

Defoliating Fence and Foxhole: An Unconventional Response to an Irregular Threat Along the Korean DMZ, 1967–1969

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While the war in Vietnam pitted American military forces against the North Vietnamese Army and Vietcong in the mid-to-late-1960s, simultaneous hostile incursions occurred along the Korean Demilitarized Zone (DMZ) as North Koreans attempted to infiltrate the territory of the South. The demarcation line that still divides North Korea from South Korea was created as a result of the Armistice Agreement, which formally ended the Korean War on July 27, 1953. The agreement officially ended hostilities and instigated a permanent bureaucratic system to maintain the ceasefire. Comprised of 10 members—5 from each side—the Military Armistice Commission is headquartered at the Joint Security Area (JSA) at Panmunjom. This neutral area in the 2½-mile-wide DMZ not only separates the opposing forces but is the only place where the two sides are in continuous formal communication.¹



Military Demarcation Line sign located in the woods of Panmunjom separating North and South Korea

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¹ Korean War Armistice Agreement, July 27, 1953, *Treaties and Other International Agreements Series #2782, General Records of the United States Government, Record Group (RG) 11, National Archives at College Park, Maryland (NACP)*; P. Wesley Kriebel, "Korea: The Military Armistice Commission, 1965–1970," *Military Affairs* 36 (Oct. 1972): 96; Lee Jin-hyuk, *The DMZ: Dividing the Two Koreas* (Seoul, South Korea: Seoul Selection, 2010), 12.

The Korean DMZ stretches the width of the peninsula, approximately 151 miles, and routine policing of the zone is the responsibility of both belligerents in their own designated sectors.² Mirroring the style of early 20th-century trench warfare, the Chinese and North Koreans pulled their forces back two kilometers north from the demarcation line while the United Nations Command (UNC) pulled its forces back two kilometers south, creating a four-kilometer no man's land.³ According to the 1953 Armistice Agreement, the opposing forces established the DMZ as a buffer zone to prevent future incidents that might lead to a renewed outbreak of hostilities.⁴ The armistice denied all persons—civilian or military—access to the boundaries of the DMZ, unless authorized by the Military Armistice Commission. The demarcation line itself remains clearly marked along the boundary between the belligerents' respective areas and the demilitarized zone.⁵

In 1967, as part of a general review of the DMZ defenses, the United States Forces, Korea (USFK) and UNC found that vegetation within the DMZ and contiguous areas provided cover for North Korean raiding parties, which increased unencumbered along the DMZ Security Fence since the Armistice. Fourteen years worth of dense, uncontrolled foliage growth significantly hindered UN and Republic of Korea (ROK) defensive operations, while simultaneously enhancing enemy infiltration operations. According to the Final Report of Vegetation Control Plan CY68, "effective use of night vision devices was affected by dense foliage and frequently movements of UN Forces into defensive positions were being hampered."⁶

As it did in the concurrent situation along the inland waterways of Vietnam, the U.S. Department of the Army (DOA) authorized dispersal of Agent Orange, an equal mixture of butoxyethanol esters of 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and 2,4-dichlorophenoxyacetic acid (2,4-D), along the Korean DMZ from mid-May 1968 through 1969 in order to deprive the enemy of the tactical benefits of indigenous foliage.⁷ To supplement the effects of Agent Orange, ROK personnel dispersed two additional herbicides, Monuron and Agent Blue, in order to clear offensive fields of fire from observation posts, checkpoints, and roadsides. Thus, the Department of Defense (DOD) modified the existing defense policy along the DMZ to include

² "Truce Village: The Last Combat Zone," *Time*, Aug. 30, 1976, 42.

³ Jin-hyuk, *The DMZ: Dividing the Two Koreas*, 12.

⁴ Korean War Armistice Agreement, July 27, 1953, RG 11, NACP.

⁵ *Ibid.*

⁶ Julian E. Buckner, *Final Report, Vegetation Control Plan CY 68* (San Francisco: Department of the Army Headquarters, U.S. Army Advisory Group, Korea, 1969), 1–2.

⁷ *Ibid.*, 10.

defoliant operations as a means to counter North Korean agitators, saboteurs, and guerillas, and thereby reduce their ability to infiltrate the zone.

This article expands the existing historiography surrounding the use of herbicides in Southeast Asia in the late-1960s to include the Korean DMZ. During that time, the U.S. Army authorized the use of herbicides Monuron, Agent Blue, and Agent Orange in order to detect and prevent North Korean incursions. This study incorporates oral histories and testimonies from former enlisted servicemen stationed at the DMZ who recalled the tensions on that front, the differences made by herbicides, and the violent encounters that took place before and after the prohibition on use of herbicides. The inclusion of these personal testimonies is not only a means of accessing and interpreting a generally excluded source of historical information, but it draws attention to this underrepresented group of enlisted servicemen who were enthusiastically willing to discuss their experiences and recollections. Military histories of the era are often elitist histories—official narratives defined by officers and, by extension, the departments to which they dedicated themselves. Thus, these histories neglect a significant cohort of enlisted veterans. This study includes accounts from rank-and-file enlisted men to fill this gap in the historiography, offering a more detailed and complete view of the DMZ story.

