USE OF MINES BY POORLY COMMANDED UNITS

In the case of armed bands, and indeed also of certain armies lacking in certain specific aspects of military equipment, mine deployment in an offensive perspective is held to be a legitimate means of achieving certain set objectives. For many combat units in the 3rd world, mines are the only way they have of making up for the fact that the group is not in a position to come by expensive material. Such mine-layers quite often are operating outside of any serious command structure but may all the same have at their disposal very large stocks of what are often state-of-the-art devices.
At the European Parliament's Public Hearing on this subject (in March 1995) the Swedish Ambassador, Johan Molander, president of the group of governmental experts re-examining the Convention of 1980, raised this problem when he described the antipersonnel mine as being «the poor man's weapon».
Mines bring into play an «ambient threat» which has the general effect of worsening any given situation. They may be used in order to disorganize supplies to a badly prepared adversary, and above all to terrorise civilian populations (internal conflicts). Mines may be laid around strictly civilian installations, which will be quite impossible to identify by any reference to the military operations. It is in fact this kind of uncontrolled mine-laying which underlies the greatest part of the whole present-day problem of antipersonnel mines.

Use of mines by civilian communities
Civilian populations are the prime victims of antipersonnel mines. This, however, does not stop them **being themselves sometimes the layers** of such devices. It is, in point of fact, not at all unheard of for villagers who are the victim of endemic banditry, for example, to hide antipersonnel mines, which they have picked up from here or there, to defend their dwellings, herds or stores. This very perverse state of affairs is particularly clear in Cambodia (with the fear of the Khmers Rouges) and in Afghanistan (with rivalry between different groups of Mujahideen). Such practices **imply that private, secret and unchecked stocks are being built up**.

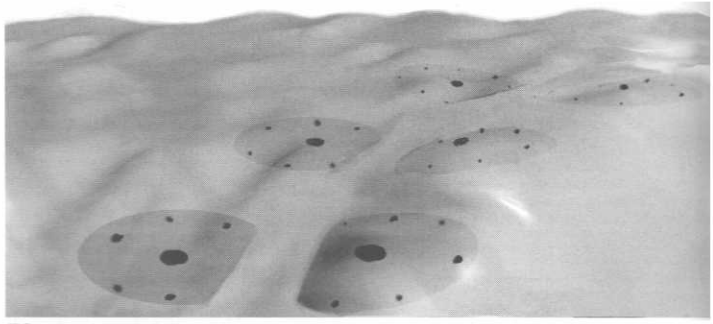
LAYING, BURIAL AND SCATTERING OF MINES

The type of laying involved in creating these «mined areas» enables a series of characteristics to be determined. Analysing these, in turn, improves knowledge of the threat, in terms of its extent and nature, etc., and enables preventive and curative measures to be envisaged. In ordinary language, the term most commonly employed is «mine-laying», and this term easily comes to be extended to cover the creation of mined areas in itself. Nevertheless, it may at times be worth making a distinction between the simple «laying» of a mine and its «burial», and again between both of these operations and that of «scattering».

LAYING OR BURYING MINES BY HAND

Laying or burying mines by hand is still the most widespread method; it is, in all armies, regulated so as to enhance military effectiveness and to integrate the mine-deployment into the general defence system while still giving friendly forces a certain degree of freedom of movement and, possibly, making later mine retrieval possible. Measurements made in the course of hand mine laying may be done so by the «line» (metre or yard) or by «pacing» (about 3/4 m).

• **Within NATO,**
simple laying and burial of mines is conducted in line with the 1987 STANAG 2045. As regards hand mine setting, STANAG requires the application of a pre-established «bunch» schema- which in fact involves semi-circles of a few metres' diameter in a regular formation along one or two lines. The number of antipersonnel mines thus organized around the central mine



Placement «en grappes»

of the «bunch» (which is in general an antitank mine) is fixed and invariable from bunch to bunch, with a maximum number of mines per bunch also being set.

• **In the former Warsaw Pact forces,**
similar rules and practice are applied: bunching around a central mine and use of antipersonnel mines to separate antitank mines. According to NATO observations, the Warsaw Pact forces planned to sow between 5 and 10% of anti-lift mines in their minefields. It is to be noted that the Warsaw Pact was counting on a much more wide-spread use of mines: given that any soldier was expected to be able to lay mines, the Eastern Bloc mines (like the Chinese ones) are designed so as to become active only after a few seconds, as a means of guaranteeing the safety of the clumsiest of soldiers.

• **In other countries:**
the schemes used by 3rd World regular armies are usually directly taken from those of their military advisors. A good working knowledge of the recent history of the country and/or of the area is therefore indispensable.

