Frankfurt, W.G., Sept. 29-30—Despite the absence of Domingo Colin because of injury and a subpar performance by Raul Gonzalez, the Mexican race walking corps successfully withstood the Soviet challenge to defend their Inzano Cup title. And the revolution that they have brought about in race walking continued unabated with results that we find hard to comprehend as we type them. As a result, our walkers found themselves left completely in the lurch despite three personal bests and our best overall performance (timewise) ever in this competition.

In Saturday's 20 Km, Daniel Bautista proved once again that he is head and shoulders over the rest of the world. And the Soviets again demonstrated their tremendous depth. Bautista went through the first 5 km in 19:21 and then forgot he should slow down at that sort of pace. At 10 km, he had 39:05. He proceeded to 15 km in 58:52 and went on to finish in a mind-boggling 1:18:49. The Soviets, however, were not all that far behind, although Bautista had things very much his own way. Boris Yakovlev grabbed second in 1:19:47 and was followed by three countrymen in the next 42 seconds. The Mexicans stayed close in the team battle by capturing eighth to finish the race three points behind the USSR total of 120. With both countries very strong in the 50, it was obvious no one else was in the team picture.

The Mexico-USSR domination continued on Sunday. World record holder Gonzalez went out on his own, with no one daring to match his pace. Covering 10 km in 42:47, 20 in 1:25:03, and 30 in 2:07:29, he had a 5-minute lead on the field. Then he proved he is only human and succumbed to his own brutal pace. However, as he faded, two teammates came to the fore to sweep to a 1-2 finish with Martin Burdudz winning in 3:43:36. When Gonzalez revived himself to hang on to fourth, the Mexicans had a five-point victory in the overall scoring. Not without a valiant fight from the USSR, though, as the Soviets captured places 5, 6, and 7. All of the first six finishers were under 3:50. Certainly a great victory for Mexico as one would never have expected them to withstand the Soviet depth without Colin.

For the U.S., Jim Heiring had his best race ever with a 1:28:51, but this left him 31st. Chris Hansen was on about a 1:27 pace at 15 km, but struggled from there. Still he managed to be very near his best with 1:30:56 in 35th. Neal Pyke went through the first 5 km in 20:05 and was still about 63:00 at 15 km, well on his way to an American best, when he too folded from the effort, lost style, and was DQ'd while in about 20th place. Steve Fedinovsky, suffering from a heel injury, struggled through with a 2:37:22 in 55th to get the team points.

At 50, Vincent O'Sullivan was well under his personal best with a 4:12:15, moving him to third on the U.S. all-time list. He was 34th, one
The Ohio Racewalker is published monthly in Columbus, Ohio. Subscription rate is $6.00 per year ($6.00 for First Class Mail, $8.00 for Overseas Airmail).

**Ohio Racewalker**

<table>
<thead>
<tr>
<th>Vol. XV</th>
<th>No. 7</th>
<th>PAGE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPTEMBER 1979</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Ohio Racewalker is published monthly in Columbus, Ohio. Subscription rate is $6.00 per year ($6.00 for First Class Mail, $8.00 for Overseas Airmail). Editor and Publisher: John E. (Jack) Mortimer. Executive Secretary: John E. (Jack) Mortimer. Subscription rate is $6.00 per year ($6.00 for First Class Mail, $8.00 for Overseas Airmail).

**RESULTS:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racewalker*</td>
<td>Aug. 26-9</td>
<td>Lakewood, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker**</td>
<td>Aug. 26-9</td>
<td>Waterford, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker***</td>
<td>Aug. 26-9</td>
<td>Columbus, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker****</td>
<td>Aug. 26-9</td>
<td>Cleveland, Ohio</td>
<td>Results</td>
</tr>
</tbody>
</table>

**NEW ENGLAND 50 MILE WALK**

San Francisco, Aug. 26-9, reported last month, Colorado's Marco Evonuk continued his mastery of the U.S. scene over 50 km with a win in the National Championship race today. Although he was about 5 minutes slower than in June, Marco's 4:15:07 has still been bettered by only two U.S. walkers—Larry Young and Rob Kitchen. Dan O'Connor was much better in this race than in that June Pan-Am trials and gained 3 minutes on Evonuk over the last 11 miles to finish in 4:19:36. In the course of this final surge he passed both Carl Schueler and Vince O'Sullivan who captured the other two spots on the U.S. 50 Mile Cup team. Ray Serres gained considerably on Schueler during the final 6 miles but ran out of room and was still 11 minutes away from the final team slot at the finish. Angie Hirt and Wayne Hunter were not too far back, but never challenged for the leading spot.

