

Past Caring - My work in demining and "mine action"

[Click here](#) to read something about who I am and what motivates me.

What follows are extracts from a book that will be published when I find time. I have tried to avoid naming names unless I have something positive to say (but have not always succeeded). If I have named you and you would rather not, let me know and I will remove your name.

The Humanitarian Demining (HD) days

I got involved in demining in 1994 while working as a (mostly volunteer) technician and scribe for a development charity based in the engineering department of the University of Warwick, UK. The charity worked on developing appropriate technology for transfer to developing countries and I had spent several years working with them on low-tech rural water supply systems. Unlike most starting in demining, I was already over forty and not looking for a career. After a trip to Mozambique to look at the demining being conducted in Maputo Province, I wrote a paper in which I identified three needs which the 'appropriate technology' charity could try to address. These were face and eye protection, blast resistant hand tools, and a small machine to cut undergrowth in advance of the deminers.

I contacted the two British demining charities, Mines Advisory Group (MAG) and HALO Trust, speaking to Rae McGrath and the late Colin Mitchell. For MAG, Rae came and gave the University group an introduction - showing a range of mines - and for HALO, Colin spent a couple of hours being charmingly rude as he emphasised the need to get out and be a deminer myself (Colin had charisma, which excused a lot). Both were surprisingly patient and helpful. Colin advised that I should talk to the actual deminers, not the 'experts' in charge, and get the deminers to teach me what they did. This has worked and while I have rarely shared a language with the deminers, they have taught me their methods and then let me show them the way that others work. Inspired by Rae and Colin but still woefully ignorant about the blast forces involved with high explosives, I made a range of equipment which I then blast tested with the British 'Territorial Army' on Salisbury Plain (thank you retired Brigadier John Hooper).

My early work on body armour is described in the first parts of this [link](#).

My early work on visors and face protection is covered in the first parts of this [link](#).

My work on safer hand tools is covered on this [link](#).

My work with area preparation machines is covered [here](#).

It is not necessary to visit those links to understanding the following, but it may help.

After my first blast tests, the University group were offered two days of training by the British army at Minley Manor. This training was limited to lying shoulder to shoulder prodding with bayonets, and soldier spot-the-tripwire games. David Hewitson (ex-HALO Trust) turned up to tell us this was not relevant to humanitarian demining. He was a submariner so the army tried to wind him up but that was water off a diver's back. Thank you David Hewitson. The training was a good introduction to the way that military demining differs from humanitarian demining and a preparation for the ignorance of those ex-army 'experts' who have often failed to appreciate that difference.

I was listening and trying to learn from the people in charge while I developed designs of cheap and practical personal protective equipment (PPE). But I also spent time in the field with the actual deminers in Afghanistan, Cambodia, Angola, Mozambique, Zimbabwe, and Namibia, learning what they really did, trying it myself, and realising how little those in charge knew about

the work on the ground. What I learned included the fact that there was no one single way to do the work and that there were no two 'experts' who agreed on anything from the varied effects of different High Explosives to the use of a metal-detector and the need for Personal Protective Equipment (PPE). Most had no idea how the hazards we were finding worked and saw no need to find out. I started to take mines apart to collect their metal content in order to test metal-detectors and got involved in proving that the old Schiebel AN19 detector (then used by the US Army so favoured by the UN) was incapable of finding many of the mines. This involved gathering evidence to convince people who already knew everything - and it took years to enlighten them. Fortunately the internet was starting to blossom and those of us who cared could start to pool real sources of information and experience despite being continents apart. This made us harder to ignore.

While designing and making PPE, I worked as a surveyor and deminer in rural Mozambique, disarmed and destroyed mines, and started to have the confidence to ask awkward questions on the internet forum that was then very influential in demining circles. I learned that the tools and equipment we were expected to use were often incapable of doing the job, that 'clearance' was an uncontrolled black hole into which donors threw money (a goldmine for amoral mercenaries) – and that it was easy to embarrass those who had assumed power. Naively, I really thought they would want to know when things were not right. Lost in the idealism of the run up to the millennium, it really did not occur to me that some were doing their best but working to an entirely different agenda that usually involved paying mortgages and expensive ex-wives. Most were also ex-military and having been through 'the best training in the world' they had nothing to learn from a civilian.



There are not many photos of me from that pre-digital time (I was usually holding the camera anyway) but these show me as a researcher in Mozambique in 1994 and as a deminer using a watercourse to cross the border minefield in 1996 - a rather hot adventure.

The University of Warwick denied all knowledge of me when I blew the whistle on a scam involving 'clearance' of an area with no mines in Mozambique. The scam was embarrassing my deminer friends who had been told to pretend to search and detonate some plastic

explosive occasionally to make it look as if they were finding mines. I was with Keith Byng of ROMTECH at the time and we were obliged to border-hop across the minefield out of Mozambique when the dodgy commercial company were told that I had no connection with a UK University so thought it safe to put a price on our heads. That's a story involving sacks of skulls in a Harare suburb and the loyalty of black friends in a time of white cowboys. I lived on because my would be nemesis was notoriously reluctant to ever pay out (so why bother shooting us?) and because the boss of another commercial demining company based in Zimbabwe, Minetech, did not want the bad publicity that shooting me might have brought. Bernie, the then owner of Special Clearance Services, eventually bought me a beer and offered me a job which I declined. Funny old world.

Feeling unjustly abandoned, I parted company with Warwick University, who had never been able to pay me anyway, and got some independent funding from a small medical charity to keep on with my PPE work (after successfully arguing that preventing injury fell under their medical remit). I was later told that I had left Warwick University under a cloud after stealing a FAX machine. The Warwick group had carried on with their attempts at making visors and the ill conceived Tempest machine (ill-conceived by me, I admit) that I had started in Cambodia. When they were asked why I was no longer involved, saying that I had stolen a FAX machine probably seemed as good a lie as any other. Hey, I had no engineering qualification anyway so I was no loss to their group. With some sense of irony, I have since accepted several formal invitations to give talks to Warwick University's postgraduate engineers and only stopped going because they never got around to paying my mileage. They think that I must have a secret income - well, how else could I do so many things unpaid? I don't but I have always got by.

Having an internet presence led to me being invited to speak at the signing of the Ottawa Convention (Mine Ban Treaty) in Canada, not in the main hall, but at a packed side event chaired by the Italian government minister Emma Bonino. I had never spoken from a platform before and I was to be the first up. Sitting at a table on a raised platform in front of a lot of people, I was obviously nervous. Emma Bonino was sitting at my side. She smiled at me as she did the introduction, then placed a comforting hand on my thigh. The audience could see her hand, saw my jaw drop, and they laughed. That worked - and I read my paper better than I might have done. Thank you Emma Bonino. My paper was titled 'There are no deminers at this conference', making the argument that the people who are on their knees all day were not represented and their needs should be remembered. It was not a bad paper, considering my inexperience. Bob Keeley (now Dr Bob) was in the audience and he resented the implication that he was not a deminer, so bobbed up to say that he was. He was an EOD callout man in Cambodia, so closer to a deminer than some, but he had not listened to a word and there was an embarrassed silence. Not embarrassing for Bob, but for everyone else. Our paths have crossed from time to time over subsequent years, and Bob has usually lectured me about my diplomatic failings. I suspect that he is a good man, albeit cleverly disguised.

I was trying to find a donor or partner to help me repeat my PPE work locally in Afghanistan, or inside Pakistan to supply Afghanistan, and a Professor from the University of Western Australia expressed interest. His father-in-law had a research centre in Pakistan so I went out to Islamabad to try to transfer skills. The *Hammeed and Ali Research Centre* was actually a 'relaxation centre' at the back of an urban house where nothing happened very slowly. Frustrating, but I got back into Afghanistan and travelled around with the deminers, did a few blast and fragmentation tests on armour I had made on the street in Rawalpindi, watching, and learning. Listening to Mansfield or Bullpitt (successive Chief Technical Advisors for what was then called the UN Mine Action Coordination Centre for Afghanistan - UNMACCA) you would think that Afghan deminers lay prone to prod for mines but they only did that for the UN's photographers. It was too hot and dirty to lie down, [very unsafe](#) to prod for mines, and no one can work while lying prone anyway. The idea of demining while lying down originates in military training when soldiers are obliged to lie down to present a smaller target to anyone shooting at them. The myth that you can demine with your chest against the ground has been perpetuated by many blinkered senior managers who have a military background and manicured hands – those with field experience limited to photo opportunities and minefield tourism. At that time, the same senior managers were often insisting that deminers work in three man teams, one detecting, one excavating, and one standing guard over the other two. This was both inefficient and unsafe but changing the old officer mindset took years.

But ah, Afghanistan. This was a time when the hills of rock were pocked by flowers and piles of PMN anti-personnel mines collected by the nomads. In the towns, the sun bleached earth roads

merged into ochre clay buildings where deep grained grey-wooden doors opened into cool black shadows. No colour, not a single Coke sign. It could have been the 12th century if it were not for the strands of Christmas tinsel wrapped around the Kalashnikov barrels of the Taliban. I really liked Afghanistan and the Afghans. My only problem on that trip was when the Taliban stamps in every region ate the pages in my passport, obliging me to peel out a useful visa for Angola (always hard to come by). I met Faiz Paktian Mohammad in Islamabad that time - he was also concerned about Afghan deminer safety - and coincidentally he had been the speaker who followed me in Ottawa.

Colonel George Zahakzewsky (Colonel Zee) gave a presentation after Faiz in Ottawa. He read a long paper intended to show that the U.S. government was spending vast sums on research to develop demining equipment as some kind of compensation for being unwilling to sign the Mine Ban Treaty. I caught up with him afterwards to ask how they could be spending so many millions on developing equipment for demining with so little to show for it? He said he would get back to me. I slipped back through the snow to a distant hotel room wondering why I had given up a week for this.

Back in the UK a month later, Colonel Zee telephoned from the Pentagon to ask whether I would consider working with his US Army CECOM NVESD team. (CECOM NVESD is short for Central Command, Night Vision and Electronic Sensors Directorate, a title that covers what they had done in the past, not what they were doing at the time.) "What do you want me to do?" I asked suspiciously. "What do you want to do?" he replied.

So I took a contract with them as a 'mine clearance subject matter specialist' with the money to rework my PPE designs and a remit to travel the demining world recording how people worked, gathering accident data and testing equipment for them. In fact I declined to test most of their equipment because it was inappropriate for use in demining. An example was the expanding foam used to spray over mines so that you could safely step on them after three minutes... And then how do I get at the mine to destroy it? No answer. Another was the 32 ton Mine Clearance Cultivator, a massive bulldozer converted to push a plough that could lift large anti-tank mines to the surface. What about the smaller anti-personnel mines surrounding the anti-tank mines? And surely it must break itself every time the plough hits a tree root or rock as the machine pushes forward? "Oh it's only for anti-tank mines and it works fine in our test beds". What a pity that minefields are very rarely sand-beds seeded with conveniently large mines. Poor Colonel Zee, he was hampered by having to spend money in states that supported his budget and saddled with a bunch of engineer bureaucrats with zero knowledge of anything outside their bureaucracy. Beverly Briggs was his second in command and she was trying, but when she died it was inevitable that it would fail. But I did take an air spade to try in Afghanistan - and just getting it to Kandahar was an achievement in itself.



Powered by a large compressor it was always going to be an unrealistic alternative to hand tools but it could have uncovered mines safely in most soils, just not the hard packed loess clay out in Afghanistan which the air jet merely honeycombed with tiny air channels. Non-intuitively, the air jet could cut the ground and blow stones around but could not apply enough pressure on a mine to detonate it (I did try). Clever, but not exactly practical. Even if it had worked, the compressor could not be moved over rough ground and cost thousands of dollars. The hand tools the deminers used cost a few dollars and were easy to carry. I had only agreed to test it because I could not refuse to test everything – and I liked the men who made it. Well, I could have been wrong and just testing it ticked some boxes for my employer.

And I got to return to Angola, Mozambique and Cambodia plus visit Bosnia and Croatia, spending time in as many minefields as possible, learning from the deminers how they really worked, and then filming them. The record was supposed to educate the people in Washington but that proved to be a little optimistic. They were not interested in the detail and ignored the work of this alien contractor. I was too busy doing my own thing to notice how much I had let Colonel Zee down.

The Humanitarian Mine Action (HMA) years

In the late 1990s, the term 'Humanitarian Mine Action' (HMA) was adopted to describe activities in support of the Mine Ban Treaty. This roughly coincided with the time that I put PPE development aside and started to pay much more attention to other aspects of Humanitarian Mine Action. I had already worked as a deminer and surveyor, begun writing Standing Operating Procedures (SOPs) and training material and advised several research and development efforts but these things had either been done in support of my work on protective equipment or simply as favours.

The internet was blossoming and the Menschen gegen Minen (MgM) demining forum had more than 4000 subscribers – amazing at the time. It was the platform that got me known for questioning received wisdom at a time when things needed to change. The same was true of Hendrik Ehlers at MgM, but he was also an entertaining performer so was in greater demand at the plethora of conference events held in the late '90s. The Berlin Wall was down and the new millennium was going to mark a new beginning in which there would be no place for wars and landmines. Many of us were swept up in a heady humanitarian enthusiasm that is hard to credit post 11th of September 2001.

This is me in Denmark in 2000 delivering a paper entitled 'Something is Rotten in the State of Demining'. My 'heady enthusiasm' was always tempered by realism. What was 'rotten' was our lack of concern for the deminers and their safety.

I knew deminers who had died and others who had committed suicide after being injured unnecessarily. Most of these people would not have been demining if it were not for us. They were being paid to pursue our post-conflict humanitarian priorities, not theirs, so if I might be able to do something to prevent their suffering being repeated, I felt obliged to try. This despite the fact that many actual deminers really did not care about their own safety. All men in those days, deminers were mostly hard workers who were both uneducated and



unsophisticated. They were survivors of a national conflict who often did not plan further ahead than the next payday. Some took risks willingly and parodied the worst of the ex-pat 'heroes' around. Perhaps I was being paternal or patronising to think that they did not deserve to suffer unnecessarily? If so, I was not alone. I had already worked alongside many people who had been junior military officers and who did their best to keep their deminers safe in impossible circumstances. I was most impressed by the South Africans and East Germans. It is true that I always tried to see the best in everyone but I was only ever seriously wrong in two cases (both Western Europeans, sadly). I did not expect much of my fellow Brits but have often been pleasantly surprised. One of them unwittingly made a huge difference to my entire approach to the emerging demining industry. I was an outsider trying to understand, so if it did not make sense, then the failing must be mine. Mark Buswell changed my mind in Angola in '97 by making one simple, common sense observation.



The picture shows me in Angola, still bearded from Afghanistan.

At that time, all the demining organisations claimed to clear to a depth of 30cms using metal-detectors and bayonets. Popular detectors could not find some of the small mines at any depth at all, and none could find them deeper than 10cms. The bayonet blade was 15cm long and was pushed into the ground at 30 degrees to the ground surface. Do the trigonometry, he advised. We could not reliably search to 10cm so could not clear to 30cm except by digging away the entire ground surface, which was very rarely done. Hardly rocket science, but it gave the lie to the public claims of every demining group in the world at the time and that gave me the confidence to doubt their increasingly absurd claims about the number of square metres that a deminer could reliably search and clear in a day. Without intending to, Mark had given me the confidence to speak out when the emperor had no clothes. I still meet him from time to time. In 2018 (still without having bothered to buy a masters degree) he was managing a large counter-IED programme in Syria. I cannot think of anyone better for that job. At the start of 2021 he is managing counter-IED training in Libya.

