PRECISION GUIDED MUNITIONS: IMPLICATIONS FOR DETENTE

by

BRIGADIER GENERAL EDWARD B. ATKESON
US ARMY

NO consensus has yet developed regarding the meaning or impact of new high-technology tactical weapons systems, either with respect to the military balance in Europe or in the larger context of East-West relations and detente. Some writers believe that a radical shift in the tactical military balance may be underway, possibly approaching a point of departure from traditional reliance upon nuclear weapons. This article first reviews the time-honored debate over the defensibility of Western Europe without recourse to tactical nuclear weapons. It then introduces the new dimension represented by precision guided munitions and related technology and identifies the principal intellectual schools which have developed as a result. Finally, it transcends the debate to seek out and to explore the likely implications of the opposing points of view for western security.

THE TACTICAL NUCLEAR DEBATE

There is some minor disagreement over the origin of the debate regarding the defensibility of Western Europe without resort to nuclear weapons. Former Assistant Secretary of Defense Alain Enthoven claims that "NATO was . . . born with a psychological 'complex' about conventional forces,"[1] implying that the issue was with us at the outset. Jeffrey Record, of the Brookings Institution, believes it emerged in the 1960's with the introduction of the concept of flexible response.[2] Whenever its birth, the mainstream of opinion in the debate has held that the West cannot match the large ground forces of the Warsaw Pact and must rely upon the American nuclear deterrent, both "tactical" and "strategic." Few responsible voices question the raison d'etre of the strategic deterrent—the US based long-range missiles and aircraft, and the ballistic missile submarines—but the tactical weapons, numbering some 7,200 deployed in Europe,[3] and their delivery systems have proved highly controversial.

Secretary of Defense Schlesinger explained his reasons for maintaining the tactical stockpile in Europe: "First . . . to deter a

limited first-use of nuclear weapons by an opponent and along with the conventional and nuclear forces help create a general deterrent against either conventional or nuclear aggression. Second, should deterrence fail, . . . (to) provide a source of nuclear options for defense other than the use of strategic forces. Third, given our doctrine of flexible response, we do not preclude the use of nuclear weapons by the United States and its allies to prevent a successful aggression."[4]

Others have elaborated on this rationale. Record has pointed out that the presence of tactical nuclear weapons (TNW) in Europe imposes a high degree of uncertainty upon an opponent. Soviet nuclear doctrine, he indicates, is ambiguous on the relationship between theater and strategic nuclear conflict, and the presence of TNW in Western Europe probably appears to them as a virtually open-ended possible consequence of offensive action. Further, the presence of the weapons has "tremendous political significance" to our European allies and should remain (in some numbers) as part of our earnest of support.[5]

The sensitivity of the North Atlantic Treaty Organization (NATO) Allies to withdrawal of the weapons was demonstrated afresh at the Defense Ministers' conference in Brussels on December 11, 1974. Only the Dutch Minister, Henk Vredeling, advocated a de-emphasis of reliance on TNW for deterrence and defense, proposing instead that the weapons be used as "bargaining counters" in the current East-West talks on reducing forces in Europe. Vredeling received no support from his colleagues, particularly in view of prevalent pessimism regarding the world strategic situation and NATO's ability to cope simultaneously with growing Soviet power and the economic recession. Roy Mason, the British Minister, warned the meeting that a reduction in TNW would lower the nuclear threshold and accelerate the use of strategic nuclear weapons should deterrence fail, although he did indicate a willingness to "go along" with any American adjustment of stockpile levels for technical efficiency purposes.[6]

An extreme view of the importance of TNW has been presented by Dr. Colin Gray of the International Institute for Strategic Studies. He writes ". . . a war between NATO and the Warsaw Pact will be won or lost on the North German Plain within a matter of days . . . NATO lacks the kind of forces in place—or at all likely to be in place in time—that could stop a Warsaw Pact armored blitzkreig in its tracks." As a result, he advocates "very early and very heavy use of low-yield tactical nuclear weapons," because "the Warsaw Pact would go nuclear very early anyway, and/or . . . NATO would inevitably lose a conventional war—short or protracted . . . ."[7]

The anti-TNW school bases its argument largely on the damage which might ensue in Europe in a nuclear war and upon the dangers of escalation. Adherents point to Exercise Carte Blanche held in Western Europe as an example of the nightmare which troubles them most. In a period of 48 hours, 335 nuclear devices were theoretically exploded, 268 of which were in Germany. German casualties, not including those attributable to residual radiation, were estimated at between 1.5 and 1.7 million dead, and some 3.5 million others wounded. Comparison of these figures to the total civilian casualties from bombing in World War II of .3 million killed and .8 million wounded prompted Chancellor Helmut Schmidt to remark that tactical