The only challenger to Evonuk in the race was Jim Heiring, who emerges as a new threat at the distance if he decides to train for it. He stayed very close to Evonuk for the first 20 miles, although Marco always led, and trailed Marco by 1:16.17 by only 15 seconds at that point. When Jim called it a day at 25 miles, he was still just 46 seconds behind and about 7 minutes ahead of everyone else.

The race was easily the classiest ever in U.S. history with 11 under 4:40 and 13 under 5 hours. This despite people such as Heiring, Randy Hirt, Dennis Reilly, Tom Dooley, and Bob Rosencrants not finishing.

In the Master's division, Bill Ranney won with a 4:48:53. At 30 miles, Ron Laird led Bill by 21 seconds but apparently collapsed, or nearly so, as he needed nearly 14 minutes to cover that last mile and 120 yards. Sal Corrillo just missed overthrowing Laird for second. None of this detracts from the performance of Bill Ranney, who passed 7 people after 20 miles. He was destined to catch Laird collapse or not.

**RESULTS:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racewalker*</td>
<td>Aug. 26-9</td>
<td>Lakewood, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker**</td>
<td>Aug. 26-9</td>
<td>Waterford, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker***</td>
<td>Aug. 26-9</td>
<td>Columbus, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker****</td>
<td>Aug. 26-9</td>
<td>Cleveland, Ohio</td>
<td>Results</td>
</tr>
</tbody>
</table>

**NEW ENGLAND 50 MILE WALK**

San Francisco, Aug. 26-9, reported last month, Colorado's Marco Evonuk continued his mastery of the U.S. scene over 50 km with a win in the National Championship race today. Although he was about 5 minutes slower than in June, Marco's 4:15:07 has still been bettered by only two U.S. walkers—Larry Young and Rob Kitchen. Dan O'Connor was much better in this race than in that June Pan-Am trials and gained 3 minutes on Evonuk over the last 11 miles to finish in 4:19:36. In the course of this final surge he passed both Carl Schueler and Vince O'Sullivan who captured the other two spots on the U.S. 50 Mile Cup team. Ray Serres gained considerably on Schueler during the final 6 miles but ran out of room and was still 11 minutes away from the final team slot at the finish. Angie Hirt and Wayne Hunter were not too far back, but never challenged for the leading spot.

The only challenger to Evonuk in the race was Jim Heiring, who emerges as a new threat at the distance if he decides to train for it. He stayed very close to Evonuk for the first 20 miles, although Marco always led, and trailed Marco by 1:16.17 by only 15 seconds at that point. When Jim called it a day at 25 miles, he was still just 46 seconds behind and about 7 minutes ahead of everyone else.

The race was easily the classiest ever in U.S. history with 11 under 4:40 and 13 under 5 hours. This despite people such as Heiring, Randy Hirt, Dennis Reilly, Tom Dooley, and Bob Rosencrants not finishing.

In the Master's division, Bill Ranney won with a 4:48:53. At 30 miles, Ron Laird led Bill by 21 seconds but apparently collapsed, or nearly so, as he needed nearly 14 minutes to cover that last mile and 120 yards. Sal Corrillo just missed overthrowing Laird for second. None of this detracts from the performance of Bill Ranney, who passed 7 people after 20 miles. He was destined to catch Laird collapse or not.

**RESULTS:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racewalker*</td>
<td>Aug. 26-9</td>
<td>Lakewood, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker**</td>
<td>Aug. 26-9</td>
<td>Waterford, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker***</td>
<td>Aug. 26-9</td>
<td>Columbus, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker****</td>
<td>Aug. 26-9</td>
<td>Cleveland, Ohio</td>
<td>Results</td>
</tr>
</tbody>
</table>

**NEW ENGLAND 50 MILE WALK**

San Francisco, Aug. 26-9, reported last month, Colorado's Marco Evonuk continued his mastery of the U.S. scene over 50 km with a win in the National Championship race today. Although he was about 5 minutes slower than in June, Marco's 4:15:07 has still been bettered by only two U.S. walkers—Larry Young and Rob Kitchen. Dan O'Connor was much better in this race than in that June Pan-Am trials and gained 3 minutes on Evonuk over the last 11 miles to finish in 4:19:36. In the course of this final surge he passed both Carl Schueler and Vince O'Sullivan who captured the other two spots on the U.S. 50 Mile Cup team. Ray Serres gained considerably on Schueler during the final 6 miles but ran out of room and was still 11 minutes away from the final team slot at the finish. Angie Hirt and Wayne Hunter were not too far back, but never challenged for the leading spot.

