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# THE PAST AS PROLOGUE: A CAUTIONARY TALE OF THE U.S. EXPERIENCE WITH TACTICAL NUCLEAR WEAPONS

By David O. Smith

Last year at the Fifth Iteration of the U.S.-Pakistan Strategic Dialogue in Singapore, I recall a degree of ambivalence on the Pakistan side about admitting their country's pursuit of tactical nuclear weapons as a means to offset India's Cold Start Doctrine. During the discussion that followed the panel on Strategic Stability: Modernizations, Doctrines, and Deterrence Constructs, participants were split on their opinions about the utility of short-range battlefield missile systems in general and tactical nuclear weapons in particular. However, the consensus of all participants was that "all nuclear weapons are strategic weapons regardless of range, yield, and employment, and that, in this sense, there are no tactical nuclear weapons in South Asia".<sup>1</sup>

However, two developments occurred earlier this year in both countries that appear to belie this conclusion:

The first was on 19 April when Pakistan tested its *Nasr* (Hatf-IX) short-range ballistic missile. According to the ISPR press release issued that day, "The missile has been developed to add deterrence value to Pakistan's Strategic Weapons Development program at shorter ranges. *Nasr*, with a range of 60 km, carries nuclear warheads of appropriate yield with high accuracy, shoot and scoot attributes. This quick response system addresses the need to deter evolving threats."<sup>2</sup> A Pakistani observer, Mansoor Ahmed, noted that the *Nasr* test "demonstrated that Pakistan has succeeded in miniaturizing its nuclear weapon designs to the extent that these can be launched by tactical and cruise missiles...Pakistan can now make air and naval versions of *Nasr* and nuclear tip the *Babar* and *Ra'ad* cruise missiles."<sup>3</sup> Ahmed is correct. Once the basic miniaturization process is mastered, it is relatively easy to make small warheads for a variety of land-based systems, artillery shells, for example, or naval systems like torpedoes and ship-to-ship missiles as well.

The second event was on 21 July when India responded by conducting the first test-firing of its own tactical ballistic missile system, the 150 km range *Prabaar*, which, according to Indian press accounts, carries a 200 kg conventional warhead and can be fired in salvoes of six independently targeted missiles. Scientific Adviser to the Defence Minister V.K. Saraswat called it "a unique missile because it has high maneuverability, very high acceleration and excellent impact accuracy. It will bridge the gap between the multi-barrel rocket system, *Pinaka* and the *Prithvi* missiles....It is

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<sup>1</sup> Khan, Feroze H. and Masellis, Nick M., Workshop Report, U.S.-Pakistan Strategic Partnership, A Track Two Dialogue for Long Term Security Cooperation, Fifth Iteration. Monterey, CA: Naval Postgraduate School, October 2010.

<sup>2</sup> Press Release, 19 April 2011, Directorate for Inter Services Public Relations. [www.ispr.gov.pk/main.asp?o=t-press\\_release&date=2011/4/19](http://www.ispr.gov.pk/main.asp?o=t-press_release&date=2011/4/19).

<sup>3</sup> Ahmed, Mansoor, "Why Pakistan needs tactical nuclear weapons," The Weekly Pulse, 6 May 2011. [www.weeklypulse.org/details.aspx?contentID=563&storylist=9](http://www.weeklypulse.org/details.aspx?contentID=563&storylist=9).

comparable to the Army Tactical Missile System (ATACMS) of the United States,” he added.<sup>4</sup> Though not expressly stated to be a tactical nuclear delivery system, it certainly has the warhead capacity to carry a miniaturized nuclear warhead. Since India has or soon will have the technological capability to miniaturize a nuclear warhead, it should be a relatively simple step to develop battlefield nuclear systems to match any Pakistani capability.

So what is the prospect for continued development, refinement, and deployment of battlefield or tactical nuclear weapon (TNW) systems in South Asia? Unfortunately, we have seen this movie before. Thus, we can predict with a fair degree of confidence how the future will probably unfold. Briefly, we can expect to see the following:-- Development and deployment will likely precede the development of doctrine.

- India will match (and probably exceed) whatever Pakistan does.
- The numbers of deployable weapons will be determined primarily by the fissile material production capacity on both sides rather than the number needed for deterrence.

