

July 16, 1986

## THE CONVENTIONAL ARMS BALANCE PART 3 DETECTING NUCLEAR WAR IN EUROPE

### INTRODUCTION<sup>1</sup>

It is central to the military strategy of the North Atlantic Treaty Organization that its forces be able to hold back a Soviet-led Warsaw Pact conventional attack for several days. This would give NATO nations time to decide whether to use nuclear weapons. It is now questionable, however, whether NATO units are capable of buying this precious time needed for careful decision making. A May 1985 report by the NATO Military Committee warned that under present trends NATO's conventional forces would not be able to withstand a Warsaw Pact assault long enough for NATO to decide whether to escalate the war to the nuclear level.

If this situation continues, NATO's ability to deter Soviet aggression in Europe will diminish substantially. Its conventional forces are weak, and its nuclear weapons are vulnerable to preemptive Soviet attacks. During the last decade, Moscow has added nearly 10,000 modern main battle tanks to its forces facing NATO and has increased its inventory of large caliber artillery and rocket launchers from 20,000 to over 35,000 tubes. Its forward deployed troops are more battle ready than ever, and they have received sufficient supplies to continue combat long enough to achieve tactical breakthroughs without major reinforcements. Soviet frontal aviation, meanwhile, has been upgraded with such advanced combat aircraft as the Su-27 and the MiG-28. And Soviet electronic countermeasure

---

1. This is the third in a series of Heritage Backgrounders on the conventional arms balance. It was preceded by Backgrounders No. 489 (February 21, 1986) on "The Threatening Soviet Lead" and No. 503 (April 11, 1986), "The U.S. Army Must Counter Soviet Gains." Future studies will examine the U.S. Navy and Air Force.

capabilities now can complicate NATO interdiction of Warsaw Pact airfields and troops with manned aircraft.

To arrest the steady deterioration of its military posture in Europe, NATO above all needs stronger conventional forces along with improved readiness and greater sustainability in combat. In particular, what NATO needs are:

- o hardened shelters for its aircraft and maintenance facilities to protect and keep them operational after suffering intense bombardment by enemy aircraft and tactical missiles;
- o anti-tank weapons capable of cracking the improved armor of Soviet tanks and armored personnel carriers;
- o unmanned deep-strike platforms, such as remotely piloted vehicles for battlefield reconnaissance and delivery of "smart" submunitions against mobile, unprotected targets; and
- o enough stockpiles of munitions, fuel, and spare parts for high intensity combat operations for at least 30 days.

A step was made in this direction in 1984 when the NATO Defense Planning Committee called for nearly doubling the funding of the Alliance's Infrastructure Program, which pays for such support systems as hardened aircraft shelters and pipelines. Another needed step was the 1984 decision by the NATO defense ministers to improve NATO troop readiness, survivability under attack, and ability to keep fighting (called "sustainability") for at least 30 days.

Unless it improves its conventional forces, NATO could see its flexible response strategy crumble. In that case, there would be no NATO alternative to a massive Soviet conventional attack but to surrender Central Europe or to hurtle nuclear weapons at the invaders.

#### ADDRESSING THE SOVIET CONVENTIONAL ADVANTAGE

NATO military planners long have been dissatisfied with the alliance's growing dependence on the early use of nuclear weapons. Reducing nuclear reliance was the declared goal of the 1978 Long-Term Defense Program according to which the allies pledged to increase defense spending 3 percent annually after inflation for five years.

This program listed ten critical areas for improvement, nine of which aimed at enhancing conventional defenses.<sup>2</sup> Most NATO members, however, did not honor their pledge. As such, only marginal progress has been achieved in improving conventional defenses.

Conventional defense weaknesses became apparent during the recent debate over deployment of intermediate-range nuclear weapons (INFs) in Europe. Those supporting the INF deployment based their arguments in part on the conventional deficiencies. Those opposing INF, meanwhile, advocated increased conventional forces instead of new nuclear arms systems. NATO Commander, General Bernard Rogers, seized on this emerging consensus and proposed a combination of stronger conventional forces and new operational doctrine. This became known as the follow-on forces attack (FOFA) concept or the Rogers Plan. It requires spending increases of 4 percent annually and, if fully executed, would make NATO conventional forces strong enough to blunt the initial thrust of a Warsaw Pact attack.

