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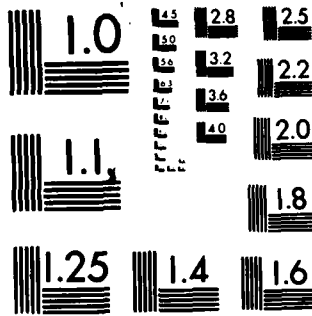
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October 1982

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COULD A NUCLEAR ARMS FREEZE BE NEGOTIATED?

Kevin N. Lewis

The Rand Corporation, Santa Monica, California

October 1982

THE NUCLEAR ARMS FREEZE MEANS DIFFERENT THINGS TO DIFFERENT PEOPLE

The nuclear arms freeze initiatives on many state and local ballots this fall have stimulated quite a debate on U.S. nuclear policy. This debate has been characterized by considerable confusion and acrimony. While any popular discussion of nuclear affairs is bound to be emotionally charged, this year's controversy has been further fueled by the great differences in the roles and aims of a possible freeze as perceived by this debate's many participants.

The two sides really do not have different ultimate objectives; their different perspectives can, if you will, be explained by the use of alternative rates for "discounting" the nation's future security. "Freeze now" proponents believe that holding out for enhanced security in the future cannot be justified given the apparent present danger of annihilation. Accordingly, most people who vote for a freeze are urging an immediate stop to pertinent strategic force activities of *all* types. Their opponents, for the most part, believe that modernization of the U.S. posture will improve our security situation over the long run (by compelling the Soviets to make a more serious commitment to arms reduction and by allowing us to eliminate dangerous and perhaps provocative vulnerabilities in our arsenal). Thus, most freeze opponents are

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calling for eventual quantitative force reductions within a treaty regime that still allows for an as yet undetermined degree of qualitative force structure enhancement.

Each voter must decide for himself what the long-term consequences would be of options foregone or retained in the present. But all questions of principle and all estimates of risks aside, the freeze groundswell has some very serious political implications. These result chiefly from the fact that many proponents--including a number of elected officials--attribute an expanded, practical role to the freeze itself. To this group of advocates, the freeze initiative is more than a principle with which nuclear policy should be consistent; it is also apparently a basis for a set of future treaty talks. That a freeze is contemplated as the core of a new phase of strategic arms control is amply in evidence. For example, many people have gone to great lengths to speculate about such technical points as the feasibility of verifying adequately a freeze.

What began as a statement of broad aims, then, seems to be slowly expanding its portfolio to include day to day questions of diplomacy and arms employment and procurement policy. Like it or not, to the extent that approval of a freeze signals a national choice for at least the near future, these referendums (that in effect state our aims and lay out the risks we are willing to take) will send an important signal to the Soviet Union and to our Allies. Whether a popular referendum--even a non-binding one--should be the vehicle for the determination of U.S. strategy is, in my view, a most doubtful proposition.

Some people are inclined to postpone deliberations on the practical ramifications of this drift until the need to confront them arises. Nonetheless, it is useful at the present time to get a feel for the range of issues we might face later. Thus, suppose that a freeze is adopted as a basis for U.S. nuclear policy; what then? Do we really want to negotiate a freeze? *Can* we negotiate one? How far should we be willing to go to adhere to the principles of such a treaty in near-term force plans and political action?

The answer to these and other questions lies in large part in the possible nature of a future freeze negotiation process. To date, discussion has concentrated on two issues: the extent to which a freeze would undermine ongoing arms control efforts that call for reductions, and both sides' ability to verify a freeze. Verifiability is, as everyone admits, a prerequisite of any sound arms control treaty. Technical verification issues have been discussed elsewhere at considerable length and I will not add to that literature here. Rather, given any particular set of assumptions about both sides' ability to verify a treaty or protocol, I would like to ask what is thereby implied about the nature of the negotiating process required to consummate the arrangement between the United States and Soviet Union in the first place. Let us, in other words, examine the freeze from a negotiator's point of view.

