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Manual Demining in Lebanon

MineTech International has been tasked with clearing 1,300 square kilometres of land in southeast Lebanon. In the space of nine months, MineTech deminers have disarmed and destroyed 23,300 mines, clearing 2.2 million of the total three million square metres of land. As MineTech approaches the end of this first major task in Lebanon, MineTech Project Manager Max Dyck and Team Supervisor Moses Sibanda present their perspectives on the challenge.

by Max Dyck, Project Manager, MineTech International

Introduction
In May 2002, MineTech deployed 10 manual demining teams, 10 mine detection dog (MDD) teams, survey and explosive ordnance specialists, and groundwater preparation machinery to southern Lebanon. Our task was to clear some 200 minefields from a substantial area of southern Lebanon stretching south and west from El Quiat in the north down past Kafer Kela to Bary Yehoum in the south. Having received confirmation of the project, our team had deployed and set up a first base camp within 10 days. Accreditation from the project supervisors, the United Nations Mine Action Coordination Centre (UN MACC) in Tyre, came just three days later. Our ground clearance machinery then took 10,000 minute metres and our manual deminers cleared 6,500 square metres from the first minefield before the end of day one. The momentum created by the rapid deployment has been maintained through the middle of February, nine months into the project. MineTech had been responsible for the disarming and destroying 23,300 of AP and AT mines cleared by that time. Over the period, we have further strengthened resources, bringing in local deminers—United Nations (UN) and Lebanon armed personnel trained by MineTech to UN standards to operate as demining units under MineTech management.

Conditions
The conditions facing the manual deminers are tough, but there are many similarities to other theatres. Summer temperatures are in the upper 90s (Celsius), and in winter they drop to almost zero. But the real dastardly are the efforts on the part of the gusty winds and whipping rain. The rain, virtually non-stop for several months starting mid-December, has had a direct impact on productivity, keeping the manual demining teams out of the fields during the wet season and leaving very wet, leekly conditions for them to deal with in between.

We have tackled the issue by managing resources as best we can to ensure minimum downtime. Teams have worked the peripheral areas outside of the fences or switched to clearing AT mines during days of heavy downpours, despite the fact that the weather slows the process considerably. During the middle of December, before the rains started and just six months into the project, MineTech's tally of cleared mines in Lebanon stood at 19,235, but we still reached 22,300 by mid-February, despite two months of wet weather. As the days have gone on, the area cleared is on the rise.

In many of the minefields, the terrain is steep and rocky. It is pretty uncomfortable for the manual deminers and it makes access difficult. The hard surface is difficult to penetrate, so the use of mine-detecting probes becomes more challenging. Much of the area contains former military outposts and consequently has a high level of metal contamination. On the ground, each piece of metal detected must be treated as if it is a mine until proven otherwise.

Mine Density
What is unique about Lebanon is the density of the minefields; they are probably as dense as any that have been encountered anywhere in the world. Some extend over many kilometres, forming great belts. Many have standard patterns laid in four rows with a mine every 40 centimeters. The majority of the targets have been Israeli No. 4s, but a few step mines, a mixture of F1, M11, M12, and M15A2s have also been found along with 451 pieces of UXO. The mine density makes it impractical to deploy dogs teams safely and effectively, and while machines and dogs have a crucial secondary role to play, virtually all of the mines have been cleared by hand. On the plus side, however, the mines have been laid uniformly in rows with end-of-row markers—virtually the same as the rogue mine laid out of line and sequence to each one somewhere in the middle.

Productivity and Performance
While the manual demining teams have been the primary asset in the actual clearance of the mines, the overall productivity and performance figures achieved reflect the integrated use of all three assets—man, machine and dog. The ability to deploy all three resources has had a major impact on the performance of the manual demining effort. In the majority of fields, we have used all three assets, usually employing manual demining as the primary resource supported by one or both of the secondary resources, which substantially speeds up the clearance process. Both dogs and machines have been used with great effect for area reduction, verifying the existence (or non-existence) of mines, and for providing a high level of human safety verification after manual clearance. The dogs have also been used effectively outside the main minefield fences to secure the peripheral areas and areas tasked as "lower threats." Machines have been used for both ground clearance and verification, but the density of the minefields means that as soon as a machine deminer is deployed—approximately 30 to 40 meters—it is time to pull out and make way for the manual teams. As of mid-February, the machines had cleared 525,913 square metres and the dogs were just short of 1 million square metres having found 15 mines and many pieces of UXO.

