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An Interview with Hendrik Ehlers of MgM

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Focus

Landmines in Africa

by Margaret Busé, Editor

Margaret Busé (MB): Can you describe how MgM came to be formed in Germany in 1996?

Hendrik Ehlers (HE): My friend and partner since childhood, Hans Georg Kneser, and I were on Christmas leave back home, when we learned that our common project with GPC seconding ADM in Mozambique as instructors and supervisors of the survey plus explosive ordnance disposal (EOD) section were not renewed. We had no chance but do so what many people had told us to do before: make our own non-governmental organization (NGO). With the help of our old school pal Christoph Brocks this was done within a few days and MgM was legally founded on January 16, 1996.

MB: What do you feel are the most unique aspects of MgM that set it apart from other demining organizations?

HE: The above structure is absolutely unique and so is the fact that both of us have no formal military background or similar education. Well, I was conviction for a year as a radar operator on the Hawk system. We learned everything in the field by doing it, which as a side effect generated a number of self-built clearance and management devices that actually work.

A very important thing is that we work in a team of multi-talented with maximum decentralization and decision-making. We are a group of friends and 99 percent of our staff...

Conclusion

In the past decades, a variety of Angolan peace attempts have proven fleeting and temporary. Therefore, the nation's citizens are skeptical that the cease-fire signed on April 4th will endure. HALO Trust, however, feels confident that the most recent peace attempt is different. While no one can predict Angola's future, the circumstances surrounding the FAA/UNITA cease-fire suggest that the conflict will not resume. UNITA, UNITA's fearsome leader, is dead and his army decimated. These two factors alone should prevent conflict for the time being.

For all of the humanitarian organizations operating in Angola, the newfound peace is both a welcome blessing and a daunting challenge. HALO Trust plans on playing an important role in Angola's rebuilding. HALO's efforts will allow other NGOs to operate effectively and accommodate the hundreds of thousands of IDPs moving to Angola's other municipalities. As leaders in research and development, safety, efficiency and funding, HALO is both confident and capable. If other humanitarian organizations follow HALO Trust's lead, Angola's desolate needs will soon be met.

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Has it affected your organization?

HE: Introducing MgM thinking definitely has changed the way many operators work today. The other major change was to go away from destroying as many mines as possible towards socio-economic impact. From 1992 to 1994, we cleared a nine-mile belt around Xangongo in Kunene Province, Angola, of 62,000 AT mines. We destroyed some 25,000 AP mines, mostly stockpiled in the area, and cleaned ammo dumps from a thousand tons of explosive garbage. I think we saved some cattle. In 1996 and 1997 we cleared 250 km of roads from 25 million mines in Bengo Province, Angola. As a result, almost 60,000 internally displaced persons (IDPs) returned home after seven years in camps. Giving highest priority to social impact has changed MgM and all other operators significantly.

MB: How important is transparency to MgM and how does MgM incorporate that aspect into its organization?

HE: Our motto is safety, quality, transparency and non-profit innovation. Since 1996, our website (www.mgm.org) has brought unheard of inside project information out for the first time ever, and also challenged others to do the same via the infamous MgM Demining network. I think we have set the level here worldwide. It feels very nice to have nothing to hide and contribute to the community. It is through the invitation to communicate through the network, or to copy freely whatever we develop.

MB: How does MgM utilize innovations and technology in demining?

HE: When Hans Georg had to clear the road from Maputo to Renamo Garcia in 1995, a grinder overtook him. The image of unexploded mines neatly lined up on the berms should define our later way of working, but not through inventing something, but by looking at military scrap yards and combine/modify existing solutions into a working system. This was the case for the first boom mounted vegetation cutters on a Wolf and later Saml20s, for the armored grader with a Wolf Skidder System. We found a lot to learn in Vernon Jeffry's pre-Mechen toolbox and only re-designed it. For Rotor Mk I and Mk II, we found solutions in the precision industry and now with our latest baby, the MMS, it was the hazardous environment demolition industry that offered the perfect robotic base. You will still see a lot of this kind of thinking. It is what everybody has been looking for. We experiment a lot and as we started relatively late, we could afford the luxury to buy state-of-the-art equipment in communication and documentation, as there was no need to be backwards compatible. We developed a standard kit for all vehicles using not only SELCAL HF, but also a passive global positioning system (GPS), which enabled the Command Centre in Luanda to track all movement. We developed a number of specific software solutions for survey, logistics and inventory. We build UPS, VPN-Sat com mini, survey kits, First Aid kits, mobile phones, etc. All of our development is strictly field oriented.

