

THE CONTINUING PROBLEM OF UNEXPLODED ORDINANCE ALONG THE HO CHI
MINH TRAIL IN LAOS: A CASE STUDY OF BOUALAPHA DISTRICT, KHAMMOUANE
PROVINCE, LAO PDR

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จุฬาลงกรณ์มหาวิทยาลัย

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ปัญหาที่ยังคงอยู่ของกับริเบเปิดที่ยังไม่ได้เก็บกู้ตามเส้นทางโฮจิมินห์ในลาว กรณีศึกษาเมืองบัวละ
พา แขวงคำม่วน สาธารณรัฐประชาธิปไตยประชาชนลาว



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ABSTRACT IN THAI

ปัญหาที่ยังคงอยู่ของกับระเบิดที่ยังไม่ได้เก็บกู้ตามเส้นทางโฮจิมินห์ในลาว กรณีศึกษา อ.บัวระพา
จังหวัดคำม่วน สปป ลาว

บทคัดย่อภาษาไทย

วิทยานิพนธ์ฉบับนี้ศึกษาปัญหาของกับระเบิดที่ยังไม่ได้เก็บกู้ตามเส้นทางโฮจิมินห์ในเขต
ตะวันออกเฉียงใต้ของ สปป ลาว และเสนอทางออกในการแก้ปัญหาการเก็บกู้ระเบิดเหล่านั้น ในการค้นหา
คำตอบ ผู้วิจัยศึกษาประวัติศาสตร์ของการทิ้งระเบิดตามเส้นทางโฮจิมินห์ในช่วงสงครามเวียดนาม การศึกษา
ค้นพบว่า สปป ลาว เป็นประเทศที่ถูกทิ้งระเบิดมากที่สุดประเทศหนึ่งในโลกด้วยระเบิดจำนวนสองล้านตัน
ในช่วงปี 1964-1973 และระเบิดประมาณร้อยละ 30 ยังไม่ได้ทำงาน และยังคงเป็นอันตรายสำหรับผู้คนใน
ประเทศ

วิทยานิพนธ์ฉบับนี้เน้นการศึกษาของอำเภอบัวระพา แขวงคำม่วน จากช่องแคบมุซา ซึ่ง
เป็นรอยเชื่อมของเส้นทางโฮจิมินห์ระหว่างประเทศเวียดนามและ สปป ลาว และห่างออกไปทางด้านทิศใต้อีก
ประมาณ 60 กิโลเมตร ไปยังพื้นที่ของเจ็ดหมู่บ้านที่เคยใช้เป็นเส้นทางโฮจิมินห์ ประวัติศาสตร์ของการทิ้งระเบิด
นั้นเพิ่งเกิดขึ้นได้ไม่นานนัก ปี 1973 เป็นปีสุดท้ายที่มีการทิ้งระเบิด และกับระเบิดเหล่านั้นได้สร้างปัญหา
อะไรบางอย่างเป็นหัวใจสำคัญของการศึกษาวิจัยในวิทยานิพนธ์ฉบับนี้ หากแต่ประเด็นเกี่ยวกับการรับมือกับปัญหา
ของผู้คนในพื้นที่ที่สามารถเกิดระเบิดขึ้นได้ตลอดเวลา ความสูญเสียที่ประมาณการได้ และวิถีชีวิตของพวกเขา
เป็นประเด็นที่สำคัญเช่นกัน ในการนี้ ต้องอาศัยการค้นคว้าและการวิจัยเชิงคุณภาพในการสัมภาษณ์และสังเกต
วิถีชีวิตของประชาชนที่อาศัยในอำเภอบัวระพาซึ่งเป็นกรณีศึกษาของวิทยานิพนธ์ฉบับนี้ ผู้วิจัยให้ความสำคัญ
การการวิจัยเอกสารเช่นเดียวกับการสัมภาษณ์ ผลของการศึกษาวิจัยค้นพบว่า การเก็บกู้กับระเบิดใน สปป
ลาว สามารถจัดการให้ดีกว่าที่เป็นอยู่ได้ แต่ปัญหาสำคัญคือการพิจารณาถึงวิธีการจัดการซึ่งต้องใช้เวลาและ
งบประมาณจำนวนมากในการเก็บกู้กับระเบิดเหล่านั้น

