16 April 1981

Colonel Jerry C. Scott, Infantry
Director, Command, Tactics and
Doctrine Department
United States Army Infantry School
Ft. Benning, Georgia 31905

Dear Colonel Scott

I am deeply grateful for your letter of 10 April 1981 containing the information on TOW missiles in Vietnam.

You may rest assured that I will see that this information is used effectively, both to correct erroneous opinion and to remind important audiences of an important chapter in Army history.

Please express my gratitude to all who performed the research.

Regards

Paul F. Gorman

PAUL F. GORMAN
Lieutenant General, USA

DEPARTMENT OF THE ARMY
UNITED STATES ARMY INFANTRY SCHOOL
FORT BENNING, GEORGIA 31905

IN REPLY REFER TO

ATSH-B-ID

10 APR 1981

Lieutenant General Paul F. Gorman
Director
Plans and Policy, J-S, OJCS
Washington, D.C. 20301

Dear General Gorman,

In response to your request, during your recent visit to Fort Benning, that we provide information on the effectiveness of the ground-mounted TOW missile system in Vietnam, my project officers in the Doctrine and Literature Division have researched this subject thoroughly. The most useful information that they were able to come up with is summarized in the Information Paper at Inclosure 1.

As you are well aware, the United States Army's record keeping in the latter years of Vietnam was not as extensive as it should have been. Consequently, the Information Paper does not provide details beyond August 1972.

At Inclosure 2 is an historical monograph of both the aerial and ground-mounted TOW missile system in Vietnam. This monograph was provided by the History Division of the United States Army Missile Command. The information in the monograph correlates with information received from other sources.

As a matter of interest, we are including a listing of all the potential sources that we contacted during our research efforts. Hope what we have provided is adequate for your needs, if not, please let us know and we will continue our search.

Sincerely,

Jerry C. Scott

JERRY C. SCOTT
Colonel, Infantry
Director, Command, Tactics,
and Doctrine Department

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INFORMATION PAPER

8 April 1981

SUBJECT: Ground-Mounted TOW in Vietnam

ISSUE: This paper discusses the deployment to and the effectiveness of the ground-mounted TOW missile system in Vietnam.

FACTS:

1. An urgent, unprogrammed requirement for the TOW weapon system materialized on 30 March 1972 when the North Vietnamese swept across the Demilitarized Zone in an all-out offensive supported by substantial numbers of Soviet-built and captured American tanks. To counter this new threat, the Department of the Army, on 14 April 1972, directed MICOM to rush two UH-IB (Huey) gunships equipped with the XM-26 armament subsystem and TOW missiles to the battlefront. This was followed on 30 April by orders to deploy the ground-mounted TOW system with instructors to train U. S. and South Vietnamese crews to operate the weapon.

2. The ground-mounted TOW deployment consisted of 87 TOW launcher systems, approximately 2500 missiles, maintenance support personnel and equipment, repair parts, trainers, and instructors from the Weapons Department of the Infantry School.

3. The Army of the Republic of Vietnam (ARVN) was supplied with the following equipment under the Military Assistance Service Funding (MASF) program: 3,200 missiles, 141 launchers, 14 trainers, 39 M232 jeep adapter kits, 3S M236 jeep adapter kits, 13 battery chargers, and 6 contact support sets.

4. An 82nd Airborne Division antitank task force was also airlifted to Vietnam during this period with 24 1/4-ton mounted launchers, 500 missiles and 2 3/4-ton trucks for the maintenance contact team. The task force consisted of 48 personnel plus a maintenance contact team of 10 personnel from the 763d Ordnance Company. In Vietnam, units of the task force were attached to the 3d Brigade, 1st Cavalry Division, whose personnel were trained to operate the TOW weapon system.

