

Rob Sherwood The Hows and Whys of ski tuning.

By Danny
Teuton
Chuck
Heltzel

When we (Danny and Chuck) started this story we wanted to find out about ski tuning. Because we liked to ski and because we knew friends personally who tuned skis we went to interview Rob Sherwood, an employee and ski tuner for the Sport Stalker.

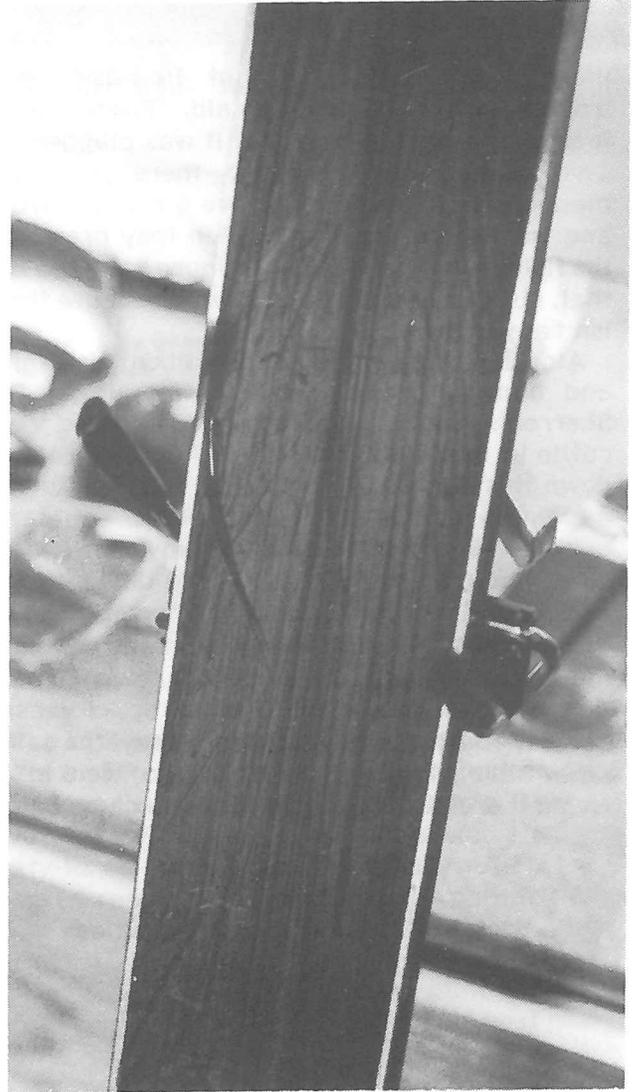
Rob is 25 years old. He grew up in Lincoln, Nebraska, where he worked in the ski business and longed to be in the mountains, preferably a ski area. He has instructed cross country skiing and has spent the last 6 years working in the ski industry. He talked to us in detail about ski tuning.

"My name is Rob Sherwood, and this is the Sport Stalker. In Nebraska I was basically a flat land skier, but we would drive to Steamboat 15 hours one way for a week of skiing. The whole year would be like that one week of skiing.

I have skied since I was 11 years old, and believe it or not we had a ski shop in Lincoln. I worked in a ski shop and did basically the same thing that I came out here to do. I was a ski salesman, technician and cross country clinic leader. I taught a few lessons, and I thought that Steamboat would be a great cross country resort. Yet when I came out here it was such a good place to downhill ski that I have been doing

that ever since. I now help manage the Sport Stalker and tune skis.

"Basically when we look at a ski we decide how much of the ski actually needs to be tuned. We inspect the ski for any major problems and there can be problems with the ski base, such as with a large hole, a scratch or some other major or minor problem. We might have to do an inlay first or some type of base weld where we would need p-tex and/or epoxy to fill in the ski.



**"This old ski
has to be belted."**

"This old ski is in such bad shape it has to be belted even before applying p-tex. A brand new ski that has never been on the belt will take a year to wear down, and then it wears down enough that you need to put the ski on the belt. The belt is really abrasive. It's a lot better to just take the hand file and file the ski. This ski (pointing to damaged ski) probably has 60 days use on it, and it was never tuned, so we have to really belt it down to even begin tuning.



