DEPARTMENT OF THE ARMY LTC Cronen/pb/464-2548
UNITED STATES ARMY COMBAT DEVELOPMENTS COMMAND
ARMOR AGENCY
FORT KNOX, KENTUCKY 40121

CDCARD-A

2 AUG 1972

SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

Commanding General
USACDC Combat Systems Group
ATIN: CDCCOMSD
Fort Leavenworth, Kansas 66027

1. (U) Reference message, DAAG-ASO-O, DA, 161539Z, May 72, subject: Temporary Duty OCONUS.

2. (U) During the period of 18 May-17 June, the ARMA representative traveled to RVN for the purpose of advising/observing the heliborne TOW operations and gathering data on aerial and ground tank operations throughout the RVN. In coordination with the Infantry, Artillery, and Aviation Agencies, the Armor Agency prepared a questionnaire (incl 1) to be hand-carried to the RVN. Of the 100 questionnaires hand-carried to units throughout Military Regions (MRs) I, II, and III, 74 were returned, of these 45 had been completed in some degree. Many areas covered in the questionnaires are not answered in this report because the information was not available or was no longer pertinent to the current situation in view of the American drawdown. In addition to the questionnaire, the 47 personnel listed below were contacted and either interviewed or completed questionnaires:

COL Hawkins	C of S, FRAC (Danang)
COL Todd	Deputy Commander, 1st Avn Bde (Pleiku)
COL Leslie	CO, 11th Combat Avn Gp (CAG) (Danang)
LTC Smith	G3, 1st Avn Bde (Long Binh)
LTC Kaser	CO, 17th Combat Avn Gp (CAG) (Pleiku)

[redacted]

[redacted]

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

LTC Anderson	XO, 17th Combat Avn Gp (CAG) (Pleiku)
LTC Feore	OIC, Heliborne TOW Det (Pleiku)
LTC An	G5, ARVN Psyop Off (Saigon)
LTC Thompson	G3, FRAC (Danang)
LTC Waggner	SA, 1st Arm Bde (Hue)
LTC Spence	SA, ARVN Ranger Comd (Saigon)
LTC McManus	G3, TRAC (Bien Hoa)
LTC Neilson	CO, Combined Materiel Exploitation
LTC Madole	SA, 3rd Armd Bde (Bien Hoa)
LTC Wollenberg	MACV Oper Ctr
LTC Seto	SA Adv, 42 ARVN Inf Regt
MAJ Finn	SA, ARVN Armored Comd
MAJ Snead	OIC, USARV CDC
MAJ Hansen	USARV CDC
MAJ McKay	Asst Bde Avn Off, 3rd Bde/1st Cav
MAJ Munsch	Asst G3 TRAC
MAJ Peterson	CO, 361st Escort Co (Pleiku)
MAJ Girardi	Ops Off, USARV AOC
MAJ Rector	XO, 11th Combat Avn Gp (CAG) (Danang)
MAJ Clement	G2, FRAC (Danang)
MAJ Terchecv	OIC, 82d Avn Div, SS-11 Team Chief
MAJ Smith	Incoming OIC for SS-11 Teams (Danang)

[redacted]

[redacted]

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

MAJ Spencer	CO, F/4th Cav (Hue)
MAJ Manolokis	G3, TRAC (FWD) (Hue)
MAJ Amador	Adv, 17th ARVN Cav
CPT Russo	XO, F Battery, 79th Arty
CPT Causey	F Battery, 79th Arty
CPT Leach	F Battery, 79th Arty
CPT Davis	F Battery, 79th Arty
CPT Slaughter	Cav Troop (Pleiku)
CPT McCabe	Oper Off, 48th Avn Co (Danang)
CPT Sudeck	Heliborne TOW C&C Aircraft Pilot
CWO Benedict	Prov Plt (SS-11) 48th Avn Co (Danang)
CWO Whitis	UH-1B Pilot TOW
CWO Smith	UH-1B Pilot TOW
CWO Fenwick	UH-1B Pilot TOW
CWO Lain	UH-1B Gunner TOW
CWO Rowe	UH-1B Gunner TOW
CWO Hixson	UH-1B Gunner TOW
CWO Hollen	204th MID (Danang)
Mr. MacInnes	USAMICOM Repre (TOW)
Mr. Follette	Bell Helicopter Tech Repr (TOW)

