

Focus

With this issue, the Disarmament Bulletin is launching what we hope will be a regular feature: a column for secondary school students. Your comments and suggestions for future topics are welcome.

Verification

It's found in everyday life. . . at the hockey rink or at the bank. . . in games or in business. Everyone agrees to play fairly and if someone's caught cheating he's penalized. Some games run on the honour system; others have referees. In dealing with banks, when we get our monthly statements we're verifying how much money we have in the bank. Arms control verification works the same way, by establishing agreed ways of checking and monitoring to make sure that a country is actually doing what it says it will.

Canada's commitment to weapons reductions and limitations, leading to eventual disarmament around the world, is well known. Such goals are achieved through negotiations and treaties. But a treaty is only as strong as the faith its parties have in it. If you don't trust your bank, you won't deposit your money in it. In the absence of trust between nations, verification is essential. It's easier to believe in a treaty if you can check to make sure the other side is living up to its terms. By monitoring compliance with their agreements, countries increase their national security, because, if a treaty is adequately verified and everyone is confident of that, it's in their best interests to stick to it.

Whether an agreement is verified adequately is a difficult thing to determine. In a bank, some depositors may insist on seeing their money in the vault but most will settle for monthly statements. In arms control, determining what is adequate verification is one of the main stumbling blocks in negotiations. Some countries may believe that every single violation must be detectable, that the terms of the treaty must be one hundred percent verifiable. Others might be willing to settle for a verification regime which will be good enough to catch violations which are military significant, but

not so sensitive that it can detect every minor violation. The idea here is that a verification mechanism need only catch those violations which pose a threat, because other violations don't really matter to security anyway. Obviously, the task of defining what is a militarily significant violation, as opposed to an insignificant one, is very difficult and has led to many disagreements in the past.

The actual means of verification usually involve a wide range of information-gathering systems. To monitor any given activity several of these systems can be used. The use of several reinforcing verification methods is sometimes referred to as setting up a verification gauntlet. This means that though it may be possible to fool some of the verification methods, it will be very difficult to fool them all consistently.

Verification systems include photo-reconnaissance satellites which can take pictures of things, electronic reconnaissance satellites to intercept messages, infrared detectors on satellites to sense heat emitted from man-made devices and radar which can track movement. If a nuclear blast is involved, seismographs can detect vibrations through the earth. These remote sensors are known as National Technical Means and are the primary method of verification for both the United States and the Soviet Union, because they don't violate each other's sovereignty. These two superpowers are also the only ones with enough sophisticated hardware (and money) to make National Technical Means a viable means of verification.

Other, less technical methods of verification might include on-site inspections, the use of control posts or monitoring government records and various publications. Generally speaking, these methods are much more intrusive because they tend to require actual physical access to a country's military installations. Up to now, the USSR has refused to allow such access. Things have changed in the last few years, however. During the negotiation of the Treaty to Eliminate Missiles of Intermediate or Shorter Range (the so-called INF Treaty), for example, the Soviet government showed that it is now willing to accept a much greater degree of intrusiveness than ever before. This change in Soviet attitudes towards verification is one

of the most encouraging developments in arms control in recent years.

We've talked so far about verification in general. Let's now look at the important role it plays in specific arms control agreements. With regard to nuclear weapons, two of the most familiar agreements are SALT I and SALT II. SALT stands for Strategic Arms Limitation Treaty. These treaties set ceilings on the numbers and types of strategic nuclear weapons systems the United States and the Soviet Union can deploy. The National Technical Means of the superpowers are the primary means of verifying the SALT treaties.

Other major treaties refer to nuclear testing. In 1963, the Partial Test Ban Treaty was signed, prohibiting nuclear testing everywhere except underground. For this treaty, monitoring the ban is less of a challenge, as any atmospheric and underwater explosions are usually conspicuous. Other treaties that have been negotiated between the Americans and Soviets include the Threshold Test Ban Treaty, which prohibits underground explosions of more than one hundred and fifty kilotonnes. Since 1977, many countries including Canada have advocated a Comprehensive Test Ban Treaty, one that would prohibit all nuclear testing, of any magnitude. By far the most effective method of verifying such an underground test ban would be to use seismic sensors. They can determine, with reasonable accuracy, the origin of a seismic event, whether it was an explosion or earthquake, and its size.

The above examples tend to demonstrate the importance of verification as it relates to bilateral arms control treaties. As the name suggests, bilateral arms control agreements are those which are reached between two parties. Another area of arms control is that which takes place in a multilateral setting. Multilateral means that several parties are involved in an arms control treaty and its verification. Multilateral arms control and verification is of special interest to Canada, as it is unlikely that we will be required to enter into any strictly bilateral arms control treaties in the foreseeable future. Let's look at some examples of multilateral arms control and discuss their verification aspects.