BG Edward B. Atkeson, USAWC 1969, is the Deputy Commandant of the College. He graduated from West Point in 1951, and received an MBA from Syracuse University in 1964. General Atkeson has commanded the 109th Military Intelligence Group, and also served as a staff officer in Department of the Army, the CIA, and Department of State. Overseas assignments have included Germany, Finland, and Vietnam. He was a Fellow at Harvard University's Center for International Affairs in 1973-74. Prior to assuming the duties of Deputy Commandant, he served as a member of the College's Strategic Studies Institute. This article will appear in the book *National Security and Detente* to be published in the spring of 1976 by Thomas Y. Crowell, N.Y. (see book review page 90).

nuclear weapons "will not defend Europe, but destroy it."[8]

There is widespread recognition that asymmetries between US and Soviet TNW ranges and yields[9] (see table 1) and the ambiguities of Soviet nuclear doctrine blur concepts of tactical versus strategic nuclear war, and that the emergence of strategic nuclear parity between the two superpowers has somehow altered earlier calculations. I. H. J. Gilmour, former British Minister of Defense, touched on the latter point in an article in *NATO's Fifteen Nations*. An era of strategic parity, he writes, has overtaken the logic of the concept of massive retaliation. As a result, the policy of deterrence of aggression at all levels places additional emphasis on conventional forces. He sees some parallels between the current situation in Europe and conditions in the early 1950's when "Europe was impoverished, its industry in ruins" and there was a requirement for a rapid conventional military buildup.[10]

David Packard, former US Deputy Secretary of Defense, takes a slightly different line:

> One argument for tactical nuclear weapons is that they provide a coupling from conventional forces to strategic forces and are therefore an important element of conventional force deterrence. If ever this were the case it is less so now, and a conventional force will be a more realistic deterrent if it can be adequate to control a confrontation without the need for tactical nuclear weapons.[11]

Finally, Enthoven argues that conventional defense is not only feasible, but essentially the only rational path. He writes, "based on years of study we believe that NATO's conventional forces are not smaller than those of the Pact and, therefore, that a strong conventional capability is feasible . . . in a conflict involving tactical nuclear forces we could lose as many men as the Pact and kill millions of civilians whom we were trying to defend."[12] He also points out that there is a well-defined "firebreak" between conventional and nuclear warfare. Beyond that the risks of escalation to global thermonuclear war are essentially open-ended.[13]

THE NEW TECHNOLOGY: PGM

Almost imperceptibly a new dimension has entered the debate over European defense,

Table 1. US and USSR TNW Ranges and Yields.

US			USSR		
System	Max Range* (Miles)	Yield	System	Max Range* (Miles)	Yield
Honest John	25	KT Range	FROG 1-7	10-45	KT Range
Sergeant	85	KT Range	Scud A	50	KT Range
Lance	70	KT Range	Scud B	185	KT Range
Pershing	450	KT Range	Scaleboard	500	MT Range
155 MM How	10	2 KT			
8" How	10	KT Range			

KT = kiloton
MT = megaton

*Operational range depends upon the payload carried; use of maximum payload may reduce missile range by up to 25 percent.

Source: International Institute for Strategic Studies, *The Military Balance 1974-1975*, pp. 73-74.

and the opposing schools are just beginning to identify the new issues which have arisen and to reassess the logic of their respective positions. The new dimension is that posed by the introduction of precision guided munitions (PGM) and related technology. (Some would argue that it is not so new, but dates from the mid-1940's and the advent of the guided missile.) A PGM has been defined by one writer as a weapon "whose probability of making a direct hit at full range on a tank, ship, radar, bridge, or airplane (according to its type) is greater than half."[14] This may be a little too strict for current technology weaponry. Nevertheless, the important element is the significant advance in first shot hit expectancy. Traditional ammunition dispersal probabilities and high expenditure rates have given way to high probability of single shot kills by "smart" (and high unit cost) missiles. Coupled with this development is the rapid expansion of the whole "conventional" (read nonnuclear) technological environment, including a wide array of missile guidance systems, radically different designs of land mines, night vision devices, automatic data processing equipment, data links, miniaturized electronic components, and unmanned reconnaissance vehicles. The technology explosion has raced down complementing corridors to produce remarkable devices, almost unimaginable twenty years ago. Only in the last few years, however, have these developments weighed in heavily in the cognizance of the defense analytical community.