สาขาวิชา เอเชียตะวันออกเฉียงใต้ศึกษา

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ลายมือชื่อนิสิต

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MICHAEL SCOTT ELMORE: THE CONTINUING PROBLEM OF UNEXPLODED
ORDINANCE ALONG THE HO CHI MINH TRAIL IN LAOS: A CASE STUDY OF
BOUALAPHA DISTRICT, KHAMMOUANE PROVINCE, LAO PDR. ADVISOR:
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ABSTRACT IN ENGLISH

The aim of this thesis is to study what problems unexploded ordinance (UXO) still pose along the old Ho Chi Minh Trail (HCMT) in southeastern Laos and what can be done to address the clean up of those unexploded bombs. In looking for answers to those questions first this thesis researches the history of the bombing of the HCMT during the Vietnam War. The study finds Laos is the most bombed country on earth with more than 2 million tons of explosives dropped between 1964 and 1973. It also finds that an estimated 30 percent of those bombs did not exploded and they continue to pose a danger for the people of the country.

This thesis focuses on Boualapha district in Khammouane province starting at Mu Gia Pass where the HCMT first crossed from Vietnam into Laos, and a further 60 kilometers south through seven villages along what used to be the trail. The history of the bombing and more recent history since 1973 after the last bomb was dropped and how the remaining bombs continue to cause problems are important parts of the research. However, how the current population deals with living in territory that can explode and what the cost, as best can be figured, of that way of life are also important. That took the most research and required a qualitative research method talking with numerous people in Boualapha district and also observing people in that region where the research is focused. Books and documents proved important as well as interviews. The study finds that there is much more that can and should be done to clean up the UXO in Laos. The key is considering what can be done and how much time and treasure would be required to clean of the mess.

Field of Study: Southeast Asian Studies Student's Signature

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Also thanks to Chulalongkorn University's Southeast Asian Studies program for offering the Masters course and mostly to my advisor Montira Rato who offered valuable and specific recommendations including that I focus on one section of the Ho Chi Minh Trail as a case study. My other course work in the program also proved valuable in writing this thesis.

Thanking the people of Boualapha district is also important because many of them provided valuable information and some opened their homes to me during my research. My deepest hope from this thesis is that it in some way increases the speed of cleaning up the unexploded ordinance remaining in Laos. The people of Boualapha and how they treated me only makes me want that to happen even more.

For any weaknesses in this thesis I take full responsibility.

Michael Scott Elmore

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LIST OF ABBREVIATIONS



ARVN	Army of the Republic of Viet Nam
ASEAN	Association of Southeast Asian Nations
Blu	bomb live unit
COPE	Cooperative Orthotic and Prosthetic Enterprise
DMZ	Demilitarized Zone
FAC	Forward Air Controller
HCMT	Ho Chi Minh Trail
MAG	Mine Advisory Group
NRA	National Regulatory Authority
UNDP	United Nations Development Program
UXO	Unexploded Ordinance
UXO Lao	Lao National UXO Program
VPA	Vietnam People's Arm

CHAPTER 1 INTRODUCTION

1.1 Background and Rationale

The Ho Chi Minh Trail played a pivotal role in Vietnam's struggle against America and its history is a lesson in perseverance and never giving up. It also teaches us strength does not always win out in that America dropped more than 2 million tons of bombs on Laos and most of that on the HCMT and still the material and personnel continued to travel from north to south where it was used in the eventual defeat of the mighty United States. The HCMT is a history worth telling, but its present is just, perhaps more, fascinating and important. The legacy of the bombing