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YORK TESTIFIES ON ABM

STATEMENT BY HERBERT F. YORK
HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS,
SUBCOMMITTEE ON DEFENSE APPROPRIATIONS

June 9, 1969

I am grateful to you for extending an invitation to the Federation of American Scientists to participate in these hearings, and I am grateful to that organization for asking me to be their spokesman on this occasion.

As in the case of everyone who has so far testified before the Congress on the subject of the ABM, I endorse the President's basic objective of maintaining the credibility of our strategic deterrent. I also strongly endorse his desire to avoid any actions which might jeopardize the possibility of conducting successful strategic arms limitations talks as soon as possible. However, I do not agree that the proposed phased deployment of the Safeguard ABM system would be an effective way to preserve the credibility of the deterrent. And further, I do suggest that while such a deployment probably would not have any influence on getting Strategic Arms Limitation Talks started, it could very well seriously inhibit a successful outcome to such talks. My reasons for so believing are similar to those given before other committees of the Congress in earlier hearings by other witnesses as well as by myself, so I will simply briefly summarize them for you here; we could go into any of them in more detail later should you wish it.

First of all, I do not believe the deterrent is in the kind or degree of danger that Department of Defense spokesmen have suggested. Our deterrent consists of three major parts: Silo-based ICBMs, Submarine-based SLBMs, and Bombers. It also has a number of minor components including Carrier-based Bombers and the Short-Ranged Bombers based in Europe and elsewhere. Each of these components has entirely different kinds of potential vulnerabilities and entirely different ways of guarding against their exploitation. Thus, while it is possible, even though not probable, that the Minute Man component of our deterrent may become endangered in the mid-seventies by the Soviet SS-9 buildup, it is not at all credible that all three major components would become endangered at the same time. In this connection, I wish to point out that while the Minute Man, unfortunately, only has the two options of either remaining in its hole or flying toward a target on a ballistic projector, the other two major components of the deterrent have a wide variety of possible alert statuses, and a wide variety of tactics are available for protecting them against various unforeseen contingencies. It may indeed turn out eventually to be quite unfortunate that the Minute Man is so inflexible, but as long as the other components of the deterrent are not similarly so limited in tactics, we need not now become excessively worried about it.

Secondly, I do not believe that Safeguard could in fact safeguard the Minute Man component of our deterrent even if it "works" in the technical sense. Safeguard is a system which in phases I and II together contains only a small number of missiles (that is, small compared to the size of the Minute Man force) and a still smaller number of MSRs (Missile Site Radars) which are, on the one hand, essential to the operation of the system and, on the other hand, are an order of magnitude softer than the Silo-based missiles the system is designed to defend. Thus, Safeguard itself

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ELECTION RESULTS

The following are the results of the recent FAS election:

Elected *Vice-Chairman*: Herbert F. York, Physics, University of Calif., San Diego

Elected *Delegates at Large*, FAS Council:

Dan I. Bolef, Physics, Washington University

Richard A. Falk, Law, Princeton University

Bernard T. Feld, Physics, Massachusetts Institute of Technology

Arthur W. Galston, Biology, Yale University

Gerald (James) Holton, Physics, Harvard University

David R. Inglis, Physics, Argonne National Laboratory

Marvin Kalkstein, Physics, State University of N.Y., Stony Brook

Matthew S. Meselson, Biology, Harvard University

George William Rathjens, Political Science, Massachusetts Institute of Technology

Arthur H. Rosenfeld, Physics, University of Calif., Berkeley

Louis B. Sohn, Law, Harvard Law School

Lincoln Wolfenstein, Physics, Carnegie-Mellon University

ABM BIBLIOGRAPHY

(Continued from *May Issue*)

"Missile Control—Hope or Chimera?" Betty Goetz Lall. *DISSENT*, May-June 1969, pp. 225-30.

Stresses the need for U.S.-Soviet arms control talks on strategic weapons now, before the present balance between the superpowers is undone by deployment of ABM's and MIRV's. Lall recommends an initial freeze on deployment of all strategic weapons, to be followed later by a freeze on production, and still later by a reduction of existing arsenals. She notes that if such a reduction were to take place, the strategy of deterrence would have to be revised, and suggests that at that time an anti-ballistic missile system might be a substitute for the concept of deterrence.

THE CONTROVERSY OVER A U.S. ANTI-BALLISTIC MISSILE SYSTEM: PROS & CONS. *CONGRESSIONAL DIGEST*, November 1968. Available from *Congressional Digest Corp.*, 3231 P St., N.W., Washington, D.C. 20007. Single copy, \$1.50; 5 @ \$1.25; 10 @ \$1.00; 25 or more @ 75¢.