Incl 1

5. New' equipment training for U. S. and South Vietnamese crews began up n arrival of the MICOM TDY team early in May 1972. Twenty-eight TOW missiles were expended in training personnel of the 82nd Airborne Division and the 3d Brigade, 1st Cavalry Division through 21 May 1972. Gunners of the 82nd Airborne task force fired 12 training rounds against an artillery bunker at a range of about 2,800 meters and scored 12 direct hits. Gunners of the 3d Brigade, 1st Cavalry Division fired 16 training rounds' with 1 missile malfunction, 9 target hits, and 6 misses because of poor lighting conditions. Training for the South Vietnamese Marines began on 10 May and continued through 22 July 1972, with a total of 163 TOW missile firings. It was in the course of the latter training program that the first ground-based TOW system was fired in actual combat on 22 May 1972. A T-54 tank was destroyed at a range of approximately 900 meters.

6. The 82nd Airborne Division antitank task force completed in-country training, received an intelligence briefing on the enemy's armor tactics, and was moved by C-130 aircraft from Bien Hoa to Pleiku. Four TOW squads were then rushed to positions around Kontum, just as the enemy tank assault began. PFC Angel Figuaroa scored the Division's first tank kill with the ground-mounted TOW on or about 26 May 1972. About a week later, the 48-man task force turned their TOW equipment over to the 3d Brigade, 1st Cavalry Division and returned to the United States. The maintenance contact team remained in Vietnam until 1 August 1972.

7. By 19 August 1972, a total of 23 TOW missiles had been fired in combat engagements, destroying 11 tanks (10 T-54, 1 PT-76), and 6 bunkers. On 12 July, 76 Tow missiles were destroyed by enemy fire at Phu Bai, and 16 others were destroyed at Fire Support Base Ross on 19 August 1972. Information on subsequent TOW combat actions could not be located. Virtually all of the TOW equipment furnished South Vietnam was eventually captured or destroyed.

HISTORY

OF THE

TOW MISSILE SYSTEM

Mary T. Cagle

Approved by: Louis Rachmeler
LOUIS RACHMELER
Major General, USA
Commanding

Issued by: Mary T. Cagle
Chief, Historical Division
HQ MIRCOM
20 October 1977

Historical Monograph
Project Number: DARCOM 85M

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Incl 2

HISTORY

OF THE

TOW MISSILE SYSTEM

NATIONAL SECURITY INFORMATION

Unauthorized Disclosure Subject to Criminal Sanctions

Distribution outside the Department of the Army will not be made except with approval of the Chief of Military History, per paragraph 6-6, AR 870-5, 22 January 1977.

The TOW in Vietnam

(U) One of the urgent, unprogrammed requirements for the TOW weapon system materialized on 30 March 1972, when the North Vietnamese swept across the Demilitarized Zone in an all-out offensive supported by substantial numbers of heavily armored Russian and captured American tanks. To counter this new threat, the Department of the Army, on 14 April 1972, directed MICOM to rush two UH-1B (Huey) gunships equipped with the XM-26 armament subsystem and a load of TOW missiles to the battlefront. This was followed on 30 April by orders to deploy the ground-based TOW system with instructors to train U.S. and South Vietnamese crews to operate the weapon.

(U) The order to have the experimental airborne TOW system on the way to Vietnam, ready to fight, in 7 days sparked one of

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[13](1) *Ibid*, (2) TOW/HAW New Mat Introductory Ltr, revised Jul 76, p.3. TOW Proj Ofc. (3) Intvw, M. T. Cagle w CPT Jack D. Conway, TOW Proj Ofc, 17 Sep 76.

[14](1) TOW ECAP Presns by COL R. W. Huntzinger, to DCG, Mat Acq, ANC: 8 Jan 74, p.2; & 8 Oct 74, p.11. (2) Hist Rept, TOW PM, FY 71, p.6. All in HDF. (3) TOW Mat Field Plan Part II (Dplmt), 15 Aug 76. TOW Prof Ofc.

