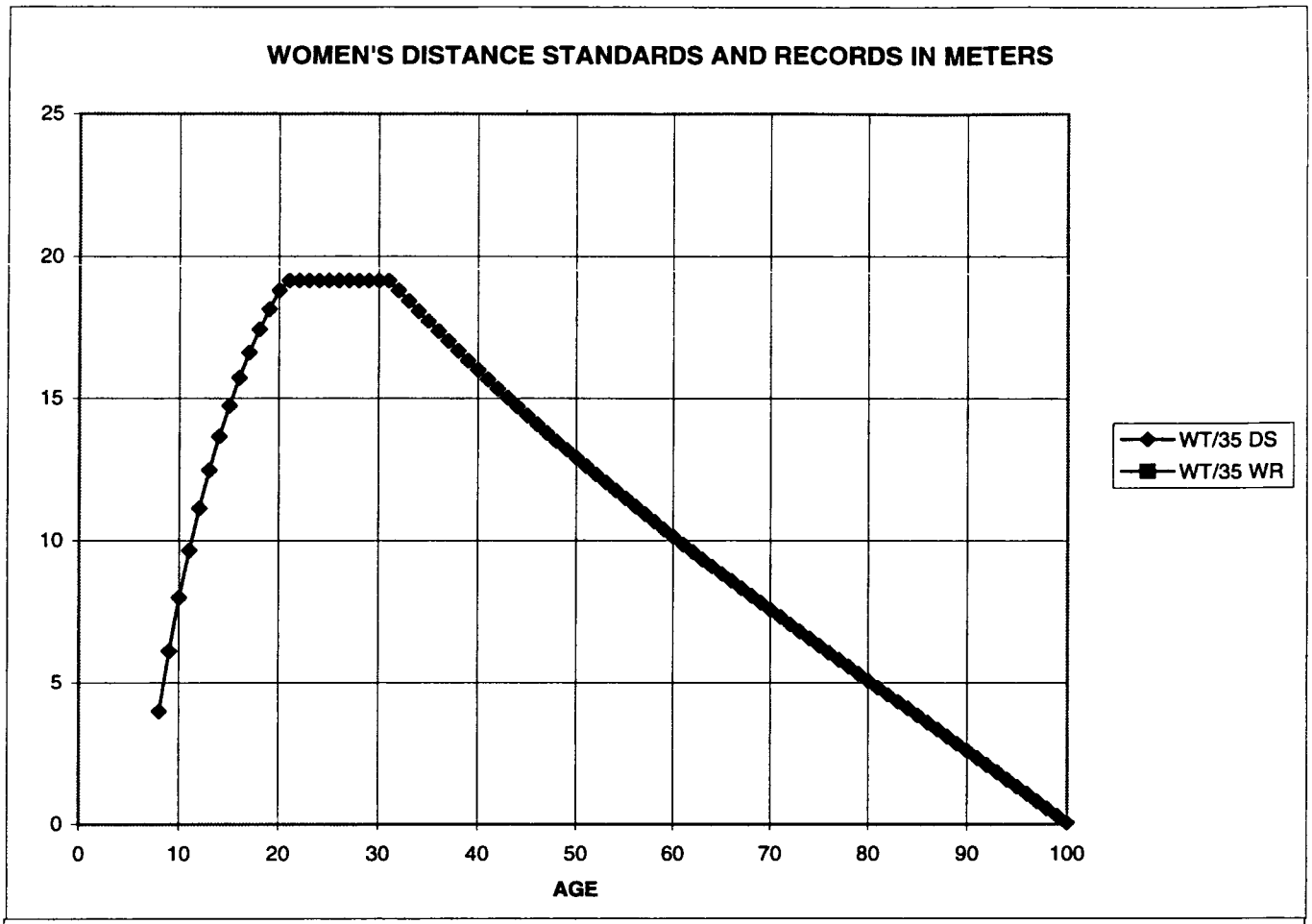


Figure 92


WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/35 DS
WT/35 WR

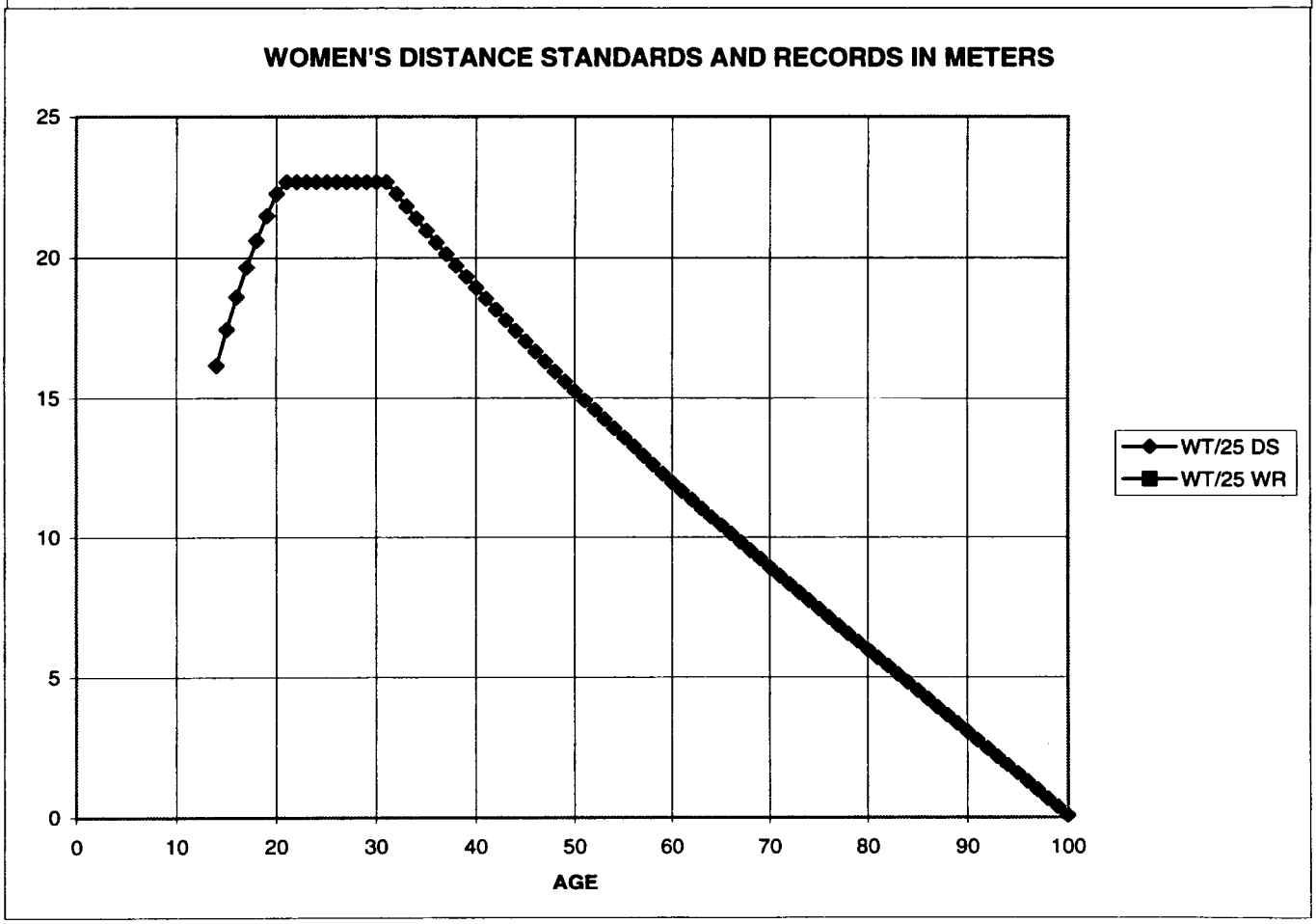
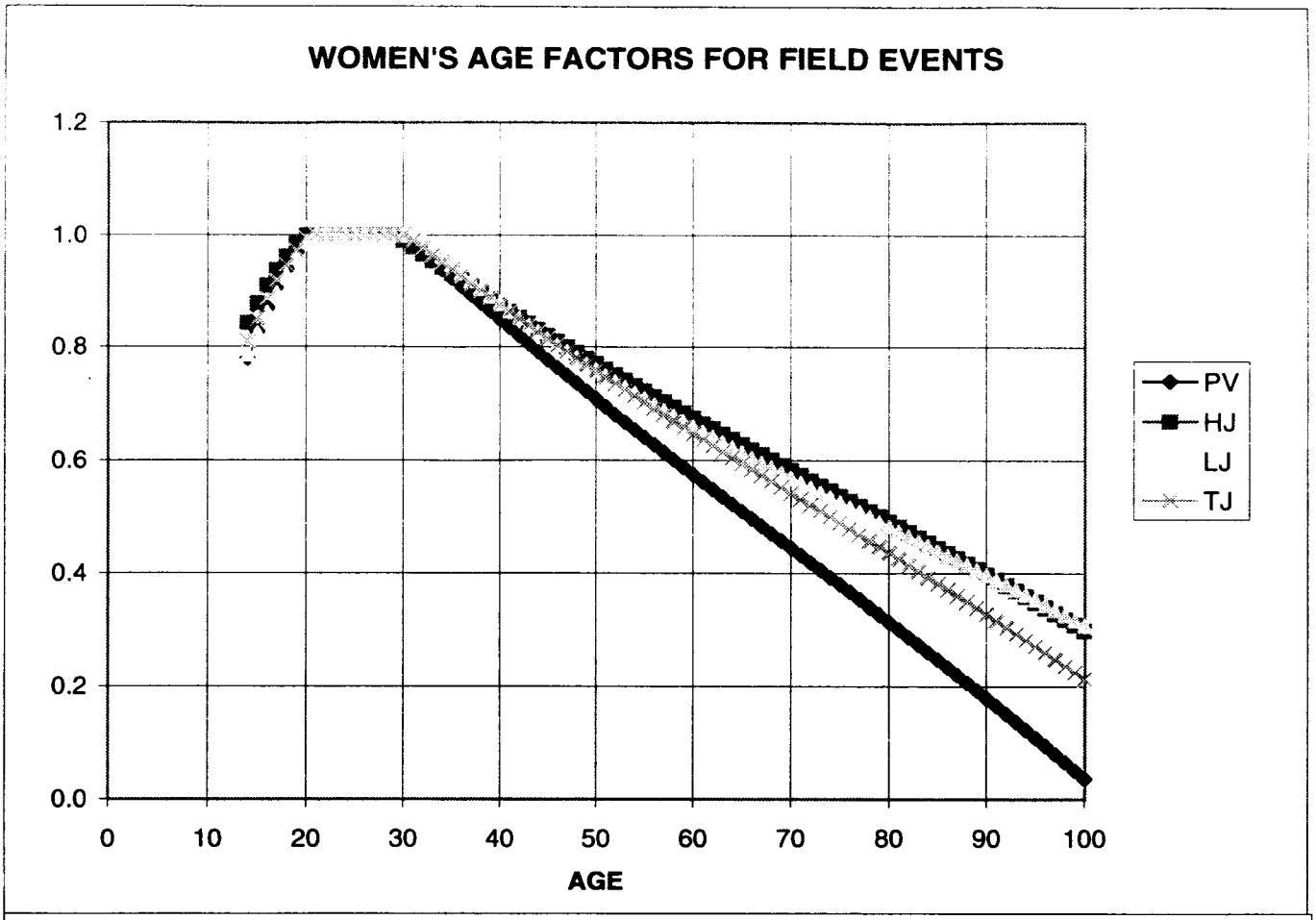

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS
25
20
15
10
5
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/25 DS
WT/25 WR

Figure 93


WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
PV
HJ
LJ
TJ

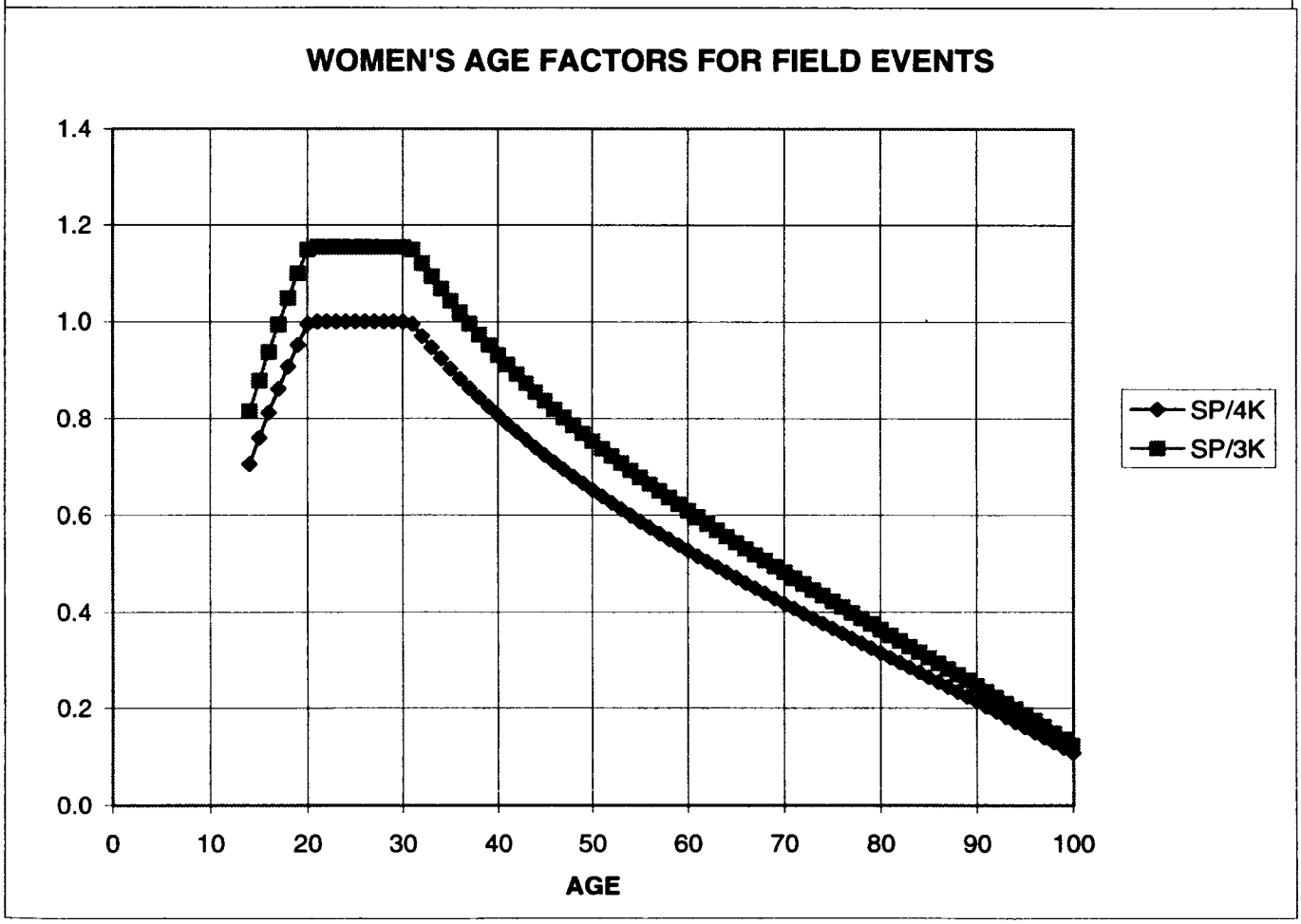
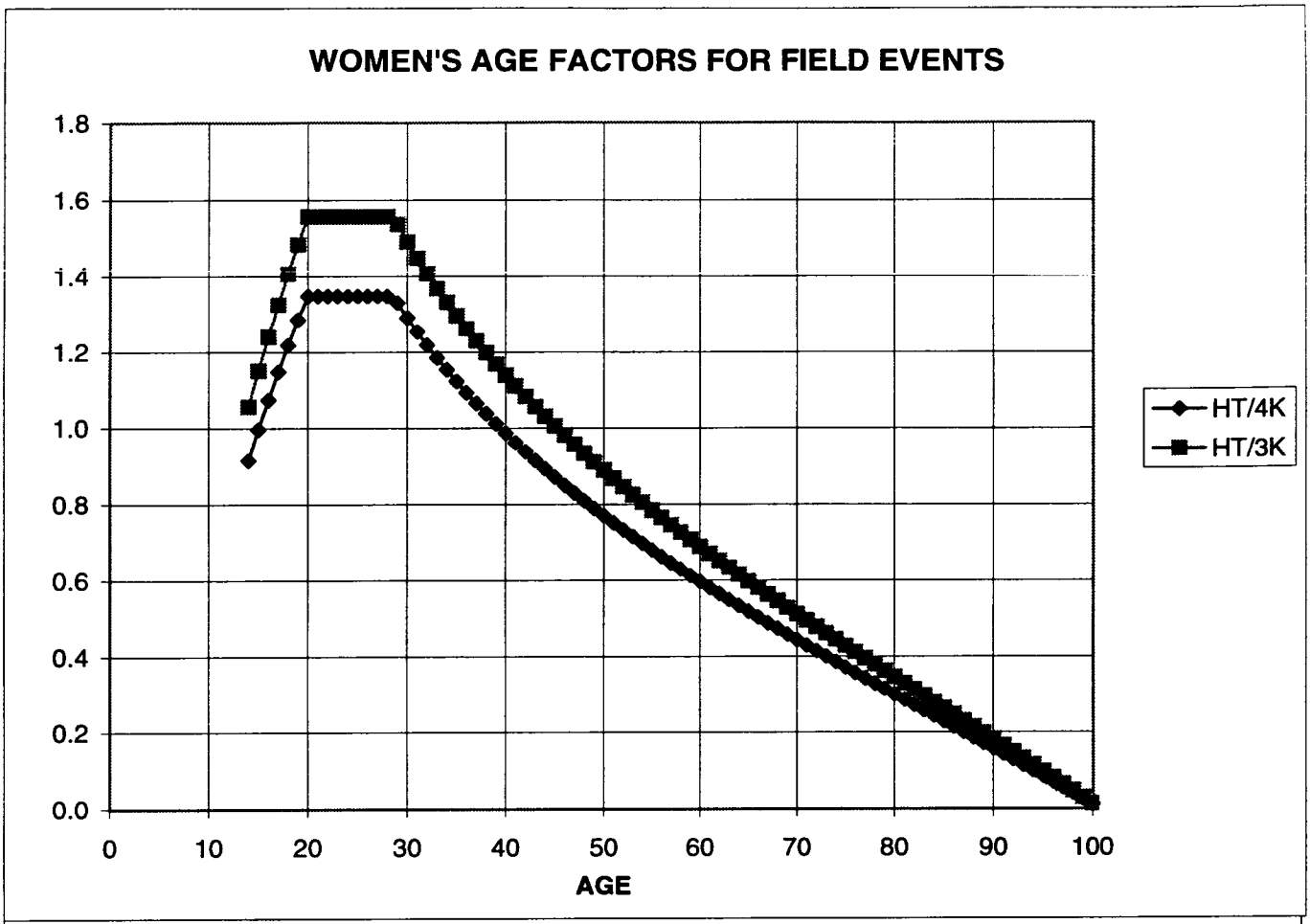

WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
SP/4K
SP/3K

Figure 94


WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
HT/4K
HT/3K

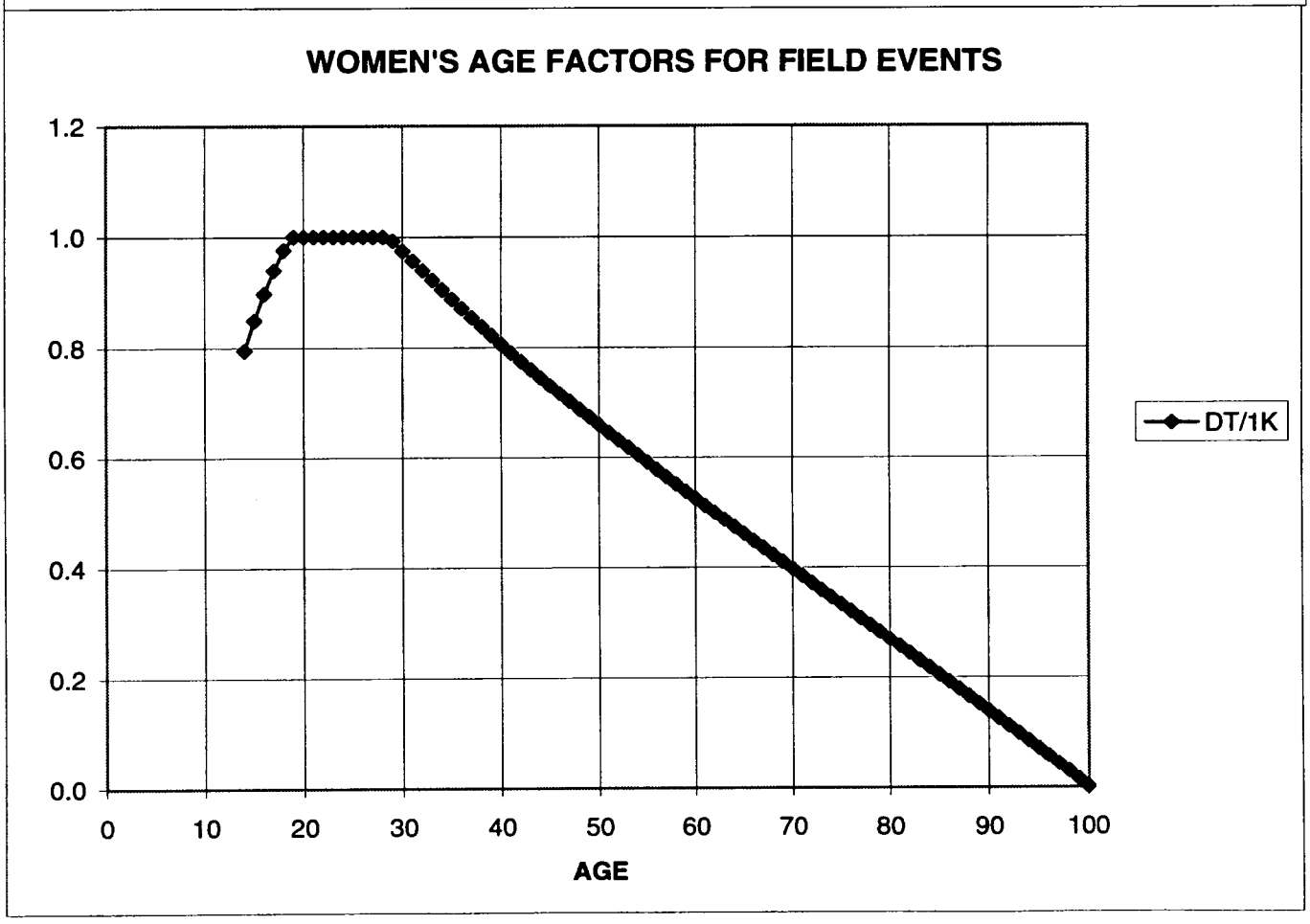
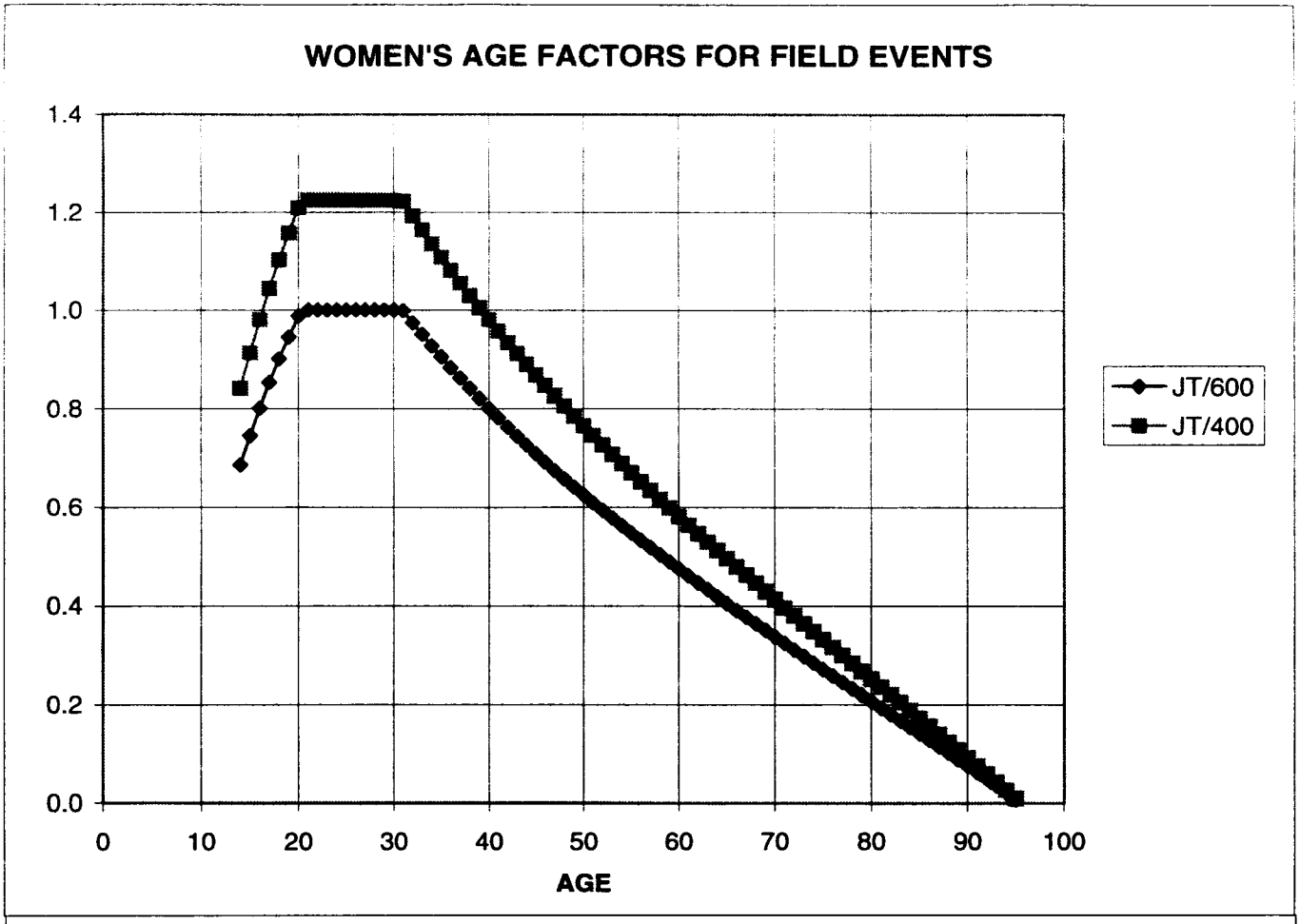
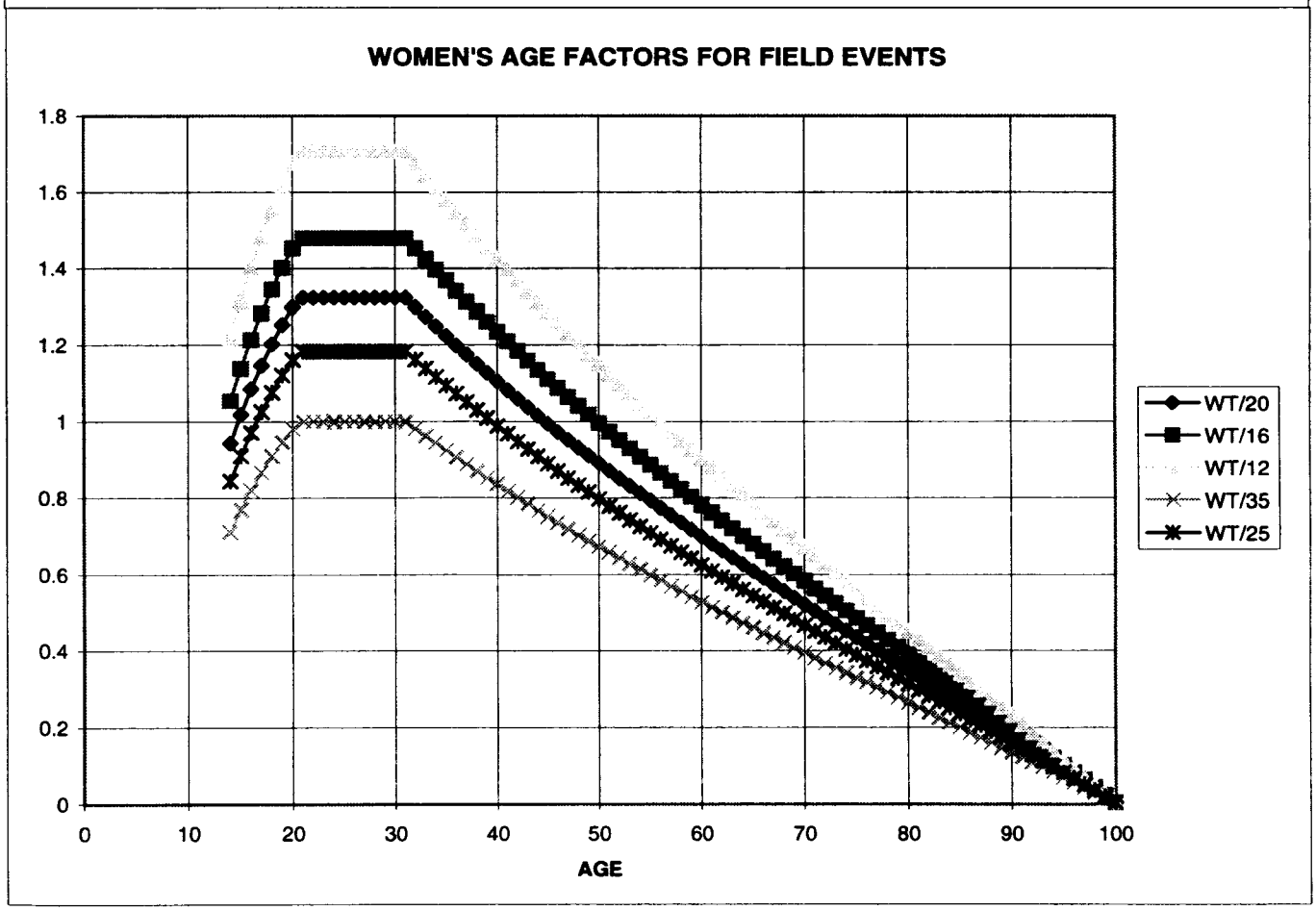

WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
DT/1K

Figure 95


WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
JT/600
JT/400


WOMEN'S AGE FACTORS FOR FIELD EVENTS
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
10
20
30
40
50
60
70
80
90
100
AGE
WT/20
WT/16
WT/12
WT/35
WT/25

Chapter Four

Race Walk Events

Standards are provided for selected race walk events most frequently included in sanctioned meets. The standards reflect times for world record level walkers. The standards apply to walkers of all ability levels however through application of the performance level percentage concept.

The performance level percentage concept is that a walker's performance level is expressed as a percentage of the world record standard which is found by dividing the event standard by the walker's time for the event. To divide, the standard and the walker's time should both be expressed in seconds. A fifty-seven year old walker uses the standard listed for age 57. Walkers twenty to twenty-nine years old use the standard listed for OC which is the open class standard.

Calculating a walker's performance level percentage. Determine the PL% for a 53 year old woman who walks the 10K in 55:55. Convert the 55 minutes and 55 seconds time walked to time in seconds, obtaining 3355 seconds. Find the standard on page 185 for the age 53 women's 10K which is listed as 2773.1 seconds. Divide 2773.1 by 3355 obtaining a value of 0.8266 which is a percentage of 82.66%.

The primary purpose of performance level percentages is to facilitate comparison of performances. An individual walker's performances can be compared against themselves, or performances of many walkers can be compared. Since the standards for all events are adjusted to a world record level, comparison of performances for different events is valid. While this effort does not set standards as such for average walkers, that doesn't mean the standards aren't applicable to walkers of average ability regardless of what the term average walker may imply.

The tables of time standards are provided starting with the next page. The standards are listed in hours, minutes and seconds format (h:m:s), and are also listed in seconds. The listing in seconds is to facilitate calculating performance level percentage.

Following the tables of time standards, age-factor tables are provided for the same events. Age-factors are used to convert the performances of non-open class walkers (e.g., masters age) to their equivalent performance as an open class effort. Specifically, age-factors for walk events are factors which convert records for non-open class walkers to the value of the open class record. Age-factor is thus obtained by dividing the open class world record time by the time of the records for the other ages. For this book, age-factor is defined to be division of the open class time standard by the time standard for the other ages.

MEN'S WALK EVENT STANDARDS IN H:M:S

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	8:20.5	8:56.1	16:46.3	18:02.9	28:50.7	48:17.5	1:01:58	1:38:13	2:17:10	2:58:45	3:43:06	5:20:48	7:12:07
9	7:30.6	8:02.9	15:09.4	16:18.9	26:03.6	43:28.6	55:37.8	1:27:34	2:01:32	2:37:37	3:15:59	4:40:43	6:18:06
10	6:56.7	7:26.8	14:04.1	15:08.7	24:11.2	40:14.9	51:23.1	1:20:26	1:51:06	2:23:30	2:57:54	4:13:58	5:42:07
11	6:32.3	7:00.8	13:17.2	14:18.4	22:50.9	37:56.5	48:21.2	1:15:20	1:43:38	2:13:25	2:44:59	3:54:54	5:16:26
12	6:13.9	6:41.3	12:42.1	13:40.7	21:50.8	36:13.2	46:05.5	1:11:32	1:38:04	2:05:53	2:35:19	3:40:36	4:57:13
13	5:59.6	6:26.1	12:15.0	13:11.6	21:04.5	34:53.5	44:20.8	1:08:36	1:33:45	2:00:03	2:27:50	3:29:31	4:42:17
14	5:48.3	6:14.1	11:53.6	12:48.6	20:27.9	33:50.6	42:58.0	1:06:17	1:30:20	1:55:25	2:21:52	3:20:42	4:30:23
15	5:39.1	6:04.3	11:36.3	12:30.1	19:58.5	32:60.0	41:51.4	1:04:24	1:27:34	1:51:39	2:17:02	3:13:30	4:20:41
16	5:31.6	5:56.4	11:22.2	12:15.0	19:34.6	32:16.7	40:57.0	1:02:52	1:25:18	1:48:33	2:13:03	3:07:34	4:12:38
17	5:25.4	5:49.8	11:10.7	12:02.6	19:14.9	31:44.7	40:12.1	1:01:36	1:23:25	1:45:59	2:09:43	3:02:34	4:05:52
18	5:20.2	5:44.3	11:01.1	11:52.3	18:58.6	31:16.5	39:34.9	1:00:32	1:21:50	1:43:48	2:06:54	2:58:21	4:00:07
19	5:15.9	5:39.7	10:53.1	11:43.8	18:45.1	30:53.1	39:03.8	59:38.4	1:20:30	1:41:58	2:04:30	2:54:44	3:55:12
OC	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
30	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:56:27	2:44:53	3:40:58
31	5:12.0	5:35.4	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
32	5:12.6	5:35.9	10:42.9	11:32.5	18:23.6	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
33	5:14.5	5:37.9	10:45.2	11:34.8	18:25.4	30:09.6	38:02.6	57:42.9	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
34	5:16.5	5:40.0	10:48.7	11:38.4	18:30.7	30:17.6	38:10.0	57:45.0	1:17:26	1:37:31	1:58:27	2:44:53	3:40:58
35	5:18.5	5:42.1	10:52.2	11:42.2	18:36.4	30:26.7	38:21.7	58:03.7	1:17:44	1:37:45	1:58:33	2:44:53	3:40:58
36	5:20.6	5:44.3	10:56.0	11:46.2	18:42.4	30:36.3	38:33.9	58:23.4	1:18:12	1:38:22	1:59:20	2:45:48	3:41:52
37	5:22.7	5:46.6	10:59.8	11:50.3	18:48.6	30:46.4	38:46.8	58:44.0	1:18:42	1:39:01	2:00:09	2:46:59	3:43:26
38	5:24.9	5:48.9	11:03.8	11:54.6	18:55.1	30:56.9	39:00.2	59:05.4	1:19:12	1:39:41	2:01:00	2:48:12	3:45:03
39	5:27.2	5:51.3	11:08.0	11:59.0	19:01.8	31:07.8	39:14.2	59:27.7	1:19:43	1:40:22	2:01:52	2:49:27	3:46:41
40	5:29.4	5:53.7	11:12.2	12:03.5	19:08.7	31:19.1	39:28.6	59:50.6	1:20:16	1:41:05	2:02:45	2:50:43	3:48:21
41	5:31.8	5:56.2	11:16.5	12:08.2	19:15.9	31:30.8	39:43.6	1:00:14	1:20:49	1:41:49	2:03:40	2:52:01	3:50:03
42	5:34.1	5:58.7	11:21.0	12:12.9	19:23.3	31:42.9	39:59.0	1:00:39	1:21:24	1:42:34	2:04:36	2:53:20	3:51:47
43	5:36.5	6:01.3	11:25.6	12:17.9	19:30.9	31:55.4	40:14.9	1:01:04	1:21:59	1:43:19	2:05:33	2:54:41	3:53:32
44	5:39.0	6:03.9	11:30.3	12:22.9	19:38.7	32:08.2	40:31.3	1:01:30	1:22:35	1:44:06	2:06:31	2:56:03	3:55:18
45	5:41.5	6:06.6	11:35.1	12:28.1	19:46.8	32:21.5	40:48.1	1:01:56	1:23:12	1:44:55	2:07:31	2:57:26	3:57:07
46	5:44.0	6:09.3	11:40.1	12:33.4	19:55.1	32:35.1	41:05.5	1:02:24	1:23:50	1:45:44	2:08:32	2:58:51	3:58:57
47	5:46.6	6:12.0	11:45.2	12:38.8	20:03.6	32:49.1	41:23.3	1:02:52	1:24:29	1:46:34	2:09:34	3:00:18	4:00:49
48	5:49.3	6:14.9	11:50.3	12:44.4	20:12.3	33:03.4	41:41.7	1:03:21	1:25:09	1:47:26	2:10:38	3:01:46	4:02:43
49	5:51.9	6:17.8	11:55.7	12:50.1	20:21.3	33:18.2	42:00.6	1:03:50	1:25:50	1:48:19	2:11:43	3:03:17	4:04:39
50	5:54.7	6:20.7	12:01.1	12:55.9	20:30.5	33:33.5	42:20.0	1:04:21	1:26:32	1:49:13	2:12:49	3:04:49	4:06:36
51	5:57.5	6:23.7	12:06.7	13:01.9	20:40.0	33:49.1	42:40.0	1:04:52	1:27:15	1:50:08	2:13:57	3:06:23	4:08:39
52	6:00.4	6:26.8	12:12.5	13:08.1	20:49.8	34:05.2	43:00.5	1:05:24	1:27:59	1:51:05	2:15:07	3:07:59	4:10:42
53	6:03.3	6:29.9	12:18.3	13:14.4	20:59.8	34:21.8	43:21.6	1:05:57	1:28:45	1:52:03	2:16:18	3:09:37	4:12:48
54	6:06.3	6:33.1	12:24.4	13:20.9	21:10.1	34:38.9	43:43.4	1:06:31	1:29:32	1:53:03	2:17:32	3:11:18	4:14:57
55	6:09.3	6:36.4	12:30.6	13:27.6	21:20.7	34:56.5	44:05.8	1:07:06	1:30:20	1:54:05	2:18:47	3:13:01	4:17:09
56	6:12.5	6:39.8	12:37.0	13:34.5	21:31.6	35:14.6	44:28.9	1:07:42	1:31:09	1:55:08	2:20:04	3:14:47	4:19:24
57	6:15.7	6:43.2	12:43.5	13:41.5	21:42.9	35:33.2	44:52.7	1:08:19	1:31:60	1:56:13	2:21:23	3:16:35	4:21:43
58	6:19.0	6:46.8	12:50.3	13:48.8	21:54.5	35:52.5	45:17.2	1:08:58	1:32:52	1:57:20	2:22:45	3:18:27	4:24:05
59	6:22.4	6:50.4	12:57.2	13:56.3	22:06.4	36:12.3	45:42.6	1:09:37	1:33:46	1:58:28	2:24:09	3:20:22	4:26:32
60	6:25.8	6:54.1	13:04.4	14:04.0	22:18.6	36:32.9	46:08.7	1:10:18	1:34:42	1:59:39	2:25:35	3:22:20	4:29:02
61	6:29.4	6:58.0	13:11.7	14:11.9	22:31.5	36:54.0	46:35.7	1:10:60	1:35:40	2:00:53	2:27:04	3:24:21	4:31:37
62	6:33.1	7:01.9	13:19.3	14:20.1	22:44.6	37:15.9	47:03.7	1:11:43	1:36:39	2:02:08	2:28:37	3:26:27	4:34:17
63	6:36.8	7:05.9	13:27.1	14:28.5	22:58.2	37:38.6	47:32.6	1:12:28	1:37:41	2:03:27	2:30:12	3:28:37	4:37:02
64	6:40.7	7:10.1	13:35.2	14:37.3	23:12.3	38:02.0	48:02.5	1:13:15	1:38:44	2:04:48	2:31:50	3:30:51	4:39:53
65	6:44.7	7:14.4	13:43.6	14:46.3	23:26.8	38:26.3	48:33.5	1:14:03	1:39:50	2:06:11	2:33:32	3:33:09	4:42:49
66	6:48.8	7:18.9	13:52.3	14:55.6	23:41.9	38:51.5	49:05.7	1:14:53	1:40:58	2:07:36	2:35:18	3:35:33	4:45:52
67	6:53.1	7:23.5	14:01.2	15:05.3	23:57.5	39:17.7	49:39.0	1:15:45	1:42:09	2:09:08	2:37:07	3:38:02	4:49:02
68	6:57.5	7:28.2	14:10.5	15:15.3	24:13.7	39:44.8	50:13.7	1:16:39	1:43:23	2:10:42	2:39:01	3:40:37	4:52:19
69	7:02.0	7:33.1	14:20.1	15:25.7	24:30.5	40:13.1	50:49.8	1:17:35	1:44:40	2:12:19	2:40:59	3:43:18	4:55:43
70	7:06.7	7:38.2	14:30.1	15:36.5	24:48.0	40:42.4	51:27.3	1:18:34	1:45:59	2:14:01	2:43:03	3:46:05	4:59:16
71	7:11.6	7:43.5	14:40.5	15:47.7	25:06.3	41:13.0	52:06.4	1:19:35	1:47:23	2:15:46	2:45:11	3:48:60	5:02:59
72	7:16.7	7:48.9	14:51.3	15:59.4	25:25.2	41:44.9	52:47.2	1:20:38	1:48:49	2:17:37	2:47:25	3:52:02	5:06:51
73	7:21.9	7:54.6	15:02.5	16:11.5	25:45.0	42:18.2	53:29.8	1:21:45	1:50:20	2:19:32	2:49:45	3:55:13	5:10:53
74	7:27.4	8:00.5	15:14.2	16:24.1	26:05.6	42:53.0	54:14.4	1:22:54	1:51:55	2:21:33	2:52:12	3:58:32	5:15:07
75	7:33.1	8:06.6	15:26.4	16:37.3	26:27.2	43:29.4	55:01.0	1:24:07	1:53:35	2:23:39	2:54:46	4:02:01	5:19:34
76	7:39.0	8:13.0	15:39.1	16:51.1	26:49.7	44:07.5	55:49.9	1:25:23	1:55:19	2:25:52	2:57:27	4:05:41	5:24:14
77	7:45.2	8:19.7	15:52.4	17:05.5	27:13.4	44:47.5	56:41.1	1:26:43	1:57:09	2:28:12	3:00:17	4:09:32	5:29:09
78	7:51.6	8:26.6	16:06.4	17:20.6	27:38.2	45:29.5	57:35.0	1:28:08	1:59:04	2:30:38	3:03:15	4:13:36	5:34:19
79	7:58.4	8:33.9	16:21.0	17:36.4	28:04.2	46:13.7	58:31.7	1:29:37	2:01:06	2:33:13	3:06:24	4:17:53	5:39:48
80	8:05.4	8:41.5	16:36.4	17:53.1	28:31.5	47:00.2	59:31.4	1:31:10	2:03:14	2:35:57	3:09:43	4:22:25	5:45:35
81	8:12.8	8:49.5	16:52.5	18:10.5	29:00.4	47:49.3	1:00:35	1:32:49	2:05:30	2:38:50	3:13:14	4:27:13	5:51:44
82	8:20.5	8:57.9	17:09.5	18:28.9	29:30.7	48:41.2	1:01:41	1:34:34	2:07:54	2:41:54	3:16:56	4:32:19	5:58:15
83	8:28.7	9:06.7	17:27.4	18:48.3	30:02.9	49:36.1	1:02:52	1:36:25	2:10:27	2:45:09	3:20:56	4:37:45	6:05:13
84	8:37.3	9:16.0	17:46.3	19:08.8	30:36.9	50:34.3	1:04:07	1:38:24	2:13:10	2:48:37	3:25:10	4:43:33	6:12:39
85	8:46.3	9:25.8	18:06.2	19:30.5	31:12.9	51:36.2	1:05:27	1:40:30	2:16:03	2:52:19	3:29:41	4:49:45	6:20:36
86	8:55.9	9:36.2	18:27.4	19:53.5	31:51.2	52:42.0	1:06:52	1:42:44	2:19:09	2:56:16	3:34:31	4:56:24	6:29:09
87	9:06.0	9:47.1	18:49.9	20:17.9	32:32.0	53:52.3	1:08:23	1:45:08	2:22:28	3:00:31	3:39:43	5:03:33	6:38:21
88	9:16.7	9:58.8	19:13.9	20:43.9	33:15.5	55:07.5	1:09:60	1:47:43	2:26:01	3:05:06	3:45:19	5:11:16	6:48:18
89	9:28.1	10:11.1	19:39.4	21:11.6	34:02.0	56:28.1	1:11:44	1:50:29	2:29:52	3:10:02	3:51:22	5:19:38	6:59:06
90	9:40.2	10:24.3	20:06.7	21:41.2	34:51.8	57:54.8	1:13:37	1:53:29	2:34:01	3:15:22	3:57:56	5:28:43	7:10:50
91	9:53.1	10:38.3	20:35.9	22:13.0	35:45.5	59:28.2	1:15:38	1:56:43	2:38:31	3:21:11	4:05:04	5:38:37	7:23:40
92	10:07.0	10:53.3	21:07.3	22:47.2	36:43.2	1:01:09	1:17:50	2:00:15	2:43:26	3:27:31	4:12:53	5:49:29	7:37:46
93	10:21.8	11:09.4	21:41.2	23:24.0	37:45.7	1:02:59	1:20:13	2:04:05	2:48:48	3:34:28	4:21:27	6:01:26	7:53:19
94	10:37.7	11:26.8	22:17.7	24:03.8	38:53.6	1:04:59	1:22:49	2:08:17	2:54:42	3:42:06	4:30:54	6:14:39	8:10:34
95	10:54.9	11:45.5	22:57.4	24:47.0	40:07.4	1:07:09	1:25:40	2:12:55	3:01:12	3:50:34	4:41:22	6:29:22	8:29:49
96	11:13.5	12:05.7	23:40.5	25:34.0	41:26.1	1:09:33	1:28:48	2:18:02	3:08:25	3:59:58	4:53:03	6:45:50	8:51:27
97	11:33.7	12:27.7	24:27.6	26:25.4	42:56.8	1:12:11	1:32:17	2:23:44	3:16:29	4:10:31	5:06:10	7:04:25	9:15:56
98	11:55.7	12:51.6	25:19.3	27:21.8	44:34.6	1:15:07	1:36:08	2:30:06	3:25:32	4:22:23	5:21:00	7:25:32	9:43:52
99	12:19.8	13:17.9	26:16.3	28:24.1	46:23.1	1:18:23	1:40:28	2:37:17	3:35:47	4:35:53	5:37:55	7:49:45	10:16:04
100	12:46.2	13:46.7	27:19.4	29:33.1	48:24.1	1:22:04	1:45:21	2:45:26	3:47:29	4:51:22	5:57:23	8:17:49	10:53:36