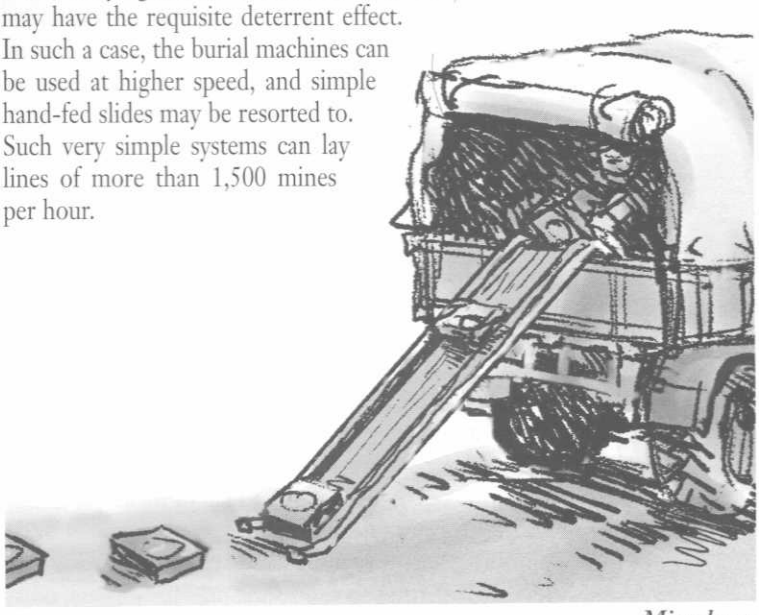
In most countries, the supply of mines does not pose a problem (e.g., Cambodia); in these countries, a density of mines far greater than the usual European norms is to be found: in some cases, more than a hundred antitank mines in an area of a few hundred square metres have been found, or even up to 20 antipersonnel mines to block access to one building.
In other countries, mine-layers carry with them no more than half a dozen devices (e.g., Mozambique), and in such cases are going to want to lay them in such a way as to be sure of striking some victim (e.g., along a much used path). Were their mine to be found still intact after a few days, they would dig it up and re-lay it on some other site.

MECHANICAL MINE LAYING AND BURIAL

Regular units will not always have the time to lay by hand all of the mines which they want to use for their protection. In order to lay or bury significant fields of mines, regular armies are equipped with mechanical mine-laying and burial devices. These devices, in general, are only provided to the engineers' units.

● **Buriers/layers:** a burying machine is composed of a set of plough-shares and a distribution system which may or may not serve as a magazine. These machines usually come in the form of a trailer attached to a lorry or armoured vehicle which itself carries the store of mines. The known burial machines have been designed to act quickly (so as to face up to what would certainly be a mechanised enemy strike) and usually only deal with antitank devices without wasting time on antipersonnel protection mines (different size and weights). Mine burial is carried out slowly and, according to the movement of the tractor, tends to constitute lines of mines, possibly broken lines. In general, the mine-layers trace out several parallel lines so as to reach a density of 0.4 to 2 mines per square metre.

● **Simple layers:** in some cases, it may not be felt worth burying mines- a dense surface-laid minefield may have the requisite deterrent effect. In such a case, the burial machines can be used at higher speed, and simple hand-fed slides may be resorted to. Such very simple systems can lay lines of more than 1,500 mines per hour.



Mine layer

BOOBY-TRAPPING BY HAND MINE LAYING

Hand laying of mines is not always performed in strict line with the instructions and rules of regular armies, all the more in that it makes it possible for the irregular combatant to make the mine or mines which he lays more dangerous- at the price of risking indiscriminate striking of non-combatants or even friendly forces. Irregulars may lay isolated mines, group them together so as to surprise clearance operators or use decoys and booby-traps, etc..

Mine burying vehicle

● **To enhance the force and wounding power** of the explosion, groups of mines may be put together, placing several mines and/or munitions in such a way that they will explode by «sympathy» (the explosion of one device setting off others). Thus there is a risk of coming upon groups of several antipersonnel mines and/or antitank mines, of mines plus munitions (shells, sub-munitions, etc.), of unexploded munitions, etc.. An antitank mine can be converted into an antipersonnel mine by placing an antipersonnel mine on the antitank mine. The antipersonnel mine thus comes to operate as a sort of detonator/booster. The same principle serves for causing munitions without activators to explode.

