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United States tactical nuclear doctrine: Developing a capability

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United States Tactical Nuclear
"
Doctrine: Developing A Capability

A Thesis

Presented to
The Faculty of the Department of Government
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by
Christopher Cooke

1979

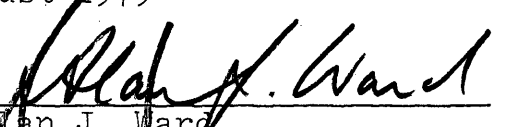
APPROVAL SHEET

This thesis is submitted in partial fulfillment of
the requirements for the degree of


Master of Arts

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ABSTRACT

The purpose of this study is to assess critically the development of United States tactical nuclear weapons (TNW) doctrine, from its inception during the Eisenhower years to its current status in the Carter Administration.

By viewing the evolution of tactical nuclear doctrine over the span of some thirty plus years, it was hoped that a better understanding of how American policy makers have related nuclear power to diplomacy could be achieved.

It is suggested that U.S. TNW doctrine has developed within the framework of deterrence in American strategic thought. The development of the doctrine has been primarily defensive in nature, measured to enhance the deterrent effect of U.S. theatre forces against Soviet inspired aggression.

Tactical nuclear doctrine as having deterrent value only is viewed as dangerously de-stabilizing for United States nuclear weapons strategy, because an examination of Soviet literature and TNW capability indicates a tactical nuclear doctrine of first-use in theatre conflict. The disparity in US-USSR TNW doctrines results in an imbalance of force in Russo-American theatre scenarios. In conclusion, the recognition of tactical nuclear weapons as contemporary weapons of war and the integration of their use in U.S. military tactics and strategy are recommended.

UNITED STATES TACTICAL NUCLEAR
DOCTRINE: DEVELOPING A CAPABILITY

I

Perhaps the basic problem of strategy in the nuclear age is how to establish a relationship between a policy of deterrence and a strategy for fighting a war in case deterrence fails.¹

For more than thirty years, since the bombings of Hiroshima and Nagasaki, American strategists have struggled with the problem of military flexibility within the context of the ultimate deterrent: thermonuclear war. Policy makers have attempted to develop a formula which would utilize the power of nuclear weapons in the art of diplomacy, hoping that some secret combination of atomic capability, national will, and circumstance would provide enhanced leverage in international politics. As history records, however, those efforts have failed. Instead of expediting foreign policy on behalf of those nations with atomic capability, nuclear weapons have complicated their foreign policies. Conflicts which arise between nuclear powers can not

¹Henry A. Kissinger, Nuclear Weapons and Foreign Policy (New York: Harper & Brothers, 1957), p. 132.

have merely localized repercussions; the denouement of nuclear exchange would be disastrous for the world. Furthermore, the nature of war itself has been transformed. The notion of winning seems obsolete when measured against the losses which would be incurred in a nuclear exchange. Indeed, the advent of nuclear weapons has, if anything, presented statesmen not with options of flexibility in the execution of national goals, but with the inflexibilities inherent in contemplating the unacceptability of nuclear war.

The history of the United States' strategic nuclear doctrine has been one of searching for an effective relationship between nuclear weapons and foreign policy, particularly with regard to its post-World War II adversary and nuclear counterpart, the Soviet Union. Since 1949, when the Soviets detonated their first atomic warhead, the Soviet Union has been perceived by American strategists as the most significant threat to the United States in the twentieth century. Consequently, policy makers have been concerned with the task of deterring a costly nuclear exchange between the two ideologically different powers. Furthermore, given the rise of the Soviet Union as a pre-eminent

world power competing with the United States, an additional task has been to discover more effective applications of U.S. power and diplomacy in areas vital to American interests which are either directly or indirectly challenged by Soviet power.

This essay will address itself to the relationship between nuclear power and American foreign policy. Specifically, it will deal with the doctrine of Tactical Nuclear Warfare (TNW) which has emerged from many years of policy debate on how nuclear weapons can best be utilized in deterring Soviet aggression in certain strategic theatres. (The European theatre will provide most examples for this study, as it is often regarded as the most likely site for Soviet-American conflict.) Beyond deterrence, TNW has been suggested as a strategy for acquiring greater military and political leverage for the realization of American goals. Tactical Nuclear Warfare is by no means a recent option for U.S. policy makers. President Eisenhower suggested in 1954 that "our defense will be stronger if. . . we share with our allies certain knowledge of the tactical use of our nuclear weapons."² And an examination of the doctrine

²From the State of the Union address by President Dwight D. Eisenhower, delivered before a joint session of Congress, 7 January 1954 (House of Representatives Document no. 251) 83d Congress, 2d Session, 1954, p. 4.

from the Eisenhower years to the Administration of President James E. Carter will show that it has developed and matured as a tactic in the field of military strategy.

Such an examination, however, will also disclose that TNW has not been taken seriously as a military strategy by any administration. At best, it has developed within the framework of deterrence. American tactical nuclear forces (TNF) have never been considered by the United States in terms of being part of a military strategy. And they are currently not regarded as offensive weapons. Rather, they are developed and deployed by the United States with the sole consideration of maintaining a balance of American and Russian theatre nuclear power. The calculus of deterrence is essentially one of numbers. How many warheads? How much throw-weight? How much power and accuracy? Present policy suggests that there is little need to consider the offensive use of nuclear weapons. If deterrence should fail, conventional forces will provide the first resort. TNW is viewed only as a final act of desperation.

This essay will explore the hypothesis that until Tactical Nuclear Warfare is incorporated into a military strategy of first-use, tactical nuclear forces will

serve neither the purpose of theatre deterrence nor of strengthening the relationship between power and diplomacy. A corollary to this hypothesis is that there is a distinction between deterrence and military strategy, and that this distinction has yet to be made in considerations of Tactical Nuclear Warfare by U.S. strategists and policy makers alike.

II

The first clear expression of a United States nuclear doctrine came in the Eisenhower years, and was aptly labeled Massive Retaliation. It was predicated on the assumption that if one could make the cost of enemy aggression intolerable, such aggression would be deterred. The Eisenhower Administration promulgated a doctrine of immediate U.S. response with nuclear capability if an opponent (namely the Soviet Union) should attempt armed aggression in areas that the United States perceived as vital to its interests. The response would be in the form of a disarming first-strike directed at targets in the Soviet Union, no matter how distant from the act of aggression. Massive Retaliation aimed at crippling the Soviet Union-- politically, economically, and militarily.

The emergence of Massive Retaliation was a result of basically three factors. First, it was a reaction against the recent Korean experience.³ Americans were

³See Alexander L. George and Richard Smoke, "Deterrence in History," in John E. Endicott and Roy Stafford, eds., American Defense Policy, 4th edition (Baltimore and London: The Johns Hopkins University Press, 1977).

unaccustomed to the travails and ambiguities of limited war, and a reliance on a nuclear deterrent seemed preferable to the maintenance, and overseas involvement, of a large conventional army for a prolonged period of time. In fact, a reliance on nuclear weaponry was understandable, given the power vacuum created by the unilateral disarmament of American conventional forces during the eighteen months following the Korean War. "Ground, air, and naval units literally melted away until it became virtually impossible to calculate what military forces, if any, the United States could muster in the face of a serious Soviet threat. Thus, the stage was inevitably set for almost total dependence by the United States on the deterrent threat of the atomic bomb to offset the massive superiority of Soviet ground forces. . . ." ⁴ The atomic bomb became the perfect replacement for vanishing American ground forces in maintaining a balance of power in post-War Europe.

Second, there was the consideration of cost-effectiveness. The Eisenhower Administration was committed

⁴Harland B. Moulton, From Superiority to Parity: The United States and the Strategic Arms Race, 1961-1971 (Westport, Connecticut: Greenwood Press, Inc., 1973), p. 5.

to reducing taxes and balancing the federal budget. These domestic goals were not possible if the United States maintained a comprehensive conventional military posture. Secretary of State John Foster Dulles best summed up this point when he stated that America needed allies and security, but by more effective and less costly means than the large-scale commitment of American troops. "This can be done by placing more reliance on deterrent power and less dependence on local defensive power."⁵ As another observer of the time put it, "the essence of the . . . policy is that it is actually possible for the United States to have greater security at less cost, with fewer soldiers, and curtailed commitments abroad."⁶ The doctrine of Massive Retaliation was a welcome relief to the American people in so far as it would preclude the debilitating economic drain of a large standing army.

Finally, Massive Retaliation can be seen as a product of several occurrences internationally which

⁵From "Evolution of Foreign Policy," address by John Foster Dulles, Secretary of State, delivered before the Council on Foreign Relations, 12 January 1954, United States Department of State Bulletin 30:107 (25 January 1954): 108.

⁶Neal Stanford, "Two Looks at the New Look," in Herbert L. Marx, Jr., ed., Defense and National Security (New York: The H.W. Wilson Company, 1955), p. 48.

encouraged the perception by policy makers that world events were following an unacceptable course. The Berlin Crisis of 1948-1949, the proliferation of Communist regimes in Europe, the Communist revolution in China, and the Soviet A-Bomb test detonation years ahead of U.S. expectations caused great alarm within American policy making circles.⁷ There was a desire to convert America's nuclear weapons into an effective leverage for the implementation of policies, the most important being the preservation of the status quo in the non-Communist world. The deterrence of Communist threats to South Korea, Taiwan, Southeast Asia, and Western Europe loomed large in the logic of Massive Retaliation.

There were problems, however, with a doctrine that necessitated a massive delivery of nuclear weapons upon provocation. What type of provocation would be deemed serious enough to precipitate nuclear war? Indeed, exactly what acts of aggression would be deterred by the threat of nuclear exchange? Could a nuclear exchange be justified politically by an aggression

⁷See A.L. George and R. Smoke, "Deterrence in History," American Defense Policy for an examination of these factors.

other than a direct attack upon the United States?

Henry Kissinger summarizes well this dilemma.