The curtailment of herbicide use by American forces in Southeast Asia in mid-April 1970 prevented allied forces from using chemical agents to remove a large Normandy poplar tree at the JSA at Panmunjom. The tree, which towered at 25 meters, obstructed observation between the checkpoint in the JSA and an allied observation post on the opposite side of the Bridge of No Return. While the suspension of herbicide use resulted from Vietnam veterans' claims of health abnormalities from exposure to carcinogenic 2,3,7,8-tetrachlorodibenzo-para-dioxin (TCDD), the curtailment ultimately prevented the safe removal of the poplar tree from within the neutral boundaries of the Korean DMZ. The curtailment allowed the continuation of surprise attacks, including the brutal deaths of two American officers, Capt. Arthur Bonifas and Lt. Mark Barrett, at the hands of North Korean military personnel in August 1976. The story of herbicide use and its subsequent curtailment adds more detail and complexity to our understanding of the tense situation along the DMZ. The inability to fully clear the zone left it a dangerous and potentially explosive border that U.S. and South Korean forces could not fully control.

Tensions Along the DMZ

Although a communist movement persisted in South Korea into the 1960s, it never maintained its momentum, and it lacked the manpower to overthrow the

South Korean government. Nevertheless, North Korean Premier Kim Il Sung continued to send agitators into the South across the heavily defended DMZ that separated the North from the staunchly anticommunist South.⁸ Thomas Spencer, platoon leader of the First Cavalry Division, First Battle Group, Seventh Cavalry Regiment, recalled:

When I was there, there were a couple of minor instances in Pan Mon Jon [*sic*]. There were a couple of minor crossings of the border or people coming through the DMZ area. We had a cavalry regiment, the Ninth Cavalry Regiment, a recon squadron [that] was actually responsible for patrolling inside the DMZ territory there. We were spread out along the DMZ's south side. . . . They [Ninth Cavalry] had observation posts [and] we'd get tagged to go up and man one of those for a period and we watched and watched and watched our little friends on the other side do their thing, [while] they watched us do our thing. But at that period of time, basically the DMZ was peaceful, except for a couple of minor incidents. It was not like it was several years later when they had some blowups there.⁹

By the mid-1960s, these minor incursions had failed to undermine the Seoul government, and Kim began escalating activity along the DMZ with entire units of insurgents and guerillas. With heightened activity, he hoped the infiltrators would form the nucleus of a renewed insurgency that would ultimately drive the Americans out of Korea altogether.¹⁰ Larry Ritter, who served along the Korean DMZ from 1969 to 1970, recalled:

I didn't know what was going to happen. I was always on edge. You're reminded of a cat in a room full of rocking chairs. You're always on edge, ready to strike. You had to be that way. You had to have your head and your ass wired together. You had to be that way and that is where I guess a lot of the . . . post-traumatic stress comes from after [*sic*] because of the letdown. 'Cause you [were] always on edge.¹¹

⁸ A. J. Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine, 1942–1976* (Wash., DC: U.S. Army Center of Military History, 2006), 329.

⁹ Interview with Thomas Spencer, Oct. 8, 2001, Thomas Spencer Collection, The Vietnam Center and Archive, Texas Tech University, <http://www.vietnam.ttu.edu/virtualarchive/items.php?item=OH0190> (accessed Feb. 7, 2016).

¹⁰ Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 329.

¹¹ Larry Ritter, interview by Heather Haley, digital recording, Sept. 24, 2015, San Antonio, TX.



UNC observation post along the defoliated southern DMZ

In November 1966, North Korean troops ambushed a U.S. patrol south of the zone and killed six Americans near Panmunjom. The success of this incursion inspired additional DPRK infiltrations as northern subversives ambushed U.S. and South Korean patrols and even bombed a Second Infantry Division barracks south of the DMZ. Some insurgents managed to move farther south in an effort to join with South Korean communists and renew peasant uprisings. In 1968 alone, there were more than 760 incidents in the DMZ, including 356 firefights, with a total of 500 deaths between the two sides.¹² Squad leader Rocky Burke admitted his initial uneasiness upon arrival at the DMZ in January 1974:

One of the guys in my ranger unit had served in the z[one]. He said it was combat, it wasn't long-term combat, but it was ambushes and stuff like that, that would last maybe 30 seconds when they [were] shooting at you, you [were] shooting at them. So I was kind of apprehensive about that, I mean I talked a good story but I don't know if I really wanted to get shot at in Korea and so I was a little bit apprehensive.¹³

¹² Wayne A. Kirkbride, *DMZ: A Story of the Panmunjom Axe Murder*, 2nd ed. (Elizabeth, N.J.: Hollym International, 1984), 20; Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 330; "Truce Village: The Last Combat Zone," *Time*, 42.

¹³ Rocky Burke, interview by Heather Haley, digital recording, Sept. 19, 2015, San Antonio, TX.

