Small Arms… As a Last Resort

By Phil D. Harrison

One can only contemplate the fearful moment of realisation that a situation has become dire, there are few options available, and in reality there will be 'no quarter' from your adversaries. At such a critical moment there is a desperate need for all systems, including small arms, to work flawlessly.

The following Article discusses three historic battles, where such a situation arose. This Article aims to focus on dismounted infantry small arms and should not be considered as an exhaustive account of the battles or the circumstances surrounding those battles. I have also tried to address the small arms 'bigger picture.'

This Article is my endeavour to better appreciate the role of small arms at three influential moments in history. The following is a 'distillation' of the information available in the public domain and consequently, there may be disappointment for those seeking new research findings.

I hope that this 'distillation' may be helpful to those looking for insights into these events.

The topic deserves a more lengthy discourse than can be afforded here and therefore, much has been omitted.

The three battles discussed are as follows:

(1) Ia Drang; November 14th-15th 1965 (with reference to Hill 881; April-May 1967)
(2) Mirbat: July 19th, 1972
(3) Wanat: July 13th, 2008

(1) Ia Drang; November 14th-15th 1965 (with reference to Hill 881; April-May 1967)

Above photo by Mike Alford

LZ-Albany

LZ-X Ray

http://www.generalhieu.com/iadrang_arvn-2.htm

As an introduction I would like to mention a brief Article from: The Milwaukee Sentinel, of Tuesday 23rd may, 1967 entitled: Men Killed Trying to Unjam Rifles, Marine Writes Home.
Washington, D.C-UPI- A combat marine wrote home that almost all of the Americans killed in a recent Vietnam battle died as they tried to unjam their new M-16 rifles.

Rep. James J. Howard (D-N.J) read excerpts of the letter to the house Monday, and demanded an explanation from Defense Secretary McNamara.

Howard declined to identify the marine, except to say he was from the Asbury Park (N.J) area. He said the serviceman's family feared reprisals against him if he was identified.

The marine's letter about the performance of the controversial lightweight new weapon contrasted sharply with the testimony heard last week by the house armed services subcommittee which is investigating complaints about the rifle. Talking about the weapon, and an unidentified battle in Vietnam, the marine wrote:

"We left with 72 men in our platoon and came back with 19. Believe it or not, you know what killed most of us – our own rifles.

"Before we left Okinawa we were all issued the new rifle, the M-16. Practically every one of our dead was found with his rifle torn down next to him where he had been trying to fix it." The letter also accused the Pentagon of suppressing pictures of the jammed rifles that were taken by a "newspaperwoman."

"They say that they don't want to get the American people up-set," the marine wrote.

The woman photographer was not further identified but was presumed to be Cathy Leroy a young French freelance photographer who took some widely circulated pictures of the battle for Hill 881 earlier this month.

A Marine Corps witness last week relayed to the subcommittee the favourable comments about the rifle made by Lt. Gen. Lewis Walt, commander of the marine forces in Vietnam. Walt quoted the captain whose company took Hill 881 as saying his men had nothing but praise for the M-16 and that "we couldn't have taken the hill without it."

The above description in the Milwaukee Sentinel is thought to refer to the battle for Hill 881 which took place during April-May, 1967.

http://news.google.com/newspapers?nid=1368&dat=19670523&id=0XZQAAAAIBAJ&sjid=EhEEAAAAIBAJ&pg=6361,4206922

http://en.wikipedia.org/wiki/Catherine_Leroy

The Stars and Stripes ran a similar report, with additional detail, on Wednesday, May 24th 1967.
http://ak47gun.weebly.com/uploads/1/0/4/6/10463357/our_own_rifle.pdf

The battle of Ia Drang took place during November 14th – 15th 1965 in the Central Highlands of Vietnam. For those who have not previously read accounts of this defining action, I have appended, below, extracts from: Vietnam by Christian G. Appy. pp. 128-141.
Published in the US as; Patriots: The Vietnam War Remembered From All Sides (Viking, 2003).

Some of South Vietnam's most demanding wartime terrain was located in the Central Highlands. Beginning about a hundred miles northeast of Saigon below the town of Ban Me Thuot, it stretches north through Pleiku, Kontum and Dak To, where it merges with the Truong Son Mountains that run through Laos all the way into North Vietnam. Comprised of rugged mist-enshrouded mountains, steep twisting ravines, hidden plateaus, and triple-canopy jungle, it was home to only 5percent of the South's seventeen million people. But by the mid-1960's it also became home to thousands of north Vietnamese troops who had walked down the Ho Chi Minh Trail and had taken one of the many spurs that emptied into the Highlands.

It was a North Vietnamese military axiom that control of the Central highlands was a prerequisite to nationwide control.

When the 1st Cavalry Division arrived in the Highlands there was great fanfare in the American press over the hundreds of sleek new helicopters. It was a cavalry not of horses but of flying "birds."

In November 1965, General William Westmoreland, the commander of U.S. forces in Vietnam, ordered the 1st Cav to seek and destroy three regiments of North Vietnamese troops in the la Drang river valley west of Pleiku. What followed was a month of intense combat, the first time in the war U.S. forces clashed with major units of northern troops – the People's Army of Vietnam.

After a month of combat in the Ia Drang, the Americans had taken their worst casualties of the war to date, with more than three hundred dead. Yet, the U.S. command claimed to have killed more than three thousand enemy soldiers. General Westmoreland declared the battle a victory and took it as confirmation that he could win the war by grinding down the Communists through a war of attrition.

For the North Vietnamese command, the lesson of Ia Drang was that big unit battles of long duration should be launched only sparingly. Mostly the Americans should be fought in quick-striking close combat, a tactic the Viet Cong and NVA called "grabbing onto the enemy's belt buckle."

"Grabbing onto the enemy's belt buckle," became the preferred option when confronting US forces. The logic being, that artillery and air power become relatively ineffective once a battle is at close quarters. Also at that point, the reliability and lethality of the AK-47 becomes a consideration.

The following description is an extract from; history.com, to provide some additional background to the battle.

In the first major engagement of the war between regular U.S. and North Vietnamese forces, elements of the 3rd Brigade, 1st Cavalry Division (Airmobile) fight a pitched battle with Communist main-force units in the Ia Drang Valley of the Central Highlands.

On this morning, Lt. Col. Harold G. Moore's 1st Battalion, 7th Cavalry conducted a heliborne assault into Landing Zone X-Ray near the Chu Pong hills. Around noon, the North Vietnamese 33rd Regiment attacked the U.S. troopers. The fight continued all day and into the night. American soldiers received support from nearby artillery units and tactical air strikes. The next morning, the North Vietnamese 66th Regiment joined the attack against the U.S. unit. The fighting was bitter, but the tactical air strikes and artillery support took their toll on the enemy and enabled the 1st Cavalry troopers to hold on against repeated assaults.

At around noon, two reinforcing companies arrived and Colonel Moore put them to good use to assist his beleaguered soldiers. By the third day of the battle, the Americans had gained the upper hand. The three-day battle resulted in 834 North Vietnamese soldiers confirmed killed, and another 1,000 communist casualties were assumed.

In a related action during the same battle, 2nd Battalion, 7th Cavalry, was ambushed by North Vietnamese forces as it moved overland to Landing Zone Albany. Of the 500 men in the original column, 150 were killed and only 84 were able to return to immediate duty; Company C suffered 93 percent casualties, half of them deaths.

http://www.history.com/this-day-in-history/major-battle-erupts-in-the-ia-drang-valley

Video, including a moving commentary, by Joseph L. Galloway, is located at the following URL:
http://www.youtube.com/watch?v=FxPeHqH4XxI&feature=player_embedded#t=0s

The following extract is taken from: Vietnam War, M-16 M-14 and Other Rifle Groups

Department of Defense Reports, Field Manuals and Training Film

In November 1965, the 1st Cavalry Division turned back North Vietnamese regulars in a savage battle in the Ia Drang Valley. LTC Harold G. Moore lauded the new M16 rifle his troops had used. "Brave soldiers and the M16 brought this victory," he declared.

http://www.paperlessarchives.com/vw_m16.html

Early AR15 (M16)

The following six references have been extracted from: We Were Soldiers Once and Young by: Lt. Gen. Harold G. Moore (Ret.) and Joseph L. Galloway.

References 1-4 refer to the M16 rifle.

References from Chapter; X-Ray

(1) *Specialist Bungum had quickly run through his limited supply of M-79 grenades and had begun hunting for something else to fight with. "I was crawling around looking for an M-16. I got my hands on one and Specialist 5 Martin T. Dorman said: 'That doesn't work; I'll get you another one.' Then he hollered: 'That doesn't work either.' I headed for a third rifle and PFC Donald Jeffrey hollered: 'It don't work!' Finally I did find an M-16 and some full magazines from our dead.*

(2) *John Herren says, "After finishing my latest report to Matt Dillon, who was overhead, I looked up to see a North Vietnamese soldier with an AK-47 just over the bank I was standing behind with my two radio operators. I fired a burst from my M-16 which promptly fell apart. The pin holding the trigger mechanism to the barrel had broken off or dropped off."*

(3) *Beck, down on his knees, bandaged the wounded officer and screamed for a medic. He adds, "I wasn't with him for more than a minute. I got his M-16 and tried to fire it and it was inoperable. I took his .45 pistol and fired into the jungle towards the enemy."*

Reference from Chapter; Albany

(4) *Specialist 4 Bob Towles; "North Vietnamese troops shattered the foliage and headed straight for us, AK-47 rifles blazing, on the dead run. I selected the closest one and fired twice. I hit him but he refused to go down; he kept coming and shooting. I turned my M-16 on full automatic, fired, and he crumpled. I shifted to another target and squeezed the trigger. Nothing happened. The fear I felt turned to terror. I saw a cartridge jammed in the chamber."*

An indication of the ferocity of the battle can be seen from the following:

Reference from Chapter; Death in the Tall Grass

(5) *The North Vietnamese commander on the battlefield, Nguyen Huu An, has a keen memory of that bloody afternoon of November 17, 1965, on the trail to landing Zone Albany: "My commanders and soldiers reported there was very vicious fighting. I can tell you frankly, your soldiers fought valiantly. They had no choice. You are dead or not. It was hand to hand fighting. Afterwards, when we policed the battlefield, when we picked up our wounded, the bodies of your men and our men were neck to neck, lying alongside each other. It was most fierce."*

Nguyen Huu An

http://www.lzxray.com/5.htm

It is clear that the 1st Battalion, 7th Cavalry were pathfinders for a new type of airmobile warfare and as such, they included many experienced infantrymen chosen for their ability:

Reference from; Prologue.

(6) Among us were old veterans, grizzled sergeants who had fought in Europe and the Pacific in World War II and had survived the frozen hell of Korea, and now were about to add another star to their Combat Infantryman's Badge.

From the book, it would appear that established small arms, such as the M-79 grenade launcher and M1911 .45 calibre pistol, performed well. The M60 machine gun was adopted in 1957, however; aspects of the design go back as far as the late 1940's. The M60 had a mixed reputation for design and reliability and as such, it was affectionately known as; 'The Pig.' It is evident that the M60 machine gun teams showed outstanding courage and skill.

http://armyhistoryjournal.com/?p=772

http://en.wikipedia.org/wiki/M60_machine_gun

The .45 calibre M1911 pistol came from the drawing board of one of the greatest firearms designers of all time, John Moses Browning. The M1911 was accepted by the US armed forces in 1911 and remained in service until 1985. Even with the introduction of the Beretta M9 the M1911 did not entirely disappear and remained in service with a number of units.