MEN'S WALK EVENT STANDARDS IN SECONDS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	500.5	536.1	1006.3	1082.9	1730.7	2897.5	3717.9	5893	8230	10725	13386	19248	25927
9	450.6	482.9	909.4	978.9	1563.6	2608.6	3337.8	5254	7292	9457	11759	16843	22686
10	416.7	446.8	844.1	908.7	1451.2	2414.9	3083.1	4826	6666	8610	10674	15238	20527
11	392.3	420.8	797.2	858.4	1370.9	2276.5	2901.2	4520	6218	8005	9899	14094	18986
12	373.9	401.3	762.1	820.7	1310.8	2173.2	2765.5	4292	5884	7553	9319	13236	17833
13	359.6	386.1	735.0	791.6	1264.5	2093.5	2660.8	4116	5625	7203	8870	12571	16937
14	348.3	374.1	713.6	768.6	1227.9	2030.6	2578.0	3977	5420	6925	8512	12042	16223
15	339.1	364.3	696.3	750.1	1198.5	1980.0	2511.4	3864	5254	6699	8222	11610	15641
16	331.6	356.4	682.2	735.0	1174.6	1936.7	2457.0	3772	5118	6513	7983	11254	15158
17	325.4	349.8	670.7	722.6	1154.9	1904.7	2412.1	3696	5005	6359	7783	10954	14752
18	320.2	344.3	661.1	712.3	1138.6	1876.5	2374.9	3632	4910	6228	7614	10701	14407
19	315.9	339.7	653.1	703.8	1125.1	1853.1	2343.8	3578	4830	6118	7470	10484	14112
OC	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
30	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
31	312.0	335.4	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
32	312.6	335.9	642.9	692.5	1103.6	1809.6	2282.6	3463	4646	5851	7107	9893	13258
33	314.5	337.9	645.2	694.8	1105.4	1809.6	2282.6	3463	4646	5851	7107	9893	13258
34	316.5	340.0	648.7	698.4	1110.7	1817.6	2290.0	3465	4646	5851	7107	9893	13258
35	318.5	342.1	652.2	702.2	1116.4	1826.7	2301.7	3484	4664	5865	7113	9893	13258
36	320.6	344.3	656.0	706.2	1122.4	1836.3	2313.9	3503	4692	5902	7160	9946	13312
37	322.7	346.6	659.8	710.3	1128.6	1846.4	2326.8	3524	4722	5941	7209	10019	13406
38	324.9	348.9	663.8	714.6	1135.1	1856.9	2340.2	3545	4752	5981	7260	10092	13503
39	327.2	351.3	668.0	719.0	1141.8	1867.8	2354.2	3568	4783	6022	7312	10167	13601
40	329.4	353.7	672.2	723.5	1148.7	1879.1	2368.6	3591	4816	6065	7365	10243	13701
41	331.8	356.2	676.5	728.2	1155.9	1890.8	2383.6	3614	4849	6109	7420	10321	13803
42	334.1	358.7	681.0	732.9	1163.3	1902.9	2399.0	3639	4884	6154	7476	10400	13907
43	336.5	361.3	685.6	737.9	1170.9	1915.4	2414.9	3664	4919	6199	7533	10481	14012
44	339.0	363.9	690.3	742.9	1178.7	1928.2	2431.3	3690	4955	6246	7591	10563	14118
45	341.5	366.6	695.1	748.1	1186.8	1941.5	2448.1	3716	4992	6295	7651	10646	14227
46	344.0	369.3	700.1	753.4	1195.1	1955.1	2465.5	3744	5030	6344	7712	10731	14337
47	346.6	372.0	705.2	758.8	1203.6	1969.1	2483.3	3772	5069	6394	7774	10818	14449
48	349.3	374.9	710.3	764.4	1212.3	1983.4	2501.7	3801	5109	6446	7838	10906	14563
49	351.9	377.8	715.7	770.1	1221.3	1998.2	2520.6	3830	5150	6499	7903	10997	14679
50	354.7	380.7	721.1	775.9	1230.5	2013.5	2540.0	3861	5192	6553	7969	11089	14798
51	357.5	383.7	726.7	781.9	1240.0	2029.1	2560.0	3892	5235	6608	8037	11183	14919
52	360.4	386.8	732.5	788.1	1249.8	2045.2	2580.5	3924	5279	6665	8107	11279	15042
53	363.3	389.9	738.3	794.4	1259.8	2061.8	2601.6	3957	5325	6723	8178	11377	15168
54	366.3	393.1	744.4	800.9	1270.1	2078.9	2623.4	3991	5372	6783	8252	11478	15297
55	369.3	396.4	750.6	807.6	1280.7	2096.5	2645.8	4026	5420	6845	8327	11581	15429
56	372.5	399.8	757.0	814.5	1291.6	2114.6	2668.9	4062	5469	6908	8404	11687	15564
57	375.7	403.2	763.5	821.5	1302.9	2133.2	2692.7	4099	5520	6973	8483	11795	15703
58	379.0	406.6	770.3	828.8	1314.5	2152.5	2717.2	4138	5572	7040	8565	11907	15845
59	382.4	410.4	777.2	836.3	1326.4	2172.3	2742.6	4177	5626	7108	8649	12022	15992
60	385.8	414.1	784.4	844.0	1338.8	2192.9	2768.7	4218	5682	7179	8735	12140	16142
61	389.4	418.0	791.7	851.9	1351.5	2214.0	2795.7	4260	5740	7253	8824	12261	16297
62	393.1	421.9	799.3	860.1	1364.6	2235.9	2823.7	4303	5799	7328	8917	12387	16457
63	396.8	425.9	807.1	868.5	1378.2	2258.6	2852.6	4348	5861	7407	9012	12517	16622
64	400.7	430.1	815.2	877.3	1392.3	2282.0	2882.5	4395	5924	7488	9110	12651	16793
65	404.7	434.4	823.6	886.3	1406.8	2306.3	2913.5	4443	5990	7571	9212	12789	16969
66	408.8	438.9	832.3	895.6	1421.9	2331.5	2945.7	4493	6058	7658	9318	12933	17152
67	413.1	443.5	841.2	905.3	1437.5	2357.7	2979.0	4545	6129	7748	9427	13082	17342
68	417.5	448.2	850.5	915.3	1453.7	2384.8	3013.7	4599	6203	7842	9541	13237	17539
69	422.0	453.1	860.1	925.7	1470.5	2413.1	3049.8	4655	6280	7939	9659	13398	17743
70	426.7	458.2	870.1	936.5	1488.0	2442.4	3087.3	4714	6359	8041	9783	13565	17956
71	431.6	463.5	880.5	947.7	1506.3	2473.0	3126.4	4775	6443	8146	9911	13740	18179
72	436.7	468.9	891.3	959.4	1525.2	2504.9	3167.2	4838	6529	8257	10045	13922	18411
73	441.9	474.6	902.5	971.5	1545.0	2538.2	3209.8	4905	6620	8372	10185	14113	18653
74	447.4	480.5	914.2	984.1	1565.6	2573.0	3254.4	4974	6715	8493	10332	14312	18907
75	453.1	486.6	926.4	997.3	1587.2	2609.4	3301.0	5047	6815	8619	10486	14521	19174
76	459.0	493.0	939.1	1011.1	1609.7	2647.5	3349.9	5123	6919	8752	10647	14741	19454
77	465.2	499.7	952.4	1025.5	1633.4	2687.5	3401.1	5203	7029	8892	10817	14972	19749
78	471.6	506.6	966.4	1040.6	1658.2	2729.5	3455.0	5288	7144	9038	10995	15216	20059
79	478.4	513.9	981.0	1056.4	1684.2	2773.7	3511.7	5377	7266	9193	11184	15473	20388
80	485.4	521.5	996.4	1073.1	1711.5	2820.2	3571.4	5470	7394	9357	11383	15745	20735
81	492.8	529.5	1012.5	1090.5	1740.4	2869.3	3634.5	5569	7530	9530	11594	16033	21104
82	500.5	537.9	1029.5	1108.9	1770.7	2921.2	3701.2	5674	7674	9714	11818	16339	21495
83	508.7	546.7	1047.4	1128.3	1802.9	2976.1	3771.9	5785	7827	9909	12056	16665	21913
84	517.3	556.0	1066.3	1148.8	1836.9	3034.3	3846.9	5904	7990	10117	12310	17013	22359
85	526.3	565.8	1086.2	1170.5	1872.9	3096.2	3926.7	6030	8163	10339	12581	17385	22836
86	535.9	576.2	1107.4	1193.5	1911.2	3162.0	4011.7	6164	8349	10576	12871	17784	23349
87	546.0	587.1	1129.9	1217.9	1952.0	3232.3	4102.6	6308	8548	10831	13183	18213	23901
88	556.7	598.8	1153.9	1243.9	1995.5	3307.5	4199.8	6463	8761	11106	13519	18676	24498
89	568.1	611.1	1179.4	1271.6	2042.0	3388.1	4304.3	6629	8992	11402	13882	19178	25146
90	580.2	624.3	1206.7	1301.2	2091.8	3474.8	4416.7	6809	9241	11722	14276	19723	25850
91	593.1	638.3	1235.9	1333.0	2145.5	3568.2	4538.1	7003	9511	12071	14704	20317	26620
92	607.0	653.3	1267.3	1367.2	2203.2	3669.3	4669.7	7215	9806	12451	15173	20969	27466
93	621.8	669.4	1301.2	1404.0	2265.7	3779.0	4812.7	7445	10128	12868	15687	21686	28399
94	637.7	686.8	1337.7	1443.8	2333.6	3898.5	4968.8	7697	10482	13326	16254	22479	29434
95	654.9	705.5	1377.4	1487.0	2407.4	4029.2	5139.9	7975	10872	13834	16882	23362	30589
96	673.5	725.7	1420.5	1534.0	2488.1	4172.8	5328.2	8282	11305	14398	17583	24350	31887
97	693.7	747.7	1467.6	1585.4	2576.8	4331.2	5536.6	8624	11789	15031	18370	25465	33356
98	715.7	771.6	1519.3	1641.8	2674.6	4507.0	5768.5	9006	12332	15743	19260	26732	35032
99	739.8	797.9	1576.3	1704.1	2783.1	4703.2	6028.1	9437	12947	16553	20275	28185	36964
100	766.2	826.7	1639.4	1773.1	2904.1	4923.5	6320.7	9926	13649	17482	21443	29869	39216

MEN'S WALK EVENT AGE FACTORS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	0.6233	0.6256	0.6389	0.6395	0.6376	0.6245	0.6139	0.5876	0.5645	0.5455	0.5309	0.5140	0.5114
9	0.6924	0.6946	0.7069	0.7074	0.7058	0.6937	0.6839	0.6591	0.6371	0.6187	0.6044	0.5874	0.5844
10	0.7487	0.7507	0.7617	0.7621	0.7604	0.7494	0.7404	0.7176	0.6970	0.6796	0.6659	0.6492	0.6459
11	0.7954	0.7971	0.8064	0.8068	0.8050	0.7949	0.7868	0.7661	0.7471	0.7309	0.7180	0.7020	0.6983
12	0.8345	0.8359	0.8436	0.8438	0.8419	0.8327	0.8254	0.8068	0.7895	0.7747	0.7627	0.7474	0.7435
13	0.8676	0.8687	0.8747	0.8748	0.8727	0.8644	0.8579	0.8413	0.8256	0.8124	0.8013	0.7870	0.7828
14	0.8958	0.8967	0.9010	0.9010	0.8987	0.8912	0.8854	0.8708	0.8571	0.8450	0.8349	0.8216	0.8172
15	0.9200	0.9207	0.9233	0.9232	0.9208	0.9140	0.9089	0.8962	0.8841	0.8734	0.8644	0.8521	0.8477
16	0.9408	0.9412	0.9424	0.9422	0.9395	0.9334	0.9290	0.9181	0.9077	0.8983	0.8903	0.8791	0.8746
17	0.9588	0.9590	0.9586	0.9584	0.9556	0.9501	0.9463	0.9370	0.9282	0.9202	0.9132	0.9031	0.8987
18	0.9742	0.9742	0.9725	0.9722	0.9692	0.9643	0.9612	0.9535	0.9462	0.9394	0.9335	0.9246	0.9202
19	0.9875	0.9873	0.9843	0.9839	0.9808	0.9765	0.9739	0.9677	0.9619	0.9564	0.9514	0.9437	0.9395
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.9982	0.9987	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	0.9921	0.9927	0.9964	0.9967	0.9984	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9859	0.9866	0.9911	0.9915	0.9935	0.9956	0.9968	0.9994	1.0000	1.0000	1.0000	1.0000	1.0000
35	0.9796	0.9804	0.9857	0.9861	0.9885	0.9906	0.9917	0.9940	0.9960	0.9977	0.9992	1.0000	1.0000
36	0.9732	0.9741	0.9801	0.9806	0.9832	0.9855	0.9865	0.9884	0.9900	0.9914	0.9926	0.9945	0.9960
37	0.9667	0.9677	0.9744	0.9749	0.9778	0.9801	0.9810	0.9827	0.9839	0.9849	0.9858	0.9874	0.9889
38	0.9602	0.9613	0.9685	0.9691	0.9722	0.9745	0.9754	0.9767	0.9776	0.9783	0.9789	0.9803	0.9819
39	0.9537	0.9548	0.9625	0.9632	0.9665	0.9688	0.9696	0.9706	0.9712	0.9716	0.9720	0.9731	0.9748
40	0.9471	0.9482	0.9564	0.9571	0.9607	0.9630	0.9637	0.9644	0.9646	0.9647	0.9649	0.9658	0.9676
41	0.9404	0.9417	0.9503	0.9510	0.9547	0.9570	0.9577	0.9581	0.9580	0.9578	0.9578	0.9586	0.9605
42	0.9338	0.9351	0.9440	0.9448	0.9486	0.9510	0.9515	0.9517	0.9513	0.9509	0.9507	0.9513	0.9534
43	0.9271	0.9284	0.9377	0.9385	0.9425	0.9448	0.9452	0.9451	0.9445	0.9438	0.9435	0.9440	0.9462
44	0.9204	0.9217	0.9313	0.9322	0.9362	0.9385	0.9389	0.9385	0.9376	0.9367	0.9362	0.9366	0.9391
45	0.9137	0.9150	0.9249	0.9257	0.9299	0.9321	0.9324	0.9318	0.9306	0.9296	0.9289	0.9293	0.9319
46	0.9069	0.9083	0.9183	0.9192	0.9234	0.9256	0.9258	0.9250	0.9236	0.9224	0.9216	0.9219	0.9247
47	0.9001	0.9015	0.9117	0.9126	0.9169	0.9190	0.9192	0.9181	0.9165	0.9151	0.9142	0.9145	0.9176
48	0.8933	0.8948	0.9051	0.9060	0.9103	0.9124	0.9124	0.9111	0.9093	0.9078	0.9068	0.9071	0.9104
49	0.8865	0.8879	0.8983	0.8992	0.9036	0.9056	0.9056	0.9041	0.9021	0.9004	0.8993	0.8997	0.9032
50	0.8796	0.8811	0.8915	0.8925	0.8968	0.8987	0.8987	0.8969	0.8948	0.8929	0.8918	0.8922	0.8959
51	0.8727	0.8742	0.8847	0.8856	0.8899	0.8918	0.8917	0.8897	0.8874	0.8855	0.8843	0.8847	0.8887
52	0.8658	0.8672	0.8777	0.8787	0.8830	0.8848	0.8846	0.8825	0.8799	0.8779	0.8767	0.8772	0.8814
53	0.8588	0.8602	0.8708	0.8717	0.8760	0.8777	0.8774	0.8751	0.8724	0.8703	0.8690	0.8696	0.8741
54	0.8518	0.8532	0.8637	0.8646	0.8689	0.8705	0.8701	0.8676	0.8648	0.8626	0.8613	0.8619	0.8667
55	0.8447	0.8461	0.8565	0.8574	0.8617	0.8632	0.8627	0.8601	0.8572	0.8549	0.8535	0.8543	0.8593
56	0.8376	0.8390	0.8493	0.8502	0.8544	0.8558	0.8553	0.8525	0.8494	0.8471	0.8457	0.8465	0.8518
57	0.8305	0.8318	0.8420	0.8429	0.8470	0.8483	0.8477	0.8448	0.8416	0.8392	0.8378	0.8387	0.8443
58	0.8232	0.8246	0.8347	0.8355	0.8395	0.8407	0.8400	0.8369	0.8337	0.8312	0.8298	0.8309	0.8367
59	0.8160	0.8173	0.8272	0.8281	0.8320	0.8330	0.8323	0.8290	0.8257	0.8231	0.8218	0.8230	0.8291
60	0.8086	0.8100	0.8197	0.8205	0.8243	0.8252	0.8244	0.8210	0.8176	0.8150	0.8136	0.8150	0.8213
61	0.8012	0.8025	0.8120	0.8129	0.8165	0.8173	0.8165	0.8129	0.8094	0.8068	0.8054	0.8069	0.8135
62	0.7938	0.7950	0.8043	0.8051	0.8087	0.8093	0.8084	0.8047	0.8011	0.7984	0.7971	0.7987	0.8056
63	0.7862	0.7875	0.7965	0.7973	0.8007	0.8012	0.8002	0.7964	0.7927	0.7900	0.7887	0.7904	0.7976
64	0.7786	0.7798	0.7886	0.7894	0.7926	0.7930	0.7919	0.7880	0.7842	0.7815	0.7801	0.7820	0.7895
65	0.7709	0.7721	0.7806	0.7813	0.7844	0.7846	0.7835	0.7794	0.7756	0.7728	0.7715	0.7736	0.7813
66	0.7632	0.7643	0.7725	0.7732	0.7761	0.7761	0.7749	0.7707	0.7668	0.7640	0.7628	0.7650	0.7730
67	0.7553	0.7564	0.7643	0.7649	0.7677	0.7675	0.7662	0.7619	0.7579	0.7552	0.7539	0.7563	0.7645
68	0.7473	0.7484	0.7559	0.7566	0.7591	0.7588	0.7574	0.7530	0.7489	0.7461	0.7449	0.7474	0.7559
69	0.7393	0.7403	0.7475	0.7481	0.7504	0.7499	0.7484	0.7439	0.7398	0.7370	0.7358	0.7384	0.7472
70	0.7311	0.7320	0.7389	0.7395	0.7416	0.7409	0.7393	0.7347	0.7305	0.7277	0.7265	0.7293	0.7383
71	0.7228	0.7237	0.7302	0.7307	0.7326	0.7317	0.7301	0.7253	0.7211	0.7182	0.7171	0.7201	0.7293
72	0.7145	0.7153	0.7214	0.7218	0.7235	0.7224	0.7207	0.7158	0.7115	0.7087	0.7075	0.7106	0.7201
73	0.7060	0.7068	0.7124	0.7128	0.7143	0.7129	0.7111	0.7061	0.7017	0.6989	0.6978	0.7010	0.7108
74	0.6974	0.6981	0.7033	0.7037	0.7049	0.7033	0.7014	0.6962	0.6918	0.6890	0.6879	0.6913	0.7012
75	0.6886	0.6893	0.6940	0.6943	0.6953	0.6935	0.6915	0.6862	0.6817	0.6789	0.6778	0.6813	0.6915
76	0.6797	0.6803	0.6846	0.6849	0.6855	0.6835	0.6814	0.6759	0.6714	0.6686	0.6675	0.6711	0.6815
77	0.6707	0.6713	0.6750	0.6753	0.6756	0.6733	0.6711	0.6655	0.6610	0.6581	0.6571	0.6608	0.6713
78	0.6616	0.6620	0.6653	0.6655	0.6655	0.6630	0.6607	0.6549	0.6503	0.6474	0.6464	0.6502	0.6609
79	0.6522	0.6527	0.6554	0.6555	0.6552	0.6524	0.6500	0.6441	0.6394	0.6365	0.6355	0.6394	0.6503
80	0.6428	0.6431	0.6453	0.6453	0.6448	0.6416	0.6391	0.6330	0.6283	0.6253	0.6244	0.6284	0.6394
81	0.6331	0.6334	0.6350	0.6350	0.6341	0.6307	0.6280	0.6218	0.6169	0.6140	0.6130	0.6171	0.6282
82	0.6233	0.6235	0.6245	0.6245	0.6232	0.6195	0.6167	0.6103	0.6054	0.6024	0.6014	0.6055	0.6168
83	0.6133	0.6135	0.6138	0.6137	0.6121	0.6080	0.6052	0.5986	0.5935	0.5905	0.5895	0.5937	0.6050
84	0.6032	0.6032	0.6030	0.6028	0.6008	0.5964	0.5934	0.5866	0.5815	0.5784	0.5774	0.5815	0.5930
85	0.5928	0.5928	0.5919	0.5916	0.5892	0.5845	0.5813	0.5743	0.5691	0.5659	0.5649	0.5691	0.5806
86	0.5822	0.5821	0.5805	0.5802	0.5774	0.5723	0.5690	0.5618	0.5564	0.5532	0.5522	0.5563	0.5678
87	0.5714	0.5713	0.5690	0.5686	0.5654	0.5598	0.5564	0.5489	0.5435	0.5402	0.5391	0.5432	0.5547
88	0.5604	0.5602	0.5572	0.5567	0.5530	0.5471	0.5435	0.5358	0.5302	0.5269	0.5257	0.5297	0.5412
89	0.5492	0.5489	0.5451	0.5446	0.5404	0.5341	0.5303	0.5224	0.5166	0.5132	0.5120	0.5159	0.5272
90	0.5377	0.5373	0.5328	0.5322	0.5275	0.5208	0.5168	0.5086	0.5027	0.4992	0.4978	0.5016	0.5129
91	0.5260	0.5255	0.5202	0.5195	0.5144	0.5071	0.5030	0.4945	0.4884	0.4847	0.4833	0.4869	0.4980
92	0.5140	0.5134	0.5073	0.5065	0.5009	0.4932	0.4888	0.4800	0.4738	0.4699	0.4684	0.4718	0.4827
93	0.5018	0.5010	0.4941	0.4932	0.4871	0.4789	0.4743	0.4651	0.4587	0.4547	0.4531	0.4562	0.4668
94	0.4892	0.4884	0.4806	0.4796	0.4729	0.4642	0.4594	0.4499	0.4432	0.4391	0.4373	0.4401	0.4504
95	0.4764	0.4755	0.4668	0.4657	0.4584	0.4491	0.4441	0.4342	0.4273	0.4230	0.4210	0.4235	0.4334
96	0.4632	0.4622	0.4526	0.4514	0.4435	0.4337	0.4284	0.4181	0.4109	0.4064	0.4042	0.4063	0.4158
97	0.4497	0.4486	0.4381	0.4368	0.4283	0.4178	0.4123	0.4015	0.3941	0.3893	0.3869	0.3885	0.3975
98	0.4359	0.4347	0.4232	0.4218	0.4126	0.4015	0.3957	0.3845	0.3767	0.3717	0.3690	0.3701	0.3785
99	0.4218	0.4204	0.4079	0.4064	0.3965	0.3848	0.3787	0.3670	0.3588	0.3535	0.3505	0.3510	0.3587
100	0.4072	0.4057	0.3922	0.3906	0.3800	0.3675	0.3611	0.3489	0.3404	0.3347	0.3314	0.3312	0.3381

These time standards were developed using a unique approach. Rather than simply curve fitting each event separately and independently of other events, the approach here fits a continuous three-dimensional time surface over the axes of age and distance. There are two primary by-products of the time surface: one being time-age curves for each event giving time as age varies from 8 to 100 years, and another being time-distance curves for each year of age giving time as distance varies from 1500 meters to 50K. Examples of these curves are included later in the chapter.

Both the time-age and time-distance curve equations must meet certain general requirements. They must be equations that lend themselves to direct parametric solution of coefficient and exponent values, and inherently have the shape or distribution of the data involved so that a minimum number of coefficients or exponents are required to form the curve. The benefit of this requirement is that a minimum number of data points suffice to obtain statistically good curve fits over the entire range of the curve. Curve shaping terms also are employed in the equations to mathematically proportion the resulting curve so that records for youths and masters can be fitted together to produce a single set of curve fitted standards for the entire, continuous age range of 8 to 100 years for any event (at the present time both youth and masters times are available for only the men's 3K walk). Only two time-age points are required to fit the time-age curve for any walk event. Four time-distance points are required to fit any age for distances ranging from 1500 to 50,000 meters. The time-age and time-distance equations are obviously non-linear and are combined to operate in an interdependent manner within the program.

The time surface is computer generated as follows. The initial step is to fit the time-distance curve for open class events using the world record times. Existing time-age (for four events) and time-distance (for OC, age 60 and age 100) equations remain or are pre-loaded in the walk event portion of the computer program. New youth, masters age and open class world records are manually entered into the records data base and the program then identifies all data base records which are better (faster) than the existing time standards. Selected records are manually entered into the program, which then calculates new time-age curves, from which new time-distance curves are calculated for every event, from which the program then produces a new set of time standards for all events, and in addition the program then identifies (if there are any) all data base records which are still better than the newly generated time standards. Selected records are again manually entered into the program and the calculations are repeated. This iteration process is continued until no records in the data base are identified as being better than the standards generated. (This is the algorithm that removes arbitrariness or bias from the best record selection process.) The results are then evaluated to determine if a significant number of actual records are included as standards and that those records are suitably distributed over the entire age-distance region of the time surface. The standards are then finalized after ensuring that all walk rate requirements are met and the resulting age-factors are suitable for all events.

Refer to the table of page 164 which shows performance level of actual records for a quick view of how many "world record" level performances are identified by the race walk standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The chart also illustrates the distribution of those records on the time surface, that is across all ages and distances.

The fitting process described above produces its results in both the time domain and the rate domain to ensure that rate requirements are not violated. For example, rate requirements are violated when standards result for an age which would have longer distances walked at faster rates than for shorter distances.

It is difficult to qualitatively evaluate a table of standards just on the basis of the feeling one gets in looking at the numerical progression of values therein. To get a better feel for the quality of

the standards, the walking rates for all events must be examined and compared. For the standards of this book, refer to the walking rate graphs provided at figures 96, 97 and 98. The graphs must have a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered good.

Age-factors are then computer generated by dividing the open class standard by the standard for each age, doing this for every event. Just as the derived time standards form a time surface over the axes of age and distance, the resulting age-factors also form a surface of age-factor values over the axes of age and distance. Age-factor results are looked at early on in the standards generating process. When it is seen that an undesirable distribution of age-factor values has resulted, the problem areas are refitted until the resulting age-factors are acceptable. Hence the age-factors are another tool like the rate results, and by using both tools the best possible standards are obtained.

The resulting age-factor surface requires further discussion to provide an understanding of its nature in regard to surface continuity and distribution. Refer to the age-factor table of page 161 for discussion purposes. It is seen that the factors are not smooth in their progression. For every event, age-factor values decrease continuously as they go from their 1.000 value at open class (OC) ages to their fractional value at age 100. There are, however, other factors in play that prevent age-factors from behaving with perfect arithmetical uniformity as they vary across the distances of all events for a specific age. One of the more significant factors is the open class record age phenomenon.

The open class record age phenomenon results from the fact that for 1500 meters, world record level walker ages average at about 25 years, while for the 50k that age is at about 29 years. Thus, the age-factors for 35 year old walkers would be expected to be very nearly 1.00 for walks in the 50k range since they are nominally only 6 years past the most favorable age for those events, while their age-factors would be somewhat less for events in the 1500 meter range since they are nominally 10 years past the prime age for short distance walking.

Thus it is seen that conditions can exist which prevent the resulting age-factor values for walkers from having a perfectly well behaved continuity in the arithmetic progression sense as age-factors are read across the table.

The table on the next page is the listing of performance level in percent for actual records. The percentages listed in the table are determined by dividing the time standard by the actual record for every age of every event having a listed record. The percentage values have been rounded to the nearest whole integer.

First look at the performance level percentages for OC which is listed in the table between ages 19 and 30. These are the percentages that result for the time-distance curve fit of world records for open class events. (See the appendix for an expanded treatment of open class world record time-distance curve fitting.) It is seen that not every record has a 100% performance level - this is because world records are usually set one at a time with only a few, rather than all, being set in any one year. Look at the rest of the table to see what has resulted for the masters age walkers. Only records having a percentage of 100 were used in determining the standards that resulted. As discussed earlier, the time surface curve fitting process attempts to include as many actual records as possible with their occurrence evenly distributed as much as possible over all of the ages and distances involved. This table provides an excellent quick look to ascertain that neither certain ages nor certain events were favored or disadvantaged by the fitting process used. Walk rate material is shown next. It was mentioned earlier that the standards were produced in both the rate domain and the time domain; these are the rate domain graphs. It was also men-

PERFORMANCE LEVEL OF MEN'S WALK EVENT RECORDS

AGE	1500	3000	2 MILE	5K	10K	15K	20K	25K	30K	50K
8	100									
9	97									
10	93									
11	88	87								
12	86	83								
13		95								
14		92								
15		93								
16										
17										
18										
19					100		98			98
OC	100	99	98	100	100	99	100	95	97	100
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40		98	90	92	98	93	98	83	94	100
41		90	87	95	98	89	95	83		100
42		91	90	96	97	97	98	79		99
43			94	92	89	87	94	81		95
44		89	87	89	97	90	97	87		98
45		87	87	92	91	94	91	84	86	98
46		88	85	92	97	96	99	80		99
47		88	84	91	98	90	96	88		100
48		91	87	95	92	90	90	80		94
49		99	96	97	96	97	97	97		88
50		96		98	100	100	100	91	88	97
51		98	87	97	96	95	97	95		87
52		94	87	96	92	89	92	85		85
53		96	84	92	90	88	93	77		83
54		93	88	95	94	92	91	83		84
55		95	94	96	97	97	94	85	88	95
56		87	83	91	89	87	95	84		85
57		88	81	88	89	86	88	81		84
58		89	89	91	90	89	90	84		85
59		89	84	91	91	88	89	78		92
60		89	84	90	90	87	97	82	85	90
61		91	79	89	91	81	92	81		83
62		84	85	94	98	89	92	82		80
63			91	91	94	90	94	92		88
64		91	83	91	89	87	88	88		77
65		88	81	87	88	86	87	80	84	83
66		85	81	92	87	87	87	78		82
67		83	81	89	86	86	85	77		87
68		82	85	90	88	82	85	78		75
69		84	85	93	87	83	94	81		76
70		85	86	87	95	95	88	89	81	90
71		83	85	93	87	83	88	81		78
72		83	84	87	86	88	89	79		85
73		84	85	91	93	86	92	88		70
74			85	93	97	87	95	84		74
75		95	85	96	100	95	98	77	87	100
76		77	79	93	85	90	96	64		
77		80	82	84	92	86	92	78		
78			83	94	84	87	91	89		
79			77	94	93	91	96			
80		94	79	97	84	85	99		93	
81		77	79	85	99		90			
82		74	80	91	93	84	86			
83			78	93	95		92			
84		90	79	81	77	65	78	70		
85			78	94			93	74		
86		75		96	80	79	94			
87		79		96	83		83			
88				95	83		94			
89										
90				99	82		100			
91										
92										
93				83			92			
94										
95										
96										
97										
98										
99										
100										

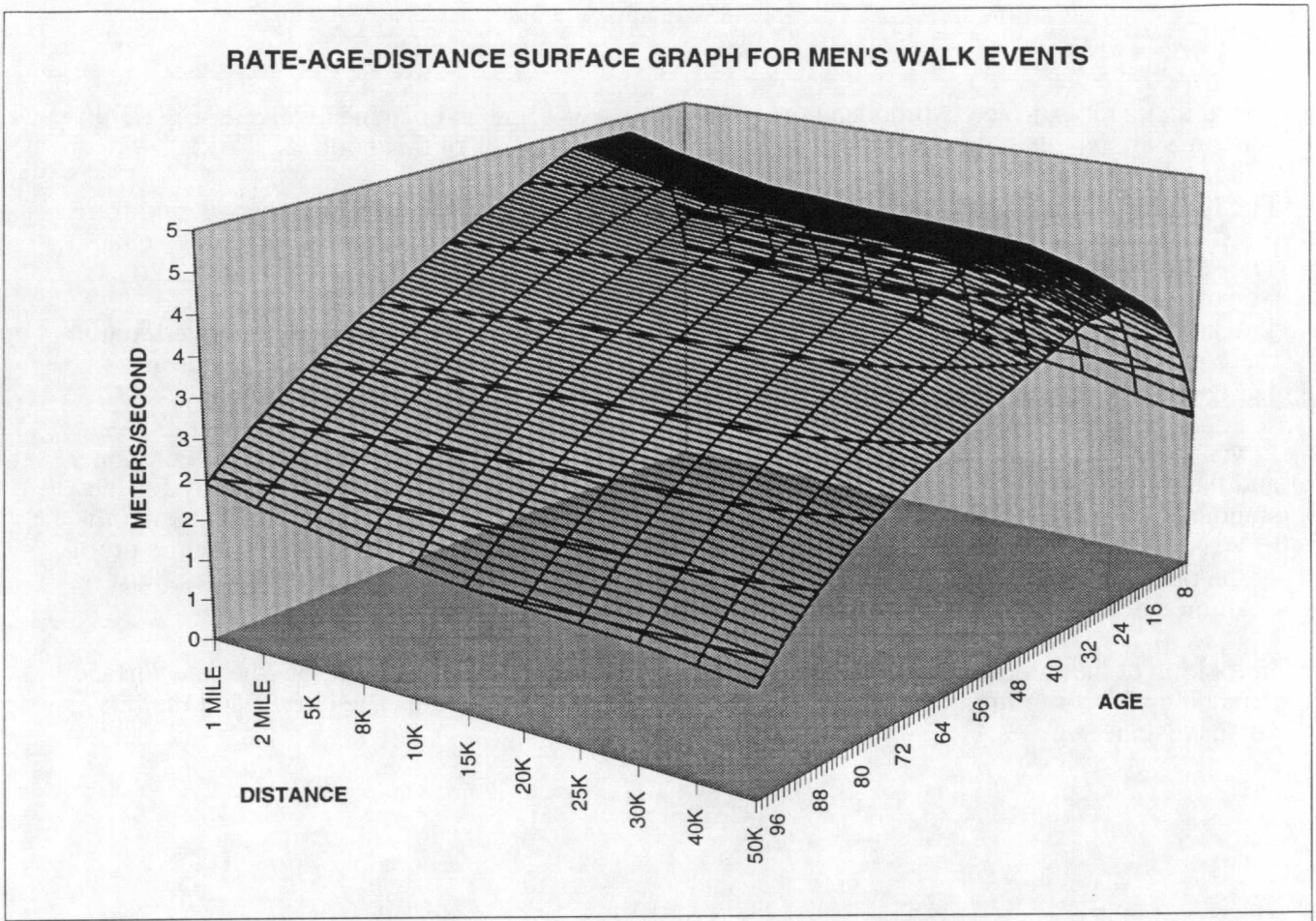
tioned that a rate surface is produced over axes of walker's age and distance walked. Figure 96 is a three-dimensional graph of the rate surface for the standards of this book.

The lower graph in figure 96 and the graphs of figure 97 display rate in meters per second for the standards generated. In these graphs the relationship is rate versus age for selected events. The selected events are 1500, 3000, 5k, 10k, 15k, 20k, 25k and 50k.

The graphs in figure 98 also display rate in meters per second for the standards generated, but in these graphs the relationship is rate versus distance for selected ages. The selected ages are 8, 12, 18 and OC in the upper graph, and are OC, 40, 60, 80 and 100 in the lower graph.

It was mentioned earlier that these rate graphs must show a smooth continuity for each rate line, and the rate lines must be proportionally spaced among themselves in a reasonable way for the standards to be realistic and hence considered suitable or good. It is seen that excellent smoothness, continuity and proportionality are displayed in all of the graphs. Rate graphs are the proof of the pudding so to speak for walk event (and running event) time standards - the rates must be examined before the times can be accepted.

In looking at the three-dimensional rate surface graph, it can be easily seen how the rate surface is made up by combining (at right angles to each other) the rate versus age curves and the rate versus distance curves.