A summary of Congressional attitudes for and against deployment of the ABM. Included are "pro" speeches by Senators Russell, Dirksen, Pastore, and Thurmond and "con" speeches by Senators Symington, Cooper, McCarthy, and McGovern. Background material on the ABM, a comparison of U.S. and Soviet weaponry, and a glossary of strategic weaponry are also presented.

ABM: A QUESTION OF PRIORITIES. Published by the *Union for Democratic Action Educational Fund, Inc.*, 1424 16 St., N.W., Washington, D. C. 20036, 1969. 20 pp. 50¢.

Contains "Militarism and American Democracy" by Senator J. W. Fulbright, "The Dynamics of the Arms Race"

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can be attacked and exhausted or destroyed by smaller less accurate warheads, while the larger more accurate warheads are held in reserve for a free ride against the Minute Man moments later. Alternatively, a somewhat larger force of the larger missiles could be built up and then it would be possible to go after both Safeguard and Minute Man simultaneously. Of course, a very much larger and much more expensive ABM system could in principle, if not in practice, handle this problem, but that is not at all the sort of thing that could be bought with any of the various budgets currently being discussed.

Third, I have grave doubts whether Safeguard will in fact "work." Here I have three major factors in mind:

1) The battle between penetration aids and penetration tactics on the one hand and discrimination techniques and interception methods on the other hand. This battle is, to be sure, easier in the present case of defending hard points than it was in the earlier case of defending large soft targets. Even so, in the event of a large sophisticated attack on our Minute Man, which is the only kind we need be concerned about here, I believe the outcome still definitely favors the offense.

2) The system requires a hair trigger so that, after standing ready for an indefinite number of years, it can fire at precisely the correct second after only minutes of warning. The system must at the same time have a trigger stiff enough so that it will not fire on a false alarm and so that it cannot be fired without authorization by the highest authority. The Army has assured us repeatedly that such authorization is required and I concur most heartily in this requirement. However, the requirement for hair trigger so it will fire when needed and a stiff trigger so it never will fire when it shouldn't are contradictory requirements which must lower the system's reliability. The situation is different in the case of our offensive missiles, which do not necessarily have to be subject to this same contradiction. In order to retaliate a missile need not, in general, be fired at some precise instant which was determined by the side which struck first.

3) There is also the great difference between the test range and the real world. On the test range test crews use test equipment to intercept U.S. targets accompanied by U.S. penetration aids at a known time and under contrived conditions. In the real world operational crews must use operational equipment to intercept enemy missiles accompanied by enemy penetration aids launched at an unknown time and must do so in an atmosphere of total astonishment and disbelief. I realize that Defense Research and Development officials are aware of some of these differences and are trying to cope with them, as witness the recent special tests of deployed Minute Men. That is all very well and to their credit, but some substantial lack of confidence in the system must remain by reason of this major, though unquantifiable, factor. In all of this, it is important to note again certain

differences between offensive and defensive missiles. Once an individual offensive warhead is finally on its way, it need "do" nothing until it contacts the ground (or arrives at some preset height) at which time it has only to explode. The defensive system must, in a matter of only some seconds, puzzle its way through the deceptive devices and tactics of the total offensive payload, and then explode its warhead at precisely the correct time and place, neither of which can be predetermined before the battle starts. This latter is intrinsically a much more complex problem and hence the subtler differences between the test range and the real world matter much more in the case of defensive missiles than in the case of offensive missiles.

Thus in summary, I believe that the proposed Safeguard ABM system will probably not "work," I believe that even if it did work, it could not safeguard the Minute Man component of our deterrent, I doubt that the Minute Man itself will be endangered by the Soviet offense in the mid-seventies and even if it were, I find it incredible that the deterrent as a whole would be in danger at that time. Even so, one still might suggest that it would be prudent to deploy the Safeguard if such a deployment would do no harm, so let us examine that matter.

It could do harm, of course, by diverting money from other places where it might be more sorely needed, as for instance, either in civil programs or in military programs better suited to satisfy critical defense needs. Let me pass over these for now and turn instead to its relationship to the arms race. It is frequently said that the ABM or at least some versions of it does not have serious arms control implications. The reasons advanced have to do with its intrinsically defensive character. In my opinion, such a belief is based on an error which may be called the "Fallacy of the Last Move." It is indeed true that if the last move ever made in the arms race consisted in deploying an ABM system, then deploying the ABM by definition would not have any arms race implication, but in the real world of constant change in both the technology and the deployed number of all kinds of strategic weapons systems, ABMs are accelerating elements in the arms race. In support of this, let us consider a relevant bit of recent history.

