



**NEW DESIGN OF ICE SKATE PRIMARILY AIMED AT THE RENTAL/NOVICE
MARKET IN RECREATIONAL SKATING AND ICE HOCKEY**

Blade Innovations Limited (UK)

STRICTLY CONFIDENTIAL

Revised – December 2014

All designs protected by © copyright, patent or unregistered design right. © copyright Steven Swan, Blade Innovations Limited. © All photography copyright Steven Swan, Blade Innovations Limited copying prohibited. All rights reserved.

The main question

When learning to skate on a slippery, hard surface, why raise the skater high off the ice? It is counter-intuitive, creates a higher centre of gravity, increases instability, making the novice feel precarious and nervous. It is like a giraffe or stilt walker on a grease pan? The experience is frustrating and negative.

The Invention

Low profile ice skates providing immediate stability due to a lower centre of gravity, giving the novice skater greater confidence to learn more quickly. The initial venture onto ice is a positive experience. The skate blades cost less to produce and can be fitted to current boot designs at the manufacturing facility.

Backstory

Until 2012 I had skated briefly only once as a teenager in 1971, on a family outing. I remember that experience, amounting to some 30 minutes, being unenjoyable and frustrating. Unable to grasp the fundamentals of skating, I spent my time either falling flat on the ice or trying to get round by holding onto the side screen. I did not skate again for over 40 years.

Around Christmas in 2008 I sat watching my family skate on seasonal rinks at Somerset House and Kew Gardens in London. Fun was had, but it appeared most people were either holding each other to stay up, falling over, shuffling round with knees and ankles bent inwards or holding onto the side screens, trying to avoid a fall.

Observations

1

Extensive study has been undertaken by viewing ice skating on permanent and temporary rinks. Development to date has primarily addressed the novice/rental markets in recreational skating & youth ice hockey. The new skate design is not aimed at advanced figure skating, ice dancing or speed skating, as the new concept skates will not suit the greater angle of lean required.

2

Those learning to skate proceed with great caution on a slippery surface, which is very unforgiving if encountered with a fall. Skaters have nothing to hold onto for balance except another person or the rink perimeter rails. Falls have been witnessed both forwards and backwards, often causing the accompanying person to fall as well.

3

The rental market has mostly inherited skates from hockey and figure skating, so they are not specific to the beginner in leisure use. The accepted norm is blades some 75mm from the sole of the boot. There has been a recent fashion for soft or fabric boots giving less ankle support and shorter life, but more comfort. The earlier styles favoured hard plastic, with the blades moulded into a projection of the sole. To achieve more stability, skaters tend to scoot along with short faltering strokes and bend knees and ankles uncomfortably inward with a risk of joint and soft tissue injury.

4

Even more able recreational skaters only need to lean over a few degrees, so in the leisure/novice/rental skating market, the position is generally upright. The now extremely popular temporary or seasonal rinks are for learning and fun, not for competition. Therefore, the objective for new visitors should be to provide a very positive experience, leaving a desire to return and improve, then moving to higher skates and more advanced technique.



Novices on seasonal rink trying to skate by bending knees inward on typical hockey skates that raise the skater high off the ice.

Injuries – Newspaper extract from the start in popularity of seasonal UK rinks

By Kate Devlin Medical Correspondent of The Daily Telegraph, Published: 28 November 2008

“Accident and Emergency wards expect a rise in wrist fractures, sprained ankles and even head injuries during the skating season, caused by people taking a tumble on the ice, especially at temporary rinks. The problem has been exacerbated in recent years by the growing popularity of the rinks, encouraged by UK television programmes like ‘Dancing on Ice’.

Tourist destinations including the Natural History Museum and Somerset House in London, Princes Street Gardens in Edinburgh and the Centre for Life in Newcastle run hugely popular skating rinks from December until January. They attract crowds of inexperienced skaters, who are typically shakier on the ice than those who visit more permanent rinks. St Thomas' Hospital in London, near to the Somerset House ice rink, found such a noticeable increase in the number of breaks, cuts, concussions and dislocations in its accident and emergency units that it launched a review into the problem.

Over a single 6 week winter period, London Ambulance Service said that it had been called out 101 times to the capital's 16 rinks”.

Don MacKechnie, vice president of the College of Emergency Medicine, warned skaters of the potential for suffering serious head injuries. He said: "Head injuries can cause all parts of the skull to swell, including blood vessels, placing great pressure on the brain that can cause brain damage or even death”.

Blade Innovations solution

A low profile blade, with a maximum height of 20mm from the sole and heel of the boot. The lower centre of gravity gives an immediate increase in perceived stability. The skater feels instantly more comfortable and at ease, concentrating on moving forward and learning to skate quickly, rather than on trying to avoid a fall. The prototypes shown below are existing heeled boots with a separate blade riveted on rather than a moulded-in blade, although this of course an alternative option. The reduction in metal volume means that the blades are cheaper and easier manufacture and can be simply fitted to existing standard boots to form the new design. The low profile allows a more than ample lean angle for recreational novice skaters.



SFR skates modified by Blade Innovations and tested on ice by Steve Swan



Jackson soft skate boot modified by Blade Innovations and used in several sizes in test referred to below

Intellectual Property owned by Blade Innovations

UK Patent granted
 Canadian Patent granted
 International PCT filed
 European registered design
 European patent pending
 USA Utility Patent

Testing and Feedback

The SFR modified skates have been tested by the inventor Steve Swan and others of varying proficiency at a rink in Bristol UK. A short video accompanies this document showing Steve (now 57) going straight onto the ice, wearing the new skates and without practice being able to easily complete a short circuit without falling.

In addition, five pairs of modified Jackson rental skates from size 3 to size 12 (UK) were tested at Bristol with a group of adults and children associated with a small company providing seasonal rinks in the UK. The group gave positive feedback that the new design would particularly appeal to the novice, that could be offered as a rental option at rinks alongside the current skate designs or marketed for sale.

The same company responded as follows:-

“We are convinced that your design could be beneficial to novice or less experienced ice skaters. This can be very interesting for our clients who will rent an ice rink and skates from us, where with they can decrease the number of casualties and maybe even generate more income because their target group becomes bigger”.

Market

It is believed that this product has to be globalised to create the necessary volume, as the UK market is insufficient (only 64 indoor rinks). Figures from the International Ice Hockey Federation in 2011, indicated there were 6734 permanent rinks in 50 countries. There are many permanent and seasonal rinks worldwide set up by leading companies such as Everything Ice Inc. Some colder countries have outdoor rinks as well e.g Russia has 951. It is considered the greatest marketing potential is for a rink supplier to commission the manufacture of the Blade skates, under their own brand and exclusive rights, by an existing skate maker. These could then be supplied with the company's own rink constructions, sold to other rink installers and retailing. Blade skates could represent 20% or 30% of boot stock at a rink to serve the novice market.

Summary

From developing, testing and the positive feedback received, it is believed that Blade Innovations low profile skates could transform the experience of novice skaters at recreational rinks and in junior hockey. The skates are economical to produce by virtue of requiring less material to manufacture the blades and by the ability to simply rivet blades to current boot designs at the factory. They could be offered as a choice alongside traditional skates at any rink to encourage quicker learning, (similar to the introduction of the shorter Snowblades for skiing), sold to other installers or marketed globally on the internet and in- store.

- Provide instant feeling of stability and greater immediate confidence
- Reduce falls and resulting injuries
- Lower production costs
- No need to redesign current skate boots
- Faster learning process
- Positive novice experience increases repeat and long term business

Steve Swan
Blade Innovations UK
January 2015