# Speedskating on Ice





# SPEEDSKATING ON ICE

By Donald A. Kangas and Shirley A. Yates

Welcome to the exciting world of speedskating on ice. This booklet is designed to provide you with everything you need to know to become involved in the sport and will introduce you to the basic steps of becoming a speed skater.

#### **HOW DO YOU START?**

You can start on your own by following the procedures in this booklet. You can find an existing club which will provide you with coaching and ice practice. You can even start a new club in your area with the assistance of the National speedskating organization!

If you would like to contact a speedskating club, you can get information about existing clubs or how to otherwise get started from:

> Shirley Yates, Executive Secretary Amateur Skating Union of U.S. 1033 Shady Lane Glen Ellyn, IL 60137 ASU National Office Phone: 708/790-3230 Novice Phone: 800/634-4766

OR if you are on your own and are interested in starting a new club, you can contact:

M.D. "Doc" Savage, Chairman ASU Growth and Development Committee 2614 N. 115th St. Wauwatosa, WI 53226 Phone: 414/258-5427

Doc Savage has an inventory of speed skates so he also can assist you in finding skates - new or used at very reasonable prices.

#### WHAT IS SPEEDSKATING ON ICE?

People have enjoyed the free feeling of skating on ice since ancient times when someone, somewhere, first strapped some bone blades on his feet. Historians have concluded that skating on ice was probably first practiced in the Scandinavian countries about 2000 years ago. Skating became an important means of transportation and communication in Northern Europe long before it became a winter sport.

Now, anyone can feel the joy of skating on ice and the freedom of gliding across ice on "wings of steel" because skates of all kinds are available and the wonders of modern technology have made ice available anywhere in the world. Although skating developed as a sport in the harsh north, it can now be practiced in comfortable indoor arenas, at any time, in the stormy north or even in warm equatorial climates.

The original competitive sport on ice was speedskating and all skates had long blades. The long blades made swift travel across frozen lakes and up and down icy fjords and canals possible. The original skating competitions were probably marathon type long distance races on frozen lakes and canals. Skates with shorter, more sturdy blades and more curvature for sharp turns and fast stops were developed as hockey and figure skating became popular sports.

Fortunately, you can start speedskating on any kind of skates. As technique improves and the desire for more speed grows, long blade speed skates can be obtained from a number of suppliers. In any case, because the essence of speedskating technique is to develop maximum speed and power from the fundamental skating stroke, speedskating practice will increase your ability to enjoy any sport done on ice skates.

Safety helmets (for indoor rinks), long-sleeved shirts and gloves are the only equipment required in addition to skates for competitions and practice. Shin guards, knee pads and elbow pads are optional.

#### **RACING ON SPEED SKATES**

There are many ways to race and compete on skates, if you want to do more than skate for enjoyment. The original marathon style of races is enjoying a resurgence of popularity in this country and abroad as an increasing number of competitions are being sponsored.

Speedskating has been a Winter Olympic sport since 1924. In recent years television coverage has made the Olympic style of racing familiar to everyone. This style of racing has more generally been referred to as "metric" speedskating because it involves two skaters at a time racing in individual lanes on a 400-meter track against the clock. The fastest time wins the race. For an overall championship an equivalent time. called a samalog, is calculated for each skater from all the distances skated. The lowest overall time. samalog, is the winner of the meet.

World Championships are sponsored every year by the International Skating Union (ISU). The United States International Speedskating Association (USISA) was established by a group of ASU members in 1965 to select and train U.S. World and National teams that compete in Olympic and ISU World Championships.

American speedskating races are called pack style because a group of skaters (usually 4-8 depending on

length of race) all start at the same time (much as in a running race) and the winner is the first one over the finish line. The Canadians use the term mass start. This exciting style of speedskating races is conducted on long outdoor tracks of 1/8 mile to 400 meters during the winter months, and indoors on short tracks, that fit inside of a hockey rink, of either 100 or 111 meters in length.