At the beginning of this decade, we began to hear about a possible Soviet ABM and we became concerned about its potential effects on our ICBM and Polaris systems. It was then that we began seriously to consider various penetration aid ideas, among them that of placing more than one warhead on a single offensive missile. This idea has since grown in complexity as these things do and has resulted in the MIRV concept (Multiple Independently Targetable Re-entry Vehicles). There are now additional justifications for MIRV beside penetration, but that is how it all started. As others have pointed out, the MIRV concept is a very important element in accelerating the arms race and potentially seriously destabilizing. In fact, the possibility of a Soviet MIRV on the SS-9 missile is used as one of the main arguments in support of the idea of hard point defense and thus we have come one full turn around the arms race spiral. No one in 1960-61 thought through the potential destabilizing effects of multiple warheads and certainly no one predicted, or even could have predicted, that the inexorable logic of the arms race would carry us directly from Soviet talk in 1960 about defending Moscow against missiles to a requirement for hard point defense of offensive missile sites in the United States in 1969. Likewise, I am sure, the Russians did not foresee the large increase in deployed U.S. warheads that would ultimately result from their ABM deployment.

Similarly, no one today can describe in detail the chain reaction which the Safeguard deployment would lead to. I think we can, however, see what its outline would be. Let us suppose for the sake of argument that the Safeguard ABM system will be deployed. Both in the U.S. and U.S.S.R., strategic analysts will apply what is known as "worst case analysis" to the situation. The Soviet analysts will look at it and say, "We don't know if it will really work or not, but we must assume it will." Soviet officials in charge of the deployment and development of offensive weapons will, even-

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Chairman John Rasmussen

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Sources of information (given in the articles in parentheses) are for further reference. Items reprinted directly from other publications are designated as such in an introductory paragraph.

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tually, act accordingly. On our side, and despite the present rosy technological views to the contrary, our strategic analysts will look at it and say, "We don't know if it will really work or not, but we must assume that it won't." U.S. officials in charge of the deployment and development of offensive weapons will, eventually, act accordingly. I do not know precisely what we will do in that case, but I do predict that some kind of frantic effort to really safeguard (or replace) the Minute Man will be undertaken. In other words, the kind of uncertainty that will be inevitably introduced into strategic thinking by the deployment of an extensive ABM as a part of the deterrent will seriously disturb both sides and create an atmosphere of disequilibrium in which effective arms control will be even more difficult than it is now.

I should like now to turn from this matter of the arms race and to raise one further question. That is "What ABM system are we really talking about here?" To explain what I mean, and to explore this question, let me first recall a part of Secretary McNamara's famous San Francisco speech. With reference to a possible Chinese missile threat, he said, "... there are marginal grounds for concluding that a light deployment of U.S. ABMs against this possibility is prudent." A few lines later he warned, "the danger in deploying this relatively light and Chinese oriented ABM is going to be that the pressures will develop to expand it into a heavy Soviet oriented ABM." The record makes it all too clear that he was probably all too right in this prediction. Let me also quote from Donald Hornig's testimony given before the Senate Subcommittee on International Organization and Disarmament Affairs just a little over two weeks ago. He said, "If I were convinced that the protection of a credible deterrent were indeed the eventual goal and that Safeguard was the best way to protect our deterrent, I would support it. But the uneasy feeling persists that although Presidents may change, Secretaries of Defense may come and go, the philosophies enunciated by our political leaders may change, the design of our ABM system hardly changes at all. It includes the same radars, the same rockets, and largely the same deployment which was contemplated for the 'heavy' defense. Safeguard continues to look like a first step toward a much bigger, more expensive and still ineffective system." Thus, the ABM appears to me to have all the characteristics of a solution in search of a problem and I suggest that the fundamental reason you have this ABM decision before you today is that in 1959, Secretary of Defense McElroy, in dividing up the space and missile roles and missions among the three services assigned the ABM to the Army as its only large sophisticated missile program. This created a situation in which for many years the lives and careers of many able persons have been closely entwined with the life and fate of one single program: the Army's ABM. This includes not only the civilians employed in the program office and by the main contractors, it also includes uniformed personnel and probably just as importantly, a whole host of part-time advisors at all levels. If, in fact, we examine closely the testimony given by persons who are part-time advisors to the Defense Establishment and who were also in favor of deployment of the present ABM, we find that with only very few exceptions, they favor Safeguard, not as an end in itself, not for the purposes which the President laid down, but rather as a prototype of something else, much bigger, much more complex, and enormously more expensive. They want a grand system which they hope could protect not only the deterrent but the rest of what goes to make up the United States of America as well. In short, they want to do a job which almost certainly cannot be done, which equally certainly would result in a reaction by the Soviets which would more than offset even the theoretical capability of such a system, and, again equally certainly, would cost vastly more money than the sums anyone is now talking about. In short, it seems to be almost impossible for the United States to build a "thin" ABM system.