Where will this end? How many tactical weapons will be enough? Perhaps the number of battlefield nuclear weapon launchers fielded by NATO forces and Warsaw Pact forces in Europe in 1989, the last year before the Soviet Union imploded, offers a clue.<sup>5</sup>

	<u>NATO</u>	<u>Warsaw Pact</u>
Missiles		
INF and medium range	132	414
GLCM	95	46
Short range	199	1593
Land-based aircraft	1382	2349
Artillery	3022	5598
<u>SAMs</u>	<u>375</u>	<u>3330</u>
Totals	5205	13,330

In considering this situation, I was reminded of the philosopher, George Santayana, who in 1905 famously wrote, “Those who cannot remember the past are condemned to repeat it.” Since we seem to be preparing to relive the past in South Asia, I thought it might be useful to briefly review the history—at least from the U.S. side—of the development and fielding of TNWs in Europe, and how we eventually came to view their utility (or lack thereof) on the battlefield.

### **The 1940s: U.S. Nuclear Monopoly and Strategic Deterrence**

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<sup>4</sup> The Hindu, 21 July 2011. [www.thehindu.com/news/national/article2279166.ece](http://www.thehindu.com/news/national/article2279166.ece).

<sup>5</sup> The Military Balance, 1988-1989. London: International Institute for Strategic studies, Autumn, 1988, p. 220.

Since the first American nuclear weapons were massive in size, weight, and kiloton yield, the only feasible method of delivering them was by heavy bombers, a mission tailor-made for the newly created U.S. Air Force. With the U.S. monopoly expected to endure for several years, little thought was given to any use other than for strategic purposes, but the unanticipated end of that monopoly in 1949 stimulated other thinking. Soon there were two distinct streams of thought about future nuclear weapons development: the “super,” promoted by scientists like Edward Teller who wanted to build thermonuclear fusion weapons, and the “little bomb,” advocated by Robert Oppenheimer who saw more practical utility in smaller fission weapons. The first would soon lead to the successful development of the hydrogen bomb; the second was equally successful but led to a dead end as no one could conceive of any use for small nuclear weapons. Vannevar Bush, who as head of Office of Scientific Research and Development helped develop the Manhattan Project and who was a key scientific advisor to President Truman after WWII, expressed the prevailing wisdom when he opined, “There will be no shells for guns carrying atomic explosives, nor will they be carried by marine torpedoes or small rockets or in any other retail way. Atomic bombs will be used only against important targets to which it pays to devote a large effort.”

This attitude was echoed in the U.S. Army as well. Shortly after Bush’s statement, the Commandant of the Army Command and General Staff College at Fort Leavenworth, Brigadier General Herbert Loper, observed: “Show me how to use this weapon tactically. It is not a tactical weapon.”<sup>6</sup>

### **The 1950s: Eisenhower’s “New Look”**

The military’s ambivalence about nuclear weapons changed abruptly in October 1953 with the promulgation of NSC 162/2, the Basic National Security Policy (popularly known as the “New Look”): “The present policies will gradually involve the use of atomic weapons and conventional weapons for tactical purposes.”<sup>7</sup> If the Army wished to remain a relevant instrument of military power—and protect its budget—it would have to get on board the nuclear train and embrace the battlefield use of nuclear weapons.

Within two years, the study of how to employ nuclear weapons in land combat became the principal focus of the U.S. Army. By 1955, nearly 50 percent of the instruction and training at Fort Leavenworth was devoted to tactical nuclear battlefield situations. Even that was thought to be inadequate. In 1956, the Continental Army Command which oversaw the activities of the Army’s educational institutions directed the Command and General Staff College “to depict atomic warfare as the typical and to treat non-nuclear warfare as modification to the typical” in future training and exercises. That year the CGSC curriculum included 614 hours of TNW instruction.<sup>8</sup>

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<sup>6</sup> Van Cleave, William R. and Cohen, S.T., Tactical Nuclear Weapons: An Examination of the Issues. New York: Crane, Russak, and Company, 1978, pp 3-4.

<sup>7</sup> Ibid., pg 4.

<sup>8</sup> Ibid., pg 5. During the years 1945-1949, Military Review, Fort Leavenworth’s professional journal, published a total of 8 articles on the ramifications of nuclear weapons on warfare. From 1950-1954 it published 32, and from 1955-1959 it published 132. Rose, John P., The Evolution of U.S. Army Nuclear Doctrine, 1945-1980. Boulder, CO: Westview Press, 1980, pg 57.

