

Ohio Race Walker  
3184 Summit Street  
Columbus, Ohio 43202



# OHIO RACEWALKER

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## CALIFORNIA WALKERS CAPTURE NATIONAL TITLES

New York, Feb. 22--It was a clean sweep for southern California walkers at the National AAU Indoor Championships as Sue Brodock captured the women's mile and Larry Walker came home first in the men's 2 Mile. Both set American Indoor records in the process. The least newsworthy aspect of the affair is that the men's walk was surrounded with some controversy which seems to be the usual state of affairs for this event.

In the women's race, Miss Brodock, who recently established a world's best for 1 Mile outdoors, was content to follow National 10 Km titlist Ellen Minkow for better than half the distance before moving out for the win. Ellen set a very good pace, passing the half mile in 3:33 but was unable to sustain such a pace and was passed after 7 of the 11 laps. Sue went on to finish in 7:28.6 breaking the Championship and American record set last year by Lynn Olson at 7:37. (Lynn, now Mrs. Steve Hayden, was on the sidelines but did not yet feel ready to compete.) Ellen hung on to equal the old record.

No one else was close but Ohio's Carol Mohanco clearly beat the rest and just missed dipping under 8 minutes. Judges for the race were Charlie Silcock, Mrs. Henry Laskau, and Steve Hayden with the only caution going to Miss Minkow.

The men's race, unfortunately, was not so clean, but in a highly competitive and fast paced race, Larry Walker showed flawless form to record 13:24.0, breaking the old American indoor record of 13:41.8 set way back in 1926 by Willy Flant. Larry's time also bettered the old Championship record set by Canadian George Goulding at 13:37 back in 1916. This was the first time the Indoor championship had been contested at 2 miles since 1919.

The early leader in the race was Rob Henderson but after a quarter mile or so he was replaced by Todd Scully. Walker eventually took over and led going into the last lap with Dave Romansky, Todd Scully, and Ron Daniel close at hand. Romansky moved ahead by about 15 yards and crossed the line in 13:20.4 but had been called out much earlier in the race, a fact that had apparently never been adequately communicated to him. In any case, as Walker edged out Scully at the line, he was the real winner. Daniel was just another couple of strides back, but was also bounced, moving comebacking Don DeNoon into third. John Knifton also finished ahead of Don, but like Romansky, was out early. John apparently realized this, but also was aware that Romansky was out and would not leave the track as long as Dave was still walking. The unfortunate part is that the other contestants in this highly competitive race did not realize that these two were actually out of the race. However, since Walker and Scully were well clear of the other legal walkers

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FIRST CLASS MAIL





Bill Ranney turns the walking over to Todd Scully, and his Hush Puppies, for the final leg of last fall's Airollo-Chiasso relay in Switzerland. Bob Henderson gives encouragement from the sidelines.

RESULTS (Starting with the Indoor miling madness)

Capt. Ron Zinn Memorial 1500 Meter, U.S. Olympic Invitational, New York, Feb. 8--1. Dave Romansky 6:05.4 2. Ron Daniel 6:10.1 3. Dan O'Connor 6:11.0 4. John Fredericks 6:29.5 5. Jim Murchie 6:41.9 6. Bob Falcicola 6:59.3 7. Randy Minn 7:05.0 (Romansky's time is equivalent to about 6:32 for 1 Mile Los Angeles Times Meet, Feb. 8--1. Larry Walker 6:28.7 2. Don DeNoon 6:34.0 3. Ed Bouldin 6:43.8 4. Mike Ryan 6:46.8 (Incidentally, in the Olympic Invitational above, blizzard conditions kept such stalwarts as Dr. John Knifton, Ron Kulik, and C. Todd Scully at home by the fireplace) San Diego Indoor Meet, Feb. 17--1. Don DeNoon 6:41.8 2. Ed Bouldin 6:47.0 3. Mike Ryan 6:54.9 10 Km, New London, Conn., Feb. 9--1. John Knifton 44:36.2 (7:02, 14:08, 21:21.5, 28:35.4, 35:54.3, 43:03.9--American Indoor Records at 4, 5, and 6 miles, and 10 Km) 5 Mile, Lowell, Mass., Jan. 12 (windy, cold, and slippery)--1. Keith Ryan 50:34 2. Tony Fedeiros 51:13 3. Dave Mancy 52:18 4. Sig Podlozny 61:07 5. Fred Brown Sr. 61:24 7 Mile, Lowell, Jan. 13 (very cold)--1. Keith Ryan 72:07 2. Tony Fedeiros 72:11 3. Fred Brown Sr. 83:50 4. Sig Podlozny 83:40 (handicap) NEAU 1 Mile, Boston, Jan. 20--1. Tom Knatt 7:12.7 2. Paul Schell 7:26 3. Francis Maher 7:42 4. John Hoogasian 8:45 5. John Spinney 8:50 NEAU 2 Mile, Franklin, Mass., Jan. 26--1. Tom Knatt 14:36 2. Steve Reiman 17:12 3. Charles Scott 17:14 4. Peter Kochinski 17:24 5. Sig Podlozny 20:19 10 Km, Long Branch, N.J., Dec. 16--1. John Knifton 45:02 5 Mile, Cambridge, Mass., Jan. 26--1. Francis Maher 42:36 2. Steve Reiman 53:03 3. Jan Brown 53:31 4. Sig Podlozny 53:35 5. Fred Brown Sr. 54:31 Allegheny Mountain AAU Jr. 2 Mile, Pittsburgh, Jan. 26--1. John Rhodes, Mt. Lebanon 18:19 (age 17) 2. Dan Slusser, un. 18:20 3. Don Ganassi Pitt. Walkers 18:28 AAU Jr. Women's 1 Mile, Pittsburgh, Jan. 26--1. Beth Harwick, Mt. Lebanon 9:00.9 2. Lynn Jones, Mt. Leb. 10:02 3. Pam Marks, Mt. Leb. 10:20 1 Mile, Pittsburgh, Feb. 9--1. Geoff Rhodes, Mt. Lebanon (age 15) 8:05 2. Don Ganassi 8:40.5 3. John Zuemie, Burg-ettstown 10:08.6 Women's 1 Mile, Pittsburgh, Feb. 9--1. Beth Harwick 8:58.8 (age 16) 2. Amy Novak, Latrobe, Pa. 9:10 3. Athena Monice, Mt. Leb. 9:47.1 4. Pam Marks 9:56 5. Jo-Ann Churpak, Burg. 10:01.5 6. Lynn Jones 10:15 AAU 2 Mile, Pittsburgh, Feb. 16--1. Geoff Rhodes 16:42 2. Gary Bywaters 17:14.5 3. Don Ganassi 17:19.7 4. Don Slusser 17:38 5. A. J. Hannsen 6. John Zuemie 19:40 Women's 1 Mile, Pittsburgh, Feb. 16--1. Beth Harwick 8:46.5 2. Amy Novak 8:59.7 3. Jo-Ann Churpak 9:35 4. Pam Marks 9:47 5. Rita Hile 10:31 10 Mile, Dayton, Ohio, Feb. 3 (Actually 5 laps of a course which is 83 yards short of 2 miles)--1. Jack Portland 1:24:37 2. Jack Elackburn 1:29:54 3. Good Ol' Stu 1:31:10 4. Clair Duckham, around 1:48--Jim Teague did 9 miles in about 1:34. I haven't been making many races lately so this is only the second time I have seen Good Ol' Stu. Jack and Jim have been competing against every other week for about 4 months but professed to still not knowing his last name. Not knowing if they were putting me on or not I made it a point to ask Good Ol' about this matter before the race and learned his last name. However, during the course of walking the unaccustomed distance of 10 miles, I quickly forgot. He remain forever as G.O.S. Anyway, he looked very good in this one, leading Elackburn for the first half and never really folding. Great style from the standpoint of legality but probably still a bit exaggerated for top efficiency. Teague is even a better stylist, with very efficient action, but must have been a bit scared of his first 10 miler as he lagged way back at



