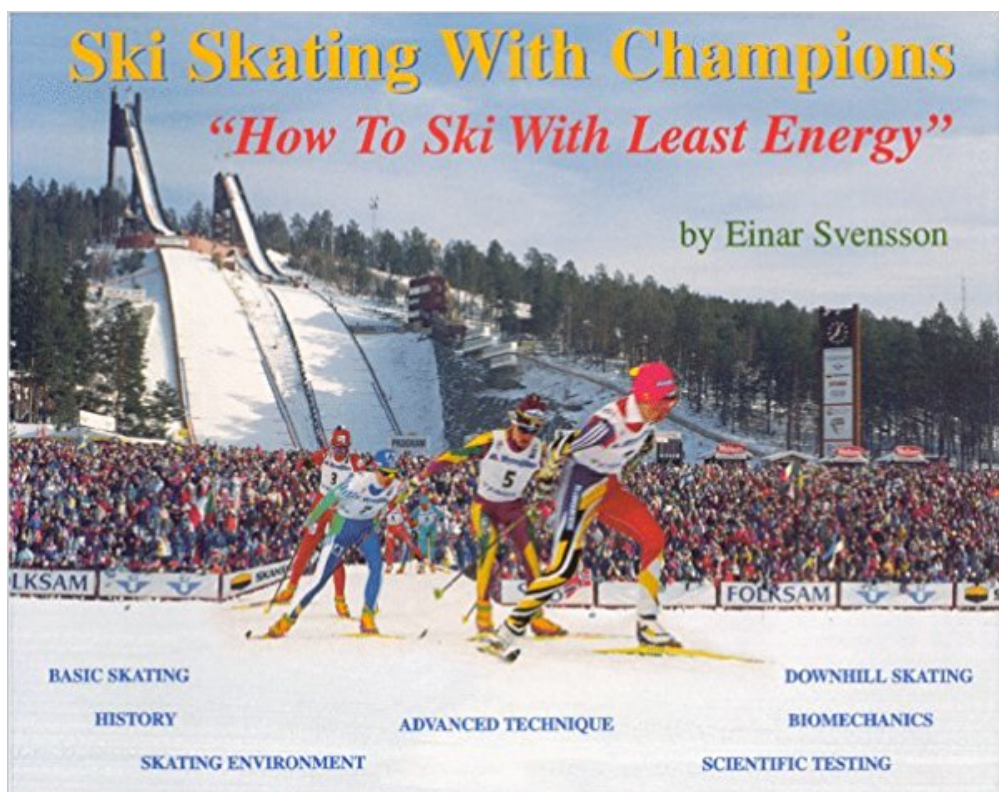


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Ski Skating With Champions: How To Ski With Least Energy



Synopsis

272p. Paper, Landscape format, indexed. This book, the most comprehensive text on cross country Ski Skating available today, is written by 11-times World Master Champion (1988-1998) and international Norwegian and Swedish top level coach, Einar Svensson. This superb text-of-choice for teaching, learning and improving ski skating technique on all levels of experience, for one of the fastest growing new winter sports in the world, is UP-TO-DATE, thorough, instructive, informative and easy to understand and follow. It's 350 color and black/white photos of recent World and Olympic Champion cross country skiers in the 1994 Lillehammer Olympics, Norway, and 1993 World Championships, Sweden, are presented in action sequences, with physical and mechanical analysis of 17 skating techniques, elaborate graphs and illustrations, and scientific test results. Topics are: basic skills and exercises, advanced techniques, detailed explanations of poling, skating and downhill techniques, criteria, terminology, ski skating history, environment, and special analyses of mechanics of skiing and skating movements using 72 professional quality illustrations and graphs. Includes results of wind tunnel testing and information on friction, and inertia.

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Customer Reviews

"...Einar Svensson has produced a tome on the ski skating technique that is destined to become both a classic and the acknowledged bible on the sub-discipline. This is the most comprehensive text on ski skating available and covers every inch of the track...The text is lively and engaging, but is really a "how to" manual at heart." -- Leslie Anthony, March 1995, "Ski Trax Magazine", Cross

Country Canada"...If you would like to ski technically perfect, this is a gold mine..." -- Swedish Ski Sport", April 1995 "In a few words, this is the best technique book I have ever seen, and one which has suggested all kinds of new ideas and approaches...The beauty of the book is that it takes nothing for granted...is complex...unbelievably thorough, a book that will need - and reward - study. It is a book written by a skier who loves the sport, and has spend a lifetime in it. It should be on every coaches and athlete's "must" list. I cannot recommend Ski Skating enough." -- Nat Brown, "Nordic Update", vol. 9,#5,1995 "It is wonderful to pick up a book about cross country ski racing that is well written, professionally laid out and contains worthwhile scholarly content use of recent photos, well drawn graphics and clear text make this the best book to date on cross country ski skating." -- Steven Gaskill, June 1995, "Team Birkie Newsletter"

This is a profusely illustrated, bio-mechanically grounded, instructional reference that cross-country skiers, cross-training athletes, and in-line skaters will find invaluable.