By identifying deterrence with maximum power. . . Massive Retaliation tends to paralyze the will. . . . Given the power of modern weapons, a nation that relies on all-out war as its chief deterrent imposes a fearful psychological handicapp on itself. The most agonizing decision a statesman can face is whether or not to unleash all-out war; all the pressures will make for hesitation, short of a direct attack threatening the national existence.⁸

Thus, the very credibility of Massive Retaliation was at once questionable, particularly after the Soviet Union began developing its own strategic force. Policy makers could not envisage bringing about a nuclear holocaust and certain self-destruction for the United States because of a theatre conflict far from its shores. Would New York and Chicago, for example, be exchanged for Berlin, or for some lesser provocation such as a minor border incursion in Korea or Finland? Would the American people accept a nuclear exchange for any cause other than their own survival? In short, the use of Massive Retaliation in anything other than a general Soviet-American war lacked credibility as a military strategy. It might well be argued that it

⁸Henry A. Kissinger, Nuclear Weapons and Foreign Policy, p. 133.

lacked credibility as a deterrent as well, at least in theatre scenarios in which the survival of the United States was not at stake (e.g., a regional conflict in Africa). As Henry Kissinger argues, "A deterrent which one is afraid to implement when it is challenged ceases to be a deterrent."⁹

Not only would an enemy interpret Massive Retaliation as a bluff, but the doctrine itself would present American policy makers with few alternatives between general nuclear war and acquiescence in piecemeal aggression. As one author has put it, "reliance upon massive retaliation not only stultified the development of new policy but encouraged a Maginot Line mentality--dependence upon a strategy which may collapse or never be used, but which meanwhile prevents the consideration of any alternative."¹⁰ Militarily, while perhaps deterring the Soviet Union from general war with the United States, Massive Retaliation left few alternatives to strategists for coping with theatre conflict, a localized outbreak of hostilities. Conventional strength and presence were expected to be at a minimum as, after all,

⁹Ibid., p. 134.

¹⁰Harland B. Moulton, From Superiority to Parity, pp. 36-37.

this was one reason for the existence of the doctrine, but without a conventional posture in the "gray areas," the military would be impotent. However, if a conventional posture were assumed, a significant purpose of Massive Retaliation-- reliance on nuclear rather than conventional capability-- would go for naught. This was an uneasy paradox and few would now disagree with Kissinger that "strategy can assist policy only by developing a maximum number of stages between total peace (which may mean total surrender) and total war."¹¹

There were two basic needs, then, as U.S. strategic doctrine entered the 1960s. First, there was the continued need to deter a Soviet first-strike, which Massive Retaliation seemed to do. Second, there was a need for greater flexibility in deterring and, if necessary, countering Soviet inspired and/or supported theatre wars which might not warrant a general war jeopardizing the survival of the United States.

¹¹Henry A. Kissinger, Nuclear Weapons and Foreign Policy, p. 136.

III

While Massive Retaliation was based upon the premise of completely obliterating the enemy in light of "sufficient" provocation, the doctrine of Assured Destruction was the result of the reassessment of strategic doctrine within the context of increasing Soviet nuclear capability. The essence of military philosophy underlying Massive Retaliation, as mentioned above, was to deter Soviet aggression by the threat of a disarming and highly damaging strike with America's nuclear force. The Kennedy Administration sought to shift this philosophy by recognizing first, that a disarming first-strike against the Soviet Union was no longer possible and second, that the ability of both nations to destroy each other would serve as a deterrent to general war. One student has noted that this shift

was primarily motivated by our view of the arms race: we feared that our effort to maintain a capability for a disarming strike would stimulate a disarming buildup of Soviet forces; and conversely, we hoped that our restraint would be reciprocated.¹²

¹²Fred C. Ikle, "Can Nuclear Deterrence Last Out the Century?" Foreign Affairs 51:2 (January 1973): 270.

Assured Destruction, then, had two basic functions. One, "to deter deliberate nuclear attack upon the United States or its allies,"¹³ and two, to bring a semblance of stability to strategic doctrine and a nuclear arms race. The Kennedy Administration correctly recognized that there was nothing that the United States could have done (at least nothing short of a massive first-strike in the early 1950s when Soviet nuclear capability was low), or could now do to prevent the Soviet Union from acquiring a second-strike capability. Even a massive nuclear retaliation would not destroy the ability of the U.S.S.R. to launch an unacceptable attack upon the United States. The Soviet sense of insecurity with regard to the West would drive them on toward achieving some measure of parity. Assured Destruction was an attempt, therefore, to possess an effective deterrent by assuring the U.S. "the capability to destroy the aggressor as a viable society even after a surprise attack."¹⁴ By calculating how much nuclear weaponry

¹³Robert S. McNamara, The Essence of Security: Reflections in Office (New York: Harper & Row, Publishers, 1968), p. 52.

¹⁴Secretary of Defense Robert S. McNamara before the Committee on Armed Services, United States Senate, 89th Congress, 1st Session, 24 February 1965. Hearings on Military Authorization for Fiscal Year 1966, p. 43.

would be required to destroy an arbitrary percentage of the Soviet population, industry, and military capability, Assured Destruction sought to create a stable deterrent to general war between the United States and the Soviet Union. If, for example, 1000 Intercontinental Ballistic Missiles (ICBMs) were required to destroy a third of the Soviet population and two-thirds of Soviet industrial and military capability, then there would be no need for U.S. deployment of nuclear weaponry beyond that level. It was hoped that this calculated approach to deterrence would be duplicated by Soviet strategists, thus curbing an arms race.

As a deterrent, Assured Destruction was little different from Massive Retaliation. Both doctrines were predicated on the assumption that if an unacceptable amount of damage could be inflicted upon the Soviet Union so as to make the costs of general war exceed the benefits, then general war would be deterred. And, as a general deterrent, Assured Destruction was subject to the same criticisms which plagued Massive Retaliation, namely the lack of options short of surrender and nuclear holocaust which policy makers could consider in a crisis

situation. Van Cleave and Barnett note that Assured Destruction was "necessary-- but insufficient." Its problem was a "lack of sufficient options between no response and large-scale responses."¹⁵ But it was different from Massive Retaliation in so far as designating how much was necessary for deterrence. And perhaps more importantly, it differed in its assessment of what exactly it could deter.

There were no pretensions within the Kennedy Administration that strategic nuclear weapons could be used in any other way except to deter general war with the Soviet Union. This line of thought, ipso facto, necessitated greater emphasis on the fighting of lesser wars than those of an all-out exchange, and this emphasis was reflected in the efforts of Secretary of Defense Robert S. McNamara to procure a more effective conventional posture for the United States. Believing that the Soviets had set a determined course of exacerbating third-world

¹⁵William R. Van Cleave and Roger W. Barnett, "Strategic Adaptability," in Robert J. Pranger and Roger P. Labrie, Nuclear Strategy and National Security: Points of View (Washington, D.C. : American Enterprise Institute for Policy Research, 1977), pp. 214-17.

conflicts into theatre wars,¹⁶ McNamara stressed the need for an "adequate level of non-nuclear military strength. . . to meet a limited challenge with limited forces."¹⁷ Thus the concept of limited war became prominent in the Kennedy Administration. But the military response in a limited conflict was to be conventional, not nuclear. A build-up of non-nuclear forces was seen as the key to increasing the American capacity to "tailor. . . responses to a particular military challenge to that level of force which is both appropriate to the issue involved and militarily favorable to our side."¹⁸ There was little room for the consideration of tactical nuclear force. As McNamara would say, the United States "could not substitute tactical nuclear weapons for conventional forces in the types of conflict

¹⁶It was widely believed by many at that time that Soviet strategy concentrated on third-world "hot spots." Soviet Chairman Khrushchev contributed to this belief by outlining Soviet aims as precluding both general war and direct theatre conflict with the United States for the reason of probable escalation to thermo-nuclear war. He stressed, however, that liberation wars in third-world countries were inevitable as long as imperialism existed. For many American policy makers, this was an ominous note.

¹⁷Robert S. McNamara, from a speech given before the American Bar Foundation, Chicago, Illinois, 17 February 1962, in Vital Speeches 28:10 (March 1962): 297.

¹⁸Ibid., p. 298.

that were most likely to involve" the United States "in the period of the 1960s,"¹⁹ (localized third-world conflict).

Even though the Kennedy Administration accepted that "an effective tactical nuclear capability was essential to overall strategy,"²⁰ little serious attention was given to the development and implementation of a tactical nuclear doctrine. The consensus among policy makers at the time was that, as Khrushchev stated, Tactical Nuclear Warfare was simply the first step toward holocaust. Escalation to strategic weaponry seemed inevitable after a first use. Furthermore, it was felt that it would only be a matter of time before the Soviets duplicated the American effort at developing a tactical nuclear force, thus leading to a similar stalemate of power that followed the buildup of Soviet strategic forces. This reasoning changed little through the Johnson years, as that Administration was involved in a problem more pressing and real than considerations of theoretical scenarios of TNF theatre conflict: Vietnam. Thus, TNW doctrine remained as it was in the Kennedy years, until the coming of the Nixon Administration.

¹⁹Robert S. McNamara, The Essence of Security, p. 69.

²⁰Ibid.

IV

In a hearing before the Armed Services Committee on the FY 1973 defense budget, Secretary of Defense Melvin R. Laird stated that the United States planned to relate its "nuclear weapons posture in the theatre to its conventional posture" so as to create options short of sole reliance on strategic nuclear weapons should a crisis arise.²¹ This would, in Laird's words, allow "maximum flexibility of response. . . should deterrence fail."²²

Indeed, the defense posture presented to the country by the Nixon Administration was in stark contrast to those of previous administrations. The "Nixon Doctrine" called for a retreat of American forces from around the world, emphasizing a reliance on increasing allied responsibility instead. Furthermore, it recognized the status of the Soviet Union as a comparable nuclear power, asking only a strategic sufficiency on

²¹Melvin R. Laird, cited in Endicott and Stafford, eds., American Defense Policy, p. 81.

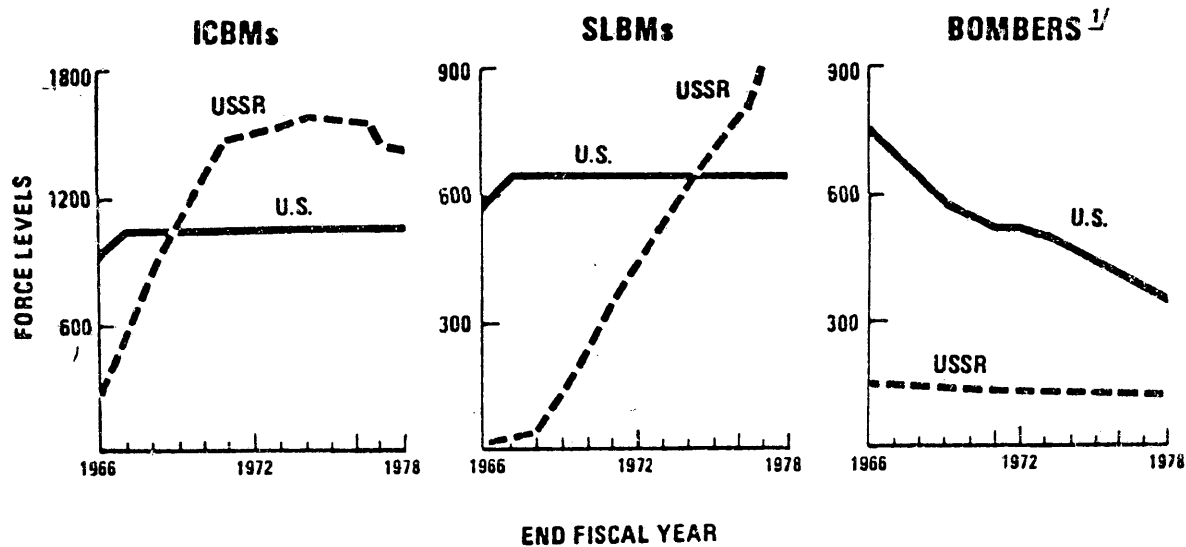
²²Ibid.

the part of the United States,²³ and it incorporated the doctrine of Tactical Nuclear Warfare into its calculations of military and political flexibility. The latter is the concern of this essay. Why did TNW achieve higher status in the Nixon Administration than in the administrations of Eisenhower, Kennedy, or Johnson? Why was 1972 so different from previous years in terms of nuclear strategy? What had happened to facilitate a more welcome response from strategists and policy makers to TNW?