The only challenger to Evonuk in the race was Jim Heiring, who emerges as a new threat at the distance if he decides to train for it. He stayed very close to Evonuk for the first 20 miles, although Marco always led, and trailed Marco by 1:16.17 by only 15 seconds at that point. When Jim called it a day at 25 miles, he was still just 46 seconds behind and about 7 minutes ahead of everyone else.

The race was easily the classiest ever in U.S. history with 11 under 4:40 and 13 under 5 hours. This despite people such as Heiring, Randy Hirt, Dennis Reilly, Tom Dooley, and Bob Rosencrants not finishing.

In the Master's division, Bill Ranney won with a 4:48:53. At 30 miles, Ron Laird led Bill by 21 seconds but apparently collapsed, or nearly so, as he needed nearly 14 minutes to cover that last mile and 120 yards. Sal Corrillo just missed overthrowing Laird for second. None of this detracts from the performance of Bill Ranney, who passed 7 people after 20 miles. He was destined to catch Laird collapse or not.

**RESULTS:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racewalker*</td>
<td>Aug. 26-9</td>
<td>Lakewood, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker**</td>
<td>Aug. 26-9</td>
<td>Waterford, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker***</td>
<td>Aug. 26-9</td>
<td>Columbus, Ohio</td>
<td>Results</td>
</tr>
<tr>
<td>Racewalker****</td>
<td>Aug. 26-9</td>
<td>Cleveland, Ohio</td>
<td>Results</td>
</tr>
</tbody>
</table>

**NEW ENGLAND 50 MILE WALK**

San Francisco, Aug. 26-9, reported last month, Colorado's Marco Evonuk continued his mastery of the U.S. scene over 50 km with a win in the National Championship race today. Although he was about 5 minutes slower than in June, Marco's 4:15:07 has still been bettered by only two U.S. walkers—Larry Young and Rob Kitchen. Dan O'Connor was much better in this race than in that June Pan-Am trials and gained 3 minutes on Evonuk over the last 11 miles to finish in 4:19:36. In the course of this final surge he passed both Carl Schueler and Vince O'Sullivan who captured the other two spots on the U.S. 50 Mile Cup team. Ray Serres gained considerably on Schueler during the final 6 miles but ran out of room and was still 11 minutes away from the final team slot at the finish. Angie Hirt and Wayne Hunter were not too far back, but never challenged for the leading spot.

The only challenger to Evonuk in the race was Jim Heiring, who emerges as a new threat at the distance if he decides to train for it. He stayed very close to Evonuk for the first 20 miles, although Marco always led, and trailed Marco by 1:16.17 by only 15 seconds at that point. When Jim called it a day at 25 miles, he was still just 46 seconds behind and about 7 minutes ahead of everyone else.

The race was easily the classiest ever in U.S. history with 11 under 4:40 and 13 under 5 hours. This despite people such as Heiring, Randy Hirt, Dennis Reilly, Tom Dooley, and Bob Rosencrants not finishing.

In the Master's division, Bill Ranney won with a 4:48:53. At 30 miles, Ron Laird led Bill by 21 seconds but apparently collapsed, or nearly so, as he needed nearly 14 minutes to cover that last mile and 120 yards. Sal Corrillo just missed overthrowing Laird for second. None of this detracts from the performance of Bill Ranney, who passed 7 people after 20 miles. He was destined to catch Laird collapse or not.
this race as a memorial to his brother, Frank, an international race walking judge, a National coach in Italy, and a former member of the Italian Olympic committee. The race was held in 1979.

