

TRACK CLUB

NEWSLETTER Vol. XIX, No. 5 June 25, 1987

NOTICE! NOTICE! NOTICE!

SPECIAL MEETING OF THE COLUMBIA TRACK CLUB

TUESDAY EVENING, 7:00 PM JULY 7

Guitar Community Center
8th & Broadway

Because of expanded job responsibilities and personal interests, Joe Duncan has found it necessary to resign as President of the Columbia Track Club. The resignation will be effective as of the Annual Meeting in October. A Special Meeting has been called to discuss the future management of CTC's program. Joe will present a comprehensive outline of CTC's activities with suggestions as to how these activities can be continued. The key to the future success of CTC will be the voluntary response of all CTC members in doing the many things that need to be done so that just a few people don't have to do it all.

BE SURE TO ATTEND THIS MEETING!! IT IS IMPORTANT!

* * * * *

Hospital Hill Half Marathon: Kent Lang, 3rd, age 20-24 1:14:06; Dick Hessler, 3rd, 45-49, 1:22:08, Larry Lewis 3rd, 50-54, 1:31:46. Don Johnson was 1:38+. Mike Little, Tom Coon and Tom LaFontaine were there but I have no times and, no doubt, other CTC people were there.

Don Johnson did the Bud Light Triathlon at Lake St. Louis, June 7-- a 3/4 mile swim, 35 mile bike & a 10k run. Don completed the event in 3 hours, 52 minutes.

Mothers Day 5k, Jeff City: 23. Jeanelle Twillman (1st 50+) 24:38, 25. Nancy Fritsch 24:54, 36. Barbara Leslie 26:47, 39. Myrtle Parsons 27:28, 68. Heather Harness 30:57, 84. Margaret Johnson 36:07, total of 101 runners.

	3 miles	2 miles	1 mile
1. Steve Stonecipher-Fisher	30 14:57	9:58	4:46
29:41	(4:57, 5:01, 4:59)	(4:58, 5:00)	2:25, 2:21)
1t. Vernon Darling	30 14:57	9:58	4:46
29:41	(4:57, 5:01, 4:59)	(4:58, 5:00)	(2:25, 2:21)
3. Mark Volek	31 16:35	10:58	5:17
32:50	(5:25, 5:30, 5:40)	(5:28, 5:30)	(2:36, 2:41)
4. Tom Coon	32 16:48	11:21	5:17
33:26	5:25, 5:35, 5:48)	(5:33, 5:48)	(2:34, 2:43)
5. Rich Harness	36 17:25	11:34	5:20
34:19	(5:30, 5:45, 6:10)	(5:49, 5:45)	(2:38, 2:42)
6. Marvin Odneal	43 17:58	11:54	5:39
35:31	(6:01, 5:55, 6:02)	(6:00, 5:54)	(2:51, 2:48)
7. Mike Walther	29 18:21	11:54.1	5:34
35:50	(5:54, 6:14, 6:13)	(5:54, 6:00)	(2:46, 2:48)
8. Tom LaFontaine	40 18:53	11:47	5:42
36:22	(6:24, 6:18, 6:11)	(5:54, 5:53)	(2:56, 2:46)
9. Tom Allen	44 18:36	12:22	5:50
36:48	(6:09, 6:16, 6:11)	(6:11, 6:11)	(2:52, 2:58)
10. Elmer Schlemper	48 18:44	12:29	5:55
37:08	(6:10, 6:17, 6:17)	(6:12, 6:17)	(2:57, 2:58)
11. Don Johnson	58 19:30	13:14	6:14
38:58	(6:22, 6:37, 6:31)	(6:34, 6:40)	(3:10, 3:04)
12. Joe Duncan	52 20:02	13:30	6:25
39:57	(6:38, 6:37, 6:47)	(6:42, 6:48)	(3:15, 3:10)
13. Norris Kruse	51 20:49	13:41	6:37
41:07	(6:56, 6:59, 6:54)	(6:56, 6:45)	(3:23, 3:14)
14. Joe Marks	49 21:20	14:07	6:49
42:16	(6:53, 7:09, 7:30)	(7:00, 7:07)	(3:23, 3:26)
15. Don Lewis	51 ---	10:55	5:34
		(5:29, 5:26)	(2:50, 2:44)
16. Shawn Harness	10	17:42	8:37
		(8:44, 8:58)	(4:28, 4:09)
17. Heather Harness	13	19:30	8:56
		(9:40, 9:50)	(4:33, 4:23)
18. Chris Ruble	33 20:28		
	(6:50, 6:53, 6:45)		
19. Turk Storvick	59 21:04		
	(6:55, 13:55, 7:09)		

