



Anne Arundell County

HISTORY NOTES

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The One That Got Away

by Merle T. Cole

Long before “Nike” meant a brand of pricey footwear, it referred to a marvel of early Cold War technology . . . the Nike series of surface-to-air missiles (SAM) systems. Nike-Ajax and Nike-Hercules were developed to intercept and destroy Soviet bombers carrying nuclear weapons. They were deployed by the U.S. Army and Allied forces at numerous points in the United States, Europe and Asia. Nike-Zeus, last in the series, was intended as an anti-ballistic missile weapon, but the project was canceled before the system was fully developed.

Under post-war interservice “roles and missions” agreements, the Army had primary responsibility for ground-based air defense of major American cities and critical defense-related localities. The Army initially performed this mission with antiaircraft artillery (AAA) guns, mostly of 90- and 120-mm size. Such weapons had proven adequate during World War II, but were virtually useless against the high-flying jet powered bombers being developed by the Soviets after the war.

Fortunately, the need for an effective guided missile anti-aircraft system to replace conventional tube artillery had been recognized early and a design contract awarded to Bell Telephone Laboratories in 1945. The initial product, Nike-Ajax, was deployed in early 1954. Among the first to receive the new weapon were units located at Fort George G. Meade.



Publicity photo of Maryland Army National Guard personnel mating Nike-Ajax missile to booster, 1960. The yoke which held the missile against the launcher rail is clearly visible at the end of the rail. Ajaxes were always loaded with Tunnel No. 3 against the rail. The fact that the yoke retaining pin had not been removed contributed to the severe damage to Tunnel No. 3 upon launch, and to the subsequent erratic flight and disintegration of the Ajax on 14 April 1955. A warhead arming mechanism is visible as a black circle just in front of “U.S. Army.” (NARA photo 111-SC-576509)

contract awarded to Bell Telephone Laboratories in 1945. The initial product, Nike-Ajax, was deployed in early 1954. Among the first to receive the new weapon were units located at Fort George G. Meade.

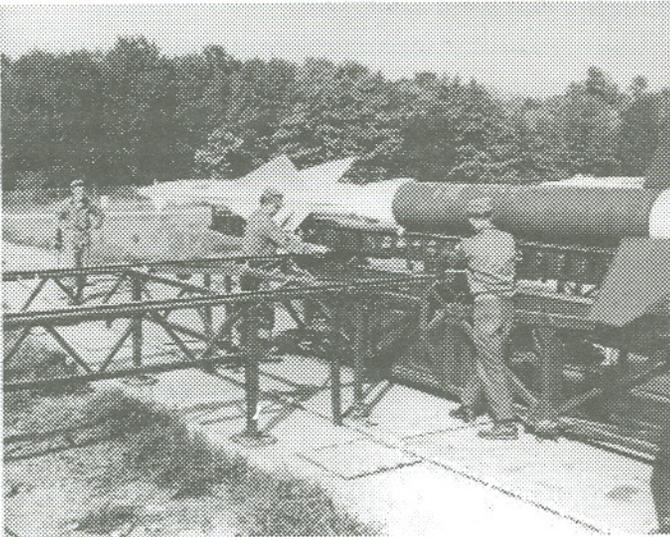
The 35th AAA Brigade had moved to Fort Meade from Fort Bliss, Texas, in February, 1950. The brigade was responsible for AAA defense of Washington, Baltimore, Norfolk and Philadelphia. It conducted this mission through subordinate AAA battalions, which were attached to and detached from brigade command

frequently in the following years. One of these was the 36th AAA Battalion (120-mm Gun) (Static), which

We Won An Award!!!

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The One That Got Away (cont. from page 1)*Nike-Ajax at a typical temporary site.*

arrived at Fort Meade on 26 April 1951. In January, 1954, the 36th was converted to the Army's first missile battalion and accordingly redesignated 36th AAA Missile Battalion. Eleven of the brigade's other battalions were later reorganized or initially organized as missile battalions, but it did not become "a 100 per cent Nike missile command" until late 1957.