In the July issue we carried a short piece by Frank Longi regarding race walking. It is sometimes necessary to push off the rear foot, pushing against the rear foot, To F.9 seemed to be in opposition to what most of us have race walking style in which he emphasized the importance of pushing action. The Niagara Association is selling race walking patches depicting a rather fierce looking, non-race walking animal and saying something like "I'm a race walker. So what?". I can't seem to locate the one Don Stankel sent me, in my usual organized fashion. But they are clever and "bring a little magic to our sport" as Don says. "For a mere $1.50, you become tough." Contact Dan at 1001 Shera Drive, Grand Island, NY 14072 if you want one. They are hoping to have 1000 copies of the "Race Management Aids and Course Marking Kit Info" packet. Larry also recommends ordering a double-sided sign kit with the race number and date on one side and the starting and finishing lines on the other. These consist of start and finish banners, mile markers, race numbers, race official signs. Requests for these kits must be made at least eight weeks in advance of the race and the kits will be supplied subject to availability. Write to Peter Thompson, Race Director, Special Events, 822 W. Main, Ste. 112, Fevetro, OH 44105. Larry Larson notes that there is also another inexpensive set of race materials and magazines available. For information on this one, write Electric City Printing Company, P.O. Box 630, Anderson, SC 29622 and ask for the "Race Management Aids and Course Marking Kit Info" packet. Larry also recommends ordering a double-sided sign kit with the race number and date on one side and the starting and finishing lines on the other. These consist of start and finish banners, mile markers, race numbers, race official signs. Requests for these kits must be made at least eight weeks in advance of the race and the kits will be supplied subject to availability. Write to Peter Thompson, Race Director, Special Events, 822 W. Main, Ste. 112, Fevetro, OH 44105. Larry Larson notes that there is also another inexpensive set of race materials and magazines available. For information on this one, write Electric City Printing Company, P.O. Box 630, Anderson, SC 29622 and ask for the "Race Management Aids and Course Marking Kit Info" packet. Larry also recommends ordering a double-sided sign kit with the race number and date on one side and the starting and finishing lines on the other. These consist of start and finish banners, mile markers, race numbers, race official signs. Requests for these kits must be made at least eight weeks in advance of the race and the kits will be supplied subject to availability. Write to Peter Thompson, Race Director, Special Events, 822 W. Main, Ste. 112, Fevetro, OH 44105. Larry Larson notes that there is also another inexpensive set of race materials and magazines available. For information on this one, write Electric City Printing Company, P.O. Box 630, Anderson, SC 29622 and ask for the "Race Management Aids and Course Marking Kit Info" packet. Larry also recommends ordering a double-sided sign kit with the race number and date on one side and the starting and finishing lines on the other. These consist of start and finish banners, mile markers, race numbers, race official signs. Requests for these kits must be made at least eight weeks in advance of the race and the kits will be supplied subject to availability. Write to Peter Thompson, Race Director, Special Events, 822 W. Main, Ste. 112, Fevetro, OH 44105. Larry Larson notes that there is also another inexpensive set of race materials and magazines available. For information on this one, write Electric City Printing Company, P.O. Box 630, Anderson, SC 29622 and ask for the "Race Management Aids and Course Marking Kit Info" packet.
As noted earlier, Frank Alongs has been an Italian national coach. Furthermore, he has done some very detailed study of the sport from the biomechanics (his thesis in 1950 was on race walking techniques). He is presently employed at Ford in human research, so whatever he says comes as a result of considerable study and not inconsiderable qualifications. In his studies, he has looked at films of walkers from many eras, beginning with the great Frigerio in the 1920's. As a result of his early studies, he was able to introduce new methods and basic training into the Italian program in the 50's. A study of these methods by the Soviets and Germans had a great deal to do with their present efforts. The Mexicans have now taken modern racewalking methods to yet another level. The Iranians have now taken modern racewalking methods to yet another level.

What all of this says is that there has been a revolution in race walking technique since the 1950's. To illustrate the change, Frank presents the following test data based on analysis of the top 10 walkers in the world for two years:

<table>
<thead>
<tr>
<th>Stride Length</th>
<th>1950</th>
<th>1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Km</td>
<td>1.16 of crutch ht.</td>
<td>1.39 of crutch ht.</td>
</tr>
<tr>
<td>50 Km</td>
<td>0.95 of crutch ht.</td>
<td>1.26 of crutch ht.</td>
</tr>
</tbody>
</table>

Based on such data and on other studies he has made, Frank concludes that in modern race walking there is no pulling but high flexibility, good coordination, good strides due to good rolling action, and good posture (emphasis added) and use of the entire working phase of the trailing foot. Good posture and extremely fast leg action are also keys to the rapid improvements seen in the modern era. Any pulling action, according to Frank, shortens the working phase of the propulsion device (trailing foot) with loss of energy and efficiency, which is essentially what I tried to say in seeking to defend Frank's position last month.

In another study, Frank attempted to determine energy expenditures for three different amputations in a race walker—45°, 90°, and 120° (angle between the forearm and upper arm). In these tests, the arms were held close to the body during walking at an 8-minute per mile pace. Effort was measured by a strain gauge bridge installed at the forearm. Also, a piezo-electric accelerometer was attached on the back of the right hand. Measurements were taken with a spectrum analyzer, in real time, with an average of 32 samples per arm and angle position. His conclusions from this study were that the 90° position is the most economical, 120° is acceptable, but 45° is not.

Frank feels we have considerable talent in this country but lack the proper coaching, scientific training methods, and the necessary mobility and flexibility in style. The latter, of course, is an outgrowth of the first two shortcomings. This is not meant to indict those that are trying to coach now but merely saying we need better guidance. Certainly, having Jerry Hausleber at the Olympic training camp last summer was a step in the right direction, but much more is needed.