In the late '90s at the new Geneva International Centre for Humanitarian Demining (GICHD), I had been introduced to HALO Trust's new director Guy Willoughby. It's charismatic founder Colin Mitchell having died, his shadow Willoughby had taken over. Retired Brigadier Paddy Blagden pointed Willoughby out saying, "You'll get along famously: he was a jockey you know". Coincidentally, I had been an apprentice jockey as a boy, so I approached him thinking that we had something in common. I was not to know that in the vernacular of the British army a 'jockey' is a slightly derogatory term used to describe members of the Household Cavalry. My approach was rudely rebuffed and he stamped off. No sense of humour, that man.

When the company making [my designs of PPE](#) in Zimbabwe offered to pay me a small percentage on each item sold, I refused without much thought because I was not doing the work to make money. But when I thought about it, there were several good reasons for refusing. First, if that company were paying me, they would not go their own way so the 'technology transfer' would have failed. Second, if I took their money, I would feel disloyal to them when I encouraged others to set up production of my PPE designs elsewhere. And finally, when I argued publicly for PPE to be used, everyone would think that I was just saying it to make money. When I was later co-opted into helping draft the new International Mine Action Standards (IMAS) and was then elected to serve as an independent on the 'review board' for

those standards, I had reason to be thankful for having no commercial links with any PPE manufacturers.

During the PPE work, I had started to collect accident investigation reports and laboriously enter them into a searchable bit of software which I designed and called the Database of Demining Incident Victims. I chose to call them 'incidents' because some of the explosive injuries resulted from deliberate actions, so were not strictly 'accidental'. I collected hundreds of detailed reports and analysed them looking for causes that could be avoided in future and for consequences that PPE might protect against. I was actually conducting formal Risk Management studies, looking for ways to avoid accidents or to reduce the injury that resulted, but I did not know the language of risk management at the time. I thought that Risk Management was what stockbrokers did with investment capital, which it also is, of course.



[See the Global SOP, [Risk Management in HMA](#) and the presentation Risk management in HMA organisations on the [Powerpoint downloads](#) page.]

There is rarely a single identifiable 'root cause' for any demining accident. They usually involve a combination of contributory failings that may be overlaid with bad luck or simple carelessness. When a deminer detonates a mine while digging it up (which is the most common activity at the time of an accident), he may have been working carelessly. Alternatively, there may have been a failing of training or supervision, inadequate tools may have been provided, or there may have been pressure applied for the deminer to work quickly. Ignorance about the hazards being encountered was also common. When the deminers were not taught how the mines worked or what parts were hazardous this was often because the person in charge did not know, so considered it unimportant. It is important for many reasons including the fact that some mines can be struck on the side with a tool and not detonate while others will be very likely to blow up in the deminer's face. The accident record made it very clear that ignorance was a cause common in many entirely unnecessary accidents, perhaps exemplified by those times when fingers were lost as deminers tried to clean-out useful little aluminium tubes in their rest break (never having been told that they were detonators). The ignorance was often also apparent at the highest level in the demining organisations. See the Accident case studies on the [Powerpoint downloads](#) page.

Ignorance usually played a part in civilian accidents too and the Mine Risk Education materials I had encountered around the world usually promoted fear, not knowledge. To tell a person not to go somewhere because it is dangerous when they must go there in order to get water, cooking wood or food is not helpful. People returning to a combat area usually know the difference between the threat posed by a mine and that posed by a dud mortar bomb. They do not need to be made afraid of everything. They need to be given all the available information about the hazards so that they can manage their risks more successfully. I think this is a respectful and sustainable approach to informing people about explosive hazards, but I know that it has offended some comfortably righteous Mine Risk Education professionals who know nothing about munitions.

I decided to try to produce training material of use to deminers, civilians and other aid workers who were working in post-conflict areas. Rather than rely on sketchy cartoon drawings or photographs of munitions that had not been used (so bore little resemblance to the things that

might be found) I planned to use detailed A3 photographs showing real hazards in the condition and context in which they might be found and to include relevant details of each hazard. The A3 sheets were laminated so that they could be passed around, studied and discussed. Given the varied hazards and contexts, different training materials had to be produced for each country and the text had to be translated. Because English is the language of demining, I would put the text in parallel translation to help deminers learn the appropriate English term. I made a pilot set for Bosnia and, with help from Colin King, got in touch with the Golden West Humanitarian Foundation in America. They persuaded the US Department of State (DoS) to put up some money for me to produce separate 50 page training resources for Angola and then Mozambique. I spent some uncomfortable months travelling around in Angola to take photographs with no vehicle, very little money and less Portuguese. Friends in the demining organisations MgM, NPA and HALO helped me. Angola was still on a war footing and more than once I was glad that my Portuguese was too poor for me to be mistaken for a spy. It was easier in Mozambique because I borrowed a vehicle, and because Mozambique was genuinely at peace. The end results were printed up in America and looked good, so I planned to take dozens of the large loose-leaf folders to distribute around Angola and Mozambique before repeating the exercise in Cambodia and then Afghanistan. I spent a few days trialling them in Mozambique (shown below) but did not have multiple copies to distribute at that time.



The US Department of State (DoS) may always have linked humanitarian demining funding to covert surveillance, supporting those organisations that will work in areas of interest and report back dutifully. Friends working with a small demining company in the Balkans told me that this

was happening in Bosnia where the American commercial organisation RONCO was getting contracts without going through the approved bidding process. I looked into it and something did seem to be amiss. RONCO had a very poor safety reputation and was taking work from small national NGOs, so I put a message on the MgM forum asking what DoS was doing – being careful to ask informed questions rather than accuse anyone of anything. My questions obviously hit the mark because I was summoned to give evidence to a Congressional Inquiry. Not being a US citizen, I was able to decline that invitation and so protect my sources. The man at DoS responsible for giving the dodgy contracts lost his job, and so did I. Golden West Humanitarian Foundation dropped me instantly. We had a 'gentleman's agreement', not a formal contract, so I could not complain when they got Colin King to telephone and tell me that they were hiring someone else to distribute my training materials in Angola and Mozambique. The disgraced DoS man had been a 'friend' of the HALO Trust director Guy Willoughby and, enraged by my temerity, Guy Willoughby banned me from visiting any HALO minefield ever again (a ban that some of their better field staff have always simply ignored). Months later Golden West telephoned and asked me to suggest someone else for them to employ. I suggested the only American I knew who seemed to really understand humanitarian demining in the field. There was a nice irony in the fact that his experience had been gained working with a small NGO in Bosnia that had lost contracts to RONCO. A good man, he joined them and was still with them when last I heard.

Was I surprised by their reaction? Yes because I still think that I was doing DoS a favour. Being so obvious is no way to run a covert information gathering exercise. Whatever, their support for favoured demining contractors, including a 'Saintly' international NGO with an interest, has continued.

DoS later gave my training materials for use in Iraq, so providing Iraqis with photographs of mines that were not there and which were hidden in unfamiliar African bush and lush jungle. Well, I suppose that the gift 'ticked a box' for someone. I produced half a dozen appropriate sheets for Iraq when I was there for the Manual Demining Study in 2003 (see [Mined area indicators, Kurdistan/Iraq](#)) but there is still a need for much more.

It seems that my training materials were ever distributed in Mozambique because I was asked for them when I was in Maputo for the Manual Demining Trials several years later. All I could do was pass on the request and give the Mine Action Centre a digitised copy. The [Angola training resource](#) is on my website because it is still being used in Angola today. Everyone I ask finds it useful but I don't think this approach has ever been repeated in other countries so perhaps it is not as good as I think it is.

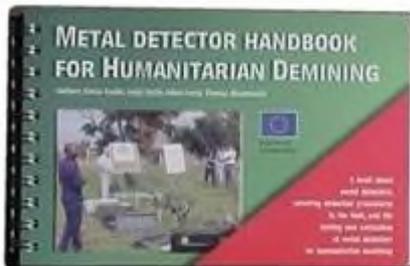
The need for demining supervisors and managers to be appropriately trained before working in humanitarian demining had also been recognised by others. Donors objected to the fact that throughout the '90s, dozens of areas that had been searched by one demining organisation were searched again by another because the work had not been accurately mapped and recorded. Having a military background was no longer a sufficient qualification and the UN started expecting job applicants to also have University degrees. (For my views on the UN, [click here](#).) It takes a lot longer to get a real degree than it takes to buy a 'masters', and obviously a masters is better than a first degree, so the UN requirement was soon reduced to a 'further degree'. Respected Universities started offering fast masters in post conflict studies and related subjects to people with no first degree but with the money to pay. The better academic institutions made the students do some work, (although not so much that they were obliged to give up their day jobs) and this did start to give graduates a shared vocabulary and some insight into the bigger picture of what HMA actually is (see [Humanitarian Mine Action](#)). The main downsides were that some graduates believed that their masters meant that they knew everything they would ever need to know, and the fact that the requirement excluded many

good field people without the cash, confidence, skills, or the patience to engage in academic games.

Having lost my funding, I had unexpected time in hand so I decided to have a go at building my ideal demining machine, something to cut undergrowth in front of deminers that was small enough to be transported in a pickup load-bay. US Army CECOM NVESD declared an interest but wanted to see a 'proof of concept', so I went to Florida to build one with a Lockheed Martin friend (at my own expense). Using the diesel engine from a ride-on lawnmower, I got one made in his domestic garage while he worked on the remote controls. Panama City Florida is not the place to be welding, cutting and grinding in a closed garage without air-con.



My first attempt kind-of worked. The prototype wheels would have prevented shock transfer to the bearings but I knew that the bigger wheel rims would have been distorted by detonating any of the larger anti-personnel blast mines. Also, its limited engine size meant that it could not carry sufficiently heavy armour to reliably protect against bounding fragmentation mines and still have the power to work while climbing hills. Obviously I needed to rework it, but I ran out of money just as NVESD decided that they would not support its development after all. They were putting all their money into [HSTAMIDS](#), a combination of the MineLab metal-detector and Ground Penetrating Radar, and into repeated work on the Tempest demining machine (which had been revised to try to meet impossible requirements that made it embarrassingly useless).



By that time I was heavily involved in drafting the International Mine Action Standards (IMAS) and had started work on the [Metal-Detector Handbook for Humanitarian Demining](#). The book was Dieter Guelle's brainchild but he did not have the English to write it, so I did, also editing the contributions that Dieter drew in from academics at ISPRA. The race to replace the old Schiebel AN19 with a detector capable of finding the

mines in electromagnetic soils had been running for several years. In fact, the patented MineLab technology in Australia had already won it but the European manufacturers were catching up and they wanted to be ready to cash in when NATO members started replacing old detectors. For unexplained reasons, the Australian MineLab has often been sidelined despite the fact that the US army has recognised its value. I suspect that a conservative military approach to design improvements coupled with brand loyalty explains the reluctance, but all

military kit is part of an arms industry in which heavy brown envelopes are reported to have powerful influence.

Working on the International Standards with the group that became the IMAS Review Board, I frequently referred to the accident record. The better accident reports contained enough detail to provide snapshots of how the various demining organisations worked so were a source of hard evidence in the Review Board - a group with little or no demining experience which clung to outdated military training. Not having a military background myself, my opinion was not valued unless I could back it up with hard evidence. The accident record was obviously useful but it scared people. What if someone were to publish their mistakes? What would the donors say? This has never happened because I have never published the names of the people or the demining organisations involved in accidents, but I understood their concerns. Accidents should be investigated and recorded in a professional way as they are in other industries. When the Geneva International Centre for Humanitarian Demining (GICHD) offered to take over my database of accidents/incidents and stop it being a 'one-man' show, I agreed on the condition that they encouraged reporting and kept it up to date. The UK government put up some money and the Geneva International Centre renamed the database the Database of Demining AccidentS (DDAS) - a clumsy acronym imposed by the man who has been given the unenviable task of managing my work. I was contracted to design software improvements, manage their implementation and enter all new data. The contract included a requirement that I should stop gathering accident records myself - data gathering was to become the Geneva International Centre's exclusive role.

By that time Colonel Zahakzewsky has moved on from US Army CECOM NVESD and established an international test and evaluation capacity (ITEP) that would assess existing and new demining equipment without fear or favour. The academics would take over that side of things, which sounded very welcome. For a while, ITEP looked really good and it could have worked if the countries that joined had not allowed commercial self-interest to overrule honest objectivity. Its library of research efforts was a real asset that was effectively lost when ITEP closed down. I am told that it is on the Geneva International Centre's website but it is not easily accessible or searchable so I hope that it will reappear in the James Madison University Data Repository one day.

I built a mine dog training area in Angola for the German demining NGO MgM and set up another in Mozambique to assess the APOPO rats with help from a South African employed by MgM at the time. Most of the South Africans I have worked with had once been heroes of the old apartheid regime so were wary of the new Truth and Justice commission and liked to work outside South Africa. They knew the African context better than anyone and also managed deminers in the field better than others. We always got along well. In Mozambique, despite our best efforts and endless patience, the rats were never 'ready' for testing (they constantly failed informal attempts) so the test area was finally 'cleared' of the 100 GYATA-64 mines we had gathered and placed at carefully measured depths in an artificially flat area free from vegetation. See [APOPO rats](#).



Hans Georg Kruessen of MgM awarded me the 'Don Quixote of Demining' award around then. (Yes, it is made from assault rifles.) Well, a German sense of humour, perhaps. Georg lived a hard and lonely life in the field for many years, punishing himself for something I never really understood. In 2015 he more or less died on the job from a cancer that he left far too late for treatment.

MgM's mine dog training area became the test area for a nuclear quadropole resonance method of detecting explosive vapour developed at L'ecole Polytechnique and I found myself taking my mine collection to Paris to help them. I was also in demand at Boston University in the States, and had already been a judge for a Canadian competition designed to get graduate engineers to produce demining innovations for several years. My limited success with PPE had not made me an engineer but it had reinforced my belief that there must one-day be technical advances that changed the face of demining. My ability to look critically at any suggestion was sometimes valued, and sometimes misunderstood. When a Danish group came up with the 'Purple Weed' or '[Red Plant](#)' solution, I tried hard to see how it could be useful and decided that it might have a place in objective Quality Control - if it could work reliably - because Quality Control is generally conducted after the area has had the undergrowth removed, been thoroughly searched and then declared clear. A low-cost way of checking whether any explosive hazards remained might have had value. I went to Namibia to conduct blind tests in the MgM mine dog training area. The plants should have grown red in the places where I had buried mines and raw explosives two years before. Unfortunately, the ARESA 'Purple Weed' System was a complete scam and I both wasted my time and fell out with MgM as a result. A Danish TV company (memorably named 'Bastard') had filmed the fiasco and interviewed me. They put together something that I was told had been edited to make Denmark look good and me look bad. Someone sent me a recording but I have never bothered to watch it. The media has always had its own agenda.