The Amateur Skating Union (ASU) conducts National Championships each year in both Long Track (400meter) and Short Track (111-meter) to select age-group champions in the following male/female classes: Midget, 10-11 year-olds; Juvenile, 12-13: Junior, 14-15: Intermediate, 16-18; Senior, 19-34; Master. 35-49: Grand Master Men, 50 and up. On the local and regional level there are classes for younger skaters such as Pony, 8-9; Pee Wee, 6-7, and Tiny Tot. 5 and under. Distances skated range from 100 meters for the very voungest to 3000 meters for the older classes.

In 1927 the ASU and the Canadian Amateur Speed Skating Association (CASSA) drew up the North American Alliance to conduct indoor and outdoor championships. Alternating between the U.S. and Canada each year, these Long Track and Short Track competitions enable the two countries to bring together their top skaters.

Short Track racing is now an exciting part of the Winter Olympics also. Making its debut at the 1988 Games in Calgary, Canada, it was approved as a full-medal sport shortly after and was included officially for the first time in the 1992 Games in Albertville, France.

Pack style Short Track speedskating is probably the most exciting form of the sport. It combines the grace of the powerful skating stroke with an emphasis on racing strategy and rapid acceleration at high speed. It is the way most competitions are conducted by ASU speedskating clubs and associations.

#### HOW IS SPEEDSKATING ORGANIZED IN THE UNITED STATES?

The first National speedskating championship was held in 1889 but official speedskating competition was organized under the rules of the International Skating Union of America in 1907. It was reorganized in 1927, becoming the present-day Amateur Skating Union of the United States (ASU USA).

The ASU is made up of numerous state and regional associations which include over 70 clubs plus a number of clubs established in areas outside of the "territory" of associations such as Florida, Texas, Hawaii and Alaska.

The clubs provide practice time, training programs, coaching and the necessary guidance for skaters, parents and officials to be involved in speedskating throughout the year. Many clubs also sponsor skating meets which allow participation by local or regional competitors. Novice meets for those new to the sport also are provided.

In addition to providing and guiding a network of clubs and associations for speed skaters in this country, the ASU actively promotes the sport, conducts National Championships, sanctions and supervises the local and regional meets and instructs its members at annual training seminars and coaching clinics.

To accomplish this, the ASU maintains a National office, trains and certifies officials, publishes a National magazine, The Racing Blade, official handbook and other publications necessary to sustain these programs. The Racing Blade and handbook are provided free to all members.

#### WHO CAN JOIN THE ASU?

Anyone may become a member of the ASU and, therefore, an official part of the speedskating community in this country. To encourage those with an interest in speedskating and introduce the sport to them, the ASU offers free membership in the National organization to first-year skaters. If a skater resides within the territory of an association, membership is handled through the association secretary. For those residing outside an association's territory, membership is facilitated directly through the ASU National Office. Anyone competing in speedskating on any level, be it novice. National, World or Olympic, must be a member of the ASU.

But you do not have to be a skater to enjoy the sport or become involved in it. Non-skaters may join as associate members (at a lower membership fee) and can find a variety of areas where their services may be needed such as assisting clubs in executive positions, helping at meets and practices and serving as officials. Many parents learn to skate and become novice coaches on the local level. Some eventually even reach the level of competitor!

The ASU has active competitors from the age of 4 to 84 so speedskating is a winter sport which has the potential for life-time activity and is one of few sports that may totally involve whole families through several generations.

The ASU has established a third official membership designation which promises to become an important part of the speedskating world - that of Special Need Skater. It includes Special Olympics athletes. In its membership, the ASU also has Marathon skaters and cyclists, cross country skiiers, in-line roller skaters and many other athletes who consider speedskating on ice an excellent cross-training sport for them in their off-season. The rapidly increasing popularity of speedskating today can be attributed to the availability of indoor ice throughout the country, the demand for the thrill associated with speed and competition, the fact that speedskating is organized for people of all ages, and an increased awareness of the need for a life-long program of exercise and conditioning.