Temperature in the 50's, sunshine, moderate winds from the SE not too bothersome. Stonecipher-Fisher and Darling lowered Dennis Stewart's 3 mile mark of 15:42 set in April, 1981 and his 2 mile mark of 9:59.5 set the same day and his overall mark of 30:22.5. This for the age 30-39 category. Don Lewis erased Don Johnson's 11:46 for age 50-59 2 miles, set in April, 1979. Thanks to Mike Little for handling this race.

Swensen's 10k, Kansas City, May 17: 16. Dennis Stewart 33:18, 2nd 35-39. Tom LaFontaine won the 40-44 division at 34:27. Milene Mittelhauser was second female with 38:05, Jeanelle Twillman was 3rd, 50-54 at 53:41.

DENNIS STEWART HANDLES THE KIDS WHILE CHRIS RUBLE MISSES A RECORD
BY .9 OF A SECOND SPRINT TRIATHLON May 29, 1987

		1500 meters	800	400	TOTAL
1. Dennis Stewart	38	4:13.4	2:02.4	:56.4	7:12.2
2. Marc Romine	32	4:23	2:09.4	1:00.0	7:32.4
2. Bob Hull	20	4:21.1	2:18.3	:59.4	7:38.8
4. Tom Coon	32	4:38.6	2:19	1:04	8:01.9
5. Richard Harness	36	4:52	2:27.1	1:02.3	8:21.4
6. Steve Engelbrecht		4:55.6	2:22	1:04	8:21.6
7. Don Lewis	51	5:05.2	2:22.5	1:05.1	8:32.6
8. Mark Volek	31	4:58.3	2:33.4	1:06.2	8:37.9
9. Mike Walther	29	5:17.5	2:36	1:07.9	9:01.4
10. Marc Lammy	31	5:18	2:40	1:07.9	9:07.9
11. Tom Allen	44	5:20	2:45.1	1:16.9	9:22
12. Dale Broadway	33	5:29.5	2:44	1:13.8	9:24.3
13. Joe Duncan	53	5:31.1	2:47	1:14.2	9:32.3
14. Don Johnson	58	5:32	2:48	1:14.6	9:34.6
15. Chris Ruble	33	5:41	2:49.5	1:17.4	9:47.9
16. Roger Hanson	55	6:18	3:10	1:25.5	10:53.5
17. B. J. Mumford	10	6:32	3:13	1:24	11:09
18. Heather Harness	14	7:09	3:33	1:26.4	12:08.4
19. Shawn Harness	10	7:06	3:41.6	1:35.4	12:53
20. Scott Gilmore	20	5:30	2:48		
21. Marshall Stewart	8			1:26	

(I wonder how fast his
dad, Dennis, could run
at age 8)

22. Chet Broadway 9 1:47

Low 80's for this Friday evening event, winds out of the west.
Chris Ruble was going after Susan Boyle's marks of 5:41, 2:49, 1:17
set in May, 1982 and as you can see, Chris was off .5 for the 800 and
.4 for the 400. Next year. . .

THANKS to Dick & Carole Madsen for being race Directors and to Scott
Hinton and Eric Mumford who were there to help.

BILL TAFT did a couple of solo walks--a 10k after the above sprint
triathlon in 1:22:25 and then a 15 k on June 6 in 2:09.3 (10k in
1:25:32) both of these on Hickman track.

MEET OF MILES

EVENT: A one mile run

DATE: 8:00 a.m., starting with oldest age group (60 & over); separate heats
July 4, 1987 for each age group, each sex, unless number of entrants does not justify
a separate heat for a particular group.

PLACE: Columbia, Missouri, Hickman High School Track

ENTRIES: No entry fee is required. No pre-registration is necessary. Simply
come prepared to run.

AGE GROUPS: 7 and under; 8-9; 10-11; 12-13; 14-15; 16-19; 20-24; 25-29; 30-34; 35-39;
40-44; 45-49; 50-59; 60-over. Male and female in separate groups.