There was a remote chance that some of the seed they had released during the trials had really been genetically modified. The plant was not native to the country (European Watercress, seriously!) so when the ARESA people left I felt obliged to burn off the ground in the test area to kill any seed present. I was doing that when I was asked to investigate a demining accident involving the Mine Clearance Cultivator, the 32 ton bulldozer converted to push a plough that US Army CECOM NVESD had spent years developing even after I had pointed out the flaws in its conception. The accident had occurred twenty miles away and I arrived at the site less than an hour after the machine had detonated an anti-tank mine. No one was hurt but the machine had been badly damaged and parts had landed in a nearby compound where people lived. NVESD complained that my report included conclusions and recommendations. Apparently, in their system, it is not the investigator's place to draw conclusions. This may explain why they have been so slow to learn. Having conducted the investigation unpaid, the report belonged to me and there were lessons to be learned from it, so I published it anyway. See the [MCC accident report](#). This marked the end of any regular communication between myself and US Army CECOM NVESD.



The "Mine Clearance Cultivator" alongside an old Soviet 'clearance' tank – both having blown themselves up.

Meantime, I was told that it was useful for the Geneva International Centre to get me involved in some projects because implicating me in a group decision would leave me obliged to accept the outcome without public criticism. Their insight into my sense of fair play was correct. One 'working group' of which I was a voluntary member was intended to advise their 'Manual Demining Study'. Over two years it met twice (all my costs paid) and as it was drawing to a close I asked, "So when will you actually start studying manual demining?" To date, their study had been an office based assessment of manual demining management activities. With little money left in the budget, they asked whether I could do a study of what deminers actually did?

With limited time and money, it would be a real challenge to do something professionally planned and executed, then ensure that independent witnesses were present to give the results maximum value. Fortunately I had friends around the world. I proposed to study different manual demining tools and procedures in four countries, conducting formal time and motion monitoring so that I could check the received wisdom over how much time deminers spent doing what. Then I would set up a disciplined test area and trial common tools and procedures to compare the strengths and weaknesses of each and assess them in terms of safety (the safety of both the deminers and of the people who would use the land). The people at the Geneva International Centre agreed.

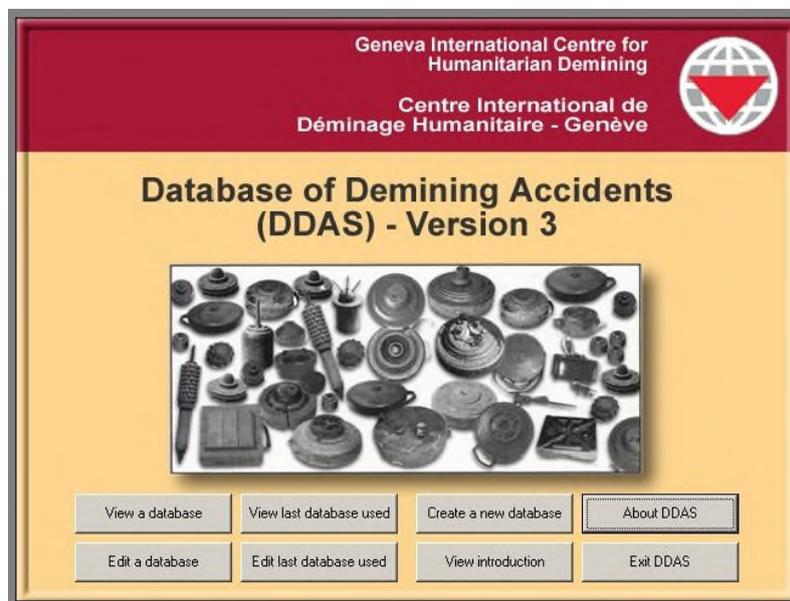
The study of working deminers was never intended to give definitive results. I had done something similar around the world twice before and I knew that the varied hazards, climate, vegetation and ground conditions would make any attempt at direct comparison between them pointless, but I would also be timing the use of different procedures and tools which might lead to unanticipated, so useful, results. To go somewhere new, I got permission from a demining organisation in Iraq to spend time with them but that was when internationals were being taken for internet executions so the Geneva International Centre told not to go. Ever my own boss, I went despite the fact that the ludicrous cost of my insurance was far more than I earned. The late Mark Manning (murdered in UK in 2014) was in the field with me there, as he had been in Angola long before. Mark was one of the no-bullshit originals who knew his hands-on stuff and really cared for his men but who would never have bothered to buy a masters degree. More patronised than ever before (because I refused to carry a weapon), I baked in the field and continued to learn.

I also went to Sri Lanka to assess the Rake Excavation and Detection System (REDS), to Cambodia to measure the advantages of using magnets and find out how much help it was to have heavy machinery removing undergrowth in front of the deminers, and to Mozambique to see their garden-spade based area-excavation system. As usual, in each case I learnt far more than I was expecting because I followed where the deminers were leading. Each place had its own personal challenges, the most disturbing of which was being unable to fly out of Iraq from Baghdad. The American army had introduced a visa system while I was working in Erbil, so I was arrested for not having one when I tried to leave. Finding armed American automatons pointing guns at me and not listening to a word I said made my blood run cold (an achievement in an Iraqi summer). I hate looking down gun barrels. Offering my cigarettes did not work, speaking just got shouted down, so I shouted angrily until my raving attracted a senior officer who strolled over, rolled his eyes, sighed, and let me get on the plane, of course. No one noticed the 'training aids' in my bag, but that was ever so. I had permission to hold parts of mines in Britain for training purposes (having permission is a Mine Ban Treaty requirement) and had brought many empty cases home for myself and others over the years. Knowing what you are looking for is, after all, rather basic. They were harmless but did not look it, so I was always ready to explain their presence in my bag. It says something for airport security that I have never had to.

I asked the UK research group QinetiQ and the German institute BAM to comment on the design of my comparative trials and then be present in Mozambique to monitor them and draw their own conclusions. BAM asked for additions and I complied. Both came at their own expense. The trials were to be hosted by (UN) ADP (the UN's 'Accelerated Demining Programme' in Mozambique) The ADP supervisors and deminers involved also had their opinions recorded. NPA in Sri Lanka sent Jan Erik Stoa to introduce the REDS procedure and train the deminers to use the rakes before the trials. The deminers knew the other tools and procedures but had refresher or continuation training for each. The exception was a team from NPA Mozambique who were to use the tools and procedure that they used every day. This was a mistake because they sent people who did not want to do anything at all. By contrast, every supervisor and deminer that ADP let me have was a hard working professional with a lot of experience. All trials require variables to be controlled but the qualities of the people involved can be hard to predict and manage. The trials went well but the work involved in making the test lanes, concealing targets, getting people together and then managing the fairness and recording of every timed event was rather trying. I knew that something was wrong with me and later discovered that I had been having mini-strokes in every country since Iraq. At fifty I was already too old. But the results were useful - see [Comparing manual demining methods](#).

Meanwhile, two years had passed and the Geneva Centre had not gathered a single accident report. The database software had been revised and I could not earn any money because there had been no data to enter. I could not even let them know about the accident records that I had gathered as I travelled around because it was a breach of contract for me to have collected them. Their failure to do anything to collect records was blamed on the objections of a certain 'saintly' NGO – anything for a quiet life in the mountains, it seems.

When I took back control of the accident database and carried on entering data as before, no one in Geneva argued and subsequent events make it ironic that the computer software still bears a GICHD logo.



Noel Mulliner, then with the UN Mine Action Service and chairman of the International Standards Review Board, gave me letters of support for the database so that I could get accident reports - but I rarely got them unless I went to ask for them myself. Mine Action Centres are always too busy to do anything unless you are in their face. The demining organisations NPA and MAG were good about providing data for a while, but then MAG's Tim Carstairs got paranoid and MAG stopped (Rae McGrath had long been supplanted). Guy

Willoughby of HALO agreed to let me have all their accident records if I first showed them what I already had. I compiled a subset of their records and sent it, and got no data at all in return. By that time the HALO accident record did not look good and I knew what Guy's attitude to me was, so I was not surprised. I should say that what I saw of HALO's work in the field was usually as good as the others despite the organisation having a very poor reputation. Some of their field staff were among the best (and often moved on from HALO as quickly as they could). I wondered what their founder, Colin Mitchell, would have made of it? It was a shame to see a British organisation that had once been a leader lose its way when it was only half way around the course: like many others, I blamed the jockey.

The tsunami in the Indian Ocean occurred a week before I arrived in Sri Lanka with a Norwegian Peoples' Aid (NPA) contract to help them get two Indian and one Sri Lankan NGO accredited to work by the UNDP supported Mine Action Centre (MAC). The global response to the tsunami meant that every charitable organisation in the world seemed to be there, fighting between themselves and offering bribes to allow them to spend their money on something, anything. I was based in Vavuniya, about as far from the sea as it is possible to be on the island, and I arrived as NPA was recovering from having had their base and all their equipment erased by the wave. Fortunately their base had been closed up for the Christmas holidays so they did not lose any staff. These were interesting times - especially as there was hope that facing a common disaster would help spur the peace process between the Tamil Tigers and the Lankan Government. Norway had brokered the ceasefire and was putting a lot of money into removing the mines as part of making the conditions ripe for peace. But turning a ceasefire into a peace treaty was not my concern, or not directly so. I had to work with the Indian NGOs and feared that the Indian army's trigger-happy behaviour when they were sent to Sri Lanka as UN Peacekeepers would not have been forgotten. It had not, so while NPA were working on both sides of the line, I was with the Indians on the Government side, lifting mine-lines that swept across the land like flotsam tidemarks left as the fighting had surged back and forth. More than 90% of all the mines I ever saw in Sri Lanka had been laid by government forces. The Tamils made their own, now called IEDs, and used them relatively sparingly (they also lifted Government mines and used them again at times). For some images of Sri Lankan IEDs, see IEDS and Humanitarian Mine Action on the [Powerpoint downloads](#) page.

The Indian NGOs (named Horizon and Sarvatra) were both staffed by retired Indian army officers. The Lankan NGO was a tiny national effort that tucked under the wing of Sarvatra. They all needed some guidance in the transition between a military and a humanitarian approach but there was no good reason for them not to be allowed to work. I wrote them better SOPs than anyone else had and quickly got them accredited with the Mine Action Centre, then worked with them on improving their machines to get them accepted too. Tim Horner was with UNDP Lanka at the time and his intelligence made my life easier. I was there as both a trainer and a Technical Advisor who spent time with the deminers in the field monitoring their work and reining them in when their enthusiasm approached recklessness. They were great. We were all using the rake excavation and detection system ([REDS](#)) pioneered by Luke Atkinson and I designed improved rake-heads, then made them at the roadside in Vavuniya with Raju Pilau, a retired major, and a British volunteer who just turned up wanting to be useful, Cris Chellingsworth. See the [developing safer hand-tools](#) page.

It was while I was there that I first met a tiny gravel-voiced Italian woman who was travelling around trying to study demining. Emanuela Cepolina's enthusiasm and commitment were admirable. As part of her PhD research she wanted to build a very small demining machine based on an Italian rotavator. She thought it could be remotely controlled to process the ground and clear mines and cost just a few thousand dollars. I patiently explained what clearance means and described how even a small blast mine would damage a tiny machine, then

encouraged her to concentrate on devising blast resistant wheels and a tool to cut undergrowth. Later, I found myself appointed as the external examiner for her doctorate thesis. Of her three examiners, one had to be someone who knew demining and there were not many people they could ask so I agreed to what was another unpaid addition to my self-imposed workload.

One of the Indian NGOs had invested in the new Schiebel ATMID detector before deploying and they wanted permission to use it. I could not allow that because it did not work well enough to find the mines at the required 10cm search depth. The deminers said that it did and the sales material claimed great things, so I contacted the Schiebel offices to ask how to maximise performance and was advised (in writing) to bang the search-head on the ground to get a better depth. I still have that letter. Ignoring that advice, I set up a test area and asked the deminers to show me that they could search to depth adequately. With all the time in the world, they failed - which I had known would be the case because the detectors could not reliably signal on the target mines at 10cm distance in air so would never do so when they were buried under soil. The tiny national NGO had half a dozen Minelab F3 detectors but the plastic plates designed to lock the search-head hinge had all been broken. Flopping search-heads are not much use so I emailed MineLab and had a dozen replacement parts delivered cost-free within a week. Thank you Hugh Graham. We trialled the MineLab and it could find all the targets reliably at more than 10cm but the little NGO carried on using the rake procedure because they never had the money for metal-detector batteries.

In all the places I have worked, I have never worked with deminers who worked harder or more willingly than those retired Indian army men, for whom anything was always possible. When I did as they asked and helped get two of them work as internationals, I worried that they would find it hard to fit in. Staying in touch, I saw their disciplined work ethic feed the prejudices of western racism in predictable ways. Politically correct but culturally ignorant women in HMA management despised their 'obedience'. European 'colleagues' refused to live in the same accommodation and when I questioned this, I found that their adult presence caused resentment because they had no sense of humour. In fact, the Indians were bemused by the reliance of the others on excess alcohol and internet porn. I apologised to them on your behalf, for what that was worth.



As an extra, I also found myself tasked with introducing the remotely controlled MV4 mini-flail to the Sri Lankan army. NPA had already given one to the Tamil Tigers so had to give one to the government forces. It arrived and when I started it up, it ran amok. A mini-flail that cannot be controlled really is a terrifying beast. The factory in Croatia sent someone to sort things out quickly (very impressive service) but I had gone home before it was discovered that we were trying to use it too

close to the army's main communications base. Its radio controls worked reliably at a distance of a kilometre.

This was around the time that Keith Byng of ROMTECH died. A Rhodie bushman and an original founder of Minetech, Keith had been the first person to teach me a kind of demining, then drag me around surveying in Mozambique. I took my first mines apart under his direction – and will never forget cutting through the detonator of an M960 with a hacksaw. Whatever, he was a real field man who I admired immensely despite his old-school paternalistic Rhodie

racism and his inability to admit when he did not know something. He died of cerebral malaria contracted while working in Congo. Explosive risks have only ever been the half of it.

It was tough in Lanka without a decent place to live. With no sea breeze, no air at all, the humidity and temperature at night reminded me of Luanda in Angola (one of Africa's armpits in more ways than one). The Danish Demining Group (DDG) let us share their comfortable house until I annoyed Samuel, the boy in charge, by answering his questions honestly (he is a man in Geneva now, still dishonest with himself). No matter, we moved into an oven overrun with cats until my declining health obliged me to take a room with an air-con in the not quite luxurious hotel Nelly Star. NPA did finally rent a well equipped house but by then I was too ill to extend my contract.

After an emergency arterial operation, I stopped smoking and thought I could just pretend nothing had happened. I presented at a research event in Berlin and was almost unable to return home. Noel Mulliner helped me through the airport. My batteries were flat. I stopped. Fortunately I had a home to go to and a long-suffering wife to put up with my bad tempered recovery.

Three months later I was offered a Chief Technical Advisor post and turned it down saying that I was not yet up to accepting full time work. Olive Group understood and put me on a retainer. I wrote preliminary SOPs for them and went to appraise a few commercial tasks, but I was not happy. They were not going anywhere quickly and I lacked the commercial 'zest' that they needed to get going. They let me go, and even today I thank them because they helped me get my engine running again.