"P-tex is actually polyethylene, a type of plastic. P stands for polyethylene and tex stands for something like protex. I'm really not sure what it means, but I bet any ski magazine will tell you. Ski magazines explain those 'buzz' words — words familiar to the trade. P-tex has something to do with molecular structure and chemical make-up.

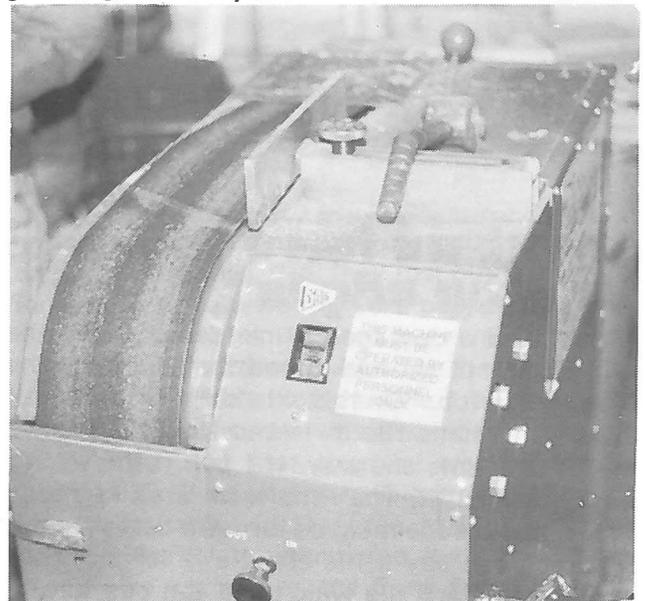
"First of all we want to fill up the holes on the ski. Then we take p-tex and put it into the hole, epoxy it, and clamp it down. Then we heat it up and actually repair the ski like one would repair a flat tire. We actually put a piece of material in there.



"Another repair is a base weld. If there's a small gouge, we would heat some p-tex and fill the gouge. There are several different types of p-tex and a lot of different colors, greens, oranges, almost any color. The p-tex bottom on one ski can be harder than the p-tex on another. One p-tex is 1000, another p-tex 2000. P-tex 1000 is harder and stronger. It's less susceptible to density, and it's faster, so all the racing skis have the harder p-tex. A regular skier usually doesn't buy that type of p-tex. It is done by the manufacturer with special equipment. We can repair either of these skis with regular p-tex 1000 and a couple of other different brands. P-tex is pretty much guaranteed to hold to the core of the ski. Most skis have wood or foam cores; once water gets into the core it'll just seep in. The whole base may delaminate.

"We can save this ski, one of two ways. First we take a very sharp knife and a template and cut out a pattern that looks like a half moon. This is called an inlay. We pull a piece of material out and cut a piece that's exactly the same. Then we put some epoxy in there, very good epoxy; we use twenty-four hour epoxy. Then we clamp it up and apply heat. Heat will make the epoxy soft and it will flow everywhere. The flow aids in the hardening process. Epoxy comes in two parts, part A and B. When the two are put together they work as a chemical reaction. Heat speeds up that chemical reaction which makes a better bond. So we have a new piece of material in the ski.

"Next we grind the ski down. We use grinders a lot. Basically a grinder is a belt sander, an aid to flattening skis. The grinder reduces the time in ski repair to almost nothing. We drip p-tex in all the little cracks, then grind the crack down and sometimes lose a lot of the ski base. Sometimes, we waste a lot of time on a little crack which may go away by grinding, but we take some of the base surface off of the ski in grinding, so we try to avoid that.