# SPEEDSKATING TECHNIQUE

By Larry R. Ralston

#### THE STRAIGHTAWAY STROKE

We have already discussed the length of a racing skate blade that enables the skater to derive more pushing power from the leg drive. It would appear that the longer the blade, the more powerful the stroke. This is true to a certain degree but too long a blade would be very difficult to control. The normal manufactured speed skate has a blade that is proportioned to the size of the shoe and the beginning speedskater will find it quite adequate. Each individual must choose a skate that is comfortable. The shoe must fit properly with a tight heel, snug toe and a soft tongue to protect the instep from becoming sore and slowing blood circulation to the foot.

As in any sport skill, there is only one path to excellence and that is by constant repetitive practice. A speedskater must master the fundamentals of balance, rhythm and drive. Let us now analyze these three fundamentals.

#### BALANCE

At this point you should already own a pair of skates that fit properly as nothing deters more from this fundamental that a pair of poorly fitted skates.

Now you must learn to assume the correct body position over your skates. Lean forward from the waist keeping the back straight, and bend the knees. The most essential point is to keep the center of balance in the hips and directly over the forward skate, as all power of the leg drive flows through this point. If this power is to be controlled the center of balance must be kept as near as possible on an imaginary line that parallels the ice surface. Always keep your head and eyes up and look straight ahead. Looking down at your skates will tend to throw you off balance. You are now ready to begin your stride.

Stride forward and outward, keeping your weight over the forward skate. At the end of the stride bring the rear foot forward and outward for the next stroke, keeping in mind that the ankles should be very close together when starting each stroke. Do not lift the skate too high off the ice when beginning each new stroke. Skating with the legs too far apart is a common fault that prevents the skater from obtaining the maximum push from each stroke.



Figure 1. Correct body position over the skate. Note the center of balance over the forward skate, the arm swing with the thumb up, bent knee, leaning forward from the waist, and straight back.

#### RHYTHM

Once having mastered the mechanics of the leg stroke, you are ready to proceed to Phase Two: The addition of the arm swing.

Whichever foot is going forward, your opposite arm should swing forward with it, thumb up. Example: When the left foot strides forward, the right arm swings forward and then backward when the foot is recovered prior to the next stroke, just as in walking. Concentrate on keeping the thumb pointing to the sky, this will assist in preventing the arm from swinging too far across the chest, possibly resulting in a loss of balance.

The arm stroke enables you to maintain balance and pick up power for the next stroke. These rhythmic movements of the arms and legs are the key factors in speedskating. Practice these movements continuously both on and off the ice. Practicing in front of a full length mirror is an excellent teaching aid. Remember that there should not be any pause between the strokes: from the lifting of the skate at the finish of the stroke until it is set down to begin the next stroke. This rhythmic coordination provides the skater better balance, adds power to the stroke and directs the skater in a straight line. ONE WORD OF CAUTION: Do not strive for speed while developing this coordination. Practice slowly and deliberately until you have mastered these skills. You will feel your speed develop as the movements are perfected.

#### DRIVE

This phase of the stroking procedure emphasizes the maximum push from each stroke. In order to add more power to each stroke it is necessary to develop a natural lower and deeper knee bend. This will increase the length of your stroke. Be sure to use the entire surface of the blade for pushing but push from the center of the blade, not the toe. Pushing off the toe will tend to dig your skate into the ice resulting in loss of speed and a possible fall. Be certain to direct the power of your leg drive forward, not upward. You will find that your natural body movement now tends to direct your shoulders forward to the angle of your stroke. *Example:* When the left foot is forward, your left shoulder is turned slightly forward to the angle of your stroke while the right arm is swinging forward in the same direction. This enables you to keep the center of balance in the hips and directly over the forward skate.

Concentrate on your head movement from this point on. The head should remain on a level plane with no up or down "bobbing" motion. Any upward motion detracts from the power of the leg drive as the power is expended upward rather than forward, resulting in loss of speed and having to work harder to maintain speed. Have someone observe your stroke and form and point out your flaws, then work hard to correct them.

These three fundamentals apply to straightaway skating only and they should be fully mastered before going on to the skill of cornering and turning. Practice these fundamentals of the straightaway stroke constantly.



Figure 2. Obtaining the maximum push from the flat center of the long racing blade. Again note the correct body position over the skate and the arm swing forward with the thumb up.