the start although he has been going out with the others and been beating Gool Ol' on most occasions. 6 Mile, Columbus, Feb. 10--1. Jack Mortland 50:35 2. Jack Blackburn 54:50 3. Doc Blackburn 5 1/2 miles in something under 1 Hour--Cur first race on my 3/4 mile training loop at the Park of Roses. Blackburn was all stiff from basketball heroics on Friday night and had to stroll in after the first mile. Mortland accelerated slightly throughout after a fairly slow start as the three stalwarts withstood a rather heavy snow and slippery conditions over the last 2 laps. 4 Mile, Newton, Iowa--1. Dave Eidahl 32:20 2. Stan Smith 35:45 3. Jim Breitenbacher 36:10 4. Ed Killin Jr. 38:50 5. Kim Reynolds 39:10 6. Ed Killin Sr. 45:20 Women's 2 Mile, Newton, Ia.--1. Debbie Killin 20:15 2. Shirley Adam 20:25 3. Sue Killin 25:40 4. Bernice Froning 28:50

#### WORLD'S 1 MILE RECORD

Women's 1 Mile, Cypress, Cal., Jan. 26--1. Sue Brodock 7:15.2 (best ever by a woman) 2. Teri Teegarden 8:20.3 3. Cindy Johnson 8:35.5 4. Jaydee Falkens 8:44.4 5. Jill Steiner 9:49--Sue really blasted out, faltered the third quarter but recovered sufficiently to better the former best by 9 seconds. Her splits were 1:39.5, 3:23.5, and 5:23.0.

Girl's 12-13 L mile, Cypress, Jan. 26--1. Vicky Flores 9:08.8 2. Leslie Young 9:28 Girl's 10-11 1 Mile--1. Sharlene McGinley 9:01.1 2. April Hickey 9:15.0 3. Andrea Johnson 10:10.0 Rose Bowl 10 Mile Hdcp, Pasadena, Jan. 20 (actual times shown)--1. Eryon Overton, Striders 1:43:30 2. Cindy Johnson, Blue Angels 1:59:35 3. Terri Teegarden, Blue Angels 1:55:39.5 4. Leonard Burkhead, Sutter TC 1:55:58 5. Hal McWilliams, Striders 1:58:15 6. Mark Klein, UC Irvine 1:46:34 7. Larry Pelletier, Blue Angels 1:51:42 8. Ed Bouldin, Striders 1:34:04.5 (fast time) 9. Bob Hickey, Blue Angels 1:42:46 10. Mike Ryan, Striders 1:44:05 11. Irv Spector, Striders 2:00:21 12. April Hickey, Blue Angels 2:11:09 13. Marty Lipstein 2:03:22 14. Travis Veon 2:32:32 15. John Kelly, Striders 1:55:34--Either this was a very, very long 10 miles or something is happening to our California walkers. The report I got describes Bouldins 1:34:04.5 as a fast time. 2 Mile, Northridge, Cal., Feb. 1--1. Larry Walker, Striders 13:37.9 2. Mike Ryan, Striders 15:03 3. Jim Hanley, Striders 17:11 4. Leonard Burkhead 18:11 5. Dave Jordan 21:13

Marathon, Seattle, Nov. 3--1. Bob Rosencrantz 1:59:03 6 Km, Seattle, Nov. 10--1. Paul Kaald 28:22 2. Dean Ingram 29:19 3. Bob Rosencrantz 25:42 (apparently a handicap) Marathon, Seattle, Dec. 1--1. Bob Rosencrantz 4:24 5 Km, Seattle, Dec. 15--1. Evan Shull 24:20 2. Bob Rosencrantz 25:20 PEWAAU 15 Km, Kent, Wash., Dec. 22--1. Bob Rosencrantz 1:19:02 2. Evan Shull 1:18:03 3. Dean Ingram 1:34:04 10 Km, Tigard, Ore., Feb. 17--1. Scott Massinger 55:55 2. Don Jacobs 64:25

W.G. Indoor 10 Km Championship--1. Bernd Kannenberg 43:10 2. Gerhard Weidner 44:28.8 3. Heinz Mayr 45:55.2 4. Muller 45:55.6 5. Richter 45:57.6 6. Michalski 46:28.6 7. Kolvenbach 46:59 8. Frey 47:10.4 9. Koch 47:13.8 10. Bob Henderson, USA 47:31.8 11. Norden 49:27.6 12. Koschollenk 49:44.2--Race held on Feb. 10. In heats the day before Kannenberg had 47:20.4, Weidner 47:09.8 to win the two heats and Bob Henderson did 47:27.8 for fifth in Kannenberg's heat. Laird made the scene but was not allowed to start as one year's residency is required. 24 did start with one disqualification in the heats.