In December 1968, an incident occurred along the DMZ involving two North Koreans who attempted to infiltrate a sector guarded by a company of U.S. infantrymen based out of Camp Wentzel. The following month, Sgt. Charles Groff of Alpha Company, Second Division of the Ninth Battalion, had “to mimic everything that transpired through that incident about ten times . . . for all [of] the dignitaries” who came through Korea on their way to Vietnam. Groff begrudgingly described the incident:

Behind us was a big high hill. On top of that hill was a search light that would traverse the fence. . . . Well, the sergeant in charge, somebody in his platoon reported to him that they heard something. . . . There was something out there. . . . He did not know what it was. . . . So he [got] on the telephone, talk[ed] to the guy operating the searchlight. He [said], I want you to continue traversing the fence as you normally do, when I tell you to mark, I want you to mark—you know, make a note of it where it’s at—don’t stop, but make a mark when I tell ya and he kept going with the floodlight. . . . They waited about 10 minutes and when they hit that spot, he said, “now,” meaning turn the light on. There were two North Koreans standing in front of him. They killed one and one got away. That’s how they got the guy. And they shot right through the fence.¹⁴

In authorizing these incursions, Kim Il Sung hoped intense and repetitive insurgency operations would force the American imperialists out of Korea and undermine the anticommunist South Korean government led by President Park Chung Hee. With the U.S. military’s attention diverted to the escalating war in Vietnam, the moment seemed fortuitous.¹⁵ Through the establishment of guerilla bases south of the DMZ, the DPRK could disrupt the political climate of South Korea, destabilize their economy, and conduct direct attacks against the ROK—all of which offered fraternal support to its Southeast Asian brethren in North Vietnam.¹⁶ Military operations conducted by six- to nine-man commando teams supported by the DPRK culminated in the attempted assassination of President Hee in January 1968. In October of that same year, 120 commandos of the infamous DPRK Unit 124 were unsuccessful in infiltrating Gangwon Province on the southeastern coast, resulting in the capture of seven, the escape of three, and the death of the remaining 110.¹⁷

¹⁴ Charles Groff, interview by Heather Haley, digital recording, Sept. 24, 2015, San Antonio, TX.

¹⁵ Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 329.

¹⁶ Kirkbride, *DMZ*, 20.

¹⁷ Daniel P. Bolger, *Scenes from an Unfinished War: Low Intensity Conflict in Korea 1966–1969*, Leavenworth Papers 19 (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1991), 86.

U.S. and UN Defenses

U.S. Army Gen. Charles H. Bonesteel III, commander of UN forces in Korea, had numerous advantages over Military Assistance Command, Vietnam (MACV) Gen. William C. Westmoreland. Of the four branches of the DPRK armed forces, the Korean People's Army (KPA) posed the most significant conventional threat (see Table 1). Fully mobilized, the KPA had the capacity to deploy approximately 34 division equivalents in the field.¹⁸ Although UN forces along the Korean DMZ were well-trained and well-equipped to counter a conventional attack, South Korea's incongruous topography made stopping these incursions exceptionally difficult.

The Korean DMZ, while mountainous, was well-documented, heavily guarded, and stretched a mere 151 miles. Additionally, Bonesteel maintained operational authority over the army of the ROK, thereby giving him more autonomy than Westmoreland in shaping military action against the North. According to Larry Ritter, stationed at Camp Wentzel from 1969 to 1970, ROK marines stationed along the DMZ "wanted to fight. As a matter of fact, [superior officers] would send them to Vietnam to fight. [North Koreans] would not go near them because they just wanted to fight."¹⁹ In fact, American sentry units were supplemented with KATUSAs, or Korean Augmentation to the United States Army forces. Serving along the Korean DMZ in the early 1960s, Lt. Thomas Spencer commented that the

Table 1. Balance of Conventional Military Power in Korea (November 1966)

	PERSONNEL	DPRK	UNC	U.S. PORTION
ARMY	Soldiers	345,000	600,000	50,000
	Special Operations Forces	3,000	1,000	
	Border Guards	26,000	39,000	
	Militia	1,200,000		
	Regular Divisions	24	22	2
	Reserve Divisions	10–17	10	
	Tanks	800	656	216
	Other Armored Vehicles	900	1,381	781
	Artillery	5,200	2,160	224
AIR FORCE	Airmen	30,000	28,000	5,000
	Combat Airplanes	590	265	60
	Helicopters	20	65	58
NAVY	Sailors	9,000	17,450	450
	Marines	2,000	30,050	50
	Destroyers/Frigates	0	7	
	Submarines	4	0	
	Minor Combatants	79	30	
	Landing Craft	20	23	
	Auxiliaries	34	12	

Source: Data adapted from Daniel P. Bolger, *Scenes from an Unfinished War: Low Intensity Conflict in Korea 1966–1969*, Leavenworth Papers 19 (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1991), 14.

¹⁸ Ibid., 13.

¹⁹ Larry Ritter, interview, Sept. 24, 2015.

KATUSA program not only doubled military personnel stationed along the DMZ, but it “was a cultural plus.” He commented that,

We had one Korean sergeant in each company, which was a liaison-type sergeant who was the interpreter and the boss that controlled KATUSAs as far as what they had to do or if they got into a disciplinary problem, he solved the disciplinary problem. . . . His disciplinary system was pure physical, might have got [on the] side of brutality at times, but it was a pure physical disciplinary system. We had a Korean liaison officer assigned to battle groups who was in charge of these sergeants in each company and made them make sure they toed their line and did their thing.²⁰

South Korea was also a much more culturally and ideologically homogenous nation than South Vietnam, with a capable military, a stronger government, and a history of successful counterinsurgency operations, which substantially differentiated the situation along the Korean DMZ from that of Vietnam.²¹

