It is precisely this type of violation of the Convention which requires a fast response by the inspection team. In case of positive detection, there is a fair chance that a violation has taken place. As a consequence the inspection team knows that it should take subsequent samples in a selective and safe way, whereby the necessary safety measures are observed with respect to the transportation of the samples. This does not mean that after a negative result of the detection reaction no samples should be taken, but only to indicate that the inspection team can be guided in their decisions on where to take samples and how many.

Many types of equipment nowadays exist that can perform the tasks described above, including both laborious "wet-chemical" methods and advanced automatic detection and monitoring devices. Military detection and monitoring kits are usually easy and fast to operate, of limited size and weight as well as robust.

Concerning the sensitivity, the Netherlands detection kits used during the trial inspection had the following specifications :
-Gas detection kit: G/V agents (0.002-0.005 mg/m^3), mustard (0.27 mg/m^3), lewisite (3.5 mg/m^3).
-Water testing kit: G/V agents (0.02-0.04 mg/l), mustard (2-4 mg/l), arsenicals (1-2 mg/l).
It is probable that these specifications are adequate to meet the requirements of detecting any present or recent production or storage.

With respect to selectivity and specificity, it goes without saying that a false negative result has, politically and legally, less far-reaching implications than false positive results. As has been stated before, a negative result does not mean that no samples will be taken. Some false positive results will occur as we have observed during the trial inspection. In some cases inorganic chemicals in high concentrations - like hydrogen chloride, sulphur dioxide, nitrogen dioxide, chlorine or ammonia - can interfere with the detection reactions giving rise to similar or different colours as those expected with the target chemicals. In all cases these phenomena could be explained easily.

Most available military detection and monitoring equipment is incapable of detection of all chemicals in Schedule 1. The introduction of additional detection reactions or even new detection technologies could yield dedicated verification instrumentation. If the equipment is used in the way described, i.e. as a qualitative sieve prior to sampling and subsequent identification and quantification, there is no special need for quantitative requirements for detection and monitoring except of course for the detection limits.

Conclusions.

It may be concluded that military detection and monitoring equipment can be helpful during inspections if it is used as a qualitatieve sieve or pre-selector to establish present or recent production and storage of Schedule 1 chemicals. In this way application of the equipment may help to stem the expected large stream of samples.

Dedicated detection and monitoring equipment can be developed starting from military equipment by introducing special requirements with respect to sensitivity and selectivity and by developing additional reactions in order to be able to detect all Schedule 1 chemicals.