When the Swiss demining organization FSD offered me a six month contract to close down their operations in Sri Lanka, I accepted. Well, I had not actually managed a demining programme but closing one down cautiously should be easy enough and I knew a bit about Sri Lanka. The first thing I did on arrival was upset the man who appointed me by turning down a proposed visit to a Colombo brothel. The second thing I did was pay \$1000 dollars of my own money to get my Tamil office manager, Dilushan, out of jail. Being a Tamil in Colombo at that time was not easy. With help from Dilushan and my national Operations Manager, Rochan Christy (now an international in Sudan), I managed to reboot the effort and get some more funding so that the programme ran for several more years. But I annoyed people by raising deminer salaries to \$120 a month (yes a month, so not exactly generous) and driving Tamil deminers accidentally shot by nervous police to hospital in Colombo (they would not have got through the checkpoints without my presence).

We were working on both sides of the line but by that time any real desire for the ceasefire had gone. Far from bringing them together, jealousies over the distribution of reconstruction money after the tsunami may have made things worse. In any case, the sound of the government's Stalin's Organ was a nightly disturbance alongside an occasional crump close at hand. The FSD field house had a concrete first-floor balcony and I remember crouching behind it nursing a warm vodka as the local police - after having been spooked by a mongoose, peacock, or possibly a Tamil infiltrator - emptied clip after clip firing blindly into the night. Flakes of concrete fell into my hair. Someone offered me a cigar and I accepted, so ending my non-smoking year. Well, perhaps everyone needs a vice.

Back in Colombo there was fighting on another front. Dr Kunasingham ran demining for the Lanka government - and he hated the affluent International NGOs with a malign passion. At first, my former association with the Indian NGOs meant that I was tolerated, but after a while he started to be abusive to me too. It was not personal - he was abusive to all of us (UNDP women worst of all). If it was water off a duck's back to Judy Grayson, it was not to me. I was representing FSD so I dutifully turned the other cheek for longer than was reasonable before I

wrote a formal complaint to the government in which I described his behaviour in detail and argued that it brought shame on them. Copies went to everyone I could think of. The government agreed and Dr Kunasingham was dismissed, later going off to join his offspring in Canada. The Indian NGO Sarvatra's leaders backed me up, but Kunasingham's successor was uncertain about me. FSD were similarly unsure. They waited until the last moment before offering to renew my contract, apparently presuming that I would accept gratefully two days before I was scheduled to leave. That was a little shabby so I would have declined even if I had not already accepted a UNDP Chief Technical Advisor's (CTA) job in Tajikistan.



The staff gave me a plaque which I am proud to have in my office today. It is hard to balance being both 'boss' and 'friend' because you have to take the trouble to genuinely know and respect the team but it is the only way I could get a real team spirit. I could not have played the 'mill owner' if I had tried, so my approach was just what came naturally. Nonetheless, I think it is the right approach to managing any humanitarian endeavour, if obviously not an option for some mindsets.

Sri Lanka had been my introduction to the problems of programme management and I learned a great deal, including lessons about my personal limitations (I was still an inadequate public speaker, for example). One of the few things that disappointed me was the unhelpful competition and point-scoring between International NGOs. This depends in part on personalities, of course, and competing for funds always risks being a sordid business, but the competition went some way to explaining why demining organisations have always been so unwilling to learn from each other. This was one of those cases when HALO's staff were among the best, incidentally, a complete change from the year before when their own deminers had attacked their offices and vehicles. If I was impressed by HALO's recovery, there were things about FSD at the time that I thought were very wrong, but subsequent management revisions and their appointment of the late Tony Fish made me believe that FSD made real efforts to improve. It always comes down to the individuals that are put in place, not the mere fact of having a position filled.

I was not looking for a career so I rarely applied for work. My strengths and weaknesses were known and if people wanted me to work with them, they should let me know. In Tajikistan, I knew and respected the outgoing UNDP Chief Technical Advisor but I had to look in an atlas to be sure of Tajikistan's borders. Knowing Afghanistan from the '90s gave me only the vaguest idea what to expect. Apparently Tajikistan's Mine Action Centre needed someone with technical know-how. Having been asked, I dutifully applied, was interviewed and I took the six month contract offered. I knew that this would be a different world so I asked UNDP to give me some training covering their systems and public speaking. They agreed, but they lied. Despite repeated requests for training, advice and help, the only person who ever answered at all was my predecessor William Lawrence who had moved sideways into Afghan border management so was often around. William had written several of the best accident reports on record, incidentally, and I liked his Regimental Sergeant Major (RSM) sense of humour. I survived my six months at UNDP Tajikistan with the help of the RSM's caustic wit.

Being with UNDP meant moving in unfamiliar circles - but I had been obliged to do the Embassy circuit in Sri Lanka so I was partly prepared. The ex-pats in Tajikistan were a very pleasant surprise. It was as if all of the intelligent odd-balls and minor embarrassments in the world had

been sent there to keep them out of the way. This was a group that could have been made for me! With eccentric good humour they let me into their circle and I felt privileged to be there. But I had forgotten how to have fun and made little time for it (a minor regret). What I did do was clash with the national director of the Mine Action Centre. Profoundly ignorant, he was insisting that all areas recorded as hazardous in the original survey of the country had to be cleared. The country survey has been conducted without enough time or money - and whole mountains had been recorded as mined just because one person reported that they had seen something somewhere up there. But the national director would not allow areas to be reduced by technical survey, or simply 'cancelled' because they should never have been recorded as hazardous in the first place. Worse, speaking through his interpreter and beaming with patronising patience, he explained that we were a 'MINE' action centre so we had no mandate to clear submunitions and mortar bombs and must leave them alone. I have known other national directors who were given the position as a sinecure that gave them a car and a salary, but they were usually bright enough to let their advisors get on with the job.

The UNDP Chief Technical Advisor (CTA) to a national Mine Action Centre (MAC) is not supposed to go into the field much. He is responsible for ensuring that the 'five pillars' of mine action as defined in the Ottawa Convention (Mine Ban Treaty) are being upheld. That is Mine Risk Education, Victim Assistance, Advocacy, Stockpile destruction, and Demining itself. In a well resourced MAC, the CTA will have the support of Technical Advisors who can keep an eye on each element. I was on my own, but I had some very good nationals. The Mine Risk Education aspect was run by Azamjon Salokhov (then working for the Red Crescent and now with OSCE in Ukraine) and he was intelligent, active and eager to innovate. The Victim Assistance element was fine, not that there were many genuine mine victims but there were plenty of people disabled by conflict. The Advocacy element was there and although the Tajik administration was not very likely to listen, they were allowed to speak. I was assured that stockpile destruction had already been completed and had no real reason to doubt it. But the rushed survey meant that the demining was far too slow and inefficient to keep the donors happy, giving me good reason to get out in the field and see for myself before making a plan. The MAC's Operations Manager, Parviz Mavlonkulov, was a serving soldier so under many constraints, but intelligent and eager to help. He was working as an international in Iraq when I last met him in 2018.

The mountaintops around town and villages in the mountains has all been defended in the civil war and many had been attacked using cluster bombs delivered by Uzbek planes flying on behalf of Government forces. Either the pilots did not understand the need to drop their bombs from a height great enough to allow the cluster bomb to burst and the submunitions to disperse, or the defending fire meant that their only concern was to drop them and get away. Either way, there were dozens of cluster bombs that had struck the ground intact, split open and were slowly spilling their submunitions down the mountains. These were old Soviet ShOAB 0.5 and AO 2.5 submunitions that were designed to be armed by spinning through the air and then detonated by the impact of landing. The only demining NGO working in Tajikistan had collected and destroyed hundreds of them during their previous work. When I went surveying I found them scattered over the sides of mountains and collecting in gullies so I went on to interview the local authorities, townspeople, rural health centres and remote households about their impact.



The only accidents anyone knew about had occurred when taking them apart, throwing them off cliffs or using them as fuel on shepherd's fires. Friends provided full details of their fuzes in Russian and English, confirming that these (even when armed) required a heavy impact to detonate (or the heat of a fire). The shepherds had seen soldiers burning chunks of high explosive to heat their mess-tins so they knew it would burn, they just did not know about the need to remove detonators.

When I returned to the office I found that there was no system in place to record new data despite the Geneva Centre having provided IMSMA map database training over several years, so my survey efforts could not be added to the database. My National Director did not agree that there was a need for it. In his eyes, my job was to get him lots of overseas trips to conferences about mines regardless of his inability to communicate. The translator explained privately that his salary was low and the allowances that UNDP paid for travel meant that a few days away could more than triple his monthly income. I had to understand, he had daughters to marry off and weddings were expensive. The Campaign against Cluster Munitions (CCM) was gathering pace so I got submunition clearance onto his agenda by getting my National Director invited to a CCM conference in Europe - travel allowances paid by UNDP. Simple, if somewhat sordid.

Both the BBC and the CCM sent film crews and I showed them a few sites but the BBC's locally hired cameraman let them down, and the CCM would not use their footage because I was picking up submunitions to show them that they were not de-facto landmines. Some types are, of course, but not these. Campaigners have never understood that blanket bans on munition types without regard to the threat presented by their varied fuze systems seems rather silly to those of us charged with finding and clearing them. The BBC broadcast a radio interview and although I was widely accused of sounding like a product of Sandhurst, my family liked it. Perhaps everyone's self image dates from their youth. I still see myself as a country boy from Totnes in Devon even if I have mislaid my country accent along the way.

Half of my time was spent in the field (the mountains) and I really liked the place and the people. Every time I came back and put on my office suit, I found an inbox crammed with UN reporting requirements that no one had told me to expect. I was obliged to write fluff between stroking possible donors with credible lies. Well, I had staff relying on me to get their salaries funded... I started to understand why UNDP Chief Technical Advisors mostly sit at a desk and prefer not to know enough to know when they are telling lies.

Then there was a death - an entirely unnecessary demining accident that was partly my fault (by omission, at least). See Accident Case Study 1 at [Powerpoint downloads](#). The investigation, conducted by William Lawrence and myself, found more failings than were credible but no one wanted to acknowledge any fault or correct error. The international demining NGO involved sent one of their directors (a lawyer) to complain to the acting UNDP Resident Representative who told me to revise the conclusions of the investigation. He was sure I was right but I should 'tone it down'. I patiently explained that it already had been toned down. I had left out the fact that the demining organisation's manager had lied about his experience in his CV (he had none) and had obstructed the investigation at every turn. I had not mentioned that the ex-pat specialist who was supposed to be present at the time of the accident was drunk, and I had downplayed his failure to correct the absence of basic area-marking at other sites under his control. I had ignored the fact that the organisation was unable to provide any written SOPs at all, which I acknowledged was partly my fault because I had just presumed that they must have some. The UNDP interns serving as desk officers who were supposed to support my work found my discomfiture funny because the incompetent NGO manager was their drinking friend.

Well, it was funny. I am not cut out to be a UNDP lackey. (For my understanding of the UN involvement in mine action and an explanation of why I support it despite its failings, [click here](#).) The discredited NGO manager (appropriately named 'Storey' because he did tell stories) moved across the road to the offices of the Organisation for Security and Cooperation in Europe (OSCE) where he was appointed as their instant 'mine action expert'. He came to the Mine Action Centre and convinced my gullible National Director that OSCE would be a better partner than UNDP by promising him more trips abroad with expenses, so my National Director told UNDP that he did not need a Chief Technical Advisor anymore. I knew it was happening and did not argue. I did not want to be a part of any system that was this incompetent and gleefully ignorant. UNDP were happy not to renew my contract or replace me. Their timing was poor. I was halfway to getting Canadian funding for a national demining effort and had a really happy team of staff. Not realising that UNDP had nothing to do with the UN Mine Action Service (UNMAS), the staff wrote to UNMAS asking for me to be retained. I was touched by that, but my departure did not really matter. Tajikistan's mine problem was so small that it would never have attracted international funding if there had not been a desire to have a stabilising presence on Afghanistan's Northern border. I got two of my staff into European Universities and have since supported others in their applications for international work. The best I could do.

As arranged with the international NGO's Director, the UNDP office waited until I was gone and then tasked others to rewrite my report of that accident. No one had told me and I first saw the rewrite in 2018 - when I was obliged to smile. Co-authored by a friend, the revised report looked different but drew exactly the same conclusions. Whatever, the International NGO's head office was not entirely blind. They did have a major restructuring and revision and even checked out whether I was available for work later, so there seem to be no hard feelings on their part, at least.

Every year I had to find time to make my contribution to the International Standards review board. There are more than 40 separate Standards and the more management experience I had, the more convinced I became of the need to refine those Standards that I had not felt qualified to have an opinion about earlier. I was also more confident that there was a need to provide pragmatic guidance to the people actually working in the field. It was around this time that my contribution included writing a TNMA (Technical Note for Mine Action) covering 'field risk assessment'. I was also working every year to get [the PPE requirements in the standards](#) changed and to stop people using demining machines and calling the result 'clearance'. Clearance is defined in the standards as the removal of all explosive hazards to an agreed depth - and there is no demining machine that can do this. However, there has always been a powerful mechanical lobby - people making money out of these big and very expensive demining machines - who had friends at the Geneva International Centre. They could not answer my arguments but opposed me anyway. True, I studied philosophy so I know that winning an argument does not make me right, but I was right over this.

Norwegian Peoples' Aid (NPA) was setting up for clearing the Syrian border minefield in Jordan and I was asked to help out. I had been asked to go when they were clearing the border between Jordan and Israel but UNDP's Chief Technical Advisor in Jordan, Olaf Jorgensen (a Canadian), told them that I would not be acceptable. We had met ten years before in Mozambique at a conference when he was looking for a job and told me that there was money to be made by getting into demining management with the UN. He was right. Without having ever seen a mine, he used his ability to charm, spin fluff and fill forms to get a lucrative position within the UN bureaucracy and a generous pension. The right kind of UNDP Chief Technical Advisor, perhaps, but I cannot help wishing that the word 'technical' were omitted. When NPA replaced some staff, Olaf did not notice that I had been brought in until after I was already there.

He pretended not to mind and I pretended not to know about his earlier objections. The man cannot help being the descendant of a telephone sanitiser.

Jan Erik Stoa pioneered the use of rakes to investigate metal-detector readings in that border minefield with great success. [Click here](#) to see a Powerpoint case study into the safety of using rakes. I wrote their SOPs and negotiated with their national authority to get them accepted. The national authority imposed some silly rules - such as the wearing of entirely useless mine-boots and the use of Vallon detectors (because the army QA people already had a few). NPA had MineLab F3 detectors and replacing them would be a huge expense, so I set up a comparative trial. The army's Vallons were all broken on arrival so the trial was reduced to establishing whether the F3s could reliably find the M14 mines at depth, which they could, so after a lot of wasted time and effort NPA were allowed to use them. That turned out to be very useful when MineLab made simple adjustments so that the detector could ignore the iron rich volcanic rocks littering parts of the minefield.

The writing of the NPA dog SOPs was really interesting. Damir Atikovic, the Bosnian in charge of their dog programme, was proudly professional and I learned a great deal by working alongside him. See the SOP for using dogs in the [Global SOPs](#) which builds on the ones I wrote then. Sadly, Damir has since retired from demining due to deaf management. Restrictions on letting NPA actually destroy the mines they found meant that I was also obliged to devise and document render-safe procedures which I did with help from an excellent Jordanian officer who designed and made the tools that were then used to take the mines apart very effectively. We did not stay in touch and I am ashamed to have forgotten his name.