General Bonesteel incorporated a dual counterinsurgency campaign in order to respond to the irregular threat. The first element was to tighten security along the southern border of the DMZ. While the incorporation of additional American sentries and munitions heightened allied alertness against DPRK guerillas, it did not fundamentally transform the situation along the DMZ. In addition to stepping up patrol, ambush, and counter-infiltration training, Bonesteel erected a new defensive barrier just behind the demarcation line, known as the DMZ Security System Fence or south tape.²² In order to infiltrate southern allied sectors of the DMZ, Ritter claimed North Korean insurgents “would have to cut their way through the fence . . . [and] channel one way in through these spider holes.”²³ Surrounded by a thin layer of dirt that revealed footprints, the new fence was topped with a strand of barbed wire, and the surrounding defoliated area improved allied observation from foxholes and cleared UNC and ROK fields of fire. Sergeant Groff remembered that he and his men had to maintain the foliage around the foxholes. In fact, he likened the vegetation

²⁰ Interview with Thomas Spencer, Oct. 8, 2001 (accessed Feb. 7, 2016).

²¹ Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 330. Unlike Ho Chi Minh, Kim Il Sung did not have the pre-independence anticolonial pedigree. While Kim and Ho began their respective regimes in similar circumstances, Ho’s record of resisting the French made him an icon among the entire Vietnamese population. Even if North Korea eventually developed its own strong state foundations, the fact remained that in the beginning, it was very much a Soviet proxy and very much dependent on Soviet support.

²² Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 101, 330.

²³ Larry Ritter, interview, Sept. 24, 2015.

and trees to those in the United States: “maybe a little thicker in certain parts, but basically that is what you would see there.”²⁴

In addition to routine manual pruning maintenance around the fence, foxholes, minefields, observation posts, and checkpoints, regular patrols supported by rapid reaction forces rounded out the system. While these precautions did not stop every DPRK incursion, trespassers faced a challenging gauntlet that significantly increased the ability of UNC allied forces to combat North Korean infiltrators.²⁵ Responding to heightened sentry operations along the DMZ in 1972, North Korean Premier Kim Il Sung announced to *New York Times* correspondents that,

The U.S. Government still adopts unfriendly attitudes toward our country. . . . The most important thing . . . is that we educate our people in the spirit of hating the enemy. Without educating our people in this spirit we cannot defeat the U.S., which is superior in technology.²⁶

Clearing Vegetation by Labor and Use of Herbicides

U.S. technological superiority over North Korea included the development, production, and dispersal of tactical herbicides authorized by the Department of Defense (DOD) for use in combat operations in Southeast Asia and regions with similar climates. The successful testing of various aerial dispersal methods using Air Force B-29, B-50, and C-119 aircraft spraying various mixtures of 2,4-D and 2,4,5-T proved that the dispersal of tactical herbicides from military aircraft could be achieved in combat environments as a means to clear overgrown vegetation, like that along the Korean DMZ. The development of new herbicides and new delivery systems was the responsibility of the U.S. Army Chemical Corps, specifically the Crops Division of the Biological Warfare Laboratories located at Fort Detrick, Maryland. By the mid-1950s, scientists had tested and evaluated the aerial application dispersal methods and the herbicidal activity of various mixtures of 2,4-D and 2,4,5-T on rice and grasses at Fort Ritchie, Maryland, in 1956; Dugway, Utah, in 1959; and Fort Drum, New York, in 1959.²⁷

²⁴ Charles Groff, interview by Heather Haley, digital recording, Sept. 24, 2015, San Antonio, Texas.

²⁵ Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine*, 330.

²⁶ Kim Il Sung, “Excerpts from Interview with North Korean Premier on Policy Toward the U.S.,” *New York Times*, May 31, 1972, 14.

²⁷ Office of the Under Secretary of Defense U.S. Army Research Office, *The History of the US Department of Defense Programs for the Testing, Evaluation, and Storage of Tactical Herbicides*, by Alvin L. Young (Cheyenne, WY: A. L. Young Consulting, 2003), 7.

For well over a decade, the DOD publicized its advancements in herbicidal warfare technologies, much to the consternation of North Korean Premier Kim Il Sung, who frequently publicized his dissatisfaction in widely circulated American newspapers, including the *New York Times*.

As early as 1963, CG I US Corps²⁸ proposed the dispersal of herbicides within the contiguous Korean DMZ to improve observation and fields of fire while simultaneously denying hostile forces the concealment provided by vegetation. U.S. Army Biological Laboratories at Fort Detrick, Maryland, received a feasibility study that recommended applications of herbicides be conducted using C-123 aircraft. Predicting accusations of armistice violations as opposing air forces were “to respect the air space over the Demilitarized Zone and over the area of Korea under military control of the opposing side,” Commander in Chief, United Nations Command (CINCUNC) Guy S. Meloy, Jr., denied requests for aircraft application of herbicides.²⁹ In late-1963, a ROK Corps Chemical Officer reported that an undisclosed, but small, amount of 2,4-D “was used in selected areas such as observation posts and guard posts to clear fields of fire.” Denied the scientific evaluation of the herbicide, ROK Army infantry forces dispersed weak concentrations of 2,4-D to these grassy areas, unaware that the higher, military-grade concentration of the herbicide specifically targeted broad-leaf vegetation and that their weaker concentration had little or no effect upon the annual and perennial grasses of the region.³⁰

The DMZ features diverse ecological environments that vary from the Mongolian oak forests of Hyangno Peak to the rice paddies of the southwestern Civilian Control Zone (CCZ)³¹ and the salt marshes along the estuary of the Imjin River. The dominant flora populations that most obstructed the DMZ Security Fence included oriental cork oak, red pine, and Mongolian oak trees.³² Identified by the DOA as “scrub,” needle leaf and broad-leaf plants dominated DMZ vegetation. Trees varied in size from six to nine feet in height, while various reeds and sedges obscured fields of fire from allied foxholes.³³

²⁸ The I US Corps included Second Infantry Division, 98th ROK Regimental Combat Team (RCT), and Fifth ROK Marine Corps (MC) Brigade (BDE).