[15]*Ibid,*

the most unique deployments ever accomplished by the Army. It was indeed a monumental task done in record time through a well-coordinated team effort headed by COL Robert W. Huntzinger, the TOW Project Manager. The two UH-1B gunships originally modified and used in the XM-26 airborne TOW development tests at Redstone Arsenal were located at Fort Lewis, Washington, where they were being used in tracking tests by the Combat Developments Command Experimentation Center. Only a part of the XM-26 equipment was installed on the helicopters, the remainder having been placed in storage at the Hughes Aircraft plant in Culver City, California. The TOW-peculiar hardware was removed from the helicopters and flown to Culver City, where the complete XM-26 subsystems were assembled, checked out, and packed for pickup at El Segundo, California. Maintenance was begun on the two helicopters at Fort Lewis as they were readied for airlift. TOW missiles were taken from production lots at Hughes' plant in Tucson and assembled for pickup by a C-141 aircraft at Davis Monthan Air Base.

(U) Realizing that this was no time to break in new men, Colonel Huntzinger handpicked the technical support team that would go with the equipment to Vietnam. Heading the team was Hughie J. McInnish, who spearheaded the development of the TOW airborne system at Redstone Arsenal. Included on the team were an expert on the UH-IB helicopter from Bell Aircraft and two engineers and two technicians from Hughes Aircraft, all of them experts on the TOW and its airborne guidance and control equipment. The aviators who had been flying the hueys in tests at Fort Lewis volunteered to deploy with the gunships to Vietnam. Members of the flight team, commanded by LTC Patrick L. Feore. Jr., were CWO's Scott E. Fonwick, Carrol W. Lain, and Edmond C. Smith, SFC Boyce A. Hartsell, Sp5 Ronald G. Taylor, and Sp 4 David W. Lehrschall. CWO Lester Whiteis of the Aviation Systems Command, a qualified test pilot, instructor, and maintenance officer, was added to complete the crew.

(U) On 21 April 1972, exactly 7 days after MICOM got the word to go, three C-141 aircraft were enroute to Vietnam with the two gunships, two sets of the XM-26 subsystem, missiles, crews and other equipment. On the morning of 24 April, the planes landed on Tan Son Nhut outside Saigon, where the gunships were readied for flight with the XM-26 systems. Since none of the Army aviators had ever fired a TOW missile from the UH-1B helicopter, the support team gave them a cram course on the XM-26 system. The crews checked out in cockpit procedures, held tracking drills to familiarize themselves with the stabilized missile sight and its controls, and, as a graduation exercise, fired two missiles each from airborne helicopters.

(U) At first it appeared that the TOW-equipped choppers would be committed to combat in the action then in progress at An Loc. The day the TOW package arrived in Vietnam, however, the North Vietnamese had overrun Tan Canh northwest of Kontum and there had been numerous actions at firebases guarding the northern and western approaches to the city. North Vietnamese armor, including Soviet-made T-54 medium and PT-76 amphibious tanks, was known to be in the area. Also the North Vietnamese had captured a number of American M-41 tanks and were using them again the South Vietnamese units falling back to Kontum, a provincial capital north of Pleiku. On 28 April, with a major enemy attack on Kontum imminent, the helicopter crews and support team were ordered north to Camp Holloway near Pleiku in the Central Highlands. The gunships flew up that day while the remainder of the group and equipment were airlifted by C-130 aircraft.[16]

(U) As the airborne group at Pleiku prepared to take the TOW into action as soon as suitable targets were located, preliminary planning was underway at MICOM for deployment of the ground-based TOW. This deployment operation, much larger than the first, involved 87 TOW Launcher systems, about 2,500 missiles, maintenance support personnel and equipment, repair parts, trainers and instructors to train U.S. and South Vietnamese crews to operate the weapon. On 5 May 1972, just 5 days after MICOM received movement orders, the first aircraft landed in Vietnam. All had arrived by the following day, and training began soon thereafter. MAJ Dale F. Norton of the TOW Project Office was named logistics officer for the ground system and deployed with it, along with Jess Rich, a civilian missile maintenance technician from MICOM's Directorate for Maintenance.[17]

(U) In addition to the above ground-based TOW equipment, the Army of the Republic of Vietnam (ARVN) was supplied with the following equipment under Military Assistance Service Funding (MASF) program: 3,220 missiles, 141 launches, 14 trainers, 39 M232 jeep adapter kits, 35 M236 jeep adapter kits, 13 battery chargers, and 6 contact support sets.[18]

(U) In yet another TOW deployment exercise, an 82d Airborne

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[16](1) *The Rocket*, 26 Jul 72. (2) *The Rocket,* 6 Sep 72.