A TREATY IS MORE THAN A LIST OF PRINCIPLES

To the men and women who would have to negotiate a nuclear freeze treaty between the United States and Soviet Union, the technical aspects of the negotiation process would be every bit as important as fundamental principles at issue. Our negotiators must be very careful about the

verification and other technical specifics of a freeze (just like any other kind of arrangement) for several reasons. The pertinent legal and verification details must be firmly in hand if the treaty is to be sold to Congress, defended before the public, and "signed off" on by the many governmental constituencies party to national security decisionmaking. Above all, the price we might have to pay should negotiations fail mitigates against a casual and disconnected approach to arms control that in effect says "let's talk about principles now and worry about substance and technicalities later." For these reasons, we should make sure that verification and other practical details are reasonably consistent with the aims of the treaty--from the start.

As has been the case in past negotiations, however, I suspect that the translation of the freeze's principles into specific concepts, definitions, and rules will prove very difficult. Consequently, ongoing negotiations may take on new forms and new scope as we grapple with key treaty details. But unless we arrive at the conference table reasonably prepared, there is not the slightest guarantee that those new forms will be in the best interest of the people of the United States. Hence, a fundamental issue to resolve before approving a freeze treaty initiative is how much we should be willing to bet up front that the myriad details and specifics of a treaty can be worked out later. While we can obviously never be totally confident in our technical evaluations before the fact, we nonetheless must insist on acceptable odds of negotiating success.

Experts warn that verification regimes and provisions can never be simple. Successful monitoring of a nuclear freeze in fact would pose a

much broader and more serious set of problems than the ones we have come to know so well, since we would be forced to rely on radically new verification techniques. These would probably include on-site inspection and a variety of other so-called intrusive verification measures. Such measures have not heretofore been acceptable to the Soviet Union and there is absolutely no evidence in hand to suggest that the Kremlin might change its tune in the future.[1] For this reason alone, great caution in predicting the success of our verification arrangements is warranted.

But going beyond this point, there is another crucial matter which has not so far surfaced in the popular forum. This is that it is essential to ask exactly what it is we are going to try to verify, and how the characteristics of the forces and activities we are inspecting should be set down in technical terms for the sake of detailed treaty preparation. It has always been the case in arms control talks that the "nuts and bolts" of a treaty--the specific rules, regulations, terms, and definitions--shape the entire negotiation process and contribute to the ultimate probability of success or failure of the talks. Before sitting down to freeze talks, therefore, I would suggest that it is important to consider how important technicalities--which would not just be implied but actually demanded by a freeze treaty--might influence the course of freeze negotiations in the future.

[1] Mr. Gromyko has, for instance, recently called for the further tightening of current restrictions on nuclear testing by the United States and Soviet Union. However, the USSR remains opposed to on-site inspections at will, a verification guarantee that is virtually essential to the successful monitoring of this kind of treaty.

VERIFICATION, YES, BUT OF WHAT?

All the verification capability in the world does not count for anything if what we are trying to verify is not precisely defined. This comes as no surprise; serious interpretation problems have long bedeviled diplomats when the rules of the game are too mushy. One recent case in point is that of the SALT II Treaty, signed by President Carter, submitted to the Senate (not to be ratified), and then withdrawn in the wake of the Soviet invasion of Afghanistan in December 1979. While some critics accused the Soviets of repeated Treaty violations, it should be noted that in no case did the alleged violations relate to overall force or type ceilings or similar major restrictions. Rather those charges referred to Soviet activities that took place in that shadowy grey area surrounding the corpus of very specific and technical rules and regulations that described what was allowed and what wasn't.

Devising the proper rules, however, turns out to be a task of staggering proportions. To illustrate just how murky and ambiguous even highly technical rules can be, let me list here some notional examples arising from (or suggested by) recent arms control efforts. For one, the Soviets have insisted on constraining the range of our cruise missiles to the magic figure of 600 kilometers. But even were the U.S. to grant this request, it is not clear how it should be enforced; there is simply no generally accepted way of defining a cruise missile's range. The range of any aerodynamic vehicle depends on a variety of interrelated factors, including the altitude at which a mission is flown, ambient temperature and winds, the type of fuel used, throttle settings, whether the cruise missile was air or ground launched, and so on.