#### REMEMBER

- 1. Be sure your skates fit well and feel comfortable.
- 2. Keep the center of balance in the hips, over the forward skate.
- 3. Keep the head and eyes up, never look down or backward.
- 4. Do not lift the skate too far off the ice when starting a new stroke.
- 5. Lay the heel of the skate down first, prior to starting the next stroke.
- 6. Bring the skates close together before starting the next stroke.
- 7. Keep the thumbs up, pointing to the sky, in your forward arm swing.
- 8. Never strive for speed while learning the individual skills; it will develop naturally.
- 9. Push off the center of the blade rather than the toe. Use the entire blade length for maximum power in each stroke.
- 10. Keep your head on a level plane; no "bobbing" up or down.

## SKATING THE TURNS

Skating the turns, or cornering, is the most difficult phase of speedskating for the novice to learn because it is an unnatural movement; unlike the basic straightaway stroke. Skating the turns involves using the cross-over stroke. Once perfected it enables the skater to maintain a constant speed or develop additional speed in the turns. The cross-over is a powerful stroke that must be mastered in order for the skater to hold a tight turn, close to the track markers and gain added momentum when coming out of the turn and onto the next straightaway.

In speedskating, all turns are made counterclockwise, or to the left, by a

series of cross-over strokes. The skater should begin to enter the turn on the inside edge of the right skate. The head and eyes turn first, and then the body. Place the outside edge of the left skate on the ice to begin the turn. Lean well into the turn with the left shoulder. Now stroke powerfully with the outside edge of the left skate as the right skate comes across the left in a scissors-like motion. (See Figures 1, 2 and 3.) Be sure to keep the body low with a good bend in the knees and swing the arms naturally.



Figure 1. Head and eyes aimed in the direction of the turn, left shoulder well back and learning into the turn. As the right leg begins the crossover, the right arm swings back and the left arm swings forward.



Figure 2. Pushing off the outside edge of the left skate. The right leg has crossed over, ready to begin the next stroke. Note the position of the left arm at the finish of the stroke.

The push off the left skate should utilize the full length of the blade and the power should be applied at the beginning of the stroke, rather than at the end. Your natural arm swing will help maintain balance, position over the skates and provide power for the next stroke. As the right skate pushes, the left skate is brought forward, the right arm swings forward and the left arm swings back. As the left skate pushes, the left arm swings forward and the right arm swings back. (Figure 3.)



Figure 3. Coming out of the turn, ready to begin the straightaway stroke. As the left leg comes forward, the right arm swings forward and the left arm swings back.

#### PRACTICE DRILL:

It is essential that the cross-over stroke be practiced and mastered in order to develop the proper form and position. The most accepted method of practice is to skate in a constant counter-clockwise circle, using nothing but the cross-over stroke while concentrating on form, proper placement of the skates and proper arm swing. Again I must emphasize not to strive for speed. You will find that as the form is developed and perfected, the circle will get larger as the speed increases.

Once you have mastered the crossover stroke you must continue to practice and perfect a rhythm of skating from the straightaway into the turn, and out of the turn into the next straightaway. You will find yourself able to attain a regular measured cadence for each lap skated, and the number of strokes per lap will not vary. Constant practice and paying attention to detail cannot be overemphasized.

#### COMMON FAULTS TO BE AVOIDED:

- A. Using only the toe of the left skate for pushing rather than the center of the blade. This will cause you to slow down and not get maximum push from the stroke. Use the entire blade length for pushing.
- B. Raising the body higher in the turns. Be sure the body stays at the same height, or lower, when entering the turn. Raising up causes the skater to push backward rather than sideward, again losing power on each stroke.
- C. Not leaning into the turn with the left shoulder causing the skater to stray away from the track markers and upsetting the natural body position over the skates.

#### REMEMBER

- 1. Enter the turn on the inside edge of the right skate.
- 2. Lay the outside edge of the left skate on the ice. Turn head and eyes first, then the body.
- 3. Lean the left shoulder well into the turn.
- 4. Stroke powerfully with the left skate as the right skate crosses over.
- 5. Stroke powerfully with the inside edge of the right skate as the left skate comes forward.
- 6. Use the entire blade length for pushing. Push from the center.
- Do not raise the body higher in the turns. Keep the head on a level plane.