AWARDS: Stadium Dairy Queen
First Place: "Peanut Buster" Parfait
Second Place: Banana Split Or something comparable
Third Place: Large Sundae

SPONSORS: Stadium Dairy Queen
Columbia Parks and Recreation Department
Columbia Track Club

8,000 METER TWO PERSON RELAY Hickman Track June 19, 1987:

1600 meter splits		1600	Total Team Time		Total Individual Time	Average Seconds per lap 10 X 400
		4800	3200 6400	8000 meters		
1. Mike Bryant	17	4:28	9:13		12:25	74.5
Andy Jones	16	14:12	19:05	23:50	11:25	68.5
2. Chris Henry	15	4:29	9:15		12:11	73.1
Jim Marshall	29	14:19	19:09	23:54	11:43	70.3
3. Rick Rother		4:53	9:49		12:44	76.4
Mark Volek		15:09	19:58	25:03	12:19	73.9
4. Angela Hessler	14	5:12	10:25		13:38	81.8
Gary Johannning	36	15:40	20:54	26:00	12:22	74.2
5. Karla Patterson	19	5:10	10:29		14:16	85.6
Mike Walther	29	16:05	21:40	27:29	13:06	78.6
6. Dick Hessler	45	5:18	10:50		13:01	78.1
Ryan Colvin	12	16:29	22:12	27:44	14:43	88.3
7. Linda Robbins	36	5:28	11:10		15:40	94.0
Tom LaFontaine	40	16:53	22:40	28:19	12:39	75.9
8. Norris Kruse	51	5:35	11:16		14:42	88.2
Tom Allen	44	17:00	22:44	28:22	13:40	82.0
9. Vernon Darling	30	5:14	10:56		11:10	67.0
Shawn Harness	10	16:58	22:59	28:39	17:29	104.9
10. Betty Bohon	36	5:45	11:39		14:35	87.5
Chris Ruble	33	17:28	23:18	28:54	14:29	85.9
11. Balazs Liposits	14	5:19	11:02		12:29	74.9
Reka Liposits	11	17:05	23:20	29:07	16:38	99.8
12. Dick Madsen	45	5:46	11:46		13:42	82.2
Carole Madsen	44	17:47	23:54	29:56	16:14	97.4
13. Heather Harness	14	5:27	11:31		17:44	106.4
Richard Harness	36	17:48	24:07	30:39	12:55	77.5
14. Amy Keller	12	5:43	11:44		17:26	104.6
Joe Duncan	53	18:12	25:08	31:33	14:07	84.7
15. Robyn Colvin	9	5:52	12:12		16:33	99.3
Mike Colvin	38	18:53	25:41	32:20	15:47	94.7

Low 80's, humid, cloudy for this Friday event. THANKS to McDonald's for the "Dinners for Two"--there were enough for everybody.

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A COUPLE OF OUT OF TOWN EVENTS:

August 8 7:00 AM Sedalia Stride & Ride 10K run, 30k Bike
Centennial Park Sedalia CONTACT: Jeff Mittelhauser
816 826-0147

August 15 7:00 PM Twilite 5,000 meter run Capitol Mall
Jefferson City 45.00 CONTACT: Jim Marshall 636-2294

ELAPSED TIME STANDINGS (not including 8,000 meter relay)

File: MALE 15U
Report: CTC REPORT
NAME POINTS

BJ MUMFORD 24
B. QUICK 11
J QUICK 11
SHAWN HARNES 11

File: MALE 1629
Report: CTC REPORT
NAME POINTS

MIKE WALTHER 113
JIM MARSHALL 42
O'BANNON 38
STONECIP-FISHER 32
DON ARCHER 25
SIMON ROSE 22
KENT RADER 14
SCOTT HINTON 13
RICK MUMFORD 13
P GROSHONG 12
THURMAN GLEB 11
G MEYER 11

File: MALE 3039
Report: CTC REPORT
NAME POINTS

MARK VOLEK 112
RICHARD HARNES 110
S STONE-FISHER 100.5
TOM COON 100*
MIKE LITTLE 76
BOB O'CONNELL 74.5
J MITTELHAUSER 67.5
MARK VOLEK 53
V. DARLING 44.5
MARC LAMMY 38
BOB MCGRATH 35
MARC ROMINE 34
RANDY SMITH 27
G HEISLER 25*
TIM ROONEY 22
GARY JOHANNING 16
LAFONTAINE 12
RICHARDSON 12
L PETTERBORG 11
CLINKENBEARD 11

