Organization principles for mine clearing operations in peace time

1. SAFETY AND EFFICACY CONDITIONS

Any given mine-clearing program must be approved by local authorities, either official or not, and this authorization should translate on the ground into active support especially with regards to safety. The organism in charge of the mission, whether a commercial company or an NGO, must have a mandate available to set against the local authorities if necessary. If the operations are part of a national mine-clearance programme, the mandate should take care of all subsequent issues such as customs, veterinary controls for dogs, taxes, immigration matters and visas for the foreigners, privileges and immunity for expatriated experts... Furthermore, a few conditions are required to approve the opening of a worksite The round should pose no risk of conflict, and be safe from a military point of view, the mine-clearance should bring immediate benefit to the population, especially if the expatriates are soon to return.

The first priority consists in guaranteeing the clearance of areas where the demining equipment itself will be installed, usually for long periods of time, as well as zones of demobilization and reintegration of the combatants and their families (ex: UNITA). The success and rapidity of the operations is tightly dependent upon their safety.

SUPERVISING PERSONNEL

SELECTION OF SUPERVISING PERSONNEL

The selection process is very important and it should take into account the very diversified nature of mine-clearing operations in peace-time. As discussed in the case of Cambodia, minefields may comprise a great number of unexploded ordnance that require specific handling methods. The neutralization of such types of ammunitions is often associated with great risks. It is not unheard of for minefields to actually comprise more unexploded ammunitions than mines. In Cambodia for example, the number of other types of explosive ordnance found and dealt with so far outnumbers the total of mines by up to a factor of eight. Whilst the focus there remains, rightly, on the mines problem, explosive ordnance other than mines is responsible for up to 25 % of the monthly civilian casualties.

There is no doubt that the best trained and most experienced mine clearance experts are drawn from the military, especially those with Military Engineering or Explosive Ordnance Disposal (EOD) service backgrounds. It is important, however, that the right people are selected from within those backgrounds. Both the Military Engineering and EOD fields comprise of a variety of specialist organizations whose personnel are rarely cross-trained to a high standard. It is therefore critical to ensure that the training and supervising personnel selected are those with the widest knowledge of the various kinds of ordnance susceptible to be found, and the highest proficiency not only in mine clearance per se, but also in handling unexploded ammunition. It is not enough to assume that because a person has military experience, he or she is automatically considered as a suitable person to conduct mine-clearing operations, particularly if the person was trained in the Navy or in the Air-Force: although they may hold outstanding military qualification, these personnel are not always trained in minefield reconnaissance, marking, clearance and recording procedures and related disciplines. It is therefore important that the qualifications and experience of EOD / mines specialists are scrutinised to ensure compatibility with the undertaking, and not taken at face value

In many respects, it would be advantageous to have a set of «minimum qualifications and experience» criteria drawn up, which could be the subject of a contractual obligation, and by which to evaluate prospective candidates for recruitment.

MANAGERIAL STRUCTURE

Once suitable personnel have been recruited, they will need to be effectively motivated and managed. This will be achieved by normal sound management principles, including.

- a sound understanding of the goals and targets to which they will be expected to work
- firm and fair disciplinary procedures
- the establishment of minimal technical standards of work
- the establishment of Standard Operating Procedures (SOP's)

Each mine-clearance worksite should include a managerial structure that will be in charge not only of the daily operational organization and control of the worksite, but also of all missions related to logistic support: housing, food, transportation, telecommunication, management of stocks, of the car fleet and replacement parts, management and maintenance of the equipment for detection and mine-clearance, and of the explosives That structure includes the physician who has control over all health-related matters, assistance in cases of emergency and evacuation.
The direction of the worksite should be allocated premises with a certain level of comfort both for administrative work and for rest periods. Drinking water and electricity supplies are essential, as well as some sanitary organization offering the possibility to take showers, to wash clothes and to treat water waste including that of the lavatories.

MANAGEMENT OF PERSONNEL

Number of employees and training personnel
Given the large number of subsidiary tasks essential to ensure the proper functioning of a mine-clearance worksite, the logistic and administrative direction should be placed under the responsibility of an executive other than the worksite leader, whose attention should be focused on his primary function. It is important to underline the fact that, although funding may be limited, personnel-related expenses should not be cut down too drastically. This is because, as a general rule, professional mine-clearing teams are fully dedicated to their primary functions and numerous local assistants must therefore be called upon to take over secretarial, relational, maintenance or cooking tasks.

Managing mine-clearing operations is a tedious task that requires professional personnel well aware of the objectives, and at the same time, of safety rules on the worksite. One of the most constraining characteristics is the coexistence on the site of highly qualified, usually expatriated executives with local mine-clearing operators who will eventually turn into executives themselves. At that time, they will be able to pursue the operations without assistance from the outside, in the strict observance of technical and administrative procedures established by the expatriates

All specialists agree that the size of a mine-clearance team should be 30 men (plus 2 nurses, though). After a 10-year-experience in Afghanistan, this is still the opinion of the U.N. In Angola, enough men are expected to be recruited to create 36 teams of 30 people, each team being supervised by only one expatriate.