3. (U) Travel from Fort Knox to RVN was accomplished on 18-20 May, and return from RVN to Fort Knox, completed on 16-17 June 1972. Travel itinerary in RVN was as follows:

a. Saigon Area	20 - 27 May
b. Pleiku Area	28 - 30 May

[redacted]

[redacted] ne)

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

c.	Danang/Hue	30 May - 01 June
d.	Saigon Area	02 - 05 June
e.	Pleiku	06 - 09 June
f.	Saigon Area	10 - 15 June

4. (C) The Airborne TOW system was employed in the Pleiku-Kontum area of operations throughout this report period. The UH-1B TOW systems were employed as a "TOW Package" consisting of one UH-1B TOW System, one UH-1H Command and Control Aircraft, and two AH-1G gunships. The AH-1Gs were from airborne resources in the area of operations.

a. The C&C normally carried a crew of four. The C&C maintained the capability to extract the UH-1B crew if it went down; provided and interface in communications between the UH-1B and other air/ground nets; acted as a control center thereby freeing the TOW crew to perform its primary mission of acquiring and engaging targets; and identified, marked, and assessed damage to targets.

b. The Cobras (AH-1Gs) were the package's protection, but were not dedicated to escort and cover the package. In the event that the TOW package was fired upon, the "on-call" Cobras were used to neutralize or destroy the threat, to provide aerial fire support for crew recovery if the TOW system was downed, and to destroy the system had it been required.

c. The TOW package was normally laagered at a secure base and scrambled in response to detection and identification of specific targets. There were two Air Cavalry Troops and several Air Force FACs working the area of operations for some time, and all were eager to request the TOW whenever a suitable target was located. Normally, the element locating a target remained in the area, and marked the target upon arrival of the package. The C&C went in first to check out the target and the immediate area. If the target was suitable (hard target) and there appeared to be no significant AAA in the area, the target was re-marked by the C&C. The UH-1B-TOW, which had been loitering 3,000 to 4,000 meters from the target while keeping the area under surveillance with his sight, located the target, planned his engagement direction, altitude and range, and commenced his run. At times, due to the foliage, it was necessary for the UH-1B to make a pass over the target before commencing a firing run. When the engagement began, the C&C ship positioned itself above and to one side of the attack line in the target area. Upon completion of the engagement, AAA situation permitting,

[redacted]

[redacted]

the C&C aircraft attempted to ascertain the results. When this was completed, the aircraft usually devoted some time to checking likely target areas and trails, and checking with other aircraft working the AO for additional targets. It was more efficient to remain in the area than to return immediately to Pleiku since several targets have often been detected in the same area in a relatively short period of time. Upon returning to Pleiku, the aircraft refueled, rearmed, and was placed on standby. If an attack by fire occurred while the package was on the ground, the crews took shelter in the revetments. If an indirect fire attack was prolonged, intense, or otherwise presented greater than normal hazards, the C&C commander had the option of having one pilot turn up each aircraft, load the crews when ready for takeoff, and depart the area. The overall operation of US Army aviation assets in the Pleiku-Kontum area of operations was controlled by an "Air Boss" who was an officer of the 17th CAG. He coordinated the employment of the TOW package, especially when it moved from one air cavalry troop area to another, acted as a relaying agency for clearances to fire when necessary (which was provided by the ARVN headquarters in Kontum), and monitored the entire combat situation.

d. Problem areas in the employment of the TOW system limited its effectiveness. Many of the targets were detected in heavy jungle by scouts at near vertical angles by looking down through the trees. The TOW system does not have the depression capability, nor does the UH-1B have the dive capability, to observe and engage these targets. The aircraft must be flown at 65 knots or less. Airspeeds above 65 knots induces a pylon vibration that effects the gunner's ability to stay on the sight. At 90 knots, the aircraft becomes uncontrollable. Limitations inherent in the TOW system included.

(1) Wire cut failure after missile impact (automatic after 18 seconds) can result in wire going into the swash plate or tail rotor.

(2) No ranging, sighting, and depth perception ability at night.

(3) Out of range firings attributed to no known objects (size) adjacent to target.

(4) Switching from 1.5 power (wider view) to 13 power (narrow view) on the sight requires thorough training and continuous practice.