File: MALE 4049
Report: CTC REPORT
NAME POINTS

TOM ALLEN 136
TOM LAFONTAINE 106
MARVIN ODNEAL 80
NORM STEBBINS 72
ELMER SCHLEMPER 59
J MARKS 58*
DICK MADSEN 50
DICK HESSLER 44
H PENDERGRAFT 23
DAVE PARKER 15
J MCCORMICK 13
D GOLDSTEIN 12
S HALLIBURTON 11
RUSS MEYER 11
MIKE HOSAKAWA 11

File: MALE 5059
Report: CTC REPORT
NAME POINTS

DON JOHNSON 123*
JOE DUNCAN 101
BEN LONDEREE 75
TURK STORVICK 70
DEAN BAXTER 60
NORRIS KRUSE 60
FRED FRITSCH 36
H MITTELHAUSER 36
JOHN O'CONNOR 12
ROGER HANSON 11
DAVID MCDONALD 11

File: WALKERS
Report: CTC REPORT
NAME POINTS

SPIER 71
WILLIAMS 41
S. FRITZ 24
BILL TAFT 22
EVANS 11

File: FEMALE 15U
Report: CTC REPORT
NAME POINTS

ANGELA HESSLER 45
B. HESSLER 11
HEATHER HARNES 11

File: FEMALE 1634
Report: CTC REPORT
NAME POINTS

CHRIS RUBLE 90
M MITTELHAUS 62
LIZ EPPL 40
J MITTELHAUS 26
SIEFERT-WADE 24
AMY HESSLER 23
JULI SCHMIDT 22
D. HOXWORTH 17
LINDA ROBBIN 16
KENNA WALKER 15
H. O'CONNOR 14
B. BOHON 13
C. PADEN 12
LIZ BULMAN 12
D. KARWOWSKI 11
L. TEERLINK 11

File: FEMALE 350VER
Report: CTC REPORT
NAME POINTS

LINDA PRICE 107
NANCY FRITSCH 67.5
D LONDEREE 59.5
LINDA ROBBINS 48
M JOHNSON 45
G GONZALEZ 37
CAROLE MADSEN 26.5
JONI O'CONNOR 13.5
GERHARDT 11
BARBARA MARTIN 11

The Bob Dolphin Report: May 3 Bloomsday 12K Run Of 54,000 runners
Bob was 1499, 7th of 478, age 55-59, 52:22, 7:01 per mile.
May 9: Hatfield 10K 41:26, 13th overall.
May 31: Clear Lake 14 mile: 1:42:05, 1st, 50-59
June 6: 42:29 10K on a tough course, a 12K Volksmarch in the afternoon,
June 7: 41:06 10K as part of a relay
June 13: Full Moon Run 4.4 miles, 8th in 28:09, 99 runners
June 14: 1500 meter racewalk, 1st 50-60, 8:39.6

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BOONE COUNTY JUNIOR OLYMPICS TRACK & FIELD MEET

MAY 23, 1987

ROCK BRIDGE HIGH SCHOOL TRACK

NEW RECORDS

BANTAM GIRLS

100 m dash	Robyn Colvin, Columbia	15.7
	OLD RECORD: Susan Emery, 1984	16.0
3000 m run	Joan Pauly, Columbia	13:49
	OLD RECORD: Joan Pauly, 1986	13:55
High Jump	Rachel Siquefield, Columbia	3'6"
	OLD RECORD: Veronica Manahan, 1982 & Belinda Heath, 1983	3'6"
Shot Put	Jacqueline Eaton, Harrisburg	16' 9.75"
	OLD RECORD: Sara Beth Goss, 1982	16' 1"

BANTAM BOYS

3000 m run	Alex Montano, Columbia	13:21.4
	OLD RECORD: Andy Wieschaus, 1986	13:26

MIDGET GIRLS

3000 m walk	Melenda Massey, Columbia	24:06.0
	NO PREVIOUS RECORD	
4 x 400 m relay:	Amy Keller, Columbia Monica Lewis, Columbia Jenny Cordia, Columbia Shannon McDonald, Columbia	5:25.0
	OLD RECORD: D. Rottjakob, J. Jurgensmeyer, A. Hessler, C. Sandfry, 1984	5:26.8