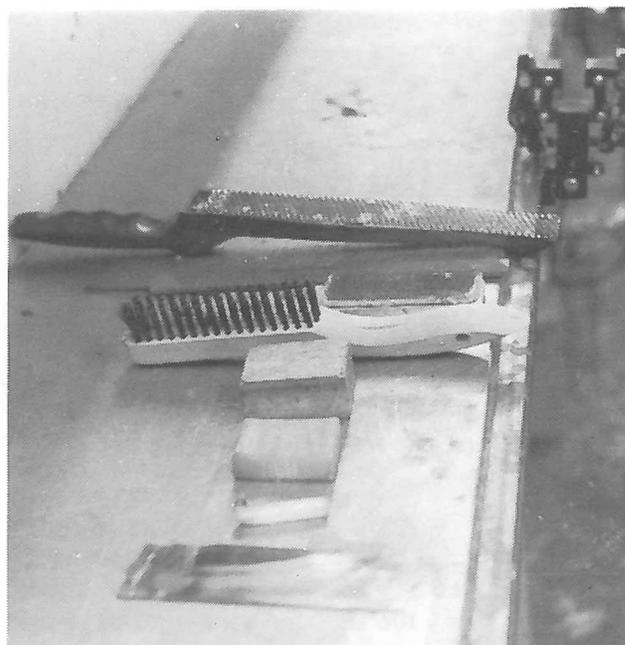


"Next we have to file the edges. We may need a whet stone and a couple of other things. Basically what we're looking for is to feel down the edge of the ski for smoothness. If there's a bad impression as you are feeling along that's a burr. We need to file that down and smooth it, even if there's a little dent. Basically you want the edges to be as smooth as possible. Any sharp indentation will slow down the ski. The basic customer off the street usually isn't that involved, but we like people to get what they pay for. We tune skis, and we want them to have a ski that is as smooth, flat and as fast as possible."



"next we have to file the edges"

Rob used a damaged ski to demonstrate the full process of ski tuning and the equipment he uses for the job. "On this ski I'd fill all the small cracks and hand file it. I need to know about a file. It only cuts one way. If I pull it the wrong way I can dull it. The little teeth are like razor edges, and the file must be turned a certain way. A person can buy a file especially for skis, but this is a bastard file which one can buy in any hardware store. Some files designed by the



'Dickey Pete' Company are favorites of ours because they last a lot longer.

"Certain ski files are designed specifically for skis. A basic file from a hardware store will probably cost about \$3.00 and will tune about 3 pairs of skis. The Dickey Pete ski file costs \$6.00, and I can tune 10 pairs of skis, because it's better made. The Dicky Pete has arrows, and you are supposed to use it perpendicular to the ski. The blade should be facing the cutting edge, that's how to use it. If the tang is horizontal I push, if it is vertical then I pull, otherwise I'm dulling the file and the ski. So I just make sure I'm cutting the right direction with the file. Another rule of thumb is to have your hands out to the side to avoid getting your hands cut by the edges.

"One can actually bend a file on a bench and bevel the edges which retards the 90 degree angle. Some people prefer beveled edges (the racers), but most have right angle edges.

"I rub my thumbs on the edge of the skis to feel the sharpness. Before they had the benches ski tuning was just basically filing across the counter. With the file and the tang unstable it's hard to get leverage. That's why we now have benches and vises.

"So that's basically the base file, and I don't have the device here right now which tells us if the base is flat and true. We don't have that because we donated the rebar beam to the

Winter Sports Club with using privileges. That machine makes the base and edges totally flat, and we just pull this rebar down the base of the ski to see if there is light under it. If there is that means there is some depressions or some type of mount that isn't allowing the rebar to lay flat. There are only a few of these beams in the United States; they are made in Europe. There they have a large room where a big striker strikes the beam and makes it precisionally flat. So I can

lay the ski down and push on the camber and if I see any light then there's something that's not flat. If we ever have a problem with a ski's flatness we can take it to the Winter Sports Club and use the rebar beam."



"The Dickey Pete file has arrows."

Rob then continued talking about files and filing skis. "A file cord is used for cleaning the file. If we keep the file really clean it will last a lot longer and cut better. We send to a company for new files, or they can be recut. Some cheap ones I don't really worry about, because they get used beyond the point of repair.

"There are several tools for ski tuning, one of which is called the turtle, or one of which is the duro file, or the side file. These tools are seen in a lot of magazines because they come in handy to tune your own skis. Of course, a bench is really nice to have also."