²⁹ Buckner, *Final Report, Vegetation Control Plan CY 68*, 1; Korean War Armistice Agreement, July 27, 1953, RG 11, NACP.

³⁰ Buckner, *Final Report, Vegetation Control Plan CY 68*, 1.

³¹ The CCZ is an area designated by the Armistice that controls and limits the entry and exit of civilian populations. Korean War Armistice Agreement, July 27, 1953, RG 11, NACP.

³² Kwang-bok Ham, *Whispers of the DMZ: All about the DMZ, a Symbol of Peace and Nature*, ed. Ŭn-jin Pak (Goyang City, Gyeonggi-do, South Korea: Wijŭdŏm Hausŭ, 2013), 11, 106.

³³ Buckner, *Final Report, Vegetation Control Plan CY 68*, D-2.

In order to clear the area and maintain agreements within the armistice, the army evaluated various manual modes of vegetation clearing, which included “hand clearing, mechanical clearing, and use of herbicides,” in relation to each method’s “effectiveness, initiation and recurring costs, and other pertinent factors,” including “adverse communist and third-country reactions.”³⁴ Evaluators selected small patches of foliage south of the DMZ not only to establish effectiveness of herbicide use, but to define the criterion for vegetation control in the region. Groff remembered wilting foliage while he was on duty along the fence because he “was trained to observe those things.” In fact, he believed that ROK personnel sprayed Agent Orange along both sides of the allied fence:

Maybe 15 feet from the fence out into the zone was sprayed that far out. What you would get [was] a clear field of fire. Plus I saw the LP [listening post] on the top of the hill. All of a sudden you could see the guys walking around without field glasses because all the vegetation from the top ten or 15 feet down the hill was gone.³⁵

Positive results yielded preparations for herbicide applications between the demarcation line and the south tape. The primary conclusion of the study was that the use of chemical defoliants to control vegetation along the DMZ, in conjunction with manual and mechanical means, was practical, manageable, and politically acceptable.³⁶ Systemic herbicide defoliation acted much like normal seasonal defoliation by causing leaf fall through reduction of the hormone auxin in leaf blades. Weak cells formed at the base of the leaf, thereby causing it to fall. Other damaging effects included interference with plant respiration and photosynthesis. Agent Orange was particularly effective against angiosperms, or flowering plants, by retarding growth of broad-leafed weeds. At the concentration levels used in Southeast Asia, however, these herbicides were deliberately nonselective to insure maximum and prolonged effect on a broad range of high-humidity jungle vegetation.³⁷

HQ Eighth U.S. Army (EUSA) issued defoliation instructions for First ROK Army and I US Corps to disperse test applications of available herbicides Monuron and

³⁴ *Ibid.*, 2.

³⁵ Charles Groff, interview, Sept. 24, 2015.

³⁶ Buckner, *Final Report, Vegetation Control Plan CY 68*, 1-2, 5, 10; Julian E. Buckner, *Standard Operating Procedure for Vegetation Control* (San Francisco: Department of the Army Headquarters, U.S. Army Advisory Group, Korea, 1969), 2.

³⁷ Military Herbicides, undated, No Date, Folder 13, Box 05, Paul Cecil Collection, The Vietnam Center and Archive, Texas Tech University, <http://www.vietnam.ttu.edu/virtualarchive/items.php?item=2520513007> (accessed Feb. 7, 2016).

2,4,D on flat terrain and in the mountains by the 21st ROK Infantry Division. On April 15, 1968, ROK personnel began the process of defoliation by dispensing a systemic, semipermanent soil sterilant known as Monuron. A compound that inhibits photosynthesis, Monuron did not exhibit any signs of carcinogenicity in humans, but side effects included mild-to-moderate irritation to the skin, nose, and throat. Urox 22, the form of Monuron applied with granular herbicide dispensers to areas south of the DMZ, penetrated the roots of perennial and annual grasses, weeds, trees, and woody plants to inhibit and retard growth over a period of two to three months. The defoliant action of Monuron relies upon rainfall to absorb the active ingredient into the soil and penetrate plant roots. Therefore, ROK personnel completed this initial application of Urox 22 in the days leading up to the start of monsoon season.³⁸

After the initial Monuron application targeted heavily foliated areas along the south tape, a ratio of 3 gallons of Agent Orange to 50 gallons of diesel was dispensed with hydro pump defoliation hand sprayers. When absorbed into the leaves, the herbicide caused rapid dehydration, defoliation, and eventual death of the plant. Effective against evergreens, shrubs, and other vines, Agent Orange allegedly posed no danger “to warm blooded animals in connection with its handling or application,” according to the DOA at the time of dispersal in 1968. The final step in the defoliation process included another herbicide, Agent Blue (cacodylic acid), which caused the woody and grassy foliage to rapidly dry, thereby starving the foliage of water and leaving the soil unsuitable for further growth.³⁹