Let me end on a more positive note. An ABM designed and deployed as part of a truly major Arms Control and Disarmament Agreement might be a useful theory. Such an

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by George W. Rathjens, an interview with Dr. Ralph Lapp on the Safeguard ABM and the Soviet SS-9, Senatorial viewpoints, and pro and con testimony on the ABM before the Disarmament Subcommittee of the Senate Foreign Relations Committee.

"The Great Nuclear Debate: Parity vs. Superiority." *WAR/PEACE REPORT*, December 1968, pp. 3-10. Center for War/Peace Studies, 218 East 18 St., New York, N.Y. 10008. 50¢.

Four American experts on nuclear weapons and arms control, Donald Brennan, Robert Strausz-Hupe, Jerome Wiesner, and Adam Yarmolinsky, discuss the question of what posture the U.S. should seek in its arms race with the Soviet Union and what course seems most likely to lead to American security.

Cases Against the ABM

ABM: An EVALUATION OF THE DECISION TO DEPLOY AN ANTIBALLISTIC MISSILE SYSTEM, edited by Abram Chayes and Jerome Wisener. Harper & Row, June 1969. \$5. 95. Published in paperback by the New American Library, June 1969. 95¢.

A report criticizing the Nixon Administration's Safeguard ABM system, on both technical and political grounds. It concludes that deployment "would not enhance the national security but would lessen it." Introduction by Senator Edward Kennedy, who commissioned the study as a "non-Pentagon" report for the Senate on the ABM issue.

"Safeguard': A Question of Priorities." Guest editorial by Hubert Humphrey. *SATURDAY REVIEW*, April 5, 1969, pp. 28-29.

Humphrey's case against the Safeguard ABM system. He stresses the urgency of strategic arms talks with the Soviet Union, arguing that such bilateral talks should not be linked to the settlement of political problems such as the Middle East and Vietnam. Although he does not feel that deployment of the Safeguard ABM system will seriously affect the strategic balance between the U.S. and the USSR, he does contend that deployment of MIRV's will significantly upset that balance.

THE FUTURE OF THE STRATEGIC ARMS RACE: OPTIONS FOR THE 1970'S, George W. Rathjens. *Carnegie Endowment for International Peace*, 1969. 53 pp. Available from Taplinger Publishing Co., 29 East 10 St., New York, N.Y. 10003. 1-9 copies @ 60¢; 10-24 @ 50¢; 25-99 @ 40¢; 100-499 at 30¢; 500 or more at 25¢.

An analysis of the ABM, MIRV's, and Chinese nuclear capabilities, which together are stimulating greater U.S. expenditures for counterforce weapons systems that increase the likelihood of thermonuclear war. Rathjens argues that early negotiations between the U.S. and the USSR offer the only possibility for breaking the "action-reaction sequence which propels the arms race." Although somewhat technical, the pamphlet contains a useful glossary of weaponry terms.

"The Dynamics of the Arms Race," George W. Rathjens. *SCIENTIFIC AMERICAN*, April 1969, pp. 15-25. Reprint

(Continued on page 4)

agreement might, for instance, involve the elimination of one offensive missile for each defensive missile deployed. Along with others who have discussed this matter, I agree that a world in which there were many defensive weapons and few offensive weapons would be preferable to a world in which this ratio was reversed, and if those two choices, and only those two choices, were in fact being offered, I would take the first. However, I emphasize that both the design and deployment must be specifically configured with the reduction of offensive forces in mind, and major deployment should follow and not precede formal international agreements to this effect.

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available, W. H. Freeman and Co., 660 Market St., San Francisco, Calif. 94104. 20¢.

Discussion of the relationship between ABM's and MIRV's, and their implications for the arms race, and of the action-reaction cycle between the U.S. and the USSR. He stresses the importance of negotiations to break that cycle and to reduce the uncertainties which each nation has with regard to the policies, capabilities and intentions of the other.