[17](1) *Ibid.* (2) *The Huntsville Times,* 26 May 72. (3) Hist Rept, TIW PM, FY 72, p.6. HDF.

[18]Intvw, M. T. Cagle w LTC Robert C. Dawes, TOW Prof Ofc, 26 Aug 76.

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Division antitank task force headed by 1LT David r. Haskett was airlifted to Vietnam with 24 jeep-mounted launchers, 500 missiles, and 2 3/4-ton trucks for the maintenance contact team. The task force consisted of a 48-man crew plus a maintenance contact team of 10 personnel from the 763d Ordinance Company (now Company E, 782d maintenance Battalion). In Vietnam, units of the task force were attached to the 3d Brigade, 1st Cavalry Division, whose personnel were trained to operate the TOW weapon system.[19]

(U) Meanwhile, the TOW airborne system had gone into action. The first TOW combat launches on the morning of 2 May 1972 resulted in the destruction of four captured American M-41 tanks, one artillery gun, and one truck at the site of one of the abandoned firebases near Kontum. CWO Carroll W. Lain probably took no note of it at the time, but he made history that morning, when a TWO missile he fired struck the first tank, marking the first American-made guided missile to be fired by U.S. soldiers in Combat.* In the next several weeks, the two Huey gunships flew numerous sorties in the area around Kontum, knocking out tanks, armored vehicles, trucks, artillery pieces, and other point targets.

(U)The North Vietnamese launched the expected attack on provincial capital of Kontum before dawn on 26 May 1972. Tactical air strikes pounded enemy forces with a mile of the city, but were hampered by the closeness of the enemy force to the defenders in the house-to-house battle underway inside the city. The two Huey gunships went into action at 0640 and before the morning ended flew several sorties apiece. They expended 21 missiles during several hours of continuous operation and scored nine tank kills-every one they found-as well as destroying other targets including a machine gun on a water tank.

(U) In the ensuing days, there were other battles and other

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* The first combat firings of army missiles occurred during the Six Day War in 1967 when the Israelis downed several Egyptian jets with the HAWK missile. HAWK missiles were deployed in Vietnam, but were never fired in combat. Early in the Vietnam war, U.S. soldiers fired some French-developed ENTAC wire-guided missiles. MICOM-developed helicopter rocket launches, firing the 2.75-inch rocket, and the Light Antitank Weapon has been widely used in Vietnam for several years.

[19](1) Stmt by SSG Tom R. Sutton, Cbt Spt Co, 1st Bn/508th Inf, Ft Bragg, NC, 6 Sep 76. HDF. (2) FONECON, M. T. Cagle w SSG Tom R. Sutton, Ft Bragg, NC, 5 Oct 76.

tanks kills, but the opportunities for helicopter-tank engagements gradually diminished. During May and June 1972, the months spent in Vietnam by the temporary duty (TDY) team, the two helicopters fired a total of 94 TOW missiles in combat engagements, scoring 81 hits on a variety of targets, including 24 tanks, 9 trucks, 4 armored personnel carriers, 3 bunkers, 2 machine gun emplacements, 2 artillery pieces, 2 ammunition dumps, a bridge, and a rocket launcher. According to Warrant Officer Lester Whiteis, neither of the gunships was hit by enemy fire. They encountered considerable machine gun fire, but avoided most it by staying high. Before leaving Vietnam, the TDY team trained replacements from the 1st Aviation Brigade. The XM-26 airborne TOW system remained in Vietnam until late January 1973.

