

Production of CWs:

This could be monitored by recording and analysing the various emissions from chemical plants into the air and water using remote techniques. Indirect methods, particularly statistical analysis based on estimates of consumption of initial and intermediate substances used in the production of CWs, is an especially promising approach.

Stockpiling of agents and munitions:

This is virtually impossible to detect directly by extraterritorial means. Detection by remote methods of transport operations, however, is possible. Indirect methods especially statistical analysis of inter-state monetary and financial transactions (i.e. to detect transfer of CWs between states) may be of some importance.

Destruction of Stocks:

This can be monitored by a remote method - recording with sensitive instruments of specific gaseous substances which may be discharged into the atmosphere as a result of the destruction process. Indirect monitoring is feasible only where destruction entails making material preparations. Also destruction may entail substantial expenditure and may thus be reflected in the budgets.

The above analysis leads to the following conclusions:

- (1) The most effective monitoring system involves the use of "national means ... for the purpose of intraterritorial national and extraterritorial monitoring".
- (2) "laboratory, remote, indirect and conservative methods can be used in intraterritorial national monitoring in all cases".
- (3) "extraterritorial monitoring can be performed chiefly by remote and indirect methods".

Remote methods:

The working paper continues with a more detailed examination of remote monitoring. This method, the paper claims, can be employed in two situations:

- (1) Where a sample for monitoring is delivered naturally in a current of air or water and samples are taken for laboratory analysis. This method depends to a great degree on natural conditions and phenomena.
- (2) "Where analysis is based on remote appraisal of some optical (spectral) characteristics of the monitored sample" through the use of artificial satellites. This method, the paper claims, is the more reliable.

A previous UK working paper on satellite detection of CW field tests* is mentioned. The Soviets suggest that a better instrument than that suggested in the UK paper would be "a monolithic detector based on impure crystals at ultra low temperatures (a condition easily attainable in outer space)". Other ways to achieve high detection sensitivity include the use of "the induced and resonance combination scattering (Shorygin) effect" employing modulated lasers.

The paper continues with its technical discussion of detection devices. It suggests that the best employment of detectors would involve "the use of a combined system in which one satellite is positioned in geostationary orbit while others revolve in low circular orbits at an altitude of about 250km."