LUGANO CUP (Cont.)

The Mexican team placed ahead of Marco Ewoniuk, who passed near the finish. Marco had the first 20 in 1:32:35 and still hung on to finish near his best ever with a 4:12:37. Dan O'Connor also had a personal best of 4:17:21 and Carl Schneider was up to par with 4:27:24. They finished 38th and 44th. Such is the state of walking in the world today.

In the accompanying women's 5 Km, Marian Fawkes, of Great Britain, streaked to a world's best of 22:51, followed closely by her compatriot, Carol Tyson. As a result, the British were easy team winners over Sweden. Led by Sue Llera 24:02 in 10th, the U.S. women finished fifth in the team battle.

Next month, we will have more detail and full results on these three great races. For now, you will have to settle for what we have gleaned from two trans-Atlantic phone conversations with Larry Larson. (Your subscription rates will go up next month to cover the cost.)


LOOKING BACK

10 Years Ago (From the Sept. 1969 OW)—The national 50 Km, held at altitude at Lake Tahoe, went to Bryan Overton in 4:56:07. Second place went to distance runner, Bob Kuchar, in only his fifth walking race. He had a 3:06:29 and then donned his knapsack and strolled off into the woods, never to be heard from again. Race-promoter Bill Runyon captivated the 5:12:28. In the National 25 Km at Kings Point, Ron Lareon strolled home in 2:02:32, followed by John Knifton (2:06:05), Marcel John (2:07:17), Gary Westfield, Steve Hayden, and Ron Daniel.

The 20 Km at the European Championships went to Great Britain's Paul Mili in 1:30:41. A surprise second was Carlssonofull, of Romania, who beat Soviet ace Nikolai Sazh with a 1:31:06. East Germans Gerhard Sporling and Hans-Georg Heinzel were next, followed by Attilio Dal Pozzato of Italy. The 50 went to East German, Christoph Hohne in 4:13:32 with his teammate, Peter Solser, next. In a 24-hour affair in England, Golin Young covered 127 miles 1155 yards. Mili won a 20 Enduring a match with France and Czechoslovakia in 1:28:18, 2 minutes up on Pathem.

5 Years Ago (From the Sept. 1974 OW)—It was European championship time again and 38-year-old Vladimir Golubchina won the 20 Km in 1:29:39, upsetting West Germany's Bernd Kannenberg by 8 seconds. The East Germans suffered two DQs and a DKF. Hohne was on top at 50 in 3:59:05.6, 38 minutes ahead of Soviet Otto Rutsch. Not far back were Selzer and Italy's Vittorio Vesci. Paul Gonzales came to the fore in the race talking and 38-year-old Vladimir Tulubnyi won the 20 Km in 1:29:30, finishing second to Sweden in the team battle. Marian Fawkes finished second to Sweden in the team battle.

TRAINING

The section on race walking in the East German book mentioned earlier is of considerable interest and is reproduced here. The underlinings were in the copy I received from Larry Larson, probably made by OW-Parkdale coach, Bob Lawson, who Larry borrowed the book from.

3.2.1. Technique

The technique of walking must be perfectly mastered if good results are to be achieved. Importance must therefore be attached to the training of technical skills, as short-comings in this respect can impair further improvement at a later stage in an otherwise fit walker.

If race work is started too soon, mistakes will creep in, which are difficult to discard and may even become irreparable.

3.2.1.1. Leg Movements

A long and economic stride is achieved by an accentuated pushing off with the trailing leg. Attention must be paid to the correct push-off right from the beginning. The forward thrust necessary for a long stride is achieved by a complete ball-to-toe roll of the foot. Just before the foot is lifted off the ground the front foot should touch the ground with the heel. The so-called double-support phase is an overwhelming feature of correct walking. (cont. p. 11)
The foot plant must be soft and should occur before the leg is completely stretched. A braking effect which would hamper the forward thrust can thus be avoided. After the landing of the front foot, the rear leg is swiftly and slackly brought forward without describing an arc by outward turning of the foot or the knee joint. In order to obtain a "flat" foot strike, an exaggerated lifting of the thigh must be avoided. Also an excessively high or wide forward swing of the foot can induce "jumping". On the whole the measured, flat leg action is characteristic of a good walker.

The following principle should be observed. Increase the stride length in line with the increase of the pace and not vice versa!

3.2.1.2. Trunk Carriage The upper body is erect or has a slight forward lean. Too much body lean leads to running.

A backward lean of the trunk is wrong and indicates poorly developed abdominal and dorsal muscles. There is the danger of breaking the necessary contact with the ground.