(U) Between 30 April 1972 and 11 January 1973, the two Huey gunships fired a total of 199 TOW missiles – 37 in training and 162 in combat engagements. The 37 training firings began on 30 April 1972 and continued through 7 August 1972. BG William J. Maddox, Jr., the Director of Army Aviation, fired one of the training rounds on 21 May 1972, during a 10-day visit to Vietnam, and scored a hit on a previously destroyed M-41 tank.

(U) Of the 162 airborne TOW missiles fired in combat engagements, 151 (93 percent) were reliable and 124 (82 percent) of the latter scored hits on a variety of targets. Among the targets destroyed were 27 tanks, 21 trucks, 5 armored personnel carriers, 3 artillery pieces, 1 antiaircraft gun, 1 122 rocket launcher, 5 machine guns, 2 57mm guns, 5 caves, 8 bunkers, 2 bridges, 2 mortars, 2 ammunition storage dumps, 2 TOW jeeps (1 with launcher and 1 with missiles), and 1 house. Eleven of the missiles fired malfunctioned and four misses occurred when the gunner fired the missile at a range in excess of 3,000 and lost it when the guidance wire ran out.[20]

(U) Nevertheless, the superior tactical value of the airborne TOW had been dramatically demonstrated. BG William J. Maddox, Jr., in confirming TOW's use in Vietnam, said he had been strongly impressed with two major lessons: "The Army attack helicopter has played a key role in the current campaign which began 30 March…The Army has fielded for the first time, a highly effective aerial anti-tank weapon.

20(1) Fact Sheets: XM-26 Sys Test & Tng Firings, 18 Sep 72; XM-26 Operational Firings, 14 Feb 73; & XM-26 results in Vietnam (Tactical Firings), 14 Feb 73. TOW Prof Ofc. (2) *The Huntsville Times,* 26 May 72. (3) *The Huntsville Times,* 2 Jul 72. (4) *The Rocket,* 26 Jul 72. (5) *The Rocket,* 6 Sep 72.

This is the TOW missile….." Summarizing what he had observed of the role of Army aviators and their attack helicopters in supporting the South Vietnamese, General Maddox said:

> "A major new dimension has been added by their now proven combat effectiveness using the TOW missiles against modern tanks as well as against other important point targets. with so few having proven so effective in Vietnam, it is now possible to visualize more clearly, the great anti-tank potential which far larger numbers of modern attack helicopters and TOW missiles would bring to a modern American division."[21]

(U) Performance of the ground-based TOW was equally impressive. As stated earlier, new equipment training for U.S. and South Vietnamese crews began upon arrival of the MICOM TDY team early in May 1972. Twenty-eight TOW missiles were expended in training personnel of the 82d Airborne Division and the 3d Brigade/1st Cavalry Division through 21 May 1972.[22] Gunners of the 82d airborne task force fired 12 training rounds against an artillery bunker at a range of about 2,800 meters and scored 12 direct hits.[23] Gunners of the 3d Brigade/1st Cavalry Division fired 16 training rounds, with 1 missile malfunction, 9 target hits, and 6 misses because of poor lighting conditions. Training for personnel of the ARVN Marine Corps began on 10 May and continued through 22 July 1972, with a total of 163 TOW missile firings.[24] It was in the course of the latter training program that the first ground-based TOW system was fired in actual combat. Following is an eyewitness account of that battle as described by Marine CPT Phillip C. Norton, an advisor with the South Vietnamese Marines, in a letter to Infantry Magazine at Fort Benning:

> "The TOW really works! Especially against the Russian-made T-54 tank.
>
> "Around 19 May 72 U.S. Army Sergeant Bill L. Tillman, weapons instructor with the First Regional Assistance Command, Republic of Vietnam was assigned to Brigade 369 of the Vietnamese Marine Corps to instruct Marines on the Tube-launched, Optically-sighted, Wire-guided missile.

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[21] *The Rocket,* 5 Jul 72, p.4.

[22] Fact Sheet, TOW Gnd Results, 18 Sep 72, TOW Proj Ofc.