As before with NPA, my remit was extended to include testing equipment. I made a cheap diesel engine powered compressed air lance (with water mixed) because the programme manager thought it would work. Without the specialist nozzle of the airspade I had tested for the Americans in Afghanistan, I did not expect it to work but it did expose M14 mines well, before blowing them around and coating them with a ground-soup that concealed them amid the mud covered rocks very efficiently. In a minefield where many mines were visible, it had no advantages at all.



I despise the mask and body armour I am wearing in the pictures here (never mind the invisibly small marking sticks) but this was not my programme and someone in an office had chosen them all. And the mine-boots? Well, I was surprised to find that I could work while wearing them but I was unable to test their effectiveness against blast and the foot-rot they caused took weeks to clear up. See [mine-boots](#).

While I was there, the Italian woman Emanuela Cepolina turned up. Getting her doctorate had made her a 'professor'. She had abandoned her rotavator and adopted a small vineyard tractor instead. I got people to take the tractor seriously enough to let her conduct some testing. She still wanted to use it to detonate mines and had not really begun to address the need for armouring or blast resistant wheels. The dual controls that allowed it to be driven to the minefield and then radio controlled had taken a long time and a lot of money to perfect. Still, she

was trying hard and her enthusiasm was good to see. (Sometimes being patronising is the best I can manage.)

The annual gathering for the Mine Ban Treaty was held in Jordan that year and I went with Jan Erik Stoa. Both grim in black suits and dark glasses, we did a Blues Brothers routine to amuse the many familiar faces present. Jan Erik is another field man who won deminer respect by leading in the field. Backed by charm and rusting irony, he has spread love and Norwegian genes around the world very effectively. I regret the fact that I have not seen him since Jordan.

My next task was for UNDP again. I had to register as a 'preferred consultant' to be given a short contract to write a comprehensive set of SOPs for the national demining effort in Angola. I had been brought in to do the impossible but no one seemed concerned whether I wrote what they would actually do, or wrote something that just looked good and sat on a shelf. I got myself a translator and set out to write something useful. With Jose Cambonjei's help, those SOPs are not bad at all. They document some tools and procedures that I don't like, but that is what they wanted and they take the risks. And although I would not use most of their demining machines, that does not matter because most of them have not moved since they arrived as boomerang aid gifted by generous donor governments. 'Boomerang aid' because when you give an expensive machine made in your own country, most of the aid money is effectively spent at home.

I wrote a few new SOPs for specific needs for International NGOs and commercials and then produced my first Generic SOPs for the Indian NGOs who were trying to find work outside Sri Lanka. I later adapted those SOPs for public download from my website. Some of those Generic SOPs have been downloaded hundreds of times and I have seen unacknowledged sections turn up in the SOPs of many demining organisations. Good. All SOPs should be revisited regularly so, not before time, I later began working on an upgrade of some of them to become the [Global SOPs](#).

My Database of Demining Accidents was due an update – and it took months to enter all of the necessary records. I had been pressing the UN Mine Action Service (UNMAS) to take over the database for years but finally it fell to the Geneva International Centre where some bureaucrat decided that a simple spreadsheet would be enough. They took the data from the [online version of my database](#) (without asking) and summarised it to start their RAPID spreadsheet. Forty page accidents reports were condensed into 25 words by someone who did not know demining so often made crass errors. Well, if they thought it was useful to have a broad overview of annual accident frequency, I could live with that as long as they collected the accident reports as well. They agreed to do that and I took them at their word because they would have been stupid not to. Events proved that my expecting them to keep their word was stupid.

As a registered UNDP consultant, I was then offered a temporary position as UNDP Chief Technical Advisor in Libya, a country with no Mine Action Centre, no history of Humanitarian Mine Action, but a large mine problem that the world preferred to ignore (not entirely unlike Iran today). Reuben McCarthy, a friend from the early days in Afghanistan, had suggested me because he knew Libya and cared about its problems, and he knew that I would be good at working with the national military without upsetting them. True, not having a military background means that I am not tempted to make disparaging comparisons between their way of doing things and the way I was trained to believe was right. Plus, I am habitually polite and respectful, even when I am asking questions and showing how things are done in other places. I do have a justified reputation for mocking naked emperors, but never people on their home ground who are obviously trying.

So I became UNDP Chief Technical Advisor based in Tripoli before the Libyan 'Spring' and made friends with the army well enough to make two lengthy survey trips to assess the extent of

WW2 remains as well as the extensive minefield laid during Libya's war with Egypt. But I was not permitted to speak to the embassies about funding the removal of WW2 mines and was ordered not to socialise in the ex-pat community at all. I was even more surprised when the UNDP Resident Representative would not let me go with the Libyans to the annual National Directors meeting in Geneva despite the fact that the Libyans had been invited and they wanted me along. I offered to pay my own way but was refused permission to go. Strange man. I had been ready to like him because rumour said that he had slipped on the promotion ladder by breaking rules but it seemed that his frustration had reduced him to using his small authority indiscriminately. I don't think that he knew that the National Directors meeting that he blocked me attending was the one at which Mine Action Centres all around the world were told to submit 25 word summaries of demining accidents to the Geneva Centre and to stop sending full reports to my database. They no longer had to submit full reports at all. He may not have known, but the Geneva Centre people certainly knew that it would be easier to get this lowering of standards past if they kept me away. A friendly call to the Resident Representative would have done it. I am not suggesting that this was planned, only that they took advantage of the opportunity when it arose.

In Libya, commercial demining organisations had been selling ludicrous demining schemes to the oil companies who wanted to conduct fast oil surveys and the mechanical lobby had been busy encouraging the army to believe that big machines could eat up their more modern minefields in no time at all. Hey, with all that oil, they can afford it – but be careful, those Arabs just can't be trusted. The only demining organisation there at the time was Countermine – pushing a huge machine that predictably enough did not survive its first anti-tank mine blast – and surveying the desert by micro-light aircraft. I introduced Norwegian Peoples' Aid (NPA) to the Ghadaffi Foundation – which Saif Ghadaffi wanted to be the centre of a national demining drive with NPA advisors. I gave Saif's Foundation SOPs and a truncated set of national standards – both eagerly translated and printed up while I was there – and I made lasting friendships in the army and civil sectors. I even made one lasting friend at UNDP, my desk officer Ali Montasser, who came on a survey and was scandalised by the number of munitions we had left strewn in his desert since WW2.

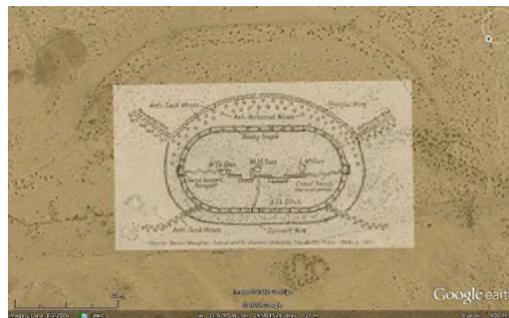
Then the UNDP Resident Representative called me in to meet an American Embassy man and told me that I should report to him. Did he think that Ghadaffi's infamous secret police had been disbanded? From the day I arrived, I had been assigned a shadow – a well educated and polite man who I bought a coffee and he later invited me to eat at his house. We both had a job to do and it was easier for both if we knew about each other because



I really did not have anything to hide. Mixing with high ranking army officers, I could not afford there to be any crossed lines because after two abortive coups Ghadaffi was a little suspicious of his army, and of the Americans. There were Libyan national UNDP staff listening while the Resident Representative spoke to me - and it was probable that his UNDP office was bugged. I pointed out the obvious, saying that I could not do what he asked because the Libyans would immediately know and cease cooperating. The American nodded, looking blank. Did he know just how crass this approach had been? The Resident Representative dismissed me saying that

he would speak to me later. He did not. NPA came and met the Libyans but could not agree the liberal Memorandum of Understanding which the Norwegians thought essential. My contract was not renewed despite requests from my Libyan counterparts that it should be. But then, I did not ask for it to be renewed because I could not work under that Resident Representative. I had started a ball rolling that was attracting national enthusiasm (if largely for potential jobs) but, with its usual sense of urgency, UNDP did not appoint a successor for more than six months by which time that ball had settled in the sand so deeply that it would take a war to dislodge it. See [UK's debt to Libya](#) (written before the Ghadaffi regime was destroyed).

NPA did give me a contract to gather together a lot of WW2 mine maps, regimental diaries and combat information covering Libya. The best source was the British National Library which also had a lot of the Italian and German minefield maps. Then I had to show how the maps could be made into transparent overlays on recent Google Earth images of the terrain. I could not do this, but my son could and he did some sterling work.



The defensive lines on the hardpan were often still visible - and the maps could be pinned to landmarks remarkably well (after adjustment for mapping changes). The report went in and is probably still on a shelf somewhere.

Meanwhile Emanuela had got some Italian government money to take the small tractor forward so asked me to design the blast-resistant wheels. By my own rules, the wheels should be capable of manufacture/repair in my own domestic garage, and should be able to take the blast from [PMN](#) anti-personnel mines without being disabled or transferring the shock to the bearings and axles. Her request coincided with the start of unanticipated and protracted problems with my wife's health so I was a little busy at home. I asked Ed Pennington Ridge to make the wheels for me. He had a small workshop an hour's drive away and had some experience making equipment for demining in Afghanistan.



I am not particularly small, but Ed is a mountain.

I decided on four different designs that would not be permanently distorted and should not transfer the shock energy to the hub and bearings. These would then be subject to controlled blast testing in Italy so that the best performer could be selected. Ed worked hard and did very well indeed. Unfortunately Emanuela fell out with him over payment and things were tense when I went for the blast testing (I blast tested one of my mask-visors while there). For unexplained reasons, I was not permitted to see the instrumented results but the wheels were attached to all manner of strain gauges and the University of Genoa selected one design which the tractor manufacturer then made using much heavier gauge steel (overkill, I think). It was heavier than needed, but I knew it would work. With no more funding, it looked as though the tiny tractor might never be finished, but I had started to think that it really should be. With a huge engine, low centre of gravity, and an articulated chassis, it could climb mountains while cutting vegetation and manoeuvring tightly around obstacles. With dual controls, you could drive it to the site towing a trailer, then fit its blast-resistant wheels and use its radio control system to drive it around the minefield preparing the ground for the manual deminers. It was beginning to look like a grown-up version of the machine that I had first wanted in 1995.

Supporting the Indian NGO Sarvatra, I was sent Requests for Proposals from the UN Mine Action Centre in Sudan. See [UNMAS in Sudan](#). I commented on the absurdity of their requirements on the demining forum and this incensed the mechanical lobby in the Geneva International Centre and at the UN Mine Action Service. Unable to answer, it seems that someone decided that I needed to be slapped down. Noel Mulliner had retired and the chairmanship of the International Standards Review Board had fallen to the acting head of the UN Mine Action Service, Justin Bradey. He wrote to me complaining of my cultural insensitivity in my forum posting and demanding a public apology. I was criticising his office, not the Sudanese, so I was puzzled by his accusation and asked for an explanation. Justin explained that my having referred to the Geneva International Centre as the GiHAD was offensive to Faiz Paktian Mohammad, the Afghan secretary to the IMAS review board who worked at the Geneva International Centre for Humanitarian Demining (GICHD). Well, GICHD had been called the GiHAD on the forum for ten years, often by me, but I had known Faiz since the '90s in Afghanistan so I wrote to him apologising for any offence. He wrote back assuring me that he was not in any way offended and adding that a jihad was a good thing to a Moslem so not an insult. I wrote to Justin reminding him that I was an invited and unpaid member of the International Standards Review Board, not a UN Mine Action Service employee, and asking him to withdraw his unwarranted letter of censure. I received no reply, so wrote again. Still no reply. With an International Standards review board meeting looming, I had no confidence in the chair, so was obliged to withdraw. I was the last of the originally elected board members and I had given them 11 years, so it was probably time. The exchange with the UN Mine Action Service was so bizarre that I posted it on the demining forum – the only way that I could kick back. And I did want to kick back because those responsible for the [Sudan debacle](#) certainly deserved a damn good kicking. In fact, my distraction over my wife's poor health and resultant money concerns probably made me a little easier to wind up than would otherwise have been the case, but I do not regret the choices I made.

If I had been manoeuvred out of the International Standards Review Board, the noise I made meant that this had cost Justin too. He lost his position as the acting head of the UN Mine Action Service, took his UN pension and opened a restaurant (or so I am told). I was also assured that things did improve in Sudan and certainly a real field man who was appalled by the range of mines and ordnance left behind by the machines took charge of operations for a while. And at the Geneva International Centre? Faiz wrote asking me if I would like a certificate of thanks for my valued International Standards input, an offer which I politely declined. I later found that Faiz has repeatedly blocked any suggestion that the Geneva International Centre

should take up my accident database so his friendship seems to have been limited to using me when convenient. Well, he is not alone in that. Faiz has moved on and other staff have come and gone but the Geneva International Centre's approach remains childishly fearful of all criticism.

Sri Lanka again, this time working with Sarvatra, the Indian NGO, who had permission to work in the defeated Tamil areas where no Western NGOs were allowed. Sarvatra were allowed because they had trained with the Sri Lankan army, so could be trusted not to feed the media with damning material. With an influx of Chinese military hardware, the government forces had annihilated the Tamil homeland, killing literally everything that moved in some areas. Sarvatra had several tasks removing the Tamil's hastily laid defensive mine-lines which became mine-swamps as they got closer to the final killing ground near the sea. Sarvatra had refined their vegetation removal rake and expanded their fleet of [Arjun machines](#), hiring them out to the other demining organisations working further South. Almost all of their deminers were Tamil war widows grateful for any job that would allow them to feed their children. The Indians had always impressed me, but I saw their genuinely humanitarian ethos more closely by living with them. Off duty officers used the machines to dig out collapsed wells and prepare the ground for planting in the places they worked – and every man gave blood regularly to the scattered NGO health clinics that had sprung up. The Tamil land was being sold off to Lankans from the South but the Sinhalese army general I spoke to had not bought any: "I am not going to buy trouble for my children", he explained. Genocide only works if you can kill every single one of them.

The retired Indian generals in charge at Sarvatra were both over seventy and wanted to make one last attempt to work internationally. They had taken one Arjun machine to Sudan but no one had taken them seriously. I fear that they may have fallen over their own feet there. True gentlemen, they did not expect ignorant point-scoring and casual racism from demining professionals. But they had carried on and found a partner in Kuwait so wanted to bid for clearing the oil lakes that were still staining the desert after Gulf War 1. Iraq had been paying reparations ever since they were thrown out, being milked as a kind of eternal punishment as the money dissolved in UN overheads and abortive contracts that somehow never achieved the goal but still consumed all the Iraqi money. You had to have a Kuwaiti partner to bid, and the Kuwaiti partner would play the system in return for most of the money. Would I go with them to survey the task they were bidding on and work out how it could be done? Eventually, I did but the job could not realistically be done. The requirement was for everything from a rifle bullet to a large bomb to be removed to a depth of over a metre over many square kilometres of desert land, including large oil lakes. Not liquid 'lakes' because they had crusted over and in some cases dried out and become thick tar. There was no detector that could find a bullet at that depth and no cheap or fast way to safely remove the oil lakes and search beneath them. The Kuwaiti partner took what I said could be done and presented it in a way that they said would be acceptable. It being their turn at the trough, they may have been right. Only then did it become apparent that the Indians would have to upfront all the equipment costs, running into millions. I advised them to withdraw. Sarvatra demining have now closed down and the generals are spending their final years building schools and installing solar-power systems in India. General Prem Puri and Brigadier Satwant Brar, I am very proud to know you.

