

Occupational Health and Safety

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After 50 years of work in many different occupations, not always safe by nature or by method, I look back and see a number of times that I have had narrow escapes from death or injury. In retrospect, they were all risky procedures and/or events that probably would not occur under better work conditions, or that, with some second thoughts for all parties, just should not have been carried out at the time. But there was always that work ethic, to do whatever it takes to get the job done, even to putting life and limb on the line, although, of course, the risks were always so carefully calculated! These were also the days when goggles, ear muffs, masks, and general concern about health and safety were never major considerations. In or around the workplace, and just speaking for myself, I have escaped being blown up, burned alive, crushed, buried, shot, drowned, electrocuted, run over, dismembered, and had often worked with pesticides, herbicides, paints, fuels, old engine oil, and assorted other toxic chemicals, and spills, with lesser problems of noise, dust, and sharp edges to contend with, and even worked regularly with asbestos, to boot.

Naturally, as just an ordinary twentieth century citizen, there have been the everyday risks of city living with fumes and particles, traffic dodging as a pedestrian or when driving, plus ladders, ice and snow, strontium 90 in school milk from French nuclear tests in the 'Pacific' Ocean, mercury fillings, milk products, plenty of meat, although always with veges or salad, of course, to name just a few of the usual hazards. Plus only one melanoma from those innocent days spent under the southern hemisphere sun at about the time the Ozone Layer really started to wane from CFC interaction. Not to mention the seen and unseen hazards of budget travel in distant lands, and the odd news bulletin since about some regions and their over-taxed indigenous modes of transport, which do make the sky seem a little bluer some days.

Even on bad days, I suppose I am pleasantly surprised to be still around. But, there are plenty of others from my generation with even more of such tales; those were the days, apart from civilian life and its attendant perils, when one did collect job experiences like other people collected postage stamps, and that also included the attendant risks, workmates, bosses, and general working conditions. The Law of Averages, and Murphy's Law, would definitely apply throughout the duration of such varied working histories, and of course, there were some who were not so lucky to survive the more severe exigencies of these Laws.

I am happy that I do not do this sort of mainly manual and semi-skilled work anymore, now mostly on account of age, in spite of the striving, thrills, interest, and novelty; but most of the work was fun, and from an age when collecting job those experiences was really like collecting stamps; there was always another tomorrow, and another jobsite. The only CV needed was whether you could do the job, leastwise for skilled hands and those below that in rank! Some of the settings in which the work was carried out were wild and beautiful places, and the jobs themselves mostly very interesting, often unique in planning and execution. The more remote sites carried additional risk at any time, often increasing the risks of makeshift work-practices, and the occasional unpleasant accident has been also witnessed.

As mentioned, there would be plenty of others with the same sort of work history, and more so, and in many cases with the physical scars to prove it. Certainly, work escapades can be just as exciting at times as those pursuits of foolhardy leisure. For example, I have worked in demolition in the past, and that is a risk-a-minute occupation, even on the best-organised site. One example of the sort of ad hoc and rather exciting, though often somewhat unsafe, worksite that I do remember concerned a certain blasting job along a steep-sided wild river in the South Island of NZ, clearing a section of bluff above a narrow road which ran through the river gorge at this point. The job was straightforward enough, but there was just this particular accumulation of terrain, 'expertise', disorganisation, casualness, and incompetence that made the experience unique in my memory.

I was in my late teens at the time, and had been working with a predominantly geriatric, though very well-meaning, road gang helping to keep open the arteries of the nation in the region. Their affectionate nickname was, of course, was Dad's Army, or The Sunshine Gang. The scenery was the sort of thing people come from all over the world to see, and some of the work was quite interesting, if somewhat slow-paced. Smokos were taken at world-famous scenic points, of course. We filled potholes, painted safety fences, repaired culverts, and spread gravel on icy roads as the winter was on the way, even getting up on the ski-road at times. All in all, it was a public service job that did actually result in observable and useful changes, however modest, to our zones of carriageway responsibility. One great favour accorded me by the boss was the use of the old Bedford to get my first truck-driving licence, potato-masher gear-box, shuddering clutch and all. I remained for much of that particular winter with this steady but reliable gang.

