

920 Reel

Princeton Speech - November 17, 1946

We have heard from Morrison what one bomb did to Hiroshima and if we care to do so we can figure out for ourselves what one bomb would do to New York City.

We may be, however, fairly certain that nobody will drop one bomb on New York City.

Atomic bombs are cheap to produce in quantity and they will be produced in quantity if they are produced at all.

To nations which have the industrial equipment an atomic bomb will be no more than the cost of a medium bomber plane They may cost about one million dollars a piece. *the cost of an atomic such* *end*

In these circumstances any national policy which is based on the concept of military preparedness is likely to lead us in the long run into a blind alley. *in the long run*

Just ask yourselves what does military preparedness involve if in case of war we must expect atomic bombs to drop on our cities.

Thirty million people live in the United States in cities of over two hundred fifty thousand and that means that thirty million people may die in one single, sudden attack. *this country*

Another thirty million people live in metropolitan areas and will be in danger of their lives. in case of war. *in case of war*

If we leave our cities as vulnerable as they are at present, a strong army and a strong navy will not help us much in defense with such a contingency *slow!*

It is possible to make the United States much less vulnerable but in order to do so we would have to relocate thirty to sixty million people.

We would have to house these people in new cities which would form a sprawling network across an area of about three thousand square miles.

Such a relocation would be difficult to carry out but organize

Such a relocation would be difficult to ~~administer~~<sup>organise</sup> but from a purely economic point of view it would be possible to ~~construct~~<sup>carry it out</sup>.

At the cost of about twenty billion dollars per year such a gigantic relocation could be ~~carried out in ten years~~<sup>completed in approximately ten years</sup>.

Moreover on the basis of such a 'ten years' plan it could be carried out without an appreciable drop in the standard of living during the transition period.

With conditions in the world being what they are some of us ~~are~~<sup>are willing</sup> ~~are~~<sup>are</sup> ~~inclined~~<sup>inclined</sup> seriously to consider this kind of military defense.

We find it however rather difficult to get ~~really~~<sup>very</sup> enthusiastic about it.

4 ~~We~~<sup>are</sup> ~~troubled~~<sup>troubled</sup> by the thought that by dispersing our cities we may defend ourselves against the weapons of the past rather than ~~against~~<sup>against</sup> the weapons of the future.

It is ~~quite~~<sup>quite</sup> true that bombs of the Nagasaki type are cheap to produce <sup>and</sup> that they can be produced in large quantities and that they may destroy a good number of our cities.

But by now some of us would be willing to settle for a war in which such bombs are dropped on our cities if only we could be sure that nothing worse <sup>will</sup> could happen to us.

Bombs of the Nagasaki type act by the blast which they cause and you know what they will do to a city. <sup>But you also know</sup> You know however <sup>also</sup> that whenever uranium is allowed to undergo fission radio active materials are produced.

Thus radio active materials are produced in the factories in which plutonium is ~~manufactured~~<sup>made</sup> from uranium and radio active ~~materials~~<sup>materials</sup> are produced whenever an atomic bomb ~~is~~<sup>is</sup> set off.

~~Not much~~<sup>Not much</sup> has been said so far of what would happen to ~~the~~<sup>us</sup> population of this country if such radio active ~~materials~~<sup>poisonous materials</sup> were ~~scattered~~<sup>scattered</sup> above the cities or throughout the countryside.

~~Little~~<sup>Little</sup> has been said about this because those who suspect what might ~~be~~<sup>be</sup> ~~the~~<sup>the</sup> ~~future~~<sup>future</sup> ~~is~~<sup>is</sup> ~~not~~<sup>not</sup> free to talk about it.

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If Dr. Olyphant <sup>should</sup> prove to be right about this it ~~would~~ <sup>would</sup> no longer be possible to set any limit to the power of ~~the~~ a single ~~warhead~~ bomb.

If such giant bombs could be made and were ever used against us they would not be used to destroy the buildings of any city.

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A year ago Dr. Oliphant of Birmingham hinted at bombs which it might be possible to ~~make~~ <sup>make</sup> and which would be a thousand times <sup>2</sup> more <sup>or</sup> powerful than the bomb ~~which was~~ <sup>which was</sup> used at Nagasaki. ~~It is possible to set a limit to the power of a single bomb.~~

~~Clearly if such bombs were ever used against us <sup>in the</sup> they would not be used to destroy the buildings of any city.~~

They would be exploded off <sup>the Pacific</sup> the Atlantic Coast ~~or the Pacific~~ <sup>and</sup> would disperse <sup>large quantities of</sup> radio active materials into the atmosphere.

The prevailing winds would then carry <sup>these poisonous</sup> ~~the radio activity~~ <sup>materials</sup> clear across the continent.

If such bombs were used <sup>against us</sup> <sup>the</sup> cities would remain ~~undamaged~~ <sup>undamaged</sup> but the men and women inside of the cities ~~as~~ well as outside of the cities would be ~~dead~~ <sup>killed</sup> and those who lived <sup>outside of the cities</sup> would be ~~dead~~ <sup>killed</sup> also.

If ten <sup>or 15</sup> years from now such bombs ~~can be used against us~~ <sup>become available</sup> the relocation of sixty million persons <sup>will</sup> have served no <sup>useful</sup> purpose.

At present the people in this country are in a ~~somewhat~~ <sup>rather</sup> peculiar position.

At the next election they may be called upon to make the most fateful decision of the century.

But the facts upon which they ought to base this decision cannot be told to them at the present time.

For the ~~real~~ danger to which this country might be exposed as the result of ~~new developments in the field of atomic energy~~ <sup>further ~~atomic~~ progress</sup> can be ~~appraised~~ <sup>appraised</sup> only by a few ~~thousand~~ <sup>hundred</sup> people and they are not free to speak. <sup>physicists</sup>

~~If Dr. Oliphant proves to be right about this it will no longer be possible to set any limit to the power of a single bomb. If such giant~~

*[Vertical handwritten notes on the right margin, including "stand" and other illegible scribbles.]*

During the past year physicists have tried to say as well as they could that only international control of the forces of destruction can give us <sup>some</sup> a measure of security.

If no solution will emerge from the present negotiations we had better examine ~~the~~ <sup>the</sup> causes of this failure <sup>as fast as</sup> we can and then try to think <sup>up</sup> a new and different approach to the problem.

To me personally it appears <sup>rather</sup> ~~somewhat~~ doubtful that a solution can be found at the level at which <sup>the</sup> ~~a~~ public discussion ~~of the issue~~ has been carried on so far.

But however that may be it seems <sup>2</sup> clear enough that a national policy based on military preparedness can only be a stop-gap policy.

It seems clear enough that if we follow such a policy we shall find ourselves before long in a blind alley and we shall be moving along a road that leads to war.

From the vantage point of the physicists <sup>2</sup> the outlines of that war <sup>are gradually becoming</sup> just barely begin to become visible and ~~more and more~~ <sup>as</sup> they seem to take <sup>on more and more</sup> the shape of catastrophe for which there is no precedent in the history of mankind.