The official Nike-Ajax program history states the units at Fort Meade became operational on 20 March, 1954. Missiles were distributed among the battalion's firing batteries — the "business end" of air defense. Battery C-36th AAA Missile Battalion manned Ajax launchers located in the "western bulge" of Fort Meade, south of Maryland 602 (now Route 198) and east of what was then called the Baltimore-Washington Expressway. The "bulge" was transferred to the Department of the Interior in 1991 and designated as the North Tract of the Patuxent Research Refuge. The battery occupied a temporary position on Hill 85, at GPS coordinates 39.05.178N/076.48.234W, while waiting for assignment to a permanent site. This location is now closed to the public. In contrast to later fixed site configurations, early Nike launchers were entirely aboveground. Underground storage magazines were designed to reduce the amount of real estate required to house Nike sites. The first underground magazine became operational at Lorton, Virginia, on 1 November 1954.

Location of firing batteries on a military reservation reflected a paradox which dogged the Nike program. Most Americans clamored for protection from

the emerging Soviet bomber threat and actively supported Nike development and deployment. At the same time there was a very strong NIMBY ("Not in MY Back Yard") reaction from many citizens. Opposition was aroused by the Corps of Engineers purchasing real estate under eminent domain procedures and concerns that property values would drop in the vicinity of the new military installations.

The missile's operating characteristics also raised fears. With its booster, Ajax was 33 feet long, a foot in diameter, and weighed 2,260 pounds. The first stage solid fuel booster fell away after burning for about three seconds. The second stage sustainer motors would then ignite and propel the missile to a speed of 1,900 miles per hour to altitudes of 70,000 feet and a maximum range of twenty-five miles. Citizens asked what would happen if boosters did not fall into the predetermined booster impact areas. Further, Ajax sustainer motors were fueled by a highly volatile mixture of inhibited red fuming nitric acid and JP-4 jet fuel. The Army publicly asserted that a Nike site would be no more dangerous as a next-door neighbor than would a common gasoline station. This did not erase fear of explosions during fueling or launch or of missiles falling from the sky if sustainer motors failed to ignite. Finally, the Ajax was designed to destroy aircraft and carried three separate high-explosive fragmentation warheads weighing about 300 pounds.

The first significant Nike accident occurred at Fort Meade on the rainy afternoon of Thursday, 14 April, 1955. At 12:35 p.m., Battery C was "practicing Nike procedures" when the rocket booster on an Ajax which was being elevated on its launcher suddenly ignited and the missile took off. Crewman Sgt. 1st Cl. Stanley C. Kozak, standing seven feet away, was caught in the flareback from booster ignition and suffered minor burns.

What happened next has been interpreted in two very different ways. Typical of contemporary media coverage was the *New York Times* of 15 April, which reported the incident as page-one news. The *Times* cited Army sources as saying the Ajax "blew apart with a tremendous explosion over a sparsely settled area . . . about three miles away" from the launcher. "The ensuing shower of tortured steel caused neither casualties nor property damage, as far as the Army and police could determine early this evening." The newspaper reported the altitude as "not known."

According to the *Times*, "An automatic detonator assured the explosion high in the air . . . A ground explosion would have caused havoc near the heavily traveled new highway between Washington and Baltimore." The Army asserted that "[a]ssured explo-

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sions of the missiles in the air reduced the hazard to a minimum" and "the missile will not explode while it is in storage or emplaced on the ground."

Military Police and Maryland State Police "rushed to the scene of what apparently was the first example of a new hazard of the pushbutton age." The area was "searched and a large number of fragments were collected; apparently the fins were the only whole parts that survived the blast. The fragments were much like the shrapnel [sic] of conventional artillery and even in free fall possibly could have caused injury or death."

A board of Army officers and representatives of the Douglas Aircraft and Western Electric companies convened "to determine whether a crewman had accidentally flipped a switch or a malfunction of electronic equipment" had caused the launch. Perhaps reflecting public suspicion of Army honesty about Nike program safety, the *Times* emphasized that the Second Army commander had "ordered his subordinates to give all the facts just as soon as they were established." On 27 April, the Army announced the board was satisfied a short circuit had apparently caused the accidental launch. The *Times* reported a spokesman indicating "that the practice of firing procedure may also have contributed." This article clearly stated the missile exploded over the Baltimore-Washington Expressway.