8. Use the arm swing to maintain balance and provide power for the next stroke.

# THE START

After learning the stroking technique for straightaway skating and skating the turns, you should develop these skills to a point where each practice session will show a noticeable improvement in lower lap times; the lower the lap time, the faster you are moving over a measured course. You should now be ready for learning the proper starting technique.

This skill has been purposely saved until last because it is the least important skill for the beginning speedskater to learn. Without mastering the straightaway stroke and the crossover stroke, the start becomes a useless skill; however, it is very important for all races of 800 meters or less because these distances are considered sprint races.

We recommend that all skaters use the right-handed starting position; that is, with the right leg back as the initial pushing leg. As most skaters use this right-handed starting position, a lefthanded started may find that the skates will occasionally get tangled with other competitors, resulting in needless falls and poor position off the line.

#### PROCEDURE

The skater should step up to the starting line with the top of the left blade on the rear edge of the starting line and the right leg slightly to the rear. Bend the knees slightly while facing forward, with your weight slightly back on the right leg. The left arm should be held slightly forward and the right arm well back. (See Figure 1.)

Maintain a position that is comfortable for you. Look straight down the track at the first corner marker; this



Figure 1. Proper position for the start. Right leg back, eyes forward, knees bent and weight slightly back on the rear leg. Left arm slightly forward and right arm well back.

will be your target when the race is started.

At the sound of the pistol the left leg is the first to move as the initial thrust is made with the inner edge of the right skate blade and forward motion of the right arm. (See Figure 2.)

Be sure to use the entire length of the blade for pushing, not just the toe.

The first few strokes are similar to those of a sprinter in track; short, quick and powerful, literally running on your skates, using the inner edges of the blades to propel you forward while the arms swing freely and naturally. You will gradually reach a point where the speed increases and it will no longer be possible to run on your blades. From here you move into a natural glide and begin the straightaway stroke. At all times be sure to keep the head up and eyes focused on the first corner marker.



Figure 2. The left leg is the first to move as the initial thrust is made from the inner edge of the right blade and the right arm swings powerfully forward.

The short choppy strokes of the start should be made in a "herringbone" pattern as illustrated in Figure 3 and the body will move to a naturally lower position as speed increases. Practice the start and gradual movement to the straightaway stroke until it is mastered.



Figure 3. The "herringbone" pattern of the starting stroke. Numbers indicate stroking order.

#### REMEMBER

1. Assume a position that is comfortable for you. Be sure you have ample room and are not touching any skater on either side of you.

- If you are naturally left handed you may want to consider starting right-handed to avoid getting skates tangled with other competitors.
- 3. Keep the head up and eyes looking down the track at the first corner marker.
- 4. The first few strokes are short, quick and powerful as you run on your skates until you move gradually into a glide and the body position is naturally lower.
- 5. Practice the start and straightaway until it is mastered. You will find it very simple to lower lap times when this skill is perfected.

### CARING FOR AND SHARPENING YOUR SKATES

You have learned how to use the unique design and extended length of the speedskate blade to obtain the maximum pushing power that enables the skater to gain speed. You are now ready to learn more about the characteristics of the long blades and how to care properly for these valued pieces of equipment.

Speedskates must be cared for and sharpened in a manner completely different from any other type of skate or irreparable damage may be done. Unlike the figure or hockey skate blade, the speedskate blade is very narrow and lacks the exaggerated curved form; however, the speedskate blade is not perfectly flat either, as it does have a slight curvature or "rock", that is usually located directly beneath the arch of the boot. This "rock" is necessary in order to be able to make turns. (See Figure 1.)



Figure 1. Checking the "Rock" on your skates. It should be located between the center of the blade and the rear cup.

While the base surface of a figure or hockey blade is wider and has a concave or "hollow ground" surface that must be sharpened by machine, the speedskate blade is perfectly square and must be sharpened by hand in order to maintain the "rock" and the perfectly square edge. (See Figure 2.)



Figure 2. Use a straight edge to check the specific curvature or "Rock" of your blade. Careful sharpening will not alter it.