Reports of battles in the latter stages of the Vietnam War, and more especially in the October 1973 Middle East Arab-Israeli War, were replete with descriptions of "smart" guided missiles attacking ground and air targets with dramatic accuracy. In May 1972 the US Air Force was able to destroy the Than Hoa bridge in North Vietnam with very few aircraft, sustaining no losses, even though the bridge had been attacked many times before by hundreds of aircraft, ten of which had been lost to ground fire. Subsequently, the Paul Doumier bridge near Hanoi was successfully destroyed in a single strike without loss, while it had taken many sorties and cost eight aircraft to drop the structure in 1967.[15] In October 1973 the Israeli 190th Armored Brigade launched a tank attack supported by the tactical aircraft against the Egyptian II Army in the Northwest Sinai and was virtually destroyed in a few hours of fighting. It had encountered the first large-scale sophisticated antitank defense in history. At almost the same time the Israeli Air Force was suffering alarming losses at the hands of Arab missilemen with SA-2, 6, and 7 surface-to-air missiles (SAM).[16] These stark and dramatic reports of the new technology caught the public eye.

What are these weapons and how do they operate? Fundamental are the "smart" bombs introduced in Vietnam and the antitank (AT) and SAM systems used in the Middle East. The "smart" bomb may be a conventional 2,000 or 3,000 pound bomb with a guidance kit attached. The kit may use laser, television (electro-optical) or heat (infrared) sources to guide the bombs to the target.[17] The AT systems rely largely on direct link guidance to steer a missile to a tank by signals transmitted through wires played out from the missiles while in flight (e.g., US tube-launched, optically-tracked, wire-guided—TOW systems and the shorter-range, man-portable Dragon). The range of most such systems is between two and four kilometers (km). SAMs, guided by radar or onboard infrared homing devices, have a wide range of capabilities depending upon design. Large systems may intercept targets at altitudes up to 45 km at ranges over 140 km (US Nike Hercules). Small hand-held weapons provide an individual soldier an effective antiaircraft capability at ranges up to three kilometers.[18]

Supplementing these systems, particularly the AT weapons, are new advances in night vision devices to include vastly-improved image-intensification systems and unprecedented real-time thermal imaging or far infrared (long-wave-length) devices. The goal of current research and development (R&D) in this area is the design of undetectable devices effective against smoke, camouflage, fog, darkness, and rain. The predominant effort in US Army R&D today is on advances in far infrared technology,

visionics, radiation sources, and image intensification.[19]

Beyond these are more exotic systems of longer range which provide the element of depth in the battlefield, but with greatly-increased prospect of effectiveness. Artillery rounds with target homing devices on board promise the reduction or elimination of traditional reliance upon probabilities for target hits.[20] Redesigned warheads and accelerated terminal velocity projectiles suggest increased expectation of achieving kills against tanks and other hard targets. Long-range systems, such as the 110 km Lance missile, can carry multiple, terminally-guided warheads, or submissiles, aboard the mother vehicle for most of the distance to the target area and then scatter the payload over a large area. The Lance can carry up to 9 such submissiles, each with a 15 pound warhead and equipped with a target discriminator system to detect the real prey from decoys.[21]

The variety of these developments is broad, the tempo of their growth rapid, and technical hurdles to their progress are falling aside with alacrity. All modern armies are experiencing the effects of the high rate of technological progress as they discard earlier versions of guided weapons for later ones. The rate of change is so rapid that it is difficult to identify technical limitations to the field (although we should expect the law of diminishing returns to come into play sooner or later).

Nor are all the tactical implications of even the current generation of PGM yet apparent. Thus far only two have been clearly identified. The first is that fixed installations seem to be particularly vulnerable to PGM. If a target can be located, as almost any logistical facility can be, it can be struck with high expectancy of severe damage. This means that depots, air fields, bridges and fortifications, and other types of structures are less secure than they have been in the past. The second springs from the fact that a mobile target which betrays its location (by sight, infrared radiation or some other means) stands a high risk of being destroyed. This tends to put a premium upon hiding, blending with the background, and remaining motionless. The premium obviously is of greater benefit to a defender who can play a more passive role than an attacker. The latter is obliged to move aggressively forward, often over open terrain in unfamiliar territory. The opportunities for the defender to locate the attacker and to bring him under PGM fire are inherently greater than vice versa.

The attacker may move at times of reduced visibility, or he may employ artificial means to offset this basic asymmetry. In daylight he may rely upon suppressant fires to intimidate his opponent, use smoke to blind him, or employ his forces in such mass that he may expect to achieve some degree of success in spite of high casualties. For the defender's part, he may rely on some of the other technological innovations mentioned to reduce the effectiveness of the attacker's tactics. Scatter mines may slow the advance and canalize the attack. Night vision and an array of intrusion detection devices may assist in locating the enemy in times of reduced visibility. Ground radar or far infrared devices may be used to direct fire through smoke or fog. Extensive reliance on heavy or prolonged suppressant fires by the attacking force is likely to reveal firing battery locations and to increase their vulnerability to PGM attack. Massed unit attacks are particularly vulnerable to hydraheaded missile attacks, such as the Lance. On balance, it would seem that the net effect of the total PGM environment would be to favor the defender. The extent to which the PGM factor is likely to influence the outcome of any particular projected conflict, however, is highly controversial, as we shall see below.