HELP--In supplying back issues of the ORW to fill a recent request I suddenly found I am completing missing the issues of May and June 1969. I should have a complete file of my own paper and thought I did. I know I did once. Anyway, anyone who does have these issues, would be most kind to let me have them to copy. Drop me a note first. In case there are several of you I can then choose one and not get stuck with too much return postage.

one can assume that it had little effect on the outcome.

It did, however, affect reporting of the race. The official timers were timing only the first six, and three of these turned out to be DQ's. Thus there were official times only on the first three. Other times are estimates from watches in the stands or are non-existent. In addition there was one foul-up on lap counting. Estaban Valle was originally placed fourth but apparently had a lap to go and when he himself stated that he had never passed Ron Kulik and Dan O'Connor, these two were moved ahead of him. Bob Henderson, also felt that he finished ahead of Valle but this was never verified.

The judges were quite busy. One additional disqualification was Roy Yarbrough and cautions were given to DeNoon, Kulik, Scully, John Fredericks, and Tom Knatt. Judges were Charlie Silcock, Bruce MacDonald, and Henry Laskau.

The first two finishers qualified for the dual meet in the Soviet Union on March 2 but Larry Walker had to decline the trip because of his teaching commitments. This moves Don DeNoon on to the team where he can continue to coach his Blue Angels half-mile phenom, Mary Decker, who is on the women's team. Results of the two races are:

Women's 1 Mile: 1. Sue Brodock, Rialto Road Runners 7:28.6 2. Ellen Minkow, Syracuse U. 7:37.0 3. Carol Mohanco, Kettering Striders 8:01.3 4. Mary Beth Hayford, Gateway T.C. and Colgate U. 8:08.9 5. Cristy Dotseth, Mayor Daley Y.F. 8:09.1 6. Cindy Arbelbide, Rialto 8:31.5 7. Teresa Teegarden, Blue Angels 8:36.0 8. Cynthia Johnson, Blue Angels 8:40.0 9. Lori Thomas, Colorado Pacers 8:44.6 10. Marybeth Harwick, Mt. Lebanon TC 8:45 11. Elizabeth Kiskin, Gateway TC 8:55 12. Stella Palanarchuk, Shore AC 8:58.0 13. Deborah Maybor, un. 9:00

Men's 2 Mile: 1. Larry Walker, Beverly Hills Striders 13:24.0 2. Todd Scully, Shore AC 13:24.4 3. Don DeNoon, Blue Angels TC 13:50.6 4. Ron Kulik, MYAC 14:16 5. Dan O'Connor, Long Island AC 14:22 6. Estaban Valle, West Valley TC, n.t. 7. Bob Henderson, UCTC, n.t. 8. Hank Klein, U. of Cal. Irvine 15:08 9. Tom Knatt, North Medford Club 15:12 10. John Fredericks, Shore AC 15:20

Other Results: British Commonwealth Games 20 Mile, Christchurch, N.Z., Jan. 29--1. John Warhurst, Eng. 2:35:23 2. Roy Thorpe, Eng. 2:39:02.2 3. Peter Fullager, Aust. 2:42:08.2 4. Hodgkinson, Aust. 2:44:55.4 5. Stevenson, N.Z. 2:46:56.2 6. Young, Isle of Man 2:48:55.2 7 1/2 Mile, Cambridge, Mass., Feb. 16--(handicap, actual times shown)--1. Francis Maher 65:22 2. Dennis Slattery 70:12 3. John Spinney 79:33 4. Jan Brown 80:43 5. Fred Brown Sr. 85:53 6. Steve Rebnan 79:07 7. Tony Medeiros 73:46 8. Dave Merency 77:29 9. Sig Podlozny 93:30 10 Km, Concord, Mass., Feb. 18--1. Tom Knatt 53:08 2. Dennis Slattery 53:46 3. Kevin Ryan 54:57 4. Keith Ryan 55:38 5. Dave Merency 56:02 6. Tony Medeiros 56:28 7. Mike Regan 63:17 8. Steve Rebnan 65:12 9. Sig Podlozny 68:14 10. Fred Brown Sr. 68:54 6.6 Mile (am), Lowell, Mass., Feb. 20--1. Steve Rebnan 63:25 2. Dennis Slattery 59:33 (hdcp) 3. Dave Merency 61:04 4. Fred Brown Sr. 75:28 5. Tony Medeiros 61:54 6. Keith Ryan 70:10



## RACING SCHEDULE

- Sat. March 2---3 Mile, Newton, Ia., 2 p.m. (A)  
 Sun. March 3---SPAAU 25 Km, Echo Park, Los Angeles (B)  
 Sat. March 9---2 or 3 Mile, Los Angeles (B)  
     PNW AAU 20 Km, Snohomish, Wash. (C)  
     3 Mile, Hickman Track, Columbia, Mo. 9 a.m. (D)  
     10 Mile, Keokuk, Ia., 10 a.m. (A)  
     Canadian Nat. Indoor 3 Km, Quebec City (E)  
 Sun. March 10---NAAU JUNIOR 15 KM, RENO, NEVADA (F)  
     20 Km, Long Branch, N.J., 1 p.m. (F)  
 Sat. March 16---NAAU Indoor 2 Mile, Boulder, Colo. (H)  
     Conn. AAU & Open 5 Km, New Haven, 12 noon (I)  
     3 Km, Toronto, Can. (F)  
 Sun. March 17---NAAU SENIOR 35 KM, LOS ANGELES, 9 a.m. (B)  
 Sat. March 23---NAAU "B" 25 KM, SEATTLE, WASH., 9 a.m. (C)  
     2 Man, 6 Mile Walk-Run Relay, Columbia, Mo. 2 p.m. (D)  
     5 Km, U. of Cal., Irvine (B)  
 Sun. March 24---10 Km, Cedar Rapids, Ia., 10 a.m. (A)  
 Sat. March 30---10 Km, Azusa-Pacific Col, Cal., 1 p.m. (B)  
     7 Mile, Hickman Track, Columbia, Mo., 9 a.m. (D)  
     NAAU SENIOR 100 KM, DES MOINES, IA., 5 a.m. (J)  
 Sun. March 31---Zinn Memorial 10 Mile, Asbury Park, N.J. (G)  
 Sat. April 6---NAAU 1 Hour, Boulder, Colo. (H)  
     10 Mile, Toronto, Can. (E)  
     Southeast Masters, Raleigh, N.C., 5 and 20 Km (K)  
     NVAU & Open 1 Hour, Hickman Track, Columbia, Mo., 9 a.m. (D)  
 Sun. April 7---Iowa AAU 20 Km, Girl's 5 Km, Veterans 10 Km, Des Moines (A)  
 Sat. April 13---3.6 Mile, Toronto, Can. (E)  
 Sun. April 14---NAAU SENIOR 1 HOUR, BOULDER, COLO. (H)  
     20 Miles, Hamilton, Ontario, 9 a.m. (E)  
 Sat. April 20---L.A. Municipal Games Age Group and Open Walks (B)  
 Sun. April 21---NAAU 75 KM, MUMFORTH COLLEGE, WEST LONG BRANCH, N.J. (G)  
 Sat. April 27---6 Mile and Women's 3 Mile, Ottawa, Ont. (E)  
     Open 10 Km, Invitational 5 Km, Mt. SAC Relays, Walnut, Cal. (B)  
     Walk-Run Pentathlon (2 Mile Walk, 880 Run, 1 Mile Walk, 2 Mile Run, 220 Dash), Columbia, Mo. (D)  
     NAAU "E" 15 KM, SPOKANE, WASH. (L)  
 Sun. April 28---NAAU SENIOR 25 KM, DES MOINES, IA. (J)  
 Sat. May 4---5 Miles, Brantford, Ont. (E)  
     Missouri Cup 20 Km, Hickman Track, Columbia, Mo., 2pm (D)  
     5 Mile Men, 3 Mile Women, Broomfield, Colo. (H)  
 Sun. May 12---Ontario 50 Km Championship, Etobicoke (E)  
     NAAU JUNIOR 5 KM, DELTA PARK, PORTLAND, ORE. (M)