In July 2012, it was announced that Colt Defense LLC would manufacture 12,000 M45's (.45 calibre), a direct descendant of the M1911, for the US Marine Corps.

http://www.colt.com/ColtMilitary/News/tabid/84/articleType/ArticleView/articleId/54/Colt-Defense-LLC-Announces-Award-of-Marine-Corps-M45-Close-Quarter-Battle-Pistol-CQBP-Contract.aspx

Above Photograph: M60 in action, Vietnam 1966
http://en.wikipedia.org/wiki/File:Soldiers_Laying_Down_Covering_Fire.jpg

Ia Drang took place in November 1965. It was, however, 1967 before the Ichord Subcommittee released its report on the M16's problems in Vietnam. Some of the problems were attributed to a change in the cartridge propellant from (extruded) IMR to Ball Powder. A detailed article on the different propellants available and the reasons for their preference are given by Daniel E. Watters, Small Arms Historian:

The following is an extract from the article:

Between March 1965 and September 1966, 99 million rounds of 5.56x45mm were delivered to US troops in South Vietnam. Of this amount, only 10 million rounds were loaded with CT 8136; the rest had WC846.

http://www.thegunzone.com/556prop.html

From the information available it would be difficult to discern which propellant was being used in the ammunition supplied to the 1st Battalion, 7th Cavalry at Ia Drang. Or, if they had access to ammunition produced at an earlier date, with the preferred IMR propellant. Irrespective of the propellant fouling aspects, the other issues highlighted by the Ichord Subcommittee would have been in play.

Were the four references regarding the M16 rifle from; We Were Soldiers Once and Young by: Lt. Gen. Harold G. Moore (Ret.) and Joseph L. Galloway, an example of the reality of equipment failure in battle, or were they indicative of more fundamental problems?

This final section, of Ia Drang, is a look at the; 'bigger picture,' as described in:

(i) The Great Rifle Controversy by Edward Clinton Ezell
(ii) The Gun, The AK-47 And The Evolution of War, C.J. Chivers

Three Extracts from: The Great Rifle Controversy by Edward Clinton Ezell. pp.208-209

Extract 1. *Catherine Leroy did not let the Pentagon stop her publication of some of the photographs she had taken on Hill 881 and 861. This spunky little photographer went to Paris Match. Appearance of one of those pictures in the French magazine caused quite a stir, as did the spate of letters piling up on desks in Washington. The basic sentiment in these letters was summed up by one disgruntled Marine who said: "These new M16 rifles aren't worth a damn."*

The Military categorically denied reports of M16 rifle unreliability. Marine General Lewis Walt stated from his headquarters in Vietnam that his troops favoured the M16. He quoted the Captain whose company captured Hill 881 to the effect that "we couldn't have taken the hill without it."

General Wallace M. Greene Jr., Commandant of the Marine Corps, held a special press conference "to correct the faulty impression that some people seem to have that the Marine Corps is dissatisfied with this weapon." According to General Green these tales were nonsense. He contended that the M16 had "proved to be a real hard-hitting, lightweight rifle ideally suited to the jungle type of environment in Vietnam." Marine Corps brass were happy with the M16. They were not having any significant problems with it.

The Ichord Subcommittee did not share the Marine Corps' enthusiasm for the M16. Shortly after they began their review of the rifle program, the Subcommittee members witnessed the weapon malfunction at Fort Benning and Camp Pendleton. In view of the conflicting claims made by the officers and combat troops, Representative Rivers sent the Ichord Subcommittee to Vietnam to determine the true story. If serious problems existed with the weapon, Rivers wanted the Subcommittee to establish the remedies needed to eliminate the difficulties.

The Subcommittee left the United States on June 1, 1967, and returned ten days later. Following the trip to Vietnam, the Ichord Subcommittee resumed its hearings in Washington. They concluded that there were problems with the rifle and that these could be traced to the lack of proper management.

Extract 2. *Most damning was the Subcommittee's statement that there was "substantial evidence of lack of activity on the part of responsible officials of highest authority even when the problems of the M16 and its ammunition came to their attention."*

Extract 3. *In the course of its investigation, the Subcommittee determined that four major factors had contributed to the poor combat performance of the M16. These were the use of a high-residue powder, the failure of the Army to secure a chromium-plated barrel and chamber, the lack of proper lubricants and cleaning equipment, and the failure to familiarize the troops with the weapon properly.*

Extract from: The Gun, The AK-47 And The Evolution of War, C.J. Chivers.

I hope it will assist in an appreciation of the 'bigger picture.'

Unfortunately, for the sake of brevity, the Authors' references have not been included:

In 1965…….the M-16 received its decisive boost. One of the American helicopter-borne units that had received M-16s, the First Battalion of the Seventh Cavalry, was placed by helicopters into the path of three NVA regiments that were trying to drive from the Cambodian border and split Vietnam in two. For six days, the outnumbered American soldiers faced communist forces in what General William C. Westmoreland, the commander of American forces in Vietnam, described as "fighting as fierce as any ever experienced by American troops." After the battle, General Westmoreland attended a briefing by the battalion commander, Lieutenant Colonel Harold G. Moore, Jr., who, according to Westmoreland, lifted an M-16 rifle and said, "Brave soldiers and the M-16 brought this victory."

General Westmoreland had worried through much of 1965 over the small-arms advantage enjoyed by communist fighters with AK-47s.

Moore and many of his soldiers told me that the M-16 was the best individual weapon ever made, clearly the American answer to the enemy's AK-47. Most American units at the time were equipped with the older M-14 rifle, which was semiautomatic and too heavy for the jungle. Convinced that Moore and his men knew what they were talking about, I asked Secretary McNamara as a matter of urgency to equip all American forces with the M-16 and then also to equip the ARVN with it.…The ARVN thus long fought at a serious disadvantage against the enemy's automatic AK-47, armed as they were with World War II's semiautomatic M-1, whose kick when firing appeared to rock the small Vietnamese soldiers back on their heels. Armed with a light carbine, little more than a pea shooter when compared with the AK-47, the South Vietnamese militia were at an even worse disadvantage.

General Westmoreland's passion for Colt's automatic rifle would remain publicly unshaken throughout his life. But his description of the battle obscured a fuller view of what Colonel Moore's soldiers had experienced. Moore's own book, published years later, described several instances of M-

16s jamming and failing in the fight. General Westmoreland also skipped details of the means by which the M-16 unseated the M-14 and finally became the American military's primary arm.

James B. Hall, a sales manager at Colt's, described a more cunning process. By late 1965, Colt's had almost filled the 1963 order for 104,000 rifles and had no other significant contracts on its books. General Westmoreland wanted more M-16s but was getting little support from the Pentagon.

Officials from Colt's, meanwhile, were working their contacts on Capitol Hill, trying to enlist congressional help.

General Westmoreland's frustration and Colt's sales push worked in concert in October 1965, when Hall sent a letter to a brigadier general he knew who managed logistics in Vietnam. Hall informed the general that "effective the following January [Colt's] would stop producing rifles for the Army and he was fighting a war without any support." If this was meant to be incendiary, it had its desired effect. The brigadier passed the letter to General Westmoreland, who called Senator Richard B. Russell, Jr., Democrat of Georgia. Russell, an ally of President Johnson and one of the deans of the hill, was touring Vietnam at the time as chairman of the Senate Armed Services Committee. Russell called McNamara on December 7 and issued a naked political threat: "Buy 100,000 rifles today, or I'm releasing the story to the press." Hall was summoned that day to Rock Island Arsenal to sign a contract. Colt's position and profits were preserved. General Westmoreland would get his guns. For those who think that the United States chose its primary infantry rifle through orderly deliberation, or that systems analysis led to organized decision-making, the episode showed how things actually worked. This was how troops in Vietnam would receive their weapons, including the unready M-16s soon to be put into the hands of Hotel Company, Second Battalion, Third Marines.

After all these years of dysfunction, scandal was not far off. But first came celebration. At Colt's Firearms Division in Hartford, General Westmoreland's end run meant salvation. In 1963, Colt's had posted a million-dollar loss. It had hired and trained new workers and lured managers from other firms, staking its future, even its survival, on a gun without a market. Floated by the Pentagon's order, the company entered a boom. The return on the AR-15 investment was at hand. When Colt's bought the manufacturing rights from Fairchild in 1959, it had gambled on a concept more than a product. ArmaLite's rifle had been rejected by the Pentagon. It had no powerful backers in the army or the Marine Corps. No domestic orders were expected. The nation was at peace. Almost seven years later, with the signing of the contract in December 1965, Colt's effectively became the sole-source provider of a weapon demanded by the army for an expanding war. The M-16, once roundly rejected, stood the chance of becoming the United States military's primary firearm, which would mean the allies would be seeking a new class of assault rifles, too. The company grew. Between May 1966 and April 1967, as rifle production jumped at the Hartford plant, Colt's military division hired 510 new employees.

Excitement surrounds a winner, and Colt's was suddenly a winner. The accompanying promotional push was striking, both for Colt's good luck and for the degree to which the gun press helped the company along. As part of the public-relations effort, William J. Curran, Colt's advertising and public-relations manager, succeeded in publishing a story under his byline in Shooting Times, naturally touting the M-16. Gun companies and gun magazines have long had relationships beyond cozy. And now, when gun journalism was needed, Shooting Times failed. The magazine promoted the rifle further with a follow-up the next month. The second article detailed how Colt's provided the editors

an M-16 for test-firing. The editors avoided putting the gun through what they called a "torture test," and were principally interested in its accuracy, its ease of use, and its bullets' penetration of various items the authors judged common to the battlefield, including bunkers and steel plates. But a funny thing happened on the way to plinking the selected targets. Of the first 450 rounds fired, the brand-new M-16 malfunctioned eleven times. Might not this have been the story? Not in Shooting Times. The writer, Major George Nonte, passed off the poor performance as related to one bad gun and not indicative of M-16s as a class. It was, Nonte wrote, "only logical to assume that any deficiencies such as those noted would be corrected (or the gun would be rejected) in the course of final inspection." He continued: "Before any single gun is actually accepted by Army resident inspectors and delivered to the military establishment, it must pass extensive firing tests." This was not quite so. In fact, each rifle at Colt's factory had to fire only thirty-three rounds to pass its acceptance test, and the army would later admit that in order to ensure a high acceptance rate, the acceptance test was skewed in Colt's favor. Colt's was allowed to conduct the tests with ammunition containing IMR powder-not the ball powder the rifles would fire in Vietnam, which was known to cause a higher rate of malfunctions.

The stories went to print even as the army conducted a survey of the small-arms use of 121 soldiers on infantry, cavalry, or airborne duty in Vietnam. Almost 90 percent were carrying M-16s. The results both confirmed the nature of ground fighting in the war and suggested that the M-16 was not ready for the job at hand. Eighty percent of the participants said they normally fired at enemy combatants within two hundred yards, and 95 percent said the enemy was within three hundred yards. Seventy-nine percent said that most or some of the time they fired at night, when more than half never saw the opposing soldiers clearly. Moreover, 95 percent of the combat veterans said that when they did see Viet Cong and NVA soldiers, the enemy was either running, prone, or in some sort of hiding. What all of this meant was that one touted feature of the M-16-an ability to strike and penetrate steel helmets at five hundred yards-was almost irrelevant in jungle war. This was a dispiriting finding, given that the desire for this long-range performance had led the army to accept a propellant that made the rifle less reliable. And the soldiers' narrative comments hinted at burgeoning problems. Some soldiers liked the M-16. But many others said that while it was a good rifle when it worked, it jammed. Ominously, several soldiers pleaded for cleaning equipment.

The National Rifle Association also was ready to give the rifle a boost, and prepared an article for the American Rifleman that praised the M-16. The article, published several months later, asserted that the rifle "bears up well under harsh field conditions" and that "dust, dirt, and rain do not make the M-16A1 less functional provided minimal care is exercised." As with the stoppages mentioned casually in Shooting Times, the NRA's article carried a strong whiff of the malfunctions plaguing the rifle. It mentioned problems with dirty chambers, extraction, and jamming, but only briefly. The American Rifleman concluded, without offering evidence, that the rifle "is proving itself in Vietnam." The gun press, with access to arms and arms companies that the traditional media could not match, was missing the biggest small-arms story of the war. The troops would have to find out the truth themselves. They would get that chance.

In summer 1966 as General Westmoreland's M-16s were arriving in Vietnam, soldiers receiving the new weapons were finding them hard to clean, fussy, and prone to untimely stoppages. The scale of the problems was severe enough that in fall 1966 the army requested help, and teams of technicians

from the Army Weapons Command and Colt's were dispatched to investigate. In meetings with several combat units, the inspectors from Colt's discovered that "weapons were in an unbelievable condition of rust, filth, and lack of repair." They also noted that the troops had received insufficient marksmanship training, and "there was a shortage of technical manuals, there was a shortage of cleaning equipment, there was a shortage of repair parts, and there was a shortage of officers and NCOs who knew anything about the maintenance of the rifle."