Another example concerns the definition of "new ICBMs" as given in the SALT Treaty. Despite a set of quantified definitions, there still has been some dispute over what, exactly, makes a missile placed in an existing silo a new one and what makes it only a modification.

A third example is the question of missile reloads, that is to say missiles that are not in launchers ("launchers" being the counting unit in SALT) but which nonetheless might be used in wartime. Yet one does not have to be an expert to guess that it is very difficult to say for the record whether a particular missile is a spare for testing, is intended for training purposes, or is in fact a full-up bird deployed for the express purpose of being rapidly placed in a launcher that has already unleashed its resident weapon. Indeed, the purpose of a perceived enemy capability often can be determined only after detailed analysis of trends in testing, training and exercises, command arrangements, enemy doctrine and public statements--just about anything other than easy-to-verify technical features.

Finally, how does one distinguish a radar intended for air defense purposes from one intended for an antiballistic missile role? Antiballistic missile radars are, of course, restricted in capability, numbers, and other characteristics, and those restrictions are stated in quite technical terms. But even so, misunderstandings occur with respect to what has constituted use of a radar in an air defense, as opposed to an antiballistic missile, mode.

These cases suggest how very difficult it can often be to lay out sufficiently complete and unambiguous treaty rules. Indeed, at least in the case of SALT and START, a whole apparatus has been set up to work

out definitions and to look into claims that technical rules have been broken. But no matter how much care we have taken to work out the terms and the legal procedures in advance, it remains very hard--even with very good verification--to completely characterize exactly what one is verifying, and whether detected activity is cheating, an accident, or simply some behavior not covered by the rules.

In my view, one of the best ways around the morass of definitions, rules, and technicalities is to work to establish arms control treaties that are based on total (and very specifically worded) bans and prohibitions. Once such a prohibition has gone into force one knows immediately whether any particular activity is a violation of the rules. This approach to negotiation and verification is precisely the idea behind the President's November 1981 Intermediate Range Nuclear Force arms control proposal which called for a so-called "zero level" restriction on many kinds of dangerous weapons. One key objective of the zero level was to get around the serious technical problems inherent in trying to count systems some of which are quite mobile.[2]

But even in the case of the INF zero level proposal vast rule problems must be overcome. This is the regrettable case despite the fact that the scope of the INF negotiations is restricted to only a very few kinds of weapons systems and a similarly limited number of conceptual issues. Yet consider some of the difficulties: the United States and

[2] Since neither side would be allowed to have any weapons of a certain type, detection of just one would be a patent violation. If some number other than zero were the ceiling, the problem of missile mobility arises. For instance, if the ceiling were 100, and the U.S. counted 110 enemy missiles, the other side could say we had double counted some of their weapons which, presumably had been on the move during our monitoring period.

Soviet Union differ over what geographic areas should come under the INF arms restriction. They disagree as to whose forces should be included in counts of weapons. They also differ as to just which weapons should be subject to limitation, whether the final ceiling should be zero or some other number, and when cuts should occur.

EXACTLY WHAT IS TO BE FROZEN?

The INF case reveals that even a quite limited and specific kind of negotiation can be fraught with serious technical problems. What might be the corresponding set of problems in negotiating a nuclear freeze? It is fairly obvious that these could be orders of magnitude more intractable than the problems that would be encountered in more traditionally narrow arms talks. For, unlike negotiations that apply only to a single class of weapons or specified region, the "freeze" (at least as it is advertised by its sponsors) calls for substantial constraints on many different kinds of weapons and activities, without qualification by geographical or other considerations.