## Contacts for the above races:

- A---Dave Eidahl, Box 72, Richland, Ia. 52585  
 B---Bob Bowman, 1961 Windsor, Pomona, Ca. 91767  
 C---Dean Ingfan, 507 Cobb Building, Seattle, Wa. 98101  
 D---Joe Duncan, 4004 Defoe, Columbia, Mo. 65201  
 E---Doug Walker, 29 Alhambra Ave., Toronto 3, Ontario, Canada  
 F---Jim Bentley, P.O. Box 6466, Reno, Nev. 89503  
 G---Elliott Derman, 28 N. Locust, West Long Branch N.J.  
 H---Floyd Godwin, 935 Ash St., Broomfield, Co 80020  
 I---Mike Segal, 117 Frederick St., Apt. 2-C, New Haven, Conn 06515

J---Butch Hammer, R.R. 1, Carlisle, Ia.

K---I don't have details on this one yet, Contact the editor if you are interested.

L---Al Shurman, 523 W. 18th St., Spokane, Wa. 99203

M---Don Jacobs, Box 23146, Tigard, Ore. 97223

Apologies for omitting Jim Bentley's address last time around, which didn't help him or you. Informal races will continue every other week or so in the Dayton-Columbus area. Contact your editor if interested. We plan from race to race.

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## LOOKING BACK:

5 Years Ago (From the Feb. 1969 ORW)--Dave Romansky recorded a 1:33:58 to win the ORW National Postal 20 Km with Bill Ranney the only other competitor to break 1:40 with his 1:39:45--Mile specialist Dan Totheroh walked 6:36.6 in Los Angeles with Ron Laird, Larry Young, and Larry Walker under a blanket just a second behind....Totheroh also won the Rose Bowl 10 Mile Hdcp in 1:24:02.3 as Tom Dooley edged teammate Goetz Klopfer by less than a second for fast time honors with 1:15:52.8.... In San Francisco, Dooley walked a quick 2:31:02 for 30 Km....Larry Young was given the Ron Zinn Memorial Trophy as the outstanding race walker in the U.S. in 1968

## FROM HEEL TO TOE

Jim Bentley Jr. was named Prep Athlete of the Year in northern Nevada by the Sierra Nevada Sportswriters and Broadcasters and was honored at a large banquet in February....Photo credits for the month go to John Knifton who provided the Ranney-Scully shot and Jack Blackburn, a publicity hound, who gave me the other one....An addition to the all-time U.S. 50 Km list. John Knifton did 4:15:12 on the track on April 20, 1972....Bob Whitman is still the official statistician for women's and girl's walks! Please send all results to him at 209 Ave. Santa Barbara, Apt. A, San Clemente, Cal. 92672....Other old timers in the sport, like myself, may want to drop a card or letter to George Casper at the Ambler Rest Home, Butler and Bethlehem Pike, Philadelphia. George has been in poor health for several years and has recently suffered another stroke. His weight is reportedly down to 90 pounds and I am sure he could use any lift. George is one of the real fine people in walking and his presence at races in that area has been sorely missed...

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 The Ohio Race Walker is published each and every month (for some 108 consecutive months now, an unbelievable record) with the intent of keeping those nuts who are interested abreast of what is happening throughout the world in that sport that causes the masses to chuckle, race walking. Your friendly editor is one Jack Mortland, who also manages the business (ho! ho!), publication, and circulation ends of this mammoth undertaking. All comments, contributions, results, and drivel from readers is encouraged and welcomed. The more handouts I can get, the better. As a matter of fact, since I am uninspired and want to be sure and get this printed in time to get it in the mail before the rates go up, the rest of this issue is stolen from other sources (properly identified) and pasted up. The lazy man's way out. Oh yeh. If you are not reading your own copy but would like to be, subscription rate is \$3.00 per year and the address is 3184 Summit St., Columbus, Ohio 43202.



The following paper appeared in *TRACK TECHNIQUE*, No. 3, March 1964.

## Race Walking

by Ruddi Toomsalu - Estonia

The IAAF rules define race walking as progression by steps so taken that unbroken contact with the ground is maintained. The advancing foot of the walker makes contact with the ground before the rear foot leaves the ground. During the period of each step, in which a foot is on the ground, the leg shall be straightened (i.e. not bent at the knee) at least for one moment.

It has been observed that by ordinary walking, wherein the length of a step is about 32 inches (82 cm.) an increase in the number of steps to 190 in a minute (i.e. more than three steps in a second) inevitably results in running. To avoid running, a different walking style has been introduced, whereby the frequency of the steps has increased even to 220 in a minute (i.e. about 4 steps in a second). At the same time the length of the steps has increased to 47-51 inches (120-130 cm.), and results have been reached that seem to be superhuman for an ordinary walker. One must walk briskly to cover one kilometer within 10 minutes, but the Swede, V. Hardmo, the owner of the 3000 meter world's record of 11:51.8, did it in 3:57.2.

