Taking Tora Bora

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Introduction

After September 11th, President Bush famously revealed his Wild West bravado, stating that Osama bin Laden was "Wanted: Dead or Alive". This rhetoric implies bringing the entire might of the US military crashing down on this one man's head; the swift sword of justice slashing through the mountains of Afghanistan into his cave. However, the truth is both less glamorous and less heroic.

In retrospect, it is clear the bin Laden was in Tora Bora around the time that US and Afghan forces attacked. It is also clear that he escaped across the Spin Ghar mountains into Pakistan. These facts were not clear, but certainly probable at the time. How did the United States miss this opportunity for justice and retribution? Could troops have captured Osama bin Laden at Tora Bora? What force would have been required to block escape routes to Pakistan, capture or kill bin Laden, and destroy the cave complex?

This paper will attempt to answer these questions by first documenting the background of the conflict, how the war plan was shaped by the theory of transformation, and the forces and arms available to both sides. While it is immediately obvious that the US enjoys an overwhelming technological advantage in this conflict, numerous intangibles fall to Al Qaeda. With these raw numbers, I will piece together the force required to attack Tora Bora with the three pronged strategy of bombing, infantry assault, and the manual clearing of caves. Had it occurred, this would have been the most difficult mission of the war, although doubtlessly the most important. And while President Bush now says that "terror is bigger than one man," no one would begrudge American forces planting bin Laden's head on a stick. While there would have been casualties, they would likely have been accepted by planners and the public as a heroic sacrifice, and a fitting tribute to the victims of 9/11.

Political and Military Background

The United States, despite a legal ban on assassination, has attempted "single man operations" several times in the last two decades, seldom successfully. Decapitation strikes against Saddam Hussein in the Persian Gulf War and the uneasy peace that followed did not hit their target. The attempted capture of Farrah Aidid in Somalia ended in disaster when two Black Hawk helicopters were shot down and 19 soldiers and hundreds of Somalis were killed in the ensuing extraction of the survivors. The capture of Manuel Noriega in Panama appears to have been successful only because he chose to hide in the Vatican embassy, which was easily surrounded and blasted with rock music. Unfortunately, real military operations is not like the television show 24, where special forces can enter a country unseen, swiftly overtake the bumbling defenses, and capture the enemy leader to face justice in an American court. In the real world, a single bad guy is often impossible to find, let alone capture or kill.

The Bush Administration inherited and champions the idea of a "Revolution in Military Affairs", later dubbed transformation by General Eric Shinseki. Instead of relying on infantry, we would radically revamp our forces to be "network-centric," light, and fast. Overwhelming air power and precision guided munitions would replace tanks and divisions. Defense Secretary Rumsfeld is an ardent supporter of this plan, and Afghanistan provided a first test to prove that a major conflict could be won the new way. The war plan was set up to maximize "jointness" and take advantage of overwhelming American technology. Most of the war was fought with Special Forces and airpower. The absurd image of operatives on horseback painting targets with lasers was referenced in Pentagon briefings and reported with glee in the media.

This fast and light plan came at a cost, however. It does take troops to take and hold territory, no matter how advanced the army. The Green Beret's preferred method is to develop a relationship with local forces, arming them and performing joint training before they actually fight. Due to the fast buildup to war, there was not enough time for this method, and indigenous forces had to be used without the customary "getting to know you" period. This lead to the liberal distribution of millions of dollars handed out literally in briefcases, and voilà, we soon had an alliance. Unfortunately, some of our new allies were not quite up to the job. While the Northern Alliance was relatively competent, a Pushtun militia run by Hazret Ali was not. Ali's was one of three forces sent to assault Tora Bora, backed by B2 strikes and a few A-Teams, with Pakistani forces providing a blocking force near the border. Here, fighting in difficult terrain and against a hardened and dug in enemy, the unconventional warfare strategy failed.

While the Pushtun warlords we turned into instant allies were not sufficiently capable of fighting in the mountain terrain, at least they could operate in the political environment. The Pakistani forces requested to block the border were not exactly welcome in the area known as Pushtunistan. This lawless region is controlled by tribesmen who resent Pakistani control. Even if Pakistani forces were free to operate in the area, their commitment to the cause is uncertain. Inter-Services Intelligence Agency (ISI) allowed al Qaeda training camps in Pakistan to further their fight for Kashmir, and many arab fighters appeared there after fleeing from Tora Bora.¹

Among officials familiar with the battle "Tora Bora represented a failure... and CENT-COM was to blame for not using conventional forces." This paper will examine what a conventional attack on Tora Bora would require, and its odds of a successful capture of bin Laden.

¹ Smucker, Philip. Al Qaeda's Great Escape. Brassey's: Dulles, VA. 2004. p 33,209.

Capabilities and Assets

Almost as soon as the towers fell, and while Ground Zero and the Pentagon still smoldered, American forces were sent toward Afghanistan. Al-Qaeda forces also began dispersing, perhaps even before the attacks took place. The leader of the Northern Alliance, Ahmad Shah Massoud, was assassinated on September 9th, 2001, probably to deny the US a charismatic ally in the inevitable retribution. Both forces scrambled to array their forces in a war which progressed quickly once it started on November 24th. However, the majority of actions were against Taliban, not Al-Qaeda forces, and it was not until the last days of the war that Americans got anywhere near bin Laden.