As the Army's nuclear thinking continued apace, its application lagged behind. A major NATO exercise in June 1955, Operation Carte Blanche, tested an effort by NATO to defend against a Soviet invasion across the North German Plain by employing TNWs. Umpires ruled that an estimated two million Germans would have been killed, a further three and a half million injured, burned or irradiated, and the industrial heartland of Germany rendered uninhabitable.<sup>9</sup> The results of the exercise eventually leaked to the press and created great consternation in West Germany. Soon afterward, the Army and the U.S. Air Force Tactical Air Command tested a similar scenario in Alabama and Louisiana in the largest ground exercise on American soil since the 1941 Louisiana Maneuvers. The results of Operation Sagebrush dismayed the participants as virtually all ground units were ruled to have been annihilated. Both the Army and Air Force discounted the results by saying the result would have been different if the actual enemy had been Soviet rather than American.<sup>10</sup> Army Chief of Staff General Maxwell Taylor was more realistic. He concluded afterward that "we in the Army have a long way to go before we understand the problems of using these weapons," noting that "we would have probably destroyed ourselves and all our friends had we tossed atomic weapons about a real battlefield in the way we did in this maneuver."<sup>11</sup>

But by the end of the decade, despite these adverse exercise results, the Army completely reorganized itself to wage tactical nuclear warfare. Jettisoning the traditional infantry division organization, it created new "Pentomic divisions"—so named because they scrapped the traditional three-brigade divisional organization in favor of five smaller "battle groups" consisting of five infantry companies. The divisional artillery was similarly organized with each battalion consisting of five batteries. All of this was intended to facilitate dispersion on the assumed nuclear battlefield. The Army's armored divisions were not reorganized as their existing organization of three combat commands was considered sufficient for a nuclear environment.

As opposed to the development tactics, techniques, and procedures of employing tactical nuclear weapons (TNWs), the actual *utility* of tactical nuclear warfare was rarely, if ever, examined. According to Brigadier General (ret) Robert Richardson, who in the 1950s was a staff assistant to NATO commander General Lauris Norstad, Supreme Headquarters Allied Powers Europe (SHAPE) planners in the 1950s were unable to come up with a single plausible scenario for the employment of

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<sup>9</sup> Biddle, Stephen D. and Fewer, Peter D., "Roles and Missions of Battlefield Nuclear Weapons", in Biddle, Stephen D. and Fewer, Peter D. (eds), CSAI Occasional Paper No. 5: Battlefield Nuclear Weapons: Issues and Options. Boston: Harvard University Center for Science and International Affairs, 1989., pg. 19.

<sup>10</sup> Ibid., pg. 19. Sagebrush was conducted in the vicinity of Fort Polk, Louisiana, and involved four complete Army divisions, approximately 100 thousand troops. Army forces simulated nuclear strikes totaling approximately 19,000 kilotons, ranging from 2 kiloton atomic demolition munitions to 200 kiloton Corporal missile strikes. The Air Force simulated weapons with yields up to 500 kilotons. Umpires ruled the strikes would have resulted in 20,000 casualties and destroyed 2700 Army vehicles. Midgeley, John J., Jr., Deadly Illusion: Army Policies for the Nuclear Battlefield. Boulder, CO: Westview Press, 1986.

<sup>11</sup> Quoted in Chapter 10, Official History of the U.S. Army. <http://www.history.army.mil/books/lineage/m-f/chapter10.htm>.

TNWs in Europe and took comfort only in the fact that it must also be very difficult for planners in Moscow to do likewise.<sup>12</sup>

Despite this “minor” doctrinal problem, the development and deployment of TNWs surged ahead. According to one observer:

Often, it would appear, weapons went all the way through to production and deployment before anyone had the assignment of thinking about their operational use. Otherwise, it is hard to explain how U.S. Army units in Europe came to have the Redstone Missile, which was supposed to function as corps artillery, but which had to be moved about by a nine-vehicle caravan, one component of which was a 25-ton, 90 foot crane. It is equally hard to explain how, after much lighter weapons became available, the Army employed some thousands of jeep-mounted, 2-4 kilometer range, one-quarter to one-half kiloton yield Davy Crockets. When President Eisenhower became aware of this, he said to his Defense aides “that when it comes to supplying small yield weapons to the Infantry and the Marines we are getting into the area of marginal utility...He suggested that we indoctrinate ourselves that there is such a thing as common sense.”<sup>13</sup>