The FOFA concept aims at striking the second and third echelons of Warsaw Pact forces to slow and weaken them before they reach the front line. Geography prevents NATO troops from falling back to regroup in the face of a Soviet attack. The alliance thus cannot, in textbook fashion, trade space for time. Nor can NATO defenses along the intra-German border hold under the weight of Soviet reinforcements. The alliance, therefore, must wear down the second and third echelons and delay their arrival at the forward edge of the battle area (FEBA) as long as possible. This requires new NATO weapons systems to strike fixed and mobile targets far behind enemy lines.

NATO's conventional forces now cannot attack most fixed targets up to 300 kilometers inside Warsaw Pact territory with a fair chance of success. To do so, NATO must use costly aircraft to penetrate heavily defended Warsaw Pact airspace. Sending manned bombers on these missions would lose more of the aircraft than NATO can afford and still maintain air superiority in the theater. The best alternative to the bombers is the use of missiles carrying powerful conventional warheads. Several candidate systems, such as the Joint Tactical Missile (JTACM) with advanced submunitions, are in development.

Mobile targets present more of a problem. NATO currently is unable to hit Warsaw Pact transportable missile launchers, artillery concentrations, or mobile radars. It may be able to, however, with such "emerging technologies" weapons as advanced sensors, tactical

---

2. The areas targeted for improvement were: readiness, reinforcement, reserve mobilization, maritime posture, air defense, command, control, and communications (C<sup>3</sup>), electronic warfare, rationalization, and logistics.

data fusion systems for instant reconnaissance and targeting data transmission, and so-called smart munitions now under development.

A 1982 NATO report has identified four critical areas in which NATO conventional forces could be bolstered significantly and speedily by technical innovation. These are counter-air capabilities; command, control, and communications (C<sup>3</sup>); defense against first wave attacks; and ability to attack rear echelon targets. In April 1984, NATO's Conference of National Armaments Directors (CNAD) selected eleven "emerging technologies" for application to conventional defense that could be available by the end of the decade if adequate funding were provided.<sup>3</sup> Most of these systems are already under development.

Also in May 1984, allied defense ministers set the 1985-1990 Force Goals and called for annual net defense spending increases of 3.2 percent for each NATO member. These Force Goals aim at rectifying the most serious NATO conventional force deficiencies: in readiness, sustainability, and survivability of NATO forces. Sustainability is critical. It is called the "war-stopper" because sustaining NATO troops in the field, under attack, is essential to halting a Soviet-led advance. General Rogers has warned repeatedly that, without the added supplies to increase sustainability, he will be forced to request the use of nuclear weapons within days of a conventional attack. In response to worries about sustainability, NATO now seeks to build supply stockpiles sufficient to wage conventional war for 30 days.

## ASSESSING THE MILITARY BALANCE IN CENTRAL EUROPE

It is difficult to accurately compare the strength of NATO and Warsaw Pact forces. The military blocs differ in terms of their purpose, geostrategic situation, and military doctrines, all of which shape their force postures and condition their equipment needs. NATO is essentially an alliance of maritime countries and lacks strategic depth. As such, it must maintain air and sea forces adequate to move supplies to the battlefield and must keep its forces in Europe at high

---

3. The eleven programs include: the new identification friend/foe (IFF) system for NATO aircraft, low-cost submunitions dispenser for fixed targets, electronic support mission (ESM) system for passive detection of enemy aircraft and vehicles, multiple launch rocket system (MLRS) with precision-guided munitions (PGMs), PGMs for the 155mm artillery gun, the battlefield target acquisition system, electronic warfare systems (EWS) for tactical aircraft, short-range anti-radiation missile, an artillery locating system, a stand-off surveillance and acquisition system, self-protection for battlefield helicopters. David A. Brown, "NATO Selects Emerging Technologies," Aviation Week and Space Technology, April 16, 1984.

readiness. By contrast, the Warsaw Pact controls the vast expanse of the Eurasian landmass and is favored by short lines of communications to support an offensive doctrine.

NATO need not match the Warsaw Pact tank for tank and plane for plane. As a defensive alliance it need not field forces capable of sustained offensive operations. Accordingly, its military units are configured and equipped differently than those of the Warsaw Pact. The chief consideration in assessing the military balance, therefore, must be whether NATO can deny the Warsaw Pact forces the degree of superiority needed for successful attack. Quantitative comparisons can be only a rough guide to assessing the military balance.