We should take note in passing that the defense implications of the new weaponry have not escaped the Soviets. They have invested heavily in tanks and other armored vehicles and are understandably sensitive to the development of new threats to that investment. Articles have been appearing with increasing frequency in Soviet professional journals on the antitank PGM threat. An article in *Voyennyy Vestnik* (Military Herald) cautioned its readers that "a successful offensive is possible only with reliable

suppression of the enemy's antiarmor defense with ATGM (antitank guided missiles) as first priority."[22]

The most apparent impact of PGM developments upon the traditional debate over the defense of Western Europe has been to cause the participants to reassess their arguments. A wide array of opinions regarding the effects of the new weapons has found its way into current literature, with some fresh dimensions appearing on both sides. At the risk of mislabeling some writers and possibly implying an association of their thoughts with those of others with whom they may not feel any particular affinity, we shall attempt to group them for analytic manageability.

The PGM intellectual spectrum may be divided into conservative and progressive schools. Many writers may prefer to think of themselves as not situated too far from the crossover point, but each reveals a center of gravity more closely identified with one school than with the other. At the extreme "left" end of the progressive group we encounter arguments for radical changes of forces, to include some redistribution of the roles and missions of the services. At the opposite end, little need for change is recognized, save incremental improvements and modernization of current forces. The conservatives make little mention of the compatibility of current force concepts with the new technology; it is probable that such omission is a signal that either the thought of possible incompatibility has not occurred to them or that they are satisfied with the association of current concepts and technology as it is. We shall explore this further.

THE CONSERVATIVE SCHOOL

PGM conservatives appear to share a belief that the future is likely to be more like the past than like some other ambience which may be derived by independent analysis. While most profess cognition of the revolutionary impact of the atomic weapon on strategic thinking (and potentially on warfare), they tend to view other technological developments as little more than product improvements in known inventories. Few see far-reaching effects upon the nature of warfare, doctrine, or the strategic balance. Conservatives like to point to historical examples of the development of ingenious counters to new or innovative military machines and argue that it is only a matter of time until the initial dramatic impact of a new machine is dulled by the appearance of its counterweapon. Brigadier C. N. Barclay, Retired, of the British Army, expresses this view:

> History records that new weapons almost invariably produce an antidote which nullifies or reduces their effectiveness, the atomic missile being the notable exception. Considering the favorable circumstances in which the SAMs (surface-to-air missiles) were used in this war (Yom Kippur), I do not think that their spectacular success is likely to be repeated in all circumstances. I believe that the ingenuity of weapon designers will quickly put SAMs in their proper place as useful, but not predominant, battlefield weapons—as has happened with machine guns, tanks, guns of various kinds and other missiles and launching contrivances.[23]

A second common characteristic among conservatives is a belief in the immutability of the Principles of War. Among these, they point out the principle of the "initiative" (or sometimes the "offensive") appears in most strategic literature from Sun Tzu, through Clausewitz to the contemporary official literature of most of the major powers. If PGM favor the defense, the conservative will reason, the contribution will be marginal because only the offense can achieve decisive action. A defender cannot "win"; the best he can hope for is to deny his opponent victory.[24]

Finally, there is a subschool among conservatives which fosters the notion that the tank has yet to meet its match on the battlefield in any form other than another tank. Not surprisingly, this view is most prevalent among armor officers who argue that ". . . a weapon which is large enough to

be sure of a target (tank) kill must be transported on some sort of vehicle. To protect the crew the vehicle requires armor; to insure good cross-country mobility it should also be tracked. To provide effective weaponry at short ranges and a capability for delivering a variety of types of ammunition it should have a gun."[25] Thus, say advocates of this school, the ideal tank-killer is a tank.