As time went pleasantly by, I heard about this new blasting job along that wild river valley, also a Ministry responsibility, so I asked for a transfer, and so was on the new jobsite from the beginning. The team assembled for the trials and excitement to come was of modest proportions, no more than a dozen men all told at any one time. The problem was this bad lie of mica shale strata that not only overhung the road in the form of a steep bluff, but actually sloped downwards, making it difficult to form a stable roadbed, all overlooking the river foaming in the gorge over 100 feet below. This section of gorge was so bad that it had never been rafted; indeed, one day we saw a rubber dingy, with a dummy strapped in, sent through the rapids as a test, and although the dingy made it, the dummy was battered to pulp.

As well, there was a huge rock the size of an average 3-bedroom house which sat above the road, embedded in the sloping strata, and was now Noted To Be On The Move. This rock had to be fully removed, and the new road bed cut back into the cliff, staring 150 or so feet higher up to remove as much of the sloping shale overburden as possible. The gorge was steep-sided, and the rock rotten; these factors had defeated the road-builders of a century before. The base of operations was out on the flat beyond the gorge, being the main smoko hut and office, and beside this was an area set aside for the bulldozer, compressors, storage, etc. Some distance away stood the explosives hut, in those more innocent days secured with an old padlock, and with no more "security" afforded it than the fuel drums nearby.

There were always a good number of vehicles through the gorge, so very early on there was pressure to limit the hours that the gorge would be closed by the actual clearing work. This was mostly from the vested interests of tourism and other local

merchants, one of whom was actually moonlighting on the job, being someone's 'relative', and employed as "watchman". Two shifts were eventually initiated, and these worked around the times that the road was open to traffic. Also the road could be arbitrarily closed if needs be.

After the bulldozer cut a bench above that first obstacle of the huge rock, the jack-hammers moved in, plus a wagon drill at the base, and all drilled for a week to make enough holes to load 90 boxes of gelignite. By Rule of Thumb, that was considered enough to blow the rock to pieces, if not to actual dust. There was, across the gorge, a set of pylons, about half a mile away as a rock would fly, and this large charge was considered less of a risk than a series of smaller ones that could still send sizable rocks that far. The dust-and-small-pieces theory would mean the pylons and their burden of wires would be (relatively?) safe. Of course, the road could not be closed longer than necessary, so a quick, clean blast, and then speedy removal of the rock, were other reasons for the Big Bang Theory's implementation.

So, we drilled for that first week, and soon realised that no available water for drilling, being too far down in the river below, meant living with an amazing amount of flying dust that was kept from one's face and neck, etc., by a scarf, and by shutting eyes and bending over and away from the ejected dust that flew when the holes were blown. With half a dozen jack-hammers operating in close proximity, the geysers of dust went everywhere, and variable winds in the gorge made the situation worse. There was also granite among the schist, being the nature of the huge boulder and other underlying outcrops that were yet to receive our attention.

Some of those plumes would go more than 20 feet in the air, and the fallout subsisting for some minutes after the blow. The wagon drill operator had to walk away from his machine when it blew, the dust was so thick. There is nothing like the smell of granite in the morning, we all had no choice, anyway. Perhaps the sort of dust mixture ingested was not so harmful in that it did not seem to remain in the lungs like purer forms of silica; I do know that for several months after that job, I was still hawking up that dust. Those same winds that carried the dust, blowing as they did at the earliest part of spring through that narrow gorge, would sometimes carry fog and water vapour that would freeze on our tools and machinery due to wind-chill; that was my first experience of black frost. That was also the coldest experience I had until I went to live in Canada for a winter, years later.

When that first spell of drilling finished, everyone pitched in to load the holes, and soon learned the trick of skewering the bottom-most stick of gelignite with cordtex before dropping it in the hole with another 20-odd on top, (the holes were 22 feet deep on average for the jack-hammers; the wagon drill holes could be deeper, and were loaded with thicker sticks on the same principle). The routine was careful ramming plus a tamped plug of dust and gravel, and then move onto the next hole. The strands of cordtex were successively meshed into a giant web that became a final single strand that then went back to the electric detonator. Smaller shots were fired by detonator and gunpowder wick, and there was the usual teeth-crimper in our gang who would spurn crimping pliers for this task. Back ten paces, at least.