(5) Haze and smoke from artillery and TAC air strikes in the target area reduces gunner's ability to detect target and confirm target hit location.

[redacted]

Employment of the system at night was not possible due to the brilliant flare illumination required, the blinding effect of the IR source on the gunner, and no ranging capability. The biggest limitation was not inherent in the TOW system, but in the aircraft. The UH-1B is severely limited. It is slow, it is heavily loaded, it is short of the required endurance, and it has limited maneuverability. The crews flying these aircraft demonstrated great skill and courage by taking these slow, ponderous, and overloaded aircraft into an area of essentially mid-intensity conflict miles beyond the near 360° FEBA that was Kontum.

e. Despite the above limitations, the heliborne TOW system has proven its great worth in a short period of time. In the greater percentage of cases, if they could hit the target they killed it (incl 2). If the tank was buttoned up, the pressure blew the turret off the tank. When Cobra gun cover was in the area, the TOW system did not receive AAA fire; however, when fire was received, it was always from their rear which indicated the NVA's reluctance to have a head-on engagement. No actual ground assessment had been made of the damage inflicted on the T54/PT76 tanks. The aircrews, maintenance personnel, and the civilian technical representatives were a close knit, smoothly operating team. They all did an outstanding job and were proud of it. This teamwork, and their skill, kept the aircraft flying and the systems shooting. (Though it was much more difficult to keep the aircraft flying than it was to keep the systems shooting.)

f. Taped interviews with the TOW package personnel elicited the following:

(1) NVA Armor seemed to require some daylight to commence their attack.

(2) Outside of Kontum city, the air cavalry scouts located almost all targets (tanks) engaged by the TOW.

(3) TOW gunners attempted to launch at the tank engine compartment or the turret from the rear of the tank proved highly successful.

(4) Air control and coordination was extremely difficult. On numerous firing passes the attack was aborted because of other aircraft in the TOW attack path.

(5) The best way to find concealed tanks was to follow their tracks.

(6) The biggest training problem was target recognition, e.g., stateside aerial ranges and targets are never prepared as they would be found in actual combat (e.g. hidden in buildings, under sheds and well camouflaged).

(7) Extreme difficulty in handing off targets when tanks are concealed or camouflaged in buildings, woods, etc.

(8) The TOW personnel expressed the belief that the best tactical employment would have been an attachment of the TOW Package to the air cavalry troop. The air cavalry troop could have provided scouts, gun cover, and C&C aircraft.

(9) With the present TOW system, at least two highly skilled electronic engineers are required to maintain the system.

5. (C) The SS-11 package from the 82d Airborne Division was originally scheduled for employment at An Loc. This plan was changed for the following reasons:

a. Running time of the missile was to slow and greatly increased the aircraft vulnerability to AD threat weapons. SS-11 employment at survivable altitudes (4000-7000 feet) was not possible because of the short length (3500m) of the guidance wire.

b. The Air Defense Threat included 12.7mm, 14.5mm, 23mm, 37mm, 57mm, and SA-7 missiles.

c. A comparison of response time between the UH-1M with a SS-11 mounted and the AH-1G with 2.75 rocket mixes indicated the AH-1G could attack targets of opportunity that would have disappeared had the attack been delayed to await the arrival of the SS-11 equipped UH-1M.

6. (C) In view of paragraph 5 above, a decision was made to move the SS-11 package to the MR I area and attach the platoon to F Troop/4th Cavalry at Hue/Phu Bai.

a. Only limited statistical data was available on the SS-11 operations during this reporting period.

b. During the ARMA observer's stay in Danang, the SS-11 in-country crews of the 1st Aviation Brigade were undergoing training on the system from the 82d Airborne Division TDY personnel.

[redacted]

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

(1) Problems identified with the training as follows:

(a) No target identification/recognition training had been given.

(b) No training or confidence on use of six power sighting scope. (Comments received were that the sights were broken or that dirty windshields obscured the sight.)

(c) No attempt had been made to develop a combat field solution to sighting/tracking problems (e.g. a cross or circle on windscreen).

(d) Lack of confidence and motivation by the 82d Airborne instructors. This group continuously expressed the urgency of being relieved and returned to CONUS.