United States

American forces fought fast and light, relying upon Afghan allies in order to minimize their footprint, and avoid sparking a resistance such as the one the Soviets encountered. Drawing a simplistic lesson from nuanced history, senior figures in the Bush administration passed down that we did not want to "make the same mistakes as the Russians, we don't want to look like an invading force." ² This ignores the fact that the Soviets were actually an invading force, trying to impose a new government and social system on the people, and there is a difference between their full force of 120,000 troops and the maximum US presence of two light divisions, or 30,000 troops. The fractured history lesson lead to an "arbitrary cap on the number of US personnel that [Commander Tommy] Franks would allow on Afghan soil at any one time.

Significant institutional knowledge on Afghanistan existed prior to the start of the war, but incredibly, little of it was utilized in the planning.

² Naylor, Sean. Not a Good Day to Die. Berkley Books, New York. 2005. p18

"The US Government had experts on both the fundamental facts and the esoterica of Afghan society, history and tribalism; on the country's demography and topography... Yet almost no checking seems to have been done. Indeed, so uneducated was the... Afghan strategy that began to be implemented on October 7 2001 that it was almost as if the task of advising policy makers and planning covert action had been left to African and Latin American experts... The strategy Bob Woodward describes in *Bush at War* as the Tenet Plan was used because... it made sense to the US mind, not because it had drawn on the US government's vast repository of Afghan knowledge."³

While conventional forces were deployed, they were relegated to base defense. Special

Forces ran the invasion with the help of Afghan allies. Table 1 summarizes American forces near

Group	Number	Readiness	Position	
10 th Mountain Division	300	base security	Bagram AFB	
87 th Battalion, 10th Mountain Division	700	lightly equipped, mobile, base security	Uzbekistan	
101st Airborne Division	600	base security	Pakistan	
5 th Special Forces Group	204 (17 A-Teams)	active	throughout Afghanistan	
British SAS	110	active	Tora Bora	
15 th and 26 th Marine Expedi- tionary Unit	1,000	base security	Camp Rhino, 60mi SW of Khandahar	

Tora Bora estimated as of December, 2001.

Table 1: Available Ground Forces ⁴

Had the US committed significant ground forces at Tora Bora, they may not have been up to the job. The conventional ground forces were being used for base security, defending airfields so the Air Force could do the dirty work. While stuck at bases in valleys, regular troops did not

³ Scheuer, Michael (anonymous). *Imperial Hubris*. Brassey's, Washington. 2004. p29.

⁴ Smucker. p34,82-84.

[&]quot;Operation Enduring Freedom - Deployments." GlobalSecurity.org. 2005. http://www.globalsecurity.org/military/ops/enduring-freedom_deploy.htm

O'Hanlon, Michael. "A Flawed Masterpiece." Foreign Affairs. May/June 2002. p47

have access to rifle ranges, or any opportunity for training or acclimatization to the high altitude where the fighting in the east was taking place.

Despite the name, the 10th Mountain Division does not actively train for mountain combat, and was not prepared for the altitude and ruggedness of the terrain at Sharikot, or Tora Bora had they been deployed. The division is based in Syracuse, New York, and trains only individuals not whole platoons, at bases in mountainous terrain in Colorado or Vermont. Even then, the maximum altitude of the school in Jericho, Vermont is only 4,393 feet, a far cry from the 8,000 to 13,000 feet experienced at Anaconda, and the almost 15,000 feet possible at Tora Bora.

During Operation Anaconda, many troops who were shuttled to altitude by helicopter had to "sit down for a half-hour and rest before they could move in the thin air." ⁵ Forces were fighting with a full load, including enough gear to stay warm at night, weighing at least 80 lbs. One Sergeant from the 187th Regiment recounted that it took his team 8 hours to move 5 km.⁶ This is a sad reflection on the readiness and capability of American troops, and a significant decline from the 10th Mountain's glory days in World War Two, when they scaled a massive ridge and defeated a superior German force at Riva Ridge.⁷

Some suspect that the very name of the 10th Mountain Division only includes the designation 'mountain' to appease Former Senator Bob Dole, a veteran of the division in World War Two, and a continuous funding source during his tenure.⁸

⁵ Manyon, Julian. "We Don't Do Mountains." ITV News. <u>http://www.geocities.com/equipmentshop/realmountaindivision.htm</u>

⁶ Stalhut, Gary. "Anaconda: Absolute Success or Wake-up Call?" DefenseWatch. Soldiers for the Truth. http://www.sftt.org

⁷ Imbrie, John. "Chronology of the Tenth Mountain Division in World War Two." National Association for the 10th Mountain Division, Inc. June 2004.