Perhaps the basic cause of the shift toward Tactical Nuclear Warfare as a doctrine for theatre conflict was the rise of Soviet capability. With the United States heavily involved in Vietnam for the better part of a decade, the Soviet Union capitalized on the on the opportunity to make marked improvements in its strategic posture (see Figure A). The leveling off of U.S. ICBM and Submarine-Launched Ballistic Missile (SLBM) deployments illustrates the earlier doctrine of Assured

²³Strategic sufficiency was predicated upon fulfilling the following the following criteria: (1) Maintaining an adequate second-strike capability to deter an all-out surprise attack on U.S. strategic forces; (2) providing no incentive for the Soviet Union to strike the United States first in a crisis; (3) preventing a grave imbalance in strategic forces; and (4) defending against damage from small attacks or accidental launches.

FIGURE A*
CHANGES IN U.S./U.S.S.R. STRATEGIC LEVELS



^{1/} FB-111 and BACKFIRE are excluded.

*Source: Department of Defense Annual Report, FY 1979
 (Washington, D.C., 1978).

Destruction as well as Nixon's doctrine of strategic sufficiency. Deployment of strategic weaponry was to be only at that level which guaranteed the destruction of a viable Soviet society, i.e., an arbitrary percentage of population and military-industrial capacity. As can be seen in the chart, there was even a substantial reduction of the U.S. bomber force, long the foundation of American deterrence. But Soviet deployment of both conventional and nuclear weapons continued to increase until the Strategic Arms Limitation Treaty (SALT I) Agreement of May, 1972 which established deployment ceilings for ICBMs, SLBMs, and strategic bombers.

Be that as it may, after involvement in Vietnam came to an end, the United States found itself at a serious conventional disadvantage in the European theatre. In addition to growing Soviet strategic and conventional capability, it also found itself confronted by ever growing Soviet tactical nuclear forces. Within this context, it is possible to explore TNW as a doctrine. What did it hope to accomplish? What was its purpose? And how was it received critically?

While Nixon and Laird introduced a more developed concept of TNW than had previous defense spokesmen, it was Secretary of Defense James L. Schlesinger who attempted to transform the concept into strategy, giving TNW specific definition. This involved, basically, a change in targeting doctrine, or exactly where missiles are to be sent, in what force, and under what circumstances. Whereas McNamara had addressed targeting doctrine early on in the Kennedy Administration,²⁴ it was only as a part of Assured Destruction. McNamara's counter-force strategy involved a more selective procedure in targeting strategic forces than Eisenhower's policy of massive and arbitrary strikes on Soviet sites. The

²⁴See R. McNamara, from an address given at Ann Arbor, Michigan, 16 June 1962, in Department of State Bulletin 47:1202 (9 July 1962): 64-69.

purpose of counterforce strategy was to give body to nuclear military strategy in case a general war became a reality. It was thought that nuclear targeting in an atomic exchange should be no different from strategic bombing in World War II where the object of targeting was less to intimidate the enemy by inflicting unacceptable losses than neutralization of its military-industrial capacity.

Schlesinger introduced a new form of counterforce strategy to allow the military greater flexibility in a nuclear exchange. It was the recognition that deterrence might fail and that conflict between the superpowers might ensue which led to this assessment. If a war had to be fought perhaps it could be fought in a limited way. If there was available to the military flexibility in their response to aggression, then perhaps the level of nuclear exchange could be regulated, short of massive retaliation.

What the change in targeting doctrine does is give the President of the United States the option of limiting strikes down to a few weapons. It would be understood that, if the United States were to strike the Soviet Union in response to some hypothetical act

on their part, this would not have to be a massive response.²⁵

The creation of more military options in a nuclear exchange could, in turn, create more political options. Certainly, the possibility of a limited nuclear response to Soviet theatre aggression would be perceived by the Soviets as more credible than an uninhibited nuclear exchange. Hence, "the effect of the emphasis on selectivity and flexibility. . . would be to improve deterrence across the spectrum of risks."²⁶

Tactical Nuclear Warfare, then, appealed to strategists for a variety of reasons. Since the possibility of a nuclear war could not be denied, the President must never be limited to a choice between acquiescence to an aggressor, or exhausting America's nuclear arsenal in an exchange. "Since there is a great uncertainty about how a nuclear war might start, response should be available to deal with a wide range of possibilities."²⁷

²⁵James R. Schlesinger, in report to the Subcommittee on Arms Control, International Law and Organizations of the Committee on Foreign Relations, in U.S.-U.S.S.R. Strategic Policies, 93rd Congress, 2d Session, 4 March 1974, p. 106.

²⁶Ibid., p. 105.

²⁷Ted Greenwood and Michael L. Nacht, "The New Nuclear Debate: Sense or Nonsense?" Foreign Affairs (July 1974): 765.

Tactical nuclear weapons of a low-yield nature,²⁸ placed contiguously in strategically vital areas permit a maximum of counterforce capability.²⁹ Low-yield weapons permit the targeting of military-industrial sites without an inordinate population kill. Hence, nuclear exchange could be kept almost entirely at a military-industrial level, and strategically contiguous weapons (Forward Based Systems) would increase the accuracy of TNF used. Thus, a combination of low-yield weapons and a high degree of accuracy would contribute to a more controlled targeting and, it was hoped, a more controlled exchange. Needless to say, a more controlled exchange would enhance credibility and deterrence. (It would do well to note that this point had been made by some scholars in the late fifties and the sixties-- Brodie, Kissinger, Kahn, Wolfers-- but policy is rarely a contemporary of theory.)

²⁸Low-yield nuclear weapons might be defined as those weapons with an explosive power of 30 kilotons (30 thousand tons equivalent TNT) which, upon detonation, produce effects which remain in the lower atmosphere and are thus entirely local.

²⁹Counterforce capability is defined as that capability to destroy military industrial sites. Countervalue capability involves only civilian targets, i.e., cities.

Another concern expressed by proponents of TNW was the fact that the Soviets were acquiring greater depth in their tactical nuclear forces. If the Soviet Union were to initiate tactical nuclear war, would the United States be able to respond at a level commensurate with Soviet use? That kind of capacity, Schlesinger noted, would have to be accompanied by appropriate training in Tactical Nuclear Warfare use as well as the planning in anticipation of the difficulties involved.³⁰ Schlesinger further warned that it was not a wise strategy to delay considerations of TNW until pressed by circumstances.

Rather one should think through the problems in advance and put together relevant, small packages which a President could choose under the circumstances in which they might be required.³¹

The failure to acquire a TNW capability which could adequately meet a Soviet first use would result in a serious military disadvantage in the field, and perhaps make unavoidable an escalation to the level of general war. For example, if Soviet forces utilized tactical nuclear weapons in a European theatre conflict,

³⁰James Schlesinger, in Report to the Subcommittee on Arms Control, U.S.-U.S.S.R. Strategic Policies, p. 107.

³¹Ibid.

selectively neutralizing military targets (communication, bridges, supply railways, and TNF storage areas) while sparing civilian population by use of low-yield weaponry, could the United States respond in kind? If not, there would be several unpleasant options from which to choose. Beginning with the assumption that NATO's nuclear stockpiles have all but been destroyed by Soviet counterforce strategy, the options for NATO are to (1) acquiesce in Soviet gains; (2) continue to fight a conventional war; (3) resort to the use of what TNF was left after Soviet counterforce strikes; and (4) launch strategic weapons in response, due to the lack of an effective TNF doctrine of use. The first two options can be labeled as unequivocal defeat. The third seems, at best, weak, and would simply be a defensive response well after Soviet gains had been consolidated. The last option can be seen as self-defeating and a return to the dilemma of Massive Retaliation. Nuclear suicide for the United States would simply not be a rational response for the loss of X amount of European territory. Without a capability for TNW, the first option (acquiescence) would seem the only reasonable alternative. The second would leave NATO forces at a gross disadvantage; the third would

be a late reaction, ineffective due to damage incurred by Soviet counterforce strategy; and the fourth would be suicidal.

Strategists for a TNW capability, therefore, argued the necessity for a doctrine of nuclear weapons use. Such a doctrine would supply U.S. and allied forces with TNW options from which political and military leaders could choose as the exigencies of conflict demand.

There were, however, several criticisms of selective targeting, tactical counterforce strategy, and TNW doctrine in general. Simply because Schlesinger, as Secretary of Defense, introduced a targeting doctrine which encouraged flexible response with nuclear weapons in a theatre conflict did not assure the broad implementation of TNW as military doctrine. There were politicians at home and allies abroad who had to be convinced of the wisdom of TNW, and the problems involved could properly be regarded as substantial.

There was the fear that "as nuclear war becomes more manageable, it also becomes more likely."³² It is true that to use low-yield, strategically contiguous tactical nuclear weapons might make the exchange of

³²Greenwood and Nacht, "The New Nuclear Debate," Foreign Affairs, p. 766.

such weaponry more manageable. Because a more definite control of weapons can be attained with TNF, strategic objectives can be better implemented. All of this, theoretically, makes a tactical exchange quite "safe" in the sense that there is a low probability of escalation to general war. The capacity to fight TNW seems a major plus in creating a myriad of options, both of a political and military nature. But might the mere presence of a great number of "safe" options encourage their use? Might a capability for TNW guarantee its place on the battlefield? Indeed, might the very fact that one power is developing a TNW capability force the other power to consider it more seriously as a military doctrine? In short, "as the use of nuclear weapons becomes more thinkable, it also becomes more acceptable."³³ It is, after all, the uncertainty involved in calculations of any nuclear exchange which should provide a deterrent against their use. When the use of TNF becomes a military art of precision and an effective counterforce strategy, then predictability of nuclear exchange becomes a reality and the uncertainty involved in deterrence fades, thus making Tactical Nuclear Warfare more probable.

