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An Interview with Hendrik Ehlers of MgM

Hendrik Ehlers discusses the challenges facing demining in Africa, research and development, and mechanical clearance used by his company. His candid replies offer insight into the world of demining and managing a multifaceted organization.

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 colleague, Hans Georg Kneser, and I were on Christmas leave back home, when we learned that our company with GPC seconding ADP in Mozambique as instructors and supervisors of the survey plus explosion ordnance disposal (EOD) section were not renewed. We had no chance but to do 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 contracts of MgM that set it apart from other demining organizations?

HE: The above structure is absolutely unique and is the fact that both of us have no formal military background or similar education. Well, I was conscripted for one 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-back cleaning and management devices that actually work. A very important thing is that we work in a team of multi-talented and maximum decentralized decision making. We are a group of friends and 99 percent of our staff have no formal military background or similar education.

MB: How has your experience, and the experience of the founders of MgM, shaped the way MgM has been structured?

HE: We wanted to avoid the situation that a HQ and/or board members in Germany could negatively influence our fieldwork. Therefore, the entire board, three members, retired five years after the foundation case of beer was emptied. Hans Georg and I remained as majority over the silent third. Christoph, Krit then shaped the IT structure of MgM and we ran off into the bush. That gave us the unique structure to be in the field and to be on top of the organization. We call that the reversed pyramid. This enables us to be very flexible and to react based on field realities rather than having to ask some distant body if we may buy a new truck or start a new operation. Without that, our Angola operations would have stopped long ago, just because there was no funding... To take it one step further, Hans Georg and me both became chairman, which lets us take the entire legal responsibility, too.

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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-belt area around Xangongo in Kusene Province, Angola, of 42,000 AT mines. We destroyed some 25,000 AP mines, mostly stockpiled in the area, and cleared an area that attracted tens of explosive gatherings. I think we saved some cattle. In 1996 and 1997 we cleared 250 lines of road from 25 km 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. I do 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 grader overtook him. The image of unerected mines neatly lined up on the horizon 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 miner. We called them vegetable cutters on a Wolf and later Samll20s, for the armoured grinders with the road system. We found a lot to learn in Vernon Yoross pre-Mychron toolbox and only re-designed it. For Rotar 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 hear a lot of this little machine 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 Selcall 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 material. We built training UPS, VPN-SAT comm suites, Survey Keys, First Aid Keys, mobile offices, etc. All of our development is strictly field orientated.

MB: What have been the successes and drawbacks of some of the technologies 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 understimated 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 them with hi-tech systems like MineTeye 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. MgM's Rotor MKI /c/o MgM
MB: What are MgM's activities in Namibia?

HE: Well, I live in Windhoek and run my duties as a voluntary chairman from my house. From an office/workshop I also run the International Desk in Programme Manager in financial and logistics 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 our 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 workshop in Lodzellas 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 are to involve HEC are that it will develop into a more commercial developer, manufacturer and deployment agent for in-house, outsourcing 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 up 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, Hansard Bach will have some results to view 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 we, 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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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-affected 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 chichester@nv.army.mil. 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 explosive 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 hand tool struck them. Parts of tools have severely damaged the upper arm that amputation was needed. Parts of handle handles have pierced the user's chest cavity. The head of a garden trowel has sliced the user's face in half—injuries 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.

Design Rules

The following design criteria were adopted for making appropriate excetration 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. (This usually means that the shaft must be taken right through the handle.)

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 core 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, provisions designed for two-handed use put the "guide-