Walking is a process of pushing the body out of balance, while it is supported over one leg and of then bringing the swinging (driving) leg forward in time to prevent the body from falling. This process is repeated with every step by an increasing force until the desired walking speed is achieved. One must remember that forward propulsion is due only to the fact that the extensor muscle forces of the leg apply at the ground in an oblique direction and not in a strictly vertical direction only. (Fig. 1)

For analyzing walking movements it is sufficient to remember that one might divide the action of legs into three phases: 1) the swinging phase, 2) the supporting phase and 3) the double phase.

**THE SWINGING PHASE.** In the swinging phase the forward pendulum movement of the leg is facilitated by the great mobility of hip joint and occurs largely under the influence of gravity, so that very little muscular action is necessary. It is also essential that the limb be slightly flexed, by shortening the leg almost one-ninth of its entire length to prevent the toes from touching the ground.

The swinging phase starts at the moment the toes get off the ground, and at the end of this phase the heel touches the ground. The duration of this phase is 0.415 sec. (assuming that the duration of the double step, i.e. the entire period in which the limb covers the swinging and the supporting phases is one second).

During the swinging phase the muscles of the leg are held relaxed, to get ready for the exertion which is waiting in the following phase, when they are being used first as restraining, then as propelling forces.

The swinging phase might be divided into (a) posterior period, in which the limb is moving from the ground to the vertical line of the center of gravity of the body, and (b) anterior period, in which the limb swings from the vertical line to the point of landing.

**THE SUPPORTING OR PROPULSORY PHASE.** The moment when the heel touches the ground, marks the beginning of the supporting or propulsive phase, which ends at the take-off moment, when the great toe leaves the ground.

As long as the supporting leg assumes a position ahead of the vertical line of the center of gravity of the body, the limb acts as a restraining force (not as a propulsive force), and this interval might be called the anterior or braking period.

After that moment, when the head of the femur assumes a position in front of the heel, the posterior or propulsive period starts, as the propulsive and forward pushing action of the supporting leg comes into effect.

The time of the supporting phase (0.575 sec.) is always longer than the swinging phase (0.415 sec.), being increased by slower walking, and decreased by faster walking. As the walking speed increases, the closer these times come to each other. However the supporting phase never becomes shorter than the swinging phase. Here lies the fundamental difference between the walking and running: In running the swinging phase is always longer than the supporting phase!

**THE DOUBLE SUPPORTING PHASE.** Between the two above named phases exists a transition phase or double supporting phase. This is a space of time of 0.081 sec., when both legs are in contact with the ground. This phase almost disappears when walking is performed with the utmost velocity, namely when the walking borders on the mechanics of running.

**RACE WALKING.** As soon as we increase our walking speed to the maximum limit, we are confronted with the shortcomings of ordinary walking. We might observe that the basic difference between the slow and the fast walk lies in the height which the two heads of the femur are carried above the ground. The higher they are, the shorter must be a single step, since the leg can re-

move itself only slightly from the vertical position. When they are in a lower position (fig. 2, P. 2), then the pendulum from forward to backward has a larger amplitude. This coincides with the length of the step. But we know this is associated with bending the knee joints to a greater degree, and that such a low position of hip joints produces a great and tedious burden on the thigh muscles. And now, to reduce that tiresome muscular effort, and at the same time to keep the hip joint in a low position, the head of the femur of the swinging leg is brought downward and forward by a circular movement, with respect to the head of the femur of the supporting leg, (fig. 2 p. 3). The pelvic bones in the hip girdle can do this, with a very slight movement of the spine. Such a downward-forward rotating movement of his hip joint guarantees an extensive movement for the swinging leg. When executing the hip movement correctly, the walker will feel that he is "walking with the hips", and using his legs as extensions.

At the same time the up and down oscillation of the head and trunk disappears, as the supporting leg remains locked from the knee and the head and trunk are always kept at the same height, thus maintaining a constant center of gravity, and the extra burden of the thigh muscles becomes minimized.

Such a walking style is uncomfortable and unfamiliar when training is started, as the hip muscles get tired very soon. But such fatigue disappears after a few training sessions as the unfamiliar movement becomes familiar.

The feet should land with an almost straight inner side as this gives the advantage of correct balance through the toes.

The heel is the first part of the foot that makes contact with the ground. The take-off occurs over the great toe, whereby the toes are pointed outward for a few degrees.

The length of the steps is highly personal, depending mainly upon the height of the body and legs, the looseness of the hip girdle, and the take-off force. For example, the famous Latvian walkers, P. Zeltins and A. Kruklins had the same length of the steps, in spite of a great difference in their heights 5'6" (168 cm.) and 5'11" (180 cm.) respectively. But Zeltins possessed very loose moving hips, which gave him added stride-length.

The arms with clenched fists swing powerfully up and right across the chest to the front of the opposite shoulder. The arms are held bent at the elbows at approximately 90 degrees, and as each fist reaches his highest point, the other drops back in rear of the hip.

For learning and perfecting his walking style, one should stress certain items, one by one. For example:

1. To develop the relaxed movements of legs and shoulders, the walker should walk slowly about 30-40 minutes.

2. In stressing take-offs, it is recommendable that the hands be kept down by the sides.

3. Keep the hands to side position when seeking to perfect rotary movements of the hip girdle and landings, heel first.

4. To improve shoulder action, place a 3-foot length of wooden pole, one inch diameter, on the back, held in place with front of elbows, and walk with prolonged steps while stressing the swinging of shoulders. Keep the head and body upright at the end of each stride.

**THE TYPICAL FAULTS OF WALKING TECHNIQUE.** 1. Hands are carried in a too high position. Such a position is usually connected with high lifted shoulders, and when walking fast the shoulders tend to perform "jogging" (bounding) movements, making the competitors eligible for a "caution of running", as the knees begin to lift high and contact with the ground is broken. In such a case, encourage a more directly forward drive with the arms.

2. General or partial muscular tension. One should perform stretching and loosening exercises, and long walks with relaxed muscles daily.

3. Exaggerated lateral movement of hips (correct is forward and downward). This is usually connected with a sideward inclination of the trunk. An exaggerated side to side hip swinging will destroy balance, cut down the effective stride, and impose greater stress on the abdominal muscles.

4. Passive, hanging arms by sides. Arms should swing back and forth in the same rhythm as legs. Passive arms tend to produce lateral sway of the upper body and hamper forward-downward swinging movement of hips.