Nonetheless, advocates have yet to explain in even broad brush language how one might go about defining the terms of reference for a freeze. Nobody has said, for instance, what the scope of the freeze should be. Just what nuclear weapons are we talking about? Intercontinental weapons such as have been dealt with by SALT in the past? Intermediate range weapons which are now the subject of U.S./Soviet negotiations at Geneva? Should we also include short range, battlefield, and other so-called tactical nuclear weapons (including depth charges and even atomic mines)? And for that matter, *whose* nuclear weapons are we counting? The United States and Soviet Union presumably

would be involved in the freeze, but should the independent nuclear forces of Britain, France, and China be included? Clearly the United States and Soviet Union would have very different views on such questions relating to the scope and extent of a freeze. Should the freeze count offensive weapons only or should we extend ceilings to include defensive systems which, for the most part, are not nuclear armed? Are efforts to harden, conceal, or make mobile strategic targets banned under the freeze?

Yet other sticky problems concern those systems that are capable of both conventional and nuclear roles. Both sides operate a large number of aircraft, missile, artillery, and other weapon systems that can carry either conventional or nuclear warheads. What restrictions should apply to such "dual capable" systems?

And what about exotic problems? The Soviets consider the Space Shuttle to be "a weapon of mass destruction," although why isn't clear. Should that come under a freeze? What about the laser and other directed energy research? The list goes on.

Most freeze proponents seem to mean by that a ban on new deployment and testing of delivery systems and nuclear weapons themselves. Consider some of these types of arrangements. One approach might be to freeze the number of strategic launchers. But here it turns out that nothing is new, at least for us. In fact, by this criterion, the United States has been operating for some time as though it was subject to a freeze. The number of U.S. strategic launchers (as defined by SALT II) peaked in about 1964 and has declined since then. Between 1967 and last month (when the first new TRIDENT submarine, the U.S.S. *Ohio* went on

station), no new SALT countable strategic launcher entered operational service with any U.S. military unit. True, we have upgraded and modernized significantly some elements of our strategic forces, but for the most part these adjustments were intended to preserve a constant level of U.S. capability.[3] In sum, there is no escaping the fact that the overall nuclear posture of the United States has been driven by attrition--not impelled by an arms race--for at least a decade. On account of lead times, that trend cannot possibly be reversed for several years.

Another approach would be to count nuclear weapons. But here again the United States has operated under its own self imposed nuclear freeze. Contrary to the usual rhetoric, there has been no significant change in the number of U.S. nuclear weapons for about two decades. True the missions of many of these weapons have changed (usually from "tactical" to "strategic") but absolute numbers have not risen.

Some people have suggested that a freeze should concentrate on the production of nuclear materials, warhead manufacturing, or warhead testing. This approach makes some sense insofar as the nuclear payload itself is at the center of all concerns about and all plans for the strategic forces. But yet again, in addition to having been subject to a sort of freeze already,[4] the verification arrangements would pose a

[3] For instance, while the number of warheads carried by U.S. sea-based missiles increased substantially between 1970 and 1975, their total blast damage causing capability did not. Assuming that these forces have primary responsibility for attacks on enemy urban/industrial centers if necessary, aggregate capability therefore has remained the same. Similarly, more warheads are carried by our ICBMs compared with the situation a decade ago: but many key target types for these weapons have become much more numerous and harder to destroy as well.

[4] In 1964 President Johnson ordered a very sharp cutback in the production of the special nuclear materials used to make brand new dev-

vast problem. To verify such a materials freeze, it would be necessary to go into the Soviet Union armed literally with screwdrivers and plans of their nuclear weapons--we'd have to allow the same thing--in order to make sure that the treaty was being obeyed. It is ludicrous to think that U.S. representatives would ever be allowed to carry out this most intrusive kind of arms control verification. Recall that the Soviet Union does not even grant a full set of security clearances to all the members of its own negotiating teams; it is hard to think of conditions under which they would approve extremely sensitive access by U.S. intelligence officials.