RATE-AGE-DISTANCE SURFACE GRAPH FOR MEN'S WALK EVENTS
METERS/SECOND
5
5
4
4
3
3
2
2
1
1
0
1 MILE
2 MILE
5K
8K
10K
15K
20K
25K
30K
40K
50K
DISTANCE
96
88
80
72
64
56
48
40
32
24
16
8
AGE

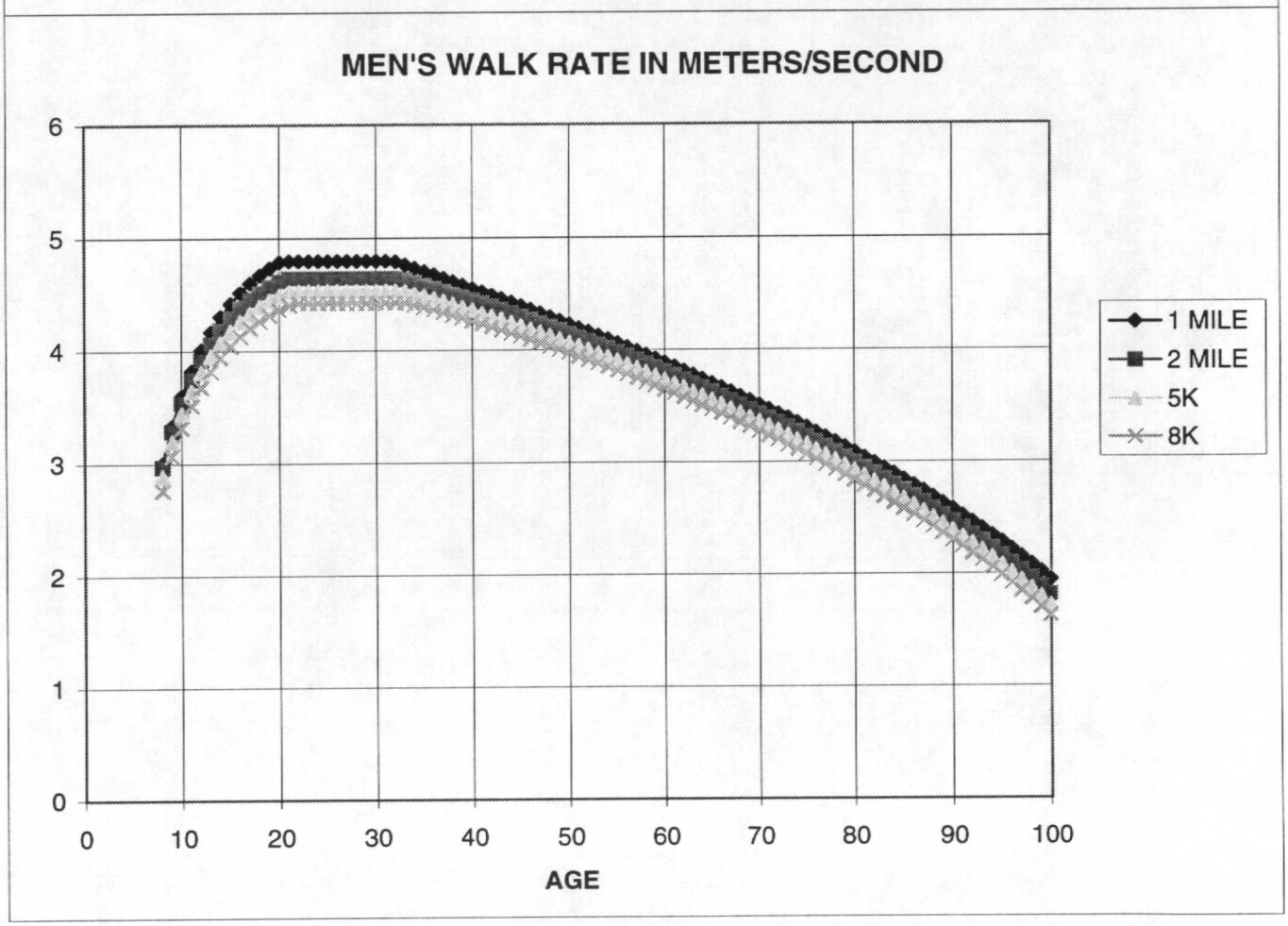
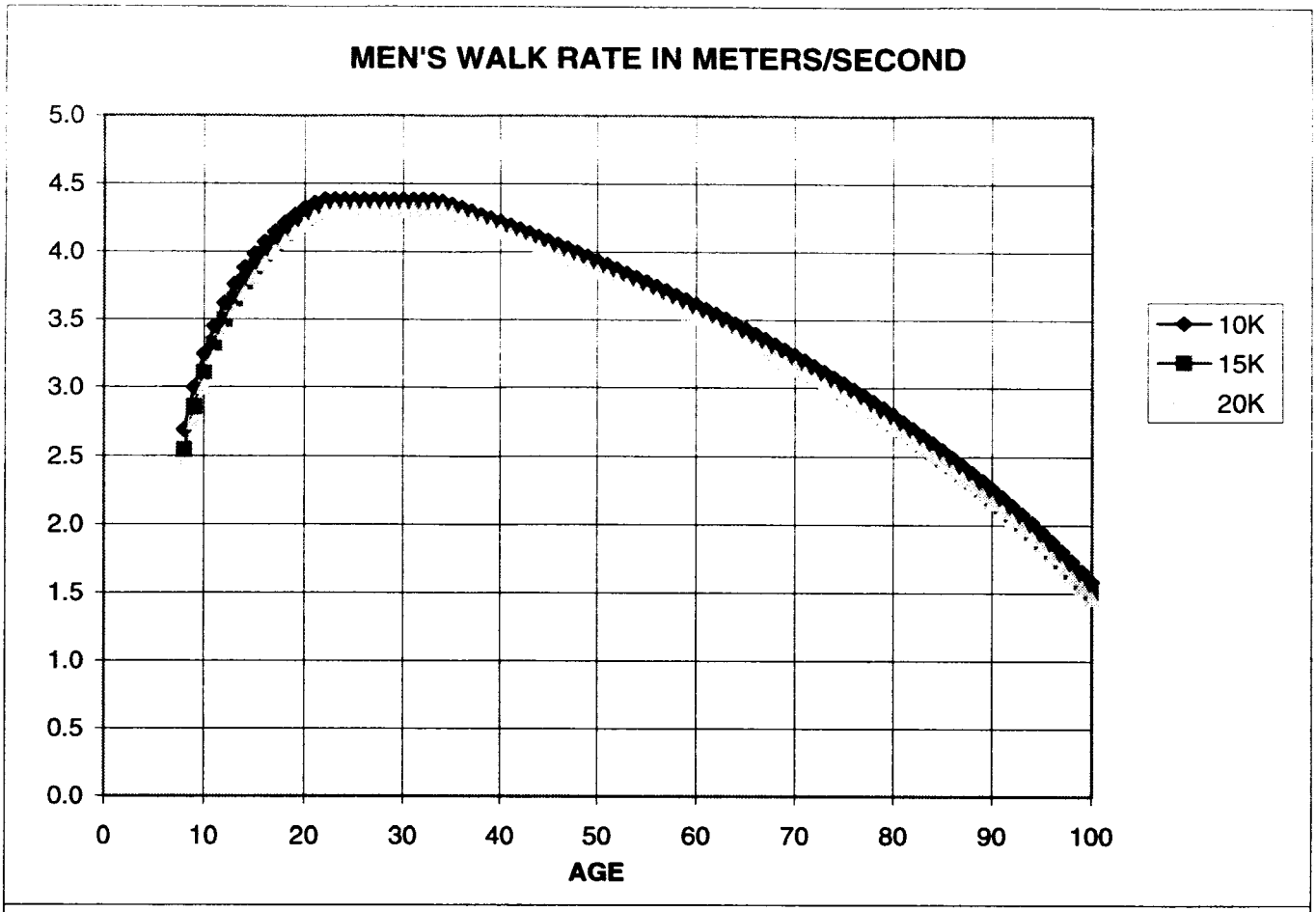

MEN'S WALK RATE IN METERS/SECOND
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1 MILE
2 MILE
5K
8K

Figure 97


MEN'S WALK RATE IN METERS/SECOND
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K
15K
20K

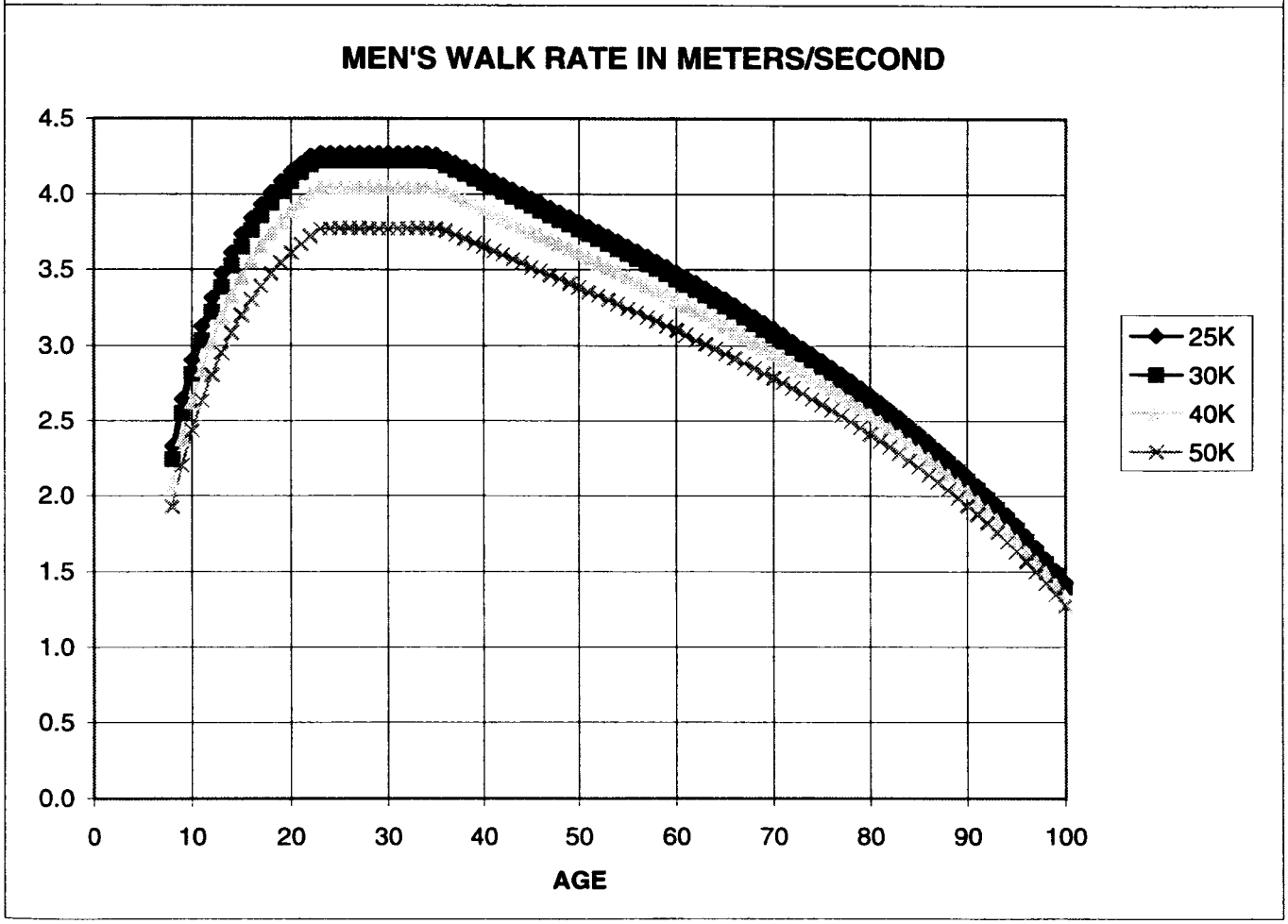
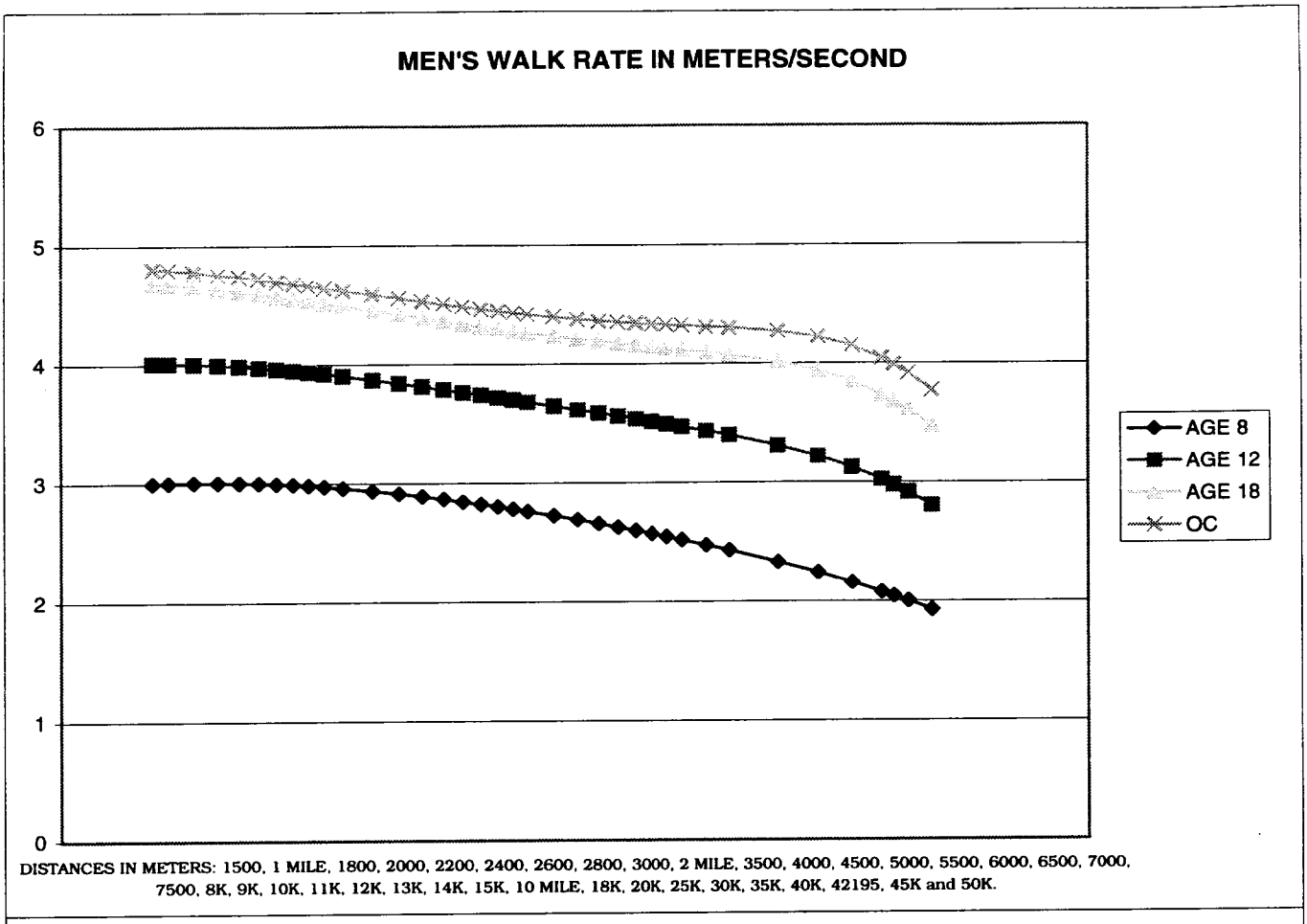
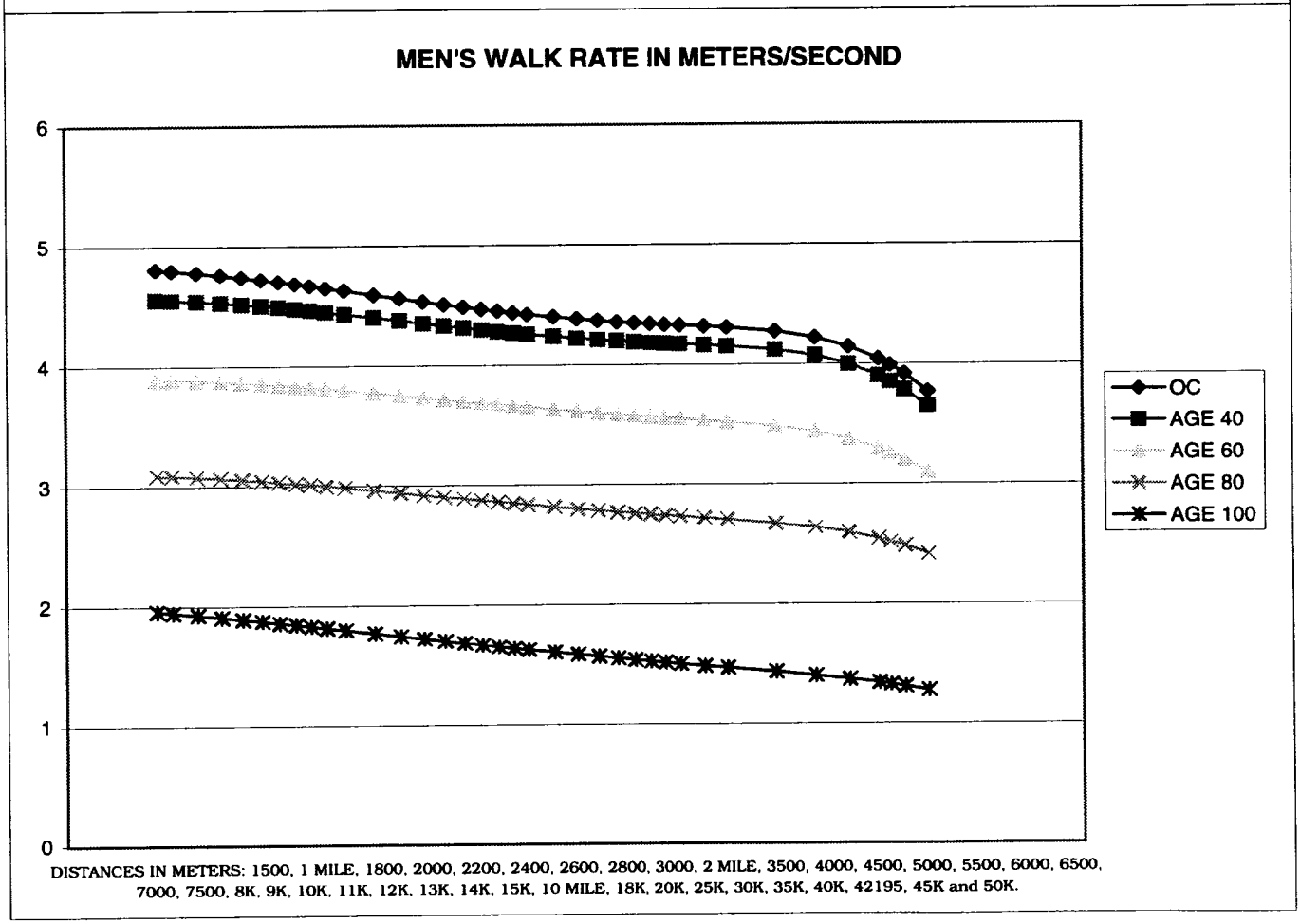

MEN'S WALK RATE IN METERS/SECOND
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
25K
30K
40K
50K

Figure 98


MEN'S WALK RATE IN METERS/SECOND
6
5
4
3
2
1
0
AGE 8
AGE 12
AGE 18
OC
DISTANCES IN METERS: 1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.


MEN'S WALK RATE IN METERS/SECOND
6
5
4
3
2
1
0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES IN METERS: 1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.

Time material for walk events is shown next. It was mentioned earlier that the standards were produced in both the rate domain and the time domain; these are the time domain graphs. It was also mentioned that a time surface is produced over axes of walker's age and distance walked. Figure 99 is a three-dimensional graph of the time surface for the standards of this book.

The next set of graphs presents performance-versus-age material plotted as time-age curves. Figures 100 through 104 show graphs of time standards and actual records versus age for individual events for the 1500, 3k, 2 mile, 5k, 10k, 15k, 20k, 25k, 30k and 50k. As indicated by the graph, a single curve includes fitting both youth and master age performances. The resulting curves do not reflect attempts to curve fit the events on a stand alone basis; these curves were produced as cross-sectional elements of the time surface. These curves fit the data base records remarkably well in view of the many stringent requirements that must be met.

There are also time-distance curves fitted but none are included here as graphics for the reason discussed below.

In looking at the three-dimensional time surface graph, it can be seen how the time surface is made up by combining (at right angles to each other) the time versus age curves and the time versus distance curves. However, because of the 200 to 1 ratio of numerical magnitudes involved for times, this renders the graphic less useful for purposes of visual analysis and interpretation. Refer to the rate surface graph of figure 96 for a more useful graphic of the relationships involved.

Refer to chapter 5 for a discussion of what records are included in or removed from the data base, and which records, if any, are not included in the plots of standards and records versus age graphs or in the tables listing performance level for actual records. The discussion in chapter 5 addresses running, hurdles, field events and walks in one coverage to preclude needless repetition of the discussion in each chapter while at the same time improving the overall understanding of which events are most and least impacted in this regard.

Figure 99

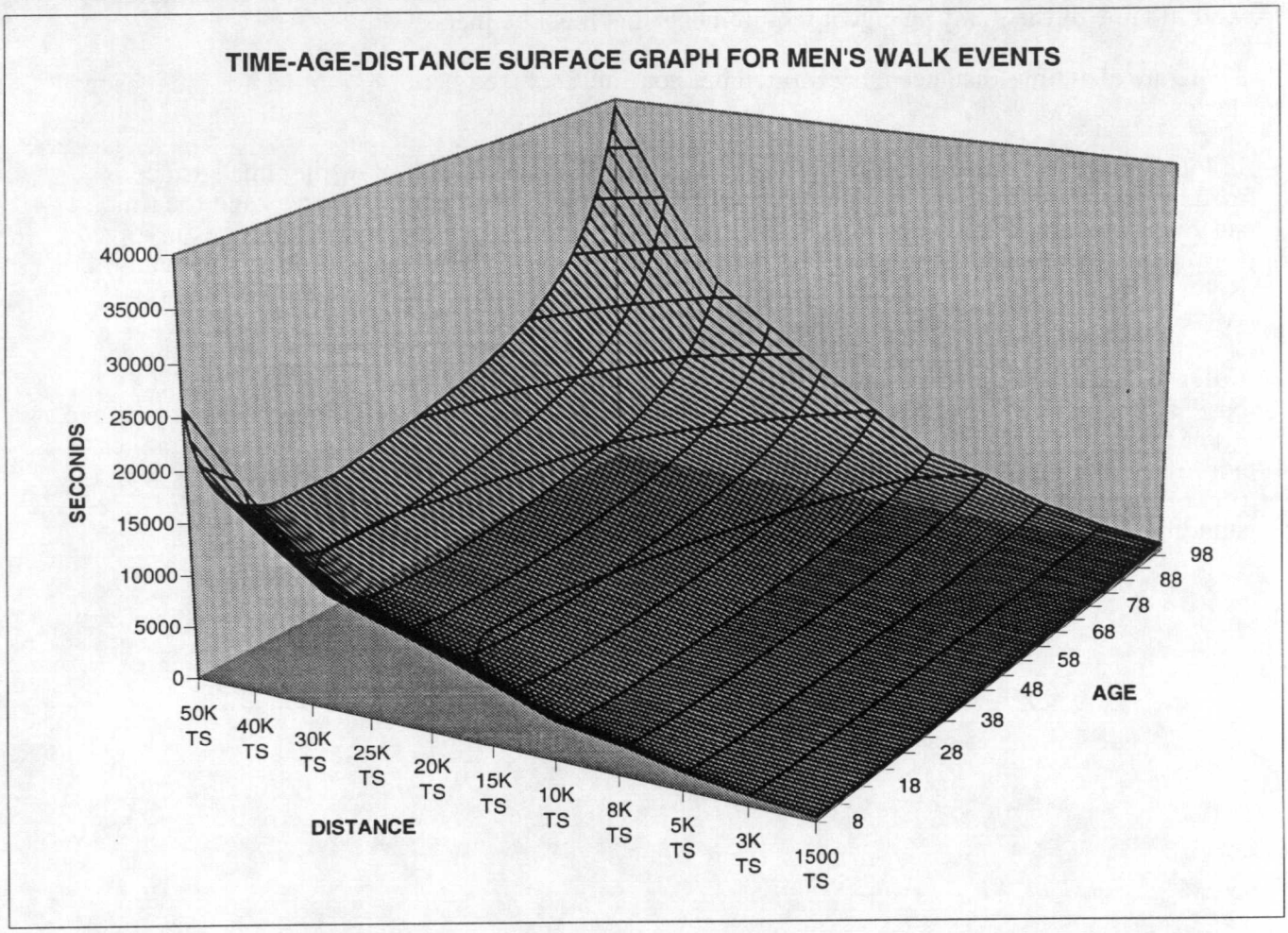
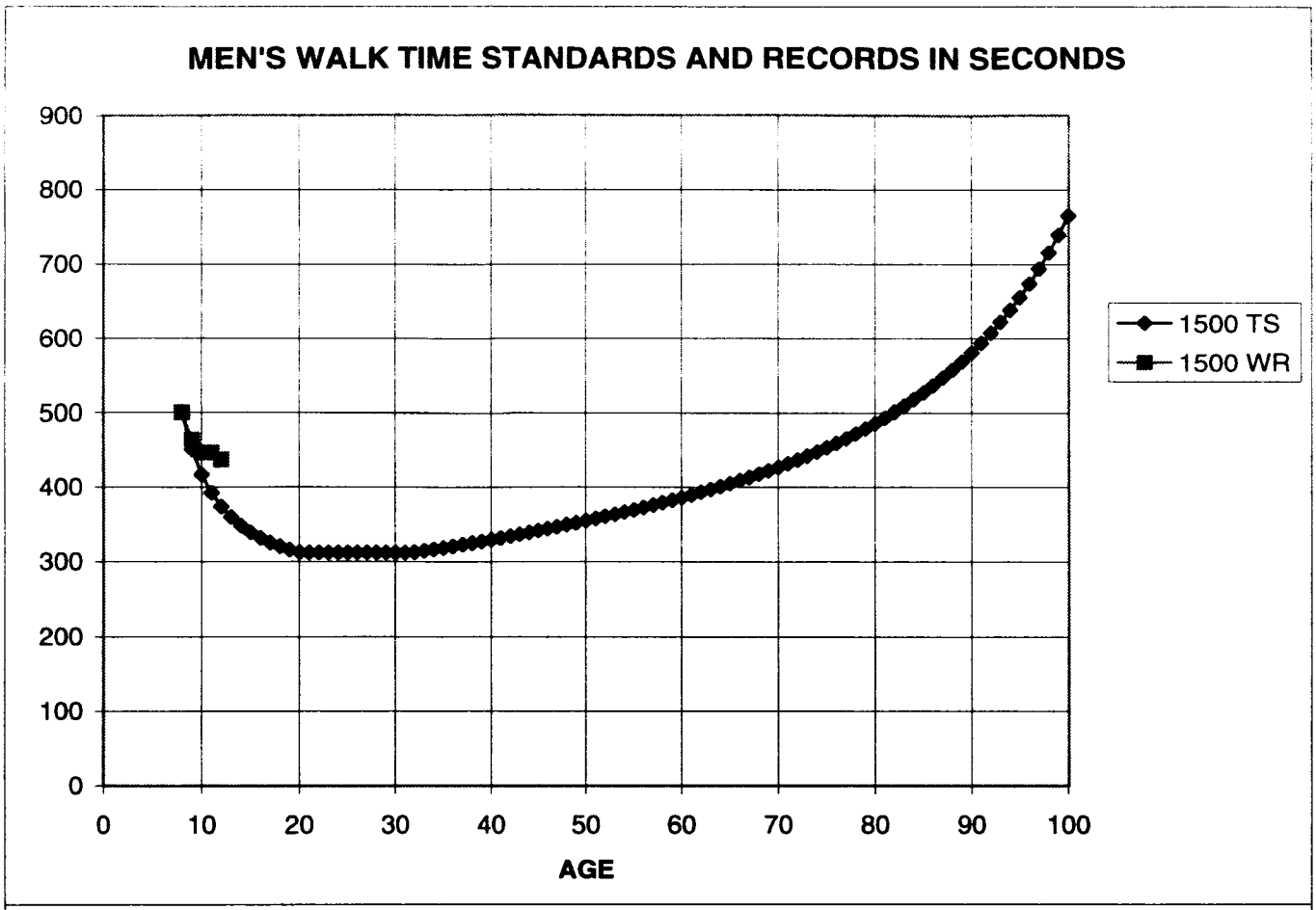

TIME-AGE-DISTANCE SURFACE GRAPH FOR MEN'S WALK EVENTS
SECONDS
40000
35000
30000
25000
20000
15000
10000
5000
0
50K TS
40K TS
30K TS
25K TS
20K TS
15K TS
10K TS
8K TS
5K TS
3K TS
1500 TS
DISTANCE
8
18
28
38
48
58
68
78
88
98
AGE

Figure 100


MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500 TS
1500 WR

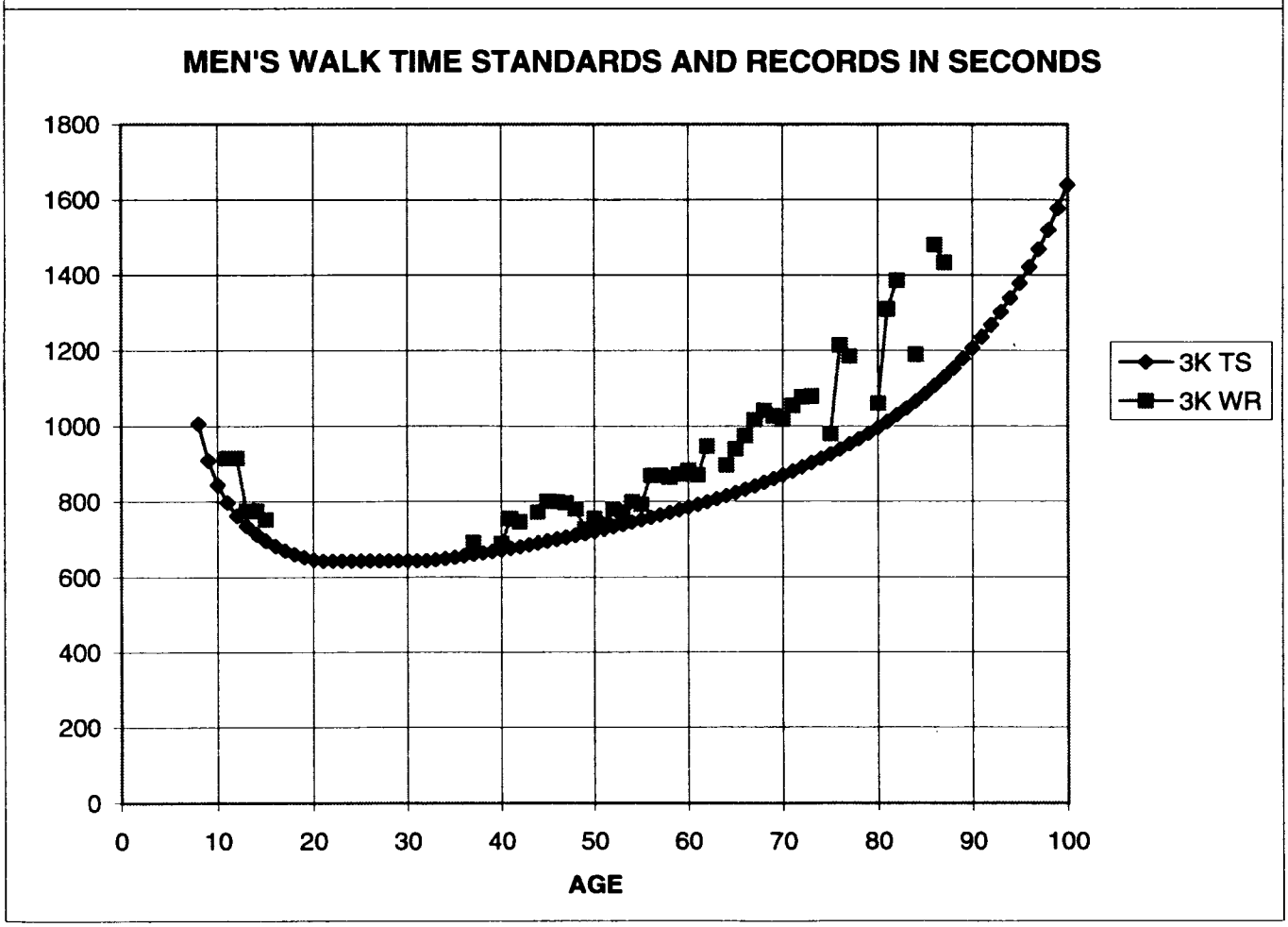
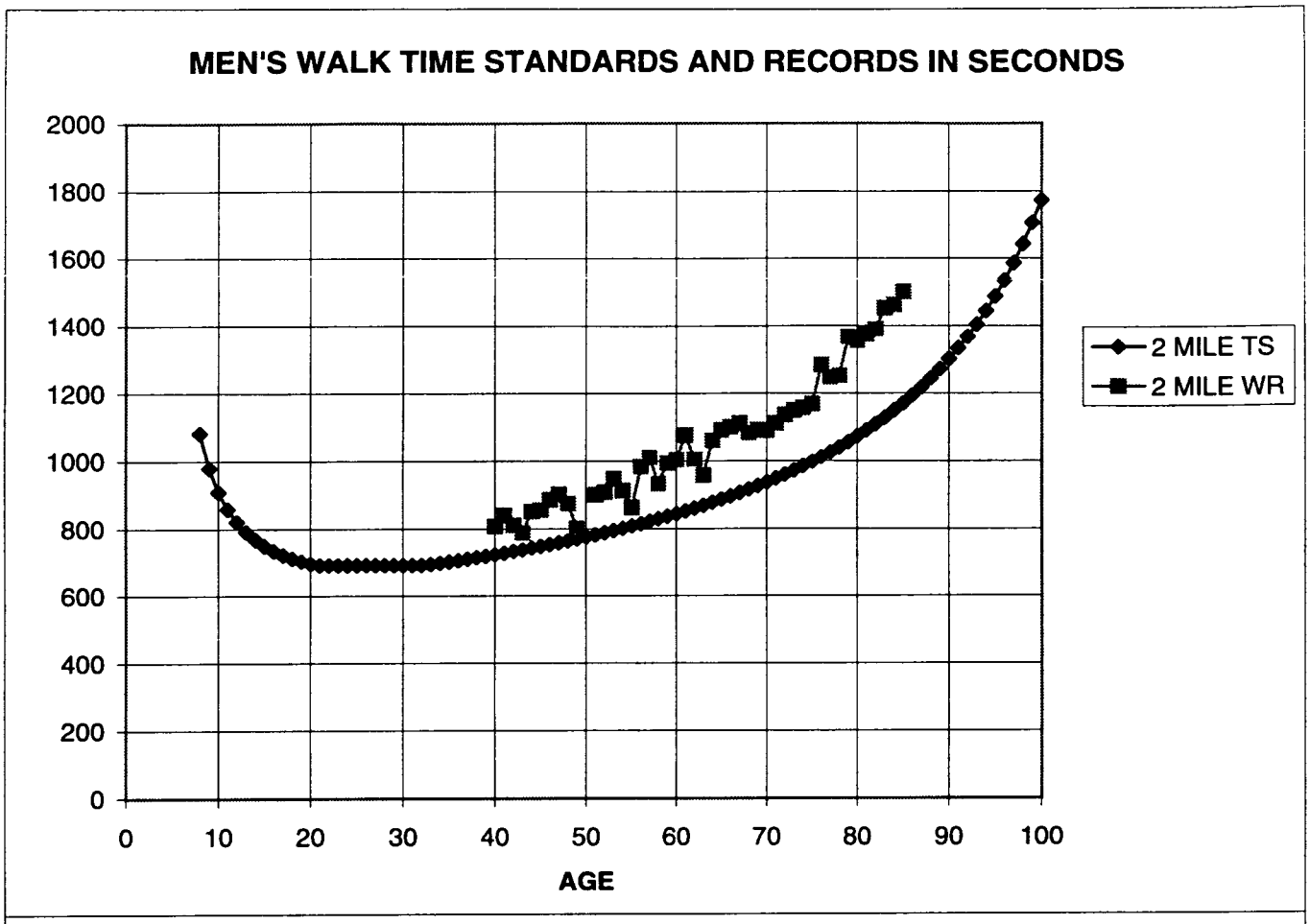

MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
1800
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K TS
3K WR

Figure 101


MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2 MILE TS
2 MILE WR

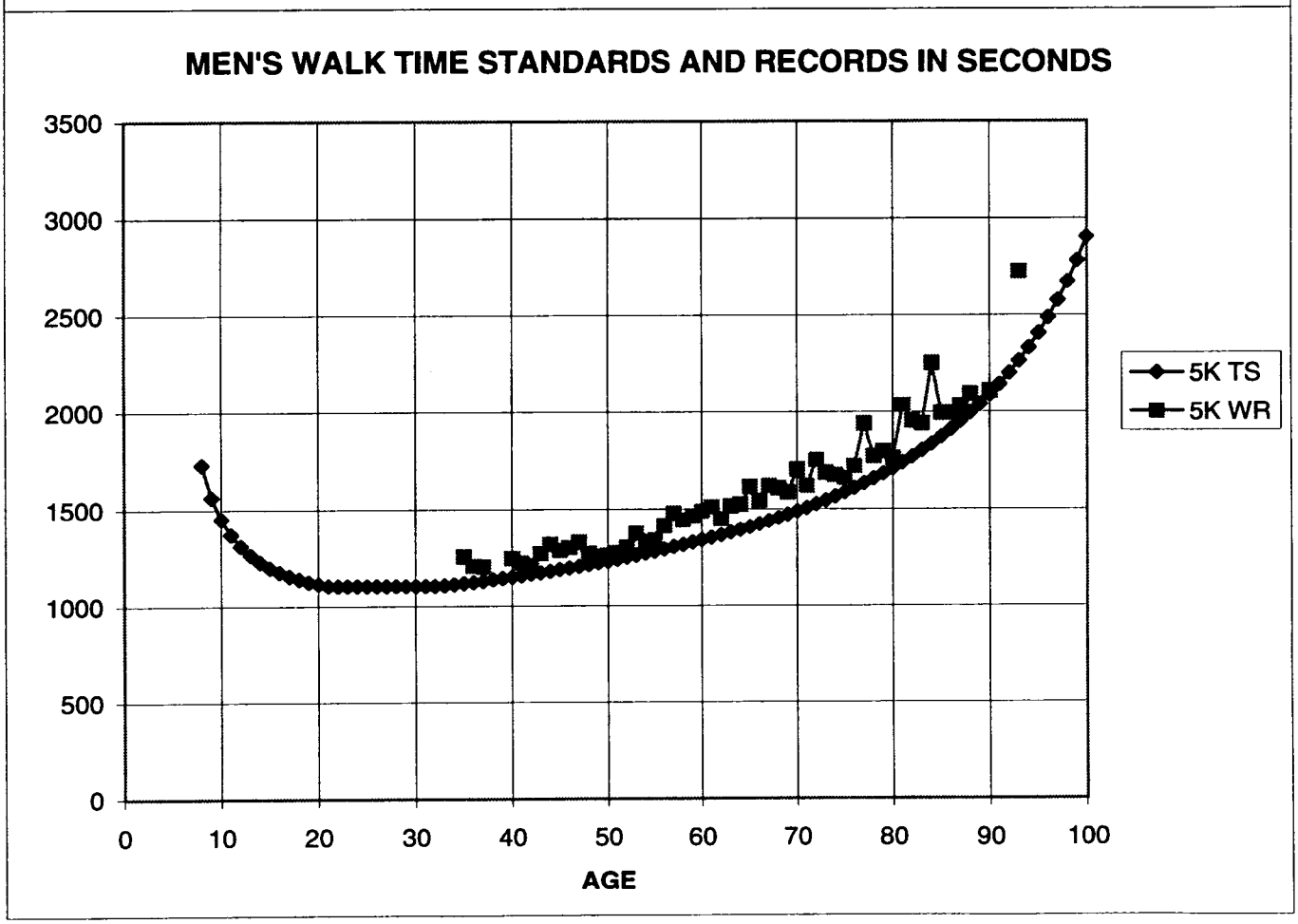
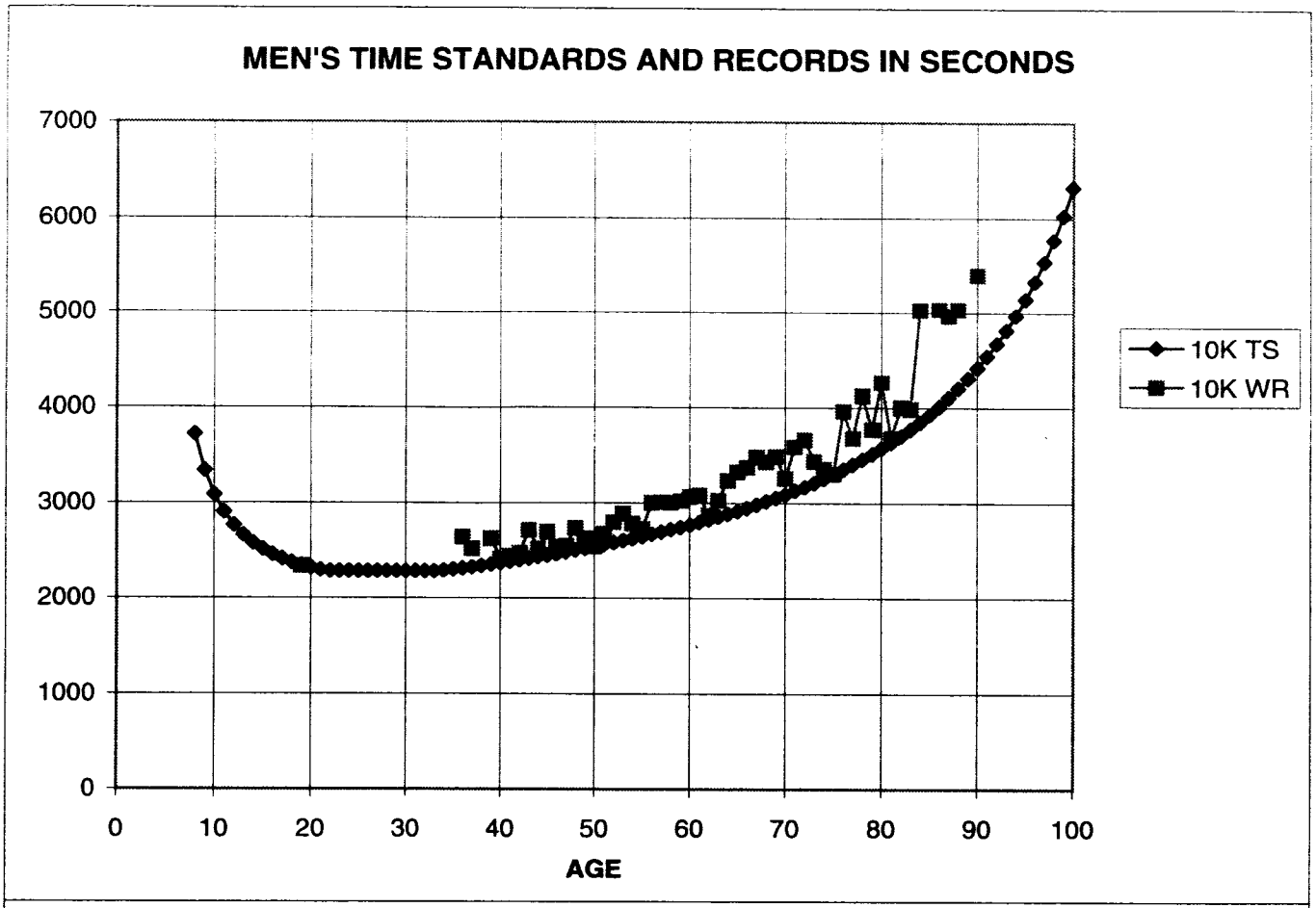

MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K TS
5K WR

Figure 102


MEN'S TIME STANDARDS AND RECORDS IN SECONDS
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K TS
10K WR

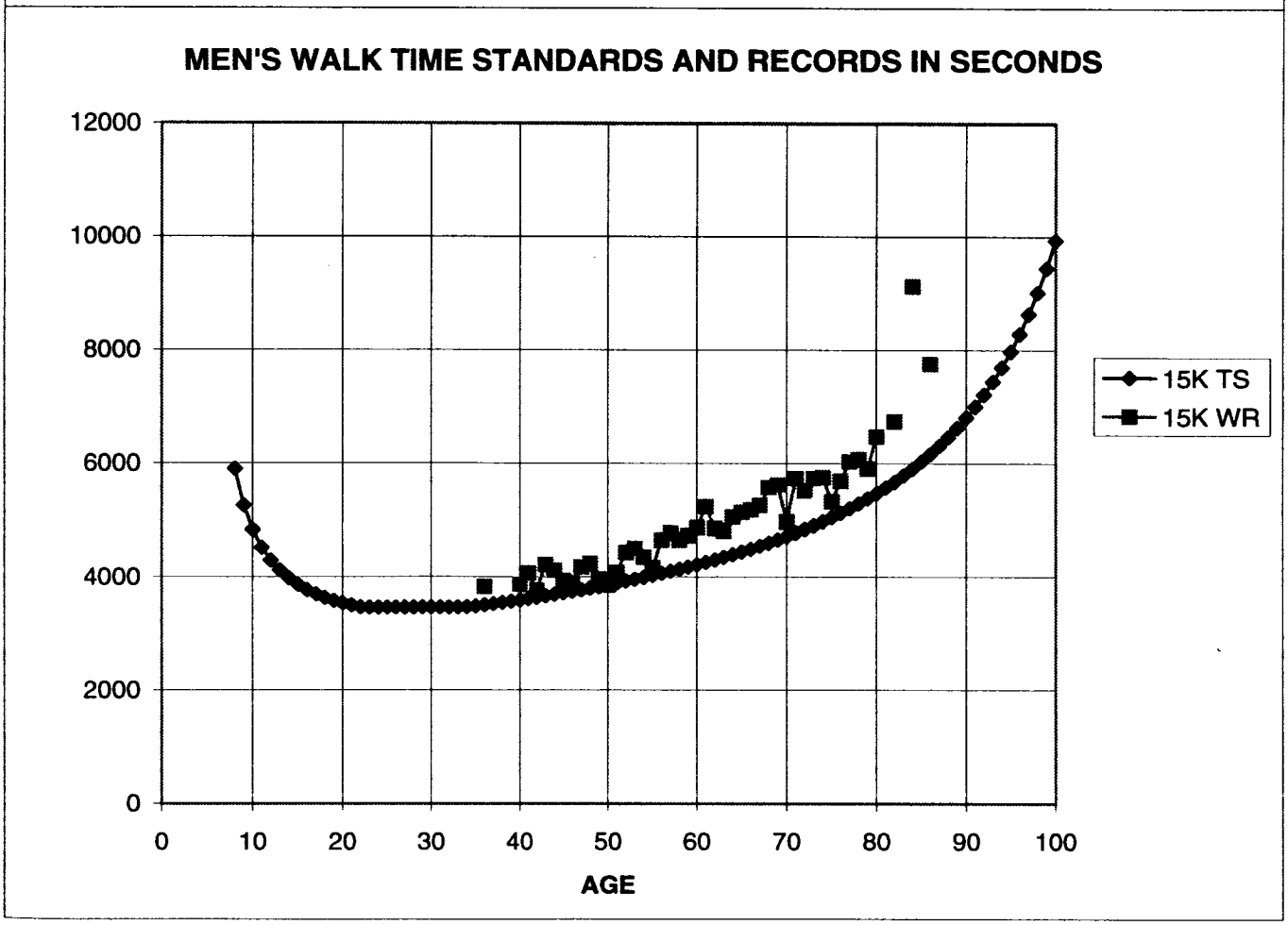
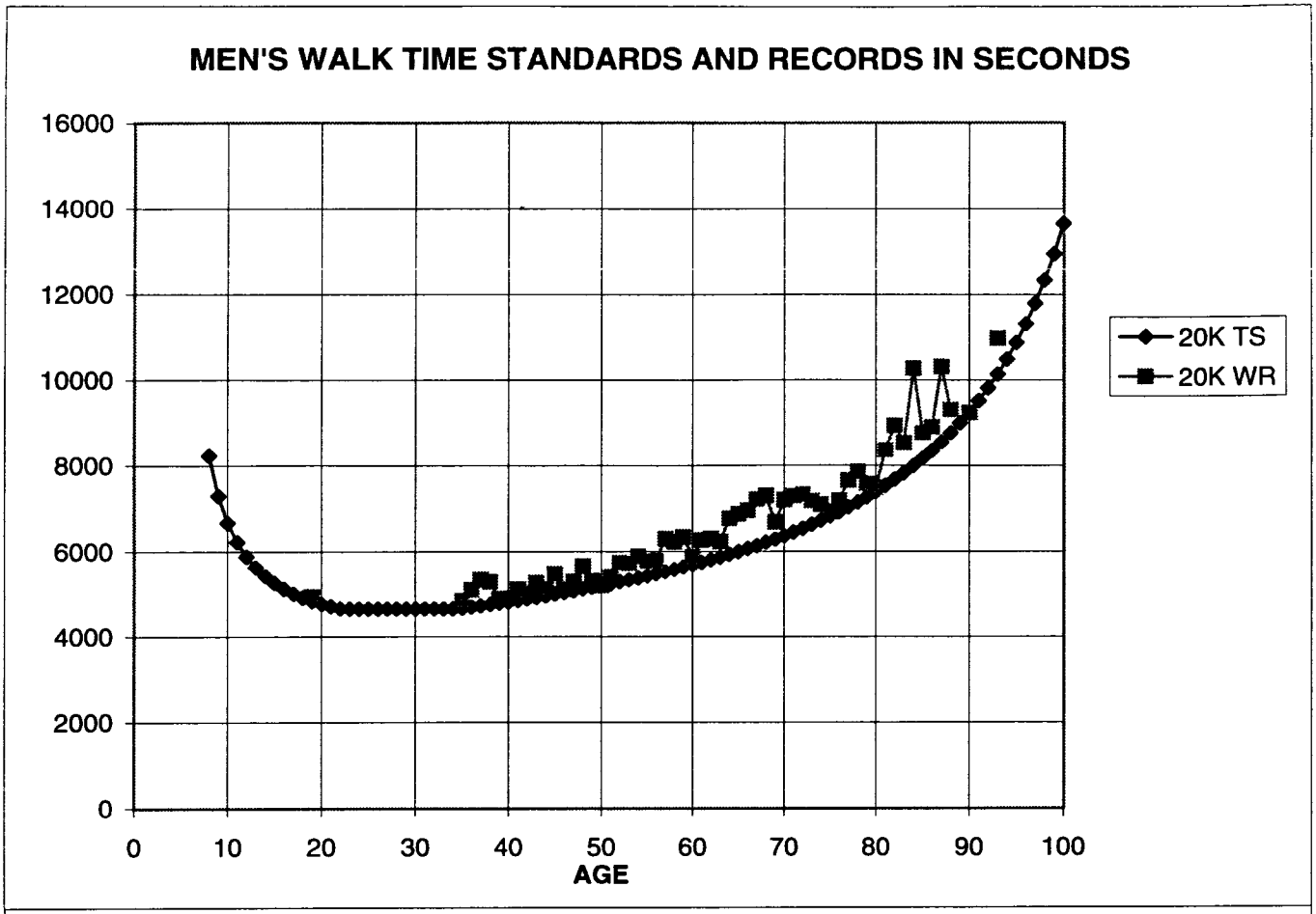

MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
15K TS
15K WR

Figure 103


MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
16000
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
20K TS
20K WR

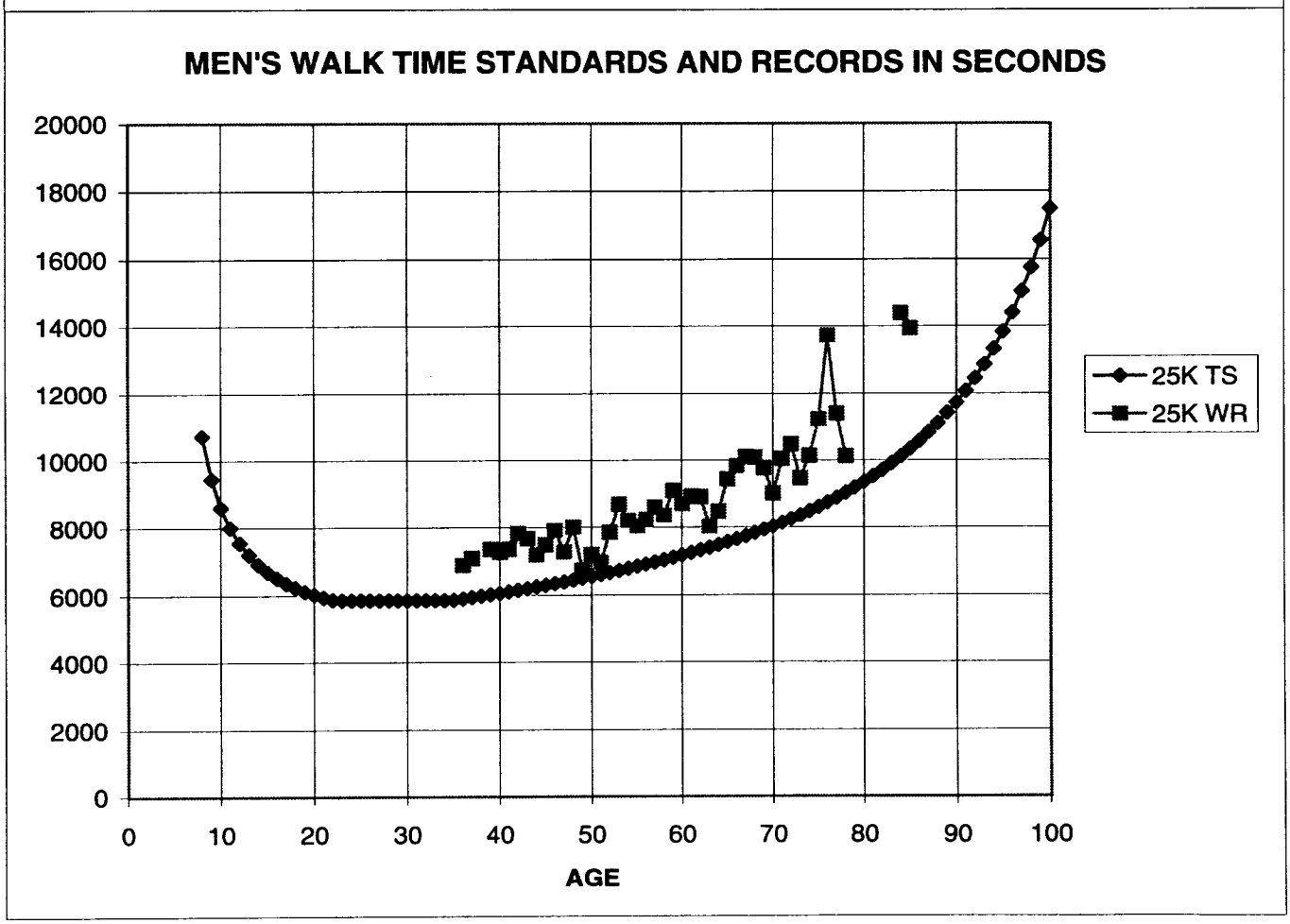
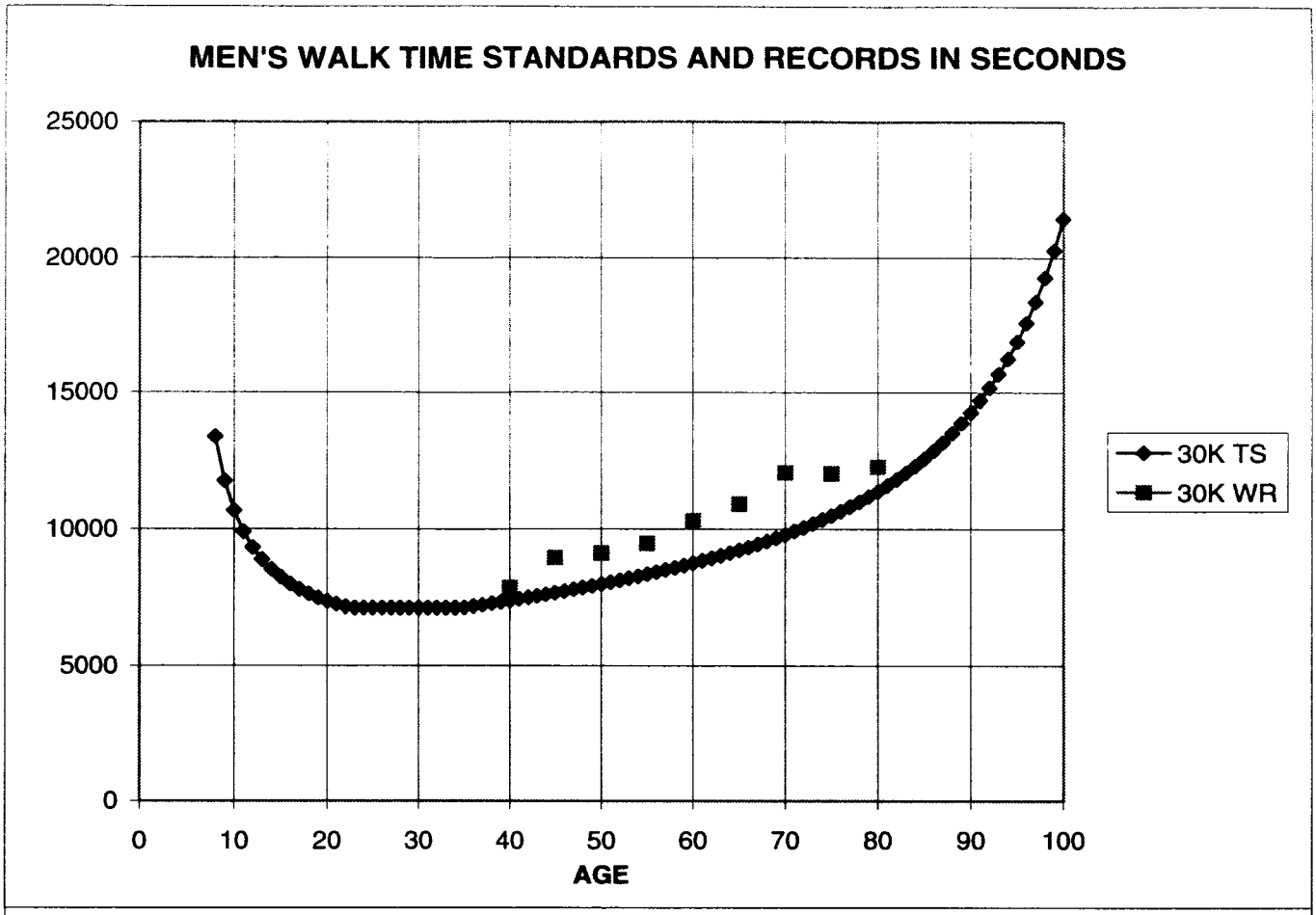
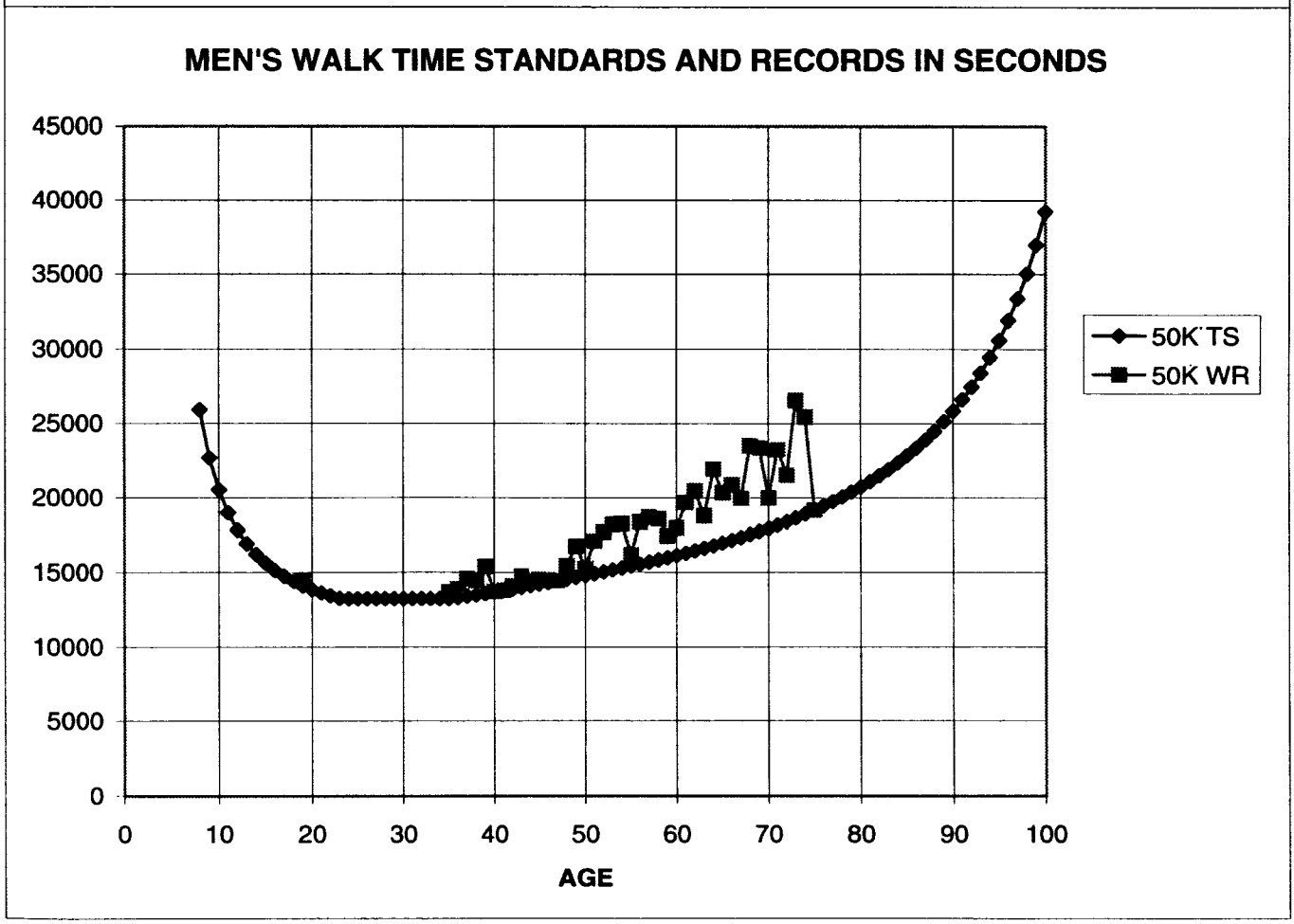

MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
25K TS
25K WR

Figure 104


MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
30K TS
30K WR


MEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
50K TS
50K WR

Material is presented next regarding fixed time walks. The two pages which follow this discussion present a table of standards for the men's 1-hour walk and a graph plotting those standards.

For the time standards, the equations found time as a function of distance. The process must be reversed then for fixed time walks, and equations must be used which find distance as a function of time. This has been accomplished by using the existing time-distance equation which generated the time standards. Since the time-distance equation is non-linear and its variable of distance is not singular in occurrence, the equation cannot be simply rewritten with time as the variable. Thus, while the existing time-distance equations were used, programming required that iterative operation methods be employed to obtain solutions. To support this need there is a time-distance equation extracted from the time surface for every year of age from 8 to 100.

The men's 1-hour walk table of standards and age-factors located at the next page lists the standards in the column under the heading "1-HR DS", lists the records for the event in the column under the heading "1-HR WR", lists the resulting performance level percentage of the records under the heading "1-HR PL%", and lists the resulting age-factors in the column under the heading "1-HR AF" for the 1-hour walk.

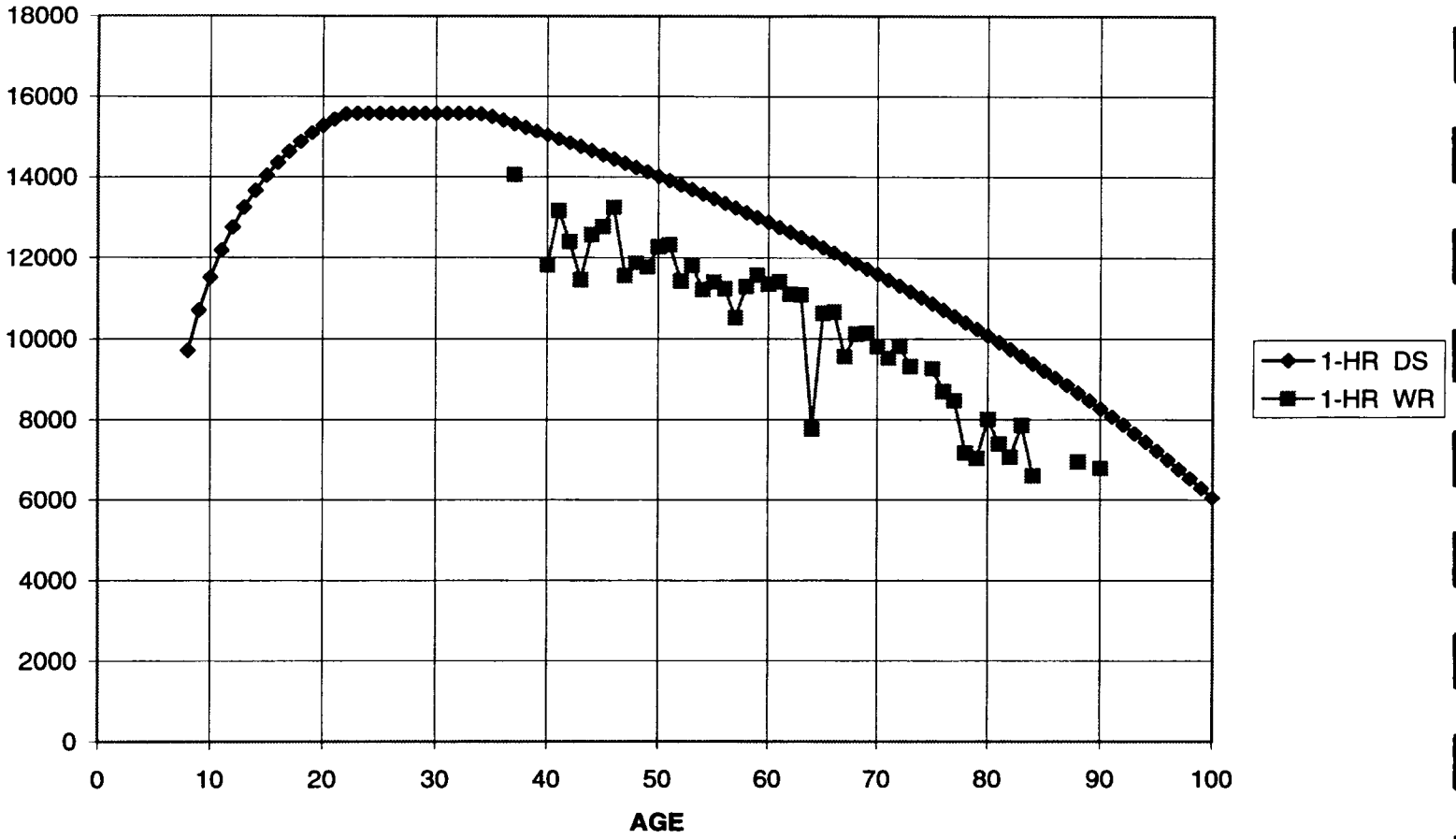
From the discussion above concerning use of the time surface equations to generate the distance standards for the 1-hour walk, it is clear that the standards were not generated by simply curve fitting the available records for the walk (in fact the records were not fitted at all), and hence like all the other events, the 1-hour walk is not separately fitted on the basis of being a stand alone event. Figure 105 is the men's graph plotting the standards and records versus age for the 1-hour walk event. There is no open class world record for the men's 1-hour walk in that the 2-hour walk is the event specified for open class world record competition. The time-distance equations were used to generate an open class standards value of 15,582 meters for 1-hour event. It is noted that this result compares favorably with the open class world record of 29,820 meters for the 2-hour walk.

MEN'S 1-HOUR WALK (meters)

AGE	1-HR DS	1-HR WR	1-HR PL%	1-HR AF
8	9717			0.6236
9	10704			0.6870
10	11513			0.7388
11	12187			0.7821
12	12757			0.8187
13	13246			0.8501
14	13667			0.8771
15	14032			0.9005
16	14351			0.9210
17	14629			0.9389
18	14873			0.9545
19	15086			0.9682
OC	15582			1.0000
30	15582			1.0000
31	15582			1.0000
32	15582			1.0000
33	15582			1.0000
34	15565			0.9989
35	15495			0.9944
36	15408			0.9888
37	15319	14059	92	0.9831
38	15227			0.9772
39	15134			0.9712
40	15039	11812	79	0.9651
41	14942	13165	88	0.9589
42	14844	12400	84	0.9526
43	14744	11447	78	0.9462
44	14644	12571	86	0.9398
45	14542	12773	88	0.9332
46	14438	13248	92	0.9266
47	14334	11554	81	0.9199
48	14229	11877	83	0.9131
49	14122	11763	83	0.9063
50	14015	12276	88	0.8994
51	13906	12324	89	0.8924
52	13796	11419	83	0.8854
53	13685	11800	86	0.8783
54	13573	11213	83	0.8711
55	13460	11396	85	0.8638
56	13345	11234	84	0.8564
57	13229	10521	80	0.8490
58	13112	11284	86	0.8415
59	12993	11570	89	0.8339
60	12873	11343	88	0.8261
61	12752	11404	89	0.8183
62	12628	11099	88	0.8104
63	12504	11090	89	0.8024
64	12378	7764	63	0.7943
65	12250	10635	87	0.7861
66	12120	10667	88	0.7778
67	11988	9570	80	0.7694
68	11855	10118	85	0.7608
69	11719	10147	87	0.7521
70	11581	9820	85	0.7433
71	11442	9532	83	0.7343
72	11300	9825	87	0.7252
73	11156	9329	84	0.7159
74	11009			0.7065
75	10860	9278	85	0.6970
76	10709	8695	81	0.6873
77	10555	8463	80	0.6774
78	10398	7176		0.6673
79	10238	7038	69	0.6571
80	10076	8008	79	0.6466
81	9910	7394	75	0.6360
82	9742	7072	73	0.6252
83	9570	7854	82	0.6141
84	9395	6612	70	0.6029
85	9216			0.5914
86	9034			0.5798
87	8848			0.5678
88	8659	6947	80	0.5557
89	8465			0.5433
90	8268	6797	82	0.5306
91	8067			0.5177
92	7861			0.5045
93	7651			0.4910
94	7437			0.4773
95	7218			0.4632
96	6995			0.4489
97	6767			0.4343
98	6534			0.4193
99	6296			0.4041
100	6054			0.3885

Figure 105

MEN'S DISTANCE STANDARDS AND RECORDS IN METERS FOR 1-HOUR WALK



Age-factor material is presented here in support and explanation of the age-factor standards table included at the beginning of the chapter. A discussion previously covered what age-factors represent, how they are derived and what some of the peculiarities are that characterize the derived results. The purpose here is to present the tabulated age-factor values in graphic plots which can be more easily visualized and interpreted.

It was previously mentioned that an age-factor surface is produced over axes of walker's age and distance walked. Figure 106 is a three-dimensional graph of the age-factor surface for the standards of this book.

The graphs in figure 107 display age-factor values for the standards generated. In these graphs the relationship is age-factor value versus age for the selected events. The selected events are 1500, 3000, 5k and 10k in the upper graph, and are 15k, 20k, 25k, and 50k in the lower graph.

The graphs in figure 108 also display age-factor values for the standards generated, but in these graphs the relationship is age-factor value versus distance for selected ages. The selected ages are 8, 12, 18 and OC in the upper graph, and are OC, 40, 60, 80 and 100 in the lower graph.

It was mentioned earlier that the age-factor values would not be perfectly smooth and could show warpage or undulation particularly at ages near the open class range. This is seen as an almost negligible effect in the graphs of figure 108.

In looking at the three-dimensional age-factor surface graph, it can be easily seen how the age-factor surface is made up by combining (at right angles to each other) the age-factor value versus age curves and the age-factor value versus distance curves.

Considering the impacts of the various phenomena involved, the resulting age-factor surface depicted in figure 106 is really quite well behaved.

ASSESSMENT OF RACE WALK STANDARDS FOR MEN.

In summary, the men's race walk standards and age factors themselves are very good, but because their record maturity and stability are rated as only good, the standards and age factors can be rated as having only good levels of statistical confidence. The records used in determining the standards are all world record level without reservation. However, as measures of performance for walking events, some walk standards appear to be overly demanding in comparison with their existing records; but that is because they are in fact equivalent and directly comparable to the standards of any and all running, hurdling and field events. For purposes of establishing statistical confidence, men's walk events are supported by a fair degree of participation worldwide.

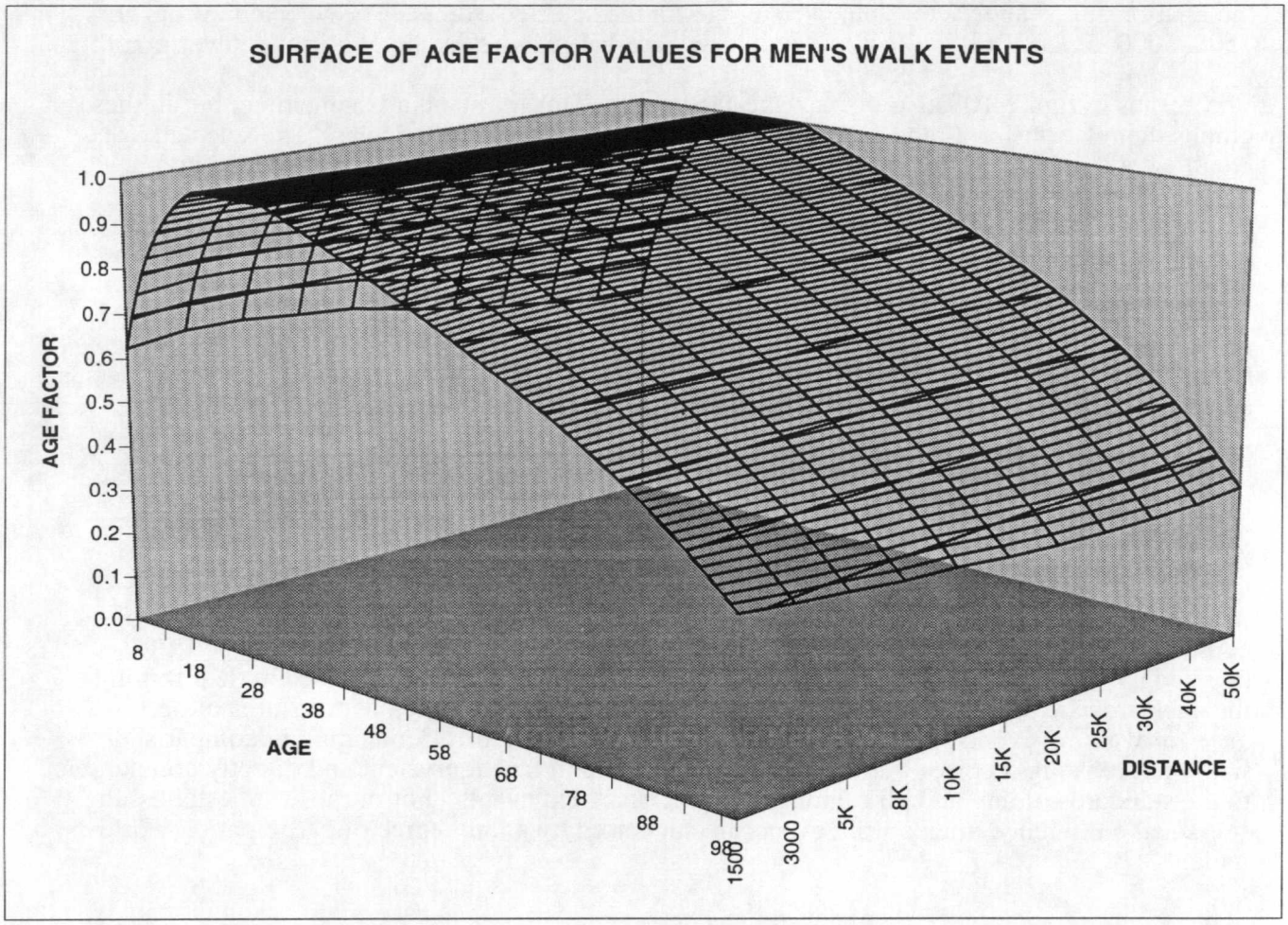
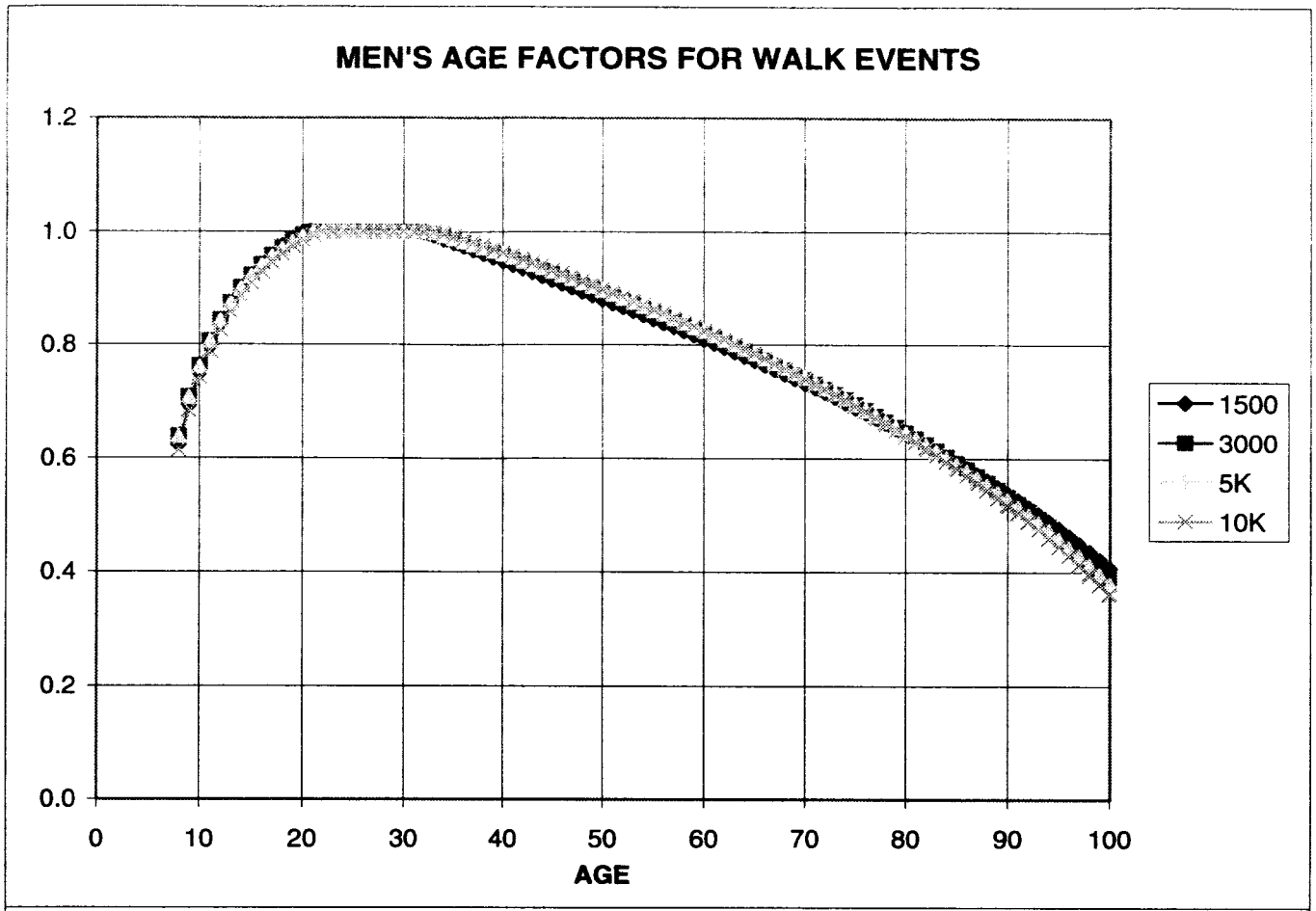

SURFACE OF AGE FACTOR VALUES FOR MEN'S WALK EVENTS
AGE FACTOR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
AGE
8
18
28
38
48
58
68
78
88
98
DISTANCE
1500
3000
5K
8K
10K
15K
20K
25K
30K
40K
50K

Figure 107


MEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500
3000
5K
10K

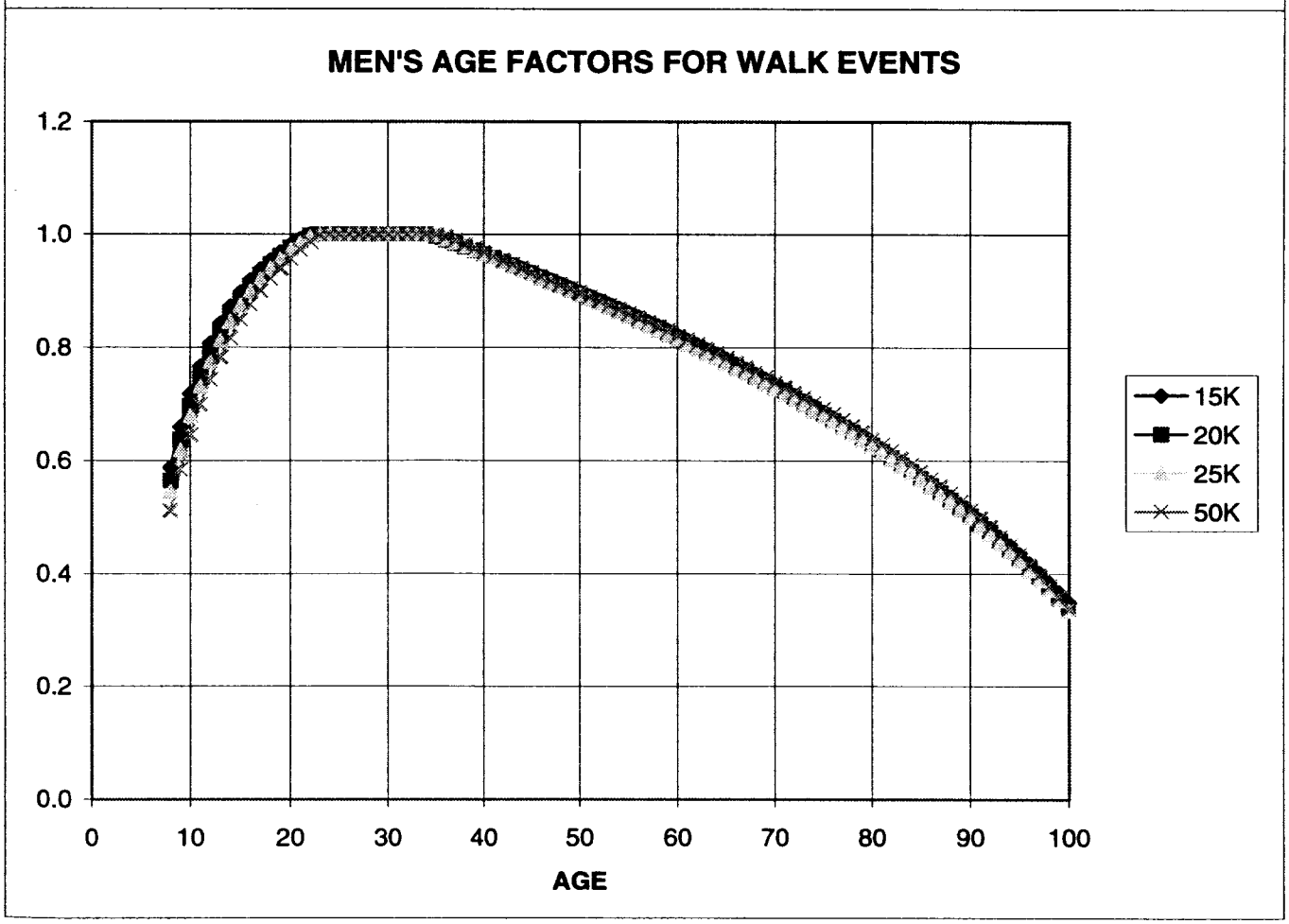
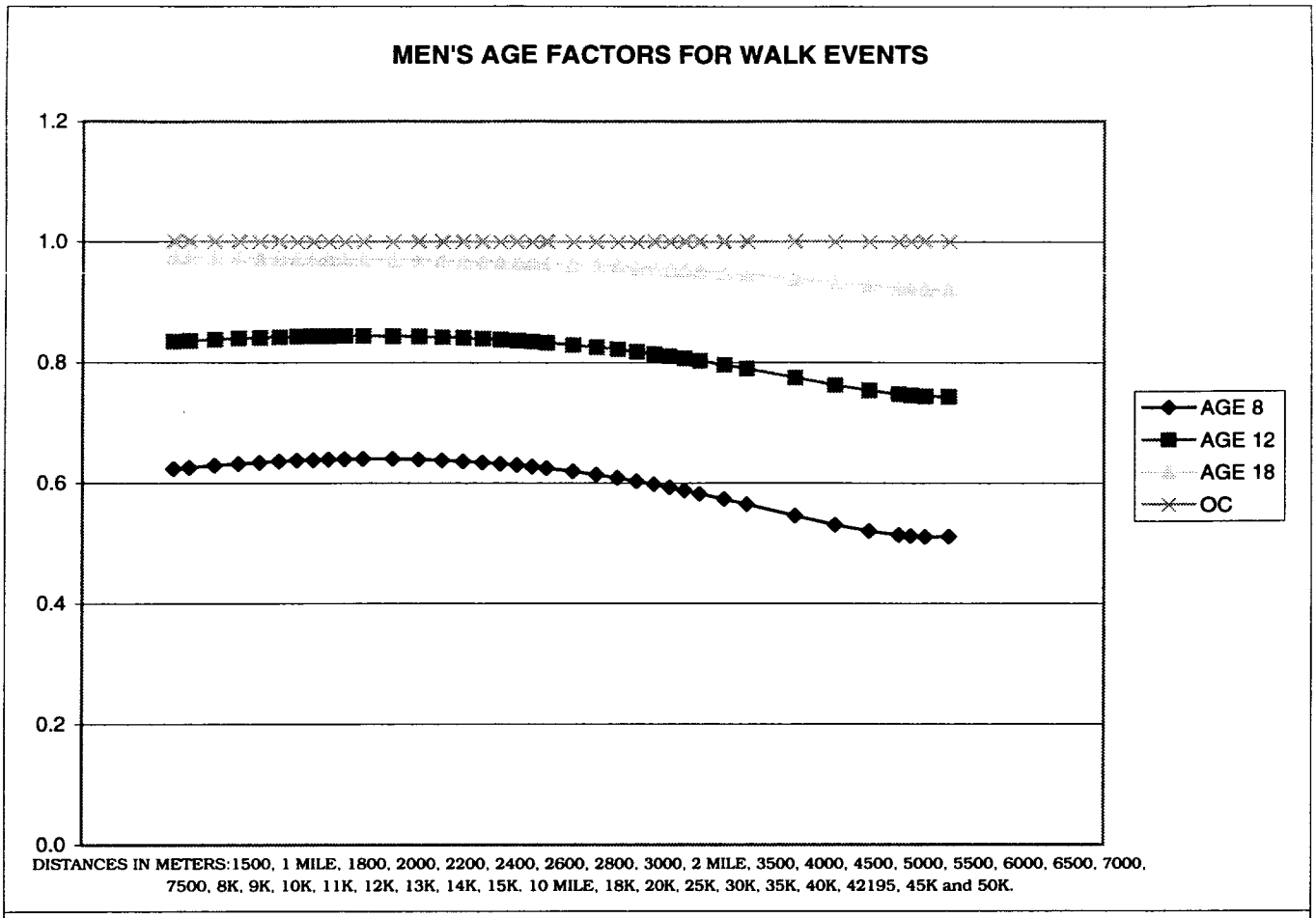
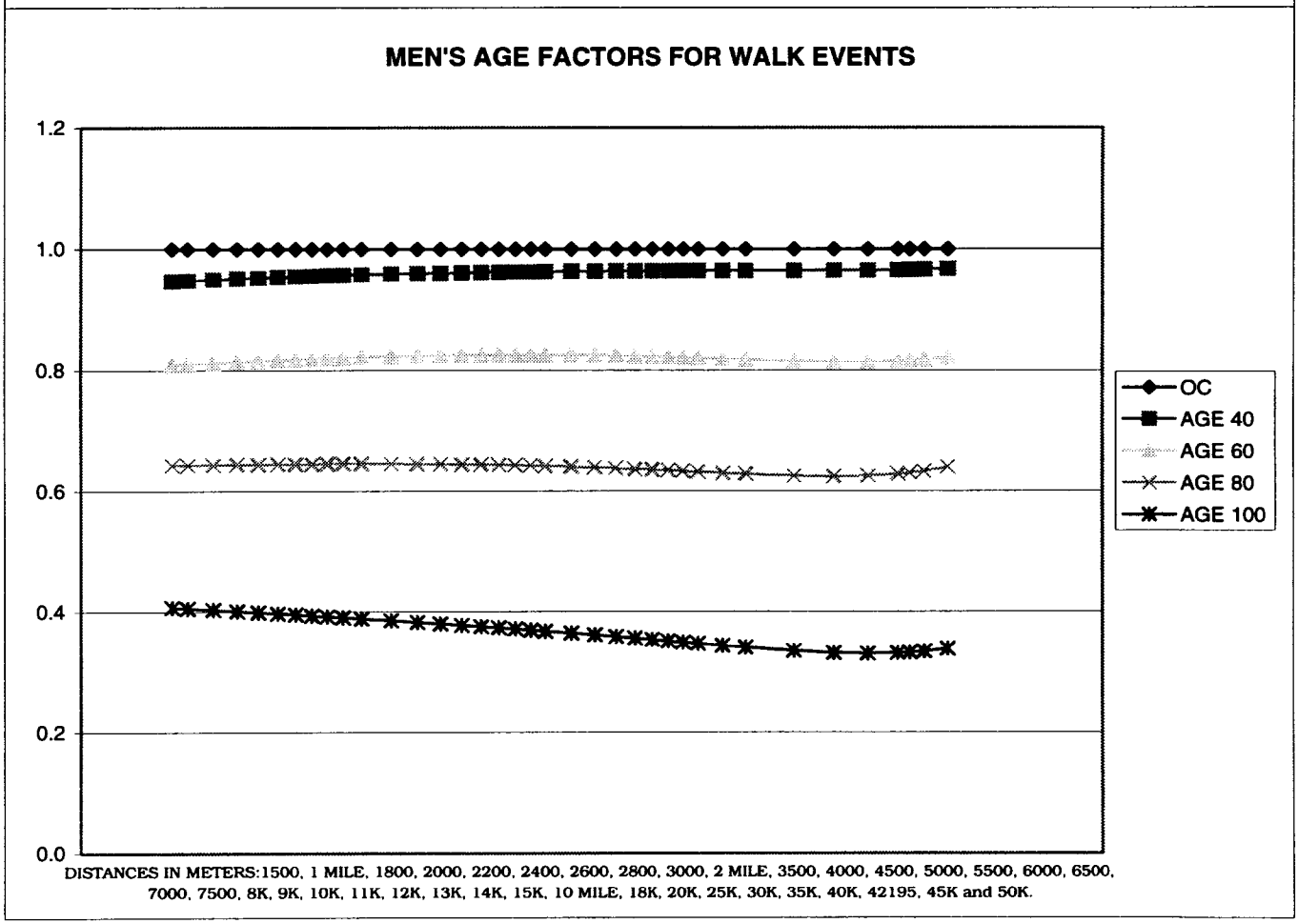

MEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
15K
20K
25K
50K

Figure 108


MEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
AGE 8
AGE 12
AGE 18
OC
DISTANCES IN METERS:1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.


MEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES IN METERS:1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.

The remainder of the chapter will include the same tables and graphs for women as were presented and discussed for men's walk events. The same discussion applies to the material in the women's portion of the chapter and hence it will not be repeated. For an explanation of a specific table or graph for women, refer to the same table or graph for men and its narrative at the beginning of the chapter.

Refer to the table of Performance Level Of Actual Records for women at page 187 to see which women's records determined their resulting standards. The table shows performance level of actual records for a quick view of how many "world record" level performances are identified by the walk standards. Those listed as 100% are included outright, while those listed as 99% and 98% are also considered to be at that level. The table also illustrates the distribution of those records on the time surface across all ages and distances.

The women's walks have been improving rapidly over the past few years, but are not yet as good overall as are the men's walks.

ASSESSMENT OF RACE WALK STANDARDS FOR WOMEN.

In summary, the women's race walk standards and age factors themselves are very good, but because their record maturity and stability are rated as only fair, the standards and age factors can be rated as having only fair levels of statistical confidence. The records used in determining the standards are all world record level without reservation. However, as measures of performance for walking events, the resulting walk standards appear to be overly demanding in comparison with their existing records; but that is because they are in fact equivalent and directly comparable to the standards of any and all running, hurdling and field events. For purposes of establishing statistical confidence, women's walk events have previously had a relatively low degree of participation worldwide over the years, and now still exhibit a considerable amount of variation of standards versus records across many ages and events. The women's race walk standards are based solely on women's race walk records and are not adjusted or otherwise modeled on the men's standards.

WOMEN'S WALK EVENT STANDARDS IN H:M:S

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	8:37.0	9:16.5	17:56.4	19:20.2	30:55.4	50:50.2	1:04:12	1:37:42	2:11:48	2:47:29	3:25:52	4:54:38	6:44:58
9	7:44.7	8:19.9	15:59.4	17:13.4	27:25.7	44:58.3	56:46.3	1:26:31	1:57:01	2:29:03	3:03:29	4:22:35	5:59:33
10	7:11.4	7:43.7	14:45.8	15:53.6	25:15.2	41:22.2	52:14.6	1:19:46	1:48:15	2:18:15	2:50:31	4:04:21	5:34:06
11	6:48.8	7:19.2	13:56.3	15:00.1	23:48.3	38:59.3	49:15.9	1:15:27	1:42:37	2:11:23	2:42:21	3:53:03	5:18:29
12	6:32.9	7:02.0	13:21.7	14:22.6	22:47.6	37:20.4	47:12.6	1:12:28	1:38:49	2:06:47	2:36:56	3:45:39	5:08:22
13	6:21.3	6:49.5	12:56.7	13:55.6	22:04.1	36:09.6	45:44.8	1:10:22	1:36:09	2:03:36	2:33:12	3:40:38	5:01:36
14	6:12.8	6:40.3	12:38.3	13:35.7	21:32.1	35:18.0	44:40.9	1:08:50	1:34:15	2:01:21	2:30:36	3:37:11	4:56:59
15	6:06.5	6:33.4	12:24.6	13:21.0	21:08.4	34:39.8	43:53.8	1:07:44	1:32:53	1:59:44	2:28:45	3:34:47	4:53:48
16	6:01.7	6:28.3	12:14.4	13:10.0	20:50.7	34:11.4	43:18.9	1:06:55	1:31:53	1:58:35	2:27:26	3:33:05	4:51:36
17	5:58.2	6:24.4	12:06.7	13:01.7	20:37.5	33:50.2	42:52.9	1:06:19	1:31:09	1:57:45	2:26:30	3:31:55	4:50:05
18	5:55.5	6:21.6	12:01.0	12:55.5	20:27.7	33:34.5	42:33.6	1:05:53	1:30:37	1:57:09	2:25:50	3:31:06	4:49:03
19	5:53.6	6:19.5	11:56.8	12:51.0	20:20.4	33:22.9	42:19.5	1:05:33	1:30:15	1:56:44	2:25:22	3:30:32	4:48:21
OC	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
30	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
31	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
32	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
33	5:50.4	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
34	5:50.5	6:16.1	11:50.0	12:43.6	20:08.4	33:03.7	41:56.2	1:05:03	1:29:40	1:56:07	2:24:43	3:29:46	4:47:22
35	5:51.0	6:16.7	11:51.0	12:44.6	20:09.9	33:05.8	41:58.6	1:05:05	1:29:42	1:56:08	2:24:44	3:29:48	4:47:27
36	5:51.6	6:17.3	11:52.2	12:46.0	20:12.0	33:09.0	42:02.4	1:05:10	1:29:47	1:56:14	2:24:51	3:29:55	4:47:36
37	5:52.4	6:18.1	11:53.8	12:47.6	20:14.5	33:12.9	42:07.0	1:05:16	1:29:54	1:56:22	2:24:59	3:30:05	4:47:47
38	5:53.2	6:19.1	11:55.6	12:49.6	20:17.6	33:17.6	42:12.7	1:05:24	1:30:03	1:56:31	2:25:09	3:30:17	4:48:03
39	5:54.3	6:20.2	11:57.7	12:51.9	20:21.1	33:23.1	42:19.4	1:05:33	1:30:14	1:56:44	2:25:23	3:30:34	4:48:23
40	5:55.5	6:21.5	12:00.2	12:54.5	20:25.3	33:29.5	42:27.2	1:05:43	1:30:27	1:56:58	2:25:39	3:30:54	4:48:49
41	5:56.9	6:23.0	12:03.0	12:57.6	20:30.0	33:36.9	42:36.1	1:05:56	1:30:42	1:57:16	2:25:59	3:31:20	4:49:22
42	5:58.4	6:24.7	12:06.2	13:01.0	20:35.3	33:45.2	42:46.2	1:06:10	1:30:59	1:57:36	2:26:23	3:31:50	4:50:02
43	6:00.2	6:26.5	12:09.8	13:04.8	20:41.2	33:54.5	42:57.7	1:06:26	1:31:20	1:58:00	2:26:50	3:32:27	4:50:51
44	6:02.1	6:28.6	12:13.7	13:09.0	20:47.8	34:04.9	43:10.4	1:06:44	1:31:42	1:58:28	2:27:23	3:33:10	4:51:49
45	6:04.2	6:30.9	12:18.1	13:13.7	20:55.1	34:16.4	43:24.6	1:07:04	1:32:08	1:58:59	2:27:59	3:34:01	4:52:58
46	6:06.5	6:33.4	12:22.8	13:18.8	21:03.1	34:29.1	43:40.1	1:07:27	1:32:37	1:59:34	2:28:42	3:34:59	4:54:18
47	6:09.0	6:36.1	12:28.0	13:24.4	21:11.8	34:42.9	43:57.1	1:07:51	1:33:09	2:00:14	2:29:29	3:36:06	4:55:51
48	6:11.8	6:39.1	12:33.7	13:30.5	21:21.3	34:57.9	44:15.7	1:08:19	1:33:45	2:00:58	2:30:23	3:37:22	4:57:37
49	6:14.8	6:42.3	12:39.7	13:37.0	21:31.5	35:14.1	44:35.8	1:08:48	1:34:24	2:01:47	2:31:23	3:38:48	4:59:39
50	6:18.0	6:45.7	12:46.3	13:44.1	21:42.6	35:31.6	44:57.6	1:09:20	1:35:06	2:02:41	2:32:29	3:40:25	5:01:57
51	6:21.4	6:49.4	12:53.4	13:51.7	21:54.4	35:50.5	45:21.0	1:09:55	1:35:53	2:03:40	2:33:42	3:42:14	5:04:32
52	6:25.1	6:53.3	13:00.9	13:59.8	22:07.1	36:10.7	45:46.2	1:10:33	1:36:44	2:04:45	2:35:03	3:44:14	5:07:27
53	6:29.0	6:57.5	13:08.9	14:08.4	22:20.6	36:32.3	46:13.1	1:11:13	1:37:39	2:05:56	2:36:32	3:46:28	5:10:41
54	6:33.1	7:02.0	13:17.5	14:17.6	22:35.0	36:55.3	46:41.9	1:11:57	1:38:38	2:07:12	2:38:09	3:48:55	5:14:17
55	6:37.6	7:06.8	13:26.6	14:27.4	22:50.3	37:19.8	47:12.5	1:12:43	1:39:41	2:08:36	2:39:54	3:51:37	5:18:16
56	6:42.3	7:11.8	13:36.2	14:37.7	23:06.5	37:45.8	47:45.0	1:13:33	1:40:50	2:10:05	2:41:49	3:54:35	5:22:40
57	6:47.2	7:17.2	13:46.4	14:48.7	23:23.6	38:13.3	48:19.5	1:14:25	1:42:03	2:11:42	2:43:53	3:57:49	5:27:30
58	6:52.5	7:22.8	13:57.2	15:00.3	23:41.7	38:42.4	48:56.1	1:15:22	1:43:21	2:13:26	2:46:07	4:01:20	5:32:47
59	6:58.0	7:28.8	14:08.5	15:12.4	24:00.8	39:13.1	49:34.7	1:16:21	1:44:45	2:15:17	2:48:31	4:05:09	5:38:33
60	7:03.8	7:35.0	14:20.4	15:25.3	24:20.9	39:45.5	50:15.4	1:17:24	1:46:13	2:17:16	2:51:06	4:09:18	5:44:51
61	7:09.9	7:41.6	14:33.0	15:38.8	24:42.1	40:19.6	50:56.4	1:18:31	1:47:48	2:19:23	2:53:53	4:13:46	5:51:41
62	7:16.3	7:48.5	14:46.2	15:52.9	25:04.3	40:55.4	51:43.5	1:19:41	1:49:28	2:21:39	2:56:51	4:18:35	5:59:05
63	7:23.1	7:55.8	14:60.0	16:07.8	25:27.6	41:33.0	52:31.0	1:20:56	1:51:14	2:24:03	3:00:01	4:23:47	6:07:06
64	7:30.1	8:03.4	15:14.5	16:23.4	25:52.0	42:12.4	53:20.8	1:22:14	1:53:06	2:26:36	3:03:24	4:29:21	6:15:44
65	7:37.5	8:11.3	15:29.6	16:39.6	26:17.5	42:53.7	54:13.0	1:23:36	1:55:04	2:29:19	3:06:60	4:35:20	6:25:03
66	7:45.2	8:19.6	15:45.5	16:56.7	26:44.2	43:36.9	55:07.7	1:25:03	1:57:09	2:32:11	3:10:50	4:41:43	6:35:04
67	7:53.3	8:28.3	16:02.0	17:14.4	27:12.0	44:22.1	56:04.9	1:26:34	1:59:21	2:35:13	3:14:54	4:48:34	6:45:49
68	8:01.7	8:37.3	16:19.2	17:33.0	27:41.1	45:09.3	57:04.7	1:28:09	2:01:39	2:38:25	3:19:12	4:55:51	6:57:20
69	8:10.5	8:46.8	16:37.2	17:52.3	28:11.5	45:58.5	58:07.2	1:29:49	2:04:05	2:41:48	3:23:46	5:03:38	7:09:39
70	8:19.6	8:56.6	16:56.0	18:12.5	28:43.1	46:49.9	59:12.4	1:31:33	2:06:38	2:45:22	3:28:36	5:11:54	7:22:49
71	8:29.1	9:06.8	17:15.5	18:33.4	29:16.0	47:43.4	1:00:20	1:33:22	2:09:18	2:49:07	3:33:43	5:20:41	7:36:53
72	8:39.0	9:17.5	17:35.8	18:55.3	29:50.3	48:39.1	1:01:31	1:35:16	2:12:07	2:53:04	3:39:06	5:30:01	7:51:51
73	8:49.3	9:28.6	17:56.9	19:18.0	30:25.9	49:37.0	1:02:45	1:37:15	2:15:03	2:57:14	3:44:48	5:39:55	8:07:48
74	9:00.0	9:40.1	18:18.9	19:41.6	31:02.9	50:37.3	1:04:02	1:39:19	2:18:08	3:01:36	3:50:47	5:50:24	8:24:45
75	9:11.1	9:52.1	18:41.7	20:06.1	31:41.4	51:40.0	1:05:22	1:41:29	2:21:21	3:06:10	3:57:06	6:01:30	8:42:45
76	9:22.7	10:04.5	19:05.3	20:31.5	32:21.3	52:45.1	1:06:45	1:43:44	2:24:43	3:10:59	4:03:44	6:13:13	9:01:51
77	9:34.6	10:17.4	19:29.9	20:57.9	33:02.7	53:52.7	1:08:11	1:46:05	2:28:14	3:16:01	4:10:42	6:25:36	9:22:05
78	9:47.1	10:30.7	19:55.3	21:25.3	33:45.7	55:02.9	1:09:41	1:48:31	2:31:54	3:21:17	4:18:02	6:38:41	9:43:31
79	9:59.9	10:44.6	20:21.7	21:53.6	34:30.3	56:15.7	1:11:14	1:51:04	2:35:43	3:26:48	4:25:43	6:52:28	10:06:12
80	10:13.3	10:59.0	20:49.1	22:23.1	35:16.4	57:31.2	1:12:50	1:53:42	2:39:43	3:32:34	4:33:47	7:06:59	10:30:10
81	10:27.1	11:13.8	21:17.4	22:53.5	36:04.3	58:49.4	1:14:30	1:56:27	2:43:53	3:38:36	4:42:14	7:22:17	10:55:29
82	10:41.4	11:29.2	21:46.8	23:25.1	36:53.9	1:00:11	1:16:14	1:59:18	2:48:13	3:44:54	4:51:06	7:38:22	11:22:13
83	10:56.3	11:45.2	22:17.2	23:57.7	37:45.2	1:01:35	1:18:02	2:02:16	2:52:44	3:51:29	5:00:22	7:55:17	11:50:24
84	11:11.6	12:01.7	22:48.6	24:31.5	38:38.3	1:03:01	1:19:53	2:05:20	2:57:26	3:58:21	5:10:04	8:13:04	12:20:06
85	11:27.5	12:18.8	23:21.2	25:06.5	39:33.2	1:04:32	1:21:49	2:08:32	3:02:19	4:05:31	5:20:13	8:31:44	12:51:23
86	11:43.9	12:36.5	23:54.8	25:42.7	40:30.0	1:06:05	1:23:49	2:11:51	3:07:25	4:12:60	5:30:49	8:51:20	13:24:19
87	12:00.9	12:54.8	24:29.6	26:20.1	41:28.8	1:07:41	1:25:52	2:15:17	3:12:42	4:20:47	5:41:54	9:11:53	13:58:58
88	12:18.5	13:13.7	25:05.6	26:58.8	42:29.6	1:09:21	1:28:00	2:18:51	3:18:12	4:28:54	5:53:26	9:33:26	14:35:23
89	12:36.6	13:33.2	25:42.8	27:38.8	43:32.4	1:11:04	1:30:13	2:22:33	3:23:55	4:37:21	6:05:33	9:56:01	15:13:39
90	12:55.4	13:53.4	26:21.2	28:20.1	44:37.3	1:12:51	1:32:30	2:26:22	3:29:51	4:46:09	6:18:09	10:19:41	15:53:51
91	13:14.8	14:14.2	27:00.9	29:02.7	45:44.4	1:14:41	1:34:52	2:30:20	3:36:00	4:55:19	6:31:19	10:44:27	16:36:02
92	13:34.8	14:35.8	27:42.0	29:46.8	46:53.7	1:16:35	1:37:19	2:34:27	3:42:24	5:04:50	6:45:01	11:10:22	17:20:19
93	13:55.5	14:58.1	28:24.3	30:32.4	48:05.3	1:18:33	1:39:50	2:38:42	3:49:02	5:14:45	6:59:19	11:37:29	18:06:44
94	14:16.8	15:21.0	29:08.1	31:19.4	49:19.2	1:20:34	1:42:27	2:43:06	3:55:56	5:25:04	7:14:13	12:05:51	18:55:25
95	14:38.9	15:44.8	29:53.3	32:08.0	50:35.6	1:22:40	1:45:09	2:47:40	4:03:05	5:35:47	7:29:44	12:35:30	19:46:25
96	15:01.7	16:09.3	30:39.9	32:58.1	51:54.4	1:24:50	1:47:57	2:52:23	4:10:29	5:46:55	7:45:54	13:06:28	20:39:50
97	15:25.2	16:34.6	31:28.1	33:49.9	53:15.8	1:27:04	1:50:50	2:57:17	4:18:10	5:58:30	8:02:44	13:38:50	21:35:47
98	15:49.5	17:00.7	32:17.8	34:43.3	54:39.8	1:29:22	1:53:49	3:02:20	4:26:08	6:10:32	8:20:15	14:12:38	22:34:21
99	16:14.5	17:27.7	33:09.1	35:38.5	56:06.5	1:31:45	1:56:53	3:07:34	4:34:24	6:23:01	8:38:29	14:47:55	23:35:37
100	16:40.4	17:55.5	34:02.1	36:35.4	57:36.0	1:34:13	2:00:04	3:12:59	4:42:58	6:35:60	8:57:27	15:24:45	24:39:44

WOMEN'S WALK EVENT STANDARDS IN SECONDS

AGE	1500	1 MILE	3000	2 MILE	5K	8K	10K	15K	20K	25K	30K	40K	50K
8	517.0	556.5	1076.4	1160.2	1655.4	3050.2	3651.9	5862	7908	10049	12352	17678	24298
9	464.7	499.9	959.4	1033.4	1645.7	2698.3	3406.3	5191	7021	8943	11009	15755	21573
10	431.4	463.7	885.8	953.6	1515.2	2482.2	3134.6	4786	6495	8295	10231	14661	20046
11	408.8	439.2	836.3	900.1	1428.3	2339.3	2955.9	4527	6157	7883	9741	13963	19109
12	392.9	422.0	801.7	862.6	1367.6	2240.4	2832.6	4348	5929	7607	9416	13539	18502
13	381.3	409.5	776.7	835.6	1324.1	2169.6	2744.8	4222	5769	7416	9192	13238	18096
14	372.8	400.3	758.3	815.7	1292.1	2118.0	2680.9	4130	5655	7261	9036	13031	17819
15	366.5	393.4	744.6	801.0	1268.4	2079.8	2633.6	4064	5573	7184	8925	12887	17628
16	361.7	388.3	734.4	790.0	1250.7	2051.4	2598.9	4015	5513	7115	8846	12785	17496
17	358.2	384.4	726.7	781.7	1237.5	2030.2	2572.9	3979	5469	7065	8790	12715	17405
18	355.5	381.6	721.0	775.5	1227.7	2014.5	2553.6	3953	5437	7029	8750	12666	17343
19	353.6	379.5	716.8	771.0	1220.4	2002.9	2539.5	3933	5415	7004	8722	12632	17301
OC	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
30	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
31	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
32	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
33	350.4	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
34	350.5	376.1	710.0	763.6	1208.4	1983.7	2516.2	3903	5380	6967	8683	12586	17242
35	351.0	376.7	711.0	764.6	1209.9	1985.8	2518.6	3905	5382	6968	8684	12588	17247
36	351.6	377.3	712.2	766.0	1212.0	1989.0	2522.4	3910	5387	6974	8691	12595	17256
37	352.4	378.1	713.8	767.6	1214.5	1992.9	2527.0	3916	5394	6982	8699	12605	17267
38	353.2	379.1	715.6	769.6	1217.6	1997.6	2532.7	3924	5403	6991	8709	12617	17283
39	354.3	380.2	717.7	771.9	1221.1	2003.1	2539.4	3933	5414	7004	8723	12634	17303
40	355.5	381.5	720.2	774.5	1225.3	2009.5	2547.2	3943	5427	7018	8739	12654	17329
41	356.9	383.0	723.0	777.6	1230.0	2016.9	2556.1	3956	5442	7036	8759	12680	17362
42	358.4	384.7	726.2	781.0	1235.3	2025.2	2566.2	3970	5459	7056	8783	12710	17402
43	360.2	386.5	729.8	784.8	1241.2	2034.5	2577.7	3986	5480	7080	8810	12747	17451
44	362.1	388.6	733.7	789.0	1247.6	2044.9	2590.4	4004	5502	7106	8843	12790	17509
45	364.2	390.9	738.1	793.7	1255.1	2056.4	2604.6	4024	5528	7139	8879	12841	17578
46	366.5	393.4	742.8	798.8	1263.1	2069.1	2620.1	4047	5557	7174	8922	12899	17658
47	369.0	396.1	748.0	804.4	1271.8	2082.9	2637.1	4071	5589	7214	8969	12966	17751
48	371.8	399.1	753.7	810.5	1281.3	2097.9	2655.7	4099	5625	7258	9023	13042	17857
49	374.8	402.3	759.7	817.0	1291.5	2114.1	2675.8	4128	5664	7307	9083	13128	17979
50	378.0	405.7	766.3	824.1	1302.6	2131.6	2697.6	4160	5706	7361	9149	13225	18117
51	381.4	409.4	773.4	831.7	1314.4	2150.5	2721.0	4195	5753	7420	9222	13334	18272
52	385.1	413.3	780.9	839.8	1327.1	2170.7	2746.2	4233	5804	7485	9303	13454	18447
53	389.0	417.5	788.9	848.4	1340.6	2192.3	2773.1	4273	5859	7556	9392	13588	18641
54	393.1	422.0	797.5	857.6	1355.0	2215.3	2801.9	4317	5918	7632	9489	13735	18857
55	397.6	426.8	806.6	867.4	1370.3	2239.8	2832.5	4363	5981	7716	9594	13897	19096
56	402.3	431.8	816.2	877.7	1386.5	2265.8	2865.0	4413	6050	7805	9709	14075	19360
57	407.2	437.2	826.4	888.7	1403.6	2293.3	2899.5	4465	6123	7902	9833	14269	19650
58	412.5	442.8	837.2	900.3	1421.7	2322.4	2936.1	4522	6201	8006	9967	14480	19967
59	418.0	448.8	848.5	912.4	1440.8	2353.1	2974.7	4581	6285	8117	10111	14709	20313
60	423.8	455.0	860.4	925.3	1460.9	2385.5	3015.4	4644	6373	8236	10266	14958	20691
61	429.9	461.6	873.0	938.8	1482.1	2419.6	3058.4	4711	6468	8363	10433	15226	21101
62	436.3	468.5	886.2	952.9	1504.3	2455.4	3103.5	4781	6568	8499	10611	15515	21545
63	443.1	475.8	900.0	967.8	1527.6	2493.0	3151.0	4856	6674	8643	10801	15827	22026
64	450.1	483.4	914.5	983.4	1552.0	2532.4	3200.8	4934	6786	8796	11004	16161	22544
65	457.5	491.3	929.6	999.6	1577.5	2573.7	3253.0	5016	6904	8959	11220	16520	23103
66	465.2	499.6	945.5	1016.7	1604.2	2616.9	3307.7	5103	7029	9131	11450	16903	23704
67	473.3	508.3	962.0	1034.4	1632.0	2662.1	3364.9	5194	7161	9313	11694	17314	24349
68	481.7	517.3	979.2	1053.0	1661.1	2709.3	3424.7	5289	7299	9505	11952	17751	25040
69	490.5	526.8	997.2	1072.3	1691.5	2758.5	3487.2	5389	7445	9708	12226	18218	25779
70	499.6	536.6	1016.0	1092.5	1723.1	2809.9	3552.4	5493	7598	9922	12516	18714	26569
71	509.1	546.8	1035.5	1113.4	1756.0	2863.4	3620.4	5602	7758	10147	12823	19241	27413
72	519.0	557.5	1055.8	1135.3	1790.3	2919.1	3691.2	5716	7927	10384	13146	19801	28311
73	529.3	568.6	1076.9	1158.0	1825.9	2977.0	3765.0	5835	8103	10634	13488	20395	29266
74	540.0	580.1	1098.9	1181.6	1862.9	3037.3	3841.8	5959	8288	10896	13847	21024	30285
75	551.1	592.1	1121.7	1206.1	1901.4	3100.0	3921.7	6089	8481	11170	14226	21690	31365
76	562.7	604.5	1145.3	1231.5	1941.3	3165.1	4004.7	6224	8683	11459	14624	22393	32511
77	574.6	617.4	1169.9	1257.9	1982.7	3232.7	4091.0	6365	8894	11761	15042	23136	33725
78	587.1	630.7	1195.3	1285.3	2025.7	3302.9	4180.7	6511	9114	12077	15482	23921	35011
79	599.9	644.6	1221.7	1313.6	2070.3	3375.7	4273.7	6664	9343	12408	15943	24748	36372
80	613.3	659.0	1249.1	1343.1	2116.4	3451.2	4370.3	6822	9583	12754	16427	25619	37810
81	627.1	673.8	1277.4	1373.5	2164.3	3529.4	4470.4	6987	9833	13116	16934	26537	39329
82	641.4	689.2	1306.8	1405.1	2213.9	3610.5	4574.2	7158	10093	13494	17466	27502	40933
83	656.3	705.2	1337.2	1437.7	2265.2	3694.5	4681.9	7336	10364	13889	18022	28517	42624
84	671.6	721.7	1368.6	1471.5	2318.3	3781.5	4793.4	7520	10646	14301	18604	29584	44406
85	687.5	738.8	1401.2	1506.5	2373.2	3871.5	4908.9	7712	10939	14731	19213	30704	46283
86	703.9	756.5	1434.8	1542.7	2430.0	3964.7	5028.5	7911	11245	15180	19849	31880	48259
87	720.9	774.8	1469.6	1580.1	2488.8	4061.1	5152.3	8117	11562	15647	20514	33113	50338
88	738.5	793.7	1505.6	1618.8	2549.6	4160.9	5280.5	8331	11892	16134	21208	34406	52523
89	756.6	813.2	1542.8	1658.8	2612.4	4264.0	5413.1	8553	12235	16641	21933	35761	54819
90	775.4	833.4	1581.2	1700.1	2677.3	4370.7	5550.2	8782	12591	17169	22689	37181	57231
91	794.8	854.2	1620.9	1742.7	2744.4	4480.9	5692.1	9020	12960	17719	23479	38667	59762
92	814.8	875.8	1662.0	1786.8	2813.7	4594.8	5838.8	9267	13344	18290	24301	40222	62419
93	835.5	896.1	1704.3	1832.4	2885.3	4712.6	5990.5	9522	13742	18885	25159	41849	65204
94	856.8	921.0	1748.1	1879.4	2959.2	4834.2	6147.2	9786	14156	19504	26053	43551	68125
95	878.9	944.8	1793.3	1928.0	3035.6	4959.9	6309.3	10060	14585	20147	26984	45330	71185
96	901.7	969.3	1839.9	1978.1	3114.4	5089.7	6476.7	10343	15029	20815	27954	47188	74390
97	925.2	994.6	1888.1	2029.9	3195.8	5223.8	6649.6	10637	15490	21510	28964	49130	77747
98	949.5	1020.7	1937.8	2083.3	3279.8	5362.3	6828.5	10940	15968	22232	30015	51158	81261
99	974.5	1047.7	1989.1	2138.5	3366.5	5505.3	7013.2	11254	16464	22981	31109	53275	84937
100	1000.4	1075.5	2042.1	2195.4	3456.0	5652.9	7204	11579	16978	23760	32247	55485	88784

WOMEN'S WALK EVENT AGE FACTORS

AGE	1500	1 MILE	3000	2 MILE	5K	6K	10K	15K	20K	25K	30K	40K	50K
8	0.6778	0.6757	0.6596	0.6581	0.6513	0.6503	0.6532	0.6658	0.6803	0.6932	0.7030	0.7119	0.7096
9	0.7540	0.7523	0.7400	0.7389	0.7343	0.7352	0.7387	0.7518	0.7663	0.7790	0.7887	0.7988	0.7993
10	0.8122	0.8110	0.8015	0.8007	0.7975	0.7992	0.8027	0.8151	0.8283	0.8398	0.8487	0.8584	0.8601
11	0.8571	0.8562	0.8489	0.8483	0.8461	0.8480	0.8512	0.8622	0.8737	0.8837	0.8914	0.9001	0.9023
12	0.8919	0.8912	0.8856	0.8852	0.8836	0.8854	0.8883	0.8977	0.9074	0.9158	0.9222	0.9296	0.9319
13	0.9169	0.9164	0.9142	0.9136	0.9126	0.9143	0.9167	0.9245	0.9325	0.9394	0.9446	0.9507	0.9526
14	0.9399	0.9395	0.9363	0.9361	0.9352	0.9366	0.9386	0.9449	0.9514	0.9568	0.9609	0.9658	0.9676
15	0.9562	0.9559	0.9535	0.9533	0.9527	0.9538	0.9554	0.9604	0.9654	0.9697	0.9729	0.9766	0.9781
16	0.9667	0.9665	0.9668	0.9666	0.9661	0.9670	0.9682	0.9721	0.9760	0.9792	0.9816	0.9844	0.9855
17	0.9763	0.9782	0.9769	0.9768	0.9765	0.9771	0.9780	0.9809	0.9838	0.9861	0.9879	0.9899	0.9907
18	0.9856	0.9855	0.9847	0.9846	0.9843	0.9847	0.9854	0.9874	0.9895	0.9911	0.9923	0.9937	0.9942
19	0.9911	0.9910	0.9904	0.9904	0.9902	0.9904	0.9908	0.9922	0.9936	0.9947	0.9955	0.9963	0.9966
OC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
31	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
33	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
34	0.9997	0.9998	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
35	0.9983	0.9984	0.9986	0.9986	0.9987	0.9989	0.9991	0.9994	0.9997	0.9998	0.9998	0.9998	0.9997
36	0.9966	0.9966	0.9968	0.9969	0.9970	0.9973	0.9976	0.9982	0.9986	0.9989	0.9991	0.9992	0.9992
37	0.9945	0.9945	0.9947	0.9947	0.9950	0.9954	0.9957	0.9966	0.9973	0.9978	0.9982	0.9985	0.9986
38	0.9920	0.9920	0.9922	0.9922	0.9925	0.9931	0.9935	0.9947	0.9957	0.9964	0.9970	0.9975	0.9977
39	0.9891	0.9891	0.9892	0.9892	0.9896	0.9903	0.9909	0.9924	0.9937	0.9947	0.9954	0.9962	0.9965
40	0.9857	0.9857	0.9858	0.9859	0.9862	0.9871	0.9879	0.9897	0.9914	0.9926	0.9936	0.9946	0.9950
41	0.9819	0.9819	0.9820	0.9820	0.9825	0.9836	0.9844	0.9866	0.9886	0.9902	0.9913	0.9926	0.9931
42	0.9777	0.9776	0.9777	0.9777	0.9782	0.9795	0.9805	0.9831	0.9854	0.9873	0.9886	0.9902	0.9908
43	0.9729	0.9729	0.9729	0.9730	0.9735	0.9750	0.9762	0.9791	0.9818	0.9840	0.9855	0.9874	0.9880
44	0.9678	0.9677	0.9677	0.9677	0.9684	0.9701	0.9714	0.9747	0.9777	0.9802	0.9820	0.9840	0.9848
45	0.9622	0.9621	0.9620	0.9620	0.9628	0.9646	0.9661	0.9698	0.9732	0.9759	0.9779	0.9801	0.9809
46	0.9561	0.9560	0.9558	0.9559	0.9567	0.9586	0.9604	0.9645	0.9681	0.9711	0.9733	0.9757	0.9765
47	0.9495	0.9494	0.9492	0.9492	0.9501	0.9524	0.9542	0.9586	0.9626	0.9658	0.9681	0.9707	0.9714
48	0.9425	0.9424	0.9421	0.9421	0.9431	0.9456	0.9475	0.9523	0.9565	0.9599	0.9623	0.9650	0.9656
49	0.9350	0.9349	0.9345	0.9346	0.9356	0.9383	0.9404	0.9454	0.9499	0.9534	0.9560	0.9587	0.9590
50	0.9271	0.9270	0.9265	0.9266	0.9277	0.9306	0.9328	0.9381	0.9428	0.9465	0.9491	0.9516	0.9517
51	0.9188	0.9186	0.9181	0.9181	0.9193	0.9225	0.9247	0.9303	0.9352	0.9389	0.9415	0.9439	0.9436
52	0.9100	0.9098	0.9092	0.9093	0.9106	0.9139	0.9163	0.9221	0.9270	0.9308	0.9333	0.9354	0.9347
53	0.9009	0.9006	0.8999	0.9000	0.9014	0.9049	0.9074	0.9133	0.9183	0.9220	0.9245	0.9262	0.9250
54	0.8913	0.8911	0.8903	0.8904	0.8918	0.8955	0.8981	0.9042	0.9091	0.9128	0.9151	0.9163	0.9144
55	0.8814	0.8811	0.8803	0.8803	0.8819	0.8857	0.8883	0.8945	0.8995	0.9029	0.9050	0.9056	0.9029
56	0.8711	0.8708	0.8699	0.8699	0.8716	0.8755	0.8783	0.8845	0.8893	0.8925	0.8943	0.8942	0.8906
57	0.8605	0.8602	0.8591	0.8592	0.8609	0.8650	0.8678	0.8740	0.8787	0.8816	0.8830	0.8820	0.8775
58	0.8496	0.8492	0.8481	0.8482	0.8499	0.8542	0.8570	0.8632	0.8676	0.8702	0.8712	0.8692	0.8635
59	0.8383	0.8380	0.8368	0.8369	0.8387	0.8430	0.8459	0.8519	0.8561	0.8583	0.8587	0.8556	0.8488
60	0.8268	0.8264	0.8251	0.8252	0.8271	0.8316	0.8345	0.8404	0.8441	0.8458	0.8458	0.8414	0.8333
61	0.8151	0.8147	0.8133	0.8134	0.8153	0.8199	0.8227	0.8285	0.8318	0.8330	0.8323	0.8266	0.8171
62	0.8031	0.8026	0.8012	0.8013	0.8033	0.8079	0.8108	0.8162	0.8191	0.8197	0.8183	0.8112	0.8003
63	0.7909	0.7904	0.7889	0.7890	0.7911	0.7957	0.7986	0.8038	0.8061	0.8060	0.8039	0.7952	0.7828
64	0.7785	0.7780	0.7764	0.7765	0.7786	0.7833	0.7861	0.7910	0.7928	0.7920	0.7891	0.7788	0.7648
65	0.7659	0.7654	0.7637	0.7639	0.7660	0.7708	0.7735	0.7780	0.7792	0.7776	0.7739	0.7619	0.7463
66	0.7532	0.7527	0.7510	0.7511	0.7533	0.7580	0.7607	0.7648	0.7654	0.7630	0.7584	0.7446	0.7274
67	0.7404	0.7399	0.7380	0.7382	0.7404	0.7452	0.7478	0.7515	0.7513	0.7481	0.7425	0.7269	0.7081
68	0.7275	0.7269	0.7250	0.7252	0.7275	0.7322	0.7347	0.7379	0.7370	0.7329	0.7265	0.7090	0.6886
69	0.7145	0.7139	0.7120	0.7121	0.7144	0.7191	0.7216	0.7243	0.7226	0.7176	0.7102	0.6908	0.6688
70	0.7014	0.7008	0.6988	0.6990	0.7013	0.7060	0.7083	0.7105	0.7081	0.7021	0.6937	0.6725	0.6490
71	0.6883	0.6877	0.6857	0.6858	0.6882	0.6928	0.6950	0.6967	0.6934	0.6865	0.6771	0.6541	0.6290
72	0.6751	0.6745	0.6725	0.6726	0.6750	0.6796	0.6817	0.6828	0.6787	0.6709	0.6605	0.6356	0.6090
73	0.6620	0.6614	0.6593	0.6594	0.6618	0.6663	0.6683	0.6688	0.6639	0.6551	0.6438	0.6171	0.5891
74	0.6489	0.6483	0.6461	0.6463	0.6487	0.6531	0.6550	0.6549	0.6492	0.6394	0.6271	0.5986	0.5693
75	0.6358	0.6352	0.6330	0.6331	0.6355	0.6399	0.6416	0.6410	0.6344	0.6237	0.6104	0.5803	0.5497
76	0.6228	0.6221	0.6199	0.6200	0.6225	0.6267	0.6283	0.6271	0.6196	0.6080	0.5938	0.5620	0.5304
77	0.6098	0.6091	0.6069	0.6070	0.6095	0.6136	0.6151	0.6132	0.6049	0.5924	0.5772	0.5440	0.5113
78	0.5969	0.5962	0.5940	0.5941	0.5965	0.6006	0.6019	0.5994	0.5903	0.5769	0.5608	0.5261	0.4925
79	0.5841	0.5834	0.5811	0.5813	0.5837	0.5876	0.5888	0.5857	0.5758	0.5615	0.5446	0.5086	0.4741
80	0.5714	0.5707	0.5684	0.5685	0.5710	0.5748	0.5758	0.5721	0.5614	0.5462	0.5286	0.4913	0.4560
81	0.5588	0.5581	0.5558	0.5559	0.5583	0.5621	0.5629	0.5586	0.5471	0.5311	0.5127	0.4743	0.4384
82	0.5463	0.5456	0.5433	0.5434	0.5458	0.5494	0.5501	0.5452	0.5330	0.5163	0.4971	0.4576	0.4212
83	0.5339	0.5333	0.5310	0.5311	0.5335	0.5369	0.5374	0.5320	0.5191	0.5016	0.4818	0.4413	0.4045
84	0.5217	0.5211	0.5188	0.5189	0.5213	0.5246	0.5249	0.5190	0.5054	0.4871	0.4667	0.4254	0.3883
85	0.5097	0.5090	0.5067	0.5069	0.5092	0.5124	0.5126	0.5061	0.4918	0.4729	0.4519	0.4099	0.3725
86	0.4978	0.4971	0.4948	0.4950	0.4973	0.5003	0.5004	0.4934	0.4784	0.4589	0.4375	0.3948	0.3573
87	0.4861	0.4854	0.4831	0.4833	0.4855	0.4885	0.4884	0.4808	0.4653	0.4452	0.4233	0.3801	0.3425
88	0.4745	0.4738	0.4716	0.4717	0.4740	0.4768	0.4765	0.4685	0.4524	0.4318	0.4094	0.3658	0.3283
89	0.4631	0.4624	0.4602	0.4603	0.4626	0.4652	0.4648	0.4563	0.4397	0.4186	0.3959	0.3519	0.3145
90	0.4519	0.4512	0.4490	0.4492	0.4513	0.4539	0.4534	0.4444	0.4273	0.4058	0.3827	0.3385	0.3013
91	0.4409	0.4402	0.4380	0.4382	0.4403	0.4427	0.4421	0.4327	0.4151	0.3932	0.3698	0.3255	0.2885
92	0.4301	0.4294	0.4272	0.4273	0.4295	0.4317	0.4310	0.4212	0.4032	0.3809	0.3573	0.3129	0.2762
93	0.4194	0.4188	0.4166	0.4167	0.4188	0.4209	0.4200	0.4099	0.3915	0.3689	0.3451	0.3007	0.2644
94	0.4090	0.4083	0.4062	0.4063	0.4083	0.4103	0.4093	0.3988	0.3801	0.3572	0.3333	0.2890	0.2531
95	0.3987	0.3980	0.3959	0.3961	0.3981	0.3999	0.3988	0.3880	0.3689	0.3458	0.3218	0.2776	0.2422
96	0.3886	0.3880	0.3859	0.3860	0.3880	0.3897	0.3885	0.3773	0.3580	0.3347	0.3106	0.2667	0.2318
97	0.3787	0.3781	0.3760	0.3762	0.3781	0.3797	0.3784	0.3669	0.3473	0.3239	0.2998	0.2562	0.2218
98	0.3691	0.3684	0.3664	0.3665	0.3684	0.3699	0.3685	0.3568	0.3369	0.3134	0.2893	0.2460	0.2122
99	0.3596	0.3589	0.3569	0.3571	0.3589	0.3603	0.3588	0.3468	0.3268	0.3031	0.2791	0.2362	0.2030
100	0.3503	0.3497	0.3477	0.3478	0.3497	0.3509	0.3493	0.3371	0.3169	0.2932	0.2693	0.2268	0.1942

AGE	1500	1 MILE	3000	2 MILE	5K	10K	15K	20K	25K	50K
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18					100	101				
19										
OC	100	99	100	96	100	100		100	88	100
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40		81	90	65	87	90	80	84	65	
41		82	90	77	85	87	82	84		67
42		79	90	76	90	86	81	81	75	88
43		75	85		82	84	76	77	78	100
44		80	80	79	86	83	79	90	79	88
45		81	85	80	83	89	80	87	77	99
46		83	79	82	86	86		81	69	69
47		84	78	84	84	84	80	79	77	90
48		80	79		83	83	71	80	66	
49		80	81	77	82	82	79	84	65	74
50		79	84		83	85	78	87	74	79
51		83	80		87	87	81	82	72	90
52		79	83		85	84	76	89	74	87
53		80	81		84	88	79	78	76	90
54		69	80		82	82	77	79		
55		81	84	69	83	82	83	88	70	89
56		80	79		85	82	81	83	75	79
57		82	83		92	83	82	83	83	
58		84	83	78	88	90	81	82	78	71
59		83	87		85	91	78	85	80	
60		86	87	79	87	90	81	85	83	
61		88	85		93	91	81	86	79	
62		81	85		86	91	79	81	79	
63		84	81		89	88	80	81	83	
64		82	87		87	85	80	81	82	84
65		87	90		88	89	80	87	86	98
66		88	84	82	96	87	85	82	84	
67		90	85	85	85	86	82	85	87	
68		90	93	74	90	97	78	81	81	
69		73	86	78	95	97	81	83		
70		80	86		95	98	77	86		
71		77	95	76	100	97	74			
72		78	86	85	97	85	77	77		
73		79	80	76	99	100	79	82		
74		94	84	90	88	88	79			
75		80	88		97	96	87	88		
76		77	83	76	92	87	78	81		
77		75		76	92	88				
78		62		62	91	94				
79		83	62	67	88	84				
80			86		94	95		78		
81			89		89	86				
82			86		97	88				
83			91		81					
84										
85			85		88					
86					97	100				
87			88		93					
88										
89										
90										
91										
92										
93										
94										
95										
96										
97										
98										
99										
100										