⁸ Vest, Jason. "Mountain Division: Why the US Can't Match the British at High Altitudes." *The American Prospect Online*. 21 March 2002. internet <u>http://www.prospect.org/webfeatures/2002/03/vest-j-03-21.html</u>

America's newfound allies were not as dedicated to the task as it had hoped. Smucker recounts the tale of a warlord holding an impromptu press conference standing on top of a decrepit Soviet tank while rounds whipped by, more interested in media coverage than winning the battle. Naylor complains of Afghan troops leaving the battlefield for evening tea, and not returning until after having breakfast. Some troops literally arrived at the battlefield on donkeys, while their leaders drove in Range Rovers. Generals Hazret Ali and Zaman Shareef disagreed bitterly over the strategy for the assault on Tora Bora, and each played America for as much money as possible. "Both men wanted to be as nice as possible to Uncle Sam without pissing off their local constituencies. If that meant betraying them both – with no one getting hurt by what they didn't know – schmoozing with the Green Berets in the short run was worth it to guarantee that they would still be king of the hill when the fighting was all over." ⁹

Group	Number	Position
Hazret Ali	1000	Wazirutan River Valley, East
Zaman Ghun Shareef	1000	Wazirutan River Valley, West
Haji Zahir	700	Tangikhula
Pakistani	4,000	Afghan-Pakistan Border, not fully in place until December 10 th

Table 2: Allied Troops 10

Massive firepower is at the disposal of the US Air Force, particularly in the form of the AC-130 gunships and the F15-E Strike Eagles. Dropping ordnance would not be a problem. However, there are limitations for troop placement. The 101st Airborne would not be able to use its preferred Blackhawks for insertions, having to rely instead on the dual rotor Chinooks with

⁹ Smucker. p43.

¹⁰ Smucker, 2004. p.121

their higher altitude ceiling.

Group	Aircraft	Number	Base
160th SOAC "Nightstalkers"	MH-60 Blackhawk	12	USS Kitty Hawk Battle Group
	MH-47 Chinook	6	
	MH-53 Pave Low	several	
28 th Air Expeditionary Wing	B-1	8	Diego Garcia
	B-52	10	
376 th Air Expeditionary Wing	F-15E	6	Kyrgystan
	F-18	6	
	A-10	6	
	Mirage 2000	6	
16th Special Operations Wing	AC-130	6	Oman
	AC-130	3	Uzbekistan

Table 3: Available Air Forces¹¹

Taliban/Al-Qaeda

Determining TAQ force number and strengths was difficult for the US military, and accurate numbers are almost impossible for civilians to acquire. I relied on journalist and historical accounts for troop numbers, weapons, and tactics. While some of this information is outdated, and some possibly exaggerated, the following tables represent the best numbers available.

Туре	Number	Range	Location
"anti-aircraft shells"	"tens of thousands"		Garhikil
Stinger	200-300	1-8km, 8,000 m ceiling	known AQ
	at least 4 captured		Tora Bora
Blowpipe	?	500-3500m	?
SA-7 Strela-2	?	5,500 m, 2,000 m ceiling	?

Table 4: Available Air Defense Systems¹²

Because no authoritative declassified report on TAQ air defenses exists, the Soviet experience at similar cave complexes, such as Zawhar Kili in 1985 is instructive. It was a large, well defended base 80 km south of Tora Bora, and today is a popular destination to instruct so-called "war tourists" on Al-Qaeda's advanced construction of caves. It has nearly 500 meters of tunnels and contained a "hotel, a mosque, arms depots and repair shops... [and] a gasoline generator even provided power."¹³

¹² Smucker, Philip. "Al Qaeda's Mule Trail to Pakistan." *Christian Science Monitor*. December 12, 2001. <u>http://www.christiansciencemonitor.com/2001/1220/p1s2-wosc.html</u> O'Hanlon. 2002.

Glasser, Susan. "The Battle of Tora Bora: Secrets, Money, Mistrust." Washington Post. February 10, 2002. A1

¹³ Jalai, Ali and Grau, Lester. The Other Side of the Mountain. Foreign Military Studies Office: Leavenworth. 1995. p.317

Туре	Number	Range (m)
ZPU-1	5	8,000
ZPU-2	4	1,400
D30 122mm Howitzer	1	4,600-17,400
BM-12 MRL	some	5,000-20,000

Table 5: Air Defenses at Zhawar Killi 14

Despite the impressive construction and firepower inside, Zahawar Kili did not have an effective air defense against helicopter gunships or strafing and bombing by high performance aircraft. Their British Blowpipe shoulder-fired missiles were totally ineffective. Jalai and Grau relate a story of one Pakistani captain who fired 13 at a helicopter without a single hit. This may have been due to countermeasures employed by the Soviets, or the age and decrepitude of the weapon.

The design of TAQ air defense during the Soviet conflict was complex and multilayered. Spotting stations began 5 to 15 kilometers out from a base, with anti-air guns beginning at 4 to 6 kilometers. Guns and missiles were concentrated on high ridges, to catch helicopters who flew near valley floors. Crews displayed remarkable bravery, often replacing fallen gunners immediately. ¹⁵

It seems Tora Bora did not have a similarly equipped air defense system, or if one existed, it was not battle tested, as the US did not employ helicopters close to the ground during its siege. In any case, the Stinger can be defeated by modern American electronic countermeasures, and can only easily be aimed during daylight, not during the night operations at which the US

¹⁴ Jalai and Grau, p.318.

