## ANNALS OF SURVEYING

## THE STAR SHOT



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One Friday night last February, instead of being safely home at 10 o'clock, watching the world's disasters unfold on the tube, I was clutching for dear life to the back of a snowmobile sleigh speeding through the woods in the wilds of Renfrew County. The temperature, according to a dilettante Swede named Celsius, was  $-30^{\circ}$ , and our route, laughingly called a trail, led between trees one metre apart, which just happened to be the width of the sleigh. My function, apart from being the subject in a scientific test of how much the human body will stand before shattering, was to steer the sleigh; so intent was I on missing the trees that I didn't have time to notice the deadfalls over which we passed, the violent changes of course, the brush which lashed my usually damask cheeks, and the low decapitating limbs. My grip made vice-like by terror, I usually hung on, even if skipping along like a tin can behind a bridal car, but sometimes I was swept off by limbs or by the pressure of centrifugal force and caromed into the bottomless snowdrifts, while the snowmobile and sleigh disappeared down the trail. After a while the driver, Ron Cavanagh, a recognized expert on human endurance and the antigravitational forces generated by snow vehicles, would notice, by the absence of dull thuds behind him, that I was gone, and would come back for me, sometimes before I had struggled from the snow bank.

Why, you may ask, were we doing this, at a time when sensible people were sitting around sipping brandy, having dined on pheasant under glass? Well, we had just completed a ritual known as a star shot, one of the effects of which is that you may come back, as we did, looking as if the star has shot you.

For survey purposes, we had to find the direction of a certain line, at a place probably unvisited, except by the more athletic timber wolves, since the first surveyor crawled over the cliff. The sun could be used for this purpose, but the Pole Star is considered better; instead of speeding from horizon to horizon, it stays pretty well fixed up there, hardly moving at all.

But there are a few disadvantages. Everybody must have noticed that the sun comes out during the day, and is therefore easily visible, but the Pole Star is a night creature, and even then is hardly any more noticeable than Pluto (the planet, not the dog). Furthermore, the sun gets low enough in the sky to be easily sighted, but the Pole star is away up, so high that the average person attempting to sight it must wrench his neck into a painful U shape, with a terrible effect on his ability to drink tea or dine with delicacy. In fact, if the star shot has been protracted, citizens have been known to flee from the observer, convinced that they are seeing a ghost with its head tucked underneath its arm.

Still, these drawbacks are accepted by surveyors mad for accuracy, and so at dusk, several hours before the pitiful tale told above, we had arrived on site, after a similarly hair-raising and heartsinking ride on our vertical-climbing snowmobile. It was even faster than the later one, because the driver could see where he was going this time, and even the sleigh-scrambler could see enough through the clouds of snow to avoid the worst perils. So, apart from a severe case of whiplash, a pronounced elongation of the arms, cuts across the cheeks made by brush, but so similar to sabre cuts that I was compulsively clicking my heels and murmuring 'bitte ?', and feet completely by-passed by blood already forming ice-crystals, I was O.K., once I had massaged my eyeballs into focussing and rotating properly.

We prepared for the star shot. First, we excavated a hole about the size of a Siberian tiger trap in the snow, and at the bottom of it found the survey station. Into this Ron and the theodolite were lowered, while I set off down the trail to set a reflector behind the backsight. All seemed well. We couldn't see the Pole star just yet, but the sky was clear, and it would surely appear. We had two watches, flashlights, a spotlight, batteries — we'd be gone in half an hour.

Alas, it didn't happen that way, and the reason, I maintain, was the temperature. I have this theory that not only does cold slow down molecular activity, but it has the same effect on human affairs. How the northern races got where they are, I don't know — if it hadn't been for the tse-tse fly and the mosquito, the people from the tropics surely would have dominated the world.

As I went down the trail to set the reflector at the next station, I noticed numerous tracks in the snow, which appeared to have been made by large animals, perhaps moose or woolly mammoths. However, I was nonchalantly assured by Ron that they came from the resident pack of timber wolves, which was probably observing us at this very moment.

"But", he added reassuringly, "not to worry. They're probably just curious".