³³Ibid., p. 766.

Another, more profound, criticism is that TNW as a military doctrine is not possible at all. It can only be the initial stage in an escalation toward general war. Consider the scenario: Theatre conflicts emerge in Europe and the Middle East. Warsaw Pact troops make a conventional push into the Federal Republic of Germany while Soviet surrogates precipitate armed conflict against Israel and interfere with petroleum deliveries both to Israel and the United States. The U.S. decides to respond with Tactical Nuclear Warfare in Europe-- low-yield, accurate counterforce strikes-- to alleviate military disadvantage for NATO forces and at the same time send a warning signal to hostile forces in the Middle East. It would be hoped that such a display of TNF would show the resolve on the part of the West to resist aggression, and the willingness to escalate if necessary. Theoretically, the possibility of escalation is enough of a deterrent to at least prevent further aggression and to perhaps stabilize the situation. But the question remains: Will the Soviet Union perceive correctly the intricacies of strategy involved in the U.S. response, or, rather, will they view it as the first stage in an attempted American effort to neutralize Soviet

power by strategic exchange? They will then respond, accordingly, by launching ICBMs? Thus there is the problem of distinguishing between TNW and general war.

The above scenario illustrates the problem of a mutual understanding with regard to the use of TNF. There may simply be none. For example, there is no agreement between the United States and the Soviet Union (or any other nuclear powers for that matter) as to what criteria exist for determining a proper target for tactical nuclear weapons. Or, indeed, there is no understanding as to what constitutes a tactical nuclear weapon. Is it a weapon with 20 kilotons of force? 50 kilotons? 100 kilotons? Can it be launched from a location far removed from the theatre, a submarine for example? Should TNF be measured by range, power, or by effect? Even if there is agreement on exactly what a tactical nuclear weapon is, can the belligerents limit destruction with their use in a manner commensurate with the limited objectives of the conflict? If not, escalation is very probable.³⁴

The potential problems posed by TNW have led to an ambivalence on the part of policy makers in incorporating

³⁴See Robert E. Osgood for an exposition on the problems associated with TNW, particularly the problem of mutual definition between belligerents, in Limited War: The Challenge of American Strategy (Chicago: The University of Chicago Press, 1957).

its tenets into military strategy. For Americans, the use of TNF portends escalation and unimaginable destruction to the United States, and for what? Control of the Rhine or the Ruhr? NATO members in Europe are also understandably anxious about TNW doctrine, even more so than Americans. Any implementation of TNW will more than likely take place within their territory. And yet there is a realization among both Americans and their allies that, in Europe, Warsaw Pact forces greatly outnumber their NATO counterparts, and elsewhere Soviet military activity is at an unprecedented level of deployment. Not only is Soviet conventional power a challenge, but Soviet TNF is substantial, confronting the allies with the most unpleasant of possibilities should war occur. In addition to a general ambivalence toward TNW then, there is also the desire to have available the military flexibility and political options which possession of a doctrine of use would offer.

As Kissinger would say, "We thus return to the basic problem of limited war in the nuclear age: where to strike the balance between the desire for posing the maximum threat and the need for a strategy which does not paralyze the will."³⁵ The remainder of the thesis

³⁵Henry Kissinger, Nuclear Weapons and Foreign Policy, p. 191.

will deal with current United States TNW doctrine as expressed by the Carter Administration and will consider how well it confronts the problem of relating nuclear power to diplomacy and military strategy, particularly in theatre considerations. An examination of the strategy and tactics of tactical nuclear war will provide the conclusion.

In current TNW doctrine, as expressed by the Carter Administration, there is no deviation from the pattern of U.S. nuclear weapons policy historical development. First and foremost, there is the goal of deterring a Soviet first-strike against the United States. This is done by retaining "the capability at all times to inflict an unacceptable level of damage on the Soviet Union, including the destruction of a minimum of 200 major Soviet cities."³⁶ The current policy of Mutual Assured Destruction (MAD) to deter a first-strike is consistent with earlier doctrines of Massive Retaliation and Assured Destruction in that it assumes that making the costs of a first-strike exceed its benefits will deter a rational adversary.

The mainstay of MAD is the concept of Essential Equivalence; that the United States possess a nuclear strike power roughly equal to that of the Soviet Union.

³⁶Secretary of Defense Harold Brown, cited in Department of Defense Annual Report, Fiscal Year 1979 (Washington, D.C.: Government Printing Office, 1978), p. 55.

This concept is not far removed from the sufficiency doctrine posited by the Nixon Administration. According to Secretary of Defense Harold Brown, Essential Equivalence serves four major purposes. "It helps to ensure that political perceptions are in accord with the military realities. . . ; it minimizes the probability that opposing strategic forces will be used to seek any diplomatic advantage; it reduces the chance that one side or the other will become vulnerable to charges of a bomber or missile gap. . . .," thereby contributing to strategic stability in a crisis by reducing the incentives for either side to strike first or pre-empt; and it provides a stable framework through which to effect arms reduction.³⁷ Essential Equivalence is the guarantee that the United States will possess a second-strike capability³⁸ with regard to the Soviet Union, thus deterring general war. As Brown suggests, by requiring that the United States possess an essentially

³⁷Ibid., pp. 56-57.

³⁸A second-strike capability is that capability which permits a nation to absorb a nuclear attack and have sufficient nuclear weaponry left to respond with an attack of its own which will exact a comparable degree of destruction on the aggressor.

equivalent nuclear capability vis-a-vis the Soviet Union, perceptions of strategic inequality which may encourage first-strike attempts are discouraged.

Under Carter, TNW doctrine remains basically the same as when expressed by Laird and Schlesinger. TNF is maintained "to complement and provide a link between conventional and strategic nuclear forces."³⁹ That is, tactical nuclear weapons are envisaged as providing options between conventional defeat and nuclear holocaust. The United States "must not be committed to a single, inflexible war plan."⁴⁰ Theatre nuclear weapons, in the Carter Administration, are thus given a role similar to the role given them by Nixon. In a time of crisis a TNF capability will present alternatives of flexibility to the decision maker. But, more importantly, TNF capability represents a more credible deterrent than strategic capability to Soviet theatre aggression. "TNFs are intended to deter theatre nuclear attacks in conjunction with conventional forces. . . ."⁴¹ This observation introduces a very significant point in the development of TNW doctrine.

³⁹Brown, DOD Annual Report, FY 1979, p. 130.

⁴⁰Ibid., p. 42.

⁴¹Ibid., p. 130. Also see Secretary of State Cyrus Vance before the Royal Institute for International Affairs, London, in Secretary of State (Washington, D.C.: Bureau of Public Affairs, 1978).

In retrospect, the history of U.S. nuclear weapons policy reveals two lines of development. The most consistent of these, from Eisenhower to Carter, has been the Massive Retaliation concept of deterrence. This has remained in one form or another and has differed from one administration to the next only in estimations of what it could accomplish. Under Eisenhower, it was believed that Massive Retaliation could deter any act of aggression anywhere. Assured Destruction, it has been shown, still guaranteed the massive response of nuclear exchange, but only if confronted by the threat of a Soviet first-strike. It recognized the limits of massive buildups of nuclear stockpiles, as well as what a massive response doctrine could deter. Strategic Sufficiency and Essential Equivalence are both predicated upon the strategy of a massive U.S. nuclear response to a Soviet first-strike, albeit the targeting of such response had been refined to include greater counterforce capability. The 1970s have seen the inclusion of targeting flexibility in calculations of how massive a nuclear response should be. But the essential mission of U.S. strategic forces continued to be measured by its massive destructive capability.

A second line in nuclear weapons policy has been that of flexible response. Recognizing the failure of Massive Retaliation in deterring acts of aggression lesser in magnitude than a first-strike against the United States, policy makers moved toward creating a more credible response to non-nuclear aggression. McNamara implemented programs which enhanced American conventional forces, and saw these forces as the answer to U.S. impotency in taking forceful action around the world short of nuclear exchange. However, as Soviet strategic and tactical capability grew during U.S. involvement in Southeast Asia, post-Vietnam administrations have seen the need to incorporate Tactical Nuclear Warfare in theatre scenarios. The significance of this move, however, lies not in the move itself, but in how TNW doctrine has been incorporated in U.S. nuclear weapons policy.

In The Absolute Weapon: Atomic Power and World Order,⁴² Bernard Brodie and Arnold Wolfers suggested that, whereas in the past, before nuclear weapons, the purpose of U.S. military doctrine had been to win wars,

⁴² Bernard Brodie and Arnold Wolfers, eds., The Absolute Weapon: Atomic Power and World Order (New York: Harcourt, Brace and Company, 1946).

in the future, it must be to avert them, to deter them. Indeed, the consistency involved in strategic thinking throughout U.S. post-War history well reflects this shift. As has been noted, Massive Retaliation, Assured Destruction, Strategic Sufficiency, and MAD all share the common theme of deterrence. Furthermore, the shift in strategic thought from winning wars to deterring them has involved all facets of warfare, including conventional and tactical nuclear forces.

When McNamara emphasized the shoring up of America's conventional posture, it was for the purpose of meeting small-scale military threats which could not be met with strategic nuclear weapons, for example, guerrilla wars, East-West border skirmishes (perhaps Berlin), and possibly more intense conventional conflicts. Tactical nuclear weapons were valued primarily with respect to their role as a deterrent in U.S. theatre strategy, supplementing the strategic nuclear umbrella. How "an effective tactical nuclear capability was essential to . . . overall strategy"⁴³ was at best an ambiguous matter for the Kennedy Administration.

⁴³Robert S. McNamara, The Essence of Security, p. 69.

In addressing the Senate Subcommittee on Arms Control on the topic of targeting strategy and the role of limited/tactical nuclear war, Secretary Schlesinger stated that, to the extent they make "the possible use of U.S. strategic forces more credible, (TNFs) have a beneficial effect on deterrence."⁴⁴ Confronted by increasing Soviet tactical and conventional forces (particularly in Europe), the Nixon Administration was concerned about how to deter aggression which the Soviets might directly or indirectly encourage because of perceiving post-Vietnam America as restrained by domestic forces. The shift toward considering TNW more seriously is understandable given the context of a debilitated United States, its strength sapped by years of involvement in Southeast Asia. It was hoped that the possibility of TNW, if allied conventional forces were challenged by an adversary, would deter the challenge from proceeding beyond the initial stage. Furthermore, given the recent growth of Soviet TNF capability, the mere possession of tactical nuclear weapons was seen as the absolute minimum in the maintenance of deterrence. Harold Brown, for example, states that "U.S. theatre nuclear forces

⁴⁴Schlesinger to Subcommittee on Arms Control, U.S.-U.S.S.R. Strategic Policies, p. 108.

have a symbolic importance that transcends their direct military value."⁴⁵ Brown continues:

There is no evidence that nuclear firepower can substitute for the other elements of a conventional capability. . . . Nonetheless, the TNFs play a vital role in our overall posture of deterrence and collective security.⁴⁶

Tactical Nuclear Warfare, then, has been considered by successive administrations since Eisenhower, but within the framework of deterrence. Theoretically, the possible use of TNW in theatre conflict has been credited with providing more options to policy makers, options between the extremes of acquiescence and exhaustive nuclear exchange. But even the possibility of use has been valued only as a deterrent, not as a first-use weapon of war. In a review of the relevant literature it is difficult to find assessments of the military value of TNW. Dominating any discussion of TNF use is the concept of deterrence. Glenn Snyder accurately notes that "deterrence in war is most sharply illustrated in proposals for a strategy of limited retaliation, in which initial strikes, in effect, would be threats of further strikes to come, threats designed

⁴⁵Harold Brown, DOD Annual Report, FY 1979, p. 68.