¹⁵ Gusinov, Timothy. "Spetsnaz Experience in Afghanistan." *Combined Arms Center Military Review*. March-April 2002. <u>http://www.leavenworth.army.mil/milrev/English/MarApr02/alamanac.htm</u>

excels and prefers. However, Stingers were tremendously effective against Soviet forces, and were credited with 270 kills and turning the tide of the war. ¹⁶

Stingers supplied by the US in the 1980s during the Soviet resistance would almost certainly be nonfunctional by the time of the American war. That model of missile "needs careful maintenance, and the chances of any still being useful fifteen years later were low." More threatening are DShK heavy machine guns, or the Chinese knockoff ZPU-1. These could "down a helicopter up to a kilometer away." These guns managed to destroy many Soviet aircraft, and were especially threatening to the lumbering Super Stallions and Chinooks the Americans used for troop transports.¹⁷

Taliban ground forces are more difficult to measure, because no order of battle exists, and their strategy usually calls for retreat and regrouping in the face of a superior foe. Al-Qaeda mastermind Dr. Ayman Al-Zawahiri documents this in his autobiography, supposedly written in a cave at Tora Bora during the assault, writing that when faced with certain military defeat, "the movement must pull out as many personnel as possible to the safety of a shelter." ¹⁸

At Tora Bora, the majority of the fighters escaped, while only the Chechen "die-hards" stayed. These foreign fighters had come to Afghanistan to learn the skills of *jihad*, and now that the infidels were attacking, were anxious to put their skills to the test and take as many Americans to the afterlife with them as possible. Tora Bora was manned with at least 700 Al-Qaeda fighters, according to estimates by ground commander Hazret Ali. Estimates by US commanders ranged as high as 2,500. Near 300 were confirmed killed, although more bodies may remain forever buried in rubble.¹⁹

¹⁶ Fichett, Joseph. "What About the Taliban's Stingers?" International Herald Tribune. September 26, 2001.

¹⁷ Naylor, p120

¹⁸ Smucker. 2004. p125

al-Zawahiri, Ayman. Knights Under the Prophet's Banner. Al-Sharq Al-Aswat: London. December 2, 2001.

¹⁹ Gallser, Susan. "Remnants of Al Qaeda Flee Toward Pakistan." Washington Post. December 17, 2001. A1

Conflict

To adequately contain TAQ forces at Tora Bora, US forces would have to place ground troops to close off possible escape routes, bomb to destroy hardened defenses, and sweep to clear the caves. Each of these would require a separate force, and I will analyze the requirements for each objective in turn. Following this accounting of forces and their task, I will determine how the job could have been done better, or at least adequately enough to catch the target.

Blocking Escape

Using a map made during the Soviet invasion, which appears to still be the most accurate of the area I was able to determine fifteen major passes along the Spin Ghar mountain range into Pakistan. (see Map 2) These are only the ones that were easily identifiable to a person whose topographic reading skills are solely derived from recreational hiking, not someone intimately familiar with the terrain. The Spin Ghar, while not as high as the Hindu Kush or the Himalaya, are extremely rugged and steep, nearing 40° on the upper slopes.²⁰ Skilled mountaineers with local knowledge could likely improvise more escape routes.

I used journalist accounts of the early December 2001 battle to map troop advance routes, and the largest passes directly out of the cave complexes. (see Map 3) The yellow circles indicate areas of US bombardment, and so give a rough idea of TAQ locations. Given the possible numbers of cave entrances, perhaps 50 over the total area of 12.5 square kilometers, one could figure out the number of bombs required to completely destroy the complex. This is probably not instructive, as ground forces must be committed to aim precision weapons, and there are too many assumptions present in the layered calculations for the numbers to be worth anything.

²⁰ Lee, Kent ed. Terrain Analysis of Afghanistan. Eastview Cartographic, Minneapolis. 2003. p197.

Robin Moore postulates that it would have been impossible for Al-Qaeda forces to cross the 13,000 ft ridge in the dead of winter²¹, but this is clearly false given that hundreds of men did exactly that. Naylor's excellent history of Operation Anaconda relates the story of a tantalizing intelligence lead:

American surveillance planes spotted scores of intense heat sources – interpreted as campfires – in the snowy heights. There were no settlements at that altitude. The perception at CFLCC (Coalition Forces Land Component Command) was that these fires were keeping enemy fighters warm as they made their as they made their way to Pakistan. The generals in Kuwait recommended bombing the positions as soon as possible. But Franks and his staff did not see it like that. "They might be shepherds" was Central Command's attitude, according to two officers who sat in on video-teleconferences in which the matter was discussed. At CFLCC that theory didn't wash. The idea that scores of shepherds were tending their flocks in drifting snow at 10,000 feet in the middle of winter was implausible. But the higher headquarters prevailed and refused to target the hotspots because no one could prove that they were enemy campfires. Whoever set the fires – Al Qaeda fighters or a midwinter gathering of shepherds – survived to make a safe passage across the border. ²²