The book goes over numerous skating techniques, including many (e.g., the marathon skate) that in 2014 are not really in use any more. Furthermore, back in 1994 the English names were not standardized, and he hence uses a direct English translation of the Norwegian names. Some translation: Diagonal dance = coaches skate; Paddle Dance = V1, Double dance=V2, Single dance = V1-alt. The instructional portions are (in my opinion) pretty good, though (in 2014) somewhat shallow in detail for an advanced skier, with some technique recommendations that have not stood the test of time. The history section is quite interesting. There are numerous pictures from the best skaters of 1994, which are quite interesting but in 2014 YouTube instructional videos do a better job than almost any book can. He talks a bit about muscle physiology. That part is a good introductory recap of the topic. It goes into good detail on muscle anatomy, but doesn't talk about the force-velocity curve or a Hill's model, both of which are very relevant to skiing biomechanics. The biomechanics seems to me to not only be somewhat shallow, but to have numerous very fundamental mistakes of physics. Here are a few: He seems to have a consistent confusion between mass and weight. On page 210, he claims that the Kg is the unit of force (in fact, it is a unit of mass). On page 223, he claims that work is measured in kg·m (in fact, it is nt·m). Finally, on page 261, he gets it correct, stating that weight is equal to mass * the gravitation constant (which is roughly 9.8 nt/kg). On page 229, he claims that energy = weight * height * time. In fact, it is weight * height; there is no time involved. On page 219, he claims that, as a general property of biomechanics, the sum of all internal

moments (i.e., moments caused directly by muscles) must equal the sum of all external moments (i.e., moments caused by gravity and by contact forces with the ground). Perhaps, with some definition of moments, this could be correct. However, the standard formulation that I have always seen is that the sum of all internal moments is always zero, since internal moments come in equal-and-opposite pairs. Having the sum of moments caused by your muscles equal the sum of moments that act on the ground would indeed be useful $\sum \tau_{\text{muscles}} = -\sum \tau_{\text{external}}$ but as far as I know it is not actually true. In fact, muscles act through multi-joint kinetic chains that are more complex than Svensson implies. Svensson recommends (on page 209) planting your pole parallel to your shins. He does not give any reason for this, and it is not something I have ever heard before. Svensson notes (e.g., on pages 202-3) that during skiing, we move the body's center of gravity up and down repetitively. He states that this is wasted energy, and that it is a substantial amount of wasted energy. Thus, he recommends changing technique to eliminate this vertical motion, and says that he expects skiing speed to improve greatly when technique is changed to avoid vertical motion. In fact, vertical movement of the center of gravity is essential to modern technique. Both V2 and V2-alt depend on movement between the "high-hips" position and a crunched (low-center-of-gravity) position. Lowering of the center of gravity changes gravitational potential energy into kinetic energy (i.e., into forward motion), rather than wasting the potential energy. He states (page 225) that when you push off of the skating ski (and onto the new gliding ski), you generate a force parallel to the ski that you push off of. In fact, this is not how contact forces from a moving ski work; the generated force is perpendicular to the skating ski rather than parallel to it. All in all, an interesting (albeit somewhat dated) instructional book. But perhaps not a good source for biomechanics. Unfortunately, I have not yet found a good source for skiing biomechanics!

Mr. Svensson's book presents detailed analyses of 17 skate skiing techniques and more. I really liked that each technique was presented in a several different ways. Anyone who has teaching experience knows that two different students may find different approaches to a subject more effective. As to 'technical errors' found by 'elite skiers' I have a feeling nordic skiers are like musicians. It is said that the only thing two musicians can agree on is the incompetence of a third. Indeed there are a variety of tweaks and variations on each technique that will prove to be effective for each skier. This book provides ample material for a starting point. This is a really amazing book.

Einar Svensson has put an amazing level of effort and care into producing "Ski Skating With

Champions: How to Ski With Least Energy," and it shows. Trying to capture Cross-Country Skiing technique and be comprehensive yet concise, is nearly an impossible task for a written work, multimedia, or video. Einar Svensson has contributed an important work to the sport. If you are a serious xc skier, then you have to have this book as a reference on your shelf. I do. David McMahon, 1993 Canadian National Biathlon Champion

A lot of work went into writing *Ski Skating With Champions*. It dissects ski skating like no other book before it. Many intermediate level skiers will find it thought provoking. The expert and elite skiers many find a variety of technical errors, or that the text is overly complex - lacks a consolidated and simple understanding of skiing, but for the sport racer the book is a good one to have on the shelf. I also recommend "Tao of Skiing" which takes an entirely different approach.

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