There seemed to be little or no oversight of the development or deployment decision-making process by senior military officers, many of whom apparently lacked confidence in their ability to judge the issues. According to one Air Force expert testifying in a 1957 AEC hearing:

Most senior officers tend to consider atomic weapons to be beyond their understanding without exhaustive study with which they have neither the interest nor time. Atomic planning is therefore delegated to juniors who have completed various “effects” course...The seniors are unable to exert normal guidance. Instead, they are prone to endorse the computations without close questioning and without understanding procedures or implications—and in spite of personal misgivings.<sup>14</sup>

By the early 1960s when the Kennedy administration took over at the Pentagon, this abrogation of military oversight seemed complete. Senior officers were now forced to yield to scores of arrogant RAND “whiz kid” civilian analysts brought into the government by the new Defense Secretary, Robert MacNamara. One of these was 30-year old Alain Enthoven who famously replied to a question about nuclear warfare from a senior general, “General, I have fought as many nuclear wars as you have.”

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<sup>12</sup> May, Ernest R. and Kelleher, Catherine M., “History of the Development and Deployment of BNWs”, in Biddle and Fewer (eds.), pg 19.

<sup>13</sup> *Ibid.*, pg 18.

<sup>14</sup> *Ibid.*, pg 20.

## **The 1960s: Kennedy's "Flexible Response"**

MacNamara's arrogant young analysts soon changed the direction of U.S. strategic thinking and reoriented the military toward a strategy of "Flexible Response". The new administration believed that Eisenhower's policy of massive nuclear retaliation had left the U.S. with insufficient flexibility to deal with challenges that might not meet the threshold for a nuclear response, and that a complete range of military responses to anticipated Soviet provocations was needed. On 25 May 1961, Kennedy directed the Army to reorganize its still relatively new Pentomic divisions into units more suitable for non-nuclear warfare.

Astonishingly, the number of deployed TNWs in Europe more than doubled from 3000 to more than 7000 as the result of production momentum and earlier deployment decisions. And even more and much smaller weapons were considered. Scientists at Los Alamos National Laboratory proposed that as many as 50 to 100,000 "min-nukes" could be developed and fielded to offset the current level of strategic parity with the Soviet Union and the unwillingness of many NATO members to live up to their alliance obligations on the conventional side. A decade later, the Labs would call for the production of "enhanced radiation" weapons designed to kill personnel with massive amounts of radiation while reducing the tactical difficulties caused by tree blow-down and other forms of collateral damage to bridges and transportation networks.

By the mid-60s, now fully enmeshed in a counterinsurgency struggle in Vietnam, the Army no longer considered tactical nuclear warfare worthy of much study. The Fort Leavenworth curriculum in 1966 contained only 21 hours of "special weapons" instruction, later shortened to 16. By the late 1970s, seeking to put the nightmare of the failed Vietnam experiment behind it and embrace more traditional missions, the Army focused almost exclusively on purely conventional military operations and professed that "the possibility of future nuclear land combat operations is largely avoided".<sup>15</sup>

## **The 1970s and 1980s: Return to the Familiar**

The end of the Vietnam War prompted a major reevaluation by the Army of its warfighting doctrine and a return to its more traditional mission of conventional land warfare. Within a few years it created the blueprint for what eventually became known as AirLand Battle. While strategic nuclear war against the Soviet Union was still considered to be a possibility, the Army and the other armed services concentrated on developing new tactics to leverage new conventional military technologies like precision guided munitions and computer-driven command and control systems. It began to work "jointly" to create synergies between themselves, and eschewed TNWs as the principal means of offsetting the Soviet Union's massive advantage in numbers and equipment.

This trend was illustrated in the 1975 Department of Defense Annual Report which contained nearly 20 pages of analysis about strategic nuclear warfare against the Soviet homeland and less than one page about TNWs, merely noting the improbability they would ever be used:

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<sup>15</sup> Van Cleave and Cohen, pg 6.