"Can President Nixon Stop the Arms Race?" Jacob K. Javits. *SATURDAY REVIEW*, March 1, 1969, pp. 14-16, 63, 64.

The Senator from New York opposes the ABM on grounds of both the cost and the destabilizing effects of a spiralling U.S.-Soviet arms race.

"Nixon's AMB: Very Thin indeed," Robert Rothstein. *THE NEW REPUBLIC*, March 29, 1969, pp. 15-18.

An analysis of President Nixon's decision to deploy the Safeguard ABM system. Rothstein counters arguments that the system will protect the U.S. from accidental attacks, from a Chinese attack within the next decade, and from a Soviet attack against land-based retaliatory forces.

"The ABM, China and the Arms Race," Hans A. Bethe. *BULLETIN OF THE ATOMIC SCIENTISTS*, May 1969, pp. 41-44

A leading nuclear physicist argues that an ABM against China is unnecessary and could easily be penetrated. He feels that defense of Minuteman silos is "sensible in principle but is very premature." He urges an arms control agreement with the USSR prohibiting deployment of the ABM.

"The Nuclear Arms Race: Diagnosis and Treatment," J. P. Ruina. *BULLETIN OF THE ATOMIC SCIENTISTS*, October 1968, pp. 19-22.

Analysis of U.S. and Soviet nuclear capabilities and delivery systems, the development of deterrence strategy, and the development of a missile defense system. Ruina feels that the kind of stable deterrence which was possible in the early 1960's is no longer possible, because of new weapons systems which the U.S. and the USSR are capable of deploying. As a minimum step toward halting the arms race, he suggests that both nations must avoid introducing such weapons.

"The Anti-Ballistic Missile: A Dangerous Folly," David R. Inglis. *SATURDAY REVIEW*, September 7, 1968, pp. 26-27, 55-56.

An atomic physicist maintains that the only way to make nuclear war less likely is to stop "further dangerous upward spirals and outward spreading" of nuclear weaponry. He derides the assumption of the effectiveness of the ABM and stresses the need for arms control negotiations with the Soviet Union.

"Keeping the Strategic Balance," Carl Kaysen. *FOREIGN AFFAIRS*, July 1968, pp. 665-75. Reprints available from Council on Foreign Relations, 58 East 68 St., New York, N.Y. 10021. 50¢.

A former Deputy Special Assistant to the President for National Security Affairs argues against U.S. development and deployment of ABM's and MIRV's, suggesting that these weapons will severely upset the strategic balance between the U.S. and the Soviet Union, thus determining the stability of mutual deterrence.

Cases for the ABM

"The Case for Missile Defense," Donald Brennan. *FOREIGN AFFAIRS*, April 1969, pp. 433-48. Reprints available from the Council on Foreign Relations, 58 East 68 St., New York, N.Y. 10021. 50¢.

Brennan, of the Hudson Institute, makes what is probably the most persuasive case for a "thick" missile defense system, within the larger context of achieving a U.S.-Soviet "freeze" on offensive nuclear weapons.

"A New Strategy for the New Missile," Herman Kahn. *FORTUNE*, June 1969.

A case for a thin ABM defense system, asserting that control and stabilization of the arms race could be achieved through U.S.-Soviet procurement of defensive missiles and limitation of offensive missiles. Kahn summarizes and counters the major arguments against deployment of the ABM, and criticizes the "dogmatism" which he finds on both sides of the current debate.

"A Case for Missile Defense," Freeman Dyson. *BULLETIN OF THE ATOMIC SCIENTISTS*, April 1969, pp. 31-33.

Dyson believes that the proposed ABM will be militarily effective in defending missile sites, that deterrence is not inconsistent with a strong active defense, and, moreover, that it is both moral and economical to pursue security and stabilization through increasing U.S. reliance on defense systems.

THE ABM AND THE CHANGED STRATEGIC BALANCE, U.S.A. VS. U.S.S.R. Study prepared by the National Strategy Committee of the American Security Council, May 1969. 60 pp. 1101 17 St., N.W., Washington, D.C. 20036. \$1.50.

A report urging deployment of an ABM by a panel including several Nobel Prize winning physicists, retired generals Nathan Twining, Thomas Power, Bernard Schriever, and former AEC head Lewis L. Strauss. They conclude that evidence of Soviet attempts to gain strategic military superiority over the U.S. (in intermediate and medium range missiles, space weapons, long range bombers, an ABM system, and a civil defense program) requires the U.S. to "create a missile defense system to protect its nuclear deterrent."

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Federation of American Scientists
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