The Baltimore *Morning Sun* of 15 April summarized the incident in much the same way as the *Times*, but treated it as local news. The *Sun* reported pieces of the missile landed on Barbersville and other fragments "too small to disrupt traffic" hit the Baltimore-Washington Expressway. Lt. Col. Dwight Bingham, Second Army deputy chief of information, was reported as saying, "the Army was 'embarrassed' because it could not account for the incident." Bingham added that the Ajax carried an explosive warhead, "is believed to have exploded in the air," and "the rocket booster dropped off on the Meade reservation." Since no large pieces were recovered, he suggested that Nike had disintegrated. The *Sun* provided some interesting "local color:"

Barbersville residents who saw the material that fell, burned and then was carried away from the scene by the military described a loud explosion and said their houses shook.

By the end of the military cleanup of the area near their homes, the only traces left of the mis-

sile's fall were two holes in the soft mud and a few bent and splintered small trees. One of the holes was about 4 feet in diameter and 2-1/2 feet deep. The other was narrower and deeper.

Mrs. Nancy Bishop, of Barbersville, said she was at her kitchen window when she saw something that looked like an airplane go over her house at a 45-degree angle 200 feet in the air. 'Smoke and flames were coming out of the end of it,' she said. 'I saw it explode in the air. It exploded again when it hit the ground. Before it hit it sailed between a house and a trailer.' She said it passed with a 'whistling noise' and 'went off like a flash of lightning.'

Mrs. Bishop's observation appears to contradict repeated assertions that the missile "exploded somewhere several thousand feet in the air." It also confirms the recollection of a soldier who was there.

Col. George O. Evans retired from the Army after twenty-six years service, mostly with Ajax and Hercules systems, his last troop assignment as commanding officer of 2d Battalion — 44th Air Defense Artillery in the Republic of Korea. When he encountered the 1955 newspaper accounts on an Internet web site, he contacted the webmaster with correct information because he "knew [the newspaper coverage was] not true." Colonel Evans had no personal knowledge of the incident, but his first troop assignment was as Launcher Platoon Leader with an Ajax unit in Germany. There, in 1960, he met Chester Joswick, who as a warrant officer had been Battery C's Assistant Launcher Platoon Leader that rainy spring afternoon. Joswick related details of the incident to Evans, and the two jointly developed a summary statement to "set the record straight." Details were further clarified in exchanges between Mr. Joswick and the author.

Joswick noted that crew drill procedures were not fully refined in this early stage of the Nike program. Existing procedures required the booster squib cable be connected anytime a battery went to "Battle Stations" to track unknown aircraft. Battery C had gone to "Battle Stations" for drill purposes. The Launcher Section crew performed pre-launch checks, including one for stray voltage on the launcher. Except for the Section Chief (Sgt. Kozak), who remained above ground to assure the launcher was up and locked into position, the crew moved to the underground section room. As soon as the launcher came up the booster ignited and the Ajax left the launcher. Because no launch was intended, the pin of the launcher's forward yoke support had not been

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removed. The yoke supported the missile on the launch rail in a near-vertical position. When the missile was fired, the yoke support hinged down and away as soon as there was any forward or upward movement, allowing the missile to clear the rail. As the pin had not been removed, the yoke remained in place when the Ajax took off, tearing out the No. 3 Tunnel or fairing strip covering essential wiring on the missile's side. This damage rendered the missile warheads inoperative and prevented an explosion. It is also likely the warheads failed to detonate because the missile never attained the g-forces necessary to close the arming mechanisms.

Because the launcher had not fully erected, the Ajax left at an angle rather than nearly vertically as designed. Mr. Joswick recalls the missile flew to a height of about 3000 feet before it broke up. Structural damage sustained when the Ajax left the launcher rail, coupled with rapid initial acceleration, rendered the missile aerodynamically unsound and led to the break-up. The fact the crew had not removed the propulsion safety pin during the drill contributed to the failure of the sustainer motor to start. And, since the launch was unintended, the missile was not under radar control.

Neither the missile nor the booster exploded in flight. The booster separated and fell onto Barber's Trailer Court more than a mile from the launch site. Fuel tank fragments fell on the Baltimore-Washington Expressway where the fuel and oxidizer caused a fire but little or no damage. The missile nose section was found 500 yards from the launcher with the guidance assembly still attached.