The fielding of the M-16 had stumbled badly. In a flash, a disturbing reputation had taken shape. When M-16s worked, they were excellent. But with unsettling frequency, after a bullet was fired, the empty cartridge case would not extract. It remained stuck in the chamber. The process of firing-not only on automatic, but at all-abruptly ceased. Making matters worse, sometimes the bottom of a spent cartridge case was torn away, which made it exceptionally difficult to remove the remainder manually. This was in some ways a familiar story. M-16s and their ammunition created jams as surely as Gatling and Gardner guns had early in their long period of manufacture. Moreover, as these problems were being reported, the weapons, billed as being assembled from modern components that gave the rifle an unsurpassed durability, were literally rotting in the troops' hands. Another group of Colt's specialists traveled to Rock Island Arsenal to inspect rifles returned from Vietnam. Robert D. Fremont, a former ArmaLite employee who had joined Colt's, reported to Hartford that "the exteriors of most weapons were corroded and the bores and chambers almost universally fouled and dirty, showing evidence of real neglect." Fremont suspected maintenance was a problem, because soldiers either had not been issued proper cleaning equipment or had not been trained. But he sensed as well that perhaps the M-16s were not yet suited for combat duty. There was too much rust and corrosion. He recommended "an investigation as to the possible use of stainless steel for barrels or chrome plating the chambers and bores of the AR-15 weapons in order to combat corrosion and neglect." Fremont reached a conclusion that the army's leadership and the president of Colt's Firearms Division, Paul A. Benke, would not utter in public. "Colt's weapons," he wrote, "are sadly lacking in corrosion resistance."

It was a damning statement, though the public-and the troops-would not hear it. For the manufacturer of a weapon distributed by the United States for jungle war, it must have been surprising. The M-16 was nearly ten years old, and the manufacturing steps necessary to ensure corrosion resistance were no secret. But the army and Colt's had neglected to follow them. At the same time, an army review team was finding that the army had issued new weapons but not the necessary cleaning gear to go with them. Lieutenant Colonel Herbert P. Underwood, visiting Vietnam from Rock Island, watched the troops make do. His letter back to Colonel Yount detailed a supply failure. It also revealed his own uncertainty about the army's state of knowledge of the weapons it was handing out.

The 173rd uses some field expedience, primarily for cleaning the chamber and the bore of the weapons. They either use a piece of commo wire, a shoe lace or a nylon cord which they carry with them. They take a 30 caliber patch cut it in half, fold it once and loop the string or what ever it is to the center of this patch. Then using oil they pull it through the bore of the weapon starting from the chamber. As they do this, they clean both the chamber and the bore and then dry it off. They also put a little bit of oil on it. I have not been able to find anyone that does not put a little bit of oil in the chamber of the weapon to prevent it from corroding. I try to discourage it, however I am not

completely convinced myself that if you leave the chamber completely dry you won't have a problem resulting from corrosion, even if you cleaned your weapon every day.

No one, it seemed, was quite sure what to do with this new rifle, not even the officers issuing it. Lieutenant Colonel Underwood had other problems to report. "The 173rd Airborne Brigade tells me that they have had at least 10 weapons, if not more, to blow up in the same manner as the exhibits that we had sent to us," he wrote. In at least one of these cases, the American soldier firing it was killed. The problems were multiplying. Of 2,000 M-16s tested at the Twenty-fifth Infantry Division, 384 malfunctioned. One company, B Company of the Twenty-sixth Infantry, made a list of malfunctions that read like a roll call: 527042 Gorton, 54 rounds fired, 2 failed to extract; 701693 Mason, 2 rounds fired, round stuck in chamber, 60 rounds fired, 1 failed to extract; 531240 Coolet, 60 rounds fired, 1 failure to extract, 1 failure to feed, 40 rounds fired, 1 failure to chamber; and on it went, man by man.

Three weeks later, David Behrendt, a Colt's engineer temporarily assigned to Vietnam, mailed two audiotapes back to Colt's officials in Hartford. Behrendt groused that while from the air Vietnam was beautiful, "when you get down on the ground and walk around, it's something else, kind of cruddy. I told Jim I'll be glad to see a blonde again. Everything around here is black hair and slanty eyes." Behrendt had better reasons to feel indisposed. Many M-16s were jamming, and almost all were corroded. Working alongside soldiers at American bases and outposts, Behrendt restored most rifles to working order after cleaning them and replacing parts. But it was not a good sign that a corporate engineer with a bag of parts was required to keep a new rifle in service. Combat equipment was supposed to be more hardy than that. Behrendt noted, too, that the ball powder was making the M-16 run fast. Engineers at Colt's had been working on a replacement part-a buffer inside the return spring-that would slow the weapons down. But none were yet in Vietnam. Speaking into a tape recorder halfway around the world, he urged action.

All the rifles have an extremely high rate of fire which isn't helping us in the least bit. You better get that new buffer over here right pronto to stop some of this malfunction. It sure will help. Finishes have been wearing off many of the weapons and I've actually seen holes eaten right through into the charging handle area and along the lower receiver area, underneath the dust cover. You can see right into the magazine. Carrying handles are pretty well eaten up on many of the weapons. Rust is covering quite a few of them.

Behrendt's second tape detailed similar problems: "oily chambers, dirty chambers, dirty ammo, corroded ammo, or bent magazines, lips in particular." One infantry company had a 30 percent failure rate, Behrendt said. The problems did not recur on the next operation, after the company commander emphasized rifle cleaning. This was typical of the mixed reports making their way back to the States. There were many problems, though it was also possible to find troops who liked the M-16. But Behrendt put the positive comments in perspective. "This was the only unit that has been completely satisfied with the rifles," he said. The experiences elsewhere were disquieting. "We took three rifles to the range," he said. "This was with another unit. The rifles were pulled from their storage area and the condition they were in was the way they would be taken to an operation with the magazines they were going to use. On the three rifles tryed [sic], two of them failed to extract on the first round fired. One rifle fired 63 rounds before it failed to extract." Behrendt cleaned the rifles,

replaced the extractor springs on one of them, and repeated the test the next day. With new ammunition, they worked well. With older ammunition, the jamming began on the fourth round fired. Behrendt said the platoon sergeants who watched the test were convinced the rifles could work. He was not sure they would be able to convince their men. And once again it was not a good sign that a Colt's engineer had to work on rifles one day for the rifles to function the next. He also had more bad news. I collected as many carriers and bolts as I could. Most of them are pretty much destroyed or battered up. I don't know why this is occurring. The men say they just fire and it happens. I'm sending a couple of barrels back with Jim for further investigation, I cleaned these barrels, chamber area especially as best I could, took them to the range and we still had the same fail to extract problem.

Colt's data was accumulating. Another of its representatives in Vietnam, J. B. Hall, summed up the situation. Hall had met officers who fought during Operation Attleboro, one of the largest battles to date. The operation had been a startling experience for American troops. They faced heavy Viet Cong automatic-rifle fire from the dense vegetation. And their M-16s jammed. "There is no question that soldiers in Vietnam are losing confidence in the M-16 rifle," Hall wrote. "It is imperative that we take all steps possible to correct the situation." Hall's report was the most urgent, and it included a list: plate the bore and chamber with chromium, install heavier buffers, correct the corrosion problems on receivers and barrels, and find a way to cover the magazines when not being fired. On an internal Colt's channel, Hall offered a candid recommendation: "a crash program to provide a better weapon." Like Fremont, he also framed the problem in a way that the army and Colt's would never publicly dare. "While it is very true that there is a lack of rifle discipline by commanders, the statement that the M-14 fires with dirty ammunition while the M-16 doesn't, is a hard argument to counter." This was exactly the case: When the same GIs in the same climates and conditions carried M-14s they had no problems like they did with their M-16s. Did not this suggest that the source of the problem was not the troops, but the rifles?

A little more than two weeks later, in early November 1966, the latest news of the M-16's poor performance in Vietnam reached top channels in the army. Colonel Yount visited the Pentagon to brief now-Colonel Hallock. Colonel Hallock's interest in the M-16 was zealous and personal. He had been an early supporter of the rifle, and a supervisor of Project AGILE more than four years before. The meeting marked a potentially agonizing moment. The SAWS test had zeroed in on problems with misfeeds and fouling related to ball powder. The new weighted buffer had been identified as a fix for at least part of the problem. But the buffer was available only for newly manufactured weapons at Colt's factory-not for the scores of thousands of rifles already in Vietnam. The weapon Colonel Hallock had advocated was failing, and as near as he could tell, the failures were getting American soldiers killed. What to do? Colonel Hallock filed a classified memorandum for the record based on his meeting. It left no doubt that the army had long understood the scope and nature of the M-16's problems, had done little to resolve them, and still was moving slowly to help soldiers with malfunctioning weapons in Vietnam. Colonel Hallock described his conversation with Colonel Yount.

I asked if he had a plan to retrofit the weapons in the field with this buffer and he said he did not. First production of the new buffer, he said, would be in January and they would go on new weapons. He said that if the buffers were sent to the field for the old weapons they would not be available to go on the new weapons that also are going to the field. I asked if he had plans to get a special priority to increase the production rate and speed up availability of the buffer and he apparently did

not. I also asked about clearing up the fouling caused by ball powder. He did not say that anything definitive had been done to correct the problem.

I asked him if there were any reports yet from Vietnam indicating the occurrence, in fact, of the excessive malfunctions that one would expect to be occurring in the field as a result of breakages and malfunctions induced by excessive cyclic rate and the malfunctions induced by fouling, complicated by difficult cleaning conditions in jungle war and normal poor distribution of cleaning equipment. He said there were some, but didn't elaborate at this time.

Far from the war, the two colonels discussed a list of factors compounding the rifle's poor performance-lackluster weapons-cleaning habits, shortages of cleaning equipment, insufficient training, and a host of jerry-rigged practices by soldiers, including soaking ammunition with oil. This was not how the M-16's introduction as the primary firearm in Vietnam was supposed to go. And Colonel Yount's inaction was not how military officers were expected to carry out their duties. Colonel Hallock wanted the problems remedied. But his bureaucratic instincts interfered. He was equally interested in restricting who knew of the problems. There was a scandal to contain, even if it meant limiting the number of technicians working to fix the malfunctions. Colonel Hallock all but grilled Colonel Yount, and impressed upon him the need to keep the problems quiet.

I said, as I have on several other occasions during the last year, that this situation was potentially explosive with the Congress, within Defense, in the Army, and with the public, and that the malfunctions alone could be expecting to be causing loss of soldiers [sic] lives, even though the data showed the XM16E1 to be more effective than other rifles even with the malfunctions. Also, that if there were excessive malfunction rates, the troops would lose confidence in their weapon, even though the causes were not due to weapon design, and that it was a serious thing for the troops to lose confidence in their weapon. I urged again that highest priority be given to correct this situation and also that he consider the security aspect of the information in technical and other channels.