As for training personnel, the number of expatriates used to provide assistance to local demining agents varies from one worksite to the other from 8 to 15 %. This ratio decreases as the level of qualification of the local personnel increases. Initially, expatriates are responsible for supervision, health issues and logistics, then the local personnel being trained take over For example, the ratio of expatriates to Cambodians changed from 1/7 to 1/28, and finally to 1/50. In an average worksite where operations are expected to go on for one year, a team of 5 to 7 expatriates can usually be found permanently (a project manager and his assistant, a physician and a nurse, a Nedex expert, a mechanic and an expert in logistics). It will be remembered that the objective is to give national delegates the full responsibility of mine-clearing operations.

LOGISTICS

A well organized logistics capability is central to any successful demining operation. It concentrates first of all on the movement of personnel and equipment Dealing with foreign Customs and Immigration authorities may well be delicate: the logistician may display a sense of diplomacy to negotiate the amount of taxes for importing equipment. Once in the field, the tasks related to logistics are many and of the utmost importance:

- importation and local acquisition of equipment
- storage and maintenance of stores
- distribution of equipment and stores
- quantitative and qualitative control of edible goods
- inspection and repair facilities for technical equipment
- security of edible goods and equipment whilst in store
- implementation of rules regarding storage and security of dangerous products
- distribution and return of equipment with specific attention given to fragile or dangerous supplies (explosives).

PROTECTIVE EQUIPMENT

Climatic conditions permitting, it is always best to provide the probing agents with protective clothing to protect them against the effects of mine blast and fragments. However this is still the subject of a controversy among the various operators. The arguments of all parties can be discussed.

THOSE WHO ARE FOR THE USE OF PROTECTIVE CLOTHING UNDERLINE THAT THE LATTER

- dramatically minimise the degree of head and body injuries
- are re-usable many times but still can be «sacrificed»

- are well-adapted to the technological level of the mines
- force the user to bear movement restrictions that permanently remind him that he is in a situation of danger
- may be used only in situations where they are necessary, permit to obtain reduction in insurance premiums, especially for the expatriates
- permit to provide maximum safety to the men parti-

Deminer equiped for neutralisation of a device

- give an exemplary nature to the operations in terms of consideration for human rights and human dignity.

THOSE WHO ARE AGAINST THE USE OF PROTECTIVE CLOTHING CLAIM THAT THE LATTER

- may delay assistance and care in case of injuries
- were never demonstrated to actually improve the chances of survival of the mine-clearing agents
- are expensive and their technology is not well suited
- permanently remind of the danger, which could have negative psychological effects
- could raise dangerous excessive feelings of self-confidence in the demining agents
- restrict movements and visual field
- are hot, heavy and unpleasant to wear
- are not taken in consideration in insurance agreements
- are not subject to legal obligation in the countries of interest
- were never requested by the demining agents themselves

This debate is moderated by the fact that many operators, either commercial companies or Non Governmental Organizations, may adopt one point of view or the other depending on the circumstances and the situation. However, it seems necessary that this debate be brought to a close by the bureau of work legislation («BIT»), so that the whole profession has to abide by the same rules in terms of behavior and protection This is made even more necessary by the fact that should an accident happen, the responsibility of the project manager could be investigated for insufficient security on the mine-clearance site, although no local law or insurance policy had made the use of those protective equipment compulsory for his personnel.

THE COST OF INDIVIDUAL EQUIPMENT

The cost depends on the level of protection that is sought: either head only, or the whole body It is between 500 and 1 000 ECUs, a sum to which you might have to add the cost of shoes, the characteristics of which are also vehemently debated upon.

In terms of vehicles, the teams usually travel aboard four-wheel drives, with either normal or long sub frames for non-dangerous trips, or anti-mine vehicles trips across hazardous areas. Obviously these vehicles would not resist the blast of an antitank mine, but they provide sufficient protection against antipersonnel mines. Commercial companies charge between 3 000 and 5 000 ECUs per month for these vehicles, whereas a regular liaison vehicle costs between 500 and 1 000 ECUs per month.

PURSUING MAP-MAKING AND SIGN-POSTING IN THE FIELD

The first issue is to determine the starting points of the mine-clearing operators; it should be addressed by the people responsible for minefield marking. They will the have to pursue their work throughout the progression of the mine-clearing operators. Topographical surveys (landmarks, azimuths, distances) will be used to visualize on a map the daily progression of the operations and sometimes to give a better idea on the original intentions of the bomb-layers, thus helping in orienting subsequent operations. The date, the identification and the area of the section will be indicated on the zones treated Example: the area treated by the first section is coloured in yellow and the following annotations are written down: 8.10.1225m². This indicates that on October 8th, the first section depolluted 1225 m².

This document is vital, not only from a contractual point of view but also from an operational point of view, as the study of this document and its day-to-day updating will determine the decisions to be made in the