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Road Trip with a MINECAT

by Stephanie Schlosser

In *The Journal of Mine Action* 3.2, we spotlighted the **Compact 230-Minecat**, a multi-role platform suitable for both military and humanitarian applications whose primary role is to be a mine-clearance vehicle. Since that article in the summer of 1999, the Minecat has had a proper education, going through a series of tests in various landscapes and in front of tough judges. Landmine clearing is serious business and

before a new piece of equipment can be put on the world market, it has to prove itself in rigorous settings. After all, the real customers in the demining market are those people whose lives and livelihoods depend upon the clearing of their land. J. Barry Middlemass, owner of the Lockwood Beck consulting company, brings us through a series of Minecat testing trips on this road trip from Norway to Kosovo.



The Minecat rests, its mouth gaping open, after having dug 0.5 m.

Christening the Cat

A few thoughts on the past few months of the Minecat. Since the last entry in the magazine we have continued in the comprehensive testing of the machine. Test results are now filtering through with the answers to confirm our design and the way ahead.

- Report one (1) NoDeCo from FFI (Military Testing Establishment)
- Report two (2) NoDeCo from Military Engineers (Norway) Live Explosives (Draft only - released soon)
- Report three (3) From KOSOVO by NPA Live Mines November '99

Visitors have been many and various including the International Trust Fund (ITF). Their representative was given the opportunity to see our testing and sit in the vehicle as it was flailing. The experience gave him a much better understanding of the equipment. We hope that future customers will use the ITF for funding donations. Our company, NGOs and others should benefit from their unique arrangement with the United States. After comprehensive simulated tests were carried out by NPA, (in various soil conditions, gradients, fields, tracks, and scrub-including cold Norwegian wind and rain) they agreed that the machine would be taken to Kosovo, funded by NoDeCo but under the control of NPA. *Barry Middlemass, November 1&2, 1999*

Detour à Mourmalon

En route to Kosovo we stopped off in France, at the military training area of Mourmalon. Here we carried out a presentation to members of the military, manufacturers and NGOs, and the Ambassador for Mines (France). The presentation was the worst the author has ever seen. This was entirely due to the time constraints and security of the equipment, as the vehicle was assembled directly from the two 20 ft. ISO containers and driven directly to the site, without tightening or tensioning attachments and testing the balance of the flail. After a brief description of a French "MURPHY" the machine still managed to dig to 15 cm under normal conditions and dug into the ground 50 cm after demolishing some fairly dense scrub. The second demonstration was for the Army Staff and Army Experimental Establishments only. Under the

control of the Military Engineer Staff they carried out four detonations:

1. 500 GMS HE (for effects on chains and deflector) **No Damage**
2. 3 kgms HE **No Damage**
3. 7 kgms Non metallic Anti-Tank Mine Flail **Disrupted the Mine - No Damage**
4. 7 kgms plus he charge (Command detonated- under the flail) **On detonation the chain above the explosion and the head of the chain each side of the explosion was lost. No further damage.**

Immediately after the demonstration the Minecat was reloaded into the containers, under the supervision and stopwatches of the Army Staff. The complete load was ready to move off to Kosovo within one hour. *Barry Middlemass, November 8 & 9, 1999*



Some scrub clearance and digging from the presentation in France.

Where and What Next

Norwegian People's Aid (NPA) has given the approval for the purchase of the Minecat. Hopefully funding by the Norwegian government will allow them to purchase this badly needed equipment and fulfill a season's work in their areas in Kosovo. Another agency is pressing NoDeCo for the purchase of this particular machine and that is UNIPAK, a company who has carried out a lot of good clearance work around the city of Sarajevo and who has been sub-contracted to RONCO of the U.S. UNIPAK have been



Ready-to-Travel: The flail and some spares are in one container, ready to continue the Minecat's journey.

using NoDeCo's prototype Flail (UP-1) in their clearance of areas since last July '99, particularly against the powerful PROM-1, and have had great success to date. The company now has frozen the design of the COMPACT 30 MINECAT and will continue focusing on the versatility of various add-on equipment for the platform. A sub two- (2) meter Minecat is still in the frame for various customers with different "operational" requirements.

Destination Mine Field

On arrival in Kosovo the machine had the back up of only one Operator/Mechanic, due to bereavement in the family of the second Op/Mech. I believe it must be made clear at this point that the back up personnel of NoDeCo are not ex-military and consequently, they cannot back up the "Operational" use of the machine. This point, I must stress, is something which at times is overlooked by the NGO or agency using the machine. The staff with the machine is there purely as advisers on the Mechanical and the Operating side of the equipment. Due to financial restrictions, "Technical/Operational" advisers cannot always be present during the early yet very important phases of the equipment's life. This situation puts a tremendous strain and responsibility on the "civilian" mechanic/operator, who only wants the best for the machine. I make this comment because, with the other member of staff missing, it was not possible to rebalance and check out the machine after its trip to France. A consequence of this was that the NGO wanted to start testing immediately after the machine arrived, mainly due to the deterioration of the weather and the need to have the men working with the equipment who had previously been allocated. The first test was carried out before the arrival of our Chief Technician (Mech), who on arrival carried out the re-balancing and checked out the remainder of checks on the machine. Finally, being satisfied that the Minecat was working to near maximum efficiency, the second series of tests were carried out with complete results as follows:

LIVE MINE RESULTS

- Total mines and type deployed:
- Nine (9) Anti-Personnel (PMA-2/PMA-3)
 - Two (2) Blast/Fragmentation (PMR-2a/PMR-3a) including trip wire
 - Five (5) Anti-Tank (TMM-1/TMA-5/a)

- All mines were cleared as follows:
- Detonated One (1) Anti-Tank (Loss of three (3) chain/heads)
 - Detonated Three (3) Anti-Personnel
 - Detonated One (1) Trip-wire Blast/Frag
 - Disrupted All other devices (Broken)

The area of ground used for these series of tests was compacted by the previous use of many heavy tracked and wheeled vehicles, making the test extremely hard for the penetration of the heads of the flail. The difficult ground will no doubt mean the use of an alternative chain head, if the customer requires a "digging" factor as well as the neutralization/clearance of devices. *Barry Middlemass, November 15, 1999*



The Minecat in Action: With the flail going strong, the Minecat clears mines through the snow in Kosovo.

The Mine Action Group (MAG) has recently purchased the Mine Cat for use in Kosovo. Work with the machine will commence in two months.



An operator examines a path cleared by the Minecat in Kosovo.

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All photos c/o Barry Middlemass