Regarding the cause of the accidental launch, Mr. Joswick recalls that at the outset of the investigation the Battery Control Officer, Launching Control Officer and Section Panel Operator all "denied even touching the switch to activate the missile." The board of inquiry isolated the cause as an electrical short caused by rain water in the junction box on the outside rear of the launcher control trailer. This condition defeated the crew's pre-launch safety checks. Notwithstanding this fact, the battalion commander was relieved of his duties.

The accidental launch was not the first mishap to befall Fort Meade's missiles. The official Ajax program history notes that "NIKE Battery No. 5 located at Ft. Meade, Maryland, became ignited during a lightning storm on May 3, 1954. Three van trailers . . . were completely consumed by fire . . ."

Mr. Joswick visited the site the day after the fire and found only "a semimolten mass of metal." This incident led to a procedural change requiring that lighting rods or masts be placed beside each van.

Battery C left Fort Meade in the summer of 1956. The men and equipment were redeployed to activate a new site near Derwood, numbered W-93 and alternatively referred to as Laytonville. At W-93 the men cadred a new Ajax unit designated Battery B-514th AAA Missile Battalion. Simultaneously, the old designation "Battery C-36th AAA Missile Battalion" was transferred to the Ajax unit at Fort Smallwood — also known as Pasadena or Jacobsville and numbered BA-43. B. R. (Bud) Blaydes was part of the original group of soldiers which activated BA-43 in early spring 1956. His unit was initially designated Battery B-602d AAA Missile Battalion and moved to Fort Smallwood from the Army Chemical Center at Edgewood Arsenal. Blaydes recalls that when the redesignation came in early summer 1956, "there was much, much complaining as we did not wish to be burdened with the stigma that came with their goof ups."

Any "stigma" associated with the designation was short lived. On 1 September, 1958, in another of the seemingly endless Army-wide reorganizations of artillery units, the 36th AAA Missile Battalion was officially redesignated 1st Missile Battalion-562d Artillery. The 514th was redesignated as 4th Missile Battalion-5th Artillery the same date.

When the Regular Army converted to Nike-Hercules it reduced the number of Ajax sites by closing some and transferring others to the Army National Guard. BA-43 was transferred to Battery A-1st Missile Battalion-70th Artillery, Maryland Army National Guard, on 1 March, 1960. The site was deactivated in December 1962 and is now used by the Anne Arundel County Board of Education. W-93 at Derwood was inactivated in the summer of 1960.

As embarrassing as the Fort Meade "rogue Nike" incident had been for the Army, it at least attracted only short-lived public attention. A far greater disaster, the worst of the Nike program, occurred about 1:15 p.m. on 22 May, 1958 at Site NY-53 near Middletown, New Jersey. Eight Ajax missiles exploded, killing ten men and injuring three others, while civilian ordnance personnel and soldiers were installing new arming mechanisms. Although no residents of nearby towns were injured, the *New York Times* noted the disaster "came a few hours after the Army had announced it was converting the [Middletown] base . . . and eight other Nike installations in Northern New Jersey from Ajax to Hercules

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missiles." Not surprisingly, this exacerbated existing citizen fears because the technologically superior Hercules would usually carry a nuclear rather than a conventional high explosive warhead. The Middletown incident, coupled with existing widespread community hostility, proved a public relations nightmare for the Army. Conversion plans were later scrapped, and NY-53 was transferred to the New Jersey Army National Guard, which operated it from 1960 until it was deactivated in 1964.

The Fort Meade and Middletown incidents occurred early in the Nike program and were by far the most serious at any of the Nike missile sites. They led to development and implementation of procedures which assured safe operation of both Ajax and Hercules systems until the last sites in the United States were deactivated during 1974. ■

Sources: Special thanks are due to Chester Joswick and George O. Evans for sharing their expertise and insights into the Nike program. The author also wishes to acknowledge Malcolm Livingston, Bud Blaydes, and Tom Brown for information and assistance provided.