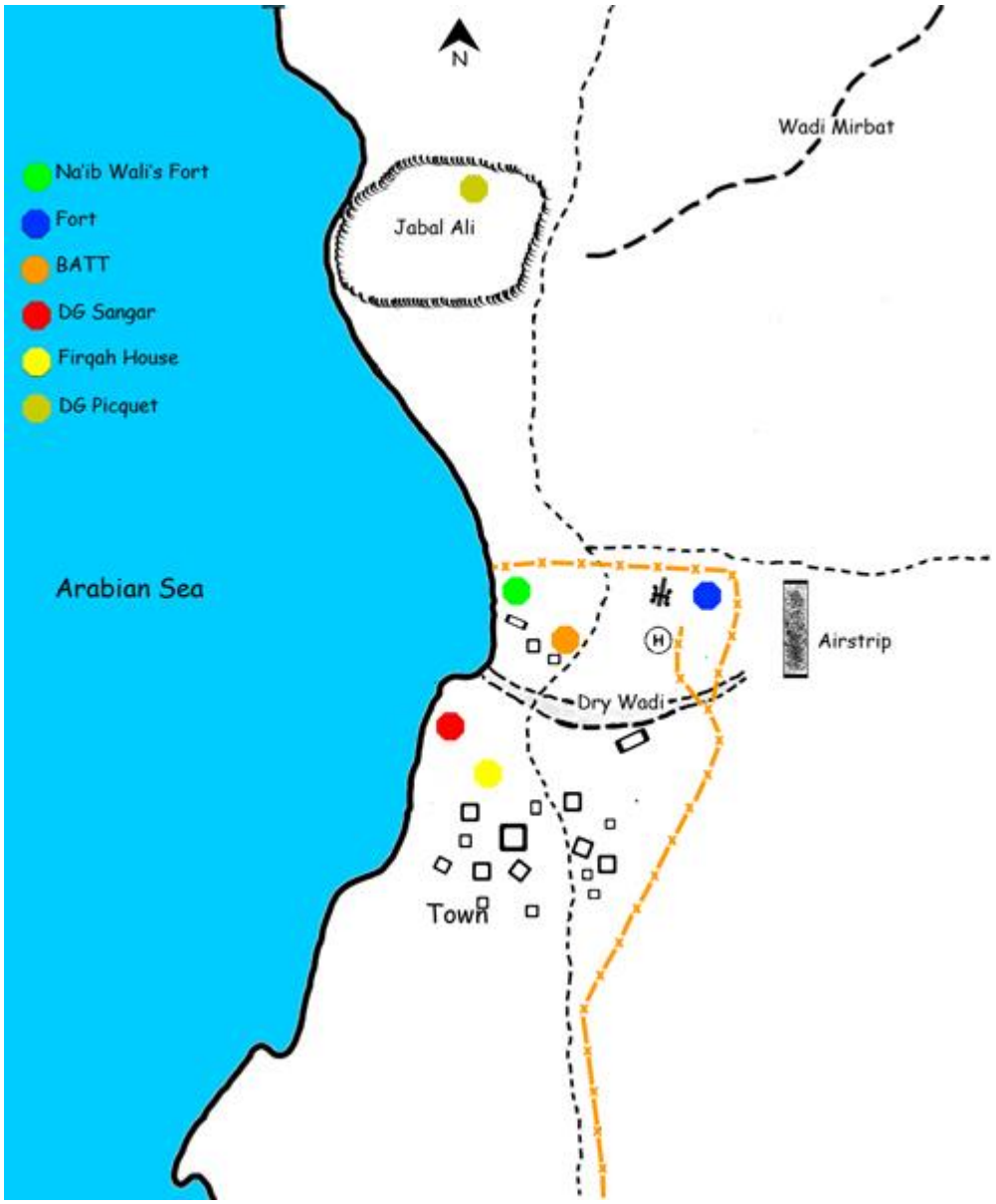
Colonel Hallock stamped his memorandum SECRET HOLD CLOSE repeatedly, and sent it to Dr. Jacob Stockfisch, codirector of the Force Planning and Analysis Office, urging that the gloomy information be provided to the army chief of staff. (Stockfisch's office reported both to the secretary of the army and the army chief of staff; it was a strong proponent of the M-16.) Read against what was happening in Vietnam, and as more rifles known to be unreliable were being manufactured and issued to men headed to combat, the correspondence was chilling. The military had the option of delaying the issue of the M-16 until its shortcomings were worked out, and to allow troops to carry weapons that worked. But this would have meant admitting to a mistake and sounding an alarm. It would have required an officer to display courage. Instead, corporate instincts and self-protection had trumped integrity and good sense. After returning to his office at the Rock Island Arsenal, Colonel Yount made a change. As of November 29, his weekly "significant action report" as head of the office managing the M-16 carried a new line: "The report must not be reproduced, filed or referenced in any official correspondence." Colonel Yount added that only he and two other people were allowed to keep file copies of his reports. "All other copies," he wrote, "will be destroyed within 10 days of receipt."

North Vietnamese troops with AK-47's.

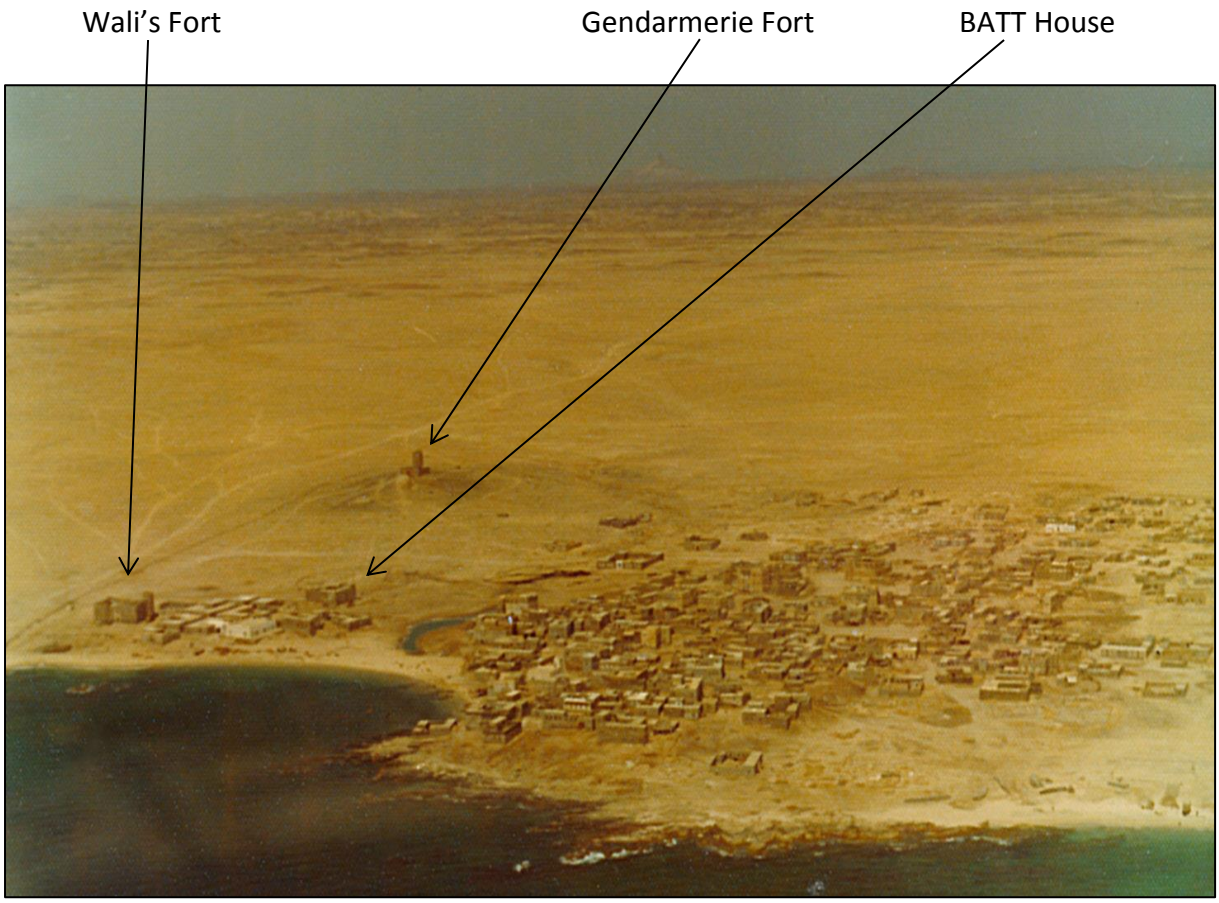
(L-R) Mikhail Timofeyevich Kalashnikov and Eugene Stoner. Eugene Stoner was the designer of the AR-15 (M16) rifle. Kalashnikov is holding the M16.

http://www.irintech.com/x1/co/2588/Mikhail-Timofeevich-Kalashnikov-meets-Eugene-Stoner

(2) Mirbat: July 19th, 1972



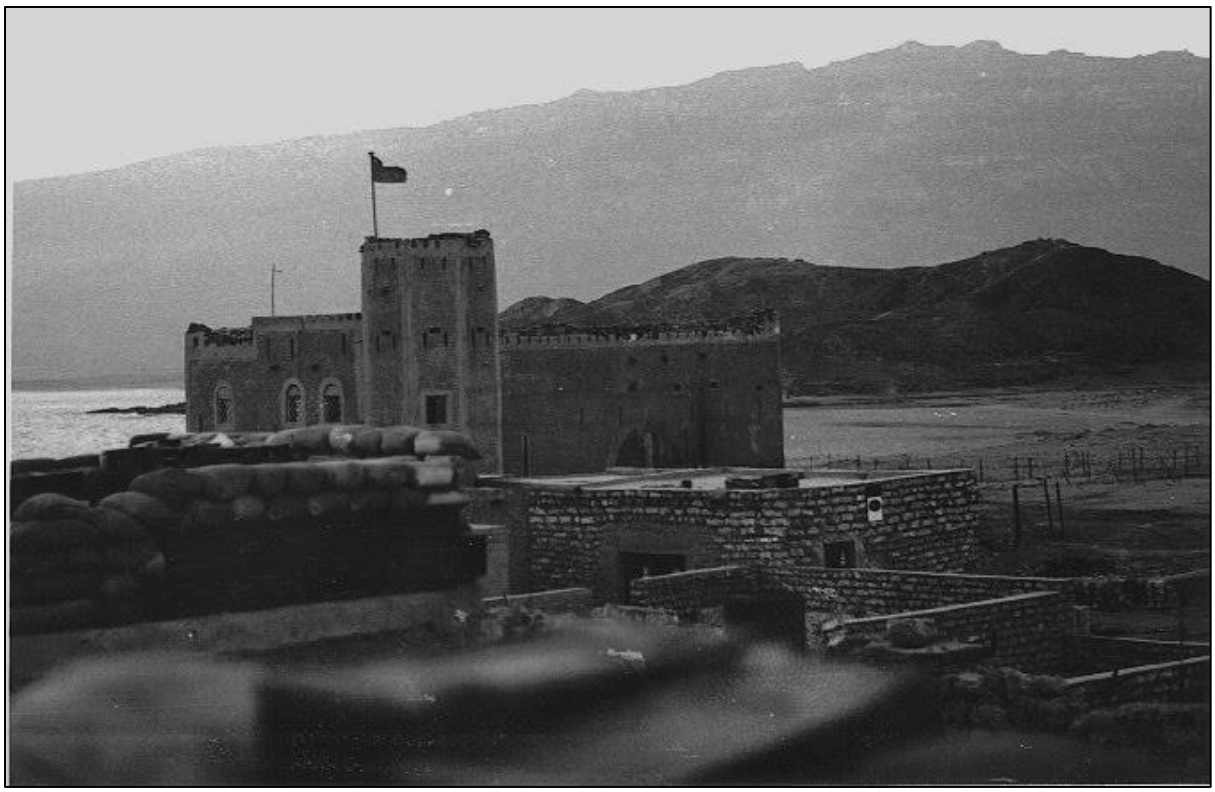
From: http://www.55fst-ramc.org.uk/FRONT%20PAGES/FP_DOCUMENTS/DOCUMENTS_DATA/Maps%20and%20Diagrams/Maps/Map-Webpages/Marbat.htm



Photograph by Brian Harrington Spier (1972-1974) http://www.flickr.com/photos/brianharringtonspier/

Photograph above and extract below from: SAS Operation Storm by Roger Cole & Richard Belfield, Hodder & Stoughton Ltd.

View of the battle field from the BATT House with the GPMG. Hidden from view are dozens of wadis, deep trenches cut into the desert floor by water and running from left to right, along which dozens of men could move freely without being seen.