MIDGET BOYS

3000 m run	John Racine, Columbia	11:41.8
	OLD RECORD: Tom Hart, 1986	12:52.6
50 m low hurdles	Tim Lewis, Columbia	1:09.5
	OLD RECORD: Jeff Magsamen, 1984	1:09.6
3000 m walk	Chris Braudis, Columbia	18:53.1
	NO PREVIOUS RECORD	

JUNIOR GIRLS

4 x 400 m relay	Angela Hessler, Columbia Amy Powell, Columbia Wendy McGuire, Columbia Jennifer Kuschel, Columbia	4:52.3
	OLD RECORD: D. Rottjakob, A. Dunn, K. Prudenz, J. Jurgensmeyer, 1985	4:52.4
Long Jump	Samantha Potter, Columbia	16' 7"
	OLD RECORD: Shermica Turner, 1985	15' 11.25"
100 m dash	Samantha Potter, Columbia	12.9
	OLD RECORD: Shermica Turner, 1984	13.0
800 m run	Angela Hessler, Columbia	2:39.7
	OLD RECORD: Jill Gladney, 1981	2:41.2
3000 m run	Angela Hessler, Columbia	11:32.2
	OLD RECORD: Angela Hessler, 1986	12:23.0

1987 Western Missouri State AAU/USA Junior Olympics Track Meet
 Saturday and Sunday - June 13-14, 1987
 Central Missouri State University
 Vernon Kennedy Field, Warrensburg

Columbia Track Club Colts

Bantam Boys (10 years and under)

Long Jump	Brandon Beissenherz	1st	13'8½"
High Jump	Rich Catlett	1st	3'11"
Shot Put	Mike Mazzacco	5th	25'4"
200m dash	Brandon Beissenherz	1st	30.01
	Rich Catlett	6th	32.5
400m dash	Brandon Beissenherz	1st	68.9 (New Record)
	Jason Meyer	5th	80.8
300m run	Justin Quick	3rd	12:50
1500m run	Tommy Allen	4th	5:52

Bantam Girls (10 years and under)

100m dash	Robyn Colvin	4th	15.6
200m dash	Robyn Colvin	2nd	32.9
400m dash	Meredith Welch	2nd	84.3
800m dash	Joan Pauly	2nd	2:55
	Meredith Welch	7th	3:10
	Destiny Thomas	13th	3:17
1500m run	Birgitta Hessler	2nd	6:43
3000m run	Destiny Thomas	2nd	14:22.6
	Joan Pauly	4th	14:35.7

Midget Boys (11 and 12 years)

800m run	Shawn Harness	13th	3:14
1500m run	John Racine	6th	5:39
	Shawn Harness	16th	6:30
3000m run	John Racine	3rd	12:07

Midget Girls (11 and 12 years)

100m dash	Monica Lewis	8th	14.8
800m run	Karla Pudenz	6th	2:55
	Jennifer Cordia	10th	3:05
400m run	Amy Keller	5th	1:14.2
	Laura Pauly	6th	1:15.0
	Shannon McDonald	7th	1:15.9
1500m run	Reka Liposits	4th	5:53.6
	Karla Pudenz	5th	5:53.8
	Jennifer Cordia	10th	6:31.9

Junior Boys

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200m dash	Balazs Liposits	6th	29.10
800m run	Mike Forbis	1st	2:11.6
	Tom Hart	12th	2:36.5
1500m run	Mike Forbis	2nd	4:36.3
	Balazs Liposits	4th	4:43.7
3000m run	Dillon Giltrap	3rd	11:36.8
	Tom Hart	6th	12:07.9

Junior Girls

80m hurdles	Wendy McGuire	4th	14.56
200m dash	Amy Powell	6th	28.28
400m dash	Amy Powell	5th	1:07
	Jennifer Kuschell	10th	1:14
800m run	Angela Hessler	2nd	2:29.7
	Caroline Knight	12th	2:57
	Heather Harness	18th	3:20
3000m run	Angela Hessler	1st	11:31

Intermediate Girls

Long Jump	Sherry Giltrap	2nd	16'5½"
100m hurdles	Sherry Giltrap	1st	17.12
400m hurdles	Sherry Giltrap	1st	1:10.9

Intermediate Boys

Shot Put	Ryan Colvin	6th	23½'
800m run	Shawn McDonald	5th	2:09.1
1500m run	Shawn McDonald	3rd	4:33
3000m run	Brian Quick	2nd	10:15.3
	Shawn McDonald	4th	10:24.3