A winter passage over the Spin Ghar would not be easy, but was certainly possible, as the tale of the midwinter shepherds indicates. It is unclear if bin Laden himself took this route, or went down the valley and around the mountains to reach Pakistan. Col. Mullholland, commander of the 5th Special Forces Group, postulates that "he went straight South," in the direction of Paracinar, Pakistan. A deal with Ghilzi tribesman reveals that Al-Qaeda forces traded 400 Kalash-nikov rifles for bin Laden's safe passage to Paracinar, "when the time was right."²³

Interviews with a "financial supporter of the sheik [bin Laden]" who claimed to have been in the same cave as him at Tora Bora gave a breakdown of Al-Qaeda forces on December 11th, 2001 by nationality that sums to 780. His account also suggests that bin Laden escaped "just over a week to ten days [before December 12] and headed to Pakistan, where he was helped

²¹ Moore, Robin. The Hunt for Bin Laden. Ballantine: New York. 2003. p298

²² Naylor. p20

²³ Smucker. 2004. p117,124

across the border by tribesmen", but planned to "remain within several hundred miles of Tora Bora" because he had a "taken a strong interest in the outcome of the battle." ²⁴

Pakistani forces were requested to secure the border, capturing perhaps 300 Al-Qaeda members, allowing nearly 1000 to escape. Some of America's mujahideen allies accepted bribes to allow Al Qaeda fighters to escape,²⁵ and it would not be surprising if Pakistani forces were also susceptible. In all, Pakistan deployed 4,000 troops to the border, but they were not well enough equipped to prevent TAQ forces from outflanking them.²⁶ General Tommy Franks claims that Pakistani troops provided "significant help – as many as 100,000 sealed the border and rounded up hundreds of Qaeda and Taliban fighters."²⁷However, this number is almost certainly generous, as this opinion piece was written at the height of the election to rebut Senator John Kerry's claims that President Bush "outsourced" the War on Terror. Without a doubt, Pakistani forces were deployed in a critical task for which American troops were better trained, better equipped, and better suited.

It is clear that bin Laden did get away, as US intelligence sources indicate. Questioning of an enemy combatant at Guantanamo Bay reveals that he personally "assisted in the escape of bin Laden from Tora Bora."²⁸The question is, with a little foresight, ground troops, and the guts to act on our intelligence, could we have stopped him?

²⁴ Ibid. p120

²⁵ Naylor. p21

²⁶ O'Hanlon. 2002.

²⁷ Franks, Tommy. "War of Words." New York Times. October 19, 2004. A2.

²⁸ Combatant Status Review Board. March, 2005. <u>http://www.defenselink.mil/pubs/foi/detainees/csrt_mar05.pdf</u>

Aerial Bombardment

The geology around Tora Bora is metamorphic gneiss and schist, and the caves were drilled with hard rock mining techniques and reinforced with concrete and steel.²⁹ An overpressure of 45 psi is sufficient to destroy reinforced concrete structures or collapse tunnels.³⁰

For conventional weapons, the lethal radius for a given yield and overpressure can be approximated by assuming half the bomb weight as the equivalent yield in kilograms of TNT. A scaling factor is needed to adjust for the difference between air density at Tora Bora's altitude of 7,000 ft and sea level. These assumptions lead to the following equation.³¹

$$\Delta p = 808 p_0 \frac{1 + \frac{r_{sc}^2}{4.5}^2}{\sqrt{\left(1 + \left(\frac{r_{sc}}{0.048}\right)^2\right)\left(1 + \left(\frac{r_{sc}}{0.32}\right)^2\right)\left(1 + \left(\frac{r_{sc}}{1.35}\right)^2\right)}}$$
 where $\mathbf{r}_{sc} = r_{\text{lethal}} \left(\frac{\rho}{\rho_0} \frac{1}{Y}\right)^{\frac{1}{3}}$

For thermobaric weapons, the blast must be close enough to the entrance for the aerosol fuel to enter the tunnel, containing the pressure wave inside. The lethal radius is assumed to be twice the typical entry size of the tunnel.

Comparing four types of weapons suitable for use against this type of hardened target, adjusting for different delivery aircraft lead to table six.

²⁹ Schindler, J. Stephen. "Afghanistan: Geology in a Troubled Land." *Geotimes*. February 2002. <u>http://www.geotimes.org/feb02/feature_afghan.html</u> Tomlinson, Chris. AP. 12/11/01.