5. The trunk, due to fatigue or of some other reason, inclines forward some 10-15 degrees. As a result, the hip girdle sinks backward, strides become shorter, and by trying to keep a high walking velocity one might easily start running. In every workout one should control his body stance, by trying to keep his hip girdle in an erect position.

6. Excessive lengthening of steps (a) When in the forward pendulum movement the leg is overextended, or (b) when in the supporting phase the supporting leg is forced to remain on the ground too long. This over-extending or over-stretching action is beyond the walker's capacity, and he exaggerates the turn of his toes outward at the moment of take-off. Thus, the take off becomes weaker, and very often, by trying to keep his walking velocity, springy steps are introduced which lead to running.

7. The swinging leg is brought forward through with a movement which is too high. As a result, the supporting leg very often leaves the ground, before the swinging leg touches the ground. This fault is mostly due to an excessively high hip action in a forward direction. The knee lift, at vigorous drive of the supporting leg, would produce a lifting tendency in the trunk and consequent loss of contact with the ground. This condition demands a retarded supporting leg break, if continuous contact is to be maintained.



8. Walking with bended knees. This is caused by (a) a feeble and defective take-off movement. The supporting leg must not break at the knee prior to the front foot landing, as there is danger of general loss of contact, especially if any spring is also imparted through the calf at the same time, (b) the swinging leg is grounded before a full extension is reached from the knee, (c) the hip girdle is continuously held in a backward position, (d) just a moment before the landing of the swinging leg, the hip of the supporting leg is falling back from its erect position, and as a result the steps become short and the landing is performed on the sole, but not heel first, or (e) the total contractile force of the anterior part of the leg muscles (the extensors) is too feeble for the extension of the knee joint, or the posterior muscles of the leg (the flexors) are too short and rigid and do not permit full extension which enables the knee joint to reach its natural extended position. The hurdler's exercise, by using both hands for pressure on the forward knee, will help to stretch thigh ligaments and muscles, and concentration on the supporting knee lock when walking will show an improvement.

9. The swinging leg is extended too early in the air before the landing. A delayed landing follows in a jerky manner which may injure the heel. While the landing is delayed, the supporting leg leaves the ground before the swinging leg touches the ground, and running movements are introduced. The swinging leg should be extended exactly at the time of landing, but not sooner or later.

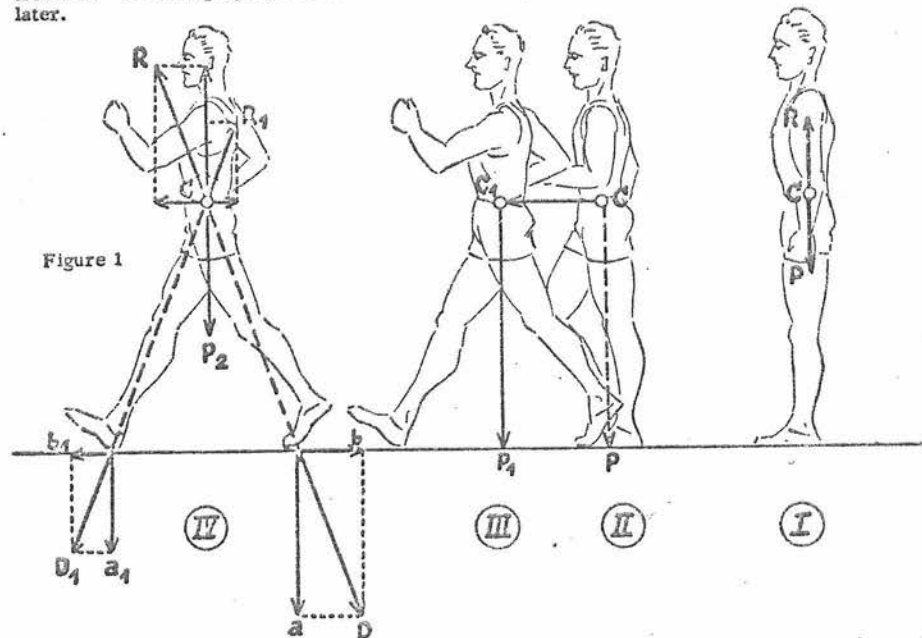


FIGURE 1. In the standing position, the erect body is in a state of equilibrium, as its center of gravity (C) is directly above its base of support (I). Usually the line of gravity falls about  $1\frac{1}{2}$ " (4cm) in front of the center of the ankle joint. There is equilibrium between superincumbent weight (P) and the counter pressure from the ground (R), it means that P equals R.

The step forward from a standing position is initiated by an alternation in postural tonus. The tonus of the extensor muscles of the foot and flexors of the leg is diminished, allowing the body to topple forward slowly. At the moment when the center of gravity has passed forward beyond the supporting base of the supporting leg, the balance of the body is lost, and the knee of the swinging leg is flexed and lifted forward (II and III). When the swinging leg touches the ground it displays a restraining action, and in the double supporting phase the superincumbent weight (P) is now locating in the middle of the legs (P<sub>1</sub>).

In this position the pressure against the ground is divided between the vertical directions of "a" and "a<sub>1</sub>", and of oblique (horizontal) directions of "b" and "b<sub>1</sub>" (IV). The faster the speed of walking, the greater is the pressure against the ground, and the friction makes the underlying surface a firm point of application. (Without friction there would be no possibility of forward locomotion.)

The resultant force of "D", composed of the forces "a" and "b" is equal to the propelling force of body (R). At the same time the resultant force "D<sub>1</sub>", composed of the forces "a<sub>1</sub>" and "b<sub>1</sub>", is equal to the restraining force of the body (R<sub>1</sub>). As the propelling force "D" is greater than "D<sub>1</sub>", then the speed of the walking is dependent upon the strength of the take-offs, and from the angle of the take-off being greater when the application time (duration) of the restraining force "R<sub>1</sub>" is as short as possible.