"About what?", I asked.

"About how we taste", he replied with a ghoulish chuckle.

It happened that just as he said this, I was taking my glasses out of my pocket, and it is just possible that the thought of my fair flesh being given the bite by a vulgar wolf caused me to treat them roughly. Or the cold might have made the plastic of the frames brittle — the temperature, I noticed, was dropping with an audible hiss. Anyway, the left hand ear piece snapped off, and the right hand frame broke at the same moment, dropping the lens into the snow.

That left me in the classic dilemma of the myopic masses — how to see to find lost glasses. It happens that my left eye, although an orb of lustrous beauty, is useless for seeing with. Like the eyes of annelid worms, or those of the millions of unfortunate Canadians who looked up at the sky instead of hiding under the stairs during the recent eclipse, it detects only light and shadow. So I had to find the lost lens.

In spite of the deep snow, I found it, but how could I possibly hold it on? There was only one way. Remembering the facial contortions of Erich von Stroheim and innumerable other Junker generals of B movies, I bent my ocular bones apart, forced in the lens, and found that I could see. Not only that, but since the left hand corner of the glass was broken, the glass was ventilated, and didn't fog up, and there was a convenient channel for the tears which, because of the pain, I was shedding. So that, I mused, is why those generals were so savage. It was the monocles.

I made my way down the line, set the reflector, and made my way back to the theodolite. Ron looked at my monocle.

"Wir haben der schpottlight vergessen", he said, clicking his heels.

"Was fur ein gottverdammte Nacht!", I said, giving my monocle an agonizing twist.

"Jawohl", he barked.

"Kannen sie", I asked, "Polaris sehen?"

"Was fur ein gottverdammte nacht", he repeated. I glanced up. There was now a film of cloud over the sky, and the Pole Star was nowhere to be seen.

Our Hollywood German being exhausted, we reverted to English.

"I can still see it through the telescope, though", Ron said. We got down to business. From my shirt pocket I extracted the \$23.95 quartz watch which we use for such important time determinations as Pole Star shots and lunch, and prepared to note the exact instant when the star was on the cross hairs.

He stood for some time peering through the telescope.

"Can you see the star?", I asked, as I crouched in the snow, rapidly congealing.

"Yes. But I can't see the cross hairs. The battery's dead."

Fortunately, we had spare batteries, so, with fingers which by now were as supple as 6 inch nails, we changed them, and continued.

"Heavens to Betsy", he said, "I can't find the consecrated star now. I think the consecrated eyepiece is iced up" (since this story is for general viewing, I have edited certain words).

He took his eye from the telescope and stood up. His neck made an audible snap as it was released from the U shape in which he had been holding it. He polished the eyepiece and tried again.

"Mark !", he said, to indicate that he had sighted the star, and that I should note the time.

"Goodness gracious", I said, "the watch has frozen solid."

Obviously it was so cold that the liquid crystal display had solidified. I knew what had to be done. I tore aside the numerous layers of clothing, and held the watch on the skin next to my sluggishly pumping heart. It should at least be above freezing in there, I reasoned. It worked — when I peered in with the flashlight, the seconds, minutes and the hour were displaying. I didn't bother about the month, date, or phases of the moon, for which there seemed less urgency. I now have a watch-shaped supercooling tattoo on my skin, but it was worth it.

We had to start over again, of course, because of the interrupted time, but since we didn't have the spotlight for illuminating the reflector from a distance, I set off down the trail again with a flashlight. It was perfectly still now, and I could hear the wolves howling — in fact, I thought I could hear their teeth chattering, and I could certainly hear a rustle as my hair stood straight up.

A mere three hours later the work was completed. We had used up all batteries, and were reduced to getting illumination from matches. I had dropped and retrieved my monocle ten times. Our vocabulary had been enriched by words and phrases undreamed of by stevedores, or even federal politicians. But we were healthy — no germ could have lived through those temperatures.

When I finally got home, I had to have two hot baths, because I was so cold that ice formed on the first one. That's how cold it gets when you have to get star shots in the Ottawa Valley.

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