⁴⁶Ibid., p. 67.

to deter the enemy from further fighting."⁴⁷ Thus, TNF has been related to diplomacy and military strategy as a bargaining chip, an equalizer in the game of deterrence, and TNW doctrine is a card between the bluff of massive retaliation and the folding of U.S. forces during a crisis. It is a card which should force the opponent to pursue a cautious game because he knows that it can be played at any moment. Furthermore, it is a card which should deter a game-winning risk.

The question with which this study deals, however, is "Can the incorporation of TNW doctrine into strategic considerations as a deterrent force, rather than as a military weapon of first-use, actually be effective in deterring aggression?" That is, if the enemy assesses U.S. TNF capability as purely symbolic, as being entirely for the purpose of deterrence calculations as opposed to actual use, then will the enemy be deterred? The role of TNW as a deterrent force in U.S. military doctrine may prove to be counterproductive in that its value, measured only as an element in calculating deterrence could devalue its credibility as a useable tactic. The fact that TNW has not been seriously considered

⁴⁷Glenn H. Snyder, "Deterrence and Defense: A Theoretical Introduction," in Endicott and Stafford, eds., American Defense Policy, p. 43.

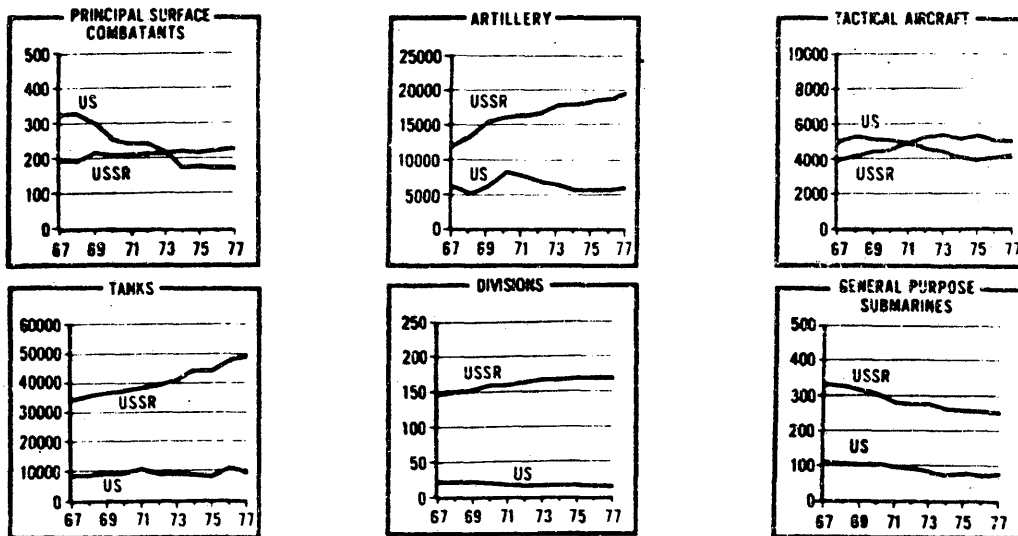
as a viable doctrine may actually encourage Soviet "testing" of U.S. and NATO determination to preserve territorial integrity.⁴⁸ Certainly the risks involved in "testing" are perceived as less if a major component of deterrence loses its value. Put more candidly, is the United States equipped with both the capability and the doctrine to fight successfully a tactical nuclear war? The most effective deterrent to Soviet aggression, or "testing", is bound to be an affirmative response with regard to both capability and doctrine.

⁴⁸"Testing" can be defined as the creation of scenarios in which the potential of conflict exists. For example, Soviet inspired trouble in Berlin, or, in a bolder move, a NATO-Warsaw Pact border crisis.

VI

When asked about Soviet intentions in challenging the United States on a variety of fronts, General Alexander Haig, Jr., former Supreme Allied Commander, Europe, stated that intentions were vague, not amenable to measurement; that capability was the source of concern.⁴⁹ Indeed, in measurements of Soviet capability and doctrine of use there is substance to the belief that the U.S.S.R. is actively challenging the U.S.A. Conventionally, the U.S.S.R. possesses a clear advantage over the United States (see Figure B).

FIGURE B*
US/USSR GENERAL PURPOSE FORCE TRENDS (1967-1977)
(END OF FISCAL YEAR)



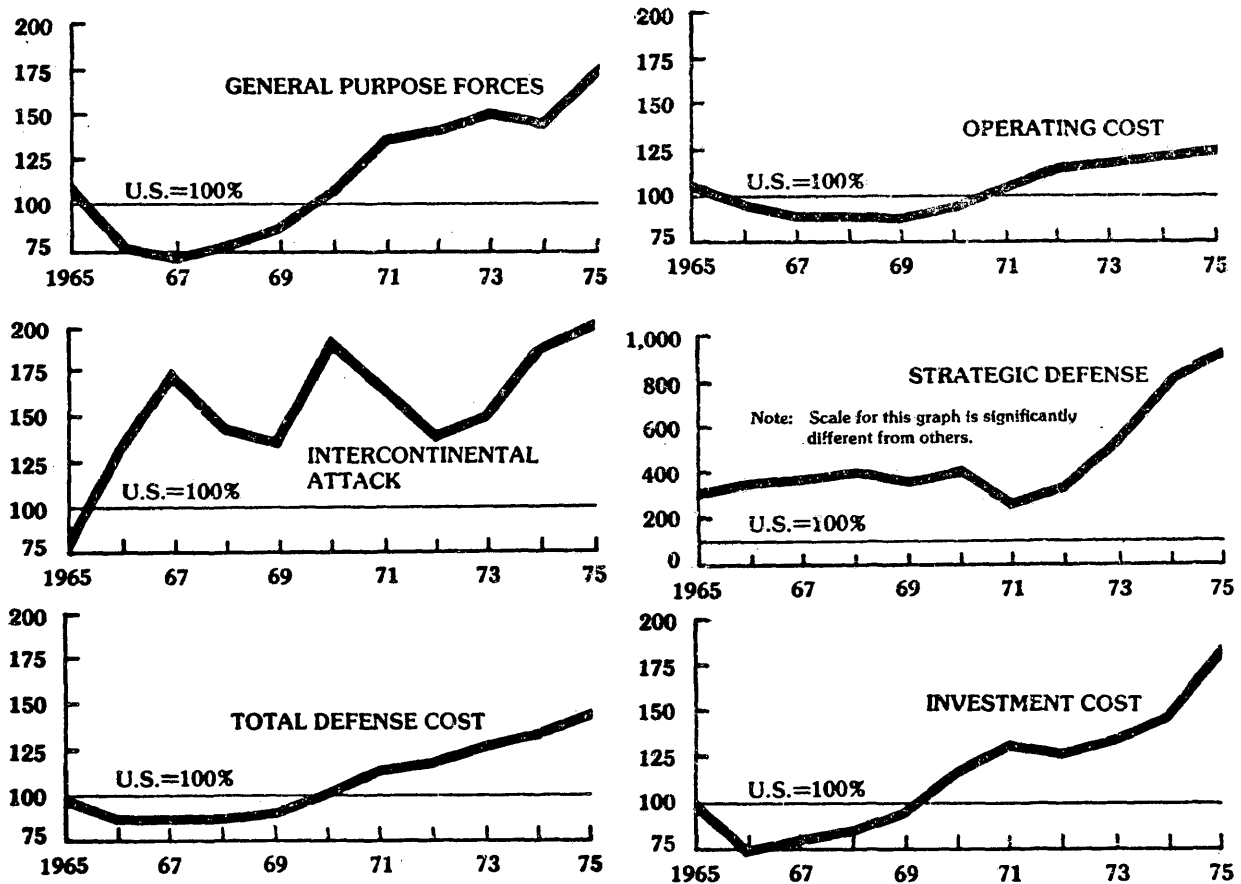
*Source: Department of Defense Annual Report, FY 1979 (Washington, D.C., 1978).

⁴⁹See James Flowers, "General Alexander Haig, Jr.: Keeping NATO in Shape," The Saturday Evening Post (February 1979): 53.

In terms of tanks, divisions of troops, artillery, tactical aircraft, and surface/subsurface combatants, the Soviet Union deploys almost twice what the U.S. deploys. Also, by the most recent American intelligence estimates, defense outlays of the Soviet defense establishment are clearly outstripping U.S. efforts (see Figure C). The Soviet strategic and tactical nuclear

FIGURE C

Dollar Cost of Soviet Programs as a Percent of US Defense Expenditures*



Source: Central Intelligence Agency, SR 76-10053, February 1976
A Dollar Comparison of Soviet and U.S. Defense Activities,
1965-1975.

capability is a respectable one, but so too is the capability of the United States (see Figure D). If a tactical nuclear war becomes a reality, numerical capability will not be the issue.⁵⁰

What most certainly will weigh in the balance of forces is the doctrine pertaining to the use of TNF. Secretary Brown was cited earlier as emphasizing the symbolic importance of U.S. tactical nuclear forces to America's allies-- an importance which transcends their military value because "there is no evidence that nuclear firepower can substitute for the other elements of a conventional capability."⁵¹ A question to ask would be whether or not the Soviets share the U.S. policy makers' perceptions of TNW capability as solely or primarily of symbolic and deterrent value. The answer seems to be a resounding "No."⁵²

⁵⁰In his report to Congress, United States Military Posture for FY 1979, General George Brown, former Chairman-- Joint Chiefs of Staff, stated that "the current inventory of U.S. tactical nuclear weapons is becoming obsolete and requires modernization. Many weapons now available reflect technology of the 1950s and 1960s." He concluded by saying, however, that "improvements are being made." p. 88. Of course, the analyst must consider the source, as Brown has a case to make for DOD's budget.