MB: What have been the successes and drawbacks of some of the technology that you have used?

HE: A major drawback is that prototyping is quite an expensive entertainment. Diversification of heavy kits causes some standing around; this is why we look more and more into multi-tools. On hi-tech, we have always understood the amount of training and supervision it takes. For example, in order to make an Angolan dog handler use a computerized weather station... This is why we favor low-tech like MMS and FWS, not excluding to combine with hi-tech systems like Minesweeper or similar.

MB: Where do you feel research and technology need to be headed to better aid demining operations?

HE: Detecting mines and/or defining areas free from explosives more effectively without compromising safety and quality.
MB: What are MgM's activities in Namibia?

HE: Well, I live in Windhoek and run my duties as voluntary chairman from my house. From an effort/workshop I also run the International Desk in Programme Manager in financial and logistic management. As it is not far, I also travel often to Kunene Province and handle operations personally. But most things done in Namibia have to do with my company HEC, which is the R&D branch for MgM. HEC designs and builds demining equipment of all sorts and does the testing and documentation of your R&D joints with U.S. DoD, EC-ESPRIT and others. Namibia is the rotating disc in the center of MgM. HEC is a non-profit commercial feed into MgM. Its income pays for staff (like me) that cannot be paid through demining funds and all it generates in terms of equipment is directly channeled into MgM's demining operations. Thanks to a special agreement with the Angolan Government, MgM also runs a non-profit commercial work in Lodzenda serving the NGO community and paying for MgM's administration and logistics in Luanda. All of the above is handled from the international desk in Namibia and audited through MgM Germany, which links MgM Swiss, MgM Austria and MgM U.S. Future plans of HEC are that it will develop into a more commercial developer, manufacturer and deployment agent for in-house, outsourced demining equipment and services worldwide. This will focus on specialized demining equipment and services which are not common to normal demining operators. As we do not foresee this effort to be a dooms-driven concern, we still are working on a multi-sector business model that makes this viable and enhances our demining activities at the same time.

MB: What are the future demining efforts for MgM?

HE: We will revolutionize demining worldwide. Together with a group of young scientists, I will present a new technology called PWS during the U.S. DoD Workshop in Washington 22-27 August. In relation to this, Harald Bach will have a new trick up his sleeve of future demining technologies that he wrote in your last issue.

MB: Based on your extensive field operations in Africa, what do you feel has been the most catastrophic result of landmines in Africa?

HE: Something we call "The return of the white spots" relating to large areas without people and without information, like on medieval maps. You don't know about these areas and the problems people suffer, as nobody can go there. This is the real catastrophe, but as the demining community can stop this and make the world a better place. I do not like to think of demining as something saving individual's lives—although it does, and is an essential part of it. But in my dreams the faces of 80,000 victims of landmines in Angola alone sometimes haunt me. We have to become better and do more.

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MB: What are the MgM activities in Angola?

HE: Specialization on the clearance of roads, bridges, landing strips, etc. The workload for Angola is vast. The big vision is to clear from Kunene, via Kwanza Kubuntu, to Moçâmedes and through this, re-open and re-connect the entire east/north east with the rest of the country.

MB: Can you describe the significance in demining the Limpopo railway in Mozambique?

HE: There are two aspects. One is to create safe agricultural land for the population, which traditionally stretches along these 42 km of densely mined railway. The other is the technical challenge of a loosely laid minefield in various rows stretching 42 km through partially very dense vegetation with a dense population. This has become our number one test and application area for vegetation cutting and intelligent mining/sifting procedures.

With a Hydrena excavator, heavily modified by Hans Georg, and a MgM/HEC Rotar Mk II, we are still too slow. Hopefully, an extended test of the U.S. DoD NVESD HDD Unisifter will bring some more effectiveness into the process. The significance is also the dialogue between the sole donor, the German government and our conflict of quality against speed. Thank heaven the Germans continue to allow us to work on quality and do not apply something like commercial standards to this nightmare.