Figure 3. Here is the equipment needed for the care of your speed skates:

- A. Sharpening Jig
- B. Combination Coarse/Fine Carborundum Stone
- C. Deburring Stone
- D. Light Oil or Kerosene

Another item not pictured is a pair of Leather Scabbards.

Because the technique for sharpening speedskates is so totally different, it will be necessary to have the equipment illustrated in Figure 3. Directions for using this equipment are included with the purchase of the sharpening stand or "jig", but the following pictures describe the process fully. (See Figures 4, 5, 6 and 7)



Figure 4. Skates properly placed in jig. Before grinding, apply light oil or kerosene to the stone. Place the coarse side of the stone on blades and grind in small circles, front to back and back to front until a burr is created on all 4 edges. Reverse stone to the smooth side and polish blades length-wise.



Figure 5. To "deburr" the blade, lay the blade on a flat edge and place the stone flat against the blade. Rub the stone straight back and forward the entire length of the blade. Only a few strokes are needed to remove the burr from each edge of each blade.



Figure 6. Wipe the blade to remove excess oil and particles.

Sharpening your speedskate blades should become a very vital part of your daily skating routine; remember, a speedskate can never be too sharp, but having even a slight dull edge will affect your performance and may cause you to slip and fall. Good skaters make a point of checking their blades regularly and will usually re-sharpen them between races in order to maintain a keen edge.

A good quality leather skate guard (scabbard), should be used to protect the edges and for walking to and from the ice surface. Be sure to keep the inside of the guard clean so that no grit or dirt will be present that could nick or damage the sharp edges of the blades.



Figure 7. Finally, place leather scabbards on your blades. These may be used for walking to the ice surface and should not be removed until you are on clean ice.

The final point in caring for your speedskates includes the use of the proper type of boot laces. Good skaters frown on the use of leather or rawhide because of its ability to expand and contract as it becomes wet and is subjected to varying temperatures. This could cause loosening of the boot or constricting the flow of blood to the foot. It is much better to use good cotton or linen laces and be sure to keep them from twisting and fraying. Laces should always be inserted through the boot eyelets in a flat position and kept that way through the entire lacing procedure.

To store your skates over the off season, give the boots a thorough cleaning with saddle soap to keep the leather soft and supple. Coat the blades, cups and sole plates with a thin film of petroleum jelly to prevent rusting.

Proper care and sharpening will extend the life of your skates, permit many more days of enjoyable skating and make them more valuable when it comes time to sell or trade them in on a new pair.

#### BASIC TIPS TO AVOID COMMON PHYSICAL PROBLEMS

#### FOOT BLISTERS

Take precaution to avoid this problem before it starts. Use a snug-fitting silk or nylon sock next to the skin and a cotton athletic sock over it. (Wool is not recommended.) The cotton will rub against the nylon but the friction will not be transferred to the skin.

#### COLD FEET

This is usually caused by circulatory stoppage to the feet because your skates are laced too tightly. Skates should be laced loosely at the bottom of the boot and continuing up to above the arch of the foot. Tighten only the last 2 or 3 eyelets and use a reverse lace at this point to prevent loosening. Never use rawhide or leather laces as they will expand and contract as they get wet and become subjected to varying temperatures.

#### WEAK ANKLES

Skating is a sport of balance and rhythm. If the ankles tend to turn in or out, your skates are too loose, improperly fitted or you need more work on your basic stroking skills in order to perfect your balance and body position over the skates. Constant practice and a well-fitting pair of skates will eliminate this problem quickly.

#### ICE BURNS

Caused when a skater falls and the bare skin is dragged across the ice surface. This usually happens to the hands and nothing is quite as painful. Be sure to wear gloves or mittens whether competing indoors or outdoors.

# IN CONCLUSION

You are now well on your way to enjoying the thrills and excitement associated with speedskate racing; the world's fastest self-propelled sport. The material covered to this point should help you become a better speedskater but, as in any sport, the road to perfection and improvement of your own performance is constant practice of the basic skills. Practice regularly to avoid developing bad habits that will hamper your performance and lessen your enjoyment.

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