⁵¹See Brown, DOD Annual Report, FY 1979, p. 68.

⁵²Admittedly, there is a problem with the availability of Soviet policy and doctrinal statements on TNW. The mainstream of thought on this matter comes primarily from Soviet military journals and publications, which do not necessarily reflect official government policy.

A survey of Soviet literature substantiates Colonel Graham D. Vernon's observation that "the Soviets consider the advent of nuclear weapons as a watershed in the history of military development and emphasize the war-fighting rather than deterrent value of these weapons."⁵³ As Vernon notes, most articles in Soviet military journals assume a nuclear environment and give much attention to a doctrine of use.⁵⁴ Little or no consideration is given TNW as an element of deterrence.

This is, of course, in contrast to U.S. and NATO TNW policy. For example, NATO's doctrine of TNF use is to delay their employment in theatre conflict until the last

⁵³Colonel Graham D. Vernon, "Soviet Options for War in Europe: Nuclear or Conventional?" Strategic Review (Winter 1979): 60. Some of the literature which can be used to examine recent Soviet thought on TNW: The Offensive: A Soviet View (Translated and Published under the Auspices of the United States Air Force); Selected Soviet Military Writings, 1970-1975 (Translated and Published under the Auspices of the United States Air Force- U.S. Government Printing Office, 1976). Also, see fn #54 below for specific Soviet books and articles on TNW.

⁵⁴See specifically I.G. Zav' yalov, "The New Weapon and Military Art," in Selected Soviet Military Writings, 1970-1975 (cited above); A.A. Grechko, On Guard Over Peace and the Building of Communism (Moscow: Voenizdat, 1971); N.A. Lomov, Scientific Technical Progress and the Revolution in Military Affairs (Moscow: Voenizdat, 1973); V. Ye Savkin, Basic Principles of Operational Art and Tactics (Moscow: Voenizdat, 1972); Marshal A.A. Grechko, Armed Forces of the Soviet States (Moscow: Voenizdat, 1975).

FIGURE D*

U.S. AND USSR STRATEGIC FORCE LEVELS

	1 JAN 1978		END FY 1978		
	U.S.	USSR	U.S.	USSR	
OFFENSIVE					
OPERATIONAL ICBM LAUNCHERS ^{1,2/}	1054	1400+	1054	1400+	^{1/} Includes on-line missile launchers as well as those in construction, in overhaul, repair, conversion, and modernization.
OPERATIONAL SLBM LAUNCHERS ^{1,2,3/}	656	900+	656	900+	^{2/} Does not include test and training launchers, but does include launchers at test sites that are thought to be part of the operational force.
LONG-RANGE BOMBERS ^{4/}					^{3/} Includes launchers on all nuclear-powered submarines and, for the Soviets, operational launchers for modern SLBMs on G-class diesel submarines.
OPERATIONAL ^{5/}	349	140	347	140	^{4/} Excludes, for the U.S.: 3 B-1 prototypes and 68 FB-111s; for the USSR: Backfire
OTHERS ^{6/}	225	0	225	0	^{5/} Includes deployed, strike-configured aircraft only.
VARIANTS ^{7/}	0	120	0	120	^{6/} Includes, for U.S., B-52s used for RDT&E, other miscellaneous purposes and those in reserve, mothballs or storage.
FORCE LOADINGS ^{8/}					^{7/} Includes, for USSR, Bison tankers, Bear ASW aircraft, and Bear reconnaissance aircraft. U.S. tankers (641 KC-135s) do not use B-52 airframes and are not included.
WEAPONS	9000	4000+	9000	4500	^{8/} Total force loadings reflect those independently-targetable weapons associated with the total operational ICBMs, SLBMs, and long-range bombers.
DEFENSIVE ^{9/}					^{9/} Excludes radars and launchers at test sites or outside CONUS.
AIR DEFENSE SURVEILLANCE RADARS	57	6500	57	6500	^{10/} These numbers represent Total Active Inventory (TAI).
INTERCEPTORS ^{10/}	324	2600	330	2600	^{11/} These launchers accommodate about 12,000 SAM interceptors. Some of the launchers have multiple rails.
SAM LAUNCHERS ^{11/}	-	10,000	-	10,000	
ABM DEFENSE LAUNCHERS ^{2/}	-	64	-	64	

*Source: Department of Defense Annual Report, FY 1979
(Washington, D.C., 1978).

possible moment. Rather than accept defeat, NATO will employ nuclear weapons. But their primary value is seen as a deterrent to the outbreak of hostilities. The basic strategy in case of Soviet aggression in central Europe is to withstand the offensive thrust as long as possible utilizing conventional capability. The allies possess sufficient reserve and supply power to stem the tide of battle in the long-run, but if NATO forces are not able to prolong the conflict without suffering a ready and quick defeat by the Soviet blitzkrieg capability, then they will resort to TNF use on a selective scale, primarily to threaten escalation, thereby

hoping to deter further aggression. Also, this delayed first use puts the responsibility of escalation squarely on the Soviet Union. If the logic of deterrence is sound, a conflict between East and West in this scenario would stabilize due to risk of escalation.

Current American TNW doctrine, however, presupposes that the Soviets measure nuclear exchange by the same indices as do the Americans; that is, through a calculus of deterrence. As noted above, Soviet military literature indicates that this is not the case. At the First Nuclear War Conference held in Washington during the spring of 1979, Admiral J.T. Hayward charged that American strategists "have long labored under the persistent illusion that tactical nuclear weapons would not be employed by the U.S.S.R. because of the fear of a nuclear exchange. This is not a valid assumption. They will be employed where and when the Soviets determine it will be in their interest."⁵⁵ The seemingly obvious statement to make at this point is that the use of nuclear weapons is not in the interest of the Soviet Union due to possible escalation; that regardless of the potential benefits of aggression, their use can never outweigh the potential costs involved.

⁵⁵J. T. Hayward, "How a Nuclear War Would Be Fought," The Bulletin of the Atomic Scientists (May 1979): 26.

This line of deterrent reasoning is the significant fallacy of U.S. TNW doctrine. Measurements of possible conflict and TNF exchange between the U.S. and its allies and the Soviet Union and its allies continue to take place within the context of deterrence. Certainly it can be argued that the myriad of risks that an aggressor would run in precipitating war would, in all probability, deter precipitation. But such assessments are sterile, excluding the real world of conflict possibilities. War is not always the product of nation A consciously and deliberately initiating conflict with nation B. Often, conflict can be cumulative, a product of unforeseen events; it can be spontaneous, an overreaction to a completely fortuitous incident. Whatever the cause, once conflict becomes a reality, questions of risks and benefits can no longer be measured within the context of a deterrent situation.

For example, in a scenario of European theatre war there are several incentives inducing Soviet first use of TNW. Given the Blitzkrieg capability of Warsaw Pact conventional forces (structured for a timely and successful massive attack, which deemphasizes supply and reserve networks), a short war will favor Pact forces while a protracted one will work to their disadvantage.

In conjunction with declaratory doctrine that the early employment of TNF will yield decisive military advantages, Soviet consideration of the time factor seems to imply that nuclear war will be much shorter in length than a conventional one and, therefore, preferable. In other words, the risks of engaging in prolonged conventional warfare with NATO are higher than risks of escalation in effectively employed Tactical Nuclear Warfare.

Another problem for the Soviets in conducting a conventional war can be termed geopolitical. As one student of Soviet military strategy has put it, "the Soviets are well aware that the loyalties of the peoples of (Warsaw Pact) countries are thin, and that a prolonged war could create serious problems, particularly given the the location of these countries astride the logistic lines of Soviet forces."⁵⁶ Past revolts in Hungary and Czechoslovakia serve as constant reminders to the Soviets of their occupation status. And, of course, there is the threat that a prolonged Soviet involvement in theatre war will increase the probability of the Chinese exploiting the situation for irredentist reasons.

⁵⁶G.D. Vernon, "Soviet Options for War in Europe," Strategic Review, p. 62.

A two-theatre war is not a situation that the Soviet Union, or any other country, desires. There is also the consideration of NATO theatre nuclear deployment should NATO be on the losing end of a military engagement. Why give the NATO forces the opportunity to employ TNF first, thereby possibly surrendering an important military advantage? Why allow NATO the critical decision of how much TNF to employ and where it is to be targeted, hoping that the strike is not a pre-emptive one and that there will be sufficient Soviet TNF remaining to effect a counterstrike?

This scenario serves to illustrate how calculations of risks and benefits may change according to the situational context. In a theatre scenario of non-conflict, tactical nuclear forces indeed serve to deter the precipitation of conflict; the deterrent value is high. But in a conflict scenario, at least for the Soviet Union, the value of TNF assumes military dimensions which supersede those of deterrence. Soviet TNW doctrine is one of use in this context, and the recognition of TNF deterrent value drops. The shift in calculation is to how the enemy's nuclear force will be employed, and this calculation will determine what steps toward an actual engagement in theatre warfare will be taken.

VII

If the above analysis of U.S. TNW doctrine is correct, then American strategists and policy makers have failed to make a crucial distinction in their assessment of tactical nuclear force. It has been concluded that while the United States possesses a substantial tactical nuclear inventory, it lacks a doctrine of military use. That is, there has been no substantive effort on the part of the U.S. defense establishment to incorporate TNF use into military doctrine as a weapon to be used in armed engagement-like any other weapon of war. And, it was noted, this is because nuclear weapons thinking has evolved solely within the framework of deterrent strategy.⁵⁷ TNFs have been accorded a value only in so far as they figure in calculations of deterrence.

⁵⁷Carl H. Builder, an analyst with the RAND Corporation, makes much the same point in suggesting that "the cumulative effects of the Assured Destruction ethic upon our strategic thinking" is that "counterforce capabilities are to be eschewed. . . as being the fuel of an arms race and the hairtriggers of instability." "Why not First-Strike Counterforce Capabilities?" Strategic Review (Spring 1979): 34. The "Assured Destruction ethic" has also had a profound impact upon the increasing counterforce capability (and doctrinal development) of TNW as well.

It was further suggested that the role of TNF as being of a deterrent value is counterproductive, because the non-recognition of TNF numerical capability as a part of a military doctrine of use is, in actuality, a negation of the capability itself. In enemy calculations of NATO weaponry employment, TNF is not a factor (until the most exacting circumstances materialize) to be considered in offensive arrangements. The negation of TNF capability by the failure to integrate it into a doctrine of use has led to a serious imbalance of forces in theatre situations vis-a-vis the Soviet Union, which, by all indications, accepts tactical nuclear weapons not only as having deterrent value, but war-winning value as well.