Relays

1600m relay Bantam Boys

Ryan Doxley	1st	5:18.6
Mike Williams		
Spencer Bartlett		
Tommy Allen		

Bantam Girls

Birgitta Hessler	3rd	5:32.4
Destiny Thomas		
Robyn Colvin		
Joannie Pauly		

Midget Girls

Amy Keller	3rd	5:00.9
Jennifer Cordia		
Monica Lewis		
Shannon McDonald		

Junior Girls

Team A

Wendy McGuire	2nd	4:32.4
Jennifer Kuschel		
Angela Hessler		
Amy Powell		

Team B

Helen Cope	4th	5:06.2
Allyson Garverick		
Heather Harness		
Caroline Knight		

3200m relay Junior Boys

Mike Forbis	1st	10:02
Ryan Colvin		
Tom Hart		
Balazs Liposits		

Attention Injured, Disabled, or Bored Runners!!

Ben Timson, Ph.D., Exercise Physiologist at Lincoln University and I are seeking volunteers to participate in a little research project on cross training. We would like to initiate this project as soon as we can obtain a commitment for eight weeks from ten runners. The following information describes the basic protocol of this proposed research:

1. We need runners who are presently running 40-50 miles per week or more and are not doing any other form of aerobic training (biking, swimming, rowing, etc..). If you are doing some calisthenics, weight training, or a stretching program, you will be able to continue that in it's present form; although we might give you some advice on how to improve these aspects of your fitness program.
2. You will need to be able to be committed to an eight week research protocol and able to perform a significant portion of your prescribed training in a supervised setting either at Boone Hospital Center or Lincoln University
3. You must be willing to decrease the amount you are running and perform an equal amount of bicycling instead. The bicycle training will occur indoors under supervised conditions on wind trainers or Fitron cycle ergometers. You will receive a precise exercise training prescription for this training. Your running will be decreased by 50% of your present weekly mileage. In addition, you will be randomized to one of three groups; 1. one group which will do 50% of their running at their usual pace and effort, 2. one group which will be precisely prescribed to always train at a comfortable pace with all continuous running, and 3. one group which will be perform carefully prescribed interval training and pace training.
4. We will perform laboratory tests to determine your maximal oxygen uptake, your heart rate maximum, maximal blood pressure, your anaerobic thresholds, running economy, body fat percentage and ideal weight, and other physiological parameters. We also will assess your performance capacity on a three mile run. These assessments will be made at entry into the study and at four and eight weeks.
5. All information will be shared with you in order to assist you in improving your fitness program, but otherwise will be kept completely confidential (so as not bias any of your competitors!)

If you are running 40-50 miles or more per week and would be willing to cut back 50%, please call either Ben or myself*** for further information; Ben can be reached at 681-5326 and I can be reached at 875-3870. We would like to initiate this project as soon as possible.

***The "myself" is Tom LaFontaine who wrote the above.

THE IMPORTANCE OF INTENSITY OF TRAINING

AND HOW TO MONITOR IT!

Tom LaFontaine
Exercise Physiologist

Exercise training prescriptions are based upon several factors including intensity, duration per session, frequency, rest, recovery, nutrition, type, progression, goals, objectives, general and specific effects, etc.. In terms of increasing one's maximal oxygen uptake (the maximal amount that a person can take in, transport, and utilize during exhaustive aerobic exercise), the most important factor is intensity. Studies have shown that when other factors are held constant, there is a direct relationship between increase in maximal oxygen uptake and intensity; the harder the training effort, the greater the improvement in maximal oxygen uptake. Studies also have demonstrated that the most important factor necessary for retention of maximal oxygen uptake is (you guessed it!) INTENSITY. Since achieving and sustaining your genetically limited level of maximal oxygen uptake is essential for optimal performance, a carefully prescribed level of intensity is most important. Thus how hard you train makes the difference in reaching your personal limits of "sucking wind". However, studies also clearly indicate that training too hard, too often is one of the primary reasons why injuries occur. Therefore, a proper blend of hard training and rest is necessary if optimal results are to be derived with the least risk of injury. Over the next few months, I will discuss ways in which you can reach your potential by optimal training while minimizing your injury potential. One important way in which you can help to assure the optimal dosage of intensity each week is to monitor your heart rate during training sessions in association with your perceived effort. This month, I will focus on determining your optimal heart rate and next month, I will illustrate how to use the rating of perceived effort scale to continuously self-regulate your intensity during training sessions.