3.2.1.3. Arm Action By their rhythmical movements the arms assist the stride rhythm. The faster the pace, the more the arms are bent. This of course varies from individual to individual. The arm movements should aid the body thrust forward which is introduced by the push-off from the ground. This must involve the shoulders which have to counteract the movement of the pelvis and have therefore a beneficial effect on the stride length (Fig. 14).

A natural swinging of the arms almost to the mid-line of the body is the best form. Slapping of the shoulder must be avoided, since this leads to an unfavorable shift of the body's center of gravity and tends to pull the walker off the ground.

A beginner with a short, unsteady stride, who tends to "jump" should be advised to keep his arms lower and less bent, since he can thus counteract the technical errors we have just mentioned.

3.2.1.4. Hip Action Good flexibility in the hip joints is decisive for a smooth and steady pace. A walker should attempt to put one foot before the other in an almost straight line. To accomplish this the athlete must learn to walk with a rotary movement of the hip joints. At every stride, when the rear leg swings forward, the hip should make a glorious movement to the other side. Apart from the body's twist occurring in running, there is a horizontal shift in the hip and shoulder axes in walking (Fig. 15). This combined movement is a characteristic of the style of a race walker. It is a purely economic movement and does not appear unnatural or tense in a good walker. An exaggerated lateral shift of the pelvis must be avoided. It is not only anesthetic, but hinders the forward movement.

3.2.2. Technical Training Although race walking differs greatly from walking in everyday life, both have the same basic characteristics. The special technique in race walking is the result of an increase of the pace rate and has been fixed later by competition rules.

Most of the characteristics of walking, such as arm and hip actions, are caused by the fast speed. It is by no means the case that the "walking rules" were there first and merely had to be observed. They developed from experience and style considerations. Beginners should keep this in mind! When beginning to learn the technique they should not try to simply reproduce the movements they have observed, but should just attempt to walk quickly. This inevitably leads to a sequence of movements which is close to the walking technique. Experience shows that it helps if a coach or another good walker walks alongside. A beginner can be more easily monitored and corrected while in motion than during training breaks. It is advisable to start learning race walking in early years. Children and adolescents learn it much easier and more quickly than sportsmen in later life.

From the beginning emphasis should be on a slack, swift movement and according to the principle: technique before speed!

3.2.2.1. Special Preparatory Exercises These comprise all those exercises strengthening the back, leg, and abdominal muscles. Exercises lunging the hip and shoulder muscles and strengthening the muscle joints should also be included in walk-outs. Walking itself is, of course, the best and most specific means of preparation. A race walker can derive benefit from running, but he should thereby follow certain principles. This applies mainly to beginners.

If a former runner wishes to take up walking, he should avoid running during his training until he has a good command of the newly acquired walking movements and performs them automatically.

In all preparatory exercises and in walking exercises should be on exercises which not only strengthen the hips and also improve slackness and extensibility of the leg muscles.

We now give a selection of exercises:

1. Walking at increased pace.
2. Walking on a straight line painted on the track surface in order to learn how to keep the feet straight and parallel.
3. Easy shift of body weight in normal position from one foot to the other on the spot for getting the feeling for leg extension and hip rotation.
4. Same exercise but with powerful strides and corresponding arm movements.
5. All kinds of games for improving suppleness and slackness, gymnastic exercises for increasing the extensibility of leg muscles.

3.2.2.2. Basic Exercises of Technical Training The following set of exercises is recommended for developing walking technique:
Exercise 1: Marching
Aim: Learn the fundamental elements of walking.
Points to note: Easy pacing with clear upper body.
Exercise 2: Marching at gradually increasing pace.
Aim: Higher speed requires a more vigorous arm action and a corresponding push-off with the trailing foot.
Points to note: The arms should be flexed 90 degrees at the elbows; longer strides; more accentuated roll of foot.
Exercise 3: Walking at medium and fast rate.
Aim: All characteristics of walking should be applied and smoothly coordinated.
Points to note: Unbroken contact with the ground; speed of movement.
Exercise 4: Walking with change of pace.
Aim: Consolidation and perfection of technical skills.
Points to note: Keep unbroken contact with the ground; speed of movement.

Faults or shortcomings in the sequence of movements or in posture may be due to physical factors or the training mistakes. If the walker makes mistakes which break the rules or hinder an economical sequence of movement, they must be eradicated. If points in the gait are involved, they deserve little attention, as much time may be required to overcome them, and in any case, success may be doubtful.