Someone on the job had a shot-firer's ticket; there may have been more than one, I was never sure of this. But we all soon learned some respect for the explosive in handling; i.e., after a couple of gelignite headaches from skin contact, gloves not being in use, one absentminded brushing of sweat from the forehead would be enough to cause a splitting headache for hours. No wonder that stuff works well with dicky hearts. Actually, talking of dicky hearts; the Ministry had sent with the explosives shed some old stocks of gelignite that were to be expended in support of the Big Bang Theory, but even before the boxes were opened; we could see the greasy seepage through the cardboard. Those boxes may have survived the highway journey to the site, but they were never to be risked in 22 foot holes or even carried to the blast sight. They were collected by "experts", and duly disposed of elsewhere, probably after being individually bedded in straw for the journey. Not a pleasant experience rummaging in the old shed to find that sort of thing. Obviously, no-one checked the shed and its contents before the journey to the jobsite.

Anyway, came the day for the super-blast, and we all watched from half a mile away as the 90 boxes went up. The bang was truly spectacular, the dust and pieces theory did work in the main, except for the few hundredweight of rock that did not cooperate, and duly brought down some of the cables on the other side of the gorge; we could hear the clanging of the pylons from where we stood, and saw the flashes and smoke from the damaged cables. A large section of the South Island below this point was without power for a while after the dust had subsided.

The road was soon reopened by a bulldozer track for the tourist and other traffic, but the power was down over a very wide area for the rest of the day, until urgent repairs could be made to the cables. Not your everyday repair-job that one, either. The provincial press was also present, in the form of a photographer and a cub reporter; the former getting a spectacular photograph of the event, including damage to the regional electricity supply. The latter was so excited by what he experienced that he wrote about the one giant rock and one box of gelignite, rather than 90 boxes. Made for a bit of an anti-climax to our reported activities, and necessitated a correction in the following edition of the morning paper.

For the following couple of days, the road forming and track-cutting went on in preparation for the next drill-bench to be established. There were a few small landslides above the area where the big rock had been, but the road had to remain open as much as possible, of course. Rubble was pushed into the wild river, which dealt rather summarily with the debris. At this stage, an afternoon shift was established to drill throughout the evening; not that there were any more men on the job, as the budget did not extend **that** far, but the merchants and tourist operators were meant to be reassured by this evidence of redoubled re-doubled effort on the part of the Ministry.

On that first afternoon shift, while we walked down to the smoko hut in the early evening for a meal break, we saw the timetabled coach make its way carefully over the track cut through the blast rubble after the day shift had finished. Twenty minutes later, in the smoko hut a 100 yards away from this track, we felt the rumble as the track went in its own landslide into the rapids below. There were 18 passengers on that bus we found out later, and that fact, as much as

anything else, convinced all parties, without further argument now, that the road should be closed for the duration. The deviation was an extra 40-odd miles over a nearby mountain range, a gravel road which itself became a full-time job for other grateful contractors to keep open.

Better than risking fatalities, though, the luck could not last at that rate. As an afterthought, for once, those on shift that night were truly blessed by the fact of punctual Ministry meal breaks, or **we** could have been in the river, even if the bus wasn't. At the end of the shift, 'we' cautiously cut a narrow track across the slide where the vehicle track had been with shovels, led by the youngest, of course, and that was me. We then all made our way across quietly, one by one, to our vehicles on the other side, there being no other way home that night except by miles of overland trekking. Improvements to that small track-building effort would be extended the following day by the bulldozer.

As a result of the vibrations of the Big Bang, plus road landslide, sundry smaller explosions and vehicle movements, it was considered necessary to clear all loose debris higher up the bluff, which meant scrambling around the face of the bluff with a shovel, a rope somewhere to hand, slowly working down to the drill-bench below. A rock from higher up, even small, could be dangerous, and already some had fallen onto the worksite. Part of the ground to be covered was original surface, with the odd tussock or native grass clump, and part new scars resulting from recent slips. I was sent up with another youngster to do the scrambling, and we duly worked our way down, levering off any rocks not set firmly in place, our "safety" ropes tied to convenient outcrops, and left lying within reach, or tied around our waists depending on perceived hazards at given positions.