A wealth of material about Nike systems is available on the Internet. One of the most useful is a verbatim reproduction of the Army's official history of Nike-Ajax development. See Mary T. Cagle, *Nike Ajax Historical Monograph; Development, Production and Deployment of the Nike Ajax Guided Missile System, 1945 - 1959*, Army Rocket and Guided Missile Agency, U.S. Army Ordnance Missile Command, Redstone Arsenal, AL, 30 June 1959, at <<http://www.redstone.army.mil/history/pdf/welcome.html#NIKE-AJAX>>. Another Internet site reproduces the 35th Artillery Brigade Newspaper with banner showing date as "June 1967, Vol. 10, No. 6." See <<http://www.nikenuke.net/nike/text/newspaper2.html>>.

Particularly useful background is provided by 35th Antiaircraft Artillery Brigade, "35th AAA Brigade 14th Anniversary, 20 Nov. 1942-1956" (N.P., 1956), copy on file at U.S. Army Military History Institute, Carlisle Barracks, PA. The best sources of unit lineage and designation information are the Unit History Cards, work sheets and files of the Organizational History Branch, U.S. Army Center of Military History, Fort McNair, Washington, DC.

For contemporary newspaper accounts, see Anthony Leviero, "Rogue Nike Missile 'Runs Away,' Explodes in Flight," *New York Times*, 15 April 1955: 1, 11; "Nike Blows Up Near D.C. Expressway," *Baltimore Morning Sun*, 15 April 1955: 40, 26; "Nike Explodes Over Laurel," *Baltimore Sun*, Sunday, 17 April 1955: A-20; "Investigation Made Into Flight of a Nike," *Baltimore Morning Sun*, 16 April 1955: 15; "Wiring Blamed for Nike Bolt," *New York Times*, 28 April 1955: 30; and "Most Missile Accidents Occur During Testing," *New York Times*, 23 May 1958: 10. Strangely, the local *Laurel News-Leader* was silent on the incident. A review of weekly issues between 14 April and 19 May revealed not one mention. The weekly is available on microfilm at the Laurel Branch of the Prince George's County Public Library System.

For the Middletown disaster, see Bill Becker, "8 Nikes Explode at Jersey Base; 10 Killed, 3 Hurt," *New York Times*, 23 May 1958: 1, 10; U.S., Department of the Army, Office of the Chief of Information, Policy and Programs Division, "Middletown Nike: A Case Study in Public Relations," 31 December 1958, copy on file at U.S. Army Military History Institute, Carlisle Barracks, PA; and Internet site <<http://alpha.fdu.edu/~bender/NY53.html>>.

The author examined local air defense arrangements at length in "W-25: The Davidsonville Site and Maryland Air Defense, 1950-1974," *Maryland Historical Magazine* 80 (Fall 1985): 240-260. This article is also available on the Internet at <<http://community-2.webtv.net/w-25/1985Article>>.

A Nike-Ajax is on display in front of the Fort Meade Museum, and a Nike-Hercules in front of Building 1978 on 20th Street off MD 175 just south of the U.S. Army Reserve Center. An historical marker at the latter site briefly summarizes the story of Nike at Fort Meade. Building 1978 was initially constructed to house the Army Air Defense Command Post for the Washington-Baltimore Defense.

The author discovered another interesting piece of early Cold War history during research for this article. The Maryland Law Library in Annapolis has a copy of the State Department of Civil Defense's "Civil Defense Plan for Maryland." Supplement No. 1 to the plan, titled "Defense Against the Underwater Burst of Atomic Bombs in Baltimore Harbor," was jointly developed with the Baltimore District-U.S. Army Corps of Engineers and published 10 May 1951. The Supplement notes "The Port of Baltimore is the most likely target of an atomic attack" on Maryland. It concludes "an ocean going vessel . . . would probably be employed to deliver an atomic bomb" to Baltimore harbor. This reflects the absence of long range Soviet bombers capable of reaching the continental United States in 1951. Even when the Soviets did develop such a force Baltimore was not among the "first tier" of high priority targets, and bomb delivery by ship would provide a practical alternative. The Supplement includes a detailed estimate of likely damage from detonation of 20 kiloton bombs. While not qualified as either physicist, military engineer or nuclear weapons specialist, the author believes the official damage estimates may have been conservative.

In Memoriam

We report with regret the deaths of member Francis W. Roesler of Severna Park and life member John H. Smith of Severn (see pgs. 8 & 9). Our sympathy is extended to their families and friends.