As current data on TNF stockpiles indicate (refer above to figure D) the United States enjoys a quantitative advantage over the U.S.S.R. But this study suggests that U.S. TNF capability is more symbolic than real and, thus, is inferior to the TNF capability of the Soviet Union, which emphasizes military use. This seems to imply two distinct types of capability, which will be designated as "Potential Capability" and "Real Capability." Potential Capability can be defined as quantitative supplies

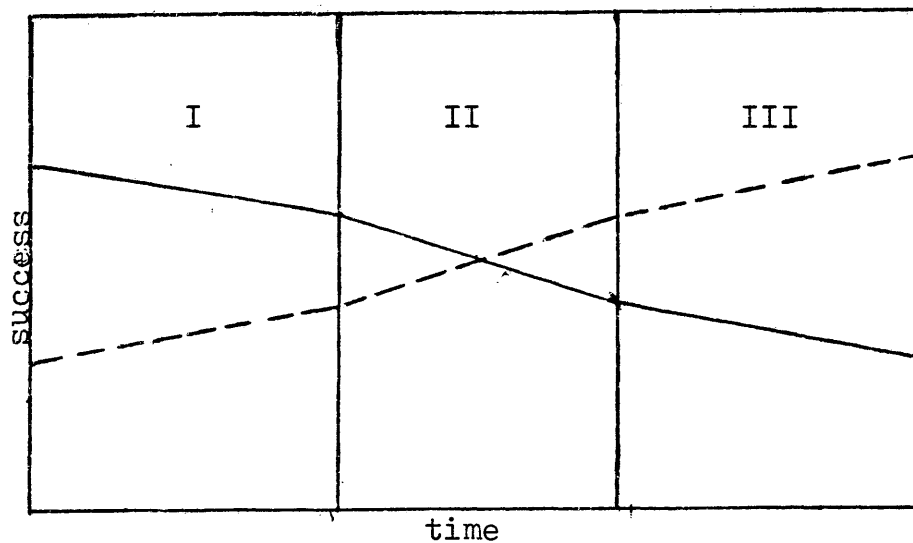
of weaponry which have the potential of being employed. The potential TNF capability of the United States can be measured as 7000+ tactical nuclear warheads; that of the Soviet Union as 4000+. Real Capability, in essence, is defined by the doctrine of weaponry employment adhered to by a nation's strategists. I have made the case that there is at present an imbalance between U.S. and Soviet TNF Real Capability, due primarily to the lack of a comparable U.S. military doctrine of battlefield use with that of the Soviet Union.

The current imbalance of TNF Real Capability portends several challenges for American strategists. In considerations of deterrence, the failure to give adequate attention to the development of Real Capability has led, and continues to lead, to a deterioration of TNF deterrent value. While it may be true that in non-conflict scenarios (e.g., present NATO/Warsaw Pact status in the European theatre) Potential Capability serves as a sufficient deterrent against the direct precipitation of conflict by either power, should conflict emerge the value of Real Capability becomes increasingly significant in estimations of force employment. That is, how the

Soviets employ their forces and exactly what forces are employed may depend upon estimations of American Real Capability, particularly with regard to tactical nuclear forces. The Soviet Union will in all probability employ tactical nuclear weapons in a theatre conflict simply because they are effective weapons of war, and their first-use guarantees an overwhelming military advantage on the field. And this use can only be further encouraged if Soviet estimates of NATO resistance do not include a serious belief that NATO TNFs will be used initially in the conflict. From a purely military perspective, the temptation to use a decisive offensive weapon while the opponent acquiesces seems overwhelming. Equally important is the point, earlier made, that the Soviets can hardly afford not to employ TNF given their geopolitical problems. A scenario of conventional conflict between NATO and Warsaw Pact forces will serve to illustrate the importance of a United States TNF Real Capability.

Recalling that a theatre war of great duration would result in a negative cost/benefit analysis by Soviet strategists, an inverse relationship can be established between time and success in a conventional war for Soviet and American forces (see Figure E).

FIGURE E



— = soviet conventional force effectiveness.
 ---- = american conventional force effectiveness

In the early stages of a war (I), the Soviets will possess a substantial quantitative force advantage. Victory, however, is not guaranteed by such an advantage. A combination of factors quite outside measurements of conventional capability could produce a stalemate and force the Soviets into stage (II) where the effectiveness of their conventional force decreases. Certainly it is folly to think that the Soviets will continue conventional engagement into stage (III). The brief time spent in stage (II) will constitute a crucial decision making moment for Soviet strategists, particularly with regard to TNF employment. It is not an exaggeration to say that

a comparable U.S. TNF Real Capability will cause carefully measured deliberation among the Soviets in deciding whether or not it is in their interest to employ TNF, and may be the difference between compromise at stage (II), or escalation onto another plane of confrontation- nuclear exchange.

If there is an imperative expressed in this essay, it must be found in the necessity for U.S. strategists to recognize the dual nature of American TNF capability. An examination of TNW doctrine from Eisenhower to Carter has shown that no such recognition exists. The employment of tactical nuclear force has been consistently viewed as a supplement to U.S. deterrent strategy, theoretically providing increased flexibility in crisis policy options, thus serving as a more credible deterrent to aggression. Long ignored has been the distinction between deterrence and military strategy, and the fact that tactical nuclear weapons must be valued within both contexts.

United States tactical nuclear doctrine up to this time, however, has been captive to the concept of deterrence. Various criticisms of TNF use explored earlier on in this essay have precluded serious consideration

of TNW within the context of military strategy. Thus, the paradox of U.S. tactical nuclear weaponry as potentially capable but in actuality impotent, lacking Real Capability. Conversely, Soviet literature and military exercise reveal a substantial level of Real Capability in military doctrine. Without integrating tactical nuclear forces into American military doctrine, the difference in Real Capability between the United States and its chief adversary will continue to persist, perhaps inviting the very consequences that they are meant to deter.

Real Capability of TNF first-use would provide the United States, and NATO, with two things. First, if Soviet estimations of U.S./NATO response to theatre conflict include the immediate use of tactical nuclear weapons, then the risks of any incursion or conflict are compounded. The compounding of risks would supplement the deterrent value of NATO's TNF in both non-conflict and conflict scenarios. Second, and more importantly, should conflict emerge, the NATO forces could utilize nuclear weapons for military advantage. As much as strategists consider the risks of escalation in the use of TNF, it cannot be denied that nuclear weapons are part and parcel of both Soviet and U.S. arsenals. And, they can be decisive in a military conflict.

Speculating on the employment of tactical nuclear weapons in a Soviet-American theatre war is not an enviable task on the part of strategists and policy makers. But these weapons do exist and, as it has been suggested, must be integrated into military tactics and strategy for what they are-- contemporary weapons of war. It must be assumed that, as weapons of war, they will be used in an East-West theatre conflict where the stakes are high, such as in Europe. And consequently, in assessments of the military advantages to be gained by nuclear weapons use, it is in the interest of the United States and its allies to acquire a TNF first-use capability.

Recalling earlier criticisms of Tactical Nuclear Warfare, however, one is forced to challenge the statement that TNF use can be in the interest of any nation. The problem of distinguishing between tactical nuclear weapons use and strategic nuclear weapons use is not insignificant. The failure to make such a distinction could, and probably would, lead to an escalation to general nuclear exchange. Since this essay recommends a military doctrine of TNF first-use in American-Soviet theatre conflict, it must, then, deal with this, and other, criticisms of Tactical Nuclear Warfare.

In the Strategy of Conflict, Thomas C. Schelling adequately outlines the basic problem of distinguishing between tactical nuclear weapons and their strategic counterparts. The problem is not seen so much as creating a distinction than as eroding one. To elaborate, Schelling sees the major distinction in weaponry not as strategic and tactical, but as nuclear and non-nuclear. He makes the point that

A distinction exists between nuclear and other weapons even though the distinction is not physical but is psychic, perceptual, legalistic, or symbolic. That small-yield nuclears delivered with 'pinpoint' accuracy are just a form of artillery, and consequently do not prejudice the issue of limits in war, is an argument based exclusively on an analysis of weapons effects.⁵⁸

According to Schelling, nuclear weapons have not been used tactically (or strategically since Hiroshima and Nagasaki) because there is a tradition for their non-use. Limited war depends upon the participants recognizing the validity of several types of constraint, for example, a border or an international law. "The fundamental characteristic of any limit in a limited war is the psychic, intellectual, or social characteristic of being mutually recognized by both sides. . . ."⁵⁹ And the

⁵⁸Thomas C. Schelling, The Strategy of Conflict (London: Oxford University Press, 1977), p. 257.

⁵⁹Ibid., p. 260.

non-use of TNF is a mutually recognized tacit bargain. Schelling concludes by stating that the key to using TNFs successfully within a theatre context is to be found in eroding the distinction between a tactical nuclear weapon and other conventional artillery. Once there is a new tacit bargain between the superpowers as to the role of TNFs in theatre conflicts, then such conflicts need not have the high probability of escalation to general nuclear exchange usually associated with TNF use. "It is difficult to imagine that the tacit agreement that nuclear weapons are different would be as powerfully present on the occasion of the next limited war after they had already been used in one."⁶⁰

To speak of eroding the distinction between TNFs and contemporary conventional weaponry is one thing. However, to erode the distinction is another. This essay referred earlier to the most significant problem involved in using a tactical nuclear weapon: How would an opponent know that the nuclear weapon is being used in a tactical and not in a strategic manner? How could the Soviet Union be assured that the use of low-yield nuclear weapons by NATO was not the first stage of a massive pre-emptive strike? Indeed, would the size of

⁶⁰Ibid., pp. 264-65.

the warhead be an issue? How about range, throw-weight, and even the source of firing? Would tactical nuclear weapons have to be launched from Forward Based Systems (contiguous to destination), or could they be launched from the sea, via submarine or cruiser? Schelling would assert that there must be a "tacit agreement" or "bargain" on all of these problems. I suggest that there already is. The dichotomous classification of Potential Capability and Real Capability is again useful.

In so far as Potential Capability (numbers and types of nuclear weapons) is concerned, the difference between a strategic nuclear weapon and a tactical nuclear weapon is clear enough. Research and Development on these weapons make the distinction from the outset. Range is one factor. Strategic weapons are those regarded as intercontinental (intercontinental being defined as the distance from the Soviet Union to the United States for a ballistic missile to travel, and vice versa). The range and land-based location of these missiles are usually fixed and classified accordingly. For example, it would be difficult for the Soviets to deploy a missile with a range of 5000 miles on the East European border and declare it a tactical nuclear weapon. Likewise, the

United States would be hard put to justify the deployment of the forthcoming MX missile in Western Europe as a part of NATO's TNF. Thus, strategic weapons are developed with an intercontinental mission in mind. Their range, and usually their payload, are indicators of this.⁶¹ On the other hand, tactical nuclear weapons are specifically tailored for theatre conflict. The range of a tactical nuclear missile is seldom above 800-1000 miles. The payload varies, but does not seem to reach the megaton level. Perhaps the greatest source of definition is, however, Research and Development. Both countries develop a nuclear weapons system with a mission, a purpose in store for that system.⁶²

⁶¹Due to less accuracy in targeting, Soviet missiles carry a greater payload of explosive power. Most Soviet strategic missiles carry warheads with 10-25 megatons (millions of tons equivalent TNT) of power as contrasted with U.S. strategic missiles at about 150-300 kilotons (thousands of tons equivalent TNT) of power. Tactical weapons vary accordingly.