Table 2. Priority, Scope, and Defoliant Requirements in Korea

PRIORITY	MATERIAL	QUANTITY	TOTAL ACRE COVERAGE
DMZ SECURITY SYSTEM FENCE	Monuron	390,000 lbs.	7,800
	Orange	13,140 gal.	4,300
	Blue	4,500 gal.	1,500
CPs AND OPs	Monuron	0 lbs.	0
	Orange	5,440 gal.	1,815
	Blue	4,200 gal.	1,400
ROADSIDE CLEARANCE	Monuron	0 lbs.	0
	Orange	900 gal.	300
	Blue	20,760 gal.	6,920

Source: Data adapted from Julian E. Buckner, *Final Report, Vegetation Control Plan CY 68*, (San Francisco: Department of the Army Headquarters, U.S. Army Advisory Group, Korea, 1969), G-1.

³⁸ Buckner, *Final Report, Vegetation Control Plan CY 68*, 1–2, 5, 10; Buckner, *Standard Operating Procedure for Vegetation Control*, 2.

³⁹ Buckner, *Standard Operating Procedures for Vegetation Control*, 3, 7.

In order to remain compliant with the 1953 Armistice Agreement, ROK personnel avoided herbicide application between the demarcation line and the south tape. However, dispersers gave priority to the fence itself. Herbicide application took place within a 100-meter radius on either side of the DMZ Security System Fence and around the perimeters of checkpoints and observation posts. Work details manually cleared the first 50 meters, and the remaining area was treated with one or a combination of the three defoliant. Application of liquid Agents Orange and Blue began in mid-May 1968 (see Table 2). Although restrictions attempted to limit or eliminate the potential for run-off, spray drift into the area surrounding the demarcation line, and damage to food crops, U.S. troops often observed these effects as far as 200 meters downwind.⁴⁰

Ultimately, the application of Monuron, Agent Orange, and Agent Blue along the south tape was successful “as it provided a clear area for observation and fields of fire and to a certain degree improved the effectiveness of night vision devices by producing an area of high contrast.” Areas surrounding observation posts and checkpoints exposed these installations to enemy observation. Roadside clearance, however, was less effective because the width of the area covered—less than 30 meters on each side—was not adequate to protect allied military transports and convoys from ambush.⁴¹

The Banning of Herbicides

The following year, 1969, the Departments of Agriculture, Interior, and Health, Education, and Welfare formally announced a ban on the domestic production, sale, and use of herbicides containing 2,4,5-T. Few Americans were aware that common household weed killers such as Scotts Turf Builder, Scotts Kancel Weed Killer, Amchem Garden Weeder, Plus-1, Ortho Brush, and Ortho Triox Liquid contained 2,4,5-T as the main herbicidal agent.⁴² In a Department of the Interior news release, the government departments collectively claimed that “2,4,5-T, as well as its contaminant, dioxins, may produce abnormal development in unborn animals. Nearly pure 2,4,5-T was reported to cause birth defects when injected at high doses into experimental pregnant mice.” The effects of Agent Orange on humans were unavailable at the time of the announcement.⁴³

⁴⁰ Ted Sypko, “Korea DMZ Vets & Agent Orange,” *VFW, Veterans of Foreign Wars Magazine* (Jan. 2004), 44.

⁴¹ Buckner, *Final Report, Vegetation Control Plan CY 68*, 15.

⁴² Edwin A. Martini, *Agent Orange: History, Science, and the Politics of Uncertainty* (Amherst: University of Massachusetts Press, 2012), 97; “U.S. Curbs Sales of a Weed Killer: Also Suspends 2,4,5-T Use as Defoliant in Vietnam,” *New York Times*, Apr. 20, 1970, 29.

⁴³ Office of the Secretary of the Interior, *Home Use of 2,4,5,-T Suspended* (Wash., DC: Department of the Interior, 1970), 1.

The suspension of all commercial herbicides containing 2,4,5-T in April 1970 included those higher concentration, military-grade defoliants used in Southeast Asia. As a result of this action, the use of Monuron, Agent Orange, and Agent Blue along the Korean DMZ ceased immediately. Allied ROK and UNC personnel completed any future foliage reduction manually with axes, machetes, and mechanized handsaws.