The Wali's Fort from the BATT House Photograph by Bernard Brady

http://www.panoramio.com/photo_explorer#view=photo&position=65&with_photo_id=4961027&order=date_desc&user=644997

Gendarmerie Fort and 25 Pounder Gun Pit
Labalaba and Takavesi (Tak) with Omani gunners (Walid Khamis)
SAS Operation Storm; by Roger Cole & Richard Belfield, Hodder & Stoughton

Mirbat Fort and the 25 pounder gun pit.

http://www.militaryphotos.net/forums/

To provide a background to the Battle:

Britain and Oman: The Dhofar War and Its Significance. Dissertation for the degree of Master of Philosophy, University of Cambridge, by Lieutenant Colonel John McKeown, Royal Engineers.

http://www.55fst-ramc.org.uk/DATA/ADOBE%20FILES/Dhofar%20War%20John%20McKeown%20Full.pdf

There have been many different accounts of the Battle of Mirbat. The 55 Field Surgical Team RAMC Web site provides a good insight into the events, therefore; I have used their references where possible.

http://www.55fst-ramc.org.uk/front%20pages/FP_DOCUMENTS/DOCUMENTS_DATA/Mirbat%20Battle/Mirbat%20Webpages/FP-mirbat.html

There are differences in accounts from different sources, as mentioned below:

There are a good number of accounts of the battle which have found their way into various books. They almost all describe the lower level personal events in the battle and can broadly be divided into accounts by those who took part in the battle and those who did not. They have been authored by both civilians and military from the rank of trooper to the rank of general.

As time has gone by, people are perhaps less constrained and more detail has emerged which now has perhaps cleared some of the muddied waters yet stirred them up as many of the accounts are at variance. There has perhaps also been a need to "set things straight" and counter some of the myths that may have arisen. Attention has also been drawn to the awards for bravery that were or were not made to those who actually took part in the battle. A great deal of bitterness and resentment has been expressed.

http://www.55fst-ramc.org.uk/front%20pages/FP_DOCUMENTS/DOCUMENTS_DATA/Mirbat%20Battle/Mirbat%20Webpages/accounts-battle-mirbat.htm

The 55 Field Surgical Team RAMC, Web site contains a listing the small arms present at the Battle. It also includes a listing, appended below, from; J.E. Peterson, pp.298, Adoo Weaponry at Mirbat, Oman's Insurgencies.

RCL 75mm	*2*
3 inch mortars	*2*
2 inch mortars	*3*
Schpagin Heavy Machine Guns	*2*

Goryunov Medium Machine Guns	*1 or 2*
RPD Light Machine Guns	*15*
Degtayarev Light Machine Guns	*4*
RPG-2	*2 to 5*

http://www.55fst-ramc.org.uk/FRONT%20PAGES/FP_WEAPONS/FP_WEAPONS.html

From the above list it can be seen that the Adoo possessed considerable small arms fire power.

An interactive list of the Adoo small arms can be found at the following: http://www.55fst-ramc.org.uk/front%20pages/FP_DOCUMENTS/DOCUMENTS_DATA/Mirbat%20Battle/Mirbat%20Webpages/adoo_weaponry_at_mirbatX.htm

Mortars

The Adoo force was well armed with mortars and machine guns (light, medium and heavy). With regard to mortars, it is ideal to stockpile ammunition in advance.

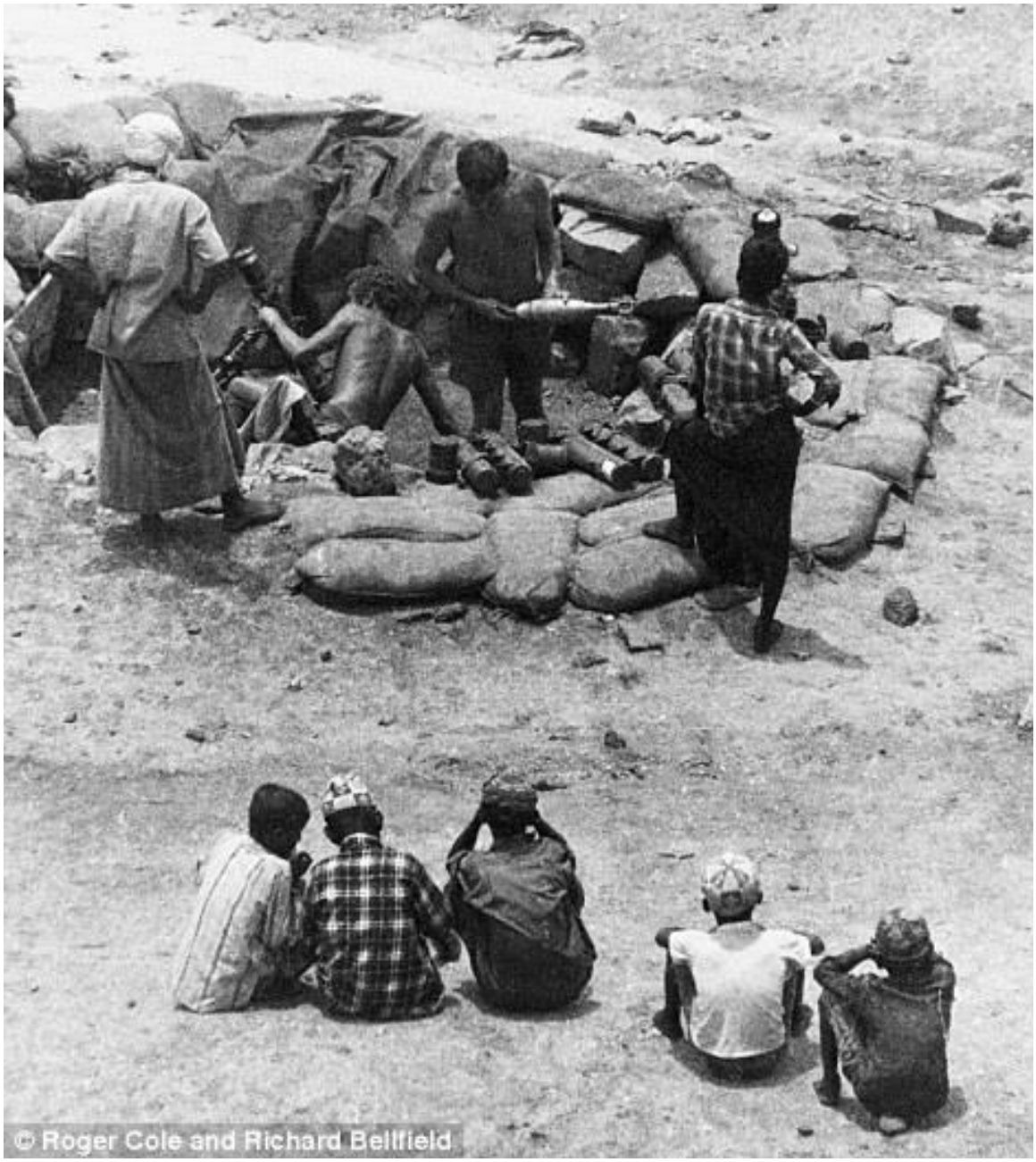
The following extract is from; Intelligence Cell Report. It includes an interview with a POW, subsequent to the Battle:

PW 12 [POW] reported that although he did not know the exact amount of heavy weapons ammunition taken on the operation, he thought that four camels were used to transport it.

Comment: - A camel can carry ten RCL rounds or a mixed load of 5 RCL rounds and 15 mortar bombs. It is thought that up to 15 rounds of RCL were fired during the battle.

http://www.55fst-ramc.org.uk/front%20pages/FP_DOCUMENTS/DOCUMENTS_DATA/Mirbat%20Battle/Mirbat%20Webpages/Intelligence-cell-report.htm

Prior to the 19th the Adoo had apparently used mortar fire in harassing, 'shoot-and-scoot,' operations.



British 81mm Mortar at Mirbat.

Above photograph from: SAS Operation Storm by Roger Cole & Richard Belfield, Hodder & Stoughton Ltd.

Small Arms

The AK-47 is an outstanding assault rifle for short and medium range, up to 300M. Beyond that range the fire is more 'harassing' than accurate. Consequently, in engaging the BATT house the Adoo would have been more dependent on their machine guns and mortars. The AK-47's would have become more effective as the Adoo closed the range on the Fort and the 25pdr gun pit.

The FN MAG58 (GPMG) in 7.62x51mm and the Browning 0.50 calibre would have been highly effective at 500M+.

Extract from: SAS Secret War, by Major General Tony Jeapes CB OBE MC, HarperCollins.

The SAS machine-gun fire crackled and spat about the fort and Kealy stopped firing for a moment to let his rifle cool down.

SLR http://en.wikipedia.org/wiki/File:SLRL1A1.jpg

FN MAG58 (GPMG) http://sadefensejournal.com/wp/?p=1692&page=3

Also present, on the BATT house roof, was a 0.5 calibre (0.5 inch) Browning machine-gun, sometimes referred to as, 'Ma Deuce. ' This is a fearsome heavy machine gun.

Being air cooled it is, however, preferable to use controlled short duration bursts, to enable the heat generated to dissipate.

Extract from: SAS The Soldiers' Story; by Jack Ramsay, Macmillan Publishers Ltd, 1996, Chapter Oman, pp. 128. Towards the end of the Battle 'Snapper' [Lance Corporal Pete Warne], recounted: '*By now I was having trouble with the Browning. It is fine for two people, with one feeding the belt through, but the breech-block and the slide had become jammed with brass shavings, and I could fire only single shots and recock the firing mechanism each time. There should have been someone to feed the belt through, but we were stretched thin – lack of manpower. '*

Extract from: SAS Secret War, by Major General Tony Jeapes CB OBE MC, Harper Collins, Chapter 9 Mirbat, pp. 203 *A burst of heavy machine-gun bullets crack-crack-cracked close by, followed by a long burst from the BATT .5 Browning. Empty brass cases tinkled brashly on to the roof.*

Extract from: Soldier 'I' SAS; by Michael Paul Kennedy, Bloomsbury Publishing Ltd., 1989, Chapter, The Battle of Mirbat, pp. 93.*We opened fire simultaneously, unleashing a hail of GPMG and .50-calibre bullets at the assaulting Adoo troops.*

Five extracts from: SAS Operation Storm; by Roger Cole & Richard Belfield, Hodder & Stoughton, 2011, pp. 124-136

(1) *Roger Cole checked his machine-gun. His GPMG was already set to sustained fire. Looking down he did a quick audit of what ammunition he had. Ten boxes, 200 rounds per box of 7.62mm ammunition. The GPMG itself was surrounded by sandbags.*

At the time, British Army regulations said it should be two layers of sandbags, but the culture of the SAS, especially the men on the front line, was to subvert the regulations to fit what was needed there and then. The two Fijians, Laba and Tak, were always restless, and over the weeks in Mirbat they had continually added extra layers of protection, including ammunition boxes interweaved with yet more bags, all filled with sand. When a young Major from the Intelligence Corps, David Duncan, visited Mirbat for a couple of days , he was told to make himself useful, and spent a day filling sand bags, which were then hauled by twenty feet of rope up onto the roof.

By the day that the rebels gathered on the Djebel, Roger Cole was protected by six layers of sandbags and boxes. It was one of the many small but crucial factors that made the difference between defeat and victory. Had the SAS not built such a strong fortification, the 12.7mm bullets from the Russian Shpagins would have shredded through the regulation-thick two layers of sandbags, taking out Roger Cole and his GPMG. The GPMG was the defining weapon of this conflict.

(2) *Pete could only fire two rounds at a time* [Browning 0.50 calibre]*. His was an anti-aircraft gun which fired and then tilted up towards the sky, in search of an enemy air force that did not exist.*

[Some concerns have been raised, regarding the accuracy of the above, with respect to the Browning being an anti-aircraft version. Some opinion indicates that the AA version utilised a different stand, but the Browning machine-gun did not differ to that used in the ground role. Two possible explanations have been proposed, however, it is not within the scope of the Article, to explore them at this time.

Recollections may have become confused, with the passage of time.]