3.2.2.3. Fault—Reason—Correction

- Fault: Breaking contact with the ground.
  Reason: The chosen pace is not consistent with the athlete's skills. He does not yet master the correct sequence of movements.
  Correction: Reduce pace rate and improve style.
- Fault: Too much backward lean (hollow back).
  Reason: Fatigue, undeveloped dorsal and abdominal muscles.
  Correction: Devise special exercises for strengthening the groups of muscles involved.
- Fault: Body lift. The runner's body describes a wavy line; the result is a tendency to jump.

Reason: Stretching of rear leg before the heel-ball-heel action of the foot is completed. Thus thrust is directed upward rather than forward.
Correction: Pay attention to a proper heel-ball-heel action. Keep leg in the rear position as long as possible. Carry arms lower. Strengthen ankle joints by special gymnastic exercises.

Fault: Legs too wide or walking with feet turned outwards.
Reason: Natural tendency of individual or wrong arm movements.
Correction: Walk on a straight line and watch parallel arm action.

Fault: Persistent knee bend of supporting leg.
Reason: The chosen pace is beyond the walker's abilities, poorly developed leg muscles, hence fatigue.
Correction: Pay attention to a fully stretched leg at the knee joint, if necessary reduce pace; general strengthening of leg muscles.

Fault: Hard landing of leading leg; leading to heel trouble.
Reason: Incorrect heel-ball-heel action of rear foot. The front leg is stretched too soon before touching the ground. As a consequence the walker rolls into the stride instead of gliding into it.
Correction: Pay attention to "soft" walking. Land high on the outer edge of the foot, keep leg in the rear position as long as possible and complete foot roll.

Fault: Very short strides.
Reason: Lack of special strength. Wrong arm action; fatigue.
Correction: Gradually lengthen strides, try to make wide strides and if necessary, improve arm action.

3.2.3. Physical Requirements and Training Methods for Improving Performance

3.2.3.1. The Importance of Physical Condition in Walking

For successful performance in walking, tall athletes have an advantage over shorter men because of their longer stride. The typical efficient walker is generally a tall, lean, wiry athlete with endurance.

3.2.3.2. Means for Developing Physical Properties

- Endurance
  The chief attribute of a successful walker is endurance. It can only be acquired through an extensive training programme in which efficiency is strongly emphasized and influenced by the mental qualities of the athlete. The latter attribute is, alas, much more difficult to acquire and are often the limiting factor in the athlete's response to training and expectations of his performance.

- Strength
  In walking the role of strength consists mainly in increasing endurance potential. This means that training should be designed primarily to stimulate the building of muscular bulk and to improve the economy of muscular work, permitting the muscles to perform during a long period of time with the smallest possible effort. Nevertheless, a walker should have well developed dorsal, abdominal and leg muscles to cover long distances (up to 50 km) according to the rules and at a relatively quick pace, or else it might happen that with growing distance he slackens off more and more, so that he can hardly keep his arms up and fails to achieve the necessary forward thrust.

- Speed
  The term speed is a relative one and should, particularly over such long distances, be considered with some caution. One may say that, strictly speaking, every walker is fast enough and that it is merely a question of endurance and fitness how long he can keep up his pace.

Special speed training is today used less and less. Athletes, especially beginners who particularly like to practice it, should be restrained.

Naturally a walker will not be able to cover the 20 km distance in less than 1 hour unless he is capable of walking the 5000-m distance in some minutes. This is, however, a question of fitness and not the result of speed training.

- Endurance
  This can only be achieved by a lot of training in a programme which is properly adjusted to the athlete's age, and training background. Although special (competition directed) endurance basic endurance and general endurance are closely related to each other, we shall, especially for the benefit of beginners, first indicate the means of developing basic and general endurance:

1. Long marches at a good pace (youths up to 20 km, adults to 25 km for 20-km walkers and up to 60 km for 50-km walkers).
2. Walking over the same distances. The foregoing not to be overconcerned with achieving a fast pace, but with acquiring correct technical posture and a smooth walking style (very the walking distances).
3. Walking and marching alternately, depending on the terrain and on the runner's condition.
4. Running on paths through forests over some 15 to 20 km (especially in springtime).
5. Skiing.
6. Participating in cross-country competitions.
7. Continuous swimming.
8. Circuit training, using the duration method.

All the training methods should be applied at low or medium intensity. The main aim is to obtain proper circulation and metabolic rate, to increase the oxygen intake capacity, to build up the proper mental attitude towards walking long distances over a long period of time.

Basic endurance should be trained for throughout the year; during the competition season its part in the total volume of training is reduced to switch to competition directed endurance training.

