

Blademaster Skate

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BARRIE STAFFORD

When you see National Hockey League players flying around the rink, stopping and starting, blades digging into the ice, do you ever wonder how their blades get sharpened just right so the players don't worry about falling down?

Sharpening skates properly is more of an art than a science, but anybody can learn the dos and don'ts. You just don't slap the skates in a clamp, and run them over a whirring grinding wheel a couple of times, and hand them to the player with a "there you go." There are guidelines to follow for NHL equipment managers, who have to keep their players fast and safe. Before Edmonton Oilers equipment manager Barrie Stafford, who has been a part of five Stanley Cup-winning teams, along with Olympic and Canada Cup squads, starts sharpening skates, he has several rules of thumb:



1 MACHINE MAINTENANCE

The tabletop must always be clean. You can use a small brush or whiskbroom to remove dust and any other shavings. I use the built-in vacuum system before and after every sharpening, and I empty the sweep tray daily. Blademaster's Slickit will polish the tabletop so the skate holder slides without friction. At Rexall Place, where the Oilers play, I use the Blademaster BR-2004 and when we go on the road, we take Blademaster's BRC-2005 portable.

2 CHANGING THE GRINDING WHEEL

Before changing, "ring" test the wheel. You do this by placing the wheel on the tommy bar and tapping it with the wheel wrench (you should hear a ringing sound). If you hear a dull "thud" sound, the wheel is cracked and should be discarded.

Choosing the proper grit wheel is a personal preference. I always use Blademaster's 8MXP, which is a multi-grit wheel. Grinding wheel grits run the gamut from 60 to 120 (the lower the number, the coarser the grind, which means the wheel removes material faster but leaves a rougher finish). The higher the grit, the less aggressive it cuts, but you get that mirror-like finish. I find the multigrit 8MXP wheel dresses well and is certainly efficient for my needs. Make sure the wheel is fastened tightly and all guards are in place. I always stand off to the side when starting up a new wheel just in case. NHL trainers use a variety of wheels from 8MXRUBY to the 8FR fine-grit wheel.

3 CHOICE OF DIAMOND

The wheel must be dressed properly before you start sharpening and the best dressing comes with a newer diamond. The diamond will last longer if you rotate it while dressing. I find the Blademaster TSM-688 diamond lasts quite long and has good value for the price.

4 HOLLOW/QUILL SETTING

Before dressing the wheel you must set the quill to the preferred hollow. It can be set anywhere from 1/4" to 2". Make your hollow selection and lock the quill into position. I always make sure the radius arm pivot points are tight, with no play and the yoke is to be centered. Make sure the yoke slidebars are secure and slide freely in their ways. The top wheel guard and screws secure the slidebars.

5 DRESSING THE WHEEL

Before you turn on the machine, check the wheel guard to make sure there is enough clearance for the wheel to turn freely. After you've set the quill to the desired hollow, move the radius arm in an up-and-down sweeping motion while turning the front-feed knob until the diamond is just touching the wheel. Make sure the Lexan protective shield is in place before turning the machine on. Care should be taken while dressing the wheel as it spins at 3450 rpm. Start the dressing process by slowly turning the front-feed knob clockwise, which feeds the diamond into the moving wheel, with your right hand, as you sweep the radius arm with your left hand in an up-and-down motion. With the

diamond cutting the wheel, keep the up-and-down arc going until the entire face or width of the wheel has been smoothly dressed with the diamond. As the wheel face is cleaned and contoured to the desired radius, it is important to use a slow, consistent up-and-down arc movement as this will lead to a smoother, properly dressed wheel.

6 THE SKATE HOLDER

A properly aligned holder is imperative in skate sharpening. My Blademaster SH-5000 holder is pre-set at the factory. The skate blade (or runner) must be centered vertically when clamped in the holder, and aligned horizontally with the center of the wheel face. Once you've dealt with these important preliminary procedures, it's time to start sharpening. Here are a few guidelines I follow:

- First, I look down the length of the blade to make sure there's no bend in it. If there is, I use the Blademaster blade straightener which is attached to the side of my machine. Then, I run my thumb and forefinger lightly along the blade, feeling for any rough spots or burrs. If I feel anything, I use a Blademaster TSM-5004 rectangular hand hone, moving it along the length of the blade to smooth off the jagged areas.
- I check for any looseness or "play" between the cowling (blade holder) and the runner, which may be attached in a variety of ways depending on the brand. Tuuk, Tuuk Plus or Lightspeed blades are all attached by a small post and nut

configuration. CCM and Easton have a vertical nut and bolt design, and Graf has a screw-head nut in the back of their cowling. Also, any instability between the boot and blade caused by a loose or rusted rivet should be corrected. Each NHL trainer has an air-riveting machine to tighten or replace rivets. In the Edmonton Oilers locker room we use Blademaster's 811-PR skate riveting machine, as well as the SC-2100 skate service center.