The Council for Scientific and Industrial Research (CSIR) in South Africa invited me down to advise over their research into blast attenuation and its relevance to possible blast boots. This was Theo von Dyk, formerly of Mechchem Denel, and we had met long before. They had done some really interesting stuff involving materials of high contrast density used to convert blast energy into heat. This came about after they were contracted to look at my database records and see whether there were any discrepancies between the US LEAP study results on blast boot testing and what really happened in blast events. The LEAP study used real limbs cut from

cadavers and fake mines filled with plastic explosive. They also drilled into the ankle bones to fit pressure transducers in a way that weakened the bone significantly. The wrong high explosive and weakened bones from aged corpses explain why their test results were actually far worse than reality as shown in the accident record. I had said that this was the case and the CSIR study came to the same conclusion. This meant that it was still theoretically possible that a blast attenuating boot could be designed. Theo and his old boss Vernon Joynt were probably the best practical armouring team ever. We had disagreed about demining procedures and safety during the cowboy days in the '90s but I had always wanted to learn from them. Vernon got an offer he could not refuse from the military industrial complex in the States and may still be working there for all I know. Theo failed to get money for his blast boot research and has now retired to Cape Town, which is a real loss.

The Italian mini-tractor was shown prematurely at the Croatia Symposium (prematurely because it was not finished or tested). Emanuela had it painted pink as a political statement and that may be why it attracted derision, but I still had hopes for it.

And then Libya bounced back into my life with something of a bang. Early in the uprising, some of the Libyans I had worked with were employed by covert US (informal) forces to act as guards and translators as they moved around to locate and destroy shoulder launched MANPADS – MAN Portable Air Defence missile Systems – that Western governments feared would be used against civil aircraft. The allied forces had bombed many weapons storage areas with remarkable accuracy but that did not always destroy their contents. Other storage areas were deliberately not bombed to allow those sent secretly to count and destroy MANPADS to operate in a safer way. My friends went to dozens of munitions stores and helped to destroy hundreds of MANPADS. And when their job was done, they decided it was time to start a Mine Action Centre and begin to clear up the mess of scattered munitions, so they contacted me. I told them that it was the UN that they should contact but the UN Mine Action Service had already moved into the East of Libya and would have nothing to do with them. My friends had Ministry of Defence support in Tripoli, army Colonels, and activists all eager to get going, but the UN had rudely dismissed them so they were going ahead without them.

It is hard to work alongside a government when no one is sure where it is, but the arrogance of the UN Mine Action Service approach was astonishing. See [UNMAS in Libya 2012](#). My wife's health had improved and she agreed that I should go if I could do anything, but I simply could not afford to go. Then Ghadaffi was killed and Big Jim, a huge Canadian commercial, turned up on my doorstep in Wales begging me to go with him to set Libya to rights. I explained where I was coming from, made him read my website and told him that I did not have a commercial bone in my body. He grinned and said that was fine, helping the Mine Action Centre get started would be perfect – and he would find some funding support. He already had plenty.

Getting into Libya during the fighting was easier than I expected, apart from one shock when customs at a little airport in Tunisia opened my bag with detector, tools and PPE – and found Big Jim's handgun hidden there (without my knowledge, of course). Fortunately, he was a smooth talker bearing dollars. Three minutes alone with the officials and my bag, gun included, was returned. We flew into Misrata, received a home-made entry stamp, and I got a ride down into Tripoli. There was a lot of war debris and angry shouting, but the women laughed at the Rambo figures strutting with bandoliers and firing into the air, the rubbish was still being collected, and patient traffic police in white uniforms were still trying to keep the traffic moving. The pictures of Ghadaffi on the banknotes had been defaced, but the currency had not collapsed. It looked possible, even likely, that things would not all fall apart. Did I want a car? It was not stolen but the police could do nothing anyway because all records of driving licences and car ownership had been bombed. So we really had learned nothing at all from Iraq. Damn Cameron, Blair and all the politicians wanting to leave their bloody marks on history.

The Libya Mine Action Centre was led by a couple of young rebels and supported by several Colonels. It was authorised by the Ministry of Defence to take responsibility for managing the cleanup of scattered munitions and unexploded hazards but had no funds at all. We were talking to the US Embassy people in a battered room that served as our office when Saif Ghadaffi was finally captured and the street outside erupted in celebration. Cannon fire outside the window and rifle bullets thudding on the roof. The Americans had to flee back to their embassy in their armoured car while we followed in a pick-up. Beer on the terrace and I was called to one side again – this time with my friends only 50 metres away. No, I could not work for them. I was there to help the Libyans and would have to leave soon – duty calling at home. In retrospect I know that my friends had already taken the US dollar, knew what was afoot and expected me to accept – but I did not know that then. Would I have agreed if I had? Probably. The US efforts looked like the best hope for Libya at that time. With some help from me, my group got a promise of American and German funding, a formal (written) MoD mandate, and I said I would help them from Wales as much as I could. Big Jim was very disappointed with me. Of all the adventurers flooding in, he was the only one I actually liked so I hope he found an angle and made a buck. Unable to afford the high prices in hotels and unwilling to sofa surf, I gave away my demining kit and paid a Libyan to drive me out to Tunisia through many rebel checkpoints (and the rebel control was obviously factional even then).

Three months later I was back in Tripoli. The Norwegians had done a deal to get in, part of which was to provide me as Chief Technical Advisor to the fledgling Libya Mine Action Centre. By that time the UN Mine Action Service (UNMAS) had moved its centre down to Tripoli, taking over a gated tourist resort and living in luxury by the sea. The UNMAS effort was headed by Max Dyck, a man I had last seen 15 years before when he was a longhaired youth leading tourist canoes down the Zambezi. He had his own Libyan Colonel on the payroll so wanted to ignore my team. He could not abide the two young rebel Directors of the Mine Action Centre who ran around making friends and impressing the foreigners in a game of political chess. The Directors hated Max in return, while relying on me to get the Centre established with help largely from Azzeddin, Nurelhuda and Colonel Atya. Only Nurelhuda spoke good English and my Arabic was close to zero. Max Dyck agreed to a compromise when we met – I actually liked the man – but broke his word almost immediately (probably having received instruction from above). So I told the world what was going on in order to try to get him replaced by someone who wanted the two efforts to work together. I got unsolicited messages of support from half a dozen internationals working for NGOs there at the time because Max and his arrogant UNMAS efforts had trodden on everyone's toes. Meanwhile the US contractor overseeing the donor's money would not actually release it to my team. They were paying for a nice building with desks and chairs but we had nothing else. I bought a phone, computer, a printer and a kettle and we did start to achieve a few things but not nearly enough to justify the long walks through the fractious city (no car again) and my increasing frustration.

A specialist in post-conflict reconstruction was given by the UK Embassy to advise us (we had not asked). Taz was an expert because she had experience in Iraq (as if experience in post-conflict reconstruction in Iraq was going to impress anyone). Whatever, I told her she could give her strange lessons in management on condition that the staff got the lessons they wanted – which were lessons in the English language. She came, told them to do what UNMAS wanted and patronised them so much that they threw her out. We had decided to use Google Earth because we could all use it, and the active international demining organisations were already using it. But of course, Max sent us an IMSMA geographic information systems (GIS) specialist from the Geneva International Centre along with a dedicated computer setup (that could not be used for anything else but mapping) despite the fact that it would inevitably be years before it could ever be made useful... But maybe IMSMA would be useful in the fullness of time as long

as someone was trained to use it. The Geneva Centre's specialist was a frightened young man who had been told that I was evil and had no idea how to train anyone. Geneva offered training in Switzerland, so I sent our Libyan GIS specialist (Abdulatif, a very bright man) to Geneva – and managed to get him a visa (a real achievement just then). The international demining organisations were good and started reporting – FSD and Tony Fish were excellent. MAG's Djadranka Gillisen was admirable. A tiny German NGO put Lutz Kosewsky in place (a good man who I knew from Angola) to work with one of the emergent national demining efforts and they were getting good work done too (that national group is still going now). But still the American contractor controlling the money would not let me spend it. They may even have been right – it really should have been Libyans driving the bus, not me.

I was needed at home where my wife's health was fragile. My Libyan Directors loved the politics but they did not take my needs seriously and the conflicting interests of the international community were once again making matters worse in a country in which we had destroyed the authority with no plan for its replacement. I declined an invitation to the British Embassy, already knowing that I wanted no part in the feeding frenzy of nations trying to get a share of Libya's oil. Without Arabic, I could not confidently assess the situation but suspected that I was becoming part of the problem for those foreign interests who would finally get their way. The NPA Country Manager had finished writing his masters (his sole activity) and was being criticised for my activities while he was trying to relax in a guarded beach bar, so he did not want me there either.

So I came home, advised from a distance, and despite having publicly ridiculed the UNMAS effort, two months later I was asked to apply for the job as UNDP Mine Action Chief Technical Advisor in Tripoli. I read the job description and there was no mention of providing support to the Libya Mine Action Centre. I asked if that was right and was told that the terms of reference were not negotiable. So I declined and advised the NPA Manager to go for it instead – it was a highly paid P5 position and he was unashamedly only in it for the money. He applied and I hear that he did polish a chair at that UNDP desk for a while.

I was asked to devise a plan for small arms collection and remained formally an 'international advisor' to the Libya Mine Action Centre for another year, but the requests for help became less and less over time. The Libyan team really did deserve better, but my best had been inadequate for reasons largely out of anyone's control. Max Dyck of UNMAS was moved on, my Directors were eased out, and some kind of UN Mine Action Service controlled Mine Action Centre staggered on ineffectively.

Back at home, my wife's poor health meant that I did not want to make any long-term commitments that would have me away from home again. I had time to start pulling some threads together over making a flexible ceramic body armour that would provide better protection against fragmentation mines and other fragmentation hazards. See the end of the page on [Developing body armour for demining](#). Ed Pennington-Ridge had encouraged me to start work on this but then got distracted by his other work so I ploughed on and got help testing my experimental designs from friends in Africa. When I finally found a design that would stop rifle fire, it was flexible but not significantly lighter than rigid ceramic plates. You don't need to stop rifle fire in demining (not usually, anyway) so adding a couple of layers of my material to standard armour would probably have been enough to stop all metal mine fragments - but no one wanted heavier armour so I had no real incentive to continue. There were many other possible uses, but I could not afford to spend any more on it. See the [FCC page](#).

I was paid to write a few more SOPs for demining groups – an almost complete set for a commercial in Iraq and odd one-offs covering things still not covered in the Global SOPs, such as the commercial Quality Management monitoring of another demining organisation.

An EU research group named TIRAMISU had become the source of more money for the Italian mini-tractor. TIRAMISU was a collection of disparate projects run by Universities and commercial companies who were revisiting every aspect of demining research I had ever heard of, from explosive-detection bees and Ground Penetrating Radar (GPR) to robots carrying metal-detectors and an explosive sniffing machine. Some were unaware of the previous work, others were relying on the improvements in computer technology to take them further. I genuinely tried to see a potential use for their work but the only one that had immediate use was the small Italian tractor. With its large engine, genuinely blast resistant wheels, and robust dual control system, it had real potential despite getting much more expensive than Emanuela had originally planned. Another TIRAMISU project on detecting tiny traces of high explosive vapour was also interesting, but failed to get the serious support needed to get a fast outcome. I hear that it is still struggling on, poorly funded, in Scotland and must go to see it one day. I ended up advising the TIRAMISU research efforts freely for three years, and towards the end I drafted a good Central Workshop Agreement (CWA) on testing demining machines, but a little man at the Geneva International Centre ensured that it went nowhere. Well, drafting European CWA is obviously something that the Geneva International Centre should be paid to do.

The Swedish police came to London and invited me down for a formal interview about Countermine activities in Libya. It seems that Lars, their scam-artiste, had been raising some money by making claims about the performance of his machine that were just a little untrue. I would have admired his cheek if he had not been such an offensive boor. There are still cowboy bandits in the demining industry, helped by the ignorance of many at the top.

A UK company contacted me with a new metal-detector that could detect the P4B mines on the Falkland islands – very difficult mines indeed. They gave me a detector but I could not get it to work properly. It had complex settings and a screen that needed ‘interpretation’ so the error could have been mine. I asked Colin King to let the manufacturer test its performance against my Minelab detector in his forest. Colin had real examples of the mines so this was a test that would have meaning. The designer was the only man who could interpret their detector’s readings, so he used it. Neither detector could find the mines reliably but the MineLab F3C was undeniably better. Thanks Colin. Worth a try. Sadly, the UK detector designer died before he could make the changes that he was convinced would make it work.

A Korean company making visors got me to test theirs to prove that they reached the requirements of the International Standards. They were beautifully made and 6mm thick, but their own government did not trust the company. I managed to test three cost-free and they sent me a donation for my work, the only time that has ever happened!

Parviz in Tajikistan asked me to come back and write their national Mine Action Centre a plan. They had a new National Director and were ready to change. I was on UNDP’s list of preferred consultants so it would be easy. Of course they did not have enough money and there was far too much work to do, but it was a compliment that the remnants of my old team wanted me back. Three weeks pay for three months work? Well, I could do most of it at home and my wife thought it would buck me up, so I agreed, signed the contract and had found a ticket before the UNDP office refused to approve the contract. They told Parviz I was 'blacklisted'. Well now, a UNDP blacklist? What with the UN Mine Action Service and the Geneva GiHAD, I was getting close to having the full set! Of course, I checked it out and UNDP does not actually have a blacklist but I had a black mark against my name in Tajikistan dating back to my refusal to revise that accident report. Integrity is priceless, of course. In this case it saved me having to do a lot of unpaid work, so looked at in the right light, it really was its own reward. In fact, the power of some minor bureaucrat to screw things up for mine action in Tajikistan was rather annoying.

More than 60 Years old. Twenty years in demining. The database of accidents was in decline with people often asking for data but not sharing new reports. The International Standards were also in obvious decline and the whole industry seemed to be obsessed with filling their pockets while saving money for the donors, so becoming less and less truly professional. I was still busy and answering questions from around the world, but I felt isolated sitting in my Welsh Border garage. Fact is, I really missed getting into the field with the people taking the risks: those are people it is always easy to respect.

In Italy, the manufacturer of the little tractor and Matteo Zoppi from the University of Genoa had pulled things together (without Emanuela) and got a machine ready for independent testing in Croatia. Now costing around \$80k, the machine was called the Area Preparation Tractor (APT). They hired me to go along and advise, so I went and spent a few weeks at the test site in Croatia. I was in my element during the extended field trial when the Croats insisted on running the machine through a dense forest minefield. It did very well – bearing in mind that it is not designed to do what an MV4 flail can do (and cost a great deal less). That said, the afterthought armouring was far too close to the engine and its camera system needed work. I was impressed by the ease with which I learnt to use it and by its resilience as the Croats tried to break it. For a video of it – including some bits taken during those trials – [click here](#). The tests and field trial were organised by Tomislav Vondracek – a Croatian national who I had heard about but never met. There's another man who I have found it easy to like and respect because he always does the job in front of him to the best of his ability. An accomplished linguist, he does have a sense of humour that makes the Sahara seem wet, but I like that.