Special endurance can be developed by training schedules in which the pace corresponds to that of competition or is slightly faster. The distances in training are usually shorter than in competitions. The interval or repetition methods, as well as the duration method including fartlek, are utilized.
As a rule training on these lines is started in March or April.

Examples of Interval Training:
1. Frequent walks over stretches at racing pace (or slightly above it) in quantity with
   short recovery intervals, e.g. 20x1000 m with 90 to 120 sec. recovery.
2. Walks of 5x2000 m or 2x4000 m with longer recovery intervals.
   The above examples are for adults; reduce the volume for children depending on
   their race distance and fitness.

Examples of the Duration Method:
1. Walks over 1/2 to 3/4 of the race distance at near competition pace.
2. Walks of a partick pattern with pace accelerations close to competition speed.
   Distance for children about 10 to 15 km, for adults 15 to 30 km.
3. Competitions over shorter distances.

**Speed**

Special speed training is rarely used today. Distances to be covered at a considerably
higher pace are included in the training for competition-directed endurance (e.g. 10 to
15 x 400 m).

**Strength**

A sportsman with a good athletic background is at an advantage also in race walking. Junior walkers should particularly bear this in mind when planning their training build-up. We distinguish between general and special strength exercises, the former being of greater importance, especially for beginners.

General Strength Exercise

These are exercises which are particularly suitable for every young sportsman. Important examples have been stressed in the section “Special Preparatory Exercises”. It should be noted that workouts with excessively heavy weights should not be the main concern; preference should be given to exercises which do not only strengthen the muscles but also increase their extensibility and flexibility at the joints.

An implement that can be used in many ways and satisfies almost all demands is the medicine ball.

Exercises

1. Throwing ball on the neck (low weight, large number of repetitions). Trunk bending forward - trunk turning left and right sideways.
2. Exercises with medicine ball: e.g. throwing with both arms forward and backward;
   holding the ball between the feet in a sitting position; leg circling.
   Game: Throwing the medicine ball over a string. The ball must not be dropped.
3. Following other track and field exercises.

### Table 13 Weekly Schedule of Training during the Preparatory Period (above February) (Build-up Training)

<table>
<thead>
<tr>
<th>Day</th>
<th>Training Objectives</th>
<th>Training</th>
<th>Total km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Basic endurance</td>
<td>20-km walk</td>
<td>20 km</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Supplementary training</td>
<td>Game</td>
<td>10 km</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Basic endurance</td>
<td>30-km walk</td>
<td>30 km</td>
</tr>
<tr>
<td>Thursday</td>
<td>General and specific strength</td>
<td>50-50 min. exercise with medicine ball, ankle workout, 10-km run</td>
<td>10 km</td>
</tr>
<tr>
<td>Friday</td>
<td>Supplementary training</td>
<td>Game</td>
<td>35 km</td>
</tr>
<tr>
<td>Saturday</td>
<td>Basic endurance</td>
<td>35-km walk</td>
<td>35 km</td>
</tr>
<tr>
<td>Sunday</td>
<td>Supplementary training</td>
<td>Game, gymnastics, possibly easy walking</td>
<td>115 km</td>
</tr>
</tbody>
</table>

### Table 14 Weekly Schedule of Training during the Competition Period (Build-up Training)

<table>
<thead>
<tr>
<th>Day</th>
<th>Training Objectives</th>
<th>Training</th>
<th>km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Basic endurance</td>
<td>20-km walking</td>
<td>20 km</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Special endurance</td>
<td>15-km walking</td>
<td>15 km</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Basic endurance</td>
<td>20-km walking</td>
<td>20 km</td>
</tr>
<tr>
<td>Thursday</td>
<td>Basic endurance</td>
<td>15-km walking</td>
<td>15 km</td>
</tr>
<tr>
<td>Friday</td>
<td>Supplementary training</td>
<td>Interval training</td>
<td>20 km</td>
</tr>
<tr>
<td>Saturday</td>
<td>Basic endurance</td>
<td>25-km walk</td>
<td>25 km</td>
</tr>
<tr>
<td>Sunday</td>
<td>Supplementary training</td>
<td>possibly 10-km run</td>
<td>125 km</td>
</tr>
</tbody>
</table>

Note: I had a major booboo with the August issue—forgot to put Second Class postage paid at Columbus, Ohio on the mender page. So essentially, I mailed it without postage. However, only four came back to me for postage and I forwarded those First Class. I know others were received from comments and renewals I have gotten. However, if you didn’t get your August issue, let me know. Also, you will note I still don’t have the pictures I said I was holding in August printed in this issue. Now I have some more. Maybe next month will be a pictorial special.