A proponent of the school writes:

> There is no question that these weapons (TOW and Dragon) will give the infantry in our forward defense area a needed and improved capability to reduce the leading tank waves, but to even remotely suggest these new weapons will annihilate a massive Warsaw Pact tank-heavy assault is both absurd and forgetful of the hard lessons of history . . . .[26]

The same writer suggests that too much is being spent on TOW and Dragon and too little on mobile forces for counterattack operations.[27]

Richard Ogorkiewicz, a prominent author on tanks and tank design, maintains that current vulnerabilities of tanks to shaped charge missiles are unnecessary. He points out that all the tanks used in the October 1973 Arab-Israeli War had been designed as if the missiles did not exist. New composite forms of armor, he says, make tanks potentially immune, over the frontal arc, to all portable antitank weapons, without adding weight to the vehicles.[28]

Dr. Gray endorses the case against the ATGM, but on somewhat more cynical grounds. "Precision-guidance technologies will be useful," he says, "but their delivery will be vigorously opposed . . . and they are almost certain to be deployed too thinly to be able to stem a Warsaw Pact armored advance."[29]

In essence, the Conservative School suggests that successful warfare is geared to the offensive. In Clausewitz' words, "warfare has three main objects: to conquer and destroy the armed power of the enemy; to take possession of his material and other sources of strength; and to gain public opinion."[30] While the new technology may marginally affect the manner in which land warfare is pursued, success will go to the side which is devoted to the achievement of decision through aggressive action.

THE PROGRESSIVE SCHOOL

The opposite point of view, which we may call "progressive," evidences belief in a different concept of the historical development of warfare. While few have devoted much attention to their deeper philosophical bearings, their arguments tend to reflect a belief in the revolutionary nature of the flow of military technology. They emphasize the magnitude of the changes brought about by the introduction of new devices on the battlefield such as the horse, the long bow, gunpowder, the machine gun, the tank, poison gas, and the airplane. They acknowledge subsequent efforts by the opposition to reduce the effects of the new machines through modifications of tactics and weaponry, but they point out that, while some equilibrium may result, it is invariably achieved at a higher or on a quite different plane than that on which it rested before. Warfare of the middle ages was different by orders of magnitude from warfare in the nineteenth century. The same may be said for the differences between the American Civil War and World War II. Technology leads to irreversible changes in the scope of conflict, and the pace of change is accelerating. Aviation came of age militarily in the First World War; sixty years later space is a routine environment for military purposes, limited only by international accord. Weapons revolutions have become routine and are really held in check only by the imagination limitations of those who contemplate their meaning.

Progressives argue that revolutionary weapons technology needs more innovative application than is normally exercised in cases of simple hardware redesign. Rather than replacing old weapons for new, they plead for a reassessment of the whole concept of weapons application. While eight ranks to a phalanx may have been a suitable organization for the lancemen of Philip of

Macedonia, the adoption of modern, individual automatic weapons involves something more than one-for-one substitution. Organization, tactics, command, and communications should all be reassessed when a major new system is introduced. The side which can maximize the effects of the new technology first is likely to be the better prepared for the next conflict.

Progressives also tend to take a somewhat different view of the nature of war. They, too, read Clausewitz, but they find different passages for emphasis. They read:

> What is the object of defense? *To preserve.* To preserve is easier than to gain; from which it follows at once that the means of both sides being supposed equal, defense is easier than attack . . . *defensive form of war is in the abstract stronger than the offensive.* This is the result we have been aiming at; for although it is absolutely natural and has been confirmed by experience a thousand times, it is still entirely contrary to prevalent opinion—a proof of how ideas may be confused by superficial writers.[31]

A notable progressive with respect to PGM technology, Dr. Malcolm Currie, Director of Defense Research and Engineering, says we have been brought "to the threshold of what I believe will become a true revolution in warfare . . . . Essentially we would like for every missile, bomb or shell to kill its target . . . . One precision munition can do the work of hundreds of rounds of bombs."[32] He implies that we have only seen the beginning of the possibilities in the field, describing current weapons as "in the Model-T stage."[33]

Francois Duchene of International Institute for Strategic Studies agrees. He says, "the most telling example of the changes in conventional weaponry was the war in the Middle East," and expresses the view that there has been a "powerful erosion of the dominance of tanks insofar as the accuracy and mobility of missiles has increased."[34]

Another observer comments that "Army weapons using . . . (PGM technology) will perhaps fulfill our impossible dream, a capability for discrete, single-shot destruction of a variety of targets at extended ranges with a family of weapon systems. If so, what we have is perhaps not simply a 'product improvement' but a new tactical ball game."[35]

Dr. Albert Wohlstetter suggests that PGM might serve many of the purposes of tactical nuclear weapons. Citing former Defense Secretary Packard's ideas, Wohlstetter sees PGM in the traditional TNW role of discouraging invasion and destroying attacking forces if deterrence fails, and destroying support and reinforcing forces. They would be particularly effective, he suggests, in defiles, maritime straits, and passes. They have the following specific advantages over nuclear weapons:[36]

- Negligible damage to target surroundings.
- More economical of manpower.
- Can be made available to allies.
- Contribute to stability in the West without suggesting an offensive posture.
- Raise the nuclear threshold and reduce the need for investment in small nuclear weapons.