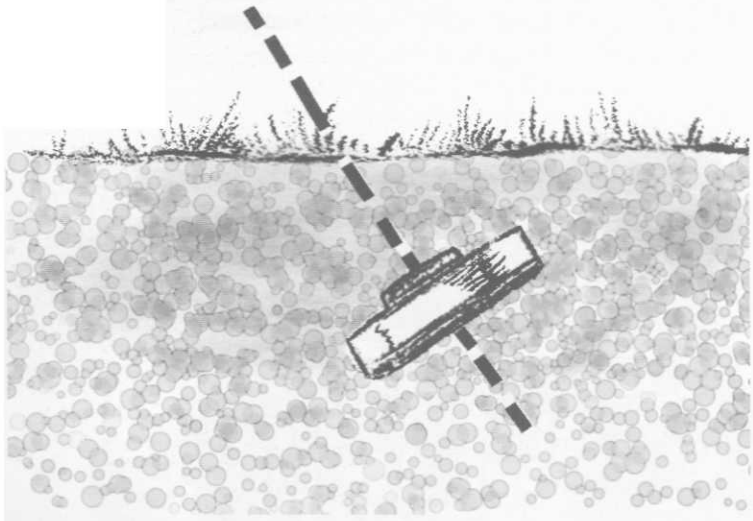
● **To enhance the effect of surprise** and to make mines much more dangerous, burial out of line with accepted standards is resorted to. The aim of the mine-layer is to out-smart but also to kill or maim the mine-clearer- for example, by:

● **putting together mines and activators having different principles** (pressure and pressure-release, pressure and trip-wires, etc.),

● **placing pressure-activated mines diagonally** so that they respond to non-vertical pressures (e.g., from a probe entering at 30° or 45°),

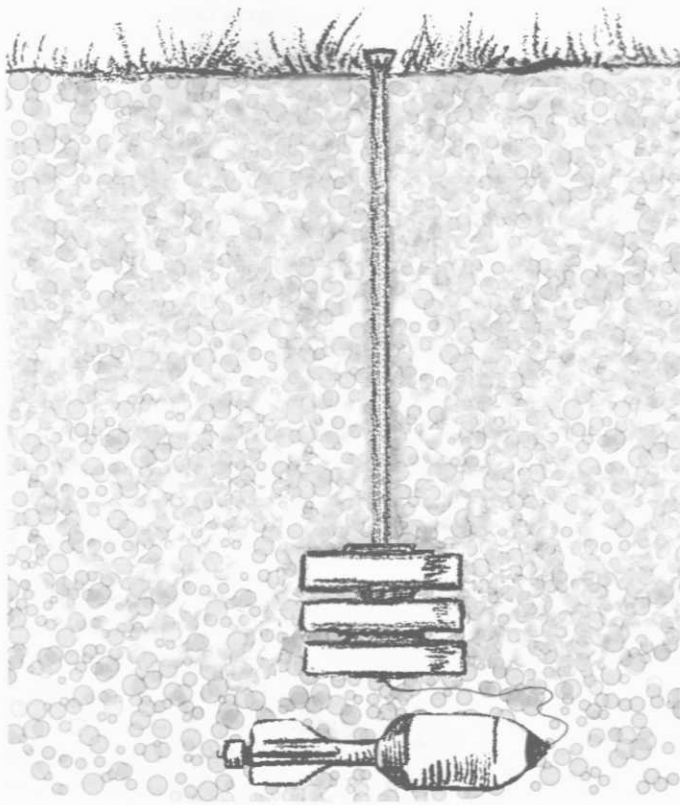
● **using** «Influence» mines reacting to radiation from metal detectors,

● **burying mines very deeply** so as to make detection difficult. A stem may then transmit the pressure down to the pressure-activator (although the destructive power of the mine will obviously be diminished by the mass of earth between it and the target).



Inclined placement

This kind of mine setting requires a lot of time and very particular know-how: booby-trapping is an operation which is dangerous for the booby-trapper himself. It is not compatible with the mass deployment demanded by classic military doctrines. It is thus restricted to terrorist-style operations (for worsening situations, or for harassment) on the part of armed bands involved in low-intensity conflicts. Fortunately, such bands are seldom composed of qualified artificers.



Associated devices

AUTOMATIC MINE SCATTERING

Since the 1960s, modern armies have equipped themselves with means which far outstrip the capacity and speed of more traditional, hand or mechanical, mine-laying methods. Indeed, here it is no longer said to be mine «laying» but rather «scattering». In this type of operation, the teams sent to sow the minefields make use of artillery (canons or rocket-launchers) or air-transport (helicopters or planes). Being no longer on the ground, they can scatter mines behind enemy lines.