Exercise physiologists traditionally have prescribed exercise based upon a given percentage of maximal oxygen uptake. Since oxygen uptake involves sophisticated laboratory equipment to determine, a percentage of maximal heart rate has been the alternative method most often used for monitoring exercise intensity (usually in association with pace). This is possible to do since heart rate and oxygen uptake are linearly related during increasing levels of pace for most individuals; for a given increase in oxygen uptake during running, a given increase in heart rate can be predicted. Thus, for example, when you are running at a pace which requires about 75% of your maximal oxygen uptake, you will be using about 85% of your maximal heart rate.

In order to accurately use this relationship, the maximal heart rate must be determined precisely on the basis of a laboratory or field test. Ideally, an electrocardiographically monitored maximal run test on a treadmill would be the method of choice. It is NOT ADVISABLE to predict your maximal heart rate from the, unfortunately, widely publicized formula: $220 - \text{age}$. Why? Because there is a standard deviation of 12 beats per minute around maximal heart rate for any age. Thus it is very easy to over or under predict maximal heart rate by this method. For example, a 40 year old will have a predicted maximal heart rate of 180. However, if we tested 100 forty year olds in a laboratory, we would find that 95% of them actually would have maximal heart rates between 156 and 204. In fact, 2.5 % would be <156 and 2.5% would be >204 ! Therefore, it is obvious that this "guestimate" formula leaves much to be desired if training intensity is to be precisely monitored by heart rate. In fact, a 90% of predicted maximal heart rate prescription for a 40 year old man with an actual maximal heart rate of 156 would have him working out above his maximal; 90% of predicted maximal heart rate of 180 is 162! If a maximal exercise test can't be performed, I recommend learning how to use the perceived effort scale which I will discuss in next month's CTC newsletter.

For fit runners with no personal history of heart, lung, or blood vessel disease and no significant risk for cardiopulmonary diseases (smoking, high cholesterol, high blood pressure, diabetes, family history, low HDL-cholesterol), the maximal heart rate can be assessed quite simply during or immediately after an all out one mile run. First, warm-up with 1-2 miles of gradually increased paced jogging/running. Next perform an all out one mile run. At the end of this mile run, immediately stop and take your pulse or heart rate for ten seconds; complete this count within 15 seconds after stopping and add one beat to the count. BE VERY CAREFUL to accurately determine this rate. You can take your pulse at the carotid artery in the neck (be sure to use light pressure) or the radial artery in the wrist or take your heart rate over your left chest wall with the palm of your right hand. Multiply the derived pulse or heart rate for ten seconds by six to determine your maximal heart rate. This is certainly much better than the "guesstimate" 220-age formula. If at all possible, I would suggest that you do this procedure while wearing an accurate heart rate monitor. See the June issue of Bicycling magazine for information regarding the quality and accuracy of commercial heart rate monitors. For example, the Exersentry made by Respironics is excellent and has been validated in comparative tests with an electrocardiogram. If you are able to run the mile while wearing a monitor, then you will have derived a very accurate determination of your maximal heart rate. Simply, note your heart rate during the last 10-15 seconds of the mile run.

The next step is to assess your resting heart rate. To do this, take your pulse rate in the am for one full minute before getting out of bed and after a good sleep. Take your pulse rate several (4-6) successive mornings and take the average of the derived measurements.

Once you have derived your maximal and resting heart rates, determine your approximate training heart rate in the following manner:

1. take the maximal heart rate minus resting heart rate; this equals your heart rate reserve (HRR),
2. take 60% and 85% of the HRR,
3. add the 60% and 85% values to the resting heart rate,
4. this will be your approximate target heart rate range,
5. for example, for a subject with a maximal heart rate of 180 and a resting heart rate of 60,
 - a. $180 - 60 = 120$
 - b. $120 (.60 \& .85) = 72 \& 102$
 - c. $60 + 72 \& 102 = 132 \& 162$
 - d. this would be the approximate training heart rate

The training heart rate derived in this manner will be quite adequate for those involved in "fitness training" only. This intensity will provide nearly optimal fitness and health benefits from aerobic exercise if the training also is done at the optimal duration and frequency; 30-60 minutes per session, 4-6 days per week, for a total of 4-6 hours per week or about 2000 to 3500 K-calories expended per week.

However, for those interested in optimizing their performance, training only at this 60% to 85% level will be inadequate. Next month, I will once again discuss the perceived effort and anaerobic threshold and describe further how to use these parameters with your heart rate to monitor your training effort.