³⁰ Yong, Qiu. "Preliminary Study on the Threat of Precision Strike Conventional Weapons to Nuclear Weapons." International Network of Engineers and Scientists Against Proliferation. Bulletin 17. August, 1999. <u>http://www.inesap.org/bulletin17/bul17art17.htm</u>

Weapon	Туре	Weight (lbs)	CEP (m)	R _{lethal} (m)	P _{hit}	Delivery Aircraft	Bomb Loads for P _{kill} = 95%
GBU-28 E/B	Conventional Depleted Uranium Ground Penetrator	4,700	8	6.6	44%	F-15E	1.5, 6 weapons
BLU-118/B	Thermobaric	1,975	3	2	26.5%	F-15E	.78, 10 weapons
BLU-82	Conventional	15,000	32	9.8	19%	C-130	.5, 15 weapons
B61-11 NGB	Ground Penetrating Nuclear ~.4 kT yield	1,200	150	37	15%	B-2A	.42, 19 weapons

Table 6: Hardened Target Weapons ³²

To destroy a hardened cave with a minimum of sorties, accurate weapons are needed. The GBU-28 achieves it minimum CEP only when guided to the target by a laser. This can be pointed by Special Forces on the ground, or by the pilot if he can distinguish the target from the surroundings. It can be extraordinarily difficult to identify a small cave opening from a mountainous background, especially when it is hidden by an overhang. Ground intelligence will almost certainly be needed to target accurately.

Gen. Montgomery Meigs, commander of U.S. Army Europe, has argued: "It takes a ground force to make the precision weapons more effective. ... One of the lessons for me is that – dealing in large areas of territory with complex terrain – [if] you want the precision weapons to be most effective, use your ground forces to force [the enemy] out of their holes." ³³

The purpose of the above chart is not to calculate exact weapon loads for an assault, but rather the type of weapon most applicable and the external circumstances necessary to achieve its

³² GlobalSecurity.org. "Smart Weapons." <u>http://globalsecurity.org/military/systems/munitions/smart.htm</u> Johnston, Robert. "Strategic Nuclear Forces of the World." March 6, 2005. <u>http://www.johnstonsarchive.net/nuclear/wrip164-04.html</u>

³³ Roosevelt, Ann. "Ground Forces Help Make Precision Weapons Precise: General." *Defense Week Daily Update.* April 9, 2002.

accuracy. It is unlikely that the US would drop 19 low yield nuclear weapons to destroy a single cave opening, particularly when these are unguided. Currently, a guided low yield nuclear weapon does not yet exist, although a guided Robust Nuclear Earth Penetrator is under development.

Thermobaric weapons excel at killing inhabitants of caves and other enclosed spaces, and were used to great effect for this purpose by the Russians at Grozny in 2000. By igniting aerosol fuels, the weapon sucks out all available oxygen. The pressure wave enters the cave, magnified by narrow passages, and is able to travel around corners. The BLU-118 was first used in combat on March 3, 2002, during Operation Anaconda³⁴, and so would not necessarily be available for combat at Tora Bora. However, it is uniquely suited to cave clearing, and development might have been accelerated for earlier deployment.

Mountain Assault

Napoleon's maxim for mountain warfare was: "Where a goat can pass, a man can pass; where a man, a battalion; where a battalion, an army."³⁵ While great advances have been made in warfare since his day, his insight into the permeability of mountains is still true.

The Soviet experience during the assault of Zhawar Kili is helpful in determining a baseline number of troops required to surround and clear a mountain stronghold. To defeat 700-800 mujahideen with air defenses required an initial force of 54 under strength battalions, eventually exceeding 6,600 men. It took 57 days of campaigning, and the Soviet and allied Afghan forces held the cave complex for only five hours. They blasted some entrances, but retreated before executing an effective demolition, because enemy reinforcements were coming and they did not

³⁴ Bahamanyar, Mir. Afghanistan Cave Complexes 1979-2004. Osprey Publishing: Oxford. 2004. p23.

³⁵ Engels, Frederick. "Mountain Warfare in the Past and Present." New-York Daily Tribune, January 27, 1857.

want to be trapped and forced to fight their way out of the cave complex. Mujahideen casualties were 281 killed and 363 wounded. Soviet casualties are unknown because they evacuated their forces and did not release a detailed after action report. Mujahideen did down 24 helicopters and two jets. ³⁶

Given the Soviet difficulty in capturing and destroying well defended cave complexes such as Zhawar Kili, it is surprising that the US relied on Afghan allied forces for the assault of Tora Bora. If the known tactic of the enemy is to withdraw when fighting a superior force, why would the US not close easily identifiable mountain passes into Pakistan?

US Forces seemed to learn the lessons of Tora Bora when they fought at Sharikot in Operation Anaconda. At least 1,000 troops were deployed from both the 101st Airborne and the 10th Mountain. Instead of a front assault, like at Tora Bora, the Anaconda plan called for the classic hammer and anvil pattern, with US troops instead of nominal allies doing the hard work on the ground. The plan also explicitly included the knowledge that high value targets (HVTs) might try to flee while lower level fighters occupied the American troops.³⁷

The change of tactic and the large ground presence is an implicit admission of failure at Tora Bora. Had these lessons been learned beforehand, by adequate consultation with knowledgeable sources, less interservice rivalry, and a little common sense, bin Laden might have been apprehended when he was pinned down.

