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DDAS: Crunching Data from the Database of Demining Accidents

Humanitarian Demining Accident and Incident Database
AID

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Crunching data from the Database of Demining Accidents

Andy Smith - 2000 [with 2005 edits]

The following comments are my own observations and opinions derived from the data compiled in the Database of Demining Accidents 1999. They do not represent the formal view of any group or individual other than myself. I am posting it here because the article still makes a point that should be remembered.

[Editor: the DDIV was renamed to become the DDI when it attracted support from UNMAS/GICHD. It was later renamed the DDAS because of an acronym clash. Later the DDAS ceased to be supported by UNMAS/GICHD and reverted to my sole maintenance.]

In the database of demining accidents, injuries are classed as either Severe or Minor. Injuries likely to be life threatening, to require surgery or to result in permanent disability are rated as Severe. All others are rated as Minor. This distinction is for convenience and is not intended to reflect on the discomfort and/or hardship associated with the injury. In some cases, injuries were not recorded in detail but I have resisted the temptation to infer detail. Note that, in very severe injuries, only the most severe injury is generally recorded.

Data crunching

Some of the data can be analysed objectively/numerically by statisticians. This can be an interesting exercise, but this kind of “quantitative data analysis” does not lead to “authoritative” results unless you know what questions to ask of the data.

For example, lets look at fragmentation mine incidents with a view to understanding the greatest threat in demining better. [Editor: the sample would be 4xbigger if the calculation was repeated in 2015.]

Fragmentation mines

In several incidents the mine was not identified. These are omitted from the following table.

Mine	# accidents	# victims	# dead	# severe inj.
MRUD	1	3	2	1
AUPS/frag	1	1	1	0

PROM	17	36	19	11
OZM-3/4	6	11	4	1
OZM-72	1	1	1	
POMZ 2&2M	11	13	1	7
VALMARA-69	6	8	4	2

In 43 fragmentation mine injuries, 32 people died and 22 were severely injured.

From which we might conclude that PPE used is simply not good enough. But look at that more closely. Take the PROM-1, which claims the highest toll. The protection worn in PROM-1 incidents was:

Protection worn			# victims	# Severe injury	# Dead
Helmet	Frag-jacket		1	0	1
None			16	5	11
	Frag-jacket		3	0	3
Helmet	Frag-jacket	Short visor	5	0	3
Helmet		Short visor	2	1	0
	Frag-jacket	Long visor	1		1
Not recorded			5	2	2

Leaving aside the cases in which the PPE used was “not recorded” - 12 people were wearing some kind of PPE and 16 were not. Of the 12 wearing PPE , there were 8 fatal and 3 severe injuries. Of the 16 wearing nothing, there were 11 fatalities and 5 severe injuries. The ratios are rather close – so close that in a sample of this size there is nothing to choose between them.

So can we conclude that there is no point in wearing PPE when facing the PROM? Or should we all wear bomb-suits?

The victims wearing no PPE were involved in 7 incidents. Three were “missed-mine” incidents – in other words, the mine was on land that had supposedly been cleared (so the 8 victims may have felt that wearing PPE was not necessary, 4 died). Two were survey incidents – and the 5 surveyors involved had no PPE issued to them because they were not supposed to enter mined areas (2 deaths). Two incidents were classed as “Other” and involved 6 victims and 5 deaths. One of these occurred when demining group supervisors deliberately went into the uncleared area – probably for area reduction so as a kind of informal “survey level 2” - but none of us will ever know. The other occurred when a mistake was made over moving the corpse of a dead civilian in a mined area. The corpse was lying on a PROM and the

“specialists” who decided that it was indelicate to remotely “pull” the corpse rather than lift it into a body-bag made the Big mistake. Why they were not wearing body armour while approaching the corpse is unknown.

So the activity at the time of the incident is relevant to the wearing of the PPE and the perceived threat level. The threat level could have been overcome in all of those instances by applying SOPs that make sense rather than by wearing bomb suits. For example, by sensibly defining survey, by not missing mines that can both be seen and have a huge metal signature, and by not breaking all the safety rules over entering uncleared areas or moving objects lying in known fragmentation minefields.

Could they have been overcome in the incidents when deminers were wearing PPE and still died? Certainly in most – by simply not disarming PROMs and by not clearing undergrowth with axes and machetes in tripwire areas. But it would also be worth looking at the causes of death more closely, The armour and helmet certainly failed in some cases – but in most the cause of death was a massive blood loss as a result of limbs being torn off and/or severe fragmentation below the level of the frag-vest. So maybe the PPE does not extend far enough?

But perhaps more important is the observation that all 16 incidents where no PPE was worn and a PROM-1 was initiated, occurred in the Balkans....

So the Balkans have a real problem with people not wearing PPE ?

No. Every single PROM-1 incident in the database has occurred in the Balkans - where PPE requirements are as high as anywhere and where it is usually worn.

The Veloceraaptor varies from country to country. In Afghanistan , the simple PMN blast mine has been the device involved in 6 fatal incidents. 5 deminers have died through ordnance, 2 from AT mines and 1 from a fragmentation mine. Perhaps it will not surprise the public to know that more deminers in Afghanistan have died from gunshot wounds while on duty than have died from any one kind of mine. So the AK is still the Veloceraaptor in Afghanistan .

But after the PROM, the PMN appears to be the world’s Veloceraaptor – with 10 deaths and 108 injuries.

Yet that is a statistical anomaly because there are no recorded PMN

injuries in many countries.

Conclusion

What that little exercise shows is that you cannot answer the question of what PPE should be worn without reference to the country where it will be worn and the threat it has to protect against.

It also shows that you can use the database to play with statistics, but unless you know what is going on in demining generally, you may derive some factually correct yet very misleading statements. The notion that number-crunching is objective and factual is simply untrue. Informed “qualitative” analysis is required before you know what questions to ask of the numbers.

But the DDAS really is a goldmine of information, painstakingly put together...

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