I was hopeful when in 2015 the Saints appointed a new jockey – amid some rather bad publicity about Willoughby taking excessive executive pay. I hoped that HALO would revert to being the leading light they were long ago – first with visors, frontal body armour (albeit minimal) and converted agricultural machinery. I had always liked their healthy disregard for the bureaucrats even if I wasn't so keen on Guy Willoughby's unhealthy disregard for everyone else. We all knew that Colin Mitchell's shoes had never fitted Mr Willoughby but I hoped they might fit the new man, Major General Cowan, rather better. Perhaps he would understand demining and move HALO up with the leaders? It was even possible that he would see demining as a fully integrated part of peace building – including building the conditions where peace became the most attractive option for the people – which I had always thought was part of HALO's original "Life Support" remit. (If you are unaware, HALO stands for Hazardous Areas Life-support Organisation, so is not really a claim to sainthood.) However, subsequent Saints postings on social media showing what I can only describe as criminally negligent demining activities leave me obliged to accept that my optimism appeared to have been sadly misplaced. It seemed that the stables were cleared out, but the worst of the unthinking hacks retained. The latest reports are a little more positive, so things may be improving at last.

When I was asked to go help clear a few thousand square metres around a school in Burma/Myanmar with a group of volunteers led by Luke Atkinson, I researched the political situation and decided that Myanmar was probably the place where demining could have the greatest humanitarian impact in the world. It was also an opportunity for an old man to have a last fling in the field, so my wife humoured me despite the cost.

I took my demining kit and when I got there I found that I had the only metal-detector, so we had to use rakes. There was a lot of metal strewn around – including many of the cheap Chinese batteries used in the improvised mines – so [the rake excavation and detection system](#) might have been the best choice anyway. In that climate, raking was hard work but the ground was soft. Although easier than it might have been, it was too slow and we all had limited money and time so I converted a two-wheel rice tractor into a machine that could prepare the ground before using the rakes.



Made in three weeks at minimal cost, the picture shows me on a test drive.

Built in a side-of-road workshop, the total cost (excluding my time) was minimal, especially because I left the rice tractor unaltered so that it could be returned to its original use afterwards. Leaving the tractor intact meant that the long cast aluminium steering arms could not be replaced. As a result, steering was difficult, but it was possible. My subsequent attempts to raise awareness and raise money for demining in Myanmar were not appreciated by those international demining organisations who were already there waiting in Rangoon for permission to work. They called me a maverick, but I had to try. See [Why not clear mines in Myanmar?](#)

I added a few records to my database of accidents but my requests for new reports were seldom answered. I contacted Agnes Marcaillou who had become head of the UN Mine Action Service (UNMAS) and got into a very slow exchange with her 'Chief of policy' in which their office recognised that the International Standards said that reports should be shared but declined to give me a new letter that I could show to demining organisations in support of data gathering. They were evading the responsibilities of their office so I would have liked to confound them by revising and using my old letters of support - but that might have got honest people into trouble, so I did not.

Tajikistan again, this time OSCE asking for my help with a regional workshop, an appraisal of the army's mine clearance efforts and a plan for the way forward. Once again it was someone I had worked with before who asked and so could not be refused. Azamjon Salokhov had been the dynamic Mine Risk Education person when I was Chief Technical Advisor at Tajikistan's Mine Action Centre and had since trained as a deminer while working with the Organisation for Security and Cooperation in Europe (OSCE). What an organisation founded to further 'security and cooperation' in Europe is doing in Tajikistan is a good question. If you do not know what the OSCE is, I suggest taking a look at [their website](#). I had to introduce Humanitarian Mine Action to regional MoD people from throughout the Central Asian States (the 'Stans'), which I did with scripted Powerpoint picture-shows so that the translators had a chance. Then I had to go see the army working in Tajikistan and make helpful comments in a lengthy report. Easy. I found that the army were using my Generic SOPs translated into Russian, using my designs of tools and some were even wearing my visors.



That's me leading the way up a mountain minefield on the Tajik-Afghan border in 2015.

They were good deminers working very well and when I was temporarily given the honorary rank of Colonel, I was genuinely honoured. They even clubbed together and bought me a uniform. Humbling, especially for a man who may have blown a few things up but has very deliberately never fired a gun. Their Colonel punched the air when I criticised the OSCE's IMAS EOD-3 training course, open to anyone and completed in less than a week. Every genuine Explosive Ordnance Disposal (EOD) specialist is bound to be insulted by an instant EOD course like that.

I also wrote a strategy document for them but that was stymied by well meaning PC OSCE member countries criticising the government of Tajikistan rather vocally, which led to demonstrations outside their Tajikistan office and a sudden reluctance to cooperate. OSCE membership includes Russia and the USA, as well as

Tajikistan. This broad membership was achieved by having fuzzy stated purposes and goals that probably made disagreement between members about the extent of the OSCE's remit to promote change inevitable. There were even internal contradictions in the US approach, with one hand criticising the Tajik regime while the other funded the Tajikistan army's Mine Action Unit and gave wide-ranging training to the Tajik army. The thinking does not join up, but why should it? For the Tajik regime, whose main economic support comes from the Soviet Union and China, the humanitarian concerns of the liberal West do not have to be taken seriously. If you want to work there, you have to start from where they are, not where you think they should be.

Pearson Engineering bought the Minewolf demining machine after the company was unable to honour its contracts but seemed not to know just what they had acquired. Someone there asked for my advice about how to go forward, which I gave, and then they wanted a presentation about Humanitarian Mine Action so I went to their factory in Newcastle (not seen since the HSTAMID demonstration 14 years before). I took my 'props' and was not surprised when the small size of anti-personnel mines shocked those who thought they had a 'clearance' machine. I explained how I think the Minewolf can be an asset in humanitarian demining when used to enhance safety, and how it is often used with a contrary effect. The staff were great but the management was unhappy because I had not shown them a market opportunity. With the University of Genoa's approval. I offered them the Area Preparation mini-Tractor, which needed their drive because the manufacturer had nothing to invest after the donor money had gone but the machine was too small for them to take seriously. Ah well, it's a long drive from Wales to Newcastle so I am glad that there is no reason for me to go again.

Being an advisor to the TIRAMISU effort meant that I was asked to be in Geneva for the annual mine ban shindig in 2015. While there I went to the Geneva International Centre and asked again about whether they could find a way to take over or support my database of demining accidents and start gathering accident reports again. I got the same answer as ever. "We know it is really useful but there is no money for that kind of thing." That was the last time I saw Faiz, who came in to say a disingenuous hello during my meeting, and the last time I visited the GiHAD's glass caged offices in the mountains. I followed it up by presenting a good argument to the International Campaign to Ban Landmines (ICBL) pointing out that signatories had signed up to share data. See [Three failings of the ICBL](#). Predictably, I first got the run-around and then an ICBL decision that it was no concern of theirs. They could not explain why the welfare of deminers was not their concern, so wrote a fudge of platitudes and bluster. I understood that they were idealists who had turned 'professional' and were now primarily concerned with limiting their workload and protecting their salaries. Well, that happens a lot.

I came away thinking about the need for appropriate training so checked what EOD training to meet International Standards was available. I found four organisations offering courses commercially. From what I could tell, their curricula varied but all concentrated on teaching military style EOD skills and all were not nearly long enough to actually achieve that. The only one that really seemed to give the training a strong Humanitarian Mine Action flavour was MAT Kosovo. They all had requirements for previous skills and experience, some more stringent than others but it looked like an experienced field man with no formal qualifications could get on any EOD-3 course if he could prove that he already knew what was necessary for EOD-2 (which was good to see). What was not so good to see was the lack of common elements in the curricula so that a qualification from one training organisation would mean the same as one from another. This is the fault of the International Standards and the absurd list of recommended skills for each level published in Annex B of T&EP 09.30/01/2014. It would, for example, take several lifetimes to learn the 450+ competencies they suggest for EOD Level 3 trainees. I am told that the Geneva International Centre is refining them now – after ten years of confusion and missed opportunity. Better late than never and I hope they will acknowledge the fact that the Explosive Ordnance Disposal elements are a tiny amount of what a good demining supervisor needs to know.

The IMAS Review Board seems to have entirely forgotten its original purpose. Right at the start we had considered setting high standards that were an ideal for organisations to aim at - but this had been tried in the Copenhagen standards which were no help to deminers or donors because no one in the world could comply with them. So it was agreed that we should write standards that reflected best practice in the field and revise them regularly as the best practice evolved. The Standards were to be a baseline on which anyone could improve, but with which everyone should comply as a minimum. These minimum requirements would give donors confidence that they were comparing like with like when assessing bids as commercial demining expanded. They were not intended to be the internally contradictory confusion of ideals and best practice that they have become.

Ever cheeky, I broke my own rule about applying for a job and was short listed for a home-based consultancy to write the new UNDP policy for integrating Mine Action into their development ethos. The challenge would be to get all of them to agree something without being so nebulous that nothing at all was actually said. They took up my references but then it went no further. Perhaps someone had looked at the blacklist they do not have? They still do not have a coherent policy.

I was contacted from Iraq by a national NGO (AMACC) that wanted SOPs for Improvised Explosive Device (IED) search and clearance and a National Standard. They had contacted the Geneva International Centre and been told that was not part of their remit but they were working

on a 'Technical Note'. AMACC needed something now, so I put something together – with advice from a few friends – and put it on my website for download. It was downloaded many times – and has now been updated in the [Global SOPs](#).

Libya came up again, wanting dedicated counter IED training so I put them in touch with Ben Remfrey from MAT Kosovo and started thinking seriously about tools to make counter IED work safer. The obvious assets were small camera quad-copters and cheap, disposable robots able to disrupt a munition or place a charge. This led me into thinking about disrupters - which turned out to be useful when I was offered a position as a paid research assistant at University of Genoa. I could work mostly from home, but needed to suggest research topics. Choosing between the APT machine, ceramic armour and more efficient disrupters, I chose the machine and the disrupters. With no money to work on the machine, I concentrated largely on disrupters and helped out in what other areas I could. The Engineering Department of the University of Genoa was really good to me – and being technically a student again promised to round off my time rather appropriately. I wrote a few papers and had time to learn again – although I never did get to grips with their 3D CAD package. It might have helped if I spoke the language but Matteo was very patient. Thanks Matteo Zoppi – the least arrogant engineer I have ever worked with, incredibly bright and a genuinely good man too.

No sooner had I become a student than I was asked by the Geneva Centre to produce a raft of training materials for a course on field risk management in demining. The evidence based course would have to rely on data from my database of demining accidents. Geneva imposed a house style that was restrictive, but hey - they would be using the course so should decide what it looked like. I produced 22 Powerpoint presentations each with 30-50 slides. Every slide had to have an appropriate picture and up to 40 words in brief bullet points. The need for more than 800 appropriate images had me burrowing in my huge library of pictures and I even got out my pencils for the odd cartoon that might get a simple point across. Starting with the history of risk management and nodding towards the way it is conducted in other industries, I learned a lot. There was not enough time, of course, but I was pleased with the slide-show result even if it did threaten death by Powerpoint.

I also presented a couple of papers at the Croatia Symposium while I was a student. One on the [Area Preparation Tractor](#) and one entitled '[Why we fail to meet the primary goal of the Ottawa Convention](#)'. This was appropriate because problems with the Convention was a formal symposium topic that year. The Geneva International Centre had sent a couple of people including a familiar smirking face from my time in Sri Lanka who reported back saying that my paper was attacking the GiHAD. It was about the industry's failure to gather and share data about demining accidents and about incidents in which hazards are found on land declared clear. Most people do not realise that signatories to the Mine Ban Treaty should do both. So the ICBL was (politely) in the firing line but I admit that the failings in Geneva and at the UN were the main target. The Geneva International Centre's director is a Swiss government appointment and that gives the Centre an official government status. The Director wrote to the Croatian Government complaining that my presentation insulted them and his status meant that this was technically a diplomatic incident! He made no attempt to explain what the insult was or to indicate any part of my presentation that was factually inaccurate. It had been critical and that could not be tolerated. This bureaucratic bull seems to illustrate the failings of the Geneva International Centre's approach rather well. The Croats responded with real diplomacy, apologising for any offence but pointing out that it was no part of their role to censor anyone. "Do they think Croatia is North Korea?" one asked me.

The disrupters I was working on had to be better than the standard Baldrick disrupters. They were, so I called them [Black Adders](#). With help from Bill Bagley and Cris Chellingsworth, we tested them several times in Kosovo and Montenegro with Ben Remfrey's MAT Kosovo team

and I witnessed some of their training while I was there. The people I met were both good and genuinely striving to be better all the time, plus I also know that it is possible to fail their courses because one student was asked to leave early while I was there. (If a course cannot be failed, the certificate is one of attendance rather than achievement.) Apart from an EOD-3 course, their first training course for the pilots of Small Unmanned Aircraft (SUA) coincided with my presence so I attended some of it and wrote up a [paper on the use of SUA in HMA](#). I decided that I would go to MAT Kosovo for training myself if I were young enough to be likely to use the new skills I would acquire. There are real advantages in having the experiences and vocabulary that result from a shared training baseline.

Then I had an interesting time in Palau with Luke Atkinson for NPA. Palau is about as far as you can get from anywhere in the Pacific. It is an island group with a growing tourist trade but where there is a widespread litter of WW2 ordnance. I went to cover for Luke's annual leave, so only a couple on months. Challenging in many new ways.



I have never seen IEDs so decayed – or so much jungle littered with scattered shells and mortars thrown around when ammunition dumps were destroyed (mostly unfuzed, but some corroding white phosphorous ordnance and some fuzed UXO). From WW2 US bombs to Japanese torpedoes, the hazards were new to me and the surveying was great fun – apart from the pseudo ‘impact survey’ required by Head Office that was ludicrously inappropriate. Picture peaceful people living in US style housing, driving pick-up trucks and getting by – ignoring the scattered bombs all of their lives, even when a rusting stack of shells sits in their backyard. Then suddenly a Mine Action team turns up and asks how many teenage girls live in their households and whether the girls have received HIV awareness education? Disliking being threatened by defensive parents, the staff simply filled in the forms themselves. More rubbish data from which someone in an office will derive rubbish conclusions, of course.

I had already drafted the Palau National Standards, so much reduced from the International Standards that the whole amounted to around 120 pages, but found that even that was far too much for anyone to read, so I revised it down to 20 pages while there. The shortest National Mine Action Standards anywhere in the world, methinks, and still covering all of the essential angles including underwater work. With few known civilian casualties (and them long ago) the work in Palau is not a high priority. However, although the population of the islands is tiny, tourism is booming and the visitors poke around where locals leave well alone so it certainly is time that the WW2 stuff was finally rounded up and destroyed. Not wanting to disturb the tourists, the government wants it done discreetly, so no big bangs and no pollution. There are pioneering solutions out there and the programme only needs enough funding to clean up properly.