As a practical matter, the initiation of a (tactical) nuclear engagement would involve many uncertainties. Acceptable boundaries on such a conflict would be extremely difficult to establish. A nuclear engagement in the theater could well produce much higher military and civilian casualties and more widespread collateral damage than its non-nuclear counterpart...we must recognize in our planning that the decision to initiate the use of nuclear weapons—however small, clean, and precisely used they might be—would be the most agonizing that could face any national leader..<sup>16</sup>

In 1980, U.S. Army Major John P. Rose, in a devastating critique of U.S. Army doctrine pertaining to tactical nuclear warfare, accurately captured the state of Army thinking on the subject:

Currently, what the Army views as tactical nuclear doctrine is nothing more than conceptual guidance on how to plan a corps nuclear package... In essence, Army tactical nuclear warfighting doctrine does not exist.... Under current doctrine U.S. ground combat forces may never attain a decisive defeat of the enemy and consequently may never be able to terminate the conflict on acceptable terms.... Tactical nuclear weapons are not seen by the Army as a war winning and warfighting instrument.”<sup>17</sup>

Rose’s critique was actually an attempt to stimulate the Army to once again think about how best to employ TNWs to defeat Soviet ground forces in a European environment. This failed miserably because by the end of the 1980s, and despite the massive numbers of TNWs then deployed in Europe, there was little remaining doubt within the NATO alliance in general and the United States in particular about their lack of utility on the battlefield. As one observer put it, “Over the past thirty years, it has become generally accepted that NATO’s battlefield nuclear weapons are neither militarily effective nor politically reassuring to the allies in whose countries they are based. There is much less agreement, however, about how the Alliance should respond to this problem.” Another had a different explanation: “The continued presence of battlefield nuclear weapons in Western Europe is hard to explain in rational terms; it is more readily explicable by organizational and political inertia.”<sup>18</sup>

### **The Problems with Employing Tactical Nuclear Weapons**

This organizational and political inertia about TNWs continues more than two decades after the collapse of the Soviet Union. According to Dr. Richard Weitz, there are still an estimated 150 NATO TNWs in Europe and 3-4000 Russian deployed TNWs.<sup>19</sup> Why, then, has the consensus

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<sup>16</sup> Schlesinger, James R. Schlesinger. Annual Report, Defense Department, FY 1975: 19, [www.osdhistory.defense.gov/docs/1975%20DoD%20Annual%20Report.pdf](http://www.osdhistory.defense.gov/docs/1975%20DoD%20Annual%20Report.pdf)

<sup>17</sup> Rose, pg. 214.

<sup>18</sup> Sigal, Leon, “The Case for Eliminating Battlefield Nuclear Weapons”, in Biddle and Fewer, pg. 34.

<sup>19</sup> Weitz, Richard, “The Future of NATO’s Tactical Nuclear Weapons”. Hudson Institute, Second Line of Defense website, [www.sldinfo.com/the-future-of-nato%E2%80%99s-tactical-nuclear-weapons/](http://www.sldinfo.com/the-future-of-nato%E2%80%99s-tactical-nuclear-weapons/).



emerged among knowledgeable analysts that TNWs lack much if any utility on the modern battlefield? The main reasons can be briefly summarized below.

*TNWs add nothing to deterrence:*

What deterred the Warsaw Pact from attacking NATO forces deployed on the north German plain was NATO's conventional capability plus the risk of escalation. There was no guarantee that any conventional conflict will not escalate relatively quickly to the strategic nuclear level. As one analyst looking at the situation in Europe in the late 1980s noted:

Battlefield nuclear weapons add little, if anything, to deterrence. What deters nuclear war in Western Europe is the threat of nuclear retaliation. If the Soviet Union is not deterred from nuclear attack by the 10,000 plus warheads in the American nuclear arsenal capable of being delivered against the Soviet Union, it is hard to see how another 3,500 warheads intended for battlefield use will make any difference.<sup>20</sup>

Even with fewer weapons, this principle is no less true in South Asia. India is deterred from initiating a Cold Start operation not by the deployment of short range battlefield systems like the *Nasr*, but out of concern that in a future crisis escalation cannot be controlled, and that eventually Pakistan's longer range missiles and higher yield nuclear warheads will be employed against its cities.