In addition, imagine the difficulties attendant on trying to negotiate the following difficult technical questions, among others. What should each side do about the nuclear materials that are manufactured for other purposes, like fuel for electric powerplants and submarines? Should either side allow the other to make changes to its warheads for any reasons at all, or can no changes be allowed? For instance, no one complained when the United States commenced a program to install new safety features on nuclear bombs (to prevent accidental detonation should a weapon fall off an airplane or catch fire, or to prevent unauthorized personnel from firing it). But, suppose that the installation of more sophisticated electronics and improved insensitive high explosive detonators not only makes the rebuilt weapons safer but more reliable. It is hardly clear under the circumstances that the Soviets would

ices. Since that time, we have held our own but have not gained or lost very much in terms of absolute stockpile size. Indeed the public press has reported that we will have problems getting ahold of all the nuclear materials we will need to make the weapons that are called for under the Reagan Administration's strategic modernization plan.

endorse this U.S. program under a freeze. And, in any case, just how do we test to determine whether our safety initiatives work?

Finally, some people have suggested that a freeze should try to restrict "just plain old general activity" in the strategic force area. Though it sounds good in principle, this approach just won't fly: the ambiguities and uncertainties would seem to defy a reasonable solution. Do we restrict U.S. procurement and operation of aerial tankers that can not only refuel B-52s en route to the Soviet Union, but also cargo aircraft and even fighter planes? What should be done about improved command, control, and communications capabilities that make it easier to stop a war if it should begin by accident, but which also can manage striking forces? What about intelligence capabilities? The same satellite that can verify the freeze can also be used to find new targets. Should pilot training be suspended? Should we prohibit government agencies and activities that not only prepare for civil defense in a nuclear conflict but also would provide relief in the event of a natural disaster? Clearly a freeze based on general goals would have to include all these and many other considerations. But it's as hard to define and describe the scope of prohibited actions as it is to believe that any realistic arrangement can be arrived at.

FREEZE NOW, TALK LATER, OR WHAT? THE CONSEQUENCES OF FAILURE

All in all, it may in principle be possible to work out some of the elements of a freeze arrangement. It might also be possible to mesh these arrangements with realistic verification capabilities. It might even be possible, all things considered, to make sure that verification, treaty, and other arrangements actually serve some of the U.S.' security

interests.

But all things are not considered in deliberation on the freeze-- whatever is meant thereby. We have now arrived at one last and very important question. Do we freeze and then negotiate, or do we talk before agreeing to a freeze? Pro-freeze advocates select the former. But what insurance exists against the situation in which treaty talks fail or we discover that the Soviets are cheating?

Here it is vital to keep in mind two things. First, it is a simple fact of life that treaties take a long time to negotiate. After all, negotiations have been and will always remain an adversary process. The more complicated the treaty, (and it would certainly seem as though a freeze treaty with its far-reaching scope would be a very, very complex one), the harder it is to work out the exact terms of the arrangement.

The second thing to remember is that we may not do well in arms control talks on a freeze. It is more the rule than the exception in negotiations to concentrate on the wrong weapons, places, and the like. Many historical examples attest to our shortsightedness and tendency to concentrate on the irrelevant. One striking example is the naval arms control process in the 1920s which dealt only with capital warships-- which turned out to play secondary roles in World war II compared with aircraft carriers and submarines. In short, our ability to see through even the best intentions is limited.

We have come full circle back to the verification stumbling block. Now, it has been said, and it is quite true, that it is possible to detect just about any new weapon or capability at some point during its development or construction. According to some observers, that is a

sufficient guarantee that we would not wind up walking down a very dangerous path should the treaty fail or should the other side eventually decide it wanted nothing of it.

But in such a highly technical area this assumption is attached to some grave risks. As weapons technology becomes more complicated, it takes longer and longer to develop new systems; in particular the "front end" schedules for new systems telescope. But it is by no means clear that we can detect violations at the R&D or breadboard phases--phases which nonetheless can account for many years of a full weapon system development program. Nor is it clear that we would be able, even if we detected such activities, to cast them within the scope of the technical language that is the foundation of all treaty verification rules. In other words, even within the letter of the treaty the Soviets could probably do much that would put the United States at a disadvantage.