Figure 109

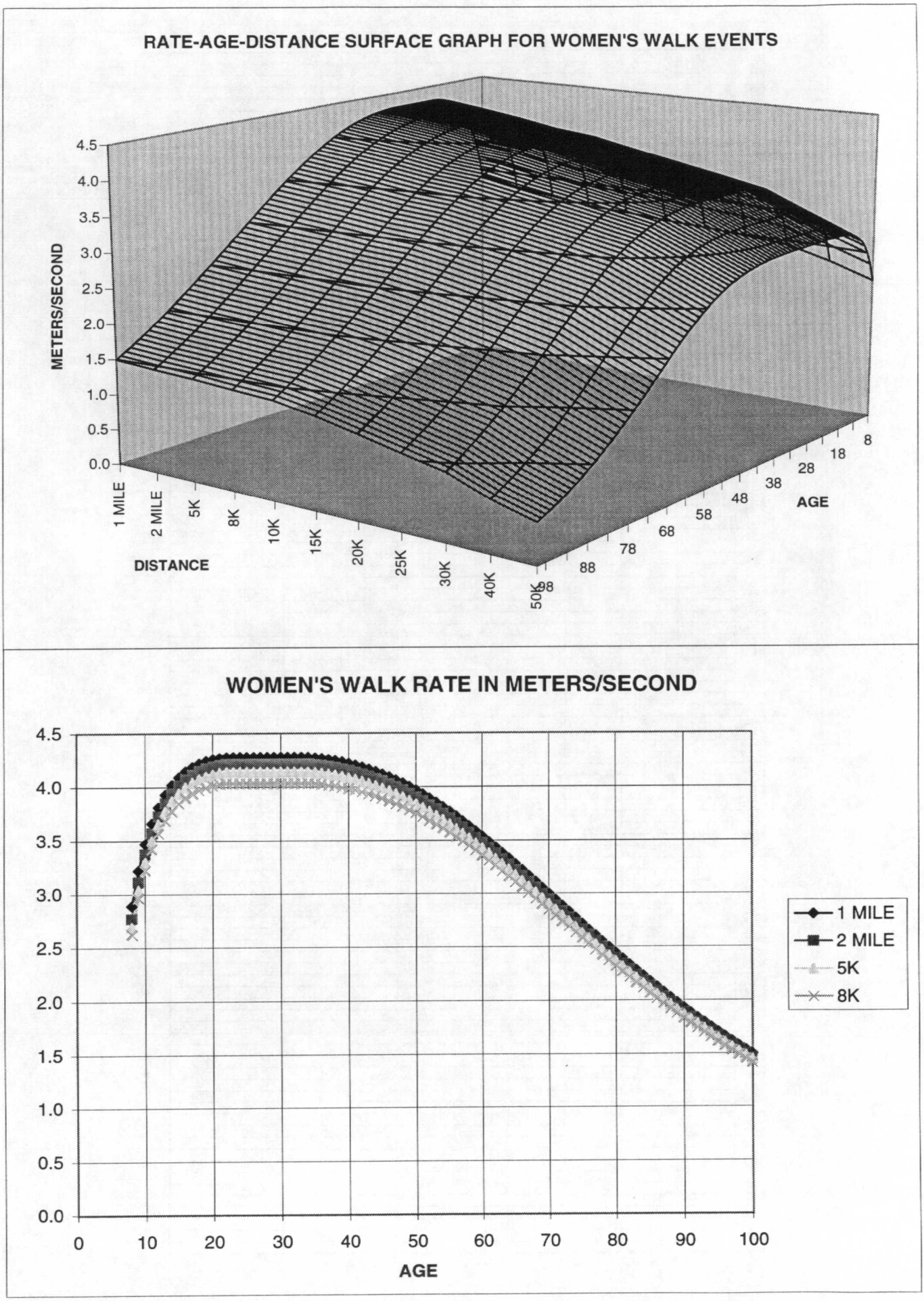
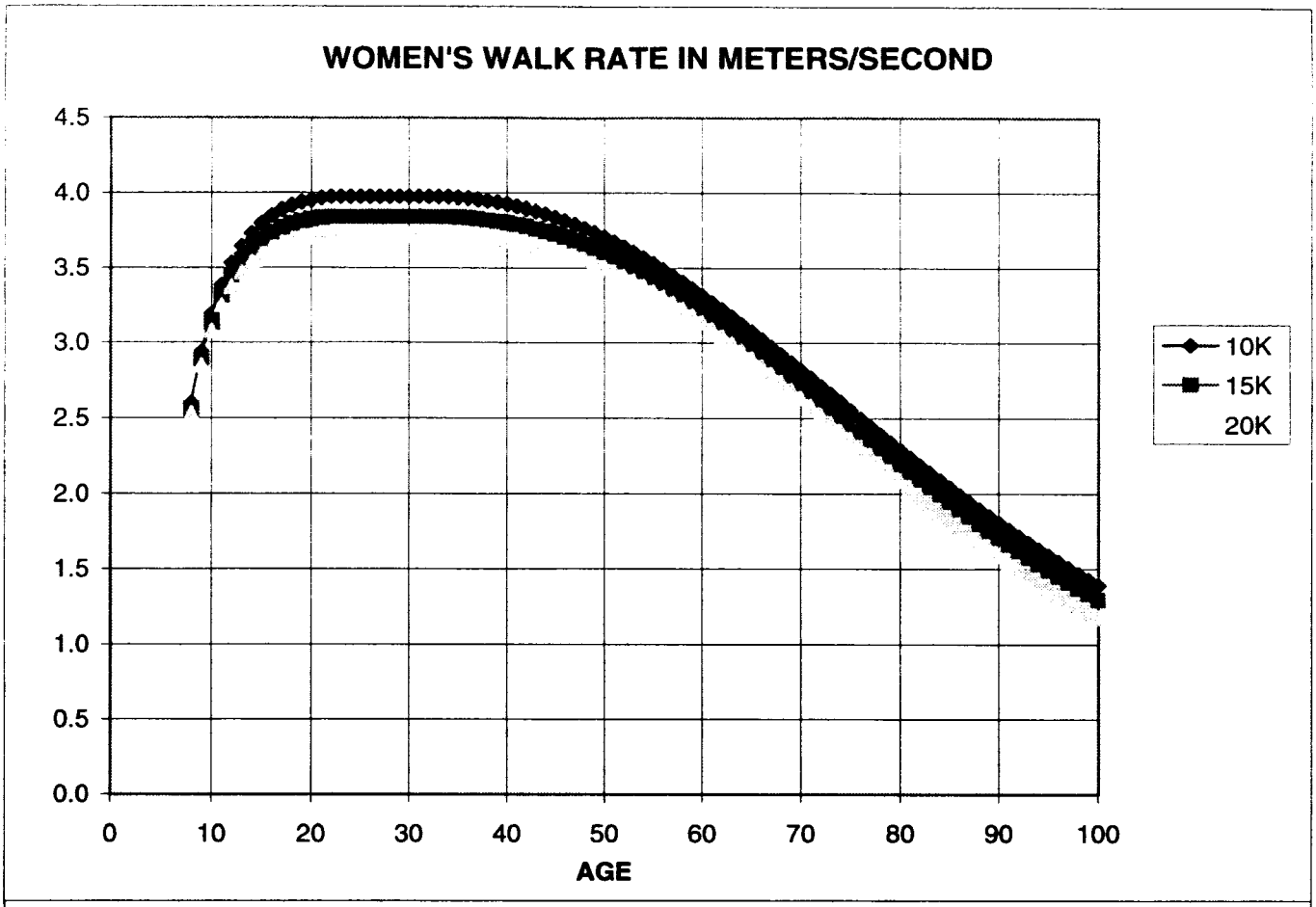

RATE-AGE-DISTANCE SURFACE GRAPH FOR WOMEN'S WALK EVENTS
METERS/SECOND
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1 MILE
2 MILE
5K
8K
10K
15K
20K
25K
30K
40K
50K
DISTANCE
8
18
28
38
48
58
68
78
88
98
AGE
WOMEN'S WALK RATE IN METERS/SECOND
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
1 MILE
2 MILE
5K
8K

Figure 110


WOMEN'S WALK RATE IN METERS/SECOND
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K
15K
20K

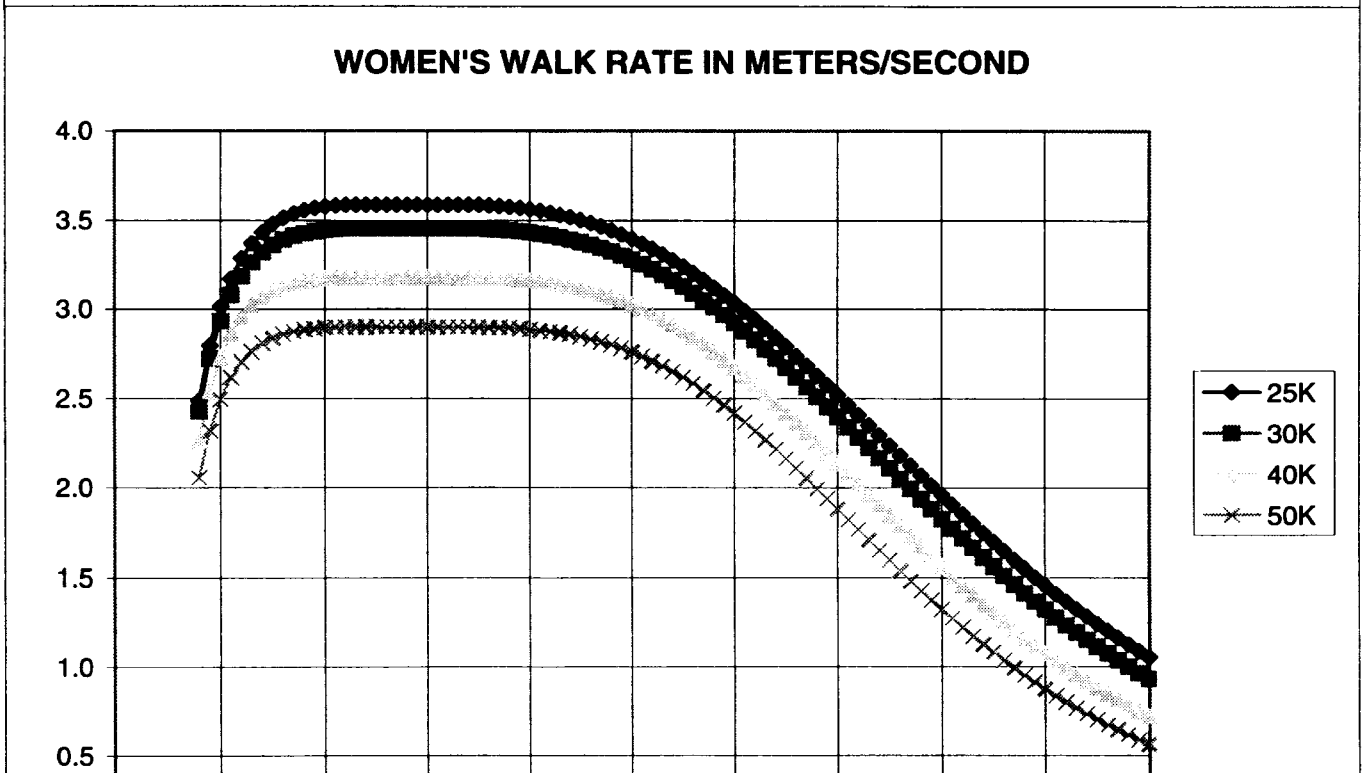
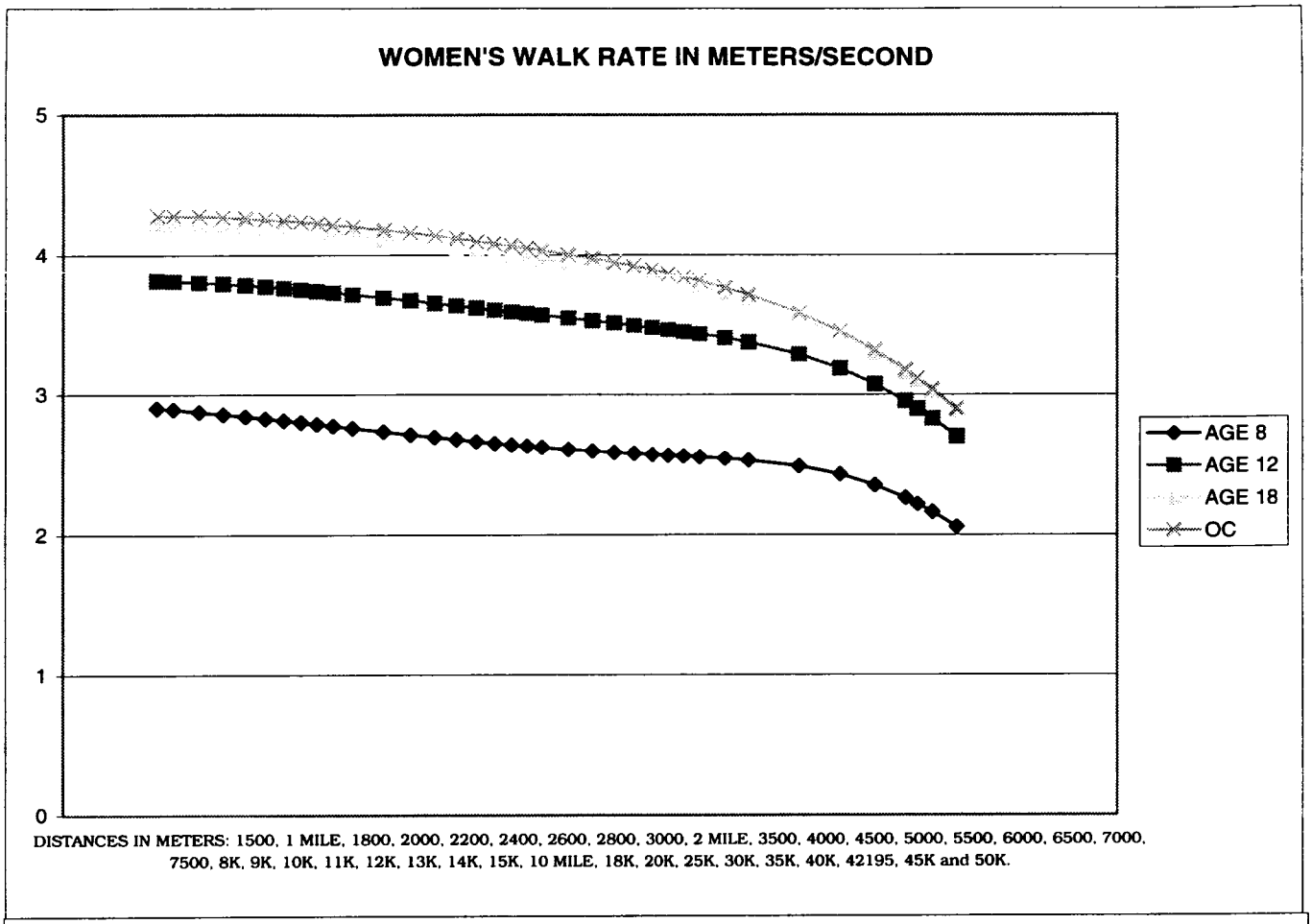
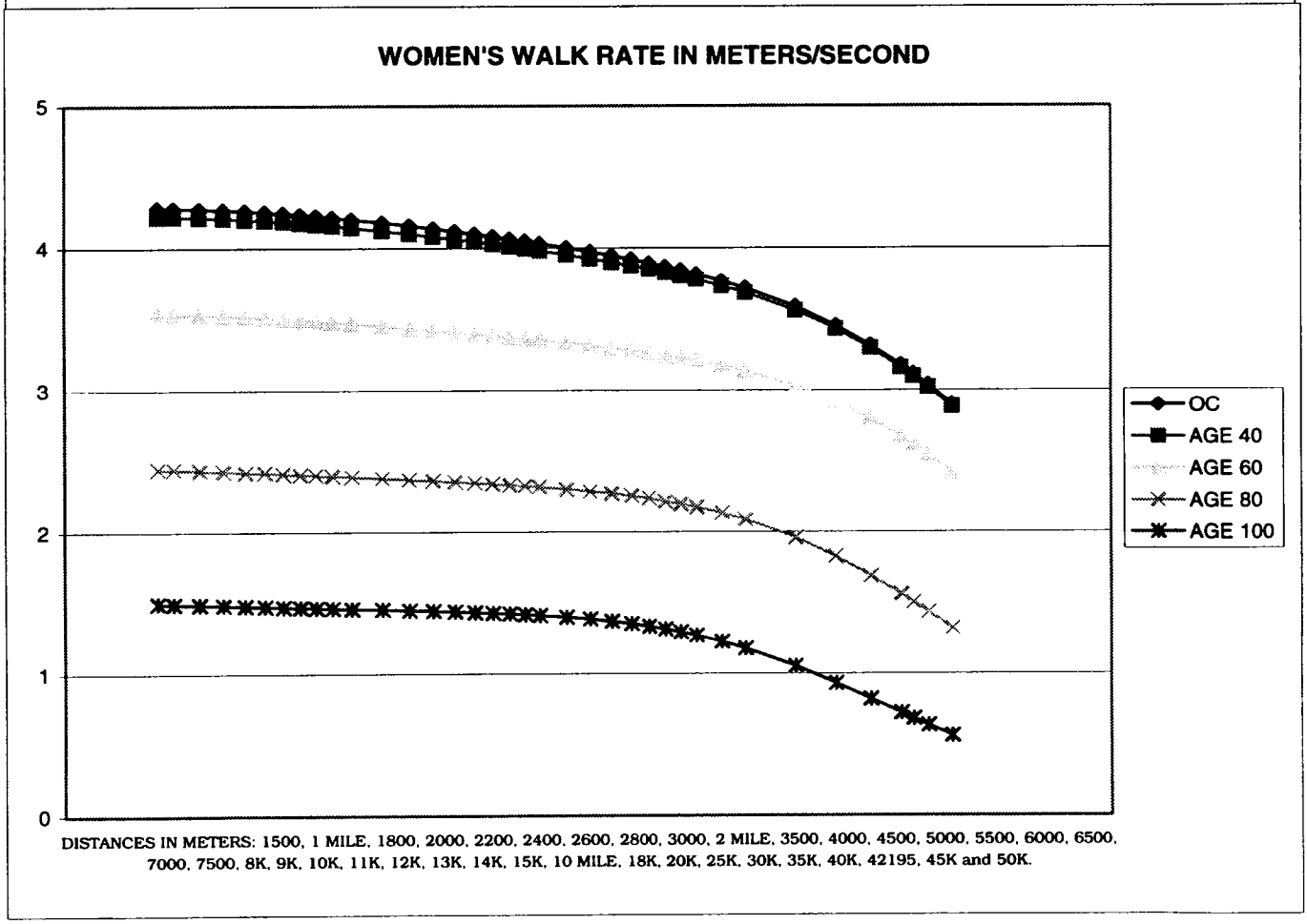

WOMEN'S WALK RATE IN METERS/SECOND
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
25K
30K
40K
50K

Figure 111


WOMEN'S WALK RATE IN METERS/SECOND
5
4
3
2
1
0
AGE 8
AGE 12
AGE 18
OC
DISTANCES IN METERS: 1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.


WOMEN'S WALK RATE IN METERS/SECOND
5
4
3
2
1
0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES IN METERS: 1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.

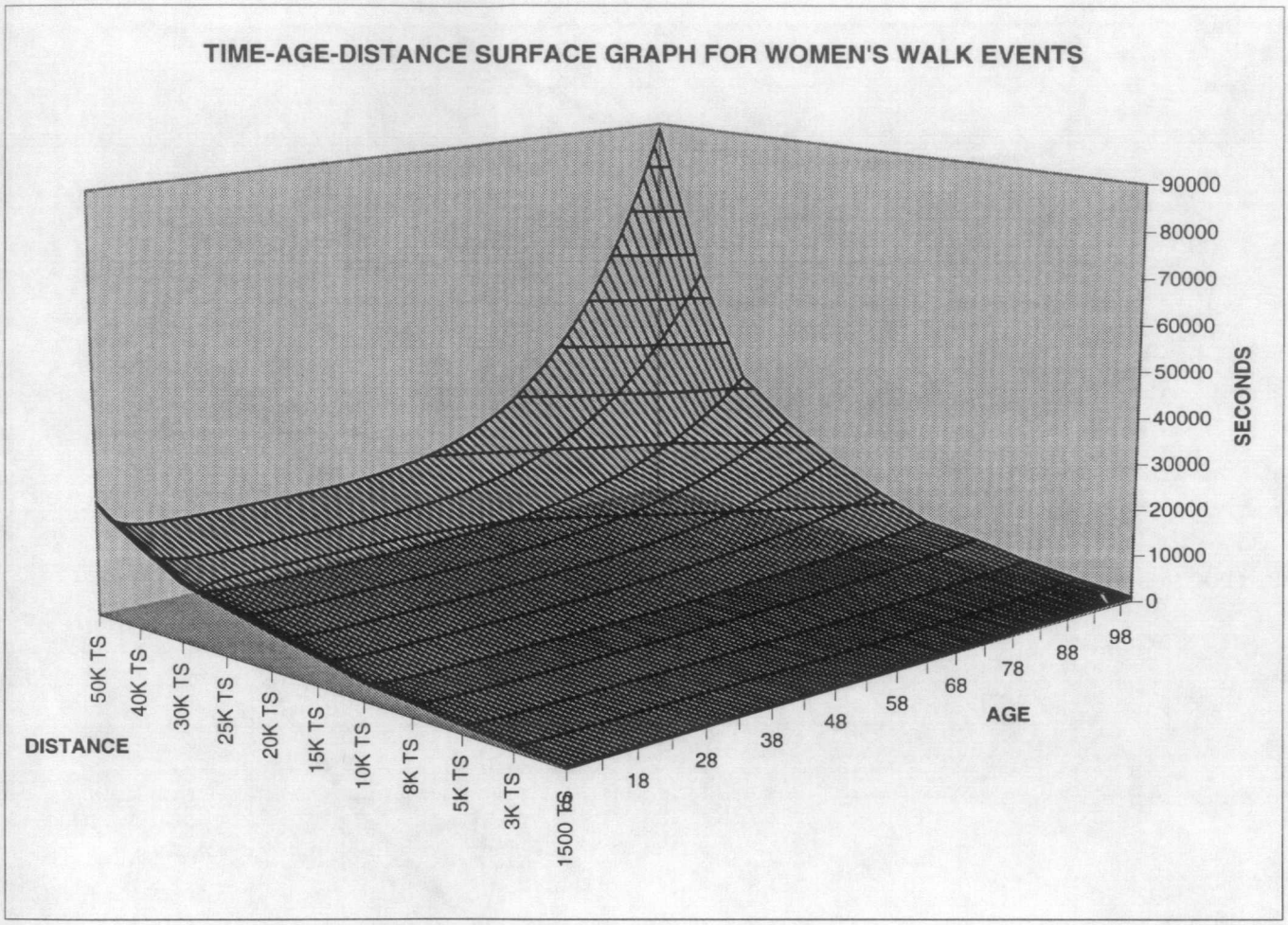
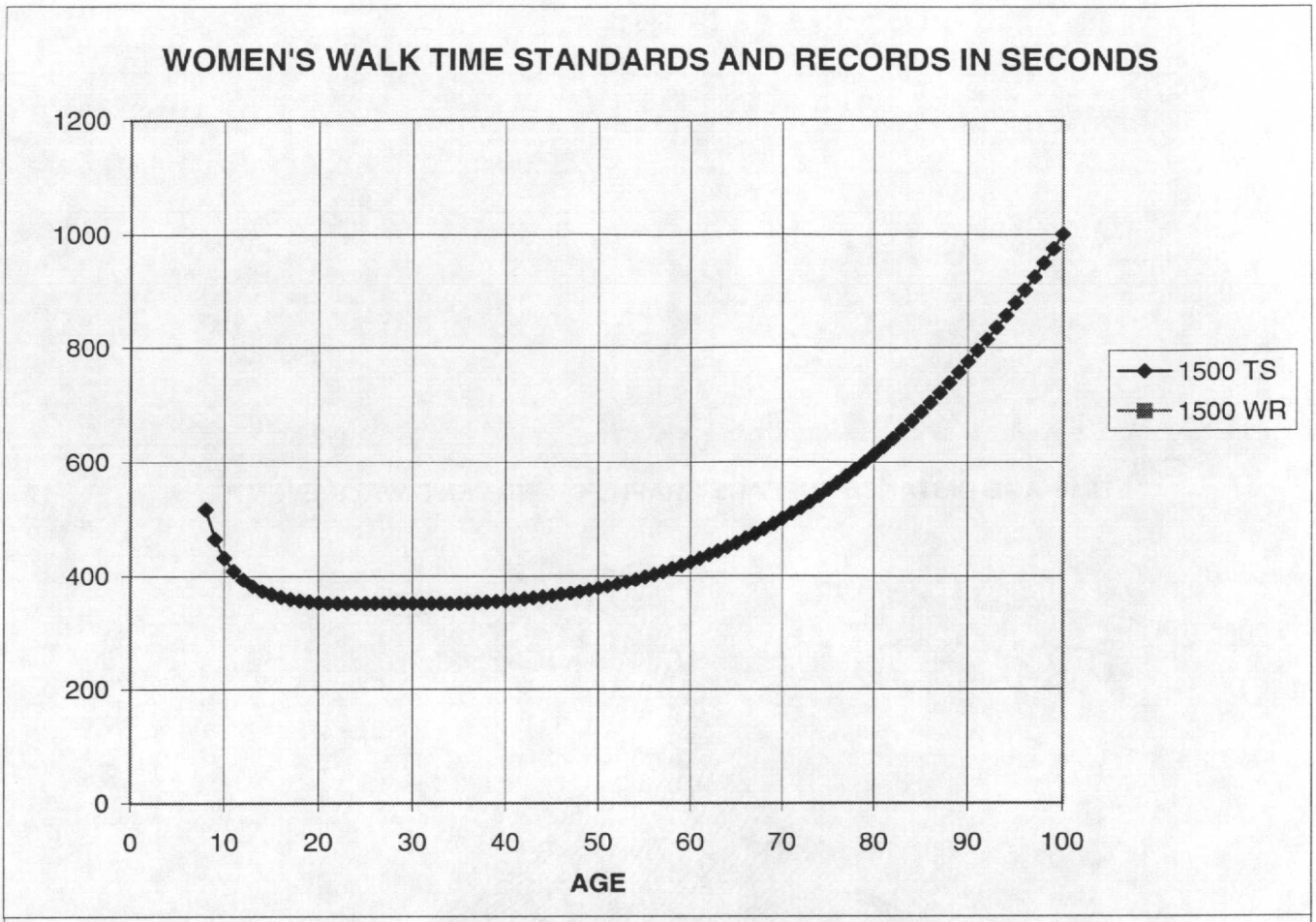

TIME-AGE-DISTANCE SURFACE GRAPH FOR WOMEN'S WALK EVENTS
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
SECONDS
50K TS
40K TS
30K TS
25K TS
20K TS
15K TS
10K TS
8K TS
5K TS
3K TS
1500 TS
DISTANCE
18
28
38
48
58
68
78
88
98
AGE

Figure 113


WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500 TS
1500 WR

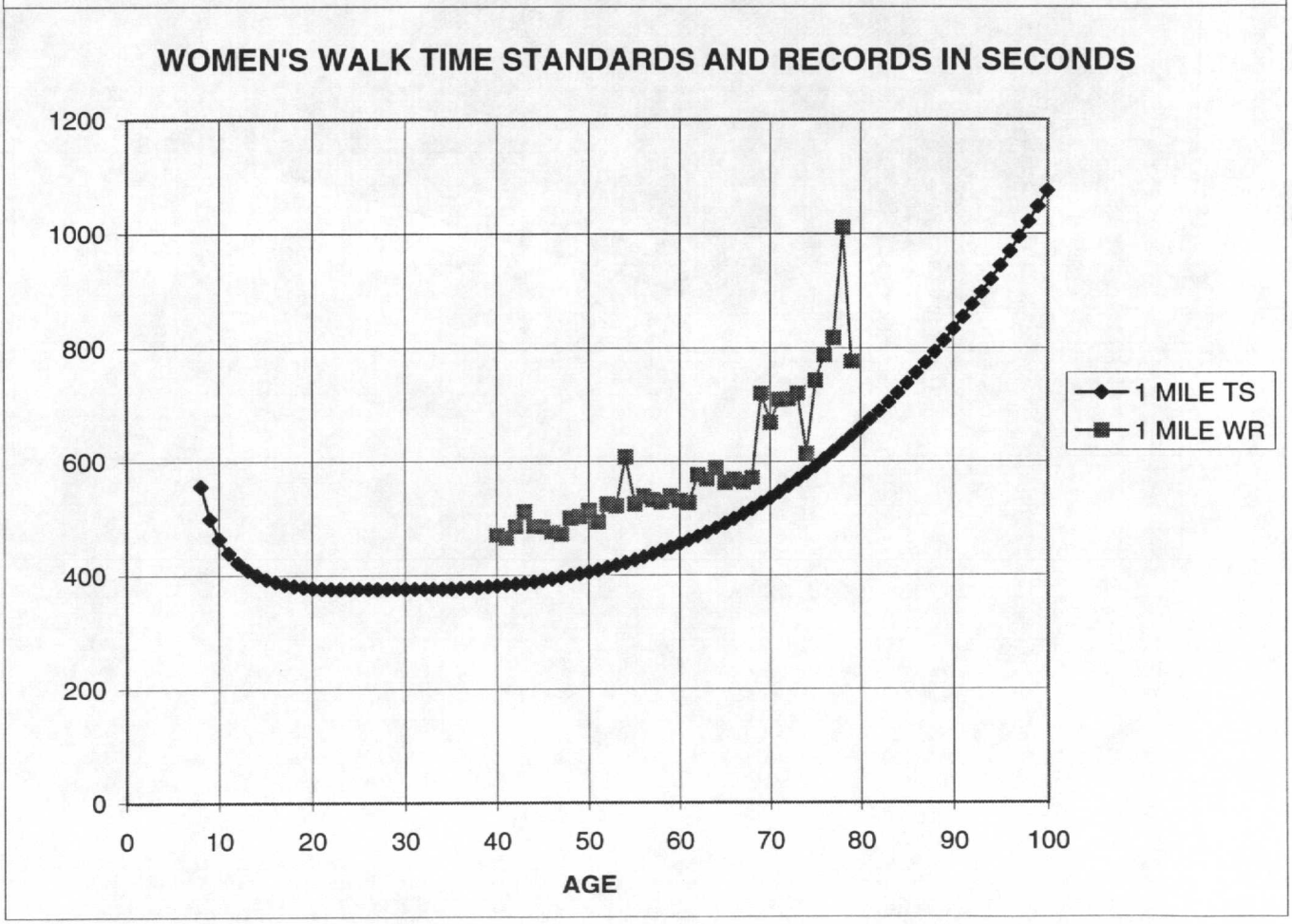
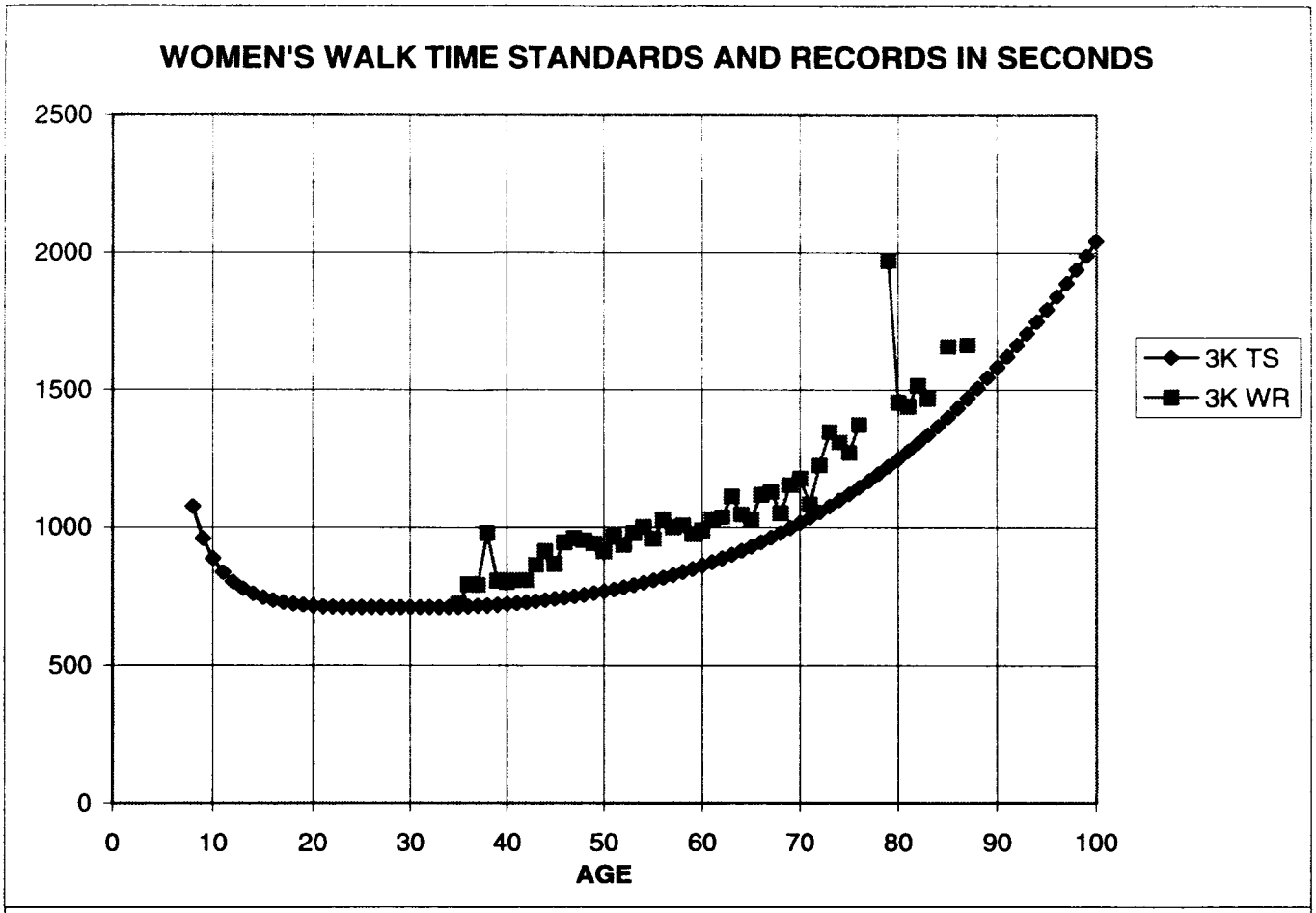

WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
1200
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
AGE
1 MILE TS
1 MILE WR

Figure 114


WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
3K TS
3K WR

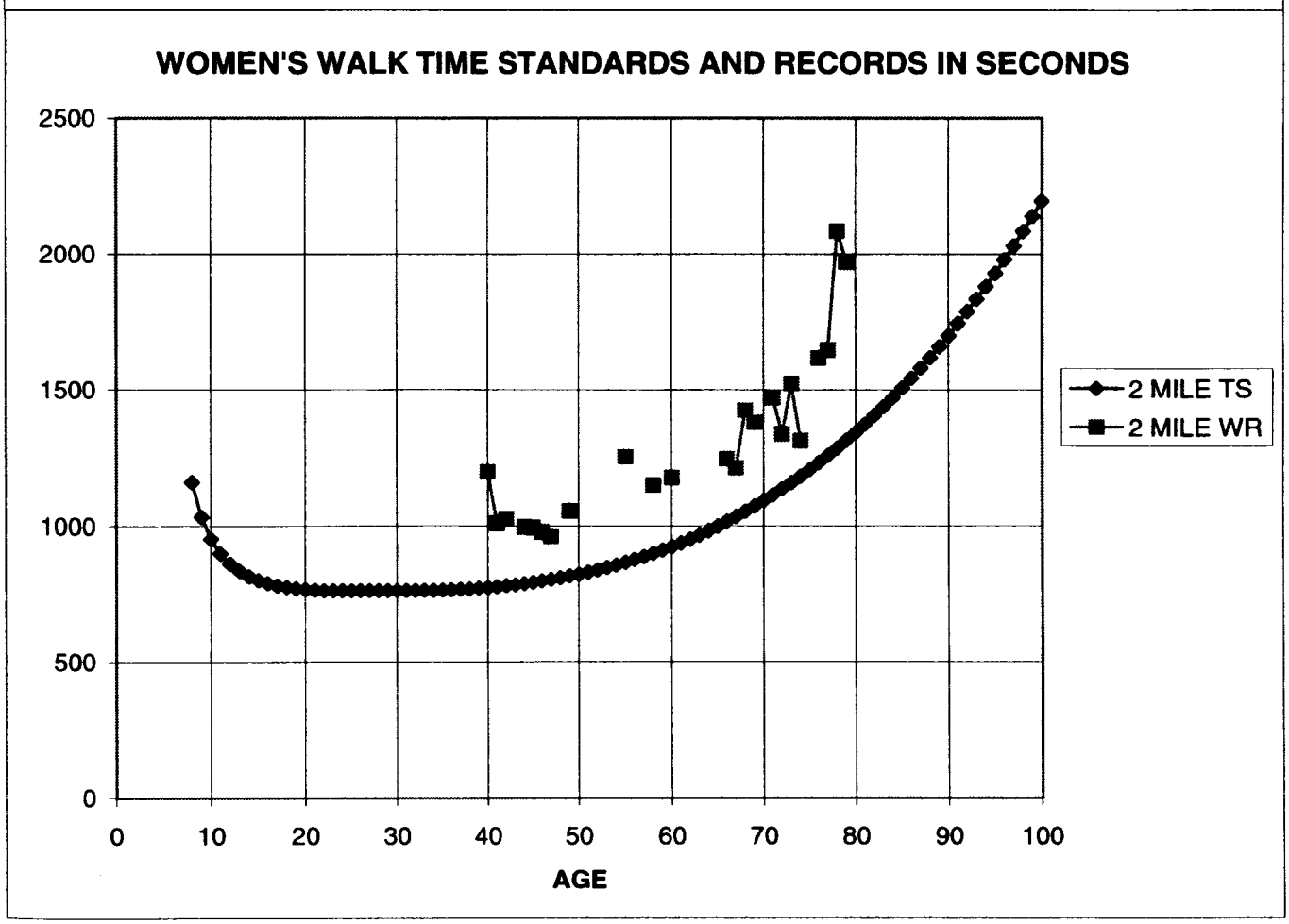
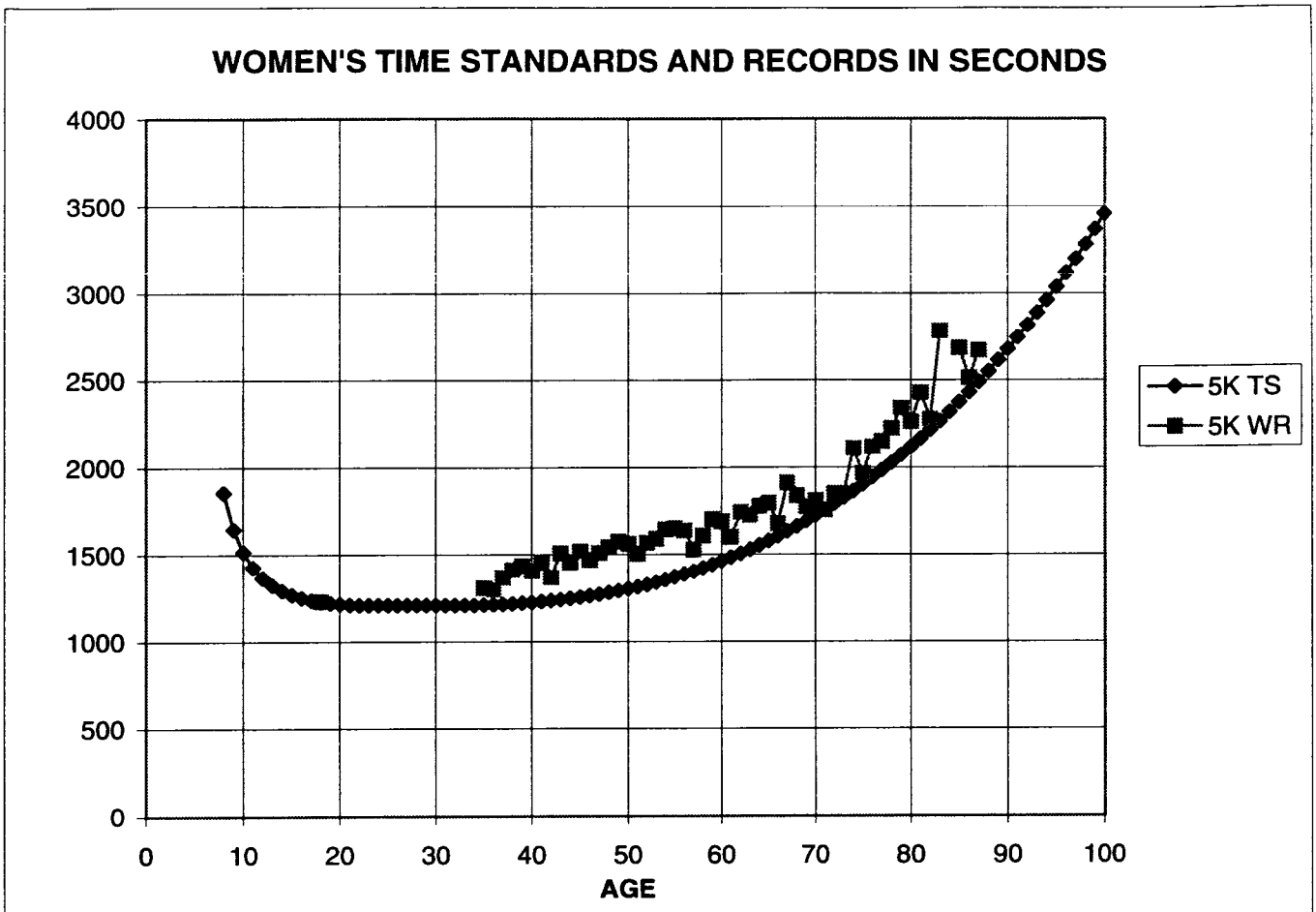

WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
2 MILE TS
2 MILE WR

Figure 115


WOMEN'S TIME STANDARDS AND RECORDS IN SECONDS
4000
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
80
90
100
AGE
5K TS
5K WR

