

United Kingdom Atomic Energy Authority found that there were seven earthquakes, or 4.5 percent, that could not be distinguished from explosions. This could mean an average of eight "suspicious events" (depending on the evaluation of "suspicious") per year in the USSR. It may not be possible to develop a system which never mistakes an earthquake for an explosion, but improvements can be expected with increased use of seismic arrays.

It may be possible to develop a method of concealing a nuclear explosion, but it would be very difficult and has apparently not been done. Setting off an explosion in a very large cavity is possible, but for explosions greater than one kiloton, the engineering difficulties of making a cavity several hundred feet in diameter and the possibility that the cavity will collapse and form a detectable crater inhibit such activity. Setting off several explosions in a short interval is not likely to be effective and timing an explosion for just after an earthquake may necessitate waiting for years for a suitable earthquake to occur near the test site. Developing a method of concealment would itself require tests, so this is an added reason to negotiate a comprehensive test ban.

Ultimately, the only effective method of verification is on-site inspection. Despite improvements in seismic arrays, ambiguity in identifying a certain number of events will remain. This uncertainty must be weighed against the desirability of a comprehensive test ban.

The article makes extensive use of graphs, diagrams and maps which illustrate many of the technical points discussed.