Qualitative differences in the actual combat capability of a weapon system, its reliability, and the synergistic effects it can generate in combination with other weapons in the force structure also must be taken into account. In the past, NATO enjoyed a qualitative edge in weaponry and equipment. This gap has narrowed considerably in the last decade. Soviet-made equipment rivals or outclasses NATO systems in many areas, such as self-propelled artillery, air defense, and surface-to-surface missiles. NATO can no longer rely, therefore, on qualitatively superior weapons to compensate for its numerical inferiority.

Training, command, control, and intelligence capabilities, unit cohesion, military doctrine, and tactical skills also determine overall combat effectiveness. But they are difficult to quantify. And while the peacetime or static balance of forces is important in assessing vulnerability to an unreinforced attack, the dynamic balance of forces is more decisive in determining the outcome of a war. Accordingly, the ability to reinforce existing forces rapidly and to sustain them in battle over time is a more appropriate yardstick for comparing the force balance between both alliances.

The Central European Front stretches 800 miles from the Baltic Sea to the Alps and is the most heavily defended region of the alliance. The Warsaw Pact keeps about 1.2 million troops in 57 land divisions and air and naval forces in Central Europe. In addition, there are 800,000 men filling paramilitary units. Counting reserves in the highest readiness category, the Pact can mount a reinforced attack with up to 115 divisions, including the 26 Soviet elite divisions camped in East Germany, Czechoslovakia, and Poland. While Warsaw Pact divisions have fewer troops than typical NATO divisions,

---

4. The largest artillery/howitzer fielded by NATO has a 203mm caliber, whereas Warsaw Pact forces deploy guns such as the M-1975 with a 240mm caliber. Despite NATO efforts to make its 155mm guns more effective with improved conventional munitions, these improvements will not close the qualitative gap favoring the Warsaw Pact.

their actual combat power is comparable because of their more favorable armor-to-troop ratio.

NATO deploys about 1 million troops in Central Europe, organized in 26 divisions plus air and naval forces. Another 19 divisions are available as ready reinforcements, including twelve active Army divisions stationed in the continental U.S. NATO could mobilize an additional 19 divisions for a total defense force of 64 divisions after at least two weeks of combat. After extensive mobilization, NATO could field a total of 3 million men.<sup>5</sup> In equivalent divisions, the Warsaw Pact can field 192 divisions, compared to NATO's 115, after 30 days of mobilization.

With its deployed forces, NATO can parry an unreinforced Warsaw pact attack for at least a few days with minimal warning time. In a "standing start" attack across the inter-German border, the 19 Soviet and 6 East German divisions would confront 22 NATO divisions, even if French, Belgian, and Dutch divisions stationed at home were not shifted forward. But the more time Moscow has to reinforce its troops, the worse the situation becomes for NATO, even if NATO reacts quickly. Fear of escalating a crisis, however, is likely to make NATO leaders reluctant to move reinforcements into position. After several weeks of Warsaw Pact mobilization, NATO would be hopelessly outnumbered and outgunned.

Warsaw Pact forces hold a 2:1 advantage in nearly every major weapon category. This does not give the Warsaw Pact the required force ratio of 3:1 for an attack across the entire length of the front, but it would be sufficient to concentrate enough mechanized units on selected sectors of the front to overwhelm and break through NATO's thin frontline defenses. Since NATO keeps few reserve forces in the rear to blunt the momentum of offensive forces or man a second line of defense, deep tactical breakthroughs will cause a ripple effect and thus unravel NATO defenses, leading to strategic success.

On the central front, Warsaw Pact forces field nearly three times as many main battle tanks (MBTs) as NATO (29,000 vs. 10,000). In artillery guns, heavy mortars, and multiple launch rocket launchers (MLRS) the Warsaw Pact holds a 2:1 advantage.<sup>6</sup> It leads by 3.5:1 in anti-tank guided weapons and by 1.6:1 in armored fighting vehicles.

---

5. This does not include French forces, which are outside NATO's military structure. While it may be assumed that these forces will join after an outbreak of hostilities, with the exception of the four divisions deployed across the French border in Germany, French troops will not be available in initial days of a war.