(2) A total of 20 combat firings had been reported with a claim of 7 hits. The in-country trained platoon had fired 11 missiles with 3 hits resulting in 1 tank kill and 1 probable (confirmed by Air Cavalry BDA). The TDY platoon from the 82d Airborne Division had fired 9 missiles with 4 hits claimed resulting in 1 tank killed and 1 probable (this claim was never confirmed by an air or ground BDA).

(a) Possible contributory factors in high miss ratios was:

1. A lack of experience and confidence in the system.

2. Inadequate training prior to deployment from CONUS.

a. Only three personnel received training of 7 days to 17 days at Fort Rucker. Of these, only one stated he had used the sight in training.

b. Personnel in (2)(a) above performed instructor role for remaining 82d Airborne Division package personnel at Fort Bragg for a period of approximately on week. With minimum training and actual firings the package then deployed to RVN and was tasked with training in-country personnel of the 1st Aviation Brigade on the system.

c. Prior to deployment to the RVN, those trained at Fort Rucker received approximately two hours armor recognition and identification training. Upon arrival in-country, no effort was made to obtain training material (available at the Danang library) to satisfy the training requirements of armor recognition and identification of all SS-11 crews. Consequently, none of the package, or in-country trained personnel, could identify the differences between an M41, M48, T54, or PT76 and so on.

[redacted]

[redacted]

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

(b) To overcome target identification problems with the naked eye, the platoon attempted use of binoculars which proved ineffective because of aircraft vibrations. During this period, no effort had been made to use the sight because the helmet interfered or the bugs on the windscreen at low level obscured the view. Of further note, no mechanical difficulties existed with the sight.

(c) Within MR I, all aviation assets were operated at tree top level because of the high enemy AD threat. In view of this requirement, training received by the 82d Airborne Package personnel was remiss. As stated earlier, the preponderance of training had been straight-in attacks at altitudes of 400 feet and upward.

7. (C) To address the 2.75 rocket mounted on the AH-1G, only one unit, F Battery/79th AFA, MR III, was used in all missions and roles of an attack helicopter. In this unit's operations, all conceivable targets were taken under attack. This unit operated in MR III in direct support of combat operations at An Loc. The Air Defense Threat included 12.5mm, 14.7mm, 23mm, 37mm, 47mm, SA-7 missiles, and heavy automatic small arms fire. This high AD threat, and the encirclement of An Loc by NVA forces, forced all aviation assets to operate at altitudes of 4000 feet and higher. Even at these altitudes, F Battery sustained losses attributed to the SA-7 missile.

a. During the time frame of this report, the 2.75 FFAR (dual purpose) was not readily available and supply was limited, thereby requiring selective employment.

b. Losses from the SA-7 missile was at or greater than 4000 feet. The missile was impacting on a hot spot at the bottom of the Cobra tail boom. Upon impact the tail boom was severed.

c. As of this report, F Battery had been credited with unconfirmed kills of 13 tanks (T54 and PT 76) by 2.75 FFAR (HEAT) and (17 lb) warheads. Although these kills are listed as unconfirmed, it should be noted that on station FACs and ground commanders confirmed hits and secondary explosions or smoke on 9 of these reports. This information is supported by a letter to BG Maddox from BG Hamlet (incl 3).

d. Lessons learned.

(1) Attack aircraft can perform all missions, and should not be specialized in one role or mission.

[redacted]

(2) Attacks should be limited in duration, expending in one or two runs whenever possible to limit exposure to enemy threat and thus increase survivability.

(3) Rumors of ability to detect presence of radars by beeps on the FM radio were not confirmed.

(4) Attacks on tanks should be conducted by a heavy team (3 aircraft) with steep angle of attack. (This ARMA observer does not necessarily agree and feels the tactic must be tempered by knowledge of type munitions being employed.)

8. (C) In interviews and observations of aviation assets overall, the ARMA observer learned that tactics for employment of aerial fires was diverse in all three regions (MR 4 not observed). This variation was dictated by the tactical situation and primarily due to the nature of the AD threat. Examples: At An Loc, the AD threat was extremely high; the city was completely encircled and required high altitude operations. At Kontum, the AD threat was low to medium, the southwest sector was considered reasonably open and lines of contact fairly well established. However, Cobras were still employed from altitude at sharp dive angles. In MR I the FEBA was well defined, AD threat considered high, and all operations were conducted at tree top level with a high degree of success. However, during this reporting period, it must also be noted that only in MRs II and III were air to ground tank operations (by Army aircraft) really exploited, and much of their success can only be attributed to skill, training, aggressiveness, and the depth of operation into enemy threat areas. Of further importance in the Kontum area was the significant fact that the SA-7 missile had not been employed and that threat AD weapons primarily fired on high performance or fixed wing cargo aircraft.