(3) *The insistent burst of metal from the GPMG and the double crash of exploding rounds from 0.50 Browning echoed round the battlefield.*

(4) *Looking across to the Wali's fort the SAS men saw the reassuring sight of the 'askaris, elderly men with huge beards standing proudly behind their .303 Lee-Enfield rifles, resolutely plugging away at the rebels below. Like many Dhofaris, they were exceptional shots, having been desert hunters all their lives. The PFLOAG commanders had underestimated them. Not only were they now providing valuable crossfire, which was a useful distraction in itself, but they were also taking out one or two of the advancing soldiers. At this stage of the battle, every single enemy casualty, whether they were killed outright or just badly injured, made a massive difference.*

(5) *In the Battle of Mirbat, the crucial resource that saved Roger Cole's life was margarine - four tins of it, stored by the base of the GPMG. It was an open secret in the regiment that, if you poured margarine along the belt and into the ammunition box, it would lubricate all the working parts and eliminate stoppages, the worst nightmare for any machine-gunner in any battle. Using margarine was definitely not standard operating procedure. It was not in any*

official munitions manual. But it worked - and whoever wrote the manual had clearly never been in a sustained firefight.

A reference to FN MAG lubrication can be found at the following URL:

http://remtek.com/arms/fn/mag/

Lubricate everything except the gas system and piston and re-assemble in the reverse order. The trigger and feed mechanisms should be detail stripped only by trained armorers. You can teach anyone to field strip a MAG 58 in just a few minutes. On your first attempt you will probably try to replace the butt-stock upside down. All else is self-evident.

The Browning .50 calibre was, apparently, 'down to the last box of ammunition' when the relief force arrived.

In the heat of battle, with the Adoo pressing, it might have been easy to resort to long bursts of fire, from the GPMG. Both machine guns on the BATT house roof were air cooled and could malfunction if the volume of fire was not controlled. A quick barrel change can enable sustained fire to be continued while the hot barrel cools. There is, therefore, considerable skill in maintaining the maximum rate of fire, without overheating the gun. Effecting a barrel change, during an engagement, is certainly non-trivial.

Additional background provided by Roger Cole [for this Article]. *There was a spare barrel for the GPMG but given the volume of incoming fire it was too dangerous to change it, hence the copious use of margarine* [improvised lubrication for the gun]*. There was no spare barrel for the Browning and eventually it stopped working. Once the Browning ceased to function Pete Warne focussed on other tasks (radio communications with base, some medical attention to the wounded and using his rifle).*

An example of the heating effect of sustained fire can be seen in the following video. Unfortunately, the video does not show the GPMG as used at Mirbat:

http://www.youtube.com/watch?v=mkLA3v84F1I&feature=player_detailpage#t=452s

A detailed list of References, on the Battle of Mirbat, can be seen at the 55 Field Surgical Team RAMC Web site, URL: http://www.55fst-ramc.org.uk/front%20pages/FP_SOURCES/FP_SOURCES.html

"Had they [Adoo] *sneaked up on the 25 pounder and turned that on to the BATT house rather than going for a full frontal assault the whole thing would have been over in less than an hour. Amazingly they had troops from the Trucial Oman Scouts who had the required artillery skills."*

Additional background from Roger Cole & Richard Belfield

The difference between success and failure is often a fine line.

(4) Wanat: July 13th, 2008

Tens of thousands of words have already been written regarding the Battle of Wanat. This Battle has subsequently generated great controversy and is still raw in the minds of those directly affected.

For those wishing to read a detailed description of about the Battle, I have appended the following URL:

(1) Wanat, Combat Action in Afghanistan, 2008. The Staff of the US Army Combat Studies Institute. Combat Studies Institute Press, US Army Combined Arms Centre, Fort Leavenworth, Kansas.

http://www.benning.army.mil/Library/content/Wanat.pdf

I have also appended, below, URL's for two additional Articles:

(2) Echoes from a Distant Battlefield, by Mark Bowden, Vanity Fair, December 2011

http://www.vanityfair.com/politics/features/2011/12/battle-of-wanat-201112

(3) The following is a Rough Draught Release (Occasional Paper**).** A Battlefield Tourist, Battle of Wanat Historical Analysis. This 'Occasional Paper' provides some interesting additional perspective compared to the PDF (i) listed above.

http://www.battlefieldtourist.com/content/battle-of-wanat-historical-analysis-rough-draft-release/

Douglas R. Cubbison is a Military Historian with the Research and Publication Team, U.S. Army Combat Studies Institute, Fort Leavenworth, Kansas.

Wanat Combat Outpost (COP) looking east from the mortar position towards OP Topside. This photograph was taken 4 days before to the attack.

http://commons.wikimedia.org/wiki/File:View_of_COP_Wanat_and_OP_Topside.jpg

With specific regard to the small arms used, the following includes a series of extracts taken from (1): Wanat, Combat Action in Afghanistan, 2008.

As a background to the extracts appended below it is important to appreciate that, once the battle had commenced there was a desperate need to suppress the enemy fire and prevent the COP being overrun.

Page 144: *Without any machine guns of their own, the mortarmen had to use M4 assault rifles firing at the maximum rate of fire simply to suppress the enemy in order to survive. In this way, Phillips burned out a series of three M4s. He then picked up an M249 SAW belonging to the engineers and*

tried to fire it but it failed to shoot. Mortarman Queck had previously tried to fire the SAW but it was jammed. Another trooper later fired it successfully after changing its barrel.

Page 148: *With the TOW HMMWV now destroyed, there were three vehicles with heavy weapons still available to fire from the main COP position. These included the two squad HMMWVs on the northern segment of the perimeter, both armed with Mk-19 automatic grenade launchers, and the platoon headquarters HMMWV, mounting an M2 .50-caliber machine gun at the CP. On the ground, the Marine ETT also had an M240 7.62-mm medium machine gun manned by Corporal Jones. This gun's importance increased because both of the 2d Platoon's organic M240 machine guns were at OP Topside and therefore, unable to support the main position. The AAF fire was so devastating that the 3d Squad's grenade launcher was quickly disabled when struck with a bullet through its feed tray. The 2d Squad's Mk-19 initially jammed, a common malfunction, but later was brought back into operation. Thus, as the initial AAF onslaught continued, the American and Afghan defenders at the main COP had only the .50-caliber machine gun at the CP, the Marine M240 machine gun, and their own small arms to repel the assault. It is to the credit of the C Company paratroopers that they maintained at least fire parity with the insurgents at COP Kahler. To achieve this effect with the available weapons, the 2d Platoon paratroopers were forced to fire their small arms at the maximum cyclic rate. The initial fight at the mortar pit, described earlier in this chapter, illustrated this. In other positions as well, the SAWs and, in particular, the M4s, experienced difficulty maintaining such a rate after the barrels got excessively hot. When that occurred, the weapons would jam, as happened to Phillips. Without heavier weapons, the enemy fire forced the Americans to return an equal volume of fire or risk the enemy overrunning the position. One young platoon member later complained, "I ran through my ammo 'til my SAW would not work anymore despite the 'Febreze' bottle of CLP [lubricant] I dumped into it."*

Soldiers were, on occasion, able to bring back into action previously jammed weapons. As mentioned above, the engineers' SAW that failed to work in the mortar pit fight was later used in another location after its barrel was replaced. In the midst of intense enemy fire, one paratrooper described how he "grabbed the engineer's weapon that was left at our position and which was a SAW and . . . started laying down about 800-1,000 rounds at the bazaar and wood line around the mosque." The .50-caliber machine gun mounted on the platoon headquarters HMMWV also remained in action. Its gunner was Private William Krupa, who was detached from the 3d Squad for this duty and had joined the platoon only two months earlier. Krupa acquitted himself well in his first firefight. Aass later commented in admiration, "Private Krupa . . . was up in the turret, taking direct fire from multiple locations and he was literally standing ankle deep in .50-cal casings from all the rounds that he'd fired. I was worried that after he shot off his first can of ammo he wasn't going to know what to do next but under fire he changed maybe a dozen cans of ammo."

Krupa recounted: RPG's were coming in constantly from the west. I remember at one point I had to slow my fire down because the barrel was red hot and there was a debate on how much ammo was left. By this time I had shot about ten .50-cal 100 round ammo cans. . ."

Page 154: *Stafford crawled back to the protection of the southern part of the OP. There he watched Bogar single handedly put up a heroic defense. Although badly wounded and at times barely conscious, Stafford recalled, "Bogar had just set his SAW on top of the sandbags and he was just kind of spraying, going through SAW rounds pretty quick. I remember him loading and spraying, loading*

and spraying." Stafford noted Bogar had fired about 600 rounds at the cyclic rate of fire when his "SAW jammed, basically it just got way overheated because he opened the feed tray cover and I remember him trying to get it open and it just looked like the bolt had welded itself inside the chamber. His barrel was just white hot."

Above Bogar in the Crow's Nest, Ayers was firing complete bursts with the M240 machine gun. Stafford was impressed with his volume of fire, "I could also hear the 240 going off above me in the Crow's Nest because Ayers was just ripping them apart. I could hear Rainey screaming at Ayers not to melt the barrel on the 240 and to control his fires." Eventually, Ayers ran out of machine gun ammunition. In the heat of battle, he did not realize that ammunition for Stafford's now unmanned M240 lay nearby.

Page 155: *With their M240 effectively out of action, Ayers and McKaig continued the fight at the Crow's Nest with two M4 carbines. Their technique was to pop up together at intervals, fire six to nine rounds at the muzzle flashes ringing the OP, then drop down before the enemy could respond. Although scared, the pair continued this maneuver until enemy return fire struck and killed Ayers, who collapsed over his weapon. Now alone in the position, McKaig began to experience problems with his M4. "My weapon was overheating. I had shot about 12 magazines by this point already and it had only been about a half hour or so into the fight. I couldn't charge my weapon and put another round in because it was too hot, so I got mad and threw my weapon down."*

The excerpts above represent only a small fraction of the engagement. However; the multiple references to overheating and jamming were sufficient to trigger questions at various levels.

Additional background

Colonel Douglas Tamilio (CDT), (Project Manager for Soldier Weapons reporting to Program Executive Officer Soldier) was interviewed in October 2009 by IDGA-org; 'On-point.' During the interview CDT was asked several questions regarding the testing of the M4 carbine. He commented that, in 1991 the testing requirement for the M4 carbine was 600 rounds between stoppages (RBS). By 2009 the figure had risen to >3600 RBS. In that period there had been 62 major improvements and 8 million rounds fired in testing. He believed that the M4 was the most tested weapon in the world. CDT mentioned that magazines contributed to 40% of all jams. Consequently, each soldier was being issued with 7 new magazines. He mentioned that; in firing 210 rounds he would not expect problems. In testing the M4 the following regimen is followed:

-Fire 120 rounds in 90 seconds

-Allow to cool down to room temperature [it is not mentioned in the interview, but the process of natural cooling, to room temperature (depending on conditions), may take 30 minutes].

-Repeat this process up to 600 rounds and then lubricate

-Repeat the process up to 1200 rounds, then clean and lubricate

http://player.fm/series/defense-news-government-news-for-industry-professionals-idgaorg/colonel-doug-tamilio-pm-for-soldier-weapons-on-the-m-4-carbine

However, the maximum sustainable rate of fire, of the M4, is reported to be 15 rounds per minute.

To provide some indications of rapid fire (not necessarily sustainable fire), I have appended a URL reference below (New Rifle Test for Experts, 1951) showing older rifles.

http://www.britishpathe.com/video/new-rifle-test-for-experts/query/01323800

The bolt action Lee-Enfield (SMLE), could apparently achieve 27 rounds per minute of rapid fire, albeit in the hands of a well-trained rifleman. With regard to sustainable fire, however, 15 aimed rounds per minute might be more realistic.

The M1 Garand is quoted as 43 aimed rounds (rapid fire) per minute. Maj. G. H. Drewry as quoted, below, indicated the sustained rate of fire of the M1 Garand was 30 rounds per minute.

Our New Service Rifle (M1 Garand), by Maj. G. H. Drewry, Ord. Department.

The rate of fire which can be attained is, of course, dependent to some extent upon the dexterity of the firer. The number of aimed shots at 200 yards for the average rifleman is approximately fifty per minute. The maximum for highly trained riflemen is approximately eighty per minute at this range, and at very close ranges, around fifty yards, a total of one hundred aimed shots are known to have been fired by an expert. Of course, such high rates of fire are not contemplated except in emergencies and they cannot be maintained over any considerable period of time, due to the overheating. An average rate of fire of around thirty shots per minute can, however, be maintained almost continuously without difficulty.

http://www.fulton-armory.com/%5Cfaqs%5CM1G-FAQs%5CM1NewRifle.htm

Looking at the numbers, it would appear that the M1 Garand could maintain almost twice the rate of sustained fire as the M4.