6. Soviet forces deploy more than 6,000 MLRS with wide range of calibers, while the U.S. has just started procurement of its own 227mm system and has now 177 launchers.

Even in helicopter gunships, a category formerly dominated by NATO, the Warsaw Pact has acquired a 2:1 advantage.<sup>7</sup> Soviet attack helicopters such as the M-28/Havoc or M-24/Hind are equipped for air-to-air combat and are armed with air-to-surface missiles able to strike NATO forces from a safe distance. According to the 1986 edition of Soviet Military Power published by the Pentagon, the new Soviet Hokum helicopter, which is faster than the new U.S. AH-64/Apache and has no NATO counterpart, "may give the Soviets a significant rotary-wing air-superiority."<sup>8</sup>

The balance is equally lopsided in terms of aircraft and air defense. The Warsaw Pact has 7,400 combat planes compared to NATO's 3,000, excluding bombers and transport planes. Nearly two-thirds or 4,200 Warsaw Pact aircraft are interceptors assigned mainly to air defense missions but which can also offer cover for more than 400 Warsaw Pact medium-range bombers in raids against NATO targets.

NATO's interceptor fleet has about 800 aircraft. The weakness of NATO ground-based air defenses aggravates the effects of this numerical disparity. Moreover, modern Warsaw Pact interceptor aircraft are equipped with advanced radars capable of detecting and engaging low-flying NATO planes flying against rear area targets deep inside Warsaw Pact territory.

In terms of ground attack aircraft and fighter bombers, the Warsaw Pact leads by over 1,900 to nearly 1,200 planes. Their increased combat radius, payload, higher speed, and improved navigational gear enables Warsaw Pact planes to operate at lower altitudes and to strike NATO forces and installations deep behind the front line. The Warsaw Pact also fields more than twice the number of reconnaissance aircraft than NATO. While NATO's planes are still superior, the Soviets are introducing their Mainstay airborne warning and control system (AWACS) planes with capabilities similar to NATO's E-3A Boeing 707s.<sup>9</sup>

The Warsaw Pact also leads in ground-based air defenses. It deploys a wide variety of surface-to-air missiles in Eastern Europe, mainly the SA-4 Ganef now being replaced with the new SA-12, SA-6 Gainful, and SA-8 Gecko to defend against NATO airstrikes. These

---

7. Soviet Military Power 1985, 4th Edition (Washington, D.C.: Government Printing Office, 1985).

8. The U.S. decision in 1985 to cancel the troubled Sergeant York division air defense gun (DIVAD) was prompted in part by its inability to defend troops against airborne attacks from modern Soviet helicopter gunships.

9. The Military Balance, 1985-86 (London: International Institute for Strategic Studies, 1985), pp. 186-87.

missiles are mounted on mobile launchers and move with ground force units. The Pact also has 4,000 more anti-aircraft guns than NATO, which maintains two air defense belts running from the Baltic Sea to the Alps but they are porous barriers unable to block a massive Soviet air offensive. The airspace between both defense belts must be covered by NATO interceptor aircraft. This means that NATO airbases must generate high sortie rates, yet they are highly vulnerable to pin-down attacks by Soviet planes and surface-to-surface missiles.

Any Soviet assault on Western Europe would involve massive air-strikes to destroy and suppress NATO airfields, command, control, communications, and intelligence (C<sup>3</sup>I) assets, storage depots, and other critical installations. The Warsaw Pact probably first would attempt to disable NATO air defenses by precursor strikes with short-range ballistic missiles to clear the way for subsequent raids by fighter bombers. If the Warsaw Pact quickly wins air superiority in the theater by crippling NATO air forces and destroying its ground-based air defenses, then NATO ground forces will be denied their essential fire support from NATO planes.<sup>10</sup>

Efforts are underway to upgrade NATO air defenses with Patriot, Roland-II, and Improved Hawk missiles. The mobile Patriot system replaces old fixed nuclear armed Nike launchers and carries non-nuclear fragmentation warheads. The Roland-II missiles will provide close-in defense of airbases and other critical installations. According to a 1984 U.S.-West German agreement, the Bundeswehr will buy 115 Roland-II launchers and will operate 12 Patriot missile batteries at four American airfields in West Germany. The U.S. will station another 42 Patriot firing units in West Germany. In a similar agreement, the Netherlands agreed to buy four scaled-down Patriot systems. When they are completed in the early 1990s, over 5,000 Patriot missiles for 82 firing units will be deployed in Central Europe, thus improving considerably NATO's air defense situation. But NATO will remain vulnerable to Warsaw Pact surface-to-surface missile attacks.