Cave Clearing

US tactics for clearing a tunnel are well defined, and require special "tunnel exploitation and denial teams" to practice this dangerous and difficult skill. Men fight using the buddy sys-

³⁶ Grau, Lester and Jalali, Ali Ahmed. "The Campaign for the Caves: The Battles for Zhawar in the Soviet-Afghan War." *Journal of Slavic Studies*. Volume 14, September 2001. Number 3. <u>http://fmso.leavenworth.army.mil/fmsopubs/issues/zhawar.htm</u>

³⁷ Naylor. p121.

tem, and use small caliber weapons to avoid causing a collapse or eardrum damage. Numerous false tunnels, trapdoors, and booby traps have been encountered in similar situations during Vietnam and by the Soviets in Afghanistan. However, the intelligence value of the material or personnel inside tunnels can justify the risk.³⁸ Soviet forces used *shmel* thermobaric weapons in their tunnel operations, to great success.

Projecting casualties for a typical tunnel clearing operation is difficult. US casualties in clearing the Chu Chi tunnels in Vietnam were higher than acceptable, and so an attempt was made to destroy them by aerial bombardment. It seems likely that US forces would attempt to clear tunnels at Tora Bora with chemical agents, rather than risk sending men in armed only with a knife, pistol and flashlight, as was a common experience in Vietnam. ³⁹

Analysis

O'Hanlon's *Foreign Affairs* article estimates that "to close off the 100 to 150 escape routes along the 25-mile stretch of the Afghan-Pakistani border closest to Tora Bora would have required perhaps, 1,000 to 3,000 American troops." In an email with the author, O'Hanlon described his method. "[it] suggests having at least a platoon deployed all the time near major passes or groups of minor ones. Thinking about it that way, you get perhaps 20 passes times 50 people per platoon (ballpark) times 3 platoons in the rotation base for every one deployed at a given moment."⁴⁰ This is a good first order estimate, but a more detailed analysis is possible.

³⁸ Center for Army Lessons Learned. "Operation Enduring Freedom: Tactics, Techniques and Procedures." Handbook 02-8. <u>http://www.globalsecurity.org/military/report/call/call_02-8_toc.htm</u>

³⁹ Tingey, Martin. "Tunnel Rats." Internet. <u>http://www.diddybop.demon.co.uk/tunnel1.htm</u>

⁴⁰ O'Hanlon, Michael. interview. 11 April 2005.

Choosing an escape route from Tora Bora over the mountains is limited by transportation range. A fully laden mule in difficult terrain can traverse 10 miles (16 km) in a day.⁴¹ Map two shows 14 major passes within a one day mule ride of the US airstrikes on Tora Bora. A battalion can defend 8,000 yards (7.3 km) when supported with fixed gun strong points. Patrols require a platoon, and are useless when performed alone. ⁴² To fully defend the 42 km stretch of the border within a one day mule ride from Tora Bora would require 6 battalions, or 6,000 soldiers. This number is a high estimate because it treats the border as linear, and not a set of passes to be defended, but in the absence of good information on how many troops it takes to seal a pass, it is adequate.⁴³ Dealing with casualties at altitude is also incredibly resource intensive, because helicopters often cannot directly land due to fire or altitude. The Soviet experience in Afghanistan indicates that "13 to 15 men might be involved in carrying one patient."⁴⁴

Inserting a force of this size is easier said than done. Basing agreements with Uzbekistan and Pakistan allowed US forces to defend airbases, but not to be flown into Afghanistan to participate in ground combat. Firm political pressure could likely have overcome this obstacle, as these agreements were forged quickly and with the false assumption that ground troops would not be needed.⁴⁵ Transport aircraft were available to move forces from their bases to Bagram or closer to Tora Bora, but the transition to altitude typically takes ten days, far more time than would be budgeted for a rapid reaction force.

⁴¹ National Park Service. "Grand Canyon National Park Visitor Information." Department of the Interior. 06 January 2005. internet. <u>http://www.nps.gov/grca/grandcanyon/faq.htm</u>

⁴² Grau, Lester Col. and Vazquez, Hernan Col. "Ground Combat at High Altitude." *Military Review*. January-February 2002. p27.

⁴³ I attempted to glean this information from the Public Affairs Office of the 10th Mountain Division, but they were not willing to discuss specifics. Even casually mentioning the name of Barry Posen did not help.

⁴⁴ Grau and Vazquez. p31.

⁴⁵ Smucker. p34

Casualty estimates are notoriously inaccurate, but extrapolating from the Soviet experience at Zhawar Kili and the American Operation Anaconda yields some insights. Most deaths at Anaconda were due to a helicopter landing in a "hot LZ", an incredible intelligence and strategic failure. Had this not occurred, the casualty ratio for Anaconda would have been 34 in approximately 1200,⁴⁶ higher than expected, but still remarkably low. The Soviet rate at Zhawar Kili was "hundreds of casualties"⁴⁷ in 6,600 men, significantly higher than the American rate. This may be due to a more difficult fight at Zhawar Kili than a Sharikot, although it was at a lower altitude. The Al Qaeda presence at Sharikot was estimated at 250, versus significantly higher numbers and a professionally prepared air defense at Zhawar Kili. Many of the Soviet casualties at Zhawar Kili were due to downed transport helicopters, a fate the Americans tried desperately to avoid at Anaconda. One particularly threatening DShK antiair gun was destroyed by the incredible bravery of several Special Forces.