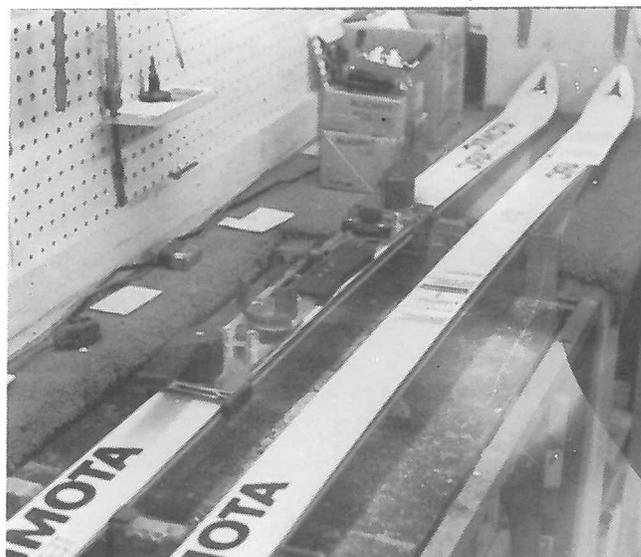
Rob pauses to back track a bit, "I should have shown you how to use a brake retainer. Salomon makes one specifically designed for ski tuning. If you don't have this tool in your shop, you can take a rubber band and put it around the top of the ski and pull the brake up, if you see the brake needs to be out of the way. When I file I don't want the brake getting in the way. In the old days rather than hassle with the brake retainer they just took the binding off. We like to have a brake retainer, but if you do it at home, just use a rubber band.

"For the side file I like to use a bench. A vise grip on a ski bench is adjustable and can hold the ski on its side. The grip need not have vice teeth because that is abrasive to the ski. As I file I basically push with the tang down and pull with the tang up. When the file is on top of the ski

that's an exact right angle. I can come close to a 90 degree angle, but I need a tool or something makeshift to check it. I use a block of wood or a cork, which if I put that at an angle, I get 90 degrees and most of my work is going to be done.

"I look at the ski a little better and watch to sharpen all the way to the tip. If it's too sharp on the tip it's going to be really hard to ski. Then what we do is called de-tuning. We may use a file or a strobe depending on how much you want the skis detuned. We grind it down and rough it up a little bit. We want the ski not too sharp because a brand new ski that's really sharp will bite right into the snow and make a person fall. Some people bring their skis back and say they are too sharp. Situations like that happen, so it's standard. We detune everybody's skis as a rule of thumb.

"There is a resting point where the skis touch, if they are both the same size. Where they touch, I start from there and tune forward along the running surface of the ski. The part of the ski that actually touches the snow doesn't need detuning. Even though we've sharpened them, there's going to be burrs or little knicks that we couldn't quite get rid of. We try to get the ski flat and the edges square, since a turn is carved with a 90 degree angle."



"The real enthusiastic skiers will have their skis waxed or tuned"

Rob then talked about waxing. "Last, but not least, waxing keeps the ski from sticking to the snow, protects the base of the ski and makes the ski fast. One can wax with a roller machine, and that is more popular because it's faster. The roller puts the wax on hot with a rubber roller, and we roll it over the ski nice and smooth. We look at the bottom of the ski to see if it's fully waxed.

"A waxer costs about a thousand dollars and we might wax 50 to 100 skis each year on that waxer, so we get our money's worth. We have a lot of customers that come in just for wax, especially on the powder days. They don't want anything to ruin the experience they want to have, and they want the fastest ski they can have. Powder tends to be sticky, especially if it has a high moisture content, and wet sticky powder will stick to a ski that is not waxed.



"It's important that when you're tuning a ski that you notice other things."

"The next step is to take a scraper and scrape down the ski. There are different techniques to use. I like to use a pushing technique with a very

sharp blade, flat sharp. In fact, every time I do a wax job I put the blade in a vice and run the file over it. I file the blade to a true 90 degree angle. Then I take a cork and smooth down the wax. We also have a big box of fur animal pelts, which helps rub in the wax. What is really 'more the scene,' a good wax job will reflect on the whole business because of cosmetics. People look at a bad wax job and think that it's a bad tune too. We know we do a good wax job if it is really smooth.

