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# STATEMENTS AND SPEECHES

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## NATIONAL AND INTERNATIONAL CONTROL OF ATOMIC ENERGY

Text of an address made by  
General A.G.L. McLaughton,  
Canadian Representative on the  
Atomic Energy Commission of the  
United Nations, before the University  
of Toronto Engineering Society,  
Ajax, October 30, 1947.

I am very pleased indeed to have this opportunity to speak to the members of the Engineering Society of Toronto University about the problem of the control of atomic energy. This is a problem which has become of the first importance in international relations. In fact I would venture to say that its satisfactory solution is an indispensable condition for the survival of civilization itself. This is a strong statement but in the light of the evidence the conclusion, unfortunately, is not escapable that this very serious menace does in reality exist.

Used as weapons of war, atomic bombs have the great advantage that explosions can be produced from relatively small amounts of fissionable materials which are readily transportable over great distances in perfect safety and under complete control as to the instant that they are to be set off. The individual bomb releases energy in such a vast amount that, up to several thousand feet, man cannot withstand the tremendous concussion, the enormous temperature or the intense radiations which are produced when a bomb is burst in the air over an objective; similarly the works of man, unless very specially and massively constructed, are vulnerable.

These facts are now within the knowledge of everyone who has read the descriptions of what happened at Hiroshima and Nagasaki some two years ago.

The two bombs which obliterated these cities each released energy equivalent to about twenty thousand tons of TNT. These bombs were early patterns in which high efficiency had not then been developed. In contrast, as a result of intensive research and development, the latest types may be much more powerful. There is no reason why this increase of power should not take place. There is, of course, a definite scientific reason for a minimum size below which no explosion can occur but, above this critical mass, it seems that the larger the bomb the higher the efficiency with which the fissionable material will be used in an explosion and thus the effect will increase much more than in proportion to size.

An alternative to the airburst bomb, and perhaps an even more terrible method of using it, is to explode the bomb under water as was done in one of the experiments at Bikini. In this case about ten million tons of water contaminated with the radioactive products of the explosion were blown up into the air. This spray may travel downwind for several miles and, wherever it falls, the resulting radiation may persist for years at such a strength that human beings could not remain within the area and survive. Thus it