At one particular spot, at the steepest part of the bluff, about 250 feet above the actual river, the ground gave way under my feet as I was moving across the face to get to unstable debris, and I grabbed the rope that was draped across my shoulder, and swung out like a monkey as my shovel and the rest of the mini-landslide tumbled into the whitest of the rapids below. Of course, we should have had belts as well as ropes, and someone deploying from above. But if I had been wearing gloves that morning, so important with correct usage, I would have missed that unsecured rope for sure, and would also have been summarily dealt with by the white water below. Oh well, I did not dwell too much on the matter at the time, or else I would never have gone on with the job, and at that age, these sorts of incident make for excitement rather than fear. But it was the last bit of steep work that had to be done, as the benching got wider and wider, and the risk of falling debris lessened. Tin hats were compulsory on the site, anyway.

Talking of tin hats, I was actually glad to be wearing one while drilling on a steep face some days earlier, at lip of the extant bench. The footing was secure, I was standing facing outward on solid rock, pulling the jack-hammer back in and down at an angle between my legs as I drilled into the face. Below me was the usual view of the steep slope to the river, and I was pulling heavily back on the handles of the hammer after starting a hole with the first bit, just a couple of feet long. Then the lights went out. Coming to a few moments later, I found myself draped over the jack-hammer, which had stopped as I released the air control.

Fortunately, the bit had penetrated the solid rock far enough to support the combined weight of the hammer and my temporarily stunned self, and apart from being dizzy, and experiencing some discomfort at my ribs and crutch, I was stable, and safe. What had happened was that a rock from higher up the bluff had fallen and hit my helmet, now askew, with a dint the size of my fist at the back to explain the event and prove my narrow escape. Without that helmet, I would have been a goner, head split like a melon, even before I hit the water below. This was the event that led to the rock-clearing exercise just described. Another driller close by, changing bits, heard my drill stop and saw me slumped over the hammer. But I was awake soon after, and apart from a bit of a headache and a stiff neck, I was OK. The view after that was even better than before, and the sky **definitely** bluer!

Other incidents occurred worthy of note; everyone on the site had their moments of extra danger at some time or other. The head man was a through-the-ranks well-meaning and quietly-worrying alcoholic, whose condition was doubtless worsened by being somewhat out of his depth as to managing a difficult one-off job like the present one. His hands shook so much when firing off the big shots that it was painful to watch. His team were mostly enthusiastic amateurs, and one private contractor who supplied the bulldozer, (the tooth crimper, actually), so things like safety standards easily slipped through the organizational net. Other near misses included the usual things like the bulldozer uncovering unexploded gelignite, or people not taking adequate cover during blasting. Apart from the big bench blasts that took place, there were always rocks and outcrops that needed a plug or three. The union did turn up to force membership on the gang, but never set foot on the actual site, apart from visiting the smoko shed to declaim and lay out various documents. Perhaps the spirit of our joint efforts carried the day, and we made our own particular luck, who knows?

On one notable occasion, a couple of hardy types decided to shelter under a compressor near a blast site, and copped a hail of rocks that shredded the steel cover of the compressor, and inflicted damage to cylinder heads and some of the air plumbing. The rest of us heard the banging and clanging after the initial explosion, and after the rocks had stopped falling, ran to render assistance to two lucky but very dusty individuals who did not stop shaking for some time after the incident. The smoko shed everyone else had used for shelter was much further away, and had a double-thickness corrugated iron roof as well. On another memorable occasion, I was caught in the open with two others, one of whom wanted to get a good photo of the blast from safe open ground some distance away. The fuse had been lit before the move was made, but we were assured by the shot-firer, (he of the shaking hands), that the fuse was a long one, so off we trotted for the open ground and a better vantage point. Of course, the charge went off "prematurely", and the three of us stood still, looking up, and watched rocks falling around us, some almost as big as dinner plates. Lucky once again, and a very dodgy occasion in more ways than one.

Smoking went on at all times, even when handling explosives and loading holes. A natural cave was uncovered at on particular stage, and it was decided to pack explosives into it to try another dust-and-small-pieces experiment. Some of the explosive used on this occasion was of a granular type, packed in large plastic bags. I saw a lighted cigarette butt land on one of those

bags, and lie for a split-second before being hurriedly swept away by the culprit. There were four of us in the cave at the time, (it was the size of a small room), and two of them had a dozen children between them. They say that unconfined gelignite smoulders when set alight, and there is always that story of boiling the billy with a broken plug. Speaking for myself, if I ever saw that done, it would be through binoculars and from behind something much bigger than me. There must be some reason for the rules about smoking and naked flame in the immediate proximity of explosives? Smoking was then discontinued; well, at least for that day anyway. That big bang was also something of a fizzer, as there was not enough compression for an effective blast; plenty of noise and dust, though.