[23] (1) *Ibid.* (2) Stmt by SSG Tom R. Sutton, Cbt Spt Co, 1st Bn/508th Inf, Ft Bragg, NC, 6 Sep 76. HDF

[24] Fact Sheet, TOW Gnd Results, 18 Sep 72. TOW Proj Ofc.

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"After two days of classes the TOW was called upon to fire against a live enemy T-54 tank. On the morning of 22 May the 369 Brigade CP was attacked by a combined tank-infantry force consisting of 9 tanks and approximately 200 troops. Sgt Tillman quickly manned his weapon and sighted in on a T-54 at a range of 900 meters. Seconds later there was the unfamiliar roar of the TOW, followed by a victorious cheer, more akin to gridiron than to the battlefield, as the T-54 was engulfed in a bright orange ball of fire. The battles ended 2 hours later with all 9 tanks destroyed and 117 enemy confirmed dead.

"I know that this is the first kill recorded by the TOW in the Vietnamese Marine Corps, possibly the first kill in actual combat. In any case it was a fine job done by Sgt Tillman with a fine new weapon – the TOW."[25]

(U) Meanwhile, the 82d Airborne Division task force, having completed in-country training and received an intelligence briefing on the enemy's armor tactics, were moved by C-130 aircraft from Bien Hoa to Pleiku. Four TOW squads were then rushed to positions around Kontum, just as the enemy tank assault began. PFC Angel Figueroa scored the Division's first tank kill with the ground-based TOW on or about 26 May 1972. Through the optical night, he saw the missile hit the Russian tank and observed a secondary explosion. About a week later, the 48-man task force turned their TOW equipment over to the 3d Brigade/1st Cavalry Division and returned to the United States. The maintenance contact team remained in Vietnam until 1 August 1972.[26]

(U) By 19 August 1972, a total of 23 TOW missiles had been fired in combat engagements, destroying 11 tanks and 6 bunkers. On 12 July, 78 TOW missiles were destroyed by enemy fire at Phu Bai, and 16 others were destroyed at Fire Support Base Ross on 19 August 1972.[27] Information on subsequent TOW combat actions U.S. units could not be located. Virtually all of the TOW equipment furnished South Vietnam was eventually captured or destroyed.[28]

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[25]Ltr, CPT Phillip C. Norton to Editor, *Infantry Magazine,* USAIS, Ft Benning, Ga, 30 May 72. HDF

[26](1) Stmt by SSG Tom R. Sutton, Cbt Spt Co, 1st Bn/508th Inf, Ft Bragg, NC, 6 Sep 76. HDF. (2) FONECOM, M. T. Cagle w SSG Tom R. Sutton, Ft Bragg, NC, 5 Oct 76.

[27]Fact Sheet, TOW Gnd Results, 18 Sep 72. TOW Proj Ofc.

[28]TOW RECAP Presn by COL R. W. Huntzinger, to AMC, 1 Jul 75, P.12. HDF

SOURCES CONTACTED

TOW Project Manager, Redstone Arsenal, AL

History Division, US Army Missile Command, Redstone Arsenal, AL

Directorate of Combat Developments, USAIS, Ft. Benning, GA

Weapons, Gunnery, and Maintenance Department, USAIS, Ft. Benning, GA

Library, USAIS, Ft. Benning, GA

44th Military History Detachment, Ft. McPherson, GA

Combat Studies Institute, Ft. Leavenworth, KS

Military History Institute, Carlisle Barracks, PA

G-3, 82d Airborne Division, Fort Bragg, NC

82d Airborne Museum, Fort Bragg, NC

U. S. Army Center of Military History, Southeast Asia Branch, Washington, DC

Department of the Amy System Coordinator for TOW, Washington, DC

Defense Technical Information Center, Alexandria, VA

U. S. Army Material Systems Analysis Activity, Aberdeen, MD

Hughes Aircraft, Conaga Park, CA

Office of the Assistant Commandant, USAIS, Ft. Benning, GA

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