A Deadly Confrontation

The inability to disperse chemical herbicides had tragic consequences in 1976 when North Korean personnel became verbally and physically combative against UNC personnel over the pruning of the large poplar tree that obstructed the view of a checkpoint in the JSA at Panmunjom. Colloquially labeled “The Loneliest Outpost,”⁴⁴ UNC Checkpoint Three connects to UNC Checkpoint Five by way of The Bridge of No Return, over which the exchange of North and South Korean prisoners of war occurred following the armistice in July 1953. Between these checkpoints stood a Normandy poplar tree that annually blocked the view between these two checkpoints when its foliage filled out in the summer months. Regularly during this time, a Korean Service Corps (KSC) workforce had manually trimmed the tree.⁴⁵ When a KSC work party made its annual pilgrimage in the summer of 1974, participating U.S. Army scout Rocky Burke described the scene:

Right on the other side of this bridge was a [North] Korean building [where] . . . they kept a whole bunch of Korean soldiers. . . . It was their quick reaction force and so if anything happened, these guys would come pouring across that bridge . . . We had an escape road that if something happened, we could get out, [but] the North Koreans would put drop gates on everything. . . . [The North Koreans] decided to build a checkpoint and drop gate on our recently-built escape road When I was there, they sent us down . . . to trim that tree So we went . . . to cut that tree down and we had some civilian workers with axes, some saws, and ladders. . . . So we got there, we got out, we deployed, put the ladders on the tree and all that. This North Korean captain, Captain Pak, showed up, actually he came across the bridge, I don't know how, he showed up with maybe about ten guys and he was standing there and he said, “If you cut that tree, you will be dead before it hits the ground.” And so, I didn't doubt him at all. . . . So we got back on the truck and left.⁴⁶

⁴⁴ Rocky Burke, interview, Sept. 19, 2015.

⁴⁵ Kirkbride, *DMZ*, 28.

⁴⁶ Rocky Burke, interview, Sept. 19, 2015.

Two years later, on August 18, 1976, the confrontation reprised itself in a deadly way when two American officers—Capt. Arthur G. Bonifas and 1st Lt. Mark T. Barrett—an ROK officer, and eight enlisted UNC guards set off across the Bridge of No Return to prune the massive tree. A West Point graduate, Capt. Bonifas spent the previous year commanding South Korea's elite guards and was, therefore, the most experienced officer to lead the team. Lieutenant Barrett, on the other hand, was only in the first month of his projected 12-month tenure along the Korean DMZ. Work began peacefully at 10:40 a.m. as three members of the work party, Kim Chil Young, Chang Thong Chi, and Sohn Won Son, climbed the tree. The team brought axes, small handsaws, larger manual and motorized saws, and one machete to the site, leaving the bulk of the equipment exposed beneath the tree. Supervisors Kwak Hi Hwan and Lee Hyong No remained under the tree to remove fallen branches and foliage from the site.⁴⁷

North Korean Lt. Pak Chul, accompanied by 10 guards, arrived within minutes of the work party's annual pruning ritual. Pak and his guards observed the South Korean maintenance detail armed with axes, saws, and machetes, directed by what he viewed as two American imperialist aggressors. As head of the work team, Hwan could not forget the ominous North Korean warning from two years earlier: "Don't cut the tree, or we will kill you." A heated verbal exchange subsequently took place between Lieutenant Pak and Captain Bonifas as Pak demanded the work cease until the status of the tree could be assessed at a security officer's meeting.⁴⁸

However, Bonifas's refusal to comply with Pak's directive prompted heightened verbal threats to the entire work detail. Pak sent a subordinate across the bridge, and within minutes, an additional 20 North Korean guards arrived on the scene. Bonifas, like the commanders before him, was no stranger to aggressive verbal threats from "Bulldog" Pak and was comfortable turning his back on the lieutenant to reassure the apprehensive work party. Interpreting Bonifas's behavior as a personal affront and show of disrespect to the authority of North Korea, Pak carefully removed his Seiko watch from his wrist, neatly wrapped it in his handkerchief—undoubtedly to prevent soiling this treasure with the blood of the American aggressors—and carefully placed it in his pocket. Seconds later, he shouted the order to kill.⁴⁹

⁴⁷ Kirkbride, *DMZ*, 29; "Sudden Death at Checkpoint Three," *Time*, Aug. 30, 1976, 42.

⁴⁸ *Ibid.*, 29, 30.

⁴⁹ Brandon K. Gauthier, "When Two Americans Were Axed to Death by N. Korean Soldiers," *NK News*, Aug. 20, 2013, <https://www.nknews.org/2013/08/when-two-americans-were-axed-to-death-by-n-korean-soldiers/> (accessed Feb. 2, 2016); Rocky Burke, interview, Sept. 19, 2015; Kirkbride, *DMZ: A Story of the Panmunjom Axe Murder*, 30; Reed P. Probst, *Negotiating with the North Koreans: The U.S. Experience at Panmunjom* (Carlisle, PA: U.S. Army War College, 1977), 8.

While on sentry duty from atop the elevated UNC Checkpoint Five that overlooked the Bridge of No Return, Cpl. Timothy Gray recorded the chaotic scuffle using a movie camera and telephoto lens. Snippets of his film aired the following night on national news outlets in the United States and ultimately helped military analysts determine the cause of the hysteria.⁵⁰ Distracted by his apprehensive workers, Captain Bonifas did not notice Lt. Pak's suspicious behavior. He was ambushed and bludgeoned to death by at least five KPA guards armed with clubs, metal pipes, and the axes left behind by the fleeing South Korean work detail. Bonifas's deputy, Lieutenant Barrett, was savagely beaten to death. His maimed body was found in a forested area 50 meters east of Checkpoint Three. The skirmish ended within minutes when a UNC driver positioned his truck over Bonifas's body to prevent further attacks. The UNC guards who accompanied the work party scattered from the area after repeated attacks by KPA guards.⁵¹ While all military personnel stationed in the JSA carried a firearm, the two-minute skirmish only involved hand-to-hand combat with the pruning equipment left by the retreating work detail.