In total, our dogs and machines have reduced the target areas by 68 percent, proving to be a significant factor in how effectively we have been able to deploy our key manual demining teams.

Managing Our Human Assets
While the performance of dogs and machine has been key in helping achieve consistently high performance targets, the manual demining teams on this project are without a doubt the primary resource. Managing this asset effectively and safely has been essential to our success. In this matter it is business as usual, and at MineTech we employ a strategy that extends to every aspect of our activity—from the way we manage safety in the field to the ethos for camp life, which we believe has major bearing on increasing performance and reducing accidents. With so many professional or sporting teams, physical fitness, motivation and mental well-being, are as key to the welfare of our manual deminers as the personal protective equipment (PPE) that visibly protects them.

Stamina
Physical fitness that ensures the teams have the peformance stamina is as crucial as the actual clearance efforts and the physical challenges of the field is essential. In training, the teams have to prove their physical ability—no exceptions, no favouritism. For the full month in high, summer temperatures it is a tough selection process, but it ensures that those at the front end of mine clearance effort and those deployed to do their job safely and effectively.

The teams are encouraged to maintain their physical strength as part of camp life through more light-hearted activities such as football and volleyball tournaments in Lebanon. In the heat and conditions have stretched physical endurance, but at least the deminers themselves have been largely accessible by vehicles. In Kosovo, by contrast, teams had to complete a half-day hike with their equipment before establishing a temporary base camp on a mountain top.

Disciplines of Discipline
Physical fitness and stamina are of paramount importance; self-discipline defines a MineTech deminer and is the foundation for overall safety. To achieve everything—management included—lies together in field camps close to target areas. Regular visits from senior management, in particular Chief Executive Officer (CEO) Colonel Dyck, ensure that the leaders lead from the front. The Colonel, like others, joins the men working in the fields and setting the standard from the top.

We make no secret that we run the camps along military lines with high levels of discipline, but it is this discipline that translates into self-discipline, high motivation and most importantly a positive attitude in the field. In addition, our manual deminers work in close teams, developing strong bonds with workmates, which again has important implications on overall performance and field safety.

Camp Life
We all work according to the same standard operating procedures, which cover everything from mine awareness to dress code and include an absolute ban on smoking or alcohol in camp and a 1700 curfew. It's the physical challenges of the field that is essential. In training, the teams have to prove their physical ability—no exceptions, no favouritism. For the full month in high, summer temperatures it is a tough selection process, but it ensures that those at the front end of mine clearance effort and those deployed to do their job safely and effectively.

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Personal Protective Equipment
PPE is the most loathed piece of equipment in the manual deminer's kit. Despite the fact that everyone respects the vital importance of wearing this gear, in the baking heat, at 40°C, it isn't all comfortable. It is, literally, used for mine 200 together with PPE manufacturer Security Devices, MineTech has developed an apron and visor that are as user-friendly and as light and flexible as possible. The PPE is manufactured in Zimbabwe to international standards and is now used widely by other international demining organisations. In Lebanon it has been fully put to the test in two particular prodding incidents, both of which have resulted from the presence of people and the direction from which the deminer then proceeds. This situation can easily happen if a mine that has lain for a long period of time under piles of debris and mud by the elements or other land movement.

Three such mines have existed in the target area and MineTech has been working on, but the resulting injuries have been minimized due to the effectiveness of the PPE, visor and body aprons. On all three occasions, with explosions just 50-60 centimetres from a deminer's face, fairly minor hand injuries have occurred when, without the PPE, major injuries would have been sustained.