The most far-reaching conceptualizations of the impact of PGM are made by Dr. T. Finley Burke of the RAND corporation. He raises issues of possible redistribution of armed service roles and missions and radical reorganization of ground forces to maximize defensive capabilities. In the former area he points out the new asymmetry of vulnerability of aircraft on the one hand and concealed ground-based missile units on the other. Achievement of as much as ten percent attrition rates of aircraft (which he believes is possible with new SAM technology) would effectively deny airspace to tactical aircraft. This, he insists, is tantamount to an air superiority role for ground forces, a sharp departure from current US doctrine.

With respect to ground forces, he sees less need for conventionally organized units. Small indigenous teams of four or five men with man-packed communications and data links to guide missiles fired from distant positions to their targets could perform the principal mission of the defensive force. Resupply of the forward teams could also be

accomplished by missile pods directed to selected points by the forward teams. In this unconventional environment emphasis would be on high attrition systems deployed in great depth which would delay, disorganize, and incrementally destroy the attacker. The force would be composed of men from the areas in which they operated, intimately familiar with the terrain. All teams would have the electronic capability and necessary codes to call for a wide variety of types of weapons terminal effects, including mines and antitank and antipersonnel (CBU) rounds.[37] The missiles might be launched from the ground or from aircraft up to 200 miles to the rear.

A common feature of most progressive arguments is the notion of attrition of enemy forces, rather than of decisive engagement. A research analyst of the US Army War College Strategic Studies Institute has labeled this concept "the primary military objective for the use of precision weaponry in the land battle for European defense. Covering forces," he says, "would acquire and designate targets for precision weapons of supporting artillery and aircraft, and canalize enemy forces into the *attrition zone* occupied by the main force."[38]

His concept fits the classic model of *Ermattungsstrategie* (strategy of exhaustion) defined by Hans Delbrück during the First World War. "History showed that there could be no single theory of strategy correct for every age," wrote Delbrück. "Like all phases of warfare, strategy was intimately connected with politics, with the life and the strength of the state."[39] Progressives point to the fundamental defensive political orientation of the western bloc, and argue that the concept of a war of attrition is not only wholly consistent with that policy, as Delbruck would wish, but that it is nonprovocative and both politically and militarily feasible with the advent of the new PGM technology.

IMPLICATIONS OF THE CONSERVATIVE SCHOOL

It may be some time before the true merits of either the conservative or progressive schools become evident, barring another general war on the European continent. It seems probable that analysts and scholars will find intellectual havens on one side or the other depending upon the forensic skills of the protagonists and upon their own basic views of the historical development of warfare.

It is possible, however, to discern some of the implications of the dialectics by pressing our exploration beyond the arguments themselves. First, we shall examine the ramifications of the ideas espoused by the conservative group.

Most apparent in the conservative argument is the implication that Western conventional military power in Europe is not only inferior to that of the East Bloc, but that there is no prospect for change. NATO is locked into the light side of the scale and is bound to remain there (unless it is overrun and destroyed by a Warsaw Pact attack). No amount of technological or organizational innovation will alter its unfavorable position.

The second implication devolves from the first. Since conventional defense is infeasible, primary reliance for security must continue to rest upon the deterrent effect of tactical nuclear weapons, present in large numbers, and, ultimately, upon the US strategic offensive force. Deterrence is emphasized not simply because war is undesirable, but because no one can foresee with confidence what a nuclear war would entail. Would it be manageable, or would it degenerate to mindless wholesale destruction of lives and property? The risk that it may entail mutual self-destruction is believed to be an unattractive enough prospect for the Warsaw Pact membership to deter any temptation to launch a military expedition westward (although some would argue that the same risk would work to deter the West from resorting to nuclear weapons if the attack did occur).

Reliance upon the nuclear weapons, of course, implies continued extended deployment of US forces abroad. The argument holds that a US nuclear guarantee without the presence of substantial numbers of American troops (as "hostages") would be incredible to friend and foe alike. The

requirements for TNW with those troops would continue in effect for the same reasons explained above. However, prominent figures in the US Congress have pointed out that the United States has maintained military forces in Europe for over thirty years. They express the view that the arrangement is not a natural one and that some other means should be developed to meet our security requirements. As long as the United States evidences a willingness to provide forces for the defense of Europe, there is little motivation for the Europeans to fulfill the requirements themselves. The advanced economic and sociological state of Western Europe as a whole would indicate that the capacity is there, if not the will. These critics argue that the indefinite presence of US forces inhibits the coalescence of a united will by treating Europe like a permanent security basket case.