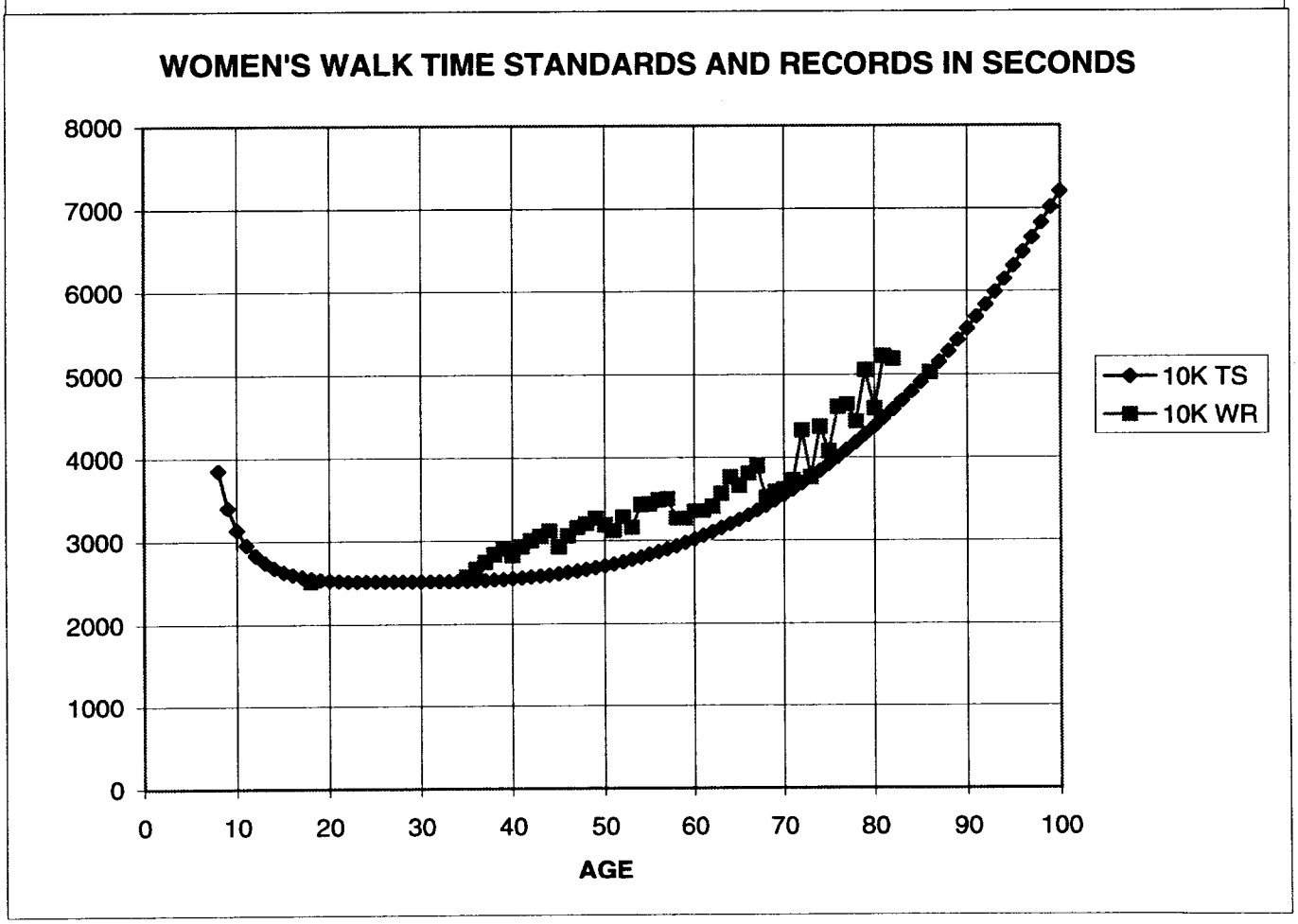
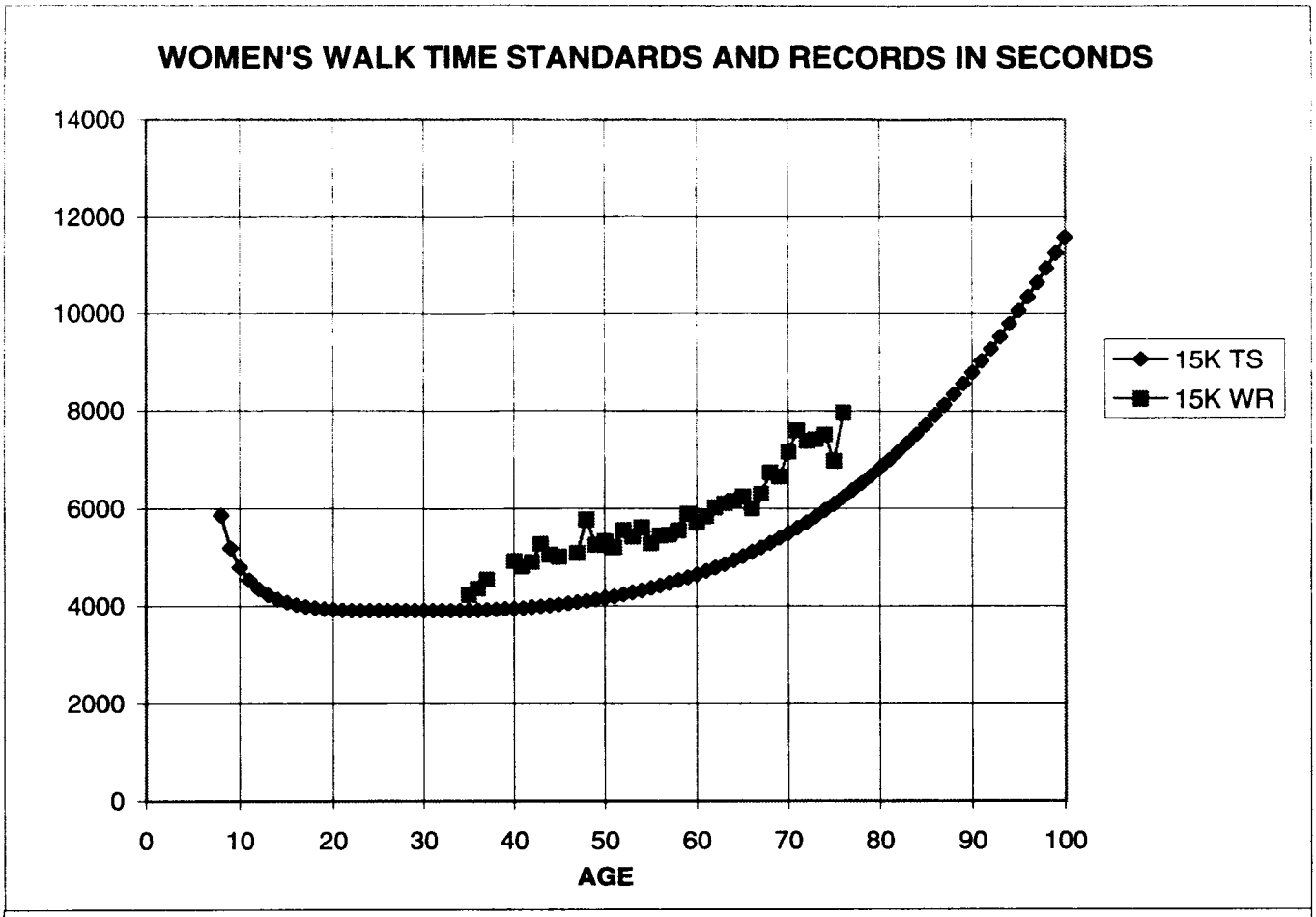

WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
8000
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
10K TS
10K WR

Figure 116


WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
15K TS
15K WR

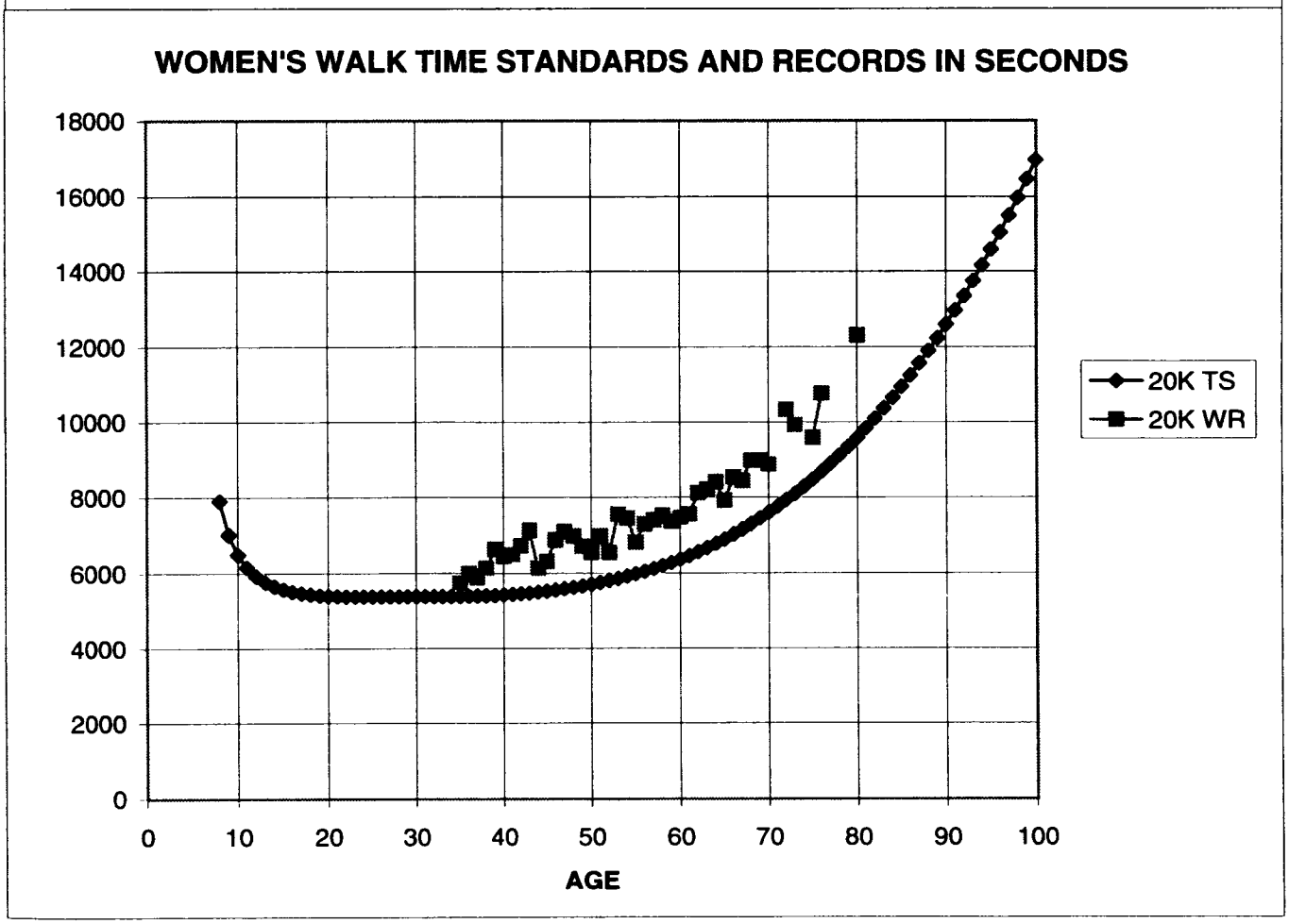
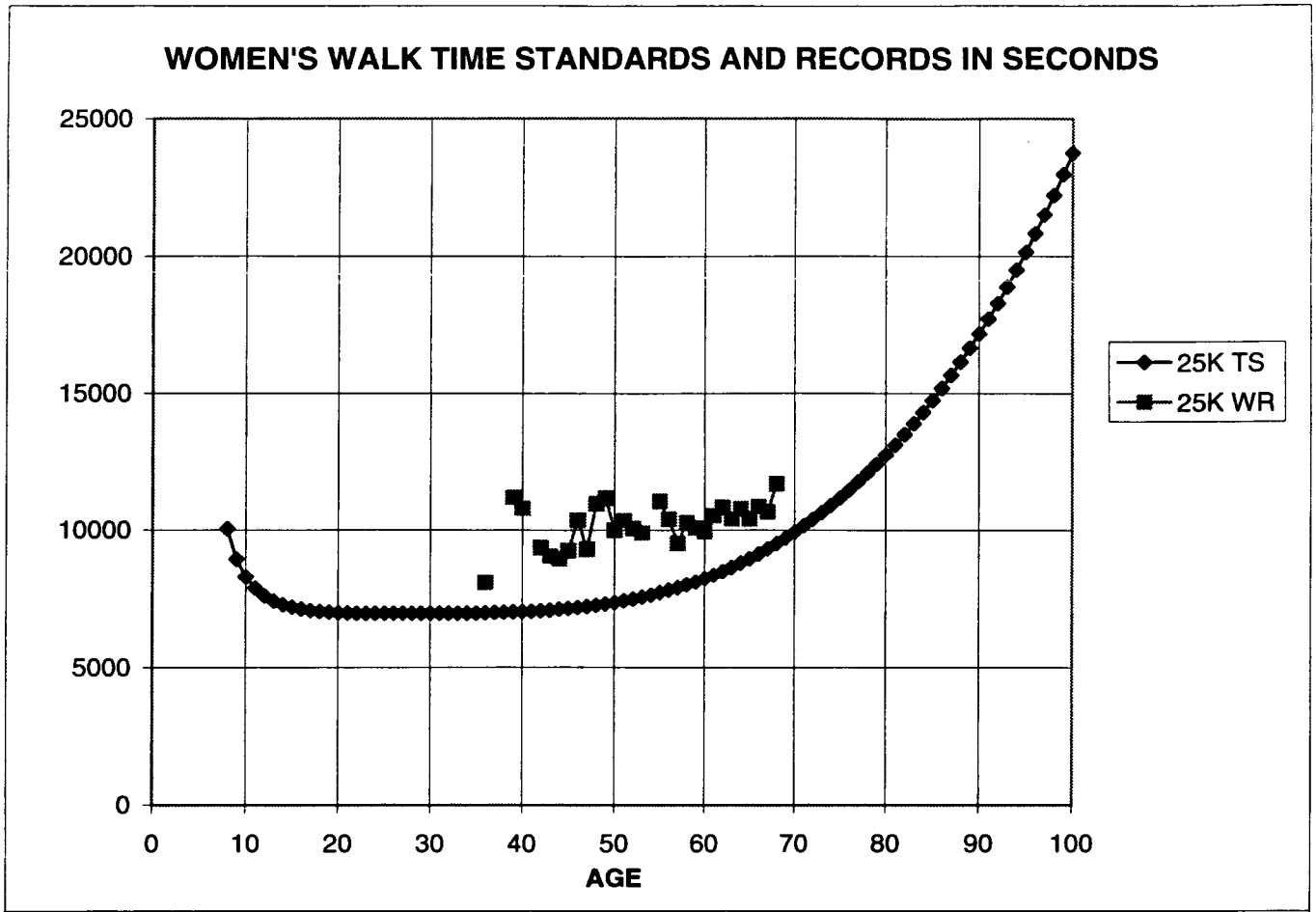
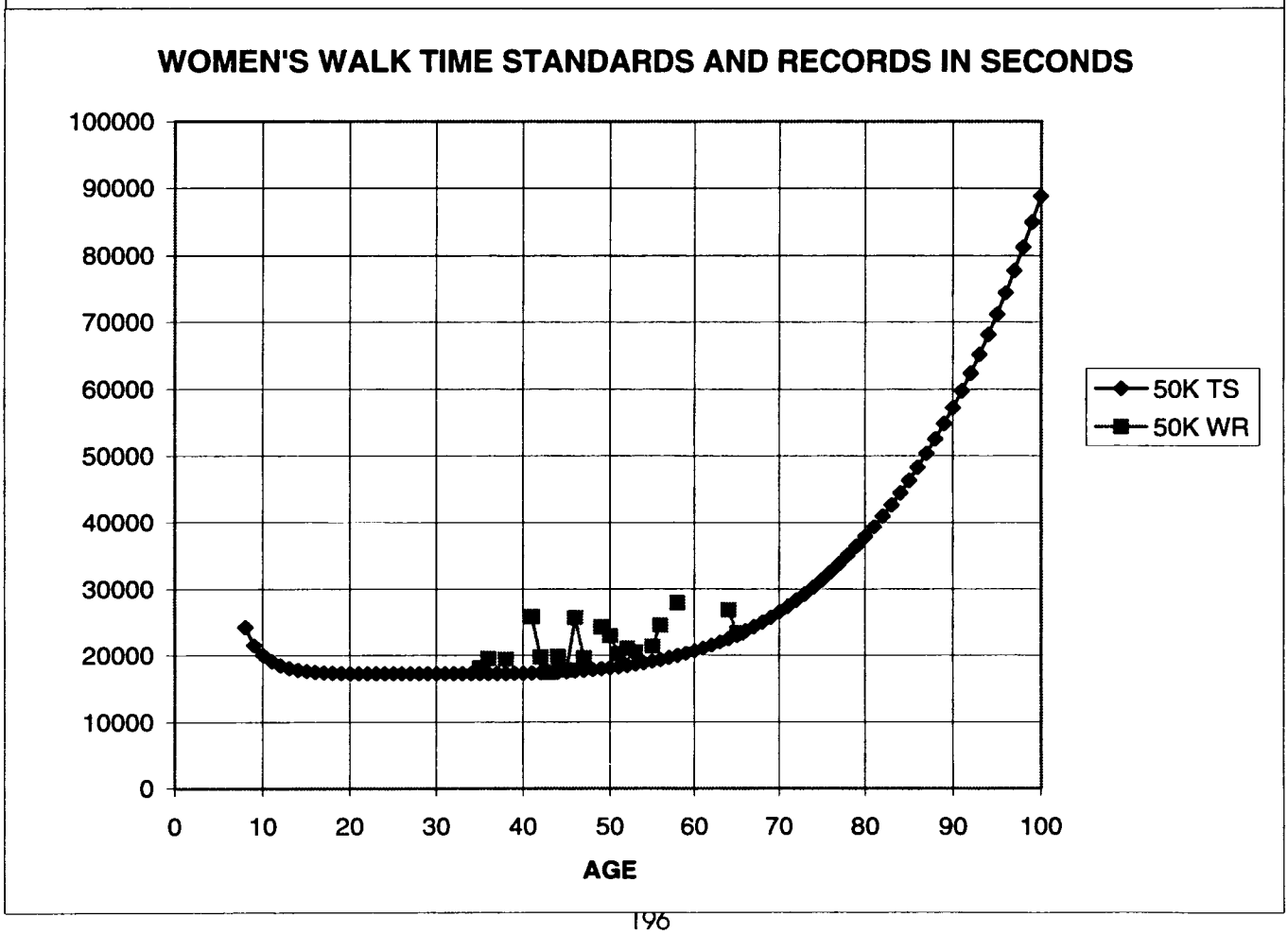

WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
20K TS
20K WR

Figure 117


WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
25K TS
25K WR

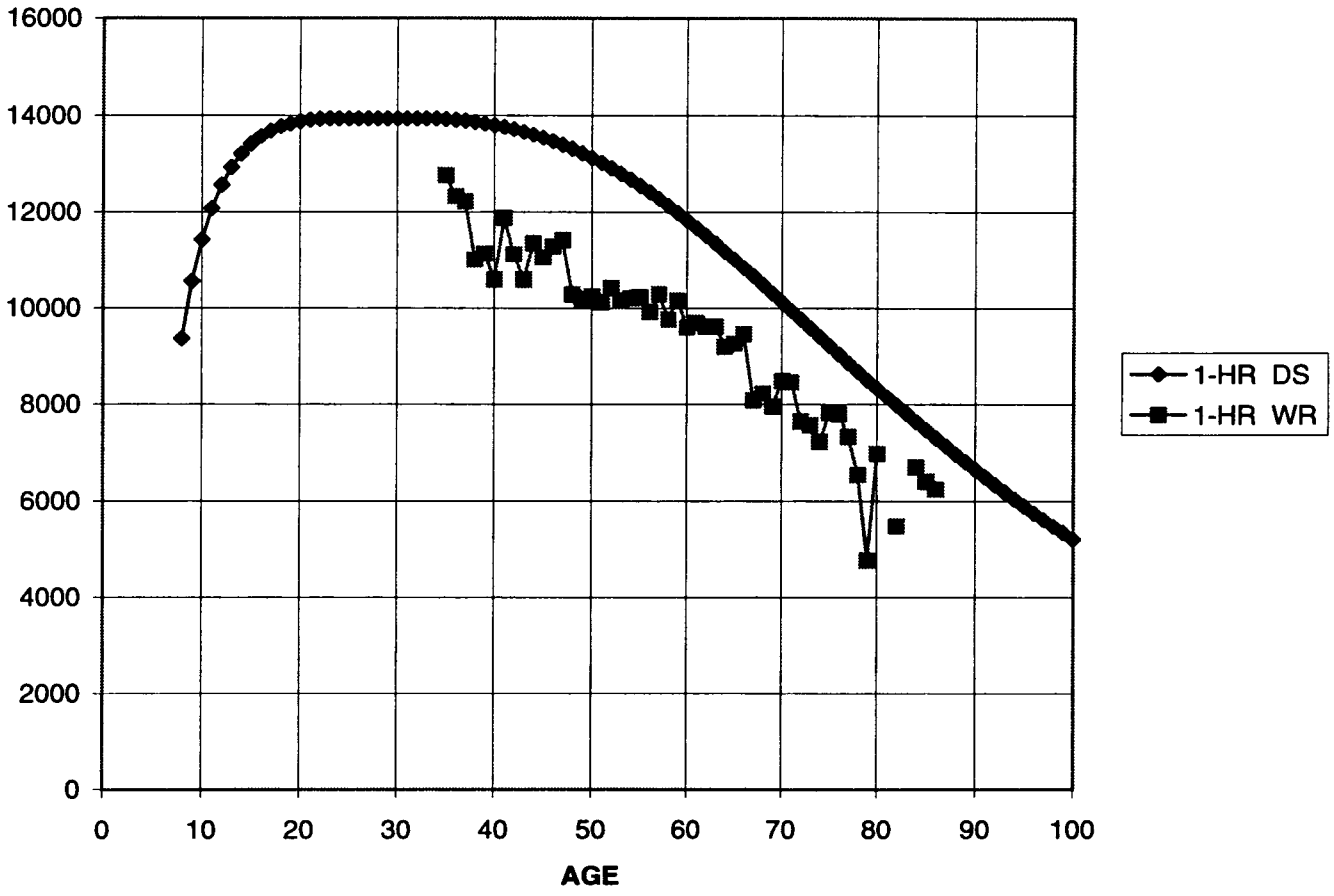

WOMEN'S WALK TIME STANDARDS AND RECORDS IN SECONDS
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
0
10
20
30
40
50
60
70
80
90
100
AGE
50K TS
50K WR

WOMEN'S 1-HOUR WALK (meters)

AGE	1-HR DS	1-HR WR	1-HR PL%	1-HR AF
8	9369			0.6724
9	10547			0.7570
10	11421			0.8197
11	12071			0.8664
12	12557			0.9012
13	12923			0.9275
14	13198			0.9472
15	13406			0.9621
16	13562			0.9734
17	13679			0.9818
18	13766			0.9880
19	13830			0.9926
OC	13933			1.0000
30	13933			1.0000
31	13933			1.0000
32	13933			1.0000
33	13933			1.0000
34	13933			1.0000
35	13925	12751	92	0.9994
36	13908	12325	89	0.9982
37	13887	12215	88	0.9967
38	13862	11003	79	0.9949
39	13832	11135	81	0.9927
40	13796	10582	77	0.9902
41	13756	11871	86	0.9873
42	13709	11112	81	0.9839
43	13657	10585	78	0.9802
44	13598	11343	83	0.9760
45	13534	11045	82	0.9713
46	13463	11278	84	0.9662
47	13386	11411	85	0.9607
48	13302	10277	77	0.9547
49	13212	10189	77	0.9482
50	13115	10239	78	0.9413
51	13012	10118	78	0.9339
52	12903	10410	81	0.9260
53	12787	10151	79	0.9177
54	12666	10202	81	0.9090
55	12538	10227	82	0.8999
56	12406	9924	80	0.8904
57	12268	10282	84	0.8805
58	12124	9765	81	0.8702
59	11977	10153	85	0.8596
60	11824	9600	81	0.8486
61	11668	9701	83	0.8374
62	11507	9623	84	0.8259
63	11343	9618	85	0.8141
64	11176	9201	82	0.8021
65	11006	9271	84	0.7899
66	10834	9463	87	0.7776
67	10660	8080	76	0.7651
68	10483	8235	79	0.7524
69	10306	7955	77	0.7396
70	10127	8497	84	0.7268
71	9947	8472	85	0.7139
72	9766	7650	78	0.7009
73	9586	7569	79	0.6880
74	9405	7228	77	0.6750
75	9224	7829	85	0.6620
76	9043	7801	86	0.6491
77	8864	7328	83	0.6362
78	8685	6547	75	0.6233
79	8507	4759	56	0.6105
80	8330	6975	84	0.5978
81	8154			0.5852
82	7980	5475	69	0.5727
83	7807			0.5603
84	7637	6696	88	0.5481
85	7468	6407	86	0.5360
86	7300	6250	86	0.5240
87	7135			0.5121
88	6972			0.5004
89	6811			0.4889
90	6653			0.4775
91	6497			0.4663
92	6343			0.4552
93	6191			0.4443
94	6042			0.4336
95	5896			0.4231
96	5751			0.4128
97	5610			0.4026
98	5471			0.3927
99	5335			0.3829
100	5201			0.3733

Figure 118

WOMEN'S DISTANCE STANDARDS AND RECORDS IN METERS FOR 1-HOUR WALK



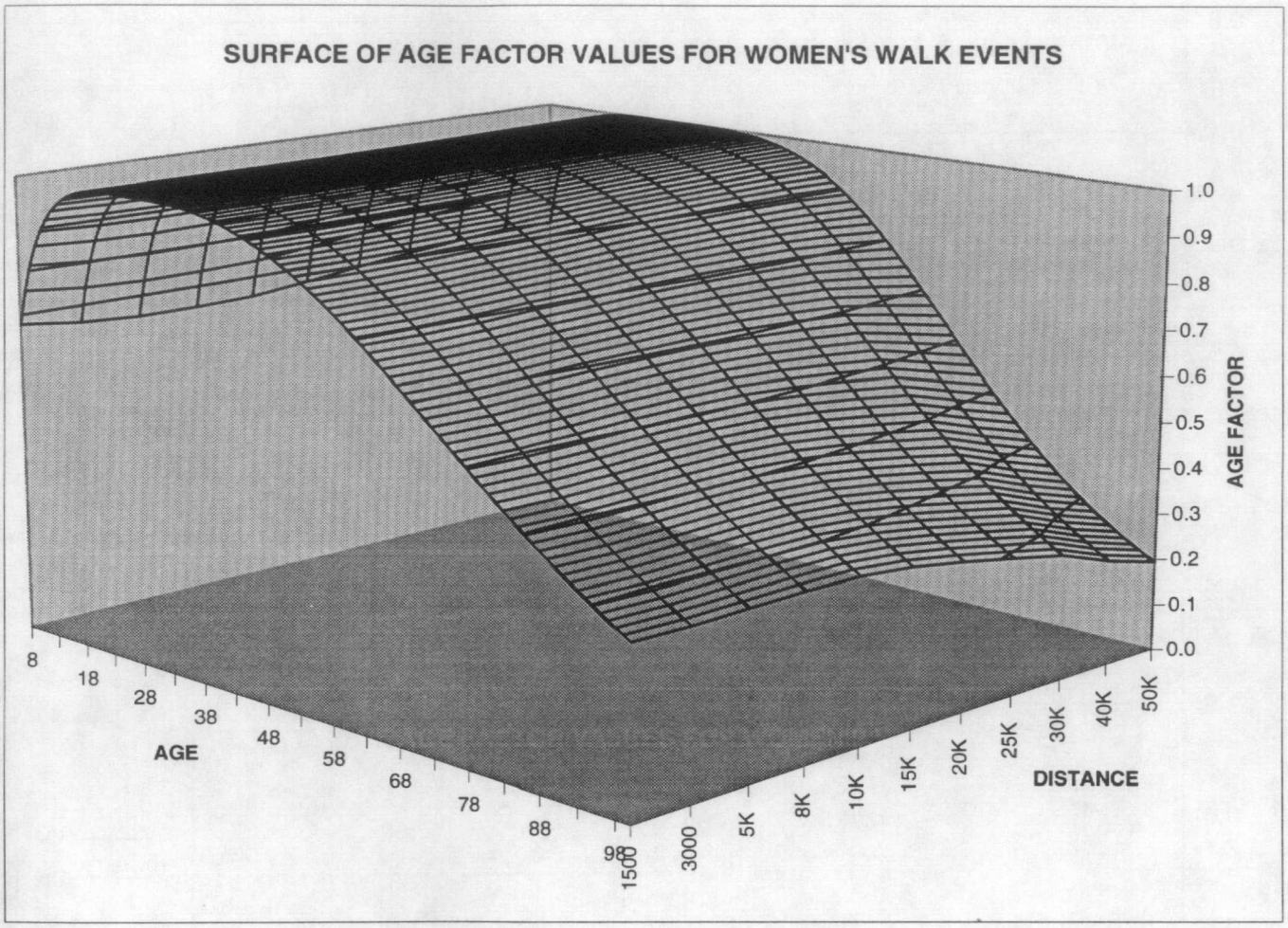
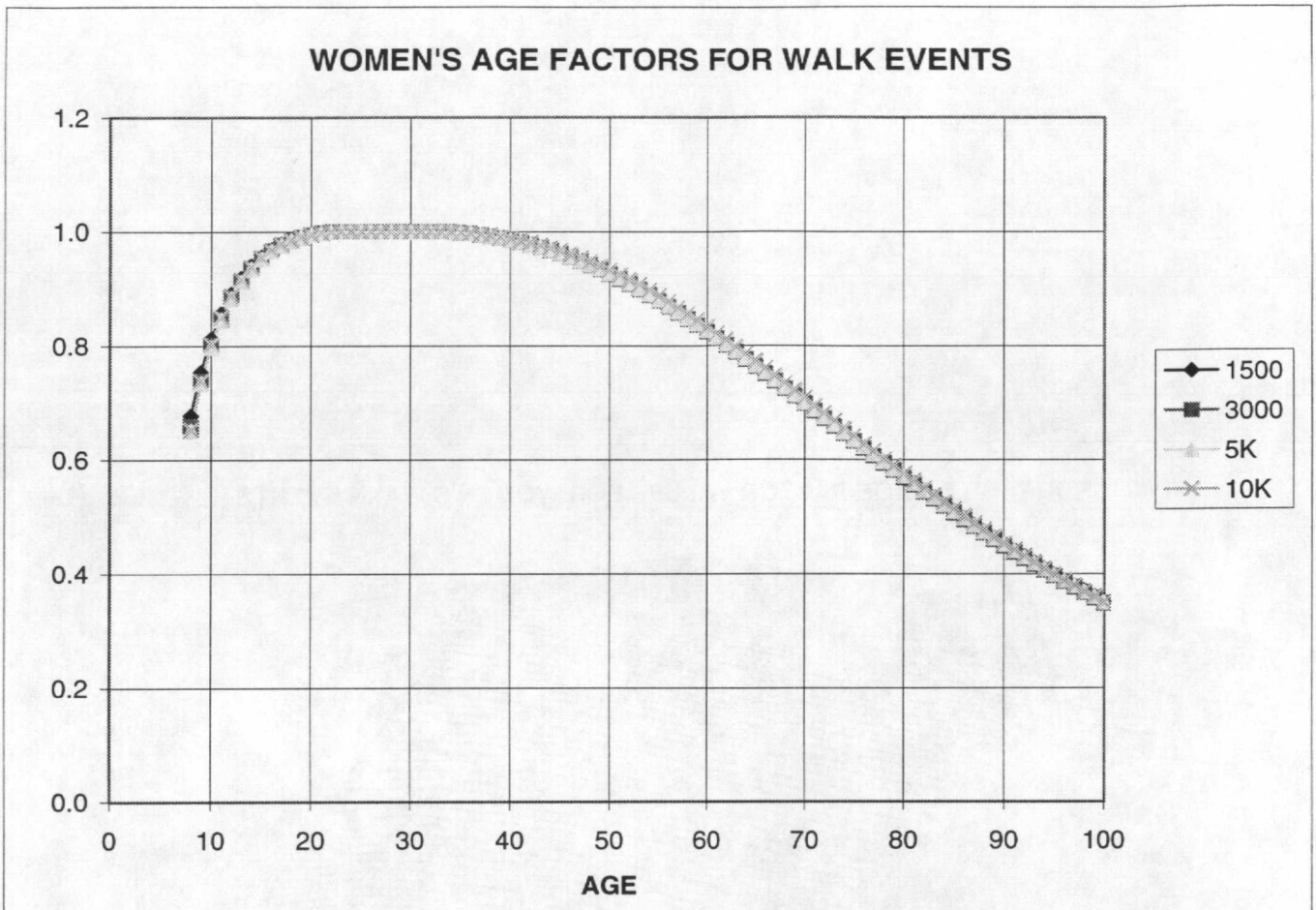

SURFACE OF AGE FACTOR VALUES FOR WOMEN'S WALK EVENTS
AGE FACTOR
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
AGE
8
18
28
38
48
58
68
78
88
98
DISTANCE
1500
3000
5K
8K
10K
15K
20K
25K
30K
40K
50K

Figure 120


WOMEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
1500
3000
5K
10K

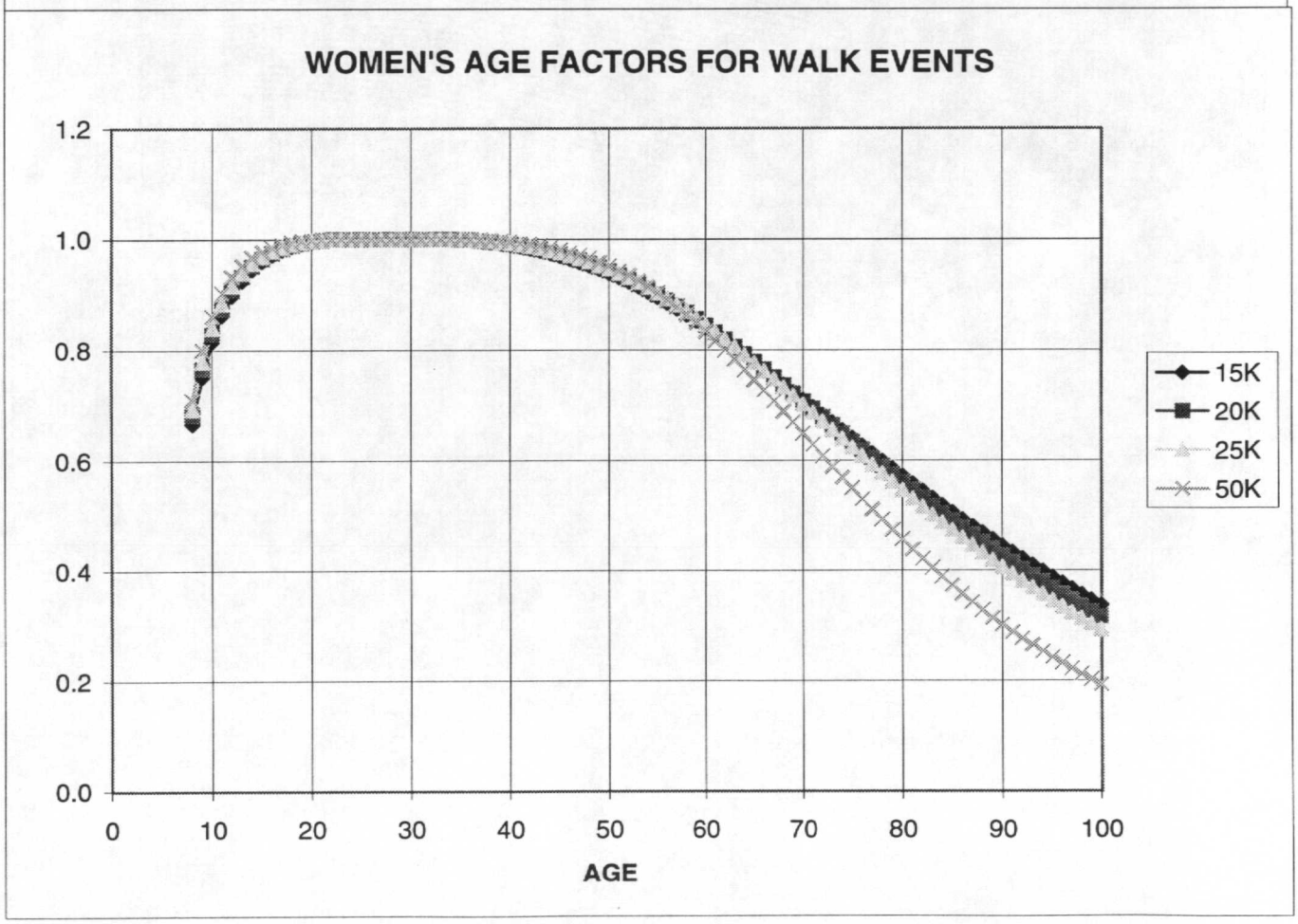
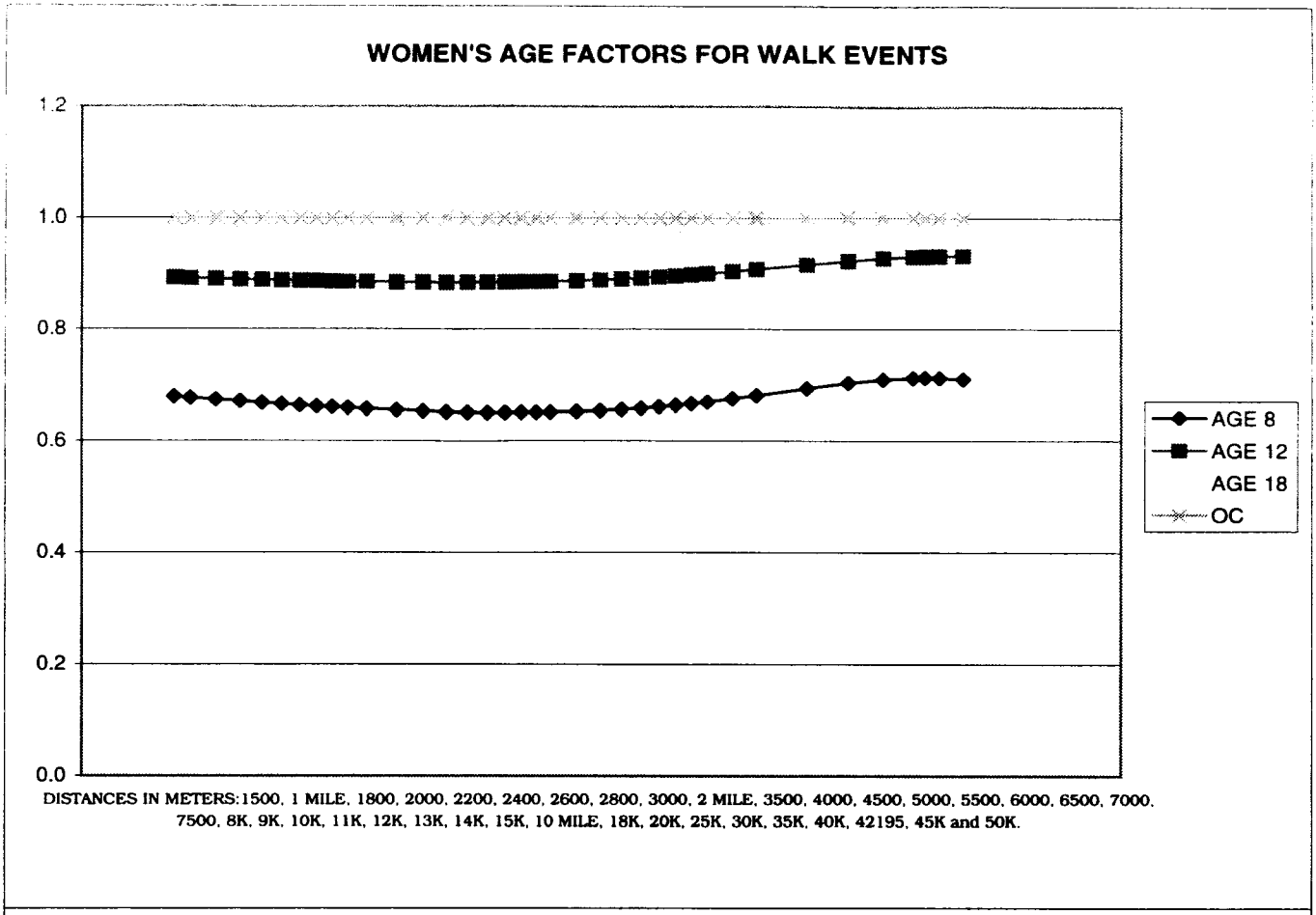
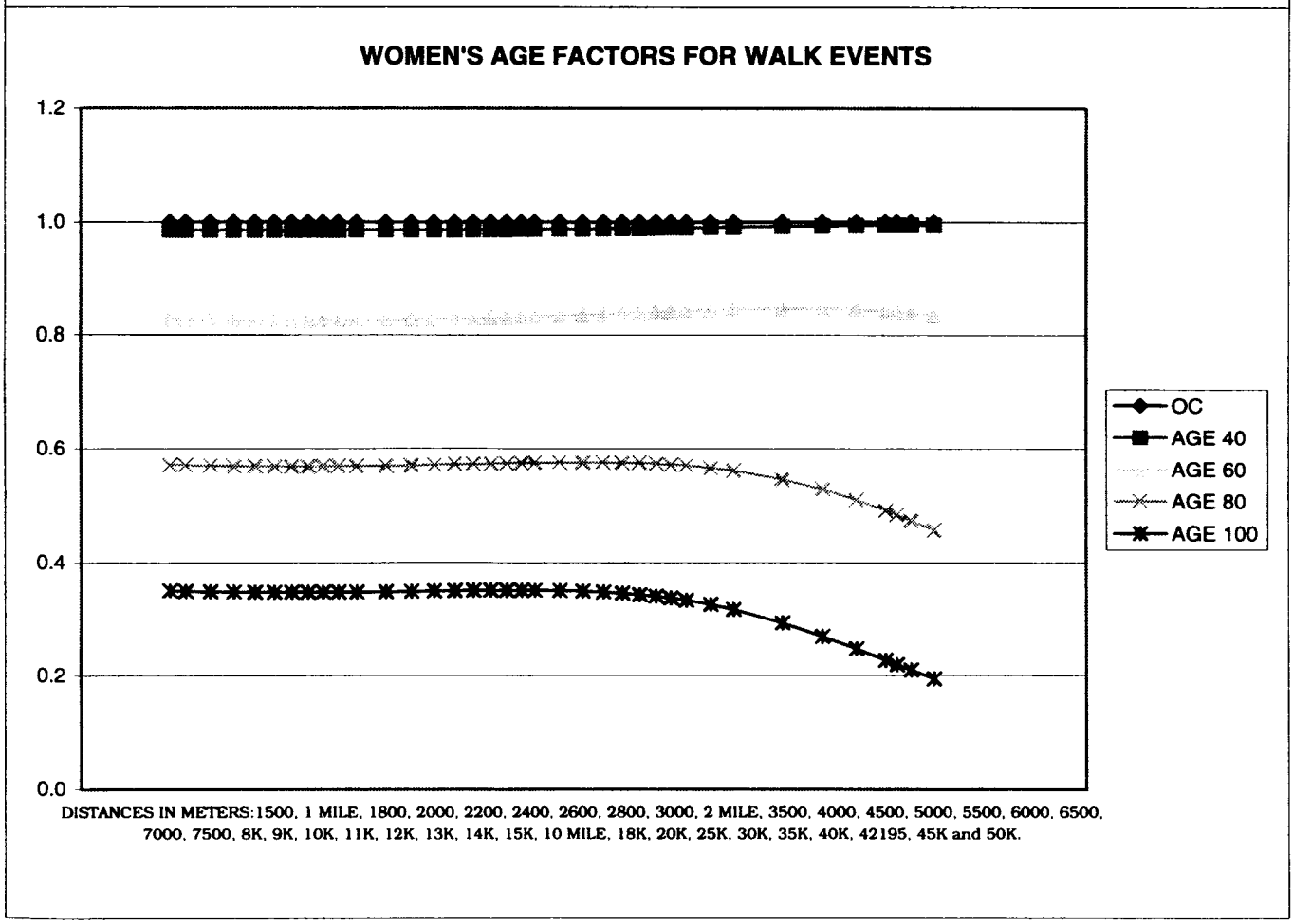

WOMEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
100
AGE
15K
20K
25K
50K

Figure 121


WOMEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
AGE 8
AGE 12
AGE 18
OC
DISTANCES IN METERS:1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.


WOMEN'S AGE FACTORS FOR WALK EVENTS
1.2
1.0
0.8
0.6
0.4
0.2
0.0
OC
AGE 40
AGE 60
AGE 80
AGE 100
DISTANCES IN METERS:1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.

Chapter Five

Data Base Content

For men and women masters age performers, international records were used for all running, hurdle, walk and field events. For boys, international records were used for ages 8 and above for running, hurdle, walk and field events. For girls, only American records for running events were used.

International running and field event records for masters age athletes were updated from "Masters Age Records 1998 edition" published by National Masters News. Running and field event records for boys were extracted from USATF international listings of "World Junior Men All-Time Age Year Records." Running event records for girls are based on American times except for their Junior world records which are international. Marathon records for international runners of all ages were updated from National Masters News. Open class and Junior world records were updated from "Track & Field News" on-line at www.trackandfieldnews.com.

Only the record time or distance is entered into the data base, the record holder is not identified and neither the date nor place of record is noted. Thus the records in the data base consist solely of their numeric value and are otherwise unidentifiable. The endeavor here is to minimize or preclude bias being favorably or unfavorably accorded any data point, while at the same time ensuring that every data point is a record from a valid source.

A large portion of the records are of the highest quality having come from sanctioned competitions with the resulting records ratified by a governing body as having met their demanding criteria, assuring such things as favoring wind within limits, times run and distances jumped/thrown certified and verified, course measurement certified, implement weights verified, lap time/lap count verification, foul free jump/throw verification, and so on. However, not all of the records included in the data base are of such highly assured quality. They are included though because the author did not have a basis for determining which records should be expunged from the data base, and which should not, that would be both completely fair and never in error. When records were extracted from a source document, all of the records of that particular category (for example running events, boys, ages 8-19) in the document were taken in toto for entry into the data base. In this way the validity of the records in the data base is that provided by the document from which they were extracted.