The most startling incident of all occurred during one benched explosion; in fact it was the first. On this occasion, there were 100 and something boxes of explosive sowed in a narrow strip of benching about a quarter of an acre in extent. This had taken more than a week to prepare, and promised to be quite a show, though designed to go up, rather than out and across as the remnants of the giant rock had done. There was no additional danger to those aforementioned pylons and wires expected. On the appointed blast time, we were all back almost half a mile, machinery and all, because of the broken nature of the rock. The explosion was a majestic slow motion affair, with a huge **CRRUMPP!** which could be heard for tens of miles, as we heard later. As the debris started to fall back to earth, those of us on foot started the long walk back. After a few steps, there was a whistling sound that grew in intensity, and beginning to register to all in the party, then there was a whack as a light-bulb sized piece of rock buried itself in the dry ground between myself and my ambulating neighbour, three paces to the right.

That piece of rock must have been sitting on the top of the blast, and was then drop-kicked to a great height by something bigger from much deeper in the explosion zone. Oh well, a miss is as good as a mile, but there was a few too many on this job. The pylons and cables actually did catch some small stuff, but there was no damage, nor was there with the succeeding benched explosions. These benches continued to be formed and then destroyed until a suitable road bed was formed further back in and further below the position of the old road bed. All 100+ box explosions, too, with similar majestic upheavals and noise resulting, with longer pauses before walking back, mostly.

There was one individual who **did** actually benefit from the job health wise, although not working with us until a bit later. He worked for the private contractor on the site who had taken advantage of the opportunity to cut a road with his spare dozer on the other side of the gorge skirting those power pylons, as a separate contract for particular local land-owner. The dozer was trucked the long way round to the other side of the river, then driven on to the site, and parked ready for the driver to hike to from **our** side of the river, via a rather exciting flying fox which was sited near the gorge jobsite.

To cut a long story short, from the first day of the new contract, this dozer driver hitched a ride out in the early morning Ministry truck with the rest of us, took the flying fox to the other side of the gorge, then scrambled by zigzags the half mile to his dozer, a steep and difficult trek of nearly 1000 feet up that would be stiff enough for a fit man, which he definitely was not. Years of driving, plus extra weight and cigarettes, and full colonial breakfast, possibly with a slight hangover, made for rather unsympathetic observation by our gang as we watched his painful progress for the first few painful days. A raucous cheer would ring out when he finally reached the dozer, and clung to it for support.

Breakfast was lost early on in the early days of his halting progress; his heart must have been strong underneath the fat, as we could see his chest heaving from across the gorge as he paused for breath on his way up the side of the gorge. Needless to say, the bulldozer had a few rather quiet days early on. Then our champion began to hit his straps, and his times got better and better over the couple of weeks that he worked on that side of the gorge. He got fitter, retained his breakfast, and the dozer went about the job with ever-increasing purpose. The cigarettes also went in the first couple of days, he cut down on his beer and his food intake, especially breakfast, and the weight then fell off him. His girlfriend shyly boasted, in confidence, of course, of other aspects of his endurance that had improved, and that the two weeks of hiking up and down that slope, when it didn't kill him first up certainly had made a new man of him, and he kept it that way as far as I know. He got a 'well-done' from his early-morning spectators too, and last I heard that his girlfriend was in the family way, and that **is** a fact.

Well, I did not quite see the job through to the end, thinking that the Law of Averages, and Cap'n. Murphy's variation, could very well catch up with me eventually on that particular jobsite, although the site did actually become safer than in those heady days at the beginning of the project. But I was yearning for a steady supply of fresh country air, that was where I was living, after all, so as the spring turned more to summer, I took up farm work in the region, and then got all that dust and gelignite excitement out of my system. Fresh lung-fulls of farm air, redolent of cow manure, diesel exhaust, and hay dust and bits, were a nice change after all that dust, and the main danger was being stepped on by an errant hoof in the byre.