Another unfavorable implication of the conservative argument is that due to major shifts in global strategic relationships (superpower strategic parity and the emergence of the new power bloc manifested in the Organization of Petroleum Exporting Countries (OPEC)), previous levels of security for Europe are no longer attainable without a higher level of effort. Perceptions of a strategic stand-off between the United States and the USSR and of differing national interests in the energy crisis are destructive of Western unity in that they reinforce doubts within NATO regarding the motives of the various partners. The US experience of forced assumption of unilateral burden for support for Israel in October 1973 emphasized the diversity of interests. This and the official recognition and formal institution of strategic parity through Strategic Arms Limitation Talks (SALT) agreements reinforce the long-standing Gaullist thesis of US nuclear unreliability. The result is a reduction in the cohesiveness and power of the Alliance and in the security of Western Europe without a significant change in the level of effort devoted to defense. The new power balance implied by the conservative argument may be summarized as follows:

	US/NATO	USSR/WTO
Strategic Balance	Parity	Parity
European Conventional Balance	Inferior	Superior
Economic Strength	Unstable	Stable
Political Unity	Deteriorating	Stable

Finally, there is an implication that prospects for detente are dimming. Detente between such different social and economic systems as exist in Eastern and Western Europe must rest upon perceptions of common interest in the maintenance of the status quo and in mutual respect for the strengths of the two groupings. A weakened West erodes confidence in the balance and encourages initiatives to seek a balance at a different level. Initiatives could take the form of efforts by Western powers to accommodate Eastern demands during periods of East-West tension or, on the other side, boldness to assert Communist demands with less inhibition than seemed evident in the past. It would not be unreasonable to expect that American perceptions of the security and stability of Western Europe could become eroded over time to the point where the Alliance might be viewed as more of a liability than an asset. These perceptions would very likely create additional pressures for disentanglement and withdrawal, accelerating the entire process.

IMPLICATIONS OF THE PROGRESSIVE SCHOOL

Turning our attention in the opposite direction, we encounter some very different implications and prospects for stability and detente on the European Continent.

The first clear point of the progressives is that a conventional defense of Europe is not only possible, but that its feasibility and facility are improving steadily. Inasmuch as the new technology very definitely favors the defense, and is only beginning to have its weight felt in the tactical balance, we can look forward to an era of positive improvement and increased confidence in western security. Technology is the strong

suit among the Allies (particularly the United States) and the rapid expansion of known and shortly-to-become-known physical and engineering principles is a task for which Western society and industry is naturally geared.

Unlike nuclear technology, to which the United States devoted a major effort, PGM technology is fundamentally defensive and stabilizing. The undesirable aspects of the action-reaction cycle in the nuclear weapons race (if, indeed there was one) should be far less of a problem with PGM.

Second, we may conclude that with a diminishing cloud of doubt regarding the conventional defensibility of Europe, the external security and stability of both sides will be enhanced. The countries of the West will have less cause to fear attack from the East, and, as NATO assumes a more visibly defensive stance with increased emphasis on air defense and antitank systems, the confidence in external security should be reciprocated by the Eastern states.

Third, there is an implication that the European NATO members could become increasingly self-reliant for deterrence and defense. Unlike nuclear weapons, PGM may be freely distributed among all partners of the Alliance, and the need for continued US force presence would be reduced. As the European armies become more potent in defensive operations, US troops may be withdrawn. In time, only those US troops directly concerned with the maintenance of the TNW capability[40] may remain to deter first use of nuclear weapons by the other side. The result would be a strong psychological uplift for the European members of the Alliance, affording them a sense of their own self-sufficiency and worthiness. Very likely these states would experience the synergistic benefits of confidence in their ability to influence their own destinies, probably increasing internal forces for economic and political cohesion. In the past, US force presence has been described as the "glue" holding the Alliance together. In the future, the progressives suggest, the Europeans may be able to provide their own glue.

A fourth implication devolves from the third. The maintenance of US TNW solely for the purpose of deterring first use of such weapons by the opponent would imply a reversal of US policy (as it has been explained by Secretary Schlesinger) to one of no first use of nuclear weapons by the United States, at least in Europe. This would go a long way toward raising the threshold of nuclear holocaust by reassuring the Soviets that we have no intention of striking them first. Their nuclear doctrine is ambiguous now—and understandably so—because they have every reason to believe that in a conflict their forces would sooner or later be subjected to US nuclear attack. This belief would intensify pressures upon them to strike first in an attempt to eliminate large components of our TNW arsenal. Were we to convince them that we had sufficient confidence in the Western Europeans' capability to defend themselves, the chances of initiation of nuclear warfare by one side or the other would be reduced.