I have appended below a URL link that provides some additional background to the M4 story.

http://fpc.state.gov/documents/organization/107245.pdf

The Army's M-4 Carbine: Background and Issues for Congress.

By Andrew Feickert, Specialist in Military Ground Forces

Congressional Research Service,

June 8, 2010

GROUND PRECAUTIONARY MESSAGE

The following document adds some additional background to the overheating issue and introduces the problem of; 'cook-off.'

GROUND PRECAUTIONARY MESSAGE
ACALA #97-03
DATE: R 051413Z NOV 96
CLASSIFICATION: UNCLASSIFIED (1nn)
SUBJECT: GROUND PRECAUTIONARY MESSAGE (GPM), 97-03 5.56MM M4A1 CARBINE

1. DISTRIBUTION: {MENU} THIS IS A GROUND PRECAUTIONARY MESSAGE THAT HAS NOT BEEN TRANSMITTED TO SUBORDINATE UNITS. SOCOM COMMANDERS WILL IMMEDIATELY RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE UNITS, ACTIVITIES
OR ELEMENTS AFFECTED OR CONCERNED. RETRANSMITTAL SHALL REFERENCE THIS MESSAGE. SOCOM COMMANDERS WILL VERIFY RECEIPT WHEN RETRANSMITTING THIS MESSAGE BY SENDING AN INFO COPY OF THE RETRANSMITTAL TO DIRECTOR,
TACOM-ACALA, AMSTA-AC-ASIR, ROCK ISLAND, IL.

2. PROBLEM DISCUSSION:

A. SUMMARY OF PROBLEM: SEVERAL INCIDENTS OF COOK-OFFS, IN AND OUT OF BATTERY, AS WELL AS BURST BARRELS, HAVE OCCURRED WITH THE 5.56MM M4A1 CARBINE. THESE INCIDENTS HAVE RESULTED IN INJURIES TO WEAPON USERS. THESE INCIDENTS RESULT FROM FIRING NUMEROUS ROUNDS WITHIN A SHORT AMOUNT OF TIME WITHOUT ADEQUATE COOLING.

(1) COOK-OFFS OCCUR WHEN A LIVE ROUND IS LEFT IN THE CHAMBER OR IN CONTACT WITH THE CHAMBER OF A HOT WEAPON AND HEATS TO THE POINT THAT THE PROPELLANT IS IGNITED.

(A) SUSTAINED FIRING OF THE M16 SERIES RIFLES OR M4 SERIES CARBINES WILL RAPIDLY RAISE THE TEMPERATURE OF THE BARREL TO A CRITICAL POINT.

(B) FIRING 140 ROUNDS, RAPIDLY AND CONTINUOUSLY, WILL RAISE THE TEMPERATURE OF THE BARREL TO THE COOK-OFF POINT. AT THIS TEMPERATURE, ANY LIVE ROUND REMAINING IN THE

CHAMBER FOR ANY REASON MAY COOK-OFF (DETONATE) IN AS SHORT A PERIOD AS 10 SECONDS.

(C) WHEN THE WEAPON HAS REACHED THE COOK-OFF POINT (OR TEMPERATURE) A ROUND SHOULD NOT BE LEFT IN THE CHAMBER FOR ANY LENGTHY PERIOD OF TIME. THE WEAPON SHOULD BE CLEARED AND THE BOLT LOCKED TO THE REAR TO ALLOW COOL DOWN.

(D) SUSTAINED RATE OF FIRE FOR THE M16 SERIES RIFLES AND M4 SERIES CARBINES IS 12-15 ROUNDS PER MINUTE. THIS IS THE ACTUAL RATE OF FIRE THAT A WEAPON CAN CONTINUE TO BE FIRED FOR AN Indefinite LENGTH OF TIME WITHOUT SERIOUS OVERHEATING.

(E) THE SUSTAINED RATE OF FIRE SHOULD NEVER BE EXCEEDED EXCEPT UNDER CIRCUMSTANCES OF EXTREME URGENCY. (NOTE: A HOT WEAPON TAKES APPROXIMATELY 30 MINUTES TO COOL TO AMBIENT TEMPERATURE CONDITIONS).

(F) THE USER'S MANUAL (TM 9-1005-319-10) FOR THE M16 SERIES RIFLE AND M4/M4A1 CARBINE STATES, "THAT IF A MISFIRE OCCURS IN A HOT WEAPON, REMOVE THE ROUND FAST (WITHIN TEN SECONDS). IF THE ROUND CANNOT BE REMOVED WITHIN TEN SECONDS, REMOVE THE MAGAZINE FROM THE WEAPON, POINT THE WEAPON IN A SAFE DIRECTION AND WAIT FOR 15 MINUTES."

(G) CAUTION SHOULD BE TAKEN BY THE USERS TO KEEP THEIR FACE AWAY FROM THE EJECTION PORT WHILE CLEARING A HOT WEAPON.

(2) COOK-OFFS OUT OF BATTERY RESULT FROM A ROUND WHICH COOKS OFF WHEN THE BOLT IS NOT LOCKED OR A ROUND WHICH COOKS OFF AS THE USER IS TRYING TO CLEAR THE WEAPON.

(3) BURST BARRELS RESULT WHEN THE WEAPONS ARE FIRED UNDER VERY EXTREME FIRING SCHEDULES AND THE BARREL TEMPERATURE EXCEEDS 1360 DEGREES FAHRENHEIT. WHEN THE BARREL REACHES THESE EXTREME TEMPERATURES, THE BARREL STEEL WEAKENS TO THE POINT THAT THE HIGH PRESSURE GASES BURST THROUGH THE SIDE OF THE BARREL APPROXIMATELY 4 INCHES IN FRONT OF THE CHAMBER. THIS CONDITION CAN RESULT IN SERIOUS INJURY.

B. PARTS, ASSEMBLY, OR COMPONENTS TO BE INSPECTED: NA

3. USER ACTIONS. {MENU}

A. TASK OR INSPECTION SUSPENSE DATE (IF APPLICABLE): N/A

B. REPORTING COMPLIANCE SUSPENSE DATE: N/A

C. INSPECTION PROCEDURES: N/A

D. CORRECTION PROCEDURES: RANGE PERSONNEL AND USERS SHOULD AVOID EXCEEDING THE

MAXIMUM AND SUSTAINED RATES OF FIRE DESCRIBED IN THE USER'S MANUAL FOR THE M16 SERIES RIFLES AND M4 SERIES CARBINE. USERS SHOULD BE TRAINED ON THE CAUSES AND HAZARDS OF COOK-OFF. BETWEEN FIRING SCHEDULES, ADEQUATE WEAPON COOLING TIME SHOULD BE ALLOWED.

http://www.northeastshooters.com/vbulletin/general-discussion/80186-did-weapons-fail-u-s-troops-during-afghanistan-assault-3.html

The following Article is from: USNI U.S. Naval Institute Proceedings Magazine, July 2010, Vol. 136/7/1289 by Kirk Ross.

This Article addresses the jamming issue reported at Wanat and as such, provides an insight into the small arms background 'bigger picture.' Consequently, I have appended a substantial extract from this Article:

Some press accounts have placed blame for M4 carbine malfunctions at the Battle of Wanat, Afghanistan, squarely on the weapon's manufacturer. In fact, other factors could have led to the disaster there.

Only the timely arrival of support—including American AH-64 Apache attack helicopters and field artillery—prevented the complete destruction of COP Kahler. 2 Yet the outcome was tragic enough: nine U.S. Soldiers died, and a further 27 were wounded, making that day one of the bloodiest of the war and prompting The New York Times to describe the four-hour Battle of Wanat as "the ' Black Hawk Down' of Afghanistan."

Press Perceptions

Immediately after the release of the Army's Occasional Paper, press reports seized on Soldiers' accounts of weapon stoppages detailed in it. The Times reported that "Soldiers who survived the battle described how their automatic weapons turned white hot and jammed from nonstop firing." (4) A November 2009 Defense News story also cited reports of weapon stoppages, but went further, attempting to connect the deaths of Soldiers in the battle to the enduring debate over the reliability and lethality of the military's primary infantry weapon, the M4 carbine.

Design Enhancements

Also worth mentioning is the fact that the M16 of four decades ago is not the same weapon as the M4 in service in Iraq and Afghanistan today. Enhancements made to the original design have substantially improved the weapon's reliability, so much so that commanders often praise the M4. At the 2006 Infantry War Fighting Conference, Major General Walter Wojdakowski, commanding general, U.S. Army Infantry Center & School, called the M4 "one of many success stories in combat operations in Iraq and Afghanistan." (6)

Yet troops outnumbered at Wanat, like those described in the Khe Sanh account 41 years before, were still plagued by numerous weapon stoppages. Studies conducted by the Army, by independent research institutions, and by Colt itself offer some indication of the cause. In particular, they provide some possible explanations for the numerous stoppages suffered by Wanat's defenders.

The Army's draft Occasional Paper states that to maintain fire parity with their attackers, the Chosen Few Company soldiers "were firing their weapons ' cyclic,' on full automatic at the highest possible rates of fire." (7) For this reason, the paper concludes, some Soldiers experienced stoppages.

Full-Automatic Fire and Weapon Stoppages

At Wanat, the weapons were pushed to their limits and beyond. In the Combat Studies Institute's paper, historian Cubbison attributed the weapon stoppages experienced by Wanat's defenders to their necessity to fire their M4 carbines at sustained high cyclic rates. This conclusion is supported by the CNA study, which revealed that Soldiers firing weapons on full-automatic doubled their probability of experiencing a stoppage. (14)

In a 21 October 2009 letter from Colt Defense LLC's executive vice president, retired Marine Major General James R. Battaglini, to Army Colonel Douglas Tamilio, project manager, Soldier Weapons, General Battaglini concludes that, finding themselves "under attack by a numerically superior Anti Coalition Militia (ACM) force conducting well planned attacks with overwhelming firepower," Soldiers at Wanat used their weapons "in excess of their cyclic rates of fire."

[It is perhaps worth commenting that the cyclic rate of fire is not a function that can be readily changed by an infantryman. Ingress of dirt might slow the cyclic rate. A change in the specification of the ammunition might increase the cyclic rate. An Armourer might be able to make some physical changes to the system that would alter the cyclic rate. It would, however; be hard to imagine the latter occurring in practice. On the other hand, it is easily possible to exceed the maximum recommended sustainable rate of fire (15 rounds per minute)].

The M4 carbine was born of the 1965-vintage Colt CAR-15 and XM177/XM177E2 carbines and the U.S. government's interest in procuring "a redesigned and upgraded variation of the M16A2 weapon system," which could fire the new M855 5.56x45-mm NATO cartridge. (15) After several meetings with government officials beginning in September 1984, Colt received a procurement contract on 12 June 1985 to provide 40 XM4 carbines for testing and evaluation.

The weapons that resulted from this program, those that through development would become known as the M4 and M4A1 carbines, were initially intended to be used by rear-echelon Soldiers and others who required only more firepower than an ordinary sidearm. However, "by the time the M4 and M4A1 carbines went into production a decade later in 1994, the end users had become frontline fighting units such as the SEALs, Special Forces, and Airborne Divisions." (16)

The original emphasis the government had placed on parts commonality between the new carbine and the M16A2 rifle had shifted to performance. Since that time, numerous and substantial

improvements have been made to the M4 and M4A1, including strengthening the bolt, extractor, and extractor spring, resurfacing the chamber, and, in 2000, the introduction by Colt of the R0921HB, a heavy-profile barrel M4A1. (17)

Rounds per Minute

According to U.S. Special Operations Command's SOPMOD (special operations peculiar modification) program office, "The current sustained rate of fire for the M4A1 Carbine is 15 rounds per minute and a maximum rate of 90 [rounds] per minute for short periods in an emergency." (18) Firing the M4 carbine at cyclic rates of fire of 90 to 150 rounds per minute, "which is the rate of suppressive fire associated with machine guns" for prolonged periods leads to rapid heating of the barrel and possible failure. (19)

Tests conducted by both the Army and by Colt indicate that "exceeding the sustained rate of fire of 15 rounds per minute will result in the weapon ' cooking off' rounds after approximately 170 rounds have been fired." If the maximum rate of fire of 90 rounds per minute "is maintained for about 540 rounds, the barrel softens and gas starts to blow by the bullet, changing the sound and size of the muzzle blast." If the operator continues to fire the weapon, the barrel will begin to droop, and finally, at about 596 rounds, the barrel will burst.