Immediately following the incident USFK Command issued a DEFCON order, and a response team comprised of South Korean special operations units deployed into the JSA. Although the incident concluded peacefully with Kim Il Sung's official expression of regret,⁵² guards stationed inside the JSA remained on high alert. On August 19, the DPRK issued a statement that challenged the series of events transmitted to U.S. audiences. In fact, U.S. national news media, according to North Korean propaganda, "contented itself with a bicentennial orgy of jingoist one-sided reportage" after Reuters reported that two American officers "died from massive head injuries and stab wounds inflicted by about 30 North Korean guards."⁵³

The Korean Central News Agency of the DPRK reported the incident as a provocation by allied UNC forces who "committed the unbearable insulting act of

⁵⁰ Kirkbride, *DMZ*, 31.

⁵¹ "Sudden Death at Checkpoint Three," *Time*, 42; Gauthier, "When Two Americans Were Axed to Death by N. Korean Soldiers"; Kirkbride, *DMZ*, 30, 31.

⁵² "It is regretful that an incident occurred in the Joint Security Area, Panmunjom, at this time. An effort must be made so that such incidents may not recur in the future." Kim urged allied forces to prevent provocation because North Koreans would "never provoke first, but take self-defensive measures only when provocation occurs." Kim Il Sung quoted in "North Korea Leaders Calls DMZ Incident 'Regretful': U.S. Rejects Message, Says That Forces Will Remain on Alert in Wake of Killing of Two Americans," *New York Times*, Aug. 23, 1972, 6.

⁵³ Ham, *Whispers of the DMZ*, 63; "U.S. Newspaper 'The Guardian' Edits Special Writeups on August 26" in *The Truth of the Panmunjom Incident* (Pyongyang, Korea: Foreign Languages Pub. House, 1976), 24; "Two U.S. Officers Hacked to Death," *Korea Herald* (Seoul, South Korea), Aug. 28, 1976.

hurling invectives and spitting at the security personnel” of North Korea. Facing numerical superiority, including “30 hooligans” led by U.S. imperialist aggressors, DPRK security personnel acted in self-defense against the allegedly premeditated plans of U.S. forces. The account went on to suggest that allied forces at the JSA planned the attack, having made “preparations for photographing it.”⁵⁴ The incident itself and embellished reporting occurred because of the Army’s need to manually clear vegetation in the wake of the prohibition of applications of Agent Orange along the Korean DMZ.

Conclusion

Hostilities along the Korean DMZ in the late-1960s and 1970s rarely reflected the classic image of war enumerated in U.S. Army doctrine. Of the defensive operations conducted by UNC forces, the land anti-infiltration role along the DMZ was crucial. Frequent hostile incursions by DPRK units forced General Bonesteel to employ front-line U.S. and ROK divisions who were “responsible for both the DMZ security mission and the defense mission.”⁵⁵ Citing numerous patrol and ambush casualties in 1967, Bonesteel concentrated his efforts to protect his subordinates with anti-infiltration training.



Guard tower at Camp Wentzel along defoliated southern DMZ

⁵⁴ “Statement of the Korean Central News Agency,” in *The Truth of the Panmunjom Incident*, 7.

⁵⁵ Gen. Charles Bonesteel, III quoted in Bolger, *Scenes from an Unfinished War*, 46.

Changes in defensive policy ultimately included the dispersal of chemical herbicides to clear vegetation along the DMZ Security System Fence, checkpoints, observation posts, and the foxholes from which daily anti-infiltration observation operations took place. The success of foliage reduction in Ranch Hand missions in South Vietnam likely influenced the initiation of herbicide operations in Korea. Starting in April 1968, ROK work details dispersed concentrated amounts of military-grade Monuron, Agent Orange, and Agent Blue in response to repeated DPRK threats. These herbicide dispersals not only made it difficult for guerilla forces to ambush patrols, convoys, and sentry operations, but helped General Bonesteel maintain his grip over ROK personnel.

The DOA's restriction of herbicide production, sale, and use in April 1970 prevented dispersal of Monuron, Agent Blue, and Agent Orange at Panmunjom, and thus made the strategic situation more complex. However, the dangers posed to humans as a result of exposure to dioxin required reevaluation of the risks associated with North Korean incursions—a calculated acceptance of some degree of incursion without the occurrence of harmful side-effects of defoliants.

These restrictions prompted the decision to send a UNC work detail, led by two American officers, to attempt to manually prune a towering tree in August 1976 that obstructed the view along the DMZ. The use of tactical herbicides not only would have obviated manual pruning, but also would have prevented the deaths of two American officers. To shed some light on border defenses and that unfortunate situation, this study uses original historical research surrounding herbicide operations conducted in Korea and incorporates previously unused personal testimonies from rank-and-file enlisted men. It fills a gap in the historiography of U.S.-sanctioned chemical warfare strategy, offering a more detailed and complete view of a DMZ story that turned so tragic in 1976. Review of the consequences of the herbicide restriction and the testimonies of soldiers stationed at the DMZ, provide a more complex and nuanced picture of the dangers and sentiments along that border. Tensions were high at the DMZ, and soldiers' testimonies reveal important details about the difficult emotional strain of service there and the dangerous confrontations that erupted.

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