9. (C) Major areas of concern, and possible areas for additional research, from this report are:

a. Detection and avoidance means against SA-7 type missiles.

b. Movable wing stores for greater angle of launch for air to ground missiles (reduces dive angle required when close-in and low level).

c. Ranging device.

d. Threat armor recognition training.

e. Low-level flight training.

f. Escape or softening device (e.g. automatic deployed parachute) for helicopter main body after tail boom or main rotor separation.

g. Night sight and surveillance means.

10. (C) Key observations:

a. Two LOHs had been fired on by T54 main gun, aircraft was downed by coaxial MG.

b. One UH-1H had sustained a 100m tank round through the tail boom. Round had not armed prior to hitting the aircraft, or was a dud. Aircraft was not downed.

c. Threat force tanks and personnel carriers made no effort to evade or hide when in the open. Once inside built-up areas, the armored vehicles would hide under sheds or inside buildings.

d. Captured NVA POWs in Danang area, that the ARMA representative personnally observed, were in the 14-17 age group.

e. One report of a T54 tank commander waving a white flag of surrender to F/79th AFA gunships at An Loc.

f. Use of 2.75 HEAT (6 lb) highly effective against armor. Use of 2.75 HE (17 lbs) will knock the track off of armored vehicles.

g. A number of personnel from the TOW System had up to 10 months experience with the system at CDEC before deployment in Vietnam.

h. The SS-11 platoon of the 82d Airborne Division had been organized for approximately one month prior to deployment to the RVN.

11. (C) Ground operations in MR I.

a. Within MR I, the ARMA observer interviewed and obtained after action reports from available advisors. It must be recognized that during this reporting period, a considerable number of advisors had been evacuated for combat wounds. Those advisors tasked with writing the after action reports were at times biased in their views as is typical of individuals proud of their unit's accomplishments.

[redacted]

b. After action reports prepared after the fact had been predominately from the advisor's memory. Minimal records had been saved, or even prepared, due to the fluid situation existing throughout the northern portion of MR I.

c. Rarely was personal interviews possible with knowledgeable advisors. Those individuals available had no knowledge of tank or air operations against the NVA armor. Advisors that had returned from the hospital, or otherwise reassigned, were unavailable as a result of the tactical situation, or reluctant to discuss the overall operation. At no time would an advisor provide information except through reference to a copy of his after action report if available.

d. Copies of after action reports are attached as inclosure 4.

e. Key observations extracted from interviews and after action reports includes:

(1) That the 202d NVA Armor Regiment (tentatively identified) crossed the DMZ minus their organic armor vehicles and equipment with orders to capture and man the ARVN M-41 and M-48 tanks. This regiment was reported to have been trained in North Vietnam on the M41 and M48.

(2) The ARVN 20th Tank Regiment (M48A3) in MR I:

(a) Was continuously committed until exhausted.

(b) Did not receive replacements.

(c) Was not adequately resupplied.

(d) Did not control nor exercise ammunition conservation.

(e) Received the first known losses to wire guided missiles.

(f) The wire guided missiles (AT-3 SAGGER) were avoided to some degree by rapidly moving the vehicles a short distance and by firing at the source.

(g) 20th tank crews often achieved first or second round hits on T54 at ranges up to 1500 meters.

(h) No known tank to tank engagements with the M41. From static positions, the M41 has knocked out the PT76 at 1000m. The M48 hit the T54 at 1500m.

[redacted]

[redacted]

(i) Employment of the T54 by NVA troops displayed weakness by failure to employ in mass (only 2 or 3 tanks committed at a time), remaining in column formation, poor gunnery, and poor coordination with infantry (e.g. at My Chanh, the attack was made by infantry, followed by ACP and then the tanks, situation called for coordinated armor and infantry together).

(j) ARVN armor had no passive night vision devices and this greatly reduced their effectiveness.

(k) NVA armor's volume of fire was not great, very slow rate of fire, and ranging was off. The T54 crews gave little or no response when taken under fire. Up to one minute delay between rounds from T54 were experienced.

