

How Len Johnson Changed the Face of Roller Skiing in the US

Early advances in roller skiing were developed in Europe, but when Bill Koch surprised everyone with his skating technique in 1982, it was the U.S. company Jenex that met the challenge.

Roller skiing is unquestionably the best way for Nordic skiers to get in shape for the snow season. Sure Nordic skiers will run or ride bicycles in the off-season but if they could only do one sport to prepare for the ski season it would be roller skiing.

Travel back in time to the 1950's and 1960's: roller skis were huge monstrosities with three baby carriage like wheels (one in the front, two in the rear) and a hinged rear half of the shaft to aid in the kick phase of classic skiing. They weighed a ton, were not very nimble or responsive, and all had one similarity—they were designed only for diagonal striding (skating hadn't been invented yet). By the 70's, roller skis had gotten smaller. Some were actual snow skis cut down with wheels installed in the hope they would gener-

ate the same on-snow feel as the skis gave before being modified. Most still had three wheels and all were made for classic technique.

Then something remarkable happened. In the early 1980's, the Nordic ski world was turned upside down by Bill Koch's skating in the 1982 Nordic World Ski Championship. The new, radically different technique boasted grace and speed, and quickly became popular. But there was a problem—how to skate on roller skis. Three-wheeled roller skis were not suitable

for skating.

A few years later in 1987, Len Johnson, a Dartmouth engineering graduate, was in Sweden watching the Polar Cup races. The Swedish National Team XC coaches informed him that current Nordic skiers were training more hours, but the physiological test results indicated their training was not as effective as the training programs from the 70's. The junior's dry land training program consisted of about 50% roller skiing and the data indicated that the metabolic de-

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Kris Freeman roller skiing on Jenex roller skis.
Photo by Len Johnson

mand of using roller skis was about 30% less than when skiing on snow. There was simply insufficient training stimulus for optimal fitness. With this information Len returned to the US with a mission—to design a roller ski that would be as close to simulating on-snow training as possible. Experimenting with different designs, Len sent a few prototypes to elite skiers in the United States and Sweden for testing. They were so well received that when he retired from his job at an electronics company, he began making V2 roller skis full-time. This was the beginning of Jenex, the Milford,

AL: Where does the Jenex name come from?

LJ: When I co-founded an electronics company the name was Genex. It became a successful company and was acquired by Teradyne Inc. and the name changed to Teradyne Connection Systems. Twenty-five years after founding Genex I started making roller skis and since my last name is Johnson decided to call it Jenex.

AL: What other companies in the US were making roller skis at the time?

LJ: No one.

AL: Where did you get your inspiration for the look of the first V2?

LJ: There was really no inspiration for the “look” of the roller skis. We wanted a very slow ski that would generate the same metabolic demand as skiers training on a tough snow course and we patented a kinematic damping device to increase rolling resistance and also designed a super light frame.

AL: Looking at other roller skis, what did you try to do better?

LJ: To simulate snow skiing we increased the rolling resistance and shortly thereafter introduced our popular Speed Reducers to make roller skiing safer and also provide variable rolling resistance.

AL: Did others work with you on the original roller skis?

LJ: No, I developed the roller skis from input from exercise physiologists and elite skiers.

AL: Did you rely on other research that was available or did you do your own R & D?

LJ: R&D was done in house. But the data from exercise physiologists and comments from elite skiers was used to develop the flex and rolling resistance of the skis.

AL: Where did you do the work—garage, basement, etc.?

LJ: I still worked in the electronics

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NH based company that manufactures some of the best skate and classic roller skis in the world.

Jenex founder—octogenarian Len Johnson—took time out of his busy schedule to give us some insights about how Jenex changed the face of roller skiing. Len supplied Active Life Magazine with the details from a study conducted by Anders Ek and supervised by Dr. Karin Piehl-Aulin where

company when we made the first prototypes. Teradyne was one of the largest manufacturing companies in NH so I personally made the prototypes on equipment there. The first production units were made in my basement. I continued making them in the basement for several months then moved to a facility in Amherst, NH.

AL: How hard was it to source parts you could not make yourself, for the first roller skis?

LJ: We had a large manufacturing facility where I could build the prototypes. With the exception of the rubber tires we could make everything in house and I located a rubber manufacturer in Massachusetts who could make the tires. Standard parts, such as bearings, bolts, nuts and screws could readily be purchased from many suppliers.

AL: How long did it take to build your sales network in the US? Internationally?

LJ: Because our skis were quite unique it went extremely quickly. Olympic and World Champion skiers immediately began to use our skis and it took less than two years.

AL: Once you were ready to produce the first V2 roller skis, how many people were working at Jenex? How many are employed now?

LJ: All custom parts are produced by local high technology manufacturing firms so Jenex only designs, tests and assembles the components. Only a few people work at Jenex and the number has been the same for over twenty-five years. If we produced the custom parts in house we would need equipment costing over two million dollars and about ten more employees. This is impossible to justify in such a small market as roller skis.

AL: We understand the “V2” connection, but what was the reason for the “Aero” part of the name and what are the benefits

five skiers were tested on roller skis and snow skis over the same distance, and the same course (with snow and without snow). The Jenex model used was the V2-910 (Jenex’ slowest classic ski) and the data proved remarkably similar, proving that his roller skis were able to accurately simulate on-snow skiing. Active Life magazine asked Len several questions about Jenex and his early roller skis:

of large, pneumatic wheels?

LJ: The Aero part was not used until we developed the pneumatic tires in 1999. Skiing on snow is smooth, but skiing on solid rubber wheel roller skis can cause substantial vibration and discomfort. The Aero tires dramatically reduce vibration. Other companies had tried pneumatic wheels before 1999 but they were unreliable and the companies stopped selling them. The 150 mm tires are extremely reliable and because they are pneumatic we dubbed them Aero. They are much safer since they can roll over debris that will cause smaller wheel standard roller skis to come to a sudden stop resulting in a fall. They are also smoother, more comfortable and the Patented Speed Reducers and Brakes are more effective on the pneumatic tire skis.

AL: If you were given the chance to do things differently with Jenex, what would have done different?

LJ: Would have invested in more manufacturing equipment for making prototypes. We have very powerful CAD programs, but only one CNC milling machine for building prototypes in-house. Producing prototypes on our supplier’s fiber-optic laser machines that costs over one million dollars makes the prototypes extremely expensive.

AL: Where do you see roller ski design going in the future?

LJ: We need to develop a very stable and easy to use roller ski that people with limited skiing skills can use. To make the ski safer and smoother it will utilize the pneumatic “Aero” wheels and Brakes and Speed Reducers will be standard. We have been working on the new design for over a year and expect to introduce it in the near future.

Active Life Magazine thanks Len Johnson, Diane Bell and everyone at Jenex for helping us with this article during their busiest time of the year. ■