UNDP Lebanon were next in line. Funded direct by the Norwegian Refugee Council, would I take a contract as Chief Technical Advisor there? They had found my name on the UNDP preferred consultants register and looked at my website. I contacted the Mine Action Centre and spoke with Major Fadi Wazen. One thing they needed was to reissue their national standards.

The standards had been written by disparate advisors over a long time and were internally inconsistent, sometimes incoherent and the International demining organisations had contempt for them. I avoided asking who had been well paid to sit in Beirut writing them. It was a six month posting and money at home was thin, so I agreed – having pointed out that I would have to come home at once if my wife's illness worsened.

Then there was the inevitable eight week delay while UNDP decided when they wanted me to actually start. And in that period we discovered that my wife, frail but battling on, was terminally ill. Emergency surgery kept her alive but she needed a level of dedicated care that we both wanted to be given by me, so I withdrew from the Lebanon contract before it could start. The Norwegians were frustrated by UNDP's delays so they withdrew their offer to fund the position. Not wanting to let anyone down, I wrote Lebanon's new National Standards unpaid. Fadi Wazen was a great help and, although it would obviously have been preferable to sit with him to write their National Standards, my efforts were good enough for them to be adopted in 2018 – along with the rule that they must be regularly revised and improved. Best I could do under the circumstances. They asked me to come out to work on revisions with them twice in 2018 – paid work – but I had to refuse because the cost of medical cover for my absence would have meant that I did not actually earn anything, plus their contorted bureaucracy dictated that I pay for a \$1000 medical check-up before I started a three week, self insured, consultancy - which was mad.

I may know a lot about Humanitarian Mine Action but I keep stressing that I am really not an EOD man – when EOD means Every One Divorced. Well, I am divorced but I got that over with long before I ever handled explosives. I was a single parent with an infant son before merging into a 'modern' family with another single parent (with three children) in the '70s. We were together for 42 years. Got great-grandchildren now.



We have always had fun together, even when we argued.

2018 was desperately difficult at times but I was supported by family and many in the Humanitarian Mine Action industry. I am especially grateful to friends at James Madison University who sent really supportive messages. Old colleagues from India, Pakistan and Sri Lanka offered money towards medical costs, offers that could never be accepted but which brought tears to my eyes. From Reuben McCarthy (the longest surviving

friend I have in demining) to Ben Remfrey (my most recent) I had nothing but kindness. Luke Atkinson tried to amuse me with his maroon beret humour and impossible questions. Like others, he found work for me to do from home. Hey, I have always been lucky. My wife survived longer than anticipated and we often laughed – so I got something right as a carer (if often as a clown).

I am one of the last of the original demining mavericks, certainly the oldest, and mavericks are never entirely out of fashion. In the first week of 2019 I was able to help friends in Ukraine, Geneva and Iraq by answering questions – but I doubted how long I could usefully do that when I was no longer in the loop. With the tide of mediocrity threatening me, it was time to retreat with as much grace as I could muster so I told the community that I had given up.

My greatest frustration on 'retiring' from Humanitarian Mine Action was the decline of the database of demining accidents. It also includes records of 'incidents' which occur when an explosive hazard is found on land that has been released for civilian use. Not written by me, simply collected by me, that database remains the greatest asset we have and one that was so undermined by the carelessness of the Geneva International Centre and the UN Mine Action

Service (let's call it 'careless' because the alternatives are rather worse) that there has been little data added for ten years. True, many of the oldest lessons still need to be learned but there are new lessons that we are not sharing as any professional industry should. James Madison University (JMU) has a data repository and they formally took over my Database of Demining Accidents (DDAS) in late 2018, renaming it the demining Accident and Incident Database (AID) at my suggestion. Thank you again JMU. May you get the money and support that is needed to keep it populated with new accident and incident reports. Perhaps predictably, as soon as word of this got out the Geneva International Centre announced its own plans to start another accident database that would be managed by them and controlled by the new demining trinity (HALO, MAG and NPA), so no conflict of interest there. Sigh.

My wife died gently at home in June 2019 and I stumbled in aimless circles for a few self indulgent months before going to Lebanon to see whether I could still care about my old obsession. With impeccably bad timing, I arrived in Beirut at the start of their peoples' revolution - remarkably intelligent and peaceful - but UNDP's terrified security people had shut their office so I could not sign the contract I had been given to review the national standards I had written from afar. No matter. It was the army that I had gone to work with because they run the Mine Action Centre. They really were unusually good.

I got out into the field and listened to the end-users before revising their national standards to better fit a context that I came to know quite well over several months. I also wrote an introductory training document for new staff at the Mine Action Centre which, being military, has a high staff rotation. They called this a Management SOP but in fact it is an induction course. I gave them back their own accident records in a working database so that they could start doing genuinely evidence-based risk management - and so that new staff could learn about the mistakes of the past. Corporate memory is very vulnerable to staff turnover, especially if past lessons and errors are not honestly documented and retained. Operations staff, medics and the Victim's Assistance officer all found the database especially valuable. I have never had so many parting gifts as the staff of the Lebanon Mine Action Centre gave me, which was a tad humbling.

While I was in Lebanon I agreed to go briefly to Kosovo to present some evidence based risk management and PPE training for NPA which also went really well. As with Lebanon, I left them with their own working copy of the database containing all recorded accidents in Kosovo to support their efforts at evidence-based risk management.

Earlier, I had been asked by James Madison University (JMU) to go and explain the database of accidents at an event in Geneva where the need for an accident database was to be discussed. I agreed, but the invitation was withdrawn because the Geneva International Centre objected to me being present and the JMU people were timid. That saved me the cost of flight and hotel, so I should probably have thanked someone but I could see what was coming.

The Geneva Centre has subsequently contracted a software engineer to write new database software (which only they can access), so they are well on the way to reinventing the rectangular wheel they pioneered with their spreadsheet accident database, RAPID. The Trinity of self interested demining organisations will decide what goes into it and what comes out, so policing themselves. No doubt the donor has been conned with half of the story again, but perhaps not. Mine Action has long been dominated by people fearful of their incompetence being made public. I reacted in a forum email, [reproduced here](#). Well, it would be a joke if it were not tragic.

Landing in UK after Kosovo was my introduction to planet-of-the-apes face-masks and disposable gloves - PPE that turned the armed airport security into budget sci-fi stormtroopers. COVID-19 was known to be with us so I dutifully locked down in my roofless house and prepared a paper about the database of accidents to deliver as my swansong at the April

Symposium in Croatia. My paper was, of course, politely critical of the Geneva International Centre and the UN Mine Action Service. I rather hoped that it would spark another international diplomatic incident because that seemed an appropriate way for me to take my leave of Mine Action. Despite the COVID postponement and eventual cancellation of the symposium (which did let me get on with repairing my roof), my paper was finally published in the CTRO's 2020 'Book of Papers' in December. Sadly, it will be easy to ignore so I am obliged to go out with more of a whimper than a bang. Perhaps this is appropriate: my wife always advised me to 'edit out the punchline'. Here is that remarkably diplomatic [paper](#) anyway.

My friend and colleague Luke Atkinson died in an explosion in September 2020 in the Solomon Islands. I was in the process of drafting a report for him at the time - which I often did because he was dyslexic - so I knew better than anyone what he was working on. That report was never finished because that would have needed his input, and because it was being done as a favour anyway. The accident looked bad but could not be properly investigated because of COVID. I did offer to go but it would have taken weeks to travel and get through quarantine. So I did my best to piece the evidence together from here. Like most accidents, it was the result of an accumulation of small errors and some bad luck, and was entirely unnecessary. There are important lessons to be learned but they do not feature in the only formal accident report that has been produced. They do feature in my report in the database, where I acknowledge the potential for bias on my part of course. Death brings out the best and the worst in people. That accident led to me finding a few new HMA friends and several people who should never be working at the level they are.

So, despite having retired, I was still doing odd tasks for Mine Action friends in several countries throughout 2020. Thankfully, I have had no reason to re-engage with the UN and Geneva with their endless instant 'experts' who do not try to understand what has gone before. These people accept the institution's alternative truths in return for high pay and the illusion of status - so have no incentive to learn. This should not be surprising because it is a feature of all bureaucracies that value loyalty to the organisation above the honest pursuit of the goals that the bureaucracy was established to pursue. When preserving the bureaucracy becomes the goal, no criticism of its 'achievement' is tolerated and no lessons are ever learned. If they were to achieve their goals, the reason for their existence would have gone - so obfuscation and delay are always required.

Post Trump it may be unfashionable to think that truth exists but it does for any definition of 'true' that includes honesty. I don't claim to have always obeyed the law or been entirely honest but I have never lied for a salary or status. This means that when I am wrong about something in Mine Action, I can claim to have been honourably wrong and have no difficulty accepting correction. I like learning, so let me know if you think any of the above is unjust.

Have I really retired? Well, that depends entirely on what I am asked to do.

If you have not been there already, please take a look at the Sections on [Developing safer hand tools](#), [Developing body armour for demining](#), [Developing face and eye protection](#), and on [Area preparation machines](#) (which can also be seen as a kind of PPE). In most, the pictures are more interesting than those in this section - and in all of them there are far fewer words.

My motivation

My motivation has often puzzled those I work with so I will try to explain it. I often do things without payment. I don't drink too much, do drugs or drive fancy cars, and I never chase the camp followers. So what is my angle? Sometimes these people wonder how they can stop me doing work unpaid when their organisation could have been paid for doing it. At other times they try to get me to join their organisation so that they can benefit from my drive and from any kudos

that attaches to my having a name for insight and honesty. Sometimes I have been appointed by a leader who wants the team to be pushed into improvement by my criticism, and sometimes I have joined teams that are hamstrung by remote leaders unwilling to hear any criticism at all. Several times, I have been part of a team that is genuinely doing its best – and have made real friends who I will always try to help, but friendship is not a sufficient motivation for my work.

Motivation is a complex part of the psyche. Yes, I have got pleasure out of doing things for others, especially if they don't know that I did it (which is rare but very satisfying when it happens). But why?

Age has something to do with it. Unlike most entering demining, I was in my early forties when I first went into a conflict zone and found a mine. My wife had a good job (working for OXFAM) and our children were leaving home. The mortgage was small and I had not wanted a fast car, casual sex or a nightclub life since I was a somewhat wild young man busily challenging the incoherent authority that surrounded me. By the age of forty I had grown out of my adolescent delusions but I never gave up questioning bad arguments, received wisdom and silly or arbitrary rules imposed by an authority that I could not respect. That said, the passing years had helped me to become a better judge of what really was silly and arbitrary (partly as a result of the intellectual gymnastics required of me when I studied philosophy). Whatever our consumer society might have me believe, I knew that measuring my success by how much money I had accumulated would be to reduce success to a measure of my willingness to exploit others. Measuring success by how many people were beneath me in a hierarchy would be as immature as competing to be a school prefect (an honour I had been happy to accept at the age of 11). I had worked inside the academic community and been a teacher long enough to know that measuring my success by the accumulation of paper qualifications would be an entirely self-centred delusion. Development work had introduced me to the pointlessness of 'tombstone aid' interventions, those designed to leave something behind by which the aid-workers would be remembered. Like the graves left in a cemetery after the end of colonialism, what they left was usually a monument to foreign nostalgia, unwanted and abandoned. My time in psychiatric hospital (as a nurse) and in detention centre (as an inmate) had erased any notion that I was somehow 'special'. Unique, yes, but no better than anyone else. No worse either, or at least of 'no less value'. I remember Hutchings, McKenna, Hawkins, Jones and Harrington from my time banged up, each one a minor maverick chosen as an example worthy of punishment by the system. Unseen for more than 45 years, at that time they had more humanity than many who guarded them. I hope that they have had good lives but doubt that they would remember me, A Smith. Having the most common name in Britain may be why I have never thought it worth wanting to be famous.

My refusal to respect the myths required to grow a consumer society to the point of its inevitable implosion is one reason that I cannot find the pursuit of wealth a sufficient justification for my existence. Another is death. From the time I had an unintentional hand in my father's death when I was fifteen years old, death has been sitting on my shoulder. He's been especially busy lately but for all of us as we get older the rattling down of family, friends, and colleagues accelerates, bringing the blue devils and regrets. When you are holding a cold hand there is never anything remotely important about the wealth and social status of the deceased. Eulogies concentrate on what they did for others. Regrets concentrate on what we failed to do for them.

I think that most people will do anything to avoid confronting the inevitable deletion of themselves because the total absence of self is a truly terrifying concept - the core of existential angst that finally drove Sartre into the Catholic Church. Social media, bungee jumping, ice-cave tourism, having kids, buying some junk you do not need, giving in to drugs and alcohol, just about anything can be a welcome distraction. Busy, busy doing things that I will not regret has been my chosen distraction.

So am I religious? Of course I am. Without subscribing to a creed or joining a congregation, I have an absolute faith in a metaphysic that cannot be proven – which is the same foundation as all religions. My article of faith is probably a species meme dating back to protecting the others in the cave: "look out for the others and prioritise those who are unable to look out for themselves". Status, ethnic origin, religion or political belief are irrelevant because we are all in the same global cave. I know that is both 'right' and 'good' but I could only prove this logically if you were to first accept my premises. I feel it's truth and no amount of internal rationalising can shake that feeling so I present it as an article of faith. It is obvious to me but if it is not obvious to you, there is nothing I can say to change that, and I have no right to try to do so.

Having no right to push my liberal humanitarian ethos onto others is another article of faith, and one that has helped when working in demining alongside good people, some of whom had done vile things in the past. If they accept my right to be me, I have to accept their right to be them. We were all doing our best and often getting it wrong – and who's to say that I would not have done the same as them if I had been born alongside them? I found that I had become "fundamentally opposed to fundamentalism of all kinds" - political, religious and even naively idealistic (a description that has been applied to me). I know from experience that the well intentioned and self righteous Politically Correct fundamentalists seeking to impose alien liberal values in unfamiliar cultural contexts have often done great harm. Better to set an example and let others believe whatever makes them comfortable until they decide to try the example you have shown them, if they ever do. No one should presume to judge people from other cultures until they have lived their lives and done it better, which is impossible. Of course, being fundamentally opposed to fundamentalism is an illogical cycle that leaves me opposed to myself but, having left the limitations of logic behind, I am comfortable with the odd unavoidable paradox.

Honesty, fairness and a sense of honour are often treated as optional luxuries by those driving our world today. They rule over a moral darkness lit by technology toys that distract many from recognising the catastrophe ahead. But I still have hope because I have been privileged to spend time in many countries where central government 'law and order' had collapsed. When there are resources that can be lawlessly exploited, that tends to happen, but from Afghanistan and Angola to Iraq and Libya I have seen small communities impose their own 'law' based on a shared understanding of fair-play, honesty and honour. Odd individuals might seek short-term selfish gain but the natural leaders, often women, have always had enough control to stop the excesses. Real security depends on having neighbours who, regardless of the squabbling and petty gossip, make a community of shared values. Those values are often lent authority by a traditional religion of one flavour or another, showing how religion can foster social cohesion. I have seen how honesty, fairness and a sense of honour are human characteristics of greater value to species survival than the selfish short-term greed dominant in today's world of convenient 'truths'. Here in the dystopian post-Christian world where the people are only 'enlightened' by their screens, I think the species really does need faith if it is to open its eyes and face the challenges it has brought upon itself. But I also think that this is happening.