(l) Enemy tactics had been for an artillery preparation of approximately thirty minutes with 82mm mortar, 122mm rockets, and 130mm gun followed by a break of 10 to 30 minutes before the tanks arrived.

(m) On 9 April, eight tanks came down a road toward the 20th tank positions, each one was destroyed in succession with no attempt being made by the T54s to maneuver off the road except for the 8th tank which was hit as it moved off into a rice field.

(n) Records captured revealed that each tank had a seven man crew assigned, however, only four were physically aboard the tank, the remaining three followed behind as replacements for casualities. No crews had been found chained inside the tank in MR I. However, crews had been found chained inside the tank in MR II and MR III.

(o) The AT-3 wire guided missile accounted for many of the ARVN tank losses. The crews would seem to be fascinated by the missile and unable to react. However, the 18th ARVN Cavalry while under attack by the AT-3 moved their tanks back and forth while firing at the missile source, no tanks were hit.

(p) By comparison to enemy tank kills it was pointed out that of all the tanks destroyed the ratio is approximately 50% by air. Of the ground kills, the M48 with HEAT rounds has accounted for approximately 85%. Of special interest in support of earlier statement pertaining to ammunition discipline problems, the ARVN armor units continue to fire on a tank even after it had exploded and was burning - if the fire went out ARVN will start to fire again to get the tank to burn.

[redacted]

(q) The ARVN infantry demonstrated little confidence in the LAW. The infantry in MR I would fire blind and run, however, the LAW has proven very effective when used by dedicated troops at Kontum and An Loc.

(r) The ground TOW saw very little use. On one occasion, as reported by MAJ Hatcher, 20th Tank Advisor, a TOW engaged a T54 at a little over 1000m, hit, spun the vehicle around, and blew the turret off. Some interest has been indicated by the advisors in mounting the TOW on M113s.

(s) The NVA infantry were killed primarily by co-axial and .50 cal MG fire. ARVN armor has made very little use of cannister rounds.

(t) The NVA employed 12.7 MG fire effectively on M113s, 82mm recoilless rifle fire has killed M48 tanks, but the primary threat to moving tanks has been the B-40 and B-41 rocket. No 23mm direct fire had been reported.

(u) As may be noted on the photographs of the BTR 50s at inclosure 5, a 14.5 MG is mounted on the rear deck. This particular carrier is believed to have been knocked out by direct artillery fire through the engine compartment. When evacuated to Hue it contained 11 bodies. Additional photos of NVA vehicles also at inclosure 6.

(v) One ARVN M48 tank was hit in the engine compartment and destroyed by artillery fire, other ARVN M48s lost searchlights and end boxes off of the rangefinders.

12. (C) Ground operations in MR II.

a. As was accomplished in MR I, the ARMA observer attempted to interview and gather after action reports of the advisors conducting ground operations within the Pleiku-Kontum area of MR 2. The tactical situation at Kontum precluded actual on site contact, however, advisors at II Corps Headquarters and advisors to ARVN units temporarily at Pleiku were interviewed.

b. One advisor, LTC Sain Seato, (formerly CDC Lno Det) - Senior Advisor to the 42d ARVN Infantry Regiment stated that ARVN artillery was not used for close in support, the guns were not moved often enough and did not fire counter battery fire. The ARVN infantry commanders placed to much reliance of gunships and TAC air support. COL Seato commented also that the enemy AAA was being operated down to battalion level. That at least

two ZSU-57 had been seen at Ben Het but not seen since, the ZSUs did not have organic radar and was believed to have been fired without any type external radar direction. He further feels that the TOW (aerial) and LAW greatly aided in saving Kontum.

c. LTC Goff, G3, II Corps stated that ARVN Artillery had been set up in quadrangles to ease air cavalry, TAC Air, and artillery coordination. That during this time period, the ARVN armor had not killed any NVA armor, the M41s firing on T54s had used only HE rounds, and these ineffectively. Of the seventeen tanks at Tan Can, sixteen had been hit by AT-3 missiles. Additional tanks had been abandoned because ARVN had only a modified M114 for a recover vehicle which could not recover a M41 tank. He felt that the NVA was using classic Russian tactics.