Thus, records of various degrees of quality have been gathered together to form the records data base, and it is therefore important to so characterize the data base quality and explain what, if anything, was done with records that were deemed to be undesirable for use. The methodology determined was to accept all records from source documents into the data base, to leave them in the data base, but when any are found unsuitable, their use is restricted to being plotted on backup material graphs showing that they exist but are in the "in error/too good" category.

Two kinds of masters age records were identified during the study that are characterized as unusable. Both will be discussed including their disposition.

The first kind is the "too good" record. While these records could be incorporated into the standards mathematically and initially were, it was usually obvious they were so much better than all other records within plus or minus five years of age that in all probability an unintended mistake or error of some kind had occurred. In addition, their use would cause a significant perturbation in the resulting age-factor values. The point to be emphasized here is that these records were left

in the data base. While they were not used for derivation of the finalized standards and they are not included in the tables listing Performance Level Percentage For Actual Records, they are included in the graphs plotting standards and actual records versus age. In this way it can be readily seen what their effect would be if they were to be included in the standards. One such too good record is the women's 400 hurdles for age 36. A second too good record selected out is the men's 100 meters for age 74, with the cause in this case being authoritatively attributed to a favoring wind far in excess of allowable limits.

The second kind of unusable record is the "not good enough" record. These records have no impact whatsoever on the standards derivation. Some too slow records were removed from track running events for masters men and women. To be selected for removal, the records had to be for ages above 70, they had to be dramatically slower than their standards, and there also had to be records for older aged runners that were faster. The purpose in removing those few records was to improve the eye integration clarity of the graphs for running events which plot the standards and records versus age. Inclusion of the too slow records introduces a misleading indicator into the rather orderly progression of record degradation with age that actually occurs. This was done only where absolutely necessary since the purpose was to enhance clarity not mislead by withholding data.

The final kind of master's age record problem identified during the study in 1994 was that of the sustained "too good" performance which occurs primarily in the throwing field events for younger masters age men and women. Many competitors have complained over the years that some men's and women's field event throw records are just too good to be acceptable, it is contended that performance enhancing substances were probably being used by those competitors, and that it is unfair to accept those performances as standards against which the "clean" competitors are measured. To test this contention, standards and age-factors for men's and women's field event throws were derived in two separate ways in order to reach a conclusion based on a comparative analysis and evaluation of the results. For the first derivation all records were accepted as being valid and the curve fitting was carried out in the normal manner.

For the second derivation the curve fitting was accomplished by first using records for only the lighter implements - ignoring the heaviest implement of the throw family and its records in order to avoid using any "too good" records associated therewith. The possibly "too good" records were then program-identified as those whose resulting performance level percentage was 101% or more (some were as high as 110%). Those records were then examined in their source document to determine which individuals were included. The next step was to temporarily remove all records of the subject individuals from the data base including their records for the lighter implements as well as for the heaviest, and to then refit the standards. In this manner the records of individuals having sustained performances which are alleged to be too good were identified by the programmed fitting process and were at the same time excluded for purposes of generating the standards for this second method of derivation.

Besides just generating standards for the two derivation methods described above, all of the associated backup material of tables and graphs was also produced for both sets of standards. All of the available material described above including the characteristics of the resulting curve fitting equations (coefficient and exponent values and curve shape behavior) were subjected to an in-depth comparative analysis and evaluation. The results of both methods of derivation were also compared with the salient characteristics of the existing jump, running, hurdle and walk events to determine if the resulting curves have the desired shape characteristics when graphed, and are within the desired range of coefficient or exponent values for the equations.

The evaluation favored accepting the derivation results produced by excluding the "too good" records on the basis that not only were the more desirable characteristics of curve shape and equational coefficient limits achieved, but significantly improved standards resulted for men's

SP/6kg, SP/5kg and DT/1.5kg, and for women's SP/3kg and DT/1kg. The most dramatic improvement was attained in the age-factors which resulted when the "too good" records were excluded. The resulting age-factors are unacceptable when the "too good" records are included in deriving the standards.

None of the questionable records were removed from the data base, they were simply not used to derive the resulting standards and age-factors. They are also not listed in the table of performance level percentages for actual records, but they are in the graphs of the throw events which plot standards and records versus age. Note that the men's shot and discus clearly exhibit the problem while the hammer, javelin and weight throw do not seem to have it to a significant degree. For women, the shot put and discus throw are the primary events exhibiting the problem.

There is little doubt that something is amiss when groups of records are 5 to 10 percent in excess of the apparent standards. Isolated instances are to be expected and are of little concern as those things do happen. However, when any one individual is repeatedly several percentage points above the standards curve, it is suggestive that something abnormal may be taking place.

It is not a purpose of this book to consider the issue of performance enhancing substances or to imply that certain individuals may be involved in such activity. It *is* a purpose of this book, however, to derive good standards and age-factors that will be applicable to all track and field competitors worldwide, including applicability to individuals of all levels of ability whether they participate competitively or not. From this point of view, the use of records which are demonstrably "too good" is considered unrepresentative for purposes of this book, and so they are included and plotted on graphs for the purpose of showing what their effect would be, but they are not used in calculating the standards.

In summary, the methodology for data base content and its control was threefold being to (1) include as valid all records listed in the source documents, (2) remove identity of record holder to minimize bias that might arise in that regard, and (3) avoid the temptation to remove "bad" records from the data base. Thus the "bad" records are left in the data base, their effect can be seen in the graphics which plot records, but they are not included as points used to determine the standards.

Chapter Six

Summary Of Overall Effort

The purpose of this book is to determine standards and age-factors for track and field events applicable to people of all ages and all levels of ability. This has been done, but with varying degrees of accomplishment as summarized below.

While the standards represent world record level performances, they are applicable to individuals of all ability levels through use of the performance level percentage concept. The performance level percentage concept for runners, hurdlers and walkers is that an individual's performance level is expressed as a percentage of the age record standard which is found by dividing the event standard by the individual's time for the event. The performance level percentage concept for field event competitor's is that an individual's performance level is expressed as a percentage of the age record standard which is found by dividing the individual's distance for the event by the event standard.

For masters age performers, men's and women's international records were used for all running, hurdle, walk and field events. For boys, international records were used for ages 8 and above for running, hurdle, walk and field events. For girls under 18, only American records were used.

Men's masters and youth running standards and age factors have very high levels of statistical confidence. These are the events which have previously had the highest degree of participation worldwide over the years, and now have the least amount of variation of standards versus records across all ages and events.

Men's masters and youth field event and hurdling standards have high levels of statistical confidence, but are not as consistent yet as running is in terms of the amount of variation between the standards and the records. Youth results for the jumps is strong and well documented for ages 8 and up. Youth results are also strong and well documented for the throwing events and hurdles, with records provided for ages 14 and up - but are limited to use of only the open class implement and hurdle height.

Women's masters and youth running standards and age factors have good levels of statistical confidence. These are the events which have previously had the highest degree of women's participation worldwide over the years, and now are attaining acceptable levels in the amount of variation of standards versus records across most ages and events. The women's records are less competitively mature than the men's simply because participation has been less for women than for men over the years, but their better records fully define and support the standards and age factors that have resulted. Their standards are based solely on their records as a completely separate effort and are not adjusted or otherwise modeled on the men's standards.

Women's masters field events and hurdling have good levels of statistical confidence, being similar to their running events in terms of the amount of variation between the standards and the records. Introduction of the pole vault, hammer throw and weight throw for women in 1993 leaves those events somewhat weak in terms of the maturity and stability of their records. Youth results for women in this study are statistically weak because only world junior records were available.

The race walk standards and age factors themselves are very good, but because their record maturity and stability are rated as only fair, the standards and age factors can be rated as having

only fair levels of statistical confidence. The records used in determining the standards are all world record level without reservation. However, as measures of performance for walking events, the resulting walk standards appear to be overly demanding in comparison with their existing records; but that is because they are in fact equivalent and directly comparable to the standards of any and all running, hurdling and field events. For women, walk events have previously had a relatively low degree of participation worldwide over the years, and now though improving, still exhibit a considerable amount of variation of standards versus records across many ages and events.

The methodologies employed to develop and generate the standards and age-factors of this book incorporate special strengths and safeguards inherent to the process which significantly enhance the final results. Using a time surface concept significantly improves the quality and validity of the standards produced and ensures that all performances are properly comparable regardless of which running or walking events are involved. Using asymptotic shaping terms in the time-age and distance-age equations significantly improves the quality and validity of all standards by increasing the statistical confidence level of the standards generated. Using a dynamic theory of masses concept significantly improves the quality and validity of the standards produced for field event throws and ensures that all performances are properly comparable regardless of which throwing events are involved.

Arbitrariness in the curve fitting process has been minimized by computerizing the mathematical equations as algorithms so that the same "best record" selection criteria applies to runs, hurdles, walks and field events and to every event therein. Arbitrariness in the curve fitting process has been minimized also by use of the age axis scaling factor mentioned above which allows curve fitting all ages as a single group - this prevents favoring either younger or older masters to the detriment of those in the unfavored age range which can and does happen with or without intent when masters and youths are fitted as separate groups.

In addition to the methodologies above, a constant concern for evenhanded fairness in not favoring/disadvantaging any one element of a set at the expense of another was paramount throughout the entire endeavor. Conscious efforts before the fact and comparative analyses afterwards were employed to avoid biases which would be favorable or unfavorable in regard to such things as records of certain individuals, certain events, certain age ranges, certain countries, and so on.

Curve fitting for hurdles and field event throws presents an additional element of complexity because hurdles of different height and implements of different weight are used for specified age segments. The age segments must be mathematically extended in age so that the curves can be examined to ensure that curve crossover has not occurred. Curve crossover has the physical meaning that for ages beyond the crossover point, higher hurdles are run faster than are hurdles of lower height, and heavier implements are thrown farther than are implements of less weight. For the standards of this book, curve fitting for every event is mathematically extended to include the ages of 5 to 100, and curve comparison is accomplished to ensure that no curve crossover abnormalities have occurred.

Before standards are finalized for running, hurdle and walk events, the rate in meters per second is determined for every event so that rate comparisons can be made to ensure that no abnormalities have occurred. In addition, age-factor results are looked at early on in the standards generating process for all events. When it is seen that an undesirable distribution of age-factor values has resulted, the problem areas are refitted until the resulting age-factors are acceptable. Hence the rate results and age-factors are used as special proofing tools, and by using both tools the best possible standards are obtained.

The strength and safeguard aspects are seen only in evaluating the backup material of the book, they are not evident in the standards per se. Nevertheless, use of the safeguards prevents the ac-

ceptance of bad standards, and the strength of the curve fitting concepts used ensures that standards for all events are properly comparable for measuring levels of performance.

OVERALL ASSESSMENT.

In summary, the purpose of this book is to produce performance standards and age factors for track and field events for competitors of various ages which are applicable to all levels of performance ability, and this has been done.

In addition, the endeavor was to accomplish the development of standards firmly anchored on four fundamental pillars of strength - (1) be purpose designed so that resulting standards for all track and field events properly measure performance level regardless of which events and what ages are compared, (2) avoid all biases and ensure evenhanded fairness in not favoring or disadvantaging any one element of a set at the expense of another, (3) use curve fitting equations of such form and functionality as to produce qualitatively acceptable standards, and (4) employ methodologies which pull everything together to achieve commonality of purpose for the end result.

The standards of this book are exceptional by having the reliability, quality and fairness cited above which are characteristics of the entire development process.

Appendix

Open Class Records And Standards

The standards of this book have several unique aspects, one of which is that the open class world records for running and walk events are also standardized by curve fitting them with a time-distance equation. This must be done for two reasons - first because the open class time-distance standards are baseline to the development of the time-age curves, and second because the open class world records themselves are not all equal at any one instant, being improved one or two at a time in a random-like manner. Use of the time-distance curve is a stochastic approach that has world records adjusted to, and improving in, a smooth waveform manner rather than being irregular with disjointed perturbations. Thus, for example, regardless of whether the mile or 1500 has the better world record time at the moment, the time-distance curve will use the better of the two and the other will be "standardized" up to its improved equivalent time. Graphic examples of this can be seen in the plotted curves of this appendix.

Included here as backup material is a table listing the performance level percentages of open class world records for running and walk events, and graphs plotting the open class time-distance curves in the time domain and the rate domain. As previously mentioned in the chapters on runs and walks, time-distance curves were not included as graphics because they were difficult to visualize and interpret - they will be shown here but only for the age range of open class performers. Four figures are presented which include men's running, women's running, men's walks and women's walks. Each figure has a time domain graph and a rate domain graph.

The upper graph is the time domain plot of time versus distance, graphing both time standards and the world records in seconds versus distance in meters. Due to the range of magnitudes involved for time and for distance, both axes are in logarithmic scale. This produces an excellent overview graph, but it is virtually useless for interpretation of details. The lower graph is the rate domain plot of rate versus distance, graphing both rate of standards and rate of world records in meters per second versus distance in meters. Only the distance axis is in log scale. This produces an excellent graph for interpretation of details. Thus the graphs are complementary and should be interpreted as a set. It is obviously easier to identify a record that is on the slow side by looking at a rate graph. In particular, look at the various 1500/mile and 3000/2 mile record combinations plotted on the rate graphs for runs and walks.

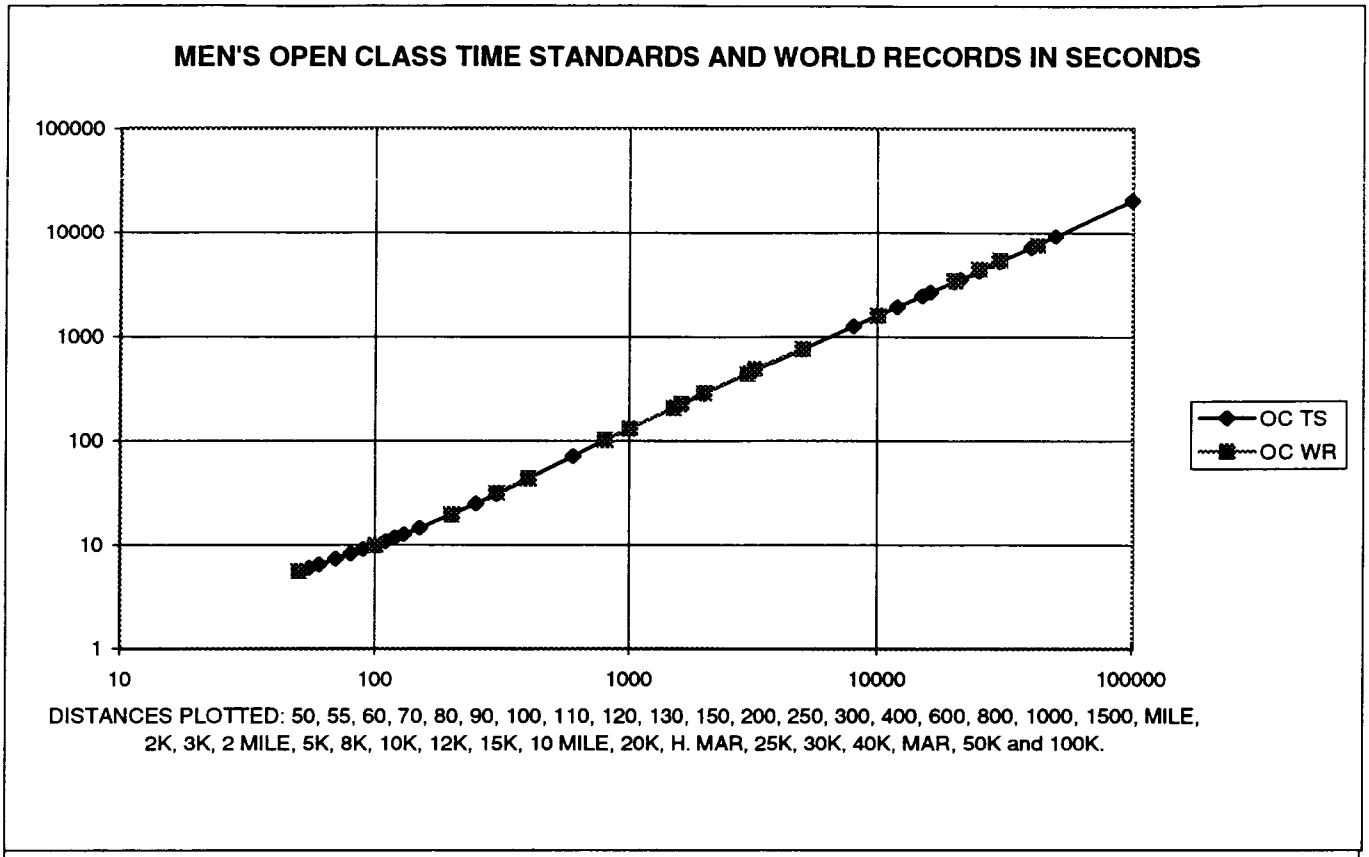
Seven time-distance points are required to fit the time-distance curve for runs, and four time-distance points are required to fit the time-distance curve for walks; bear this in mind when assessing the graphs or the table of performance level percentages. Also bear in mind that the less ordinary open class events (25k and 30k for running; 30k and 40k for walks) will have correspondingly less competitive world record times.

On the whole, rather excellent results were attained in time-distance curve fitting all men's and women's open class world records for runs and walks. This gives added credence to the concept employed, and establishes the applicability of the time-distance equations used.

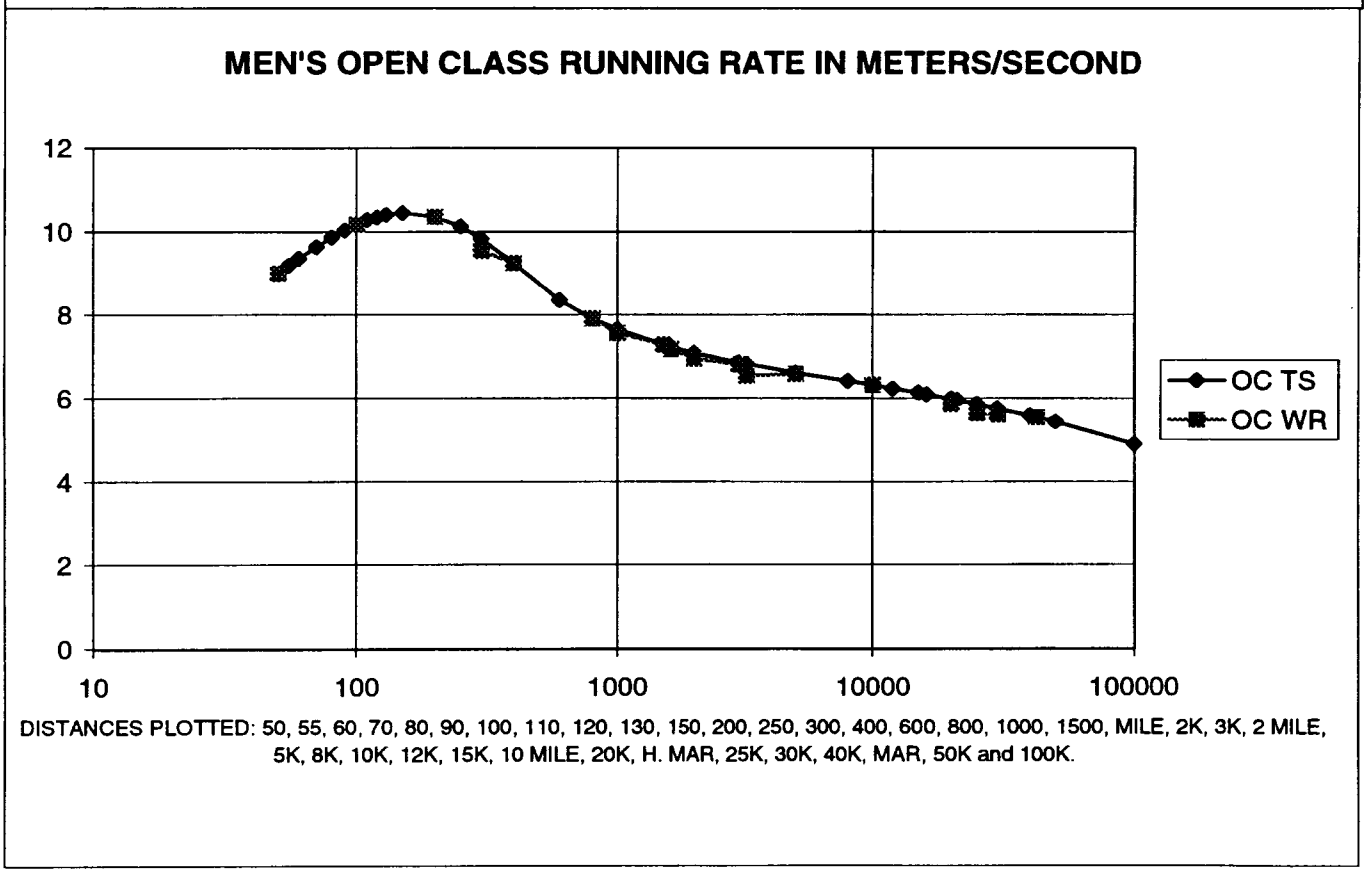
PERFORMANCE LEVEL OF OPEN CLASS WORLD RECORDS

	RUNS	RUNS			WALKS	WALKS
	MEN	WOMEN			MEN	WOMEN
DIST	PL%	PL%		DIST	PL%	PL%
50	100	100		1500	100	100
100	100	101		MILE	100	99
200	100	100		3K	99	100
300	97			2 MILE	98	96
400	100	100		5K	100	100
800	100	99		8K	96	
1000	99			10K	100	100
1500	100	99		15K	99	
MILE	99	98		20K	100	100
2K	98			25K	95	88
3K	99	100		30K	97	87
2 MILE	96			40K	94	90
5K	100	96		50K	100	100
10K	100	100				
20K	98	93				
25K	96	89				
30K	97	89				
MAR	100	100				

Figure 122



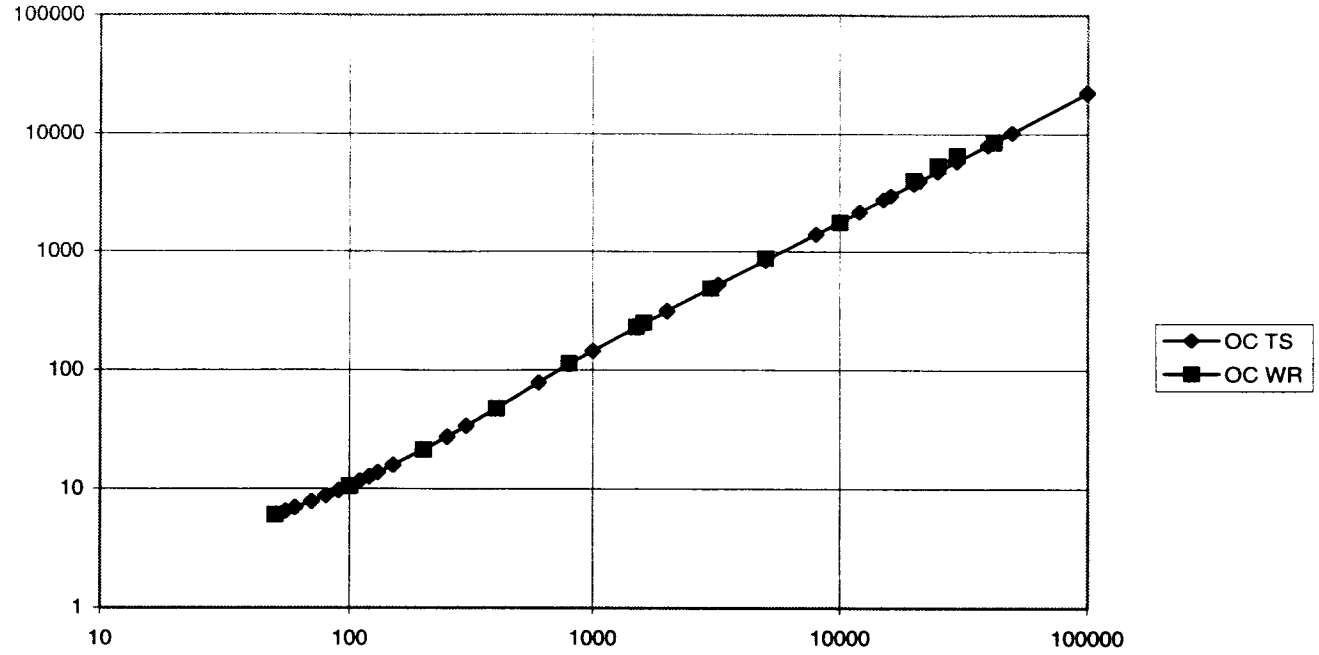
DISTANCES PLOTTED: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.



DISTANCES PLOTTED: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

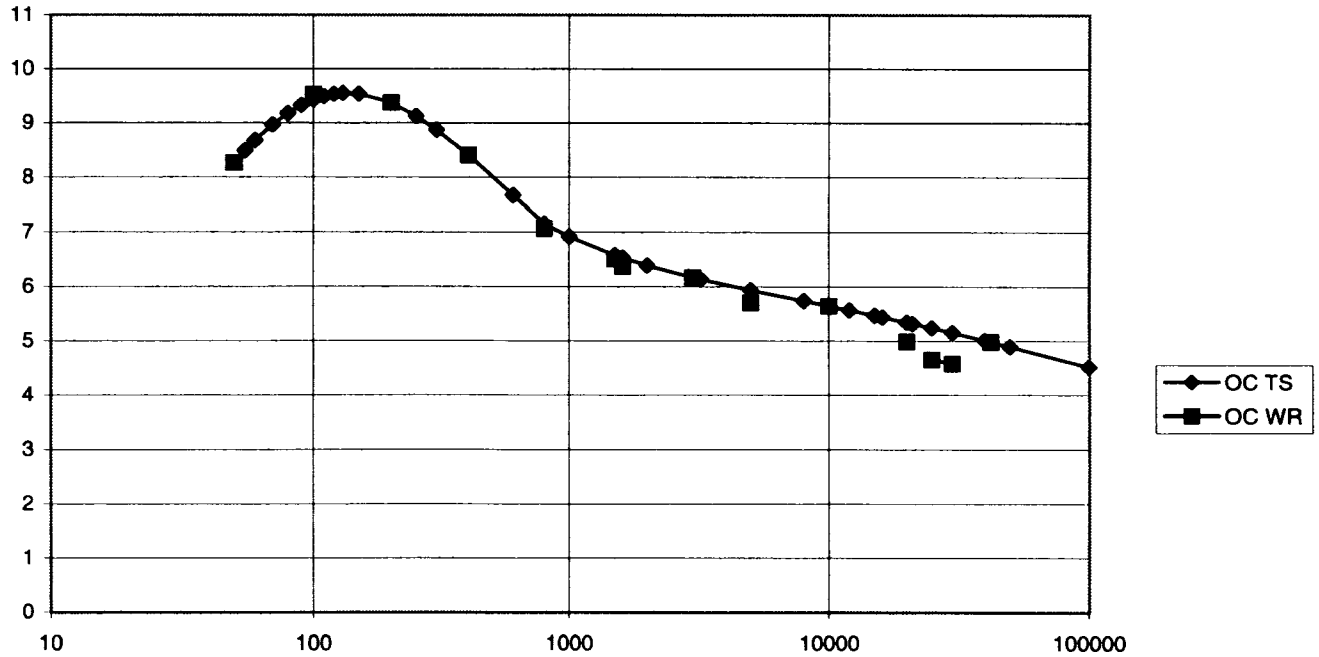
Figure 123

WOMEN'S OPEN CLASS TIME STANDARDS AND WORLD RECORDS IN SECONDS



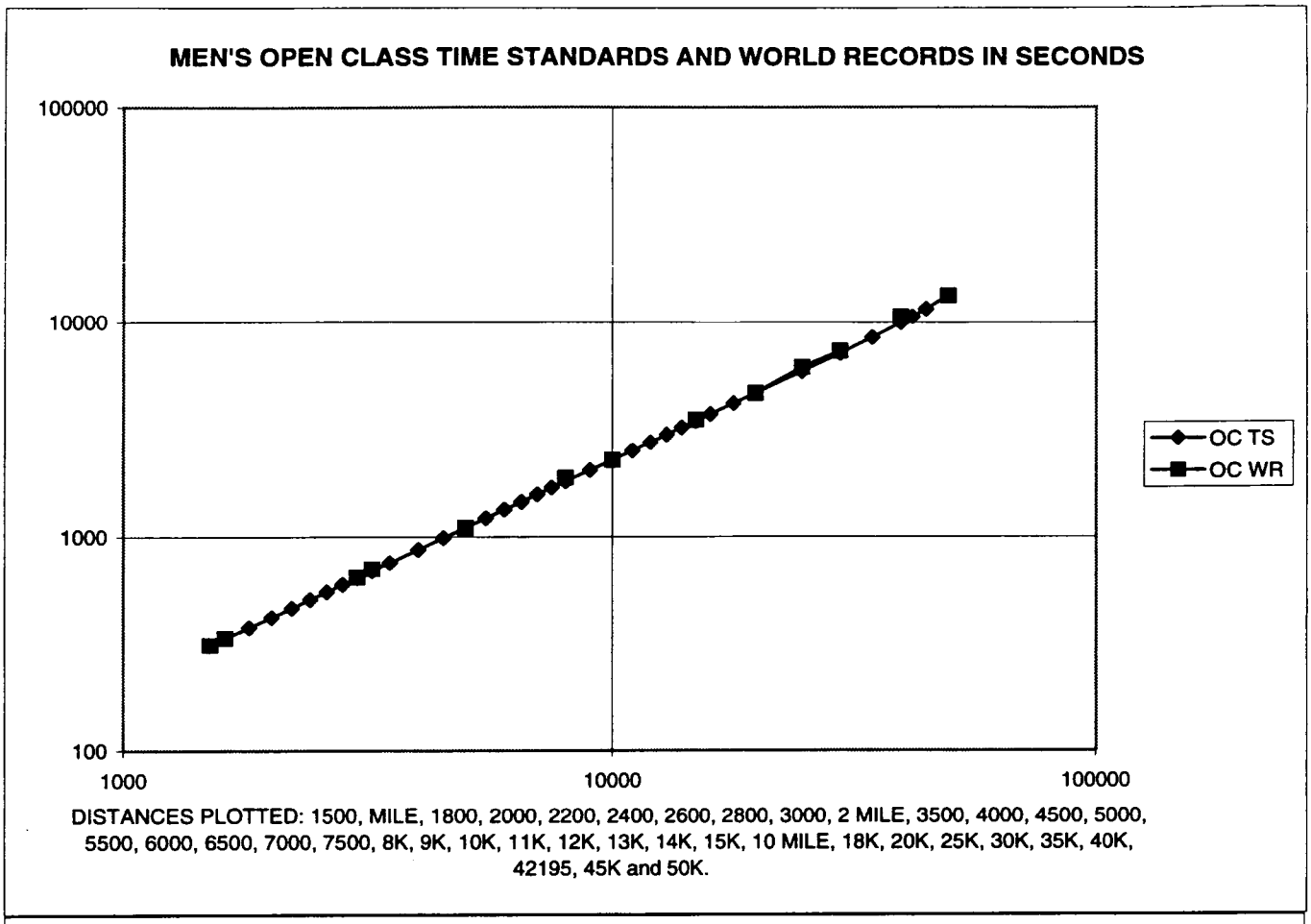
DISTANCES PLOTTED: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

WOMEN'S OPEN CLASS RUNNING RATE IN METERS/SECOND

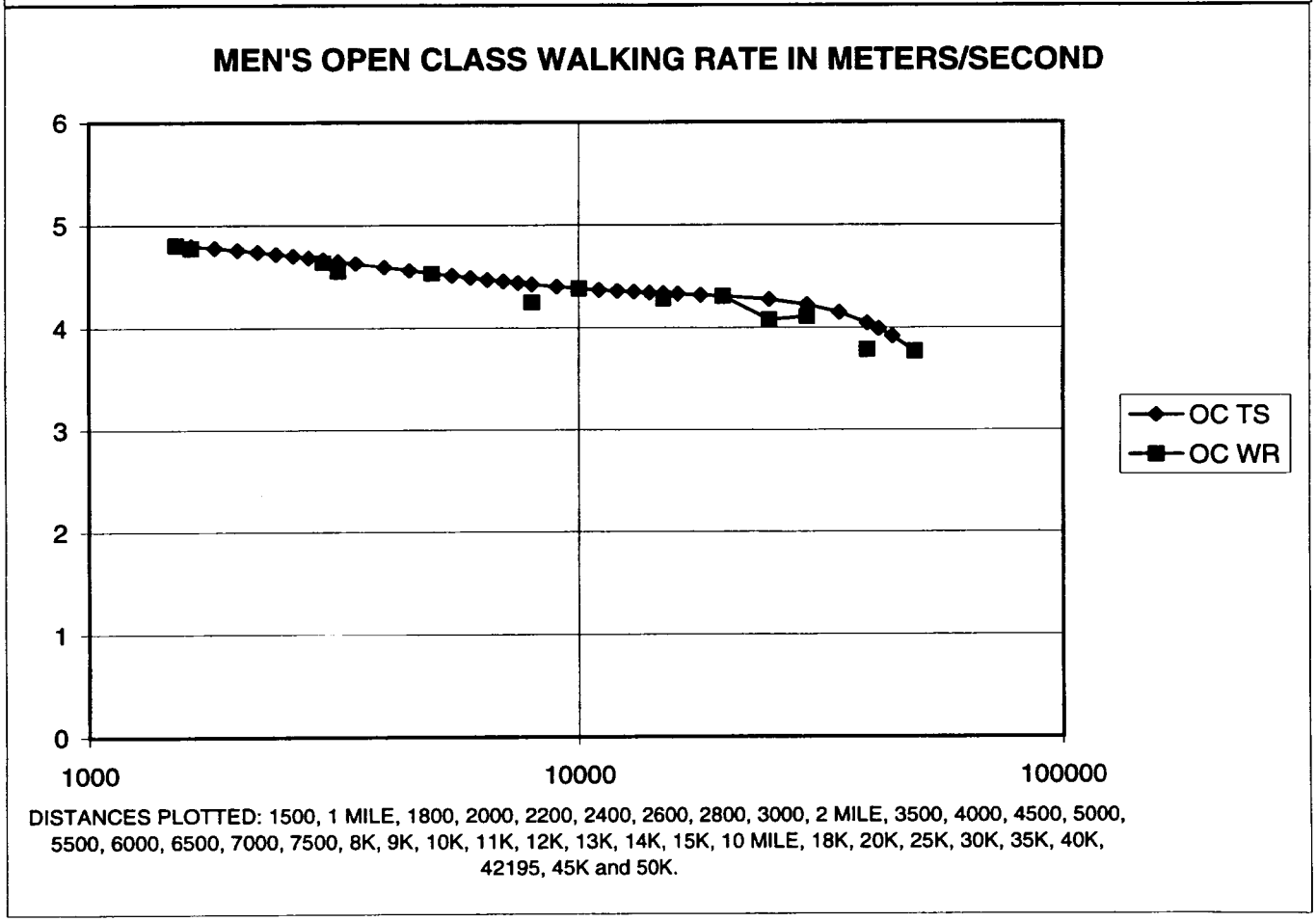


DISTANCES PLOTTED: 50, 55, 60, 70, 80, 90, 100, 110, 120, 130, 150, 200, 250, 300, 400, 600, 800, 1000, 1500, MILE, 2K, 3K, 2 MILE, 5K, 8K, 10K, 12K, 15K, 10 MILE, 20K, H. MAR, 25K, 30K, 40K, MAR, 50K and 100K.

Figure 124

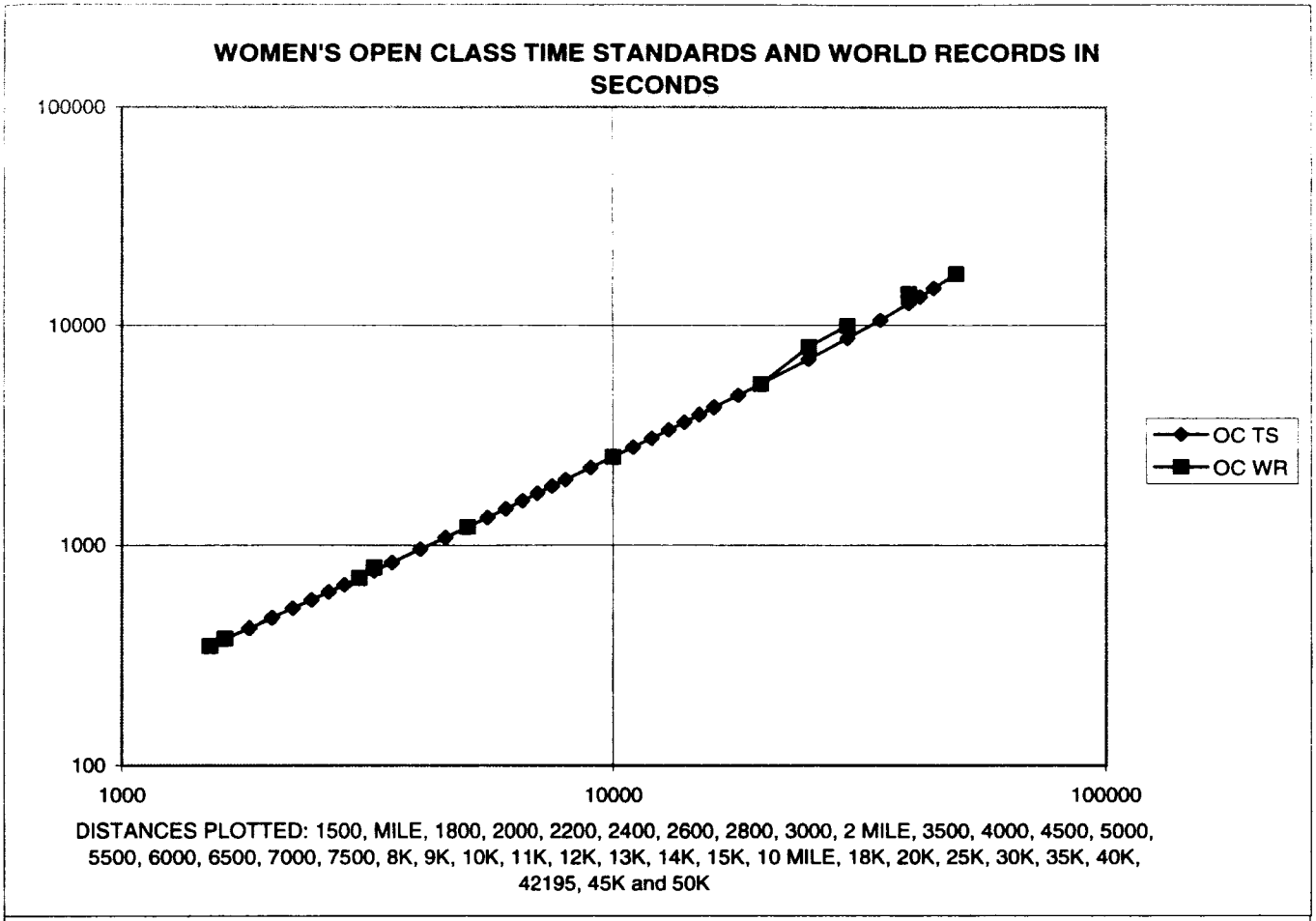


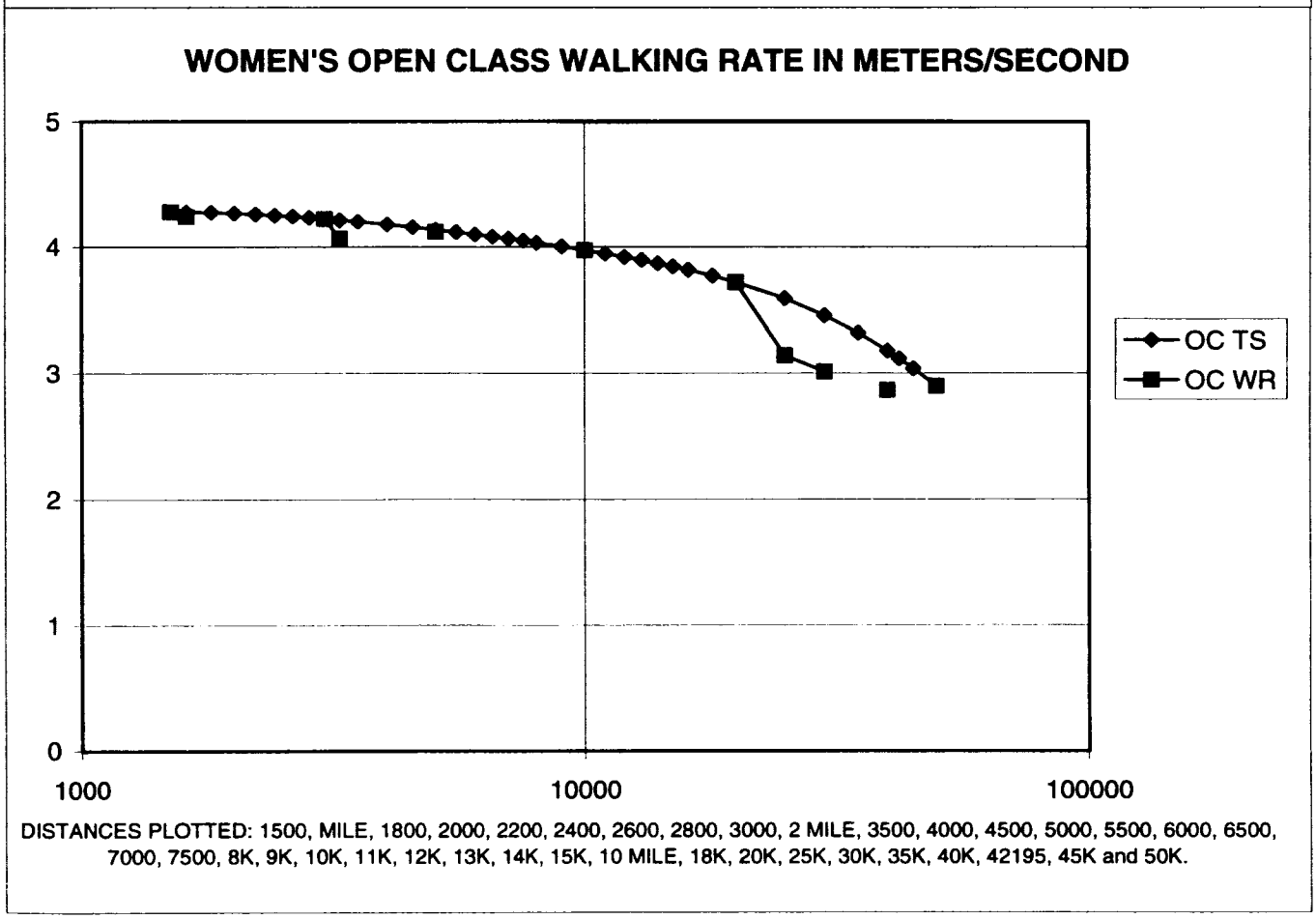
DISTANCES PLOTTED: 1500, MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.



DISTANCES PLOTTED: 1500, 1 MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.

Figure 125


WOMEN'S OPEN CLASS TIME STANDARDS AND WORLD RECORDS IN SECONDS
100000
10000
1000
100
1000
10000
100000
OC TS
OC WR
DISTANCES PLOTTED: 1500, MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K


WOMEN'S OPEN CLASS WALKING RATE IN METERS/SECOND
5
4
3
2
1
0
1000
10000
100000
OC TS
OC WR
DISTANCES PLOTTED: 1500, MILE, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 2 MILE, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8K, 9K, 10K, 11K, 12K, 13K, 14K, 15K, 10 MILE, 18K, 20K, 25K, 30K, 35K, 40K, 42195, 45K and 50K.