"Another way to wax is using a hot iron, the same type of iron that mom uses for clothes. A steamless iron works better than one with holes because wax clogs the holes. When we sell a new ski we impregnate the ski with wax. We recommend waxing for a new ski with no extra charge. We often impregnate red wax because of the molecular structure in the base of the ski and it's the softest wax and soaks into the pores.

"Wax keeps the ski from sticking to the snow."

"The first thing in the morning, we check the temperature and decide which wax we're going to use for the day. Different waxes are for different snow temperatures, so we need to choose the wax for the day. If we need a different type we scrape off the red and put on the wax of the day. Gold wax is the universal and will work for all temperatures. Red is for the warmer temps, and the colors go from silver to gold, to red, then blue, then green, which is for 40 below weather. A lot of times we use a combination.

"We take a hot iron and touch it to the wax with the ski laying on the vice. We drip the wax down the ski in a line, then run the iron down the side of the ski. We are careful to cover every section of the ski, yet never touch the iron to the ski. The skis are put together with a heat-bond process with epoxy, and if you heat up that epoxy you'll melt it. Then the ski can delaminate, and basically one can ruin a ski.

"We have a lot of customers that come in to get their skis waxed on powder days."

"The real enthusiastic skiers will have their skis waxed or tuned after every time they ski. That way the skis will last a lot longer; even for a beginner a light tune or a light file will help the skis last longer.

"It's important that when you're tuning a ski that you notice other things. There can be problems in mounting, being crooked or off center, or maybe even screws through the base. We need to bring those points to a person's awareness, just for our credibility. Sometimes a person will bring in a brand new ski that has been detuned or has no wax, and the ski is still sticking to the snow. Then we need to help them.

"Skis tend to wear on the inside edge first, and for the longevity of the ski we recommend rotating the ski just like a tire. A person can swap bindings from one ski to the other, so that the edges will wear evenly. We check for flatness or any defect. We try to be as thorough as possible."

"That's why you see a lot of skis that have pink bases."

"Probably the most popular skis on the market are Rossignol, K2's, Dynastars and Fisher. We tune any type of ski. I've tuned old wooden skis with metal edges on the bottom, to the newest skis that sell for 1300 dollars a pair. We sell a pair of skis for 500 dollars. It has a new fabric carbon and is the lightest weight and up-to-date material.

"I like to tune skis that are in good shape, not the beaten up and missing parts ones. I see a lot of skis that have rust on the edges, and that's very bad. When a person respects the ski he doesn't let them get like that. Many people forget what their skis look like when they bring them in. Often we'd like to take a picture of before and after.

"Our guys can tune skis in less than an hour, maybe 45 minutes, so the money and labor costs works out. To cover all our overhead costs we need them to make about 25 dollars an hour for the shop. This year a ski tune will cost from 15 to 20 dollars, so that's in line with labor.

"We probably go through about \$10,000 worth of wax a year, and the U.S. ski wax gives us the best deal we have found. There are three basic steps in tuning skis, filling in the holes, filing the ski, and waxing the ski.

"I got into ski tuning because I love skiing. On a perfect powder day it's the most beautiful sport in the world. I also have been fortunate to ski several other resorts since I've lived here. We have ski shops in Snowbird, Aspen, Keystone and Beaver Creek, all the Sport Stalkers are owned by Ben Hamblton. I was fortunate enough for the last two summers to be the assistant golf pro



Rob

at the Aspen golf course, so I've had skiing in the winter and golfing in the summer."

Upon concluding our interviews Chuck and I discovered we had learned a lot, and we were very glad that Rob had cooperated and helped us with information for our story. We were very glad to know how to tune our own skis just in case, we might have a "Five Wire Winter."

"The second year I was in the general manager position. I had a big guy about 6' 8" that didn't like his ski tune. Actually he didn't like the skis being detuned because he thought we took away too much of the edge. It's actually a personal preference and experienced skiers are more particular. After that situation we've been a little wary; that was the biggest guy I ever saw!