MB: Why were the operations along the Ruacana power lines in Namibia?

HE: I think that Namibian Defense Force (NDF) and U.S. DOS did a successful job, I really appreciate that this job was finished and not left half-done—as it sometimes looked like. One can only congratulate U.S. DOS for their ongoing commitment to this threat. I believe that the training of local capacities still could be optimized. The special drill of the sifting of bergs is definitely not applicable to the challenges the NDF deminers face in areas like Capriv and Kavango today.

MB: What are your future projects in Angola?

HE: MgM MineClearance has been contracted by the Angolan Government, MgM also travel often to the Angolan Government, MgM also travel often to the Angolan Government, MgM also travel often to Ruacana power lines in Namibia? I think that Namibian Defense Force (NDF) and U.S. DOS did a successful job, I really appreciate that this job was finished and not left half-done—as it sometimes looked like. One can only congratulate U.S. DOS for their ongoing commitment to this threat. I believe that the training of local capacities still could be optimized. The special drill of the sifting of bergs is definitely not applicable to the challenges the NDF deminers face in areas like Capriv and Kavango today.

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Developing Safer Demining Handtools in Zimbabwe

This article reports on an R&D programme in Zimbabwe that led to the development of safer demining handtools. The programme is an example of the way in which small changes can make the deminers' work safer.

by Andy Smith, AVS Consultants

Introduction

A research and development program to design, develop, demonstrate and test a wide range of Personal Protective Equipment (PPE) was initiated by the U.S. Army Communication and Electronics Command (CECOM), Night Vision and Electronics Sensors Directorate (NVESD), Humanitarian Demining Program in 1999—2000. In conceptual breakthrough, the PPE included safer demining handtools as an integral component of the personal protection scheme. The contractor, Andy Smith (AVS Consultants), conducted this effort in Zimbabwe, a mine-afflicted developing country, with the side effect of establishing indigenous production capability and realistic conditions in which to test and evaluate. The contractor and author of this paper, AVS, retains no interest (commercial or otherwise) in exploring these results. The U.S. Army CECOM, NVESD point of contact for this effort is Charles Chichester at charles.chichester@mil.army.com. The programme involved close collaboration with a company in the small industrial sector of Harare, Zimbabwe. That company is currently producing the tools.

Inappropriate Tools Main and Kill

A study of recorded demining accidents revealed that deminers frequently suffer severe injury when the tools they are using are unsafe. They fail by being so short that the user's hand is inside the most violently disruptive part of the blast, or by breaking up and becoming fragments when a detonation occurs. The picture to the right shows a range of tools commonly used in demining around the world. Many were designed for another purpose, and there is little evidence that almost all of them are unsafe for use in demining. Some of those that were designed for demining are also unsafe.

It is not only the users' hands that suffer. At least five deminers have died after part of their handtool stuck them. Parts of tools have severely damaged the upper arm that amputation was needed. Parts of brittle handles have pierced the user's chest cavity. The head of a garden trowel has sliced the user's face in half—juries from which he later died. The mangled head of the yellow-handled garden trowel (shown on the right) was discovered inside a deminer after he arrived in hospital.

Development Tools

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Design Rules

The following design criteria were adopted for making appropriate excavation tools. Tools used during other demining activities may not have the same requirements.

1. The user's hand should be at least 30cm from the point of any tool. Some argue that this is too long for U.S. user to control, I suggest they try because this is not the case.

2. The materials used must be sufficiently malleable for the tool to distort in any AP blast mine detonation.

3. The tool must be constructed so that it does not readily separate into component parts in any AP blast mine detonation.

4. The tool should be designed so that it is easiest to use at a low angle to the ground by a kneeling or squatting deminer, so encouraging the user to keep his hand beneath the fragment cone associated with many detonations.

5. Whenever possible, the tool should include a blast-guard for the hand using it.

It is not specified that tools should be designed for one-handed use, but this is recommended in order to expose only one hand to risk. Also, providers designed for two-handed use put the 'guide' hand inside the tool, creating a false sense of security. It is also recommended that the tool be designed with safety in mind.