Such a risky prospect is by no means a novel one. A decade ago, confident that some kind of restraint on biological and chemical warfare production and use had been worked out, the United States dramatically scaled back its own research efforts in those areas. It is now clear that no such corresponding restraint was applied on the Soviet side, and we may end up paying two or three times as much as we would have otherwise to restore the balance. In the 1930s, when Germany was not allowed an air force, the Germans nonetheless managed to train a skilled cadre of military pilots under the guise of a number of sport flying clubs and the civil airline, Lufthansa. Since such training was "allowed," treaty restrictions did not serve to stunt the growth of Nazi military aviation. The list of notorious historical examples is, unfortunately, not

a short one.

Finally, consider the implications of a freeze for the most fundamental pillar of our national security, namely our research, production, and skilled manpower base. Suppose we freeze all types of nuclear weapons and vehicle design and production now. What happens if it becomes necessary to resume those activities at a future point?

The most important disadvantage of this type concerns skilled defense manpower. Engineers sent home, scientists assigned to different projects, and workers put on other jobs cannot be quickly or cheaply returned to their original crafts. One does not simply enroll in a refresher course in some esoteric technology or brush up on techniques for making complicated tools. (For instance, the *Trident* submarine program *now* is years behind its original schedule and its costs have increased in part because of delays in building up a shipyard manpower complement to make the submarines.) It requires years of continuing commitment and dedication to maintain vital technical capabilities. To dismantle this essential part of the United States' national security potential could result in catastrophe if the Soviets cheat.

Similarly, one can just imagine what the technical difficulties would be if the need to start up the strategic industrial base at a future date emerges. One does not just go to General Electric and buy a nuclear reactor for a submarine off the shelf. One does not just call a number in the Yellow Pages to get titanium forgings for aircraft. The lead-times for these and other critical components often run into years and years. In short, and in addition to the staggering costs of mothballing and then starting up production capabilities, we would face the

consequences of possibly extended production down-time that might prevent full response to a Soviet abandonment of the freeze for years.

IN CONCLUSION: WE MUST LOOK BEFORE WE LEAP

The freeze movement began as an effort to communicate a popular statement to Washington, specifically, that voters are dissatisfied with the progress of nuclear arms control to date and frustrated by what appear to them to be gross inconsistencies between the superpowers' peace plans and their concrete military actions. But over the past several months, freeze schemes have slowly but steadily taken on new and more ambitious aims. To the extent that the approval of current ballot initiatives maintain this momentum, I believe we must examine the long-term implications of the evolution of public sentiment into an official strategy that would shape a number of policies, including those relating to our alliance relations, overall diplomatic strategy, total defense planning concept, and the like.

I have argued here that even if we can verify a nuclear freeze by any definition--which is doubtful--we may not be anywhere near sorting out vital prerequisites of the negotiation problem. I would suggest that as important as verification is in principle, it is equally essential to know exactly what of we speak. Simply attempting to force both superpowers to "abandon the arms race," as many in this country would like us to do, will not suffice. Though critics may say that the technical problems can be settled later, after a freeze is arranged, in my opinion, essential technical details must be worked out *before* any freeze process can begin. We need to do our homework for the sake of our nation's safety. Because the other side knows this well, there is

in no case any reason for him to enter into any negotiation if he thinks we are not taking it seriously (unless he has some ulterior propaganda or other political motive, which is worse still).

In sum, the success of a freeze, like the success of *any* arms control regime, depends on detailed and precise definitions, rules, and measures. These must be reasonably well thought out before serious negotiations can begin. No such preparation is evident in any aspect of the freeze initiative. There therefore seems no reason for us to proceed; in any case, we cannot expect any prudent Soviet planner to believe in our good intentions if we show up for freeze talks totally unprepared. Moreover, it is hard to see if such rules and definitions can ever be generated with the precision needed for meaningful talks. That being the case, it might be worth reassessing the sensibility of a strategic arms control regime based on the current freeze notion while we still have the chance.