

## **October 24, 1964**

### **Bhabha Speech on Nuclear Disarmament United Nation's Day**

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#### **Summary:**

A speech delivered by Dr. Bhabha for United Nation's Day on the subject of nuclear disarmament and general disarmament.

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UNITED NATIONS DAY, 24 October 1964

NUCLEAR DISARMAMENT

By

Dr. H. J. Bhabha

The United Nations Day comes this year after a number of grave events which should make us turn all the more to the United Nations as the only sane way of solving the political and international problems of the world, and replacing the law of the jungle among nations by the law of reason.

2. I have been asked to speak on Nuclear Disarmament. Let me say straightaway that in the opinion of many who have devoted much time and study to the problem, nuclear disarmament cannot be separated entirely from general disarmament. Even if it were possible to achieve complete nuclear disarmament while leaving conventional armament untouched, we would only be returning to a world as it existed before 1945, and we know that that world was not free from the horrors of war on a mounting scale. What we have to achieve is the rule of law among nations, and an organisation, the United Nations, strong enough to enforce that law and to deal with those who break it and the peace. For this purpose the United Nations, with the help of its members, will have to be armed with a security force strong enough to maintain peace in a relatively disarmed world, and such a security force may well have to be armed with nuclear weapons to a limited extent. One must remember that it is not any object that is intrinsically good or bad, but the use that is made of it.

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3. A minimum supply of nuclear weapons coupled with an adequate delivery system confers on a State the capacity to destroy more or less totally the important cities and industrial centres in another State. There appears to be no means of totally intercepting such an attack, and if even a small fraction of it gets through, entire cities and regions may be totally devastated. The only defence against such an attack appears to be a capability and threat of retaliation. It is clear that if State A has acquired the capacity to completely devastate all important centres in another State B, the possession of a manyfold more destructive power by State B would not put it in the position of making an attack on State A profitable, since it itself would be devastated as a result. Indeed, even if State B had much less nuclear armament than State A, but sufficient to inflict a few serious wounds on the attacking State, such as for example, the total destruction of a few of its principal cities, that alone might be sufficient to prevent the much stronger State A from launching an attack. In short, atomic weapons give a State possessing them in adequate numbers a deterrent power against attack from a much stronger State. Indeed, the importance of nuclear weapons is that they enable a country possessing them in adequate measure to deter another country also possessing them from using them against it.

4. Nuclear power stations with an electrical output of

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200, 250 and 300 megawatts per reactor are under construction in the world today, and much larger sizes are being planned. Atomic power stations automatically generate plutonium in their fuel, and a 300 megawatt electrical power station would provide enough plutonium for the production of between 20 to 25 atomic bombs a year, depending on their size. Thus, it seems quite within the capacity of a number of countries to produce nuclear weapons in this measure within the next 5 to 10 years. A considerable misconception exists about the cost of doing so.

5. In the Third International Conference on the Peaceful Uses of Atomic Energy organised by the United Nations at Geneva in September this year, there was a paper by the United States on the peaceful uses of atomic explosion for excavation for water diversion, irrigation or flood control, for construction of canals and harbours, or for blasting passages through mountains for highways and railroads, and for several other peaceful uses. In that paper the cost of nuclear explosives was given. A 10 kiloton explosion, i.e. one equivalent to 10,000 tons of TNT, would cost \$ 350,000 or Rs. 17.5 lakhs, - that is an explosion of the same order of magnitude as the Hiroshima bomb - while a two-megaton explosion, i.e. one equivalent to 2 million tons of TNT would cost \$ 600,000 or Rs. 30 lakhs. On the other hand, at current prices of TNT 2 million tons of it would cost some Rs.150 crores, making the use of that much explosive in one

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event totally impossible. This shows that atomic explosives are some 20 times cheaper and thermo nuclear explosives more than 500 times cheaper than conventional explosives. Thus, on the basis of the figures given in the paper I have quoted, a stockpile of some 50 atomic bombs would cost under Rs. 10 crores and a stockpile of 50 two-megaton hydrogen bombs something of the order of Rs. 15 crores. These expenditures are small compared with the military budgets of many countries. We may therefore well have to reckon with a number of countries possessing nuclear weapons within the next five or ten years, unless some important and tangible steps are taken towards disarmament.

6. Much has been said about the difficulty of acquiring a delivery system. The effectiveness of the delivery system depends on the strength of the country against whom it is proposed to deploy nuclear weapons, and its defensive capabilities. The delivery of nuclear weapons against either of the two super-powers, namely, the United States and the USSR would be much more difficult, because of their much stronger defences and because of geographical factors. On the other hand, it would not be difficult to deliver atomic weapons against a country not possessing a modern airforce and ground-to-air-missiles. Even against a country having such modern defences, if it were near, a considerable part of the attack would go through, and with nuclear weapons the devastation would be terrible. Capability of

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retaliation appears to be the most powerful deterrence.

7. Current problems of disarmament and world security were discussed at the Eleventh Pugwash Conference on Science and World Affairs which was held at Laipur in January this year and which was attended by eminent scientists from 25 countries including all the industrially advanced ones. This is not the occasion to go into the detailed analysis of the effect of a spread of nuclear weapons, and those who are interested in the subject could refer to the published proceedings of that Conference. I may however mention a couple of tentative conclusions to which I came regarding the spread of nuclear weapons. There are two super-powers today, and it seems improbable that any third country is likely to acquire within the next ten years a nuclear force and the delivery system sufficient to give it a position of absolute deterrence against either of them. The position would however be entirely different if countries were free for a decade or more, as at present, to develop nuclear weapons on their own. At least a few countries, and especially the very large ones, could then get into a position of having a deterrent nuclear force against any other. The situation would be a very complicated one and it seems not unlikely that it would be less stable than at present. It would therefore appear to be in the interest of everyone to see that substantial progress toward general disarmament is made as soon as possible, and in any case within the period of a decade before more countries have time to develop into major nuclear powers.

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The explosion of a nuclear device by China is a signal that there is no time to be lost. Neither the United Nations nor the great powers have yet succeeded in creating a climate favourable to countries which have the capability of making atomic weapons, but have voluntarily refrained from doing so. Steps must be taken to create such a climate as early as possible. The great powers under the aegis of the United Nations must take concrete steps towards nuclear and general disarmament within the next couple of years in order that they may act more effectively in deterring a spread of nuclear weapons. We have to strengthen the United Nations in order to replace the law of force by the law of reason in international relations, and so as to build a safer and peaceful world.

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