For example, moderately to highly trained runners can sustain a 10-K at about 80% to 90% of maximal oxygen uptake or heart rate reserve. As an example of the usefulness of the perceived effort scale, several studies have indicated that a level of light to somewhat heavy perceived effort corresponds to 60% to 70% of maximal heart rate and a rating of heavy to about 85% of maximal heart rate. Studies also have demonstrated the following interesting relationships between % maximal heart rate, lactic acid buildup or anaerobic threshold (see June issue of Triathlete for a discussion of the aerobic/anaerobic threshold), and the rating of perceived effort; 1. the relationship between % maximal heart rate and perceived effort is unaltered by the administration of drugs which slow resting, submaximal, and maximal heart rates (this indicates the stability of the relationship), and 2. the anaerobic threshold occurs between a perceived effort of 13-15 or somewhat heavy to heavy. The next discussion in the CTC newsletter will consider the use of a heart

LaFontaine: Intensity continued. . .

monitor in conjunction with the perceived effort to monitor your training intensity. I will also consider the anaerobic threshold in more detail in future issues of the newsletter and the benefits and effectiveness of cross training. In the meantime, good luck with your training and feel free to write or call me if you have any questions, suggestions or comments regarding your training (I can be reached at 875-3870; this is my work # so I may not be able to talk at that time, but I will get back to you to discuss the matter with you).

SCHEDULE OF EVENTS

July 4	Saturday, 8:00 a.m.	1-Mile Run. AWARDS. \$1 fee non-members; 10,000 Meter Walk (6:30 a.m.). Hickman Track.
July 18	Saturday, 8:00 a.m.	Four-Mile Relay, 3-Mile Walk. Research Park. RD: Ben Londeree
August 1	Saturday, 7:30 a.m.	Great Sandbagger 10,000 Meter Handicap Run, Walk. Meet at Strawn Road cinder pile. RD: Dean Baxter
August 15	Saturday, 7:30 a.m.	5,000 Meter Run. Hickman Track. RD: Eric Mumford
August 29	Saturday, 6:00 a.m.	30,000 Meter Run (10 Kilo for women and age 15*) 20-K Walk. Hilton Inn. RD: Chris Ruble
September 12	Saturday, 9:00 a.m.	2-Mile Cross-Country Run. Bethel Park, RD: Linda Price

The Show Me State Games will be August 7-9 at Rock Bridge track. Once again the Jefferson City Road Runners and CTC will be in charge of the Torch Relay from the capitol steps to the stadium. Therefore, anyone who wants to participate in the relay should say so to Joe Duncan. We need at least 16 people.

WELCOME TO THE FOLLOWING AS MEMBERS OF THE COLUMBIA TRACK CLUB

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Columbia, MO 65201

BOONESLICK Bicycle club

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A club
for all seasons,
ages and interests

ARE YOU INTERESTED IN GETTING THE CLUB GOING.

IF YOU ARE PLEASE FILL OUT THE QUESTIONNAIRE

NAME _____

ADDRESS _____

PHONE home _____ work _____

AGE _____ SEX _____

CHECK ALL CATEGORIES OF INTEREST;

☐ Touring

☐ Racing

☐ BMX

☐ Offroad (Mountain bike)

☐ Education (riding, safety, etc.)

☐ Education (maintenance, bike repair)

☐ Day rides

☐ Weekend rides

☐ Interested in attending an organizational meeting

☐ Other _____

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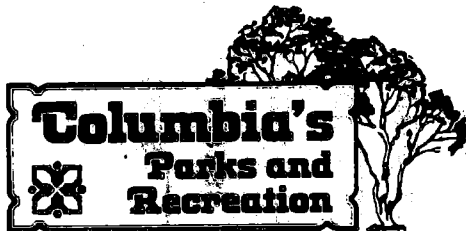
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ALL DONATIONS TO CTC ARE TAX-DEDUCTIBLE

The CTC Newsletter is an open forum to anyone. We solicit articles, race results, comments, suggestions, etc. Any submitted item must be typewritten, unless fairly short. Deadline is the third Saturday of each month. Be sure to pass on to Joe Duncan your out-of-town race results so we can all know what CTC people have been up to.

PLEASE offer to help with the administration of any race in which you will not be a participant. Remember--these events don't just happen.

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