#### HOW TO IMPROVE NATO'S CONVENTIONAL DEFENSE

Efforts to upgrade NATO's conventional force posture must be directed first at mitigating the deficiencies of the existing force structure in sustainability, air defense, and anti-armor weaponry. This does not mean that NATO should not invest in the "emerging technologies" required for the "follow-on forces attack" (FOFA) concept. But NATO cannot afford to base its conventional defenses on

---

10. Some observers believe that NATO would lose control over its airspace within a matter of days. See: Donald R. Cotter, European Security Study (ESECS), p. 221

the distant prospects of promising technologies. The more ambitious technologies, therefore, should be pursued only if their funding does not detract from the more pressing task of meeting short-term requirements.

#### To Improve Sustainability of Forces:

##### 1) Transfer U.S. Surplus Munitions.

Lack of sustainability is the Achilles heel of NATO, which no quantitative comparison of major weapon systems can accurately portray. Most allies have invested heavily in big-ticket, highly visible equipment programs, such as tanks, aircraft, and artillery but have raided munition procurement accounts to finance them. Many NATO allies thus are seriously short of advanced bombs and ordnance. Their inventories do not meet NATO's goal of 30 days of supplies. In fact, it is believed that some allies will run out of ammunition, fuel, and spare parts within ten days of hostilities. Since six NATO countries are involved in the defense of the Central Front, supply shortages of one country reverberate and can unravel NATO's defense efforts. Such countries as the Netherlands and Belgium, therefore, should be pressed to bring their forces up to established sustainability levels.

The U.S., meanwhile, could place the surplus munitions in its European inventory at the disposal of the NATO commander. Example: the U.S. Army is modernizing its 155mm artillery shells with an improved version and is returning the excess ordnance to the U.S. By keeping this ordnance in Europe, Washington could extend the staying power of NATO forces at no expense to the U.S. taxpayer. The U.S. might even save money since it will not have to pay for shipping this ordnance back to the U.S. for storage.

##### 2) Monitor Compliance with the Nunn-Roth Targets.

Senators Sam Nunn of Georgia and William V. Roth of Delaware in 1984 introduced legislation to encourage the European allies to improve their conventional forces sustainability. If they failed to do so, the Nunn-Roth law would require the withdrawal of up to 90,000 U.S. troops over three years. Although their legislation was narrowly defeated, it spurred the Europeans to agree to double budget allocations for the NATO Infrastructure Program. This program finances construction and maintenance of NATO installations, mainly airfields, ports, communications facilities, munitions depots, and fuel pipelines on an alliance-wide basis. Much of the additional money will fund construction of more than 600 hardened shelters and maintenance facilities for the U.S. aircraft that would be rushed to Europe during a war. Though the \$7.5 billion committed by NATO is twice as much as had been targeted originally, it still is only slightly more than half of what NATO military planners had requested. Washington, therefore,

should press for more spending by the Europeans on this essential program.

The Nunn-Roth proposal also would have required that the allies meet their commitment to increase annual defense spending by 3 percent (after inflation) as well as meet NATO's 30-day war supply goal. The U.S. should monitor allied performance in these areas and exert pressure to achieve European compliance with the Nunn-Roth objectives.

### 3) Complete U.S. POMCUS Program.

The U.S. is committed to reinforce NATO rapidly with six Army divisions, 60 tactical fighter squadrons, and other units within ten days of mobilization. While further reinforcement would be necessary, these additional forces are deemed adequate to prevent a Warsaw Pact breakthrough in the initial days of a war. To ease airlift and sealift requirements in an emergency, the U.S. stores in Europe the equipment and arms to be used by the U.S.-based reinforcements. The Pre-positioning of Materiel Configured to Unit Sets--or POMCUS--program now holds enough equipment for five U.S. divisions. Washington should complete the program by obtaining funding for pre-positioned supplies for the sixth division. Washington also should accelerate U.S. Air Force programs to provide logistic support for aircraft deployed to Europe at the onset of hostilities.