13. (C) Ground operations in MR III.

a. During this reporting period, all major ground actions were centered around An Loc. The fluid situation existing in An Loc and the high AD threat precluded on-site observations and critically reduced the availability of knowledgeable advisors for interviews. As in MR I, a number of advisors had been evacuated for combat wounds. The remaining advisors were still in An Loc or in widely dispersed areas in intensive preparations for reentering the encircled city.

b. After action reports were still being written as the tactical situation allowed. Detailed analysis of tank to tank, infantry versus tank, and air versus tank at An Loc was not available.

14. (U) The Combined Materiel Exploitation Center (CMEC), Saigon, has been tasked to provide interior and exterior photographs of destroyed armor vehicles in MR I, II, and III whenever the tactical situation will permit. Initial photographs obtained from CMEC (incl 5 & 6). These photos include those vehicles captured intact and others destroyed; however, it could not be determined by what means the tanks had been hit.

15. (C) Additional information on the enemy situation and Air Force operations was obtained from CWO F. G. Hollen, 204th MID at Danang. Mr. Hollen debriefed all pilots following their flight missions.

a. Air Force aircraft had received: SA-7 missile fire also SA-2 missile fire from approximately 1 mile south of the DMZ from portable launchers, also ZSU dual and quad (23mm), 37mm, and 57mm (radar unknown) fire.

b. MIG17 and MIG19 aircraft had flown over Quang Tri but made no attack.

c. One out of country (Laos) F-4 aircraft at low level, looking over a suspected bulldozer received a tank main gun blast but received no damage, this incident happened before the current offensive.

d. Air Force personnel experienced considerable difficulty in identification of type vehicle distinction between friendly and enemy tanks.

16. (U) Transportation problems.

a. The major personal problems encountered by the ARMA observer was the inability to schedule transportation in and out of Pleiku, Danang, and Saigon. At times, up to three days was required to make connections out of Saigon. All flights out of Pleiku and Danang were on a standby basis, (e.g. only one C-310 flight daily between Saigon and Pleiku, the arrival and departure time was up to 8 hours late, no pre-booking except for medical evacuation). Transportation from Pleiku main to 17th Combat Aviation Group was "On-Call" through the Pleiku Tower and was as much as 2 hours late in arriving.

b. Jeep transportation in the Saigon area was provided by the CDC Liaison Detachment as available. However, travel to points in MR III by air was considered impossible because of the limited aviation assets, inability to schedule flights into certain locations, and the daily aircraft commitments in support of the An Loc operations.

17. (U) Throughout this TDY in the RVN, this observer was accorded the finest assistance and cooperation that could be given by MAJ R. Snead, Chief, CDC Liaison Officer and his assistant MAJ C. Hansen. On all visits and interviews the ARMA observer was accompanied by MAJ Snead or MAJ Hansen. Copies of all taped interviews and after action reports obtained were made by MAJ Hansen and forwarded to HQ CDC. MAJ Hansen has briefed interested personnel in Europe on all activities covered in this report. He is scheduled to brief HQ CDC, and COMSG prior to reporting to his new duty station.

[redacted]

CDCARD-A
SUBJECT: Final Trip Report of CDEC Experiment 43.6 SEA (U)

18. (U) Recommend this report be forwarded to Infantry, Artillery, and Aviation Agencies.

FOR THE COMMANDER:

6 Incl
as

DAVID A. DUNN
Major, Armor
Adjutant

[redacted]

17

[redacted]

(C) CONFIRMED KILLS (U)

24 Tanks (6 M41's - 12 T-54's - 6 PT-76's)

4 APC's (believed to be AAICVM 1967)

2 artillery pieces (105mm, 1 unknown)

7 trucks (6 2-1/2-ton, 1 3/4-ton)

1 Antiaircraft position (twin 23mm)

2 machinegun positions (1 12.7 - 1 30 cal)

1 wooden bridge

1 hooch with small arms ammunition

1 small arms ammunition dump at abandoned fire base

1 122mm rocket launching position

3 bunkers

---

47 Total Kills

(C) SYSTEM PERFORMANCE (U)

17 practice firings (6 night firings)

89 missile firings in combat

3 missile failures (2 no IR source, 1 no flight motor)

1 system failure (power supply shut off at firing)

3 failure to capture (could have been system, missile or crew failure)

3 crew errors

---

86 guided flights

106 Total Firings
17 System Training and Checkout
(11 day - 6 night)
89 mission firings