- I sharpen with the toe of the skate facing left (the clockwise spinning wheel allows me to go with the wheel when I make my sharpening passes). Make sure the skate is centered in the holder and clamped into position.

7 WITNESS MARKS

Start the process with a pair of "witness marks." A slight touch of the wheel at each end of the blade, about eight inches apart or between the posts on a Tuuk blade.

Witness marks are an indicator that ensures the blade is centered with the high point of the radius on the grinding wheel's face. This is an imperative point in assuring we have two even edges.

- A parallel vertical witness mark, approximately 1/16th of an inch wide, on each end of the blade, means the wheel and blade are perfectly centered or level with one another.
- A "V" mark at each end of the blade means the blade has to be adjusted up in the holder to the center of the wheel.

Sharpening Tips by Barrie Stafford

- An inverted “V” at each end means the blade has to be adjusted down in the holder to the center of the wheel.
- A different mark at each end may indicate a slight bend or a skate that has a high or low edge.

If the marks indicate an out-of-center alignment, make adjustments up or down with the cam handles and begin sharpening.

8 SKATE SHARPENING

To start, I make one pass, toe to heel, then three or four passes post to post (along the horizontal length of the runner not including the toe and heel) in a consistent, steady motion. The Blademaster 8MXP wheel works efficiently with a slower, steady pass. Pressure should be consistent throughout. During my initial passes, I watch the sparks coming off the wheel, too. A consistent spark width (the width of the runner) is also an indicator that the runner is hitting squarely on the wheel. I now tip the holder up, looking at the blade bottom to assure that I've cleaned up any previously noted problem areas.

If I notice any nicks or an edge missing at this point, I'll make a few more passes until the blade is clean and smooth. Avoid excessive pressure at the front, and especially at the end of the pass. Our goal is to maintain a steady, even pressure. Uneven pressure could alter the toe-to-heel profile of the runner.

It's very important to have consistent, even pressure. At this point, I make the second-last pass the complete length of the blade. Now, before my last pass, I apply Blademaster's Gusto Glide, which comes in a dauber bottle, to the bottom of the blade. Make a slow and steady heel-to-toe last pass, slower than the previous four or five, this leaves the runner with a smooth, polished, mirror-like finish. The finished product should have no ripples or discoloration from burning (which is an indicator of too much, or unsteady pressure). I then take a small cloth and wipe off any excess Gusto Glide. I always make a mental note of the number of passes on the first skate so I can match that number to the second.

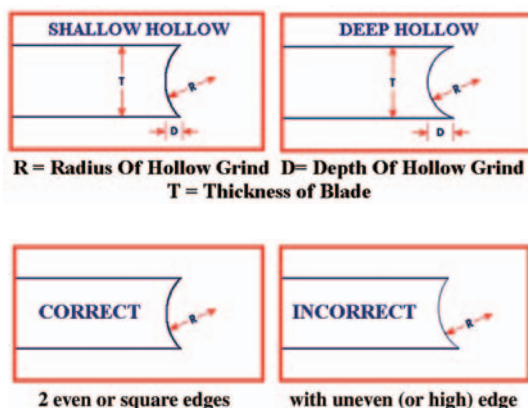
Finally, I take the TSM-5004 hand-hone and run it along both sides of the blade with a light but steady pressure, taking away any slight burr and I'm careful not to touch the freshly sharpened edges. I then run my fingers lightly down the blade making sure I have two smooth edges.

With the knowledge and understanding of the fundamentals of the machine, the wheel, the holder and the skate blade, with practice, anybody can start sharpening skates. Only through experience, can you develop the “feel” which comes with doing skates for many years. All experienced skate

sharpeners develop a pattern or profile of their own. Each NHL equipment manager has his own nuances. Every one of us develops a system that works for his required results. The suggestions I've made are just the steps I go through to get what I feel is an optimum end result. With all of us, the end result is what's most important; with a properly and consistently sharpened skate being our goal.