### 4) Improve Anti-armor Capabilities.

With the exception of the Hellfire laser-guided air-to-surface missile, the U.S. does not field a missile capable of destroying advanced armored Warsaw Pact tanks at a safe distance. Other NATO countries face similar problems. To address this, the U.S. should coordinate with its allies the development and procurement of an advanced anti-tank weapon. The U.S. also should replace the 15-year-old Dragon missile, whose limited range no longer meets operational requirements and which exposes soldiers to enemy fire when launching the missile. Since several such systems are already in production in Europe, Washington should buy an off-the-shelf system even if it does not meet all specifications of a brand-new U.S. development.

## 5) Accelerate Multiple Launch Rocket System (MLRS) Deployment.

The U.S. Army has begun deploying the MLRS system capable of delivering in less than a minute 7,700 grenade-like submunitions<sup>11</sup> over an area the size of six football fields. The MLRS gives NATO forces the firepower to suppress enemy movement. Though other NATO allies plan to buy this system, their rate of annual purchases is much too slow and must be increased. NATO also must accelerate development of "smart" warheads for the MLRS to increase the system's versatility. This includes development of a chemical charge to give the U.S. Army extended range chemical capabilities and an accelerated development of the tactical missile system (TACMS) for the MLRS.

### To Improve NATO Air Defense Capabilities:

#### 1) Deploy Additional Patriot and Roland-II Missile Systems.

The welcome decision to field Patriot and Roland-II air defense missile systems in Europe will reduce NATO vulnerability to Warsaw Pact air strikes against critical military facilities. Since NATO depends heavily on the civilian infrastructure of the allies, steps also must be taken to protect these assets against Warsaw Pact interdiction. Finally, NATO must counter the threat of Warsaw Pact nuclear and conventional armed short-range ballistic missiles (SRBMs) that could demolish NATO air defense installations and airfields.

#### 2) Upgrade Patriot and Hawk Systems with Missile Defense Capability.

NATO must deploy another 50 Patriot systems and 100 Roland systems for the protection of key civilian installations and command, control, and communications (C<sup>3</sup>I) facilities. If the current Patriot upgrading program succeeds in giving the system a limited anti-tactical ballistic missile (ATBM) capability, the new version should be deployed as soon as possible. The U.S. also should proceed with the next Hawk air defense missile improvement program to give it a self-defense capability against Warsaw Pact short-range ballistic missiles (SRBMs).

---

11. Modern artillery shells on missile warheads contain multiple small munitions called submunitions, which are released over the target area and can strike separate objects.

3) Develop a Two-tiered NATO Anti-Tactical Ballistic Missile (ATBM) System.

Washington should try to win allied cooperation in developing a so-called two-tiered ATBM defense system for Western Europe. West German Defense Minister Manfred Woerner already has endorsed an ATBM system. NATO needs missile defenses to protect its nuclear weapons from Soviet preemptive strikes. Without such defenses, NATO loses its option of carefully escalating a conflict to the nuclear level. Instead, NATO may have to launch its nuclear weapons quickly, at the very early stages of a conflict, so that it will not lose them to a Soviet strike.

4) Choose a DIVAD Replacement for the U.S. Army.

The U.S. quickly should select an air defense system to replace the cancelled Sergeant York division air defense (DIVAD) gun. A number of competitive systems have been offered by European suppliers in cooperation with American contractors. The U.S. Army should not repeat its mistake of spending years to develop its own gun from scratch, thus exposing U.S. ground forces to close-in attacks by Warsaw Pact aircraft and helicopter gunships. An early decision to buy a European system or U.S./European hybrid system is essential.

5) Accelerate NATO Identification System (NIS).

Agreement finally has been reached on a NATO-wide friend-foe identification system that would permit allied pilots and air defense commanders to distinguish hostile from friendly aircraft. The use of long-range missiles, after all, cannot depend on visual identification of approaching aircraft. It is estimated that NIS deployment could improve the combat effectiveness of NATO tactical aircraft by 30 percent. Given its dependence on interceptors for air defense, equipping existing aircraft with NIS should be a high NATO priority.