*TNWs invite preemption:*

During the Cold War, all of NATO TNWs were stored in approximately 20 sites, all were almost certainly known by the Soviet Union, and all no doubt carefully monitored by technical or human means. Any movement of weapons from the sites would almost immediately have been spotted and prompt a decision by the Soviet Union about whether to preempt before they could be completely dispersed. Technical surveillance systems in South Asia are likely not as advanced as those of the Soviet Union, but within a decade, India's space surveillance capability will be more mature than it is today and will almost certainly be employed to monitor Pakistan's strategic sites. Because the detection of one side's TNWs or their delivery units invites preemption by the other side, what little perceived value they add to deterrence is more than offset by their contribution to crisis instability and the increased risk of inadvertent escalation.

*TNWs are not useful against armored forces*

According to unclassified U.S. Army weapons effects manuals, a one kiloton TNW would have to detonate within a 90 meter radius of a tank to inflict even moderate damage on that vehicle. In fact, prompt radiation from a TNW is far more lethal to the crew of a tank than the blast effect, incapacitating crew members within a 360 meter radius.<sup>21</sup> However, such a blast would not kill that

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<sup>20</sup> Sigal, pg. 36.

<sup>21</sup> U.S. Army Field Manual 101-31-3, Nuclear Weapon Employment Effects Data: Planning Staff Officers. Washington, D.C.: Department of the Army, 1977, Appendix E.

many tanks or even incapacitate that many crew members in a deployed armor battalion maneuvering in battle. This was quickly recognized by Soviet military experts:

The advantage of the tank is that its armor protects the crew against light radiation and decreases the effect of penetrating radiation, while the tank's actual weight gives it stability which protects it against the shock wave... Thus, the conclusion can be drawn that the appearance of nuclear weapons not only failed to diminish, but on the contrary, only strengthened the role of the tank in battle.<sup>22</sup>

An additional factor to be considered is the speed of advance of armored forces, especially in exploiting a gap in defenses, the precise situation that might necessitate the use of TNWs. As one analyst observed:

They move too fast for a decision to be made to request permission for release authority, to obtain it, to unlock the weapons, to identify a target, and to gain the tactical commander's permission to fire. At best, the time to do this would take hours; at worst, it would take a day or two while political and military leaders thrashed out the implications.<sup>23</sup>

*TNWs complicate command, control, and communications (C3):*

Nuclear command and control systems should be reliable, redundant, and separate from normal tactical command and control networks. They add a degree of complexity in C3 that does not exist on the conventional battlefield. Unless they are used first in preemption against an anticipated enemy attack, the need to employ TNWs will almost certainly occur in the midst of a tactical crisis. For example, NATO commanders generally considered that TNWs would need to be used to prevent the tactical defeat of one of its corps because such an event would unhinge the entire ground defense plan for Western Europe. Thus, the need for nuclear C3 will come at precisely the time the communications are most severely taxed and vulnerable to enemy disruption. Additional security measures to safeguard TNWs against unauthorized use create even more C3 complexity. There is no information about whether Pakistan presently has or intends to develop Permissive Action Link (PAL) technology as an added layer of security for its smaller nuclear warheads which presumably would be manufactured and stored in a fully assembled state. According to Sigal:

PALs increase the likelihood that battlefield nuclear weapons, once dispersed, will be much harder to use since matching up weapons and transmitting the right messages to the right people would be difficult in a stressful communication environment of crisis or war. Yet unlocking the PALs before dispersal would only increase the chance of unauthorized use.<sup>24</sup>

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<sup>22</sup> Quoted in Van Cleave and Cohen, pg. 67.

<sup>23</sup> Sigal, pg. 46.

<sup>24</sup> *Ibid.*, pg. 45.

*Nuclear release authority for tactical targets is difficult to obtain:*

As discussed above, obtaining a political decision to use TNWs in a battlefield crisis is likely to be time consuming. The 1976 version of U.S. Army Field Manual 100-5 suggests the possibility of at least a 24-hour delay between a request from a field commander and the political decision to authorize their use. Even this degree of delay is probably generous. According to one U.S. analyst, “Thirty years of experience in NATO war games demonstrates how difficult it is to get participants to decide on first use....In a crisis even a decision to move weapons out of garrison may be difficult to obtain because of the increased chance of preemption.”