Extrapolating the Soviet casualty rate to a similar force size involved at Tora Bora paints a grim picture. The US military and public are unaccustomed to losing hundreds of men in an operation, even to catch our highest priority target. This estimate is high, but not unduly so. The lack of adequate preparation for high altitude warfare, the impossibility of accurate bombing without ground forces, and the difficulty of clearing caves all contribute to a difficult operation. Assuming that the US committed itself to catching bin Laden at Tora Bora instead of relying upon allies for the ground fight, a large number of American troops would die. However, one must remember the harsh truth that professional soldiers are paid to die. A death in the capture of bin Laden would surely be more acceptable to leaders and the public than one while defending a rear airbase.

⁴⁶ Smucker, p191.

⁴⁷ Davis, Anthony. "Targeting bin Laden." AsiaWeek. 4 September 1998. internet. <u>http://www.asiaweek.com/asiaweek/98/0904/nat_2_afghan.html</u>

American doctrine lead to over reliance on air power in the assault on Tora Bora and Anaconda. "From heights of several thousand feet, the fresh bombing runs served mostly to suppress al Qaeda fire, not eliminate the enemy."⁴⁸ To destroy some all visible cave openings would require 25-75 full plane loads of various ordnance and accurate targeting information from the ground. This was not a battle that could be won with air power alone.

For close range mountain warfare, artillery may be more useful. "Enemies are... becoming more adept at rapid movement when detected, but artillery, when it is within range, is generally able to put explosives on a target faster than aircraft." ⁴⁹ While deploying artillery in rugged terrain would be difficult, it would have responded significantly faster to requests for support, and would have been able to cover a greater area than the 120 mm mortars that the troops carried and relied upon. ⁵⁰ Mortar does excel at hitting reverse slope positions, but is limited by range.⁵¹

Mountain warfare mitigates many of the American technological advantages and pushes the conflict toward a fair fight. A return to basics, realistic training, and appropriate tools would greatly increase the effectiveness of American ground forces in Afghanistan and other possible high altitude conflict areas.

⁴⁸ Smucker. p173.

⁴⁹ Corbin, Marcus. "Honing the Sword." Center for Defense Information: Washington. 2003. p. 89

⁵⁰ Cordesman, Anthony. The Lessons of Afghanistan. Center for Strategic and International Studies: Washington. 2002. p.68

⁵¹ Grau and Vazquez. p31.

Conclusion

Tora Bora was a significant defeat for American forces. Both operationally and strategically, we were beaten by al Qaeda. Some tactics were adjusted for Anaconda, but there is clearly still more to be learned, much of which was knowable before action. Had American ground forces been used to seal the border and assault the caves, a force on the order of 6,000 troops would have been required, with possible casualties in the hundreds. Hundreds of precision guided munitions would be needed. It would have been the largest and most difficult fight of the Afghan war, but it would have been worth it to destroy al Qaeda instead of dispersing it.

In the author's opinion, it is clear that the failure to commit ground forces was due to a desire to pursue a "transformed" plan. While this approach worked for the toppling of the Taliban, it did not work to actually kill or capture high level al Qaeda leadership. That failure "underlined the consequences of CENTCOM's bias against committing the conventional forces required to destroy the remaining al Qaeda elements. There was a constant disconnect between mission and assets allowed to be available to to that mission." ⁵² The blame for this disconnect falls on the shoulders of "senior civilian leaders anxious to produce a quick result when more military planning and better timing could have produced a better one." ⁵³

For an administration ready to roll with brash rhetoric, the failure to actually commit adequate forces is unsettling. While John Kerry was accused of politicizing the issue, the blame for the escape of bin Laden is indeed the President's to bear. Had he ordered an actual assault, the cost would have been high but not insurmountable. For a man truly committed to getting bin Laden "dead or alive," the price would not have been too high to pay.

⁵² Naylor. p21.

⁵³ Smucker, p202.

Maps



Map 1: Afghanistan 54



Map 2: Closeup of Afghan-Pakistan Border 55

[▼]Major Pass on Border

⁵⁴ Digital Chart of the World. Pennsylvania State University. internet. <u>http://www.maproom.psu.edu/dcw/</u>

⁵⁵ Kent. p196, 198, 232, 235. scanned and assembled digitally



Map 3: Closeup of Tora Bora 56

Area of US Airstrike

⁵⁶ Topography from Soviet General Staff map I-42-XVII 1985 <u>http://www.lib.utexas.edu/maps/afghanistan.html</u> Troop movement and Aerial Bombardment from Lertola, Joe. "Cornered." *Time Magazine*. 24 December 2001. <u>http://www.joelertola.com/grfx/chrt_tora.html</u>