While the current M4 configuration exceeds the Army's requirements for general issue, early in the M4 program, the Special Operations Command requested a heavier barrel profile to accommodate the rapid heating that accompanies special operations forces' (SOF) high firing schedules. The Army denied this request, however, because a heavy barrel would be incompatible with M203 installation and because it did not want to add a SOF-unique repair part to its inventory. (20) In Fiscal Year 2001, Rock Island Arsenal (RIA) "responded to the distinct needs of SOF with the RIA heavy barrel."

The new heavy-profile barrel still allowed for the installation of the M203, but increased the rounds to cook off to 205 rounds, and the round count to barrel burst to 930. While the new heavy profile did not increase the service life of the barrel, it did provide SOF with, per its requirement document, an M4A1 having a limited light machine-gun capability, of a sort, as it requested. (21) It should be noted that the requirement document did not define what this capability meant in the way of sustained fire (in numbers).

In any case, the rationale for such a capability is based on special operations forces' need to break contact with large enemy formations. The method SOFs employ to break contact in such engagements is to lay down an overwhelming burst of fire intended to suppress the enemy long enough for SOFs to slip away. It is for this reason these forces are working to develop a carbine capable of firing two 30-round bursts followed by at least 45 and up to 75 rounds per minute for 440 rounds without damaging the weapon.

Misconceptions

Yet the M16/M4 was never designed to have this capability. In a 1967 TIME magazine article discussing the M16, the author marvels over "the M-16's maximum sustained rate of fire (up to 200 rounds a minute)." The quote provides some insight into the historical misconceptions about what the M16/M4 is, and what it isn't, and why many observers are disappointed in the 6-pound M4 when it fails to perform like a belt-fed light machine gun.

While suggesting that Soldiers maintain fire discipline as a means of preventing their weapons from overheating is a simple solution, when Soldiers are fighting for their lives under conditions extreme even for the battlefield - such as those that presented themselves to Wanat's defenders—such arguments lose their veracity.

According to officials at Colt, soon after the release of the Cubbison draft study, the Army contacted Colt, asking the company to "recommend any immediate options for the M4 carbine" that would increase its performance characteristics. Colt responded, recommending that the current Army contract requirement be modified by replacing the 3-round burst M4 with the fully automatic R0921HB/M4A1 and with the RIA heavy barrel, which would provide 1.7 times the sustained rate of fire as the M4. (22)

At Wanat, where firs hand accounts suggest that many defenders were firing their weapons at extremely high cyclic rates simply to prevent themselves from being overrun, it is possible that if they had been firing M4s with the RIA heavy-profile barrels instead of standard-issue weapons, they would have suffered fewer weapon stoppages. And yet some accounts, such as that of Specialist McKaig, who reported that his M4 overheated after firing 12 magazines—approximately 360 rounds—in a half hours' time (an overall rate of fire of only 12 rounds per minute; well within design specifications for the weapon) suggest either that Soldier's recollections are not accurate or that other factors may have led to weapon stoppages.

Other Possible Causes

The CNA study indicates that several other important factors contribute to an increased probability of experiencing a weapon stoppage, including cleaning and lubrication procedures (CLP), the attachment of weapon accessories, the weapons' magazines, and the possible use of rebuilt weapons. And these factors, in addition to sustained high cyclic rates of fire, may also have contributed as underlying causes of the weapon stoppages at Wanat.

"Maintenance regimens, including weapon cleaning and lubrication, have very little or no impact on . . . weapon stoppages" the report said. However, Soldiers who used dry lubricants in the maintenance of their M4s, rather than CLP, "decreased the probability of experiencing a stoppage by half." (23) Soldiers reporting a high frequency of lubricant application (one or more times per day), particularly M16 users, were more likely to experience stoppages. (24)

Increased frequency in quick-wipedown weapon cleaning also increased the odds of experiencing a stoppage. This somewhat counterintuitive finding is most likely a result of Soldiers replacing fully disassembled cleanings with quicker and less effective methods. "9 to 10 percent of M4 and M16 users called for improvements in magazine quality. Soldiers stated that the [standard 30-round aluminium] magazines [issued] are easily dented during the course of normal use and carrying in theater, causing problems in ammunition feed from the magazine." (25) Some combat veterans have said it's also critical to keep the magazines clean as well. The CNA report says, "Soldiers issued a cleaning kit with their weapons were one-third less likely to experience a stoppage than those not issued a cleaning kit." (26)

Surprisingly, more than one-third of all respondents to the CNA study indicated that they had not been issued cleaning kits with their weapons. The study indicates also that attaching accessories to

the M4 significantly had an impact on stoppages, "regardless of how the accessories were attached." Soldiers who duct-taped and zip-corded accessories to their M4s "were two and three times [respectively] more likely to experience a stoppage." (27) Finally, the report indicates, Soldiers issued rebuilt M4s are "3.5 times more likely to experience a stoppage." (28)

Dust Test 3

Beyond these potential causes are environmental factors. In a 10 December 2009 letter to Secretary of Defense Robert Gates and Chairman of the Joint Chiefs of Staff Admiral Mike Mullen, co-signed by Chairman of the House Committee on Armed Services Representative Ike Skelton (D-MO) and Chairman of the House Subcommittee on Readiness Representative Solomon Ortiz (D-TX), the congressmen raised the issue of the M4, citing their concerns that although the M4 "routinely rank[s] lower than other military weapons in testing, they are still being issued as the Army's weapon of choice."

What the congressmen seem to be referring to are the results of the U.S. Army Test and Evaluation Center's (ATEC) September-November 2007 Extreme Dust Test 3, which press reports leapt on as an indication of the M4's purported shortcomings. In the test, where ten sample M4s drawn from Army inventory competed against ten samples each of Heckler & Koch's HK416 and XM8 and Fabrique National's Mk16 SCAR, the weapons, with an initial coating of heavy lubrication applied, were placed in a dust chamber for 30 minutes and then fired to 120 rounds before being returned to the dust chamber for another half hour. This process was repeated to 600 rounds, at which point the weapons were wiped down and another coat of heavy lubrication was applied. (29) Firing continued in this way to 6,000 rounds per weapon.

Raw test data made available to the press indicated that, collectively, M4s experienced 863 low-impact and 19 high-impact stoppages over a firing schedule of 60,000 rounds—the other weapons experienced significantly fewer stoppages—but ATEC's final report, which appeared in February 2008, noted that "M4 performance . . . was significantly different than in the previous extreme dust test in which it participated," and that a separate effort was under way to investigate the reasons.

According to officials at Colt, those reasons included the fact that six of the ten M4s drawn for the test did not meet the minimum rate of fire of 700 rounds-per-minute mandated under Mil-Spec IAW Mil-C-70599A(AR), which requires a cyclic rate of fire of 700 to 970 rounds-per-minute. The M4s used in Dust Test 3, delivered to the Army in June 2007, met mil-specs when delivered; however, together the ten drawn for the test from the U.S. Army inventory averaged only 694 rounds-per-minute. (30) While performing comparably with the HK416, XM8, and Mk16 in all other respects, the M4 carbines used in the test experienced a large number of failure-to-feed and failure-to-extract stoppages. (31) Colt says this is because of the sub-mil-spec rate-of-fire of the test weapons.

Colt also states that ATEC's testers were unfamiliar with the M4s' 3-round burst configuration which, depending on the position of the cam, will sometimes fire 1 round or a 2-round burst before firing a 3-round burst. This unfamiliarity, said Colt, led to single rounds and 2-round bursts being counted as stoppages. With the exception of the M4s, all other weapons tested were fully automatic with no 3-round burst provision. Further, Colt points out that the test itself did not meet Mil-Spec 810F and "was not repeatable."

In response to what Colt described as "the premature media reporting" of the raw test data, Program Executive Office Soldier suggested that Colt conduct its own extreme dust test. So Colt contracted a DOD-certified testing agency, Stork East-West Technology Corporation in Jupiter, Florida, to conduct its own dust test according to mil-spec guidelines. In this test of ten M4 carbines, which was conducted under a protocol identical to that used in Extreme Dust Test 3, only 111 stoppages were reported.

Where Are the M4s from Wanat?

Though possibly the result of numerous factors, the exact causes of the weapon stoppages suffered by Wanat's defenders are still unreported and perhaps unknown. According to General Battaglini, Colt requested that the U.S. Army provide the weapons recovered from Wanat so the manufacturer could test them to determine the precise causes of reported stoppages. So far, the Army has not obliged. When asked if the weapons from Wanat were recovered and tested, no officials at Project Manager, Soldier Weapons, the U.S. Army Test and Evaluation Center, U.S. Army Forces Command, or Central Command could or would respond. If the weapons have not yet been tested, nearly two years after the battle, the precise causes of stoppages may never be known.

In January 2010, Project Manager, Soldier Weapons released a market survey outlining the Army's dual approach to both improvements of the M4 and moves being made toward a future carbine competition once the Joint Requirements Oversight Council approves the new requirement. (34) In the meantime, the Army says, "We have what we need." (35)

The references within the above article can be seen at the following URL:

http://www.usni.org/magazines/proceedings/2010-07/what-really-happened-wanat

With regard to counterinsurgency (COIN), it is important to interact with the population and win their confidence and cooperation. This is one of the reasons for the location of a Combat Outpost (COP) at Wanat. As a result of this philosophy, smaller groups of infantry may need to reside in a much closer proximity to the populated centres. Protecting and winning the allegiance (hearts and minds) of the population being the prime objective. In that respect Mirbat and Wanat have much in common. This philosophy of winning the population often limits the use of artillery and air power because of the possibility of friendly casualties, or collateral damage. This leaves the infantry much more dependent on their own organic resources. As such, it may become more common, in the future, for small groups of infantry to be required to defend outposts against numerically superior forces, with limited recourse to heavier weapons. At Wanat the enemy were able to get close to the COP thereby limiting the effectiveness of support. Similar tactics have been seen at:

http://www.longwarjournal.org/threat-matrix/archives/2013/04/taliban_overrun_afghan_nationa.php

http://en.wikipedia.org/wiki/Battle_of_Kamdesh

Links between Ia Drang and Wanat.

Adhesion Warfare.

This can be equated to; 'grasping your enemy by the belt buckle.' By forcing a close quarters engagement the effect of artillery and air power is diminished, or negated.

This Thesis Paper draws together a common thread linking the Korean War, Vietnam War and Afghanistan. These wars have been characterised by the ability of the opposing forces to contrive, to their advantage, a close quarters engagement.

Year	1950	1965	1993	2008
Adhesion Warfare	Korea	Vietnam	Somalia	Afghanistan
Place	Chosin Reservoir	Ia Drang	Mogadishu	Wanat

The big question is… are we equipped to address type of warfare?

ADHESION WARFARE: US ARMY COMBAT FORCES FACE AN ENEMY WHO IS CAPABLE OF NEGATING THEIR DOCTRINAL STAND-OFF FIREPOWER ADVANTAGE IN AFGHANISTAN, WITH DEADLY CONSEQUENCES. A thesis for the degree MASTER OF MILITARY ART AND SCIENCE General Studies by: DIRK D. RINGGENBERG, MAJ, US ARMY, B.A., 2000 Columbus State University, Columbus, Georgia.

Extract; pp.75 *The Global War on Terrorism has demonstrated a lack of mental and physical preparation for close combat, deficient equipment (such as the M4 rifle) and a dissipating of core infantry close combat oriented skills……. The individual soldier has lost the edge in defeating adhesion warfare tactics.*

http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA502167