Another safety initiative particularly suitable to Lebanon has been the introduction of rubber lined pads and leather elbow pads, which have been developed specifically for this terrain and are very effective. Their use is a matter of choice from MineTech. It is hoped that the pads restrict on manoeuvrability, but in general, they have rebuffed what would otherwise have been many knee and elbow injuries. As a bonus, they have prolonged the life of our field uniforms.

MineTech anticipates it will destroy a further 10,000 mines in the next three months, by which time we will have completed our first major task in Lebanon.

Despite the challenges, the initiative has already directly cleared a further 22,000 square kilometres of land for pasture, agriculture and development—land where farmers now have the confidence to allow animals
to graze safely. Many hectares of former agricultural land are already back in cultivation, several quarries have been re-opened and a major pipeline in the Tallusah area has also been re-opened.

At MineTech, we believe that mine action should be seen as a short-term obstacle to development, as opposed to a long-term job opportunity. Understanding this means understanding us. Ignore it and you'll see us as hard, uncompromising, anti-social and pretty different. Lebanon has been very rewarding, but hard work and the teams' achievements are impressive. We look forward to further challenges in this theatre.

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**My Lebanon Experience by Moses Sibanda**

Moses Sibanda, 27, has worked with MineTech since leaving school and is now a field supervisor. His experience spans Mozambique, Somalia, Bosnia, Kosovo and now Lebanon.

**First Impressions**

Our deployment was pretty fast. I was expecting to head for Iraq but, heck, if we waited for that, I'd still be home, so I'm glad the boss put me on the plane for the Lebanon job. On arrival, we deployed south to our first camp where the advance party had set up our first base. I noticed that the terrain looked a bit tough—similar to Somalia. It was rocks, rocks and more rocks. Although it was the end of winter, I still found it pretty cold and there was still quite a bit of green vegetation around. This was going to change soon because in Lebanon, boy, does it get hot!

**Targets**

Once camp was up, team leaders and supervisors went into Tyre to the Mine Action Centre (MAC) to receive our introductions to Lebanon and get familiarized with what to expect here. The targets were mainly the Israeli No. 4 AP mine. I checked it out and was quite chuffed as it has a great lump of metal in it—nice and easy to find. But then we were shown the rock mine. This was well-made and disguised as a rock. If you see it out there you'll squat on it for a rest.

**Activity in the Field**

Three days after our arrival, we were accredited to begin operations, and by the fourth day I was finding mines. My job in the beginning was to deploy with manual teams and help the recently appointed leader come to grips with his team. Did we find mines or did we find mines! Hundreds were found and disarmed in days. I was the first to disarm a live mine here and that first day I disarmed 76 No. 4s, and after that, hundreds. We stopped disarming when we discovered too many unstable mines. From then on we located and destroyed in situ. This is a bit slower, but we've got a good drill going, and now we blow whatever we find in a day without having to spend long extra hours in the minefield.

**UNMACC**

The UNMACC people are a good bunch of guys and we get along great. They speak very strangely not their fault though, they come from down under! Albie, the plans officer is famous for turning up and in his funny accent saying to the guys, "Hey guys, I just gotta a little job for you." That's when we know it's going to be a real challenge. We do them all, though—no problem.

**Accidents**

We've had a few accidents here in Lebanon, but we've found tons of mines, so it's a pretty good record, I think. Nobody goes out planning to have an accident, but you know it is dangerous work, and if you do not realize that sometimes there are mistakes, then you need to wake up. We are not selling candy at a candy store. We are dealing daily with lots of dangerous objects and now and again, something will go wrong. Right now I am the quality assurance (QA) supervisor, so it's my job to check all the systems and procedures being implemented to minimize mistakes and keep all the guys safe and, of course, ensure we do a good job for the people of south Lebanon.

**Being a Deminer**

I have been with MineTech International since I left school and I have travelled a lot—Mozambique, Somalia, Bosnia and now Lebanon. I started at the bottom and I found and destroyed hundreds of mines. I am now a supervisor and one day I want to be a field manager. Many people thought we would struggle to do what we have done here in Lebanon because we had the toughest areas with the biggest minefields. I'm proud that we've done it; it's a good job and I wouldn't swap it.