To Improve Deep Operations Capability:

The follow-on-forces attack (FOFA) concept to strike Warsaw Pact second echelon forces before they reach the frontline and the U.S. Army Airland Battle doctrine, which calls on U.S. forces to gain the initiative through offensive thrusts behind enemy lines, require carrying fire deep behind enemy lines. At present, NATO cannot do this. Many of the "emerging technology" programs, however, promise sophisticated surveillance and targeting systems to enable NATO ground and air forces to strike distant enemy targets with surface or air-launched conventional missiles.

1) Accelerate Development of the Tactical Missile System (TACMS).

This new missile can be fired from the Multiple Launch Rocket System (MLRS) platform at a distance of 60 miles and deliver submunitions against second and third echelons of the attacker's forces, tactical ballistic missile launchers, air defense installations, and other critical targets. With new guidance and target acquisition and tracking systems, the missile will boost NATO long-range conventional strike capability. Its air-launched version will enable NATO fighter bombers to fire on targets from outside the enemy air defense perimeter.

2) Equip U.S. Air Force with "Smart" Runway Cratering Weapons.

The U.S. Air Force still lacks advanced multiple impact munitions to crater runways as well as air-deliverable mines to impede and delay repairs to airfields and other installations. These munitions are needed to reduce the number of planes now required to disable enemy airbases. The British SG-357 and the German Stabo runway-busting charge delivered with multipurpose dispensers meet U.S. requirements and can be carried by most U.S. aircraft. In 1983, the U.S. Air Force began procuring the French Durandal iron-bomb as an interim weapon pending completion of its own Direct Airfield Attack Combined Munition with the Boosted Kinetic Energy Penetrator (BKEP). BKEP has been delayed repeatedly, and a production decision will not be made until FY89. BKEP still will not give the Air Force a stand-off capability but must be dropped from aircraft flying over the target at low altitudes. Nor will it offer other performance improvements over European systems already in production. It thus would make sense for the Air Force to stop acquiring the Durandal bomb, cancel BKEP, and instead procure either existing and effective German or British weapons for attack against airfields.

3) Accelerate LANTIRN Deployment.

The Low-Altitude Navigation and Targeting Infrared System for Night (LANTIRN) is designed to enable aircraft to conduct ground attacks at night and in foul weather. Poor weather conditions in central Europe are a serious handicap for NATO air forces. LANTIRN, therefore, will allow NATO aircraft to penetrate enemy air defenses at night below their radar coverage and deliver munitions with great accuracy. The U.S. Air Force plans to equip its new F-15E and F-16C/D warplanes with LANTIRN. The project should be accelerated and other NATO members should be prodded to acquire the system.

#### 4) Field JSTARS System at Accelerated Pace.

The Joint Surveillance Target Attack Radar System (JSTARS) is the linchpin of NATO's new emphasis of attacking enemy follow-on forces. JSTARS can detect and track moving targets well behind the front line and relay this information back to ground stations for targeting assignment. Current plans call for deployment in the late 1980s of ten JSTARS on C-18 converted Boeing 707 aircraft. In conjunction with other sophisticated sensors currently in development, JSTARS will give NATO forces the surveillance capabilities required to implement its new deep-attack concept. The U.S. should press its allies to fund both programs through a separate budget modeled on the successful scheme that underwrote the Airborne Warning and Control System (AWACS) acquisition in the late 1970s.

#### CONCLUSION

NATO must correct its deteriorating conventional force balance with the Warsaw Pact if it wants to deter Soviet-sponsored aggression and defeat an attack should deterrence fail. While NATO has endeavored since the late 1970s to bolster conventional defenses, these efforts have not offset the tremendous expansion of Warsaw Pact military capabilities. This forces NATO to depend more than ever on nuclear escalation to halt Warsaw Pact forces breaking through the West's brittle defenses. To make matters worse, the threat of nuclear escalation is losing credibility and may account in part for Western European weariness about the costs of resisting aggression.

Bolstering conventional defenses will address these serious shortcomings. It will buy more time for NATO before it has to escalate to nuclear attack. And it will boost West European morale by raising the prospect of NATO defending itself without necessarily resorting to nuclear weapons.

The measures suggested above are the minimum improvements needed to stem the erosion of NATO's deterrent capabilities in Europe. In the long term, development of "emerging technologies" may give NATO the weapons required to mount a viable conventional defense. But mitigating the deficiencies of the existing force posture must be given priority over future untested exotic remedies. And the expense involved is well within the means of NATO members.

Manfred R. Hamm  
Senior Policy Analyst