⁶²There are a few weapons with dual capability in the sense that they can serve both strategic and tactical missions. The American cruise missile and the Soviet Backfire bomber are good examples of this. Both have ranges that can be extended with modification. The Soviet Union and the United States, however, attempt to minimize the difficulties involved in the development of dual capable nuclear weapons by declaring intent as to their potential and actual use. SALT is a great stabilizer here. For example, SALT II limits the range of cruise missiles (U.S.) launched from land and air based systems, while curtailing production of the Backfire bomber and imposing a condition of restraint in deploying the weapon strategically.

Real Capability has been defined as the doctrinal capability to employ nuclear weapons. It is a measure of basically what percentage of weapons can be employed (Potential Capability) will be employed in a given military conflict situation. Real Capability, or the doctrine of nuclear weapons use, has been a point of ambiguity in calculations of possible escalation in a theatre nuclear conflict. Consequently, many of the criticisms of Tactical Nuclear Warfare have been directed against Real Capability. If the United States employs TNF in a theatre conflict, how can the Soviet Union be assured that the Real Capability utilized is tactical and not strategic? That is, can either the Soviet Union or the United States distinguish between TNF use as a theatre military tactic and TNF use as the first stage of a pre-emptive strategic first-strike? The failure to make such a distinction would more than likely result in the much feared escalation to general nuclear exchange.

While many critics have argued against TNF use because of the ambiguities involved in forming distinctions between tactical and strategic nuclear force Real Capability, there seem to be several mitigating factors which encourage a quite different conclusion as to how accurately an opponent can perceive the intent behind

nuclear weapons use. For one thing, TNF doctrines of use are becoming more refined, along with the weapons themselves which can be employed effectively to accomplish the most limited of missions. The state of advanced technology in the construction of tactical nuclear weapons guarantees a very specific use, commensurate with the demands of a local theatre war.

Perhaps the greatest impetus to the growing distinction between Real Capability in strategic and in tactical nuclear weapons has been the deployment of TNFs in the European theatre for such a long time. The very presence of TNFs in Europe has guaranteed and clarified their role as tactical weapons of war. The United States is well aware that the Soviets have deployed a great number of tactical nuclear weapons within Warsaw Pact countries and are training their forces for combat in a nuclear environment. There would be little surprise in U.S. and NATO policy making circles if the Soviet Union employed TNFs in theatre war. And, given current NATO TNF Real Capability, there would likewise be little surprise if NATO employed TNFs in a theatre war that they were losing. Thus, the very presence of tactical nuclear weapons and the attention recently paid to military doctrines of use by both

NATO and Warsaw Pact forces have (1) eroded the distinction between tactical nuclear weapons and conventional weaponry and, consequently, (2) emphasized the disparate nature of tactical and strategic nuclear weapons relative to one another.

This study does not attempt, however, to minimize the risks involved in nuclear weapons use. They have never been used before by two powers in war against each other and there are necessarily a great number of "ifs." But this study has sought to introduce Tactical Nuclear Warfare as a viable strategy for the United States in theatre conflict with Soviet forces. It accepts nuclear weapons as weapons of war, appraises their military advantages and disadvantages, outlines the development of both American and Soviet TNF doctrines of use, and concludes by suggesting that the United States would assume an inferior role in a theatre conflict with Soviet/Warsaw Pact forces due to the lack of a comparable TNF doctrine of use.

It is fair to say that by incorporating a first-use strategy into U.S./NATO nuclear military posture, the costs of conflict are heightened; that a first-use strategy does not even allow for the possibility of a conventional exchange. But given the present state of

Soviet TNF military doctrine for theatre conflict, allowing for conventional war in a nuclear era may itself result in unacceptable costs and escalation to a more general stage of conflict.

SELECTED BIBLIOGRAPHY

- Azrael, Jeremy R.; Lownthal, Richard; and Nakagawa, Tohru. An Overview of East-West Relations. New York: The Trilateral Commission, 1978.
- Brodie, Bernard, and Wolfers, Arnold, eds. The Absolute Weapon: Atomic Power and World Order. New York: Harcourt, Brace and Co., 1946.
- Brodie, Bernard. Strategy in the Missile Age. Princeton: Princeton University Press, 1959.
- Brodie, Bernard. "The Development of Nuclear Strategy." International Security 2:4 (Spring 1978).
- Brower, Michael. "Nuclear Strategy of the Kennedy Administration." Bulletin of the Atomic Scientists 18 (October 1962).
- Brown, George S. United States Military Posture for FY 1979. Department of Defense, 20 January 1978.
- Bundy, McGeorge. "Maintaining Stable Deterrence." International Security 3:3 (Winter 1978/1979).
- Bundy, McGeorge. "High Hopes and Hard Reality: Arms Control in 1978." Foreign Affairs 57:3 (1979).
- Donnelly, Charles H. United States Defense Policies in 1957. Washington, D.C.: U.S. Government Printing Office, 1958.
- Douglass, Joseph, D., Jr. The Soviet Theatre Nuclear Offensive. Studies in Communist Affairs, Volume 1. Washington, D.C.: U.S. Government Printing Office, 1976.
- Ellsworth, Robert. "Strategies for Dealing with Risks." NATO Review 26:2 (April 1978).

- Endicott, John E., and Stafford, Roy W., Jr., eds. American Defense Policy. Baltimore and London: The Johns Hopkins University Press, 1977.
- Garthoff, Raymond L. "SALT I: An Evaluation." World Politics 31:1 (October 1978).
- Gray, Collin S. "Theatre Nuclear Weapons: Doctrines and Postures." World Politics 28:2 (January 1976).
- Gray, Colin S. The Soviet-American Arms Race. Westmead, Farnborough, Hants, England: Saxon House, D.C. Heath Ltd., 1976.
- Gray, Colin S. "NATO Strategy and the Neutron Bomb." Policy Review (Winter 1979).
- Holloway, Bruce K.; Milton, T.R.; Palmer, Bruce, Jr.; Taylor, Maxwell D.; and Zumwalt, Elmo R., Jr. Grand Strategy for the 1980s. Washington, D.C.: American Enterprise Institute for Public Policy Research, 1978.
- Horelick, Arnold L., and Rush, Myron. Strategic Power and Soviet Foreign Policy. Santa Monica: RAND Corporation, 1965.
- Huntington, Samuel P. The Common Defense. New York: Columbia University Press, 1961.
- Ikle, Fred Charles. "Can Nuclear Deterrence Last Out the Century?" Foreign Affairs 51:2 (January 1973).
- Kissinger, Henry A. Nuclear Weapons and Foreign Policy. New York: Harper & Brothers, 1957.
- Kissinger, Henry A. The Necessity for Choice. New York: Doubleday and Co., 1960.
- Kennedy, John F. The Strategy of Peace. New York: Popular Library, 1961.

- Komer, Robert W. "Origins and Objectives." NATO Review 26:3 (June 1978).
- Lapp, Ralph E. Arms Beyond Doubt: The Tyranny of Weapons Technology. New York: Cowles Book Company, Inc., 1970.
- LaRocque, Gene R.; Rathjens, Genzi; Miller, George H.; Hayward, J.T.; and Collins, Authur J. "How a Nuclear War Would Be Fought." Bulletin of the Atomic Scientists (May 1979).
- Lodal, Jan M. "SALT II and American Security." Foreign Affairs (Winter 1978/1979).
- Mallin, Jay. Strategy for Conquest. Miami: University of Miami Press, 1970.
- Martin, Laurence. Arms and Strategy: The World Power Structure Today. New York: David McKay, 1973.
- Marx, Herbert L., Jr., ed. Defense and National Security. New York: The H. W. Wilson Company, 1955.
- McNamara, Robert S. The Essence of Security: Reflections in Office. New York: Harper & Row, 1968.
- Middleton, Drew. Can America Win the Next War? New York: Charles Scribner's Sons, 1975.
- Moulton, Harland B. From Superiority to Parity: The United States and the Strategic Arms Race, 1961-1971. Westport, Connecticut: Greenwood Press, Inc., 1973.
- Nitze, Paul. "Atoms, Strategy and Policy." Foreign Affairs 34 (January 1956).
- Osgood, Robert Endicott. Limited War: The Challenge to American Strategy. Chicago: The University of Chicago Press, 1957.

- Polmar, Norman. Strategic Weapons: An Introduction.
New York: Crane, Russak & Co., 1975.
- Pranger, Robert J., and Labrie, Roger P., eds.
Nuclear Strategy and National Security:
Points of View. Washington, D.C.: American
Enterprise Institute for Public Policy Research,
1977.
- Quanbeck, Alton H. Strategic Forces: Issues for the
Mid-Seventies. Washington, D.C.: The Brookings
Institution, 1973.
- Rostow, Eugene V. "SALT II- A Soft Bargain, A Hard
Sell." Policy Review (Fall 1978).
- Schelling, Thomas C. The Strategy of Conflict.
London: Oxford University Press, 1977.
- Schilling, Warner R.; Hammond, Paul Y.; and Snyder,
Glenn H. Strategy, Politics and Defense Budgets.
New York: Columbia University Press, 1962.
- Schryr, Michael S. Preparing for the Next War: American
Plans for Postwar Defense, 1941-45. New Haven:
Yale University Press, 1977.
- United States Department of Defense. Department of
Defense Annual Report, Fiscal Year 1979.
Washington, D.C.: U.S. Government Printing
Office, 1978.
- Vahle, Cornelius W. "Soviet and American Behavior
During the Yom Kippur War." World Affairs 141:
1 (Summer 1978).
- Vernon, Graham D. "Soviet Options for War in Europe:
Nuclear or Conventional." Strategic Review
(Winter 1979).
- Weigley, Russell F. The American Way of War: A History
of United States Military Strategy and Policy.
New York: MacMillan; London: Collier MacMillan, 1973.

Whetten, Lawrence L. Contemporary American Foreign Policy: Minimal Diplomacy, Defense Strategy, and Detente Management. Lexington, Massachusetts: Lexington Books, 1974.

Wohlstetter, Albert. "The Delicate Balance of Terror."
Foreign Affairs 37 (January 1959).

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