Adoption of a "no first use" nuclear policy by the United States would tend to close an important philosophical gap between this country and most of the other members of the United Nations, including the People's Republic of China. Peking has maintained a "no first use" policy ever since it achieved its first explosion of a nuclear device.[41] Considering the dynamics of world opinion, it is likely that the United States could gain some political advantage through adoption of a similar policy. The Soviet Union has long maintained that all nuclear weapons should be abolished as part of general and complete disarmament. However, the policy has never taken a practical form with incorporation of verification measures or specific renunciation of first use.[42] Should China and the United States opt for "no first use" and the Soviets not soon follow suit, they could find themselves isolated on the issue and on the defensive in the court of world opinion. Except for their most obedient and hard-core puppets in leftist parties abroad, the Soviets might incur the risk of weakening influence—possibly to the benefit of Peking-oriented political leadership. A not unlikely denouement would be a "clarification" of Soviet nuclear policy

embracing the "no first use" principle, at least with regard to Central Europe. Should this occur, a major obstacle would be removed from the achievement of an eighteen-year-old arms control proposal and popular dream for the area.

On October 2, 1957, the Polish Foreign Minister, Adam Rapacki, proposed to the United Nations that a nuclear-free zone should be established in Central Europe as a first step in defusing the tensions which had built up on both sides, under the banners of NATO and the Warsaw Pact. As detailed in a subsequent announcement, the scheme envisioned the removal of all nuclear weapons, weapon launchers, and facilities from Poland, Czechoslovakia, and East and West Germany. Both ground and aerial inspection systems would be permitted by both sides to insure compliance.[43]

The proposal was not well received at the time by the United States because of implications of a permanent division of Germany. It may also be assumed that the United States would have been wary of any scheme which would restrict the facility with which US forces might have access to nuclear weapons because of then prevalent perceptions of their necessity for deterrence and defense.

Now, however, with the recent modification of US policy with respect to East Germany and the implication of the progressive school that nuclear weapons may be deemphasized, if not eliminated, the Rapacki plan takes on a new complexion. If conventional defense is possible, with some confidence, why not press for denuclearization of the opponent?

The plan opens whole new vistas for the security and stability for Europe and for the world. As Rapacki suggested, progress on this issue could serve to break through many of the other issues dividing the continent. The USSR took a favorable position on the Rapacki Plan, probably more for propaganda purposes than for any serious belief in its merits. However, in an era of mutual confidence in the security of the two sides there are substantial grounds for believing that the revival of the plan would have some genuine appeal to the Soviets. They recognize, as we do, the risks of prolonged deployment of thousands of weapons on foreign soil. The dangers relate not only to their use in war, but also to accidental discharge and misappropriation by foreign governments or terrorist organizations.

It may be too early to predict with confidence the outcome of the PGM conservative-progressive debate. However, the rush of technology will not slow down for decisions to be made. Thus far it appears that the United States is hedging its bets: investing heavily in the new weaponry, but for the most part postponing organizational and roles-and-missions issues. (An important exception may be the activation of the Army's new 6th Cavalry Brigade (Air Combat), with its 336 helicopters, most of which will be TOW-equipped Cobras. The unit is designed to maximize the new technology, particularly for locating, disrupting, and destroying hostile armored and mechanized forces.)[44] For the time being, hedging may be a wise course. At some point in time decisions will be made, if only by default. Prolonged adherence to traditional concepts and doctrine will constitute a decision just as certainly as would a sharp break and election of reorganization. Now is the time to study the merits of the cases and to prepare for the hard decisions ahead.

NOTES

1. Alain C. Enthoven and K. Wayne Smith, *How Much is Enough* (New York: Harper & Row, 1971), p. 119.
2. Jeffrey Record, "To Nuke or Not to Nuke: A Critique of Rationales for a Tactical Nuclear Defense of Europe," *Military Review*, October 1974, p. 6.
3. Jeffrey Record, *US Nuclear Weapons in Europe: Issues and Alternatives* (Washington: Brookings, 1974), p. 19.
4. James R. Schlesinger, *Annual Defense Department Report FY 1975*, p. 82.
5. Record, *US Nuclear Weapons in Europe: Issues and Alternatives*, pp. 67-69. Record favors retention of TNW in Europe, but at far lower levels than currently authorized (about 2,000 vice 7,200).
6. Drew Middleton, "Schlesinger Calls A-Arms Vital to Guard Europe," *The New York Times*, December 12, 1974, p. 3.
7. Colin S. Gray, "Deterrence and Defense in Europe: Revising NATO's Theater Nuclear Posture," a paper presented at a workshop on "Force Restructuring and Force Reduction in Europe," Harvard University, November 1974, p. 2.