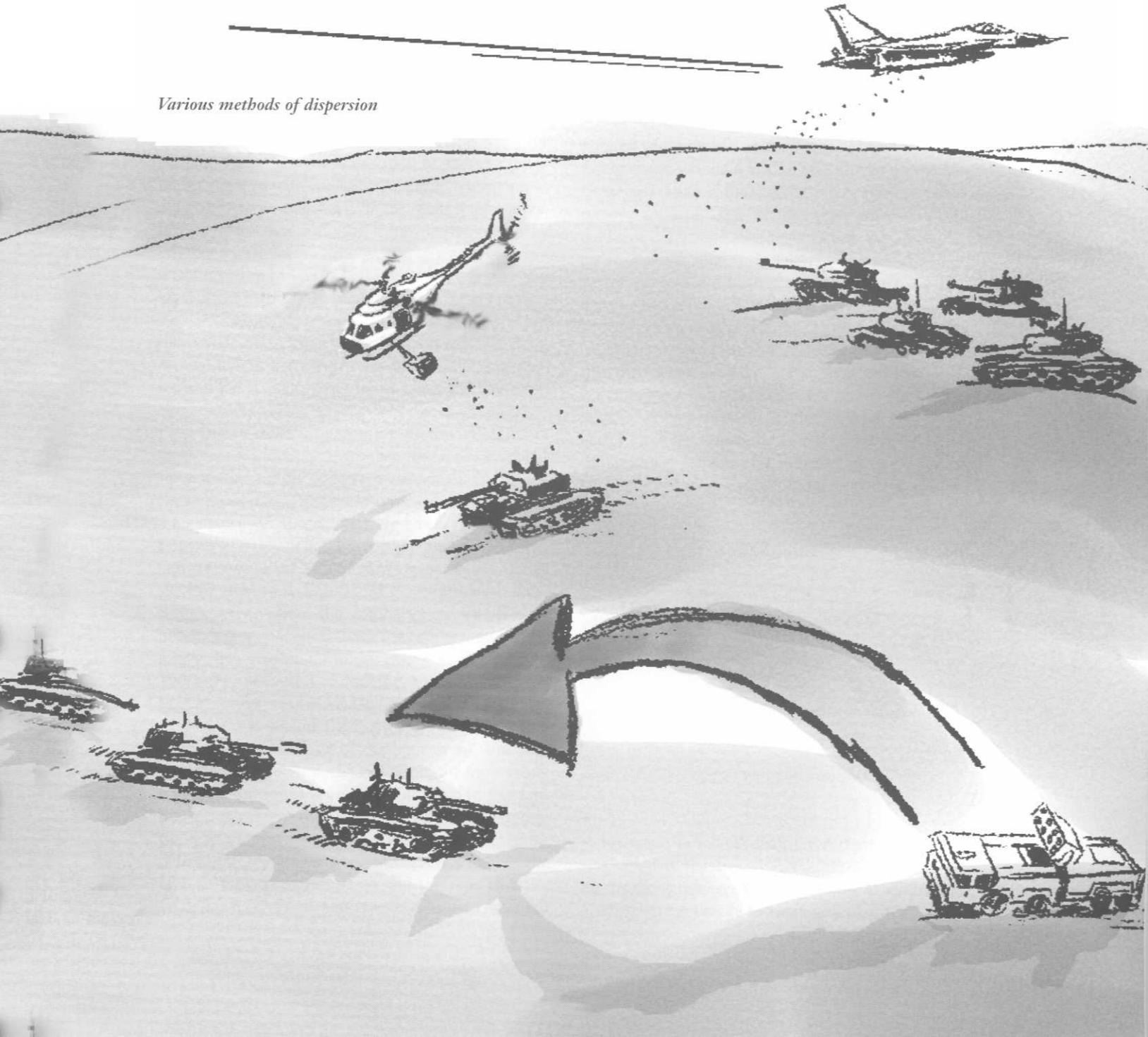
● **An artillery shell** can scatter 36 antipersonnel mines or 9 antitank mines; a salvo of 6 «antipersonnel» shells and 24 «antitank» shells will, within an 18 km range, scatter 216 antipersonnel mines and 216 antitank mines over an area of 400 m by 400 m.

● **A rocket** can contain ten or so mines; the salvo of a 24-rocket multiple rocket launcher sows a 650 m by 400 m minefield in 15 seconds at a distance of 7 km.

Certain multiple rocket launchers have a range of 20 km.

● **A cargo bomb**, dropped from a plane, can scatter 72 antipersonnel mines and 22 antitank mines: one fly-over can scatter 600 mines over an area of 300 m by 200 m.

● **A container transported by helicopter** can contain 240 mines (at a ratio of 1 antitank mine to 5 antipersonnel mines): one fly-over by a helicopter loaded with 4 containers can sow a kilometre-long, 20 m wide minefield with a density of 3 mines per sq. m.



Various methods of dispersion