WHAT DO WE MEAN BY HOLLOW?

The diamond dresses (cleans and contours) the wheel face to a convex surface. As you run the blade along the wheel, the convex wheel imparts a concave track along the length of the blade. This concave track has two outside edges and the space between the edges is called the hollow. A properly sharpened skate has two equal and even edges.



DEEP HOLLOW

A deep hollow (1/4 or 3/8ths of an inch) allows for a more pronounced edge, which makes for tighter turns and more bite for stopping. The flip-side is the deeper hollow makes the blade sink deeper into the ice, causing more drag and less glide. Players with a deep hollow have to work harder because of the friction between ice and blade. The more pronounced edges of a deeper hollow may chip easier and require more maintenance.

The deeper hollow is usually for lighter, smaller players; players less than 185 pounds. Players who maneuver in traffic or stop and start a lot, or feel secure with a little extra edge, may prefer a deeper hollow. Wayne Gretzky, when he played for the Oilers, preferred a 1/2-inch hollow because he was more of a dippy-doodler, starting and stopping quickly.

FLAT HOLLOW

A flat hollow (5/8ths, 3/4, 7/8ths or an inch) is more conducive to heavier players. The less-pronounced edge allows for more glide because the blade doesn't sink as deeply into the ice. Players using less hollow will use less energy. A flatter hollow was greatly beneficial to a player like Paul

Coffey, who had longer strides and liked to take the open ice and go. Paul always experimented with a very flat hollow between one and two inches. The flatter hollow blades are easier to sharpen and need less maintenance.

There seems to be a general misconception that sharp skates can only be achieved with a deep hollow. In the NHL, a player's skate hollow is a personal preference based on trial and error and many years of skating. Each player has a comfort level on his skates, and must always feel confident and secure on his edges. The comfort level is based on a player's ability, weight, skating style, and needs as he does his job. Whether the hollow is 3/8 or 1 inch, if sharpened properly, both will be very sharp.

Six-time Stanley Cup winner Mark Messier, whose playing weight was around 205 pounds, used a 1-inch hollow when he played for the Oilers.

Messier, a heavier power forward had long, fluid strides. He didn't need as much hollow because he liked to glide on the top of the ice. Less hollow, more glide. Current Oiler George Laraque, who tips the scale at 250 pounds, also uses a flat hollow at 1 inch. Norris Trophy-winning defenseman Chris Pronger weighs 215 pounds and prefers a 7/8th hollow. Colorado Avalanche player and Canadian Olympian Joe Sakic skates with a 5/8 inch hollow, which may seem quite flat for a smaller player. On the other hand 215-pound Jarome Iginla, a Mark Messier-style player, skates with a 1/2 inch hollow, which may seem quite deep for a player of his weight. These players all require a different hollow based on their unique skating needs and playing style.

During every game, I watch closely to see if players slide into a goal-post or come in contact with another player's blades, a stick, or the boards, which may take off an edge. If they

take a stride and fall, I wonder if they have lost an edge. As an NHL trainer, I know what every player's hollow is because I only have 23 players. I sharpen most of the skates before the morning practice on game-day, so the players can test them on the ice and it gives them time to make adjustments in hollow at game time if needed. We may also adjust hollow up and down depending on the building, climate and condition of the ice in the city we are playing in. Not all of our players get their skates sharpened for every game. Some may go two or three games, others more. Some players get their skates done two or three times a game, depending on ice conditions or bad luck with nicks. I sharpen 12 to 14 of our current Oilers roster before every game. One or 2 players get them done randomly on game days.

Edmonton Oiler player hollow breakdown:

3/8 inch	3 players
1/2 inch	9 players
5/8 inch	1 player
3/4 inch	3 players
7/8th inch	5 players
1 inch	1 player

Canadian Olympic Team breakdown:

3/8 inch	2 players
1/2 inch	12 players
5/8 inch	1 player
3/4 inch	3 players
7/8 inch	5 players
1 inch	1 player

Paul Coffey may have been the greatest skater in National Hockey League history. It was like his skate blades never touched the ice, as if he was floating. But, he was naive about what worked for him, until he joined the Oilers in 1980. “I had no idea what a hollow meant. Barrie was very patient with me and explained how it worked. He helped me realize what was right for the way I skated,” Coffey said. “If your skates aren't sharpened right, you can't play.”