*TNW are difficult to secure when deployed:*

As long as they are in their peacetime storage locations, TNWs are fairly secure. However, after deployment, their security becomes an additional responsibility for the delivery unit. Unless augmented by additional security personnel, there are normally not enough personnel in a tactical delivery unit to adequately guard them on a 24/7 basis. This creates a heightened risk that deployed TNWs can be seized or destroyed by an enemy’s special operations forces. In a state like Pakistan, there would be an added risk that one of the many militant groups that currently operate with impunity throughout the country might see their deployment as a once-in-a-lifetime opportunity to obtain a nuclear weapon. Since small TNW warheads are almost certainly fully assembled, unless they are also manufactured to be “one-point-safe,” meaning that even a high explosive applied to the warhead cannot produce a nuclear yield, any militant group obtaining such a weapon would have the ability to cause catastrophic damage to the Pakistani state.

*TNW units require scarce manpower:*

The security issue described above was well understood, but never entirely solved in Europe by U.S. forces despite a massive and expensive effort to do so. By one estimate, as much as 10 percent of U.S. manpower in Europe in the 1980s was required for the protection and special handling of TNWs. As the number of nuclear delivery units increased, the number of personnel required securing them increased as well, and the numbers of personnel available for purely conventional military operations grew smaller. General Bernard Rogers, the SACEUR, stated in May 1985, “What is happening is as I get spaces for ground-launched cruise missiles, I am bringing in nuclear weapons and sending conventional forces home.”<sup>25</sup> Pakistan is already at a great manpower disadvantage compared to India. Increasing the number of security forces to guard TNWs further exacerbates this problem.

*TNW launch units must be withdrawn from battle to ensure their survivability:*

Another dilemma field commanders will face is when—or whether—to withdraw or withhold dual-capable nuclear delivery forces from conventional battle in order to ready them for nuclear use. This will generally have to be decided when the conventional fight is at its most intense and the outcome still in doubt—when their participation in the conventional battle is most urgently required. To compound the problem, an enemy might detect the withdrawal of these forces from

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<sup>25</sup> *Ibid.*, pg. 42.

the battlefield and interpret the event as a precursor to their use against his forces, and thus decide to launch his own preemptive nuclear strike.

*TNWs are not decisive:*

But most importantly, there is little likelihood that TNWs would actually be decisive even if used in battle. NATO “studies have concluded time and time again that a two-sided exchange of battlefield nuclear weapons would quickly destroy both sides’ forward combat forces, after which the Warsaw Pact could win the ground battle by bringing forward reserves that NATO could not match.”<sup>26</sup> This situation would be precisely mirrored in the South Asian context where India’s advantage in ground combat power would eventually decide the outcome of any prolonged conflict.

## **Conclusion**

The continued presence today of small numbers of U.S. TNWs in Europe is explained more by a perceived need to reassure post-Soviet-era NATO members in Eastern Europe who were formerly part of the Warsaw Pact that the United States is fully committed to their defense in the event of a future attack from Russia rather than for any utility they have as warfighting tools. Even at the apogee of TNW deployment in the 1980s, thoughtful observers understood they were a two-edged sword:

Leaving a lot of nuclear weapons scattered around the European theater is like wiring a doomsday machine to a roulette wheel. It does raise the risk of nuclear war, but it cannot raise that risk to one side without doing so for both. That is not a strategy, but the abnegation of strategy. Worse yet, it is likely to prove self-defeating both politically and militarily.<sup>27</sup>

I have not addressed the economic dimension of developing and adequately securing TNWs and creating the C3 system for them, but the pure financial cost of such an effort will be substantial. There is no area of competition between India and Pakistan where so much advantage accrues to the former and so many impediments combine to inhibit the latter. Simply put, the financial cost of TNWs is easily within the ability of India to afford but they represent yet another heavy burden for the already fragile Pakistani economy. Any simple—and objective—cost-benefit analysis will show the folly of a South Asian TNW arms race for Pakistan.

Therefore, my recommendation to both sides in South Asia is simple, and it is the same as it was last year in Singapore. The best thing for regional strategic stability is for both Pakistan and India to halt the development and production of—and forswear the deployment of—TNWs on their territory as a useful and very simple confidence building measure. This would not only save a lot of money for both sides, it would maintain the present level of deterrence, and promote increased crisis stability in the event of a future—and probably inevitable—crisis between the two sides.

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<sup>26</sup> Uttgoff, Victor and Christenson, William, “Battlefield Nuclear Forces: An Undervalued Option for Improved Deterrence In Europe”, in Biddle and Fewer, pg. 98.

<sup>27</sup> Sigal, pg. 41.