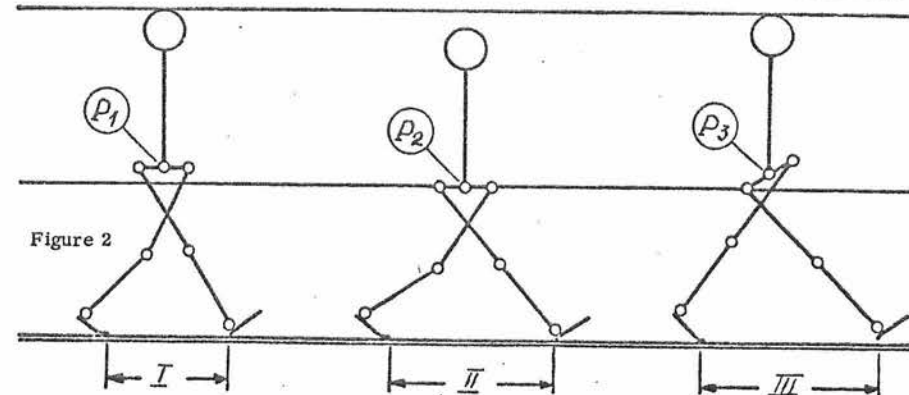


FIGURE 2. 1. Ordinary walking. The hip-girdle "P<sub>1</sub>" is in a high position and the step is short. II. The hip-girdle "P<sub>2</sub>" and the head are carried in a lower position; the step becomes longer, but the burden (stress) to the thigh muscles is very great. III. In the race walking the hip-girdle "P<sub>3</sub>" and the head are carried as high as in ordinary walking, but the step is longer, due to the alternate lowering of the heads of the femurs of the swinging legs, - as low as by walking with lowered hip-girdle "P<sub>2</sub>". The great burden of the thigh muscles is in this way eliminated.

Race walking records by country as they appeared in the Dec. 1973 Dansk Gangforbund, a Danish paper.

#### SYDAMERIKA:

##### 10000 m bane/track:

Argentina:	47.52,8	Guillermo Weller	1954 Buenos Aires
Chila:	52.02,4	Campana	1925 Santiago

##### 20 km (uden betegnelse landevej/road, ellers t = track):

Brasilien:	t 1:41.11,8	R. Nuske	29.7. 1972 Sao Paulo
Argentina:	t 1:43.42,4	Guillermo Weller	1954 Buenos Aires

##### 50 km:

Argentina:	4:26.08,0	Guillermo Weller	26.6. 1960 Buenos Aires
Brasilien:	4:38.13,6	Fernando Ellis	14.9. 1972 Sao Paulo
Chile:	t 4:39.13,8	Wolfgang Klaiber	8.4. 1973 Hamburg

#### AFRIKA:

##### 10000 m bane/track:

Syd Afrika:	44.00,6	Kalie Reyneke	6.3. 1948 Cape Town
Algeriet:	47.48,2	Mohamed Mescari	25.6. 1972 Alger
Tunis:	48.44,2	Chedly ben Ali	22.4. 1972 Tunis
Ethiopien:	53.59,0	Hunde Toure	16.2. 1971 Addis Abeba

##### 20 km:

Syd Afrika:	1:31.05,8	Lucas Snyman	3.4. 1972 Cape Town
Tunis:	t 1:33.11,0	Naceur ben Ahmed	21.6. 1964 Binche
Ethiopien:	1:37.02,0	Hunde Toure	1971 Addis Abeba
Marokko:	1:41.32,2	Kikou	1971 Casablanca
Egypten:	t 1:41.41,2	Mahmoud el Sayed	25.7. 1971 Casablanca
Algeriet:	1:44.53,0	Mohamed Mescari	1969 Cairo
Kenya:	1:46.10,6	Tony Ngoitila	25.7. 1971 Casablanca
Libyen:	1:47.50,0	Mabrouk el Ageli	7.10. 1972 Nairobi
Rhodesien:	1:51.10,0	Jeff Steinberg	13.9. 1967 Tunis
			27.3. 1966 Salisbury

## 50 km:

Syd Afrika:	4:14.30,0	Eddie Michael (Batu)	11.3. 1967 Cape Town
Syd Afrika:	4:27.55,0	George Hazle	3.4. 1961 Paarl
Tunis:	4:30.38,0	Naoui Zlassi	20.6. 1960 Tunis
Libyen:	5:15.53,0	Ahmed Yerou	15.9. 1967 Tunis
Kenya:	5:19.41,0	Tony Ngaitila	30.7. 1972 Nairobi
Egypten:	5:27.46,2	Mahmoud el Sayed	11.9. 1965 Cairo

## CENTRAL AMERIKA:

## 10000 m bane/track:

Mexico:	44.01,0	Pablo Colin	29.11.1969 Mexico City
Kuba:	45.20,6	Lucas Lara	8.5. 1971 Havanna
Nicaragua:	51.14,0	Carlos Vanegas	16.7. 1971 Kingston
Jamaica:	51.58,6	Byron Williams	16.7. 1971 Kingston
Trinidad & T:	52.53,0	Asche	1951 Kingston

## 20 km:

Mexico:	1:31.06,6	Jose Oliveros	24.6. 1972 Mexico City
Kolumbien:	1:31.14,0	Ernesto Alfara	9.9. 1973 Monteria
Kuba:	1:33.34,0	Lucas Lara	23.5. 1971 Havanna
Jamaica:	1:40.11,0	Byron Williams	15.4. 1972 Brighton
Nicaragua:	1:44.58,4	Carlos Vanegas	7. 1970 Managua
Trinidad & T:	1:50.00,0	McLean Cardinal	1971 Port of Spain
El Salvador:	1:52.20,0	Oscar Diaz	24.6. 1972 Mexico City
Porto Rico:	1:53.27,0	Luis Torres	18.9. 1969 Havanna
Honduras:	1:55.00,0	Hipolito Lopez	23.11.1972 Panama
Costa Rico:	2:06.00,0	Raul Lopez	23.11.1972 Panama
Panama:	2:08.07,2	Manuel Calcedo	18.9. 1969 Havanna

## 50 km:

Mexico:	4:12.09,0	Gabriel Hernandez	3.9. 1972 München
Kuba:	4:45.14,8	Raul Quintana	11.11.1971 Havanna
Trinidad & T:	4:47.05,0	Francis Thomas	18.6. 1972 Port of Spain
Kolumbien:	4:57.59,6	Rafael Vega	3.8. 1971 Cali
Honduras:	5:07.40,0	Hipolito Lopez	25.11.1972 Panama
El Salvador:	5:09.48,0	Oscar Diaz	25.11.1972 Panama
Guatemala:	5:16.38,0	Bernardo Sas	25.11.1972 Panama
Nicaragua:	5:24.36,4	Carlos Vanegas	29.11.1970 La Boquita
Costa Rico:	5:48.30,0	Raul Lopez	25.11.1972 Panama

## ASIE:

## 10000 m bane/track:

Syd Korea:	44.53,0	Paik Kwang Kyong	6.10.1970 Seoul
Japan:	45.08,0	Kazuo Saito	17.10.1965 Tokyo
Kina:	46.08,0	Li Fu-teh	15.10.1961 Peking
Pakistan:	46.12,2	Allah Ditta	1952
Indien:	47.07,4	Hanak Singh	27.1. 1955 New Delhi
Israel:	47.44,0	Shaul Ladany	30.8. 1970 Wantagh
Singapore:	49.53,0	Francis Sengol	15.8. 1970 Singapore

## 20 km:

Indien:	1:27.57,6	Bashan Singh	16.12.1967 Haiderabad
Japan:	1:29.50,2	Kazuo Saito	7.5. 1967 Tokyo
Indien:	1:33.33,0	Kishan Singh	25.2. 1960 New Delhi
Israel:	1:34.43,0	Shaul Ladany	28.1. 1970 Taunton
Kina:	1:35.29,4	Yang Chich-sheng	14.9. 1965 Peking
Pakistan:	1:40.10,6	Kajal Khan	16.2. 1971 Rawalpindi
Malaysien:	1:40.30,6	Karruppanan Thirumal	19.7. 68 Singapore
Singapore:	1:42.02,0	B. K.S. Maniam	1969
Burma:	1:44.04,6	T. Rajan	1973 Rangoon
Thailand:	1:47.45,0	Thep Boonvong	28.12.1969 Bangkok
Philippinen:	1:57.32,6	E. Ledesma	1971
Laos:	2:11.32,0	Songham Phixay	15.12.1971 Kuala Lumpur

## 50 km:

Israel:	4:17.06,6	Shaul Ladany	2.7. 1972 Marcinelle
Japan:	4:17.58,6	Kazuo Saito	28.4. 1968 Toyama
Indien:	4:19.46,4	Kishan Singh	15.1. 1970 Cuttack
Israel:	4:29.09,0	Shaul Ladany	2.6. 1968 New York
Burma:	4:36.59,0	T. Rajan	8.4. 1973 Rangoon
Malaysien:	5:02.35,8	Karruppanan Thirumal	3.8.1971 K.Trengganu
Singapore:	5:07.02,6	Arrumugam Kannan	8.12.1969 Rangoon

*This is old stuff, but fills space. Your editor's impressions of the Tokyo Olympics as they appeared in Columbus Appliance Lines, Dec-1964, a Westinghouse employee publication. I worked there at that time.*

Many thousands of words have been written about the outstanding athletes of the 1964 Olympics — of Billy Mills, Peter Snell, Abebe Bikila, Don Schollander — men whose dramatic feats thrilled the capacity crowds in Tokyo. And deservedly so, for the feats of these men, and others, will never be forgotten by those who were there.

## CAREFUL PLANNING

But perhaps the most outstanding performers were not on the athletic fields at all, but behind the scenes planning, organizing and directing this greatest of all Olympiads. Because the greatest single story of these Olympic Games had to be in the Japanese people and the job they did in presenting them.

First, they provided magnificent facilities for all sports, more than adequate from the viewpoint of both spectator and athlete.

For instance, the National Stadium, scene of track and field, had originally been built to seat nearly 90,000 people.

However, for the Olympics, the size of the seats was enlarged to accommodate foreigners, larger on the average than the Japanese. This cut the capacity to 73,000, but certainly did much for the comfort of spectators.

The track itself was as fine as any in the world. Despite heavy rains on two days, it remained firm and fast. The Stadium provided excellent dressing and

warm-up areas, and field event facilities were as good as any.

Among sites for other sports, the National Gymnasium, scene of swimming, not only provided a wonderful pool but is an extremely beautiful piece of architecture, both inside and out.

A second feature of the tremendous job done by the Japanese was the preparation for handling 7,000 athletes and officials. Everything was ready as each team arrived.

Housing in the Olympic Village was excellent. Food was well-prepared, fitted to each country's customs, and meals were available at all hours from seven in the morning until midnight.

Public transportation throughout Japan was free to all Olympians. Within the Village itself, the Japanese had provided 700 bicycles for the use of athletes, and these were in constant use. The Village was complete with a shopping center, laundry, barber-shop, movies and recreational center.



There were many planned tours available, both in and out of Tokyo. In short, anything the athlete might ask for had already been thought of and provided. However, preparation for the influx of foreigners did not stop with the athlete.

For spectators, buses were constantly running between several major hotels and all sports sites. At the Stadium, plastic seat covers were given to all spectators. The programs included not only a complete list of entries and lane assignments for the day, but complete results of the previous day's events.

The conduct and presentation of the events themselves were outstanding, and again indicated the great amount of planning that had gone before. The most minute of details had been thought of. (It was interesting at the track to watch the efficient manner by which officials marched in and out, in line and in step, before and after each event.)

The contrast between opening and closing ceremonies again showed the thought and preparation of the Japanese. The opening parade was dignified and carefully organized, with each nation marching separately. And as such, it was very impressive and quite inspiring.

By the time of the closing ceremony, though, the athletes were well acquainted and were in a much more festive mood, with the competition behind them. A stodgy ceremony at this point would have been most unwelcome.

The Japanese had foreseen this and planned a most informal parade with the nations completely intermingled. This resulted in many spontaneous gestures of friendship, both toward the crowd and other athletes, and another very inspiring ceremony.

Throughout the Games, the Japanese people were sincerely friendly and completely accommodating in their attitude toward

ture of this friendliness was their strong inclination for autographs: which could tie up an athlete for hours if he did not force himself away. Every Japanese seemed to have an autograph book and a camera.

The Japanese are a somewhat subdued people; the noise volume in the Stadium never approached that at an American football game. But the general enthusiasm for the Olympics was far beyond what one could expect in this country.

When people line the streets, several deep, for 15 miles to watch marathon runners training, as they did for two successive Sundays prior to the Games, you know they are genuinely enthusiastic.

Likewise, on a trip to Mt. Fuji, 20 busloads of Olympians were greeted by thousands of cheering, flag-waving children, and nearly as many adults, in each small town they passed through. This was a taste of the Olympics for these people, and they made the most of it.

This, then, was the greatest story of the Olympics for at least one competitor.



A motley crew of Ohio's race walking elite pose after the Thanksgiving Day race in Cincinnati. In the rear are Wayne Yarcho, Jack Blackburn, and Bob Smith. In front of them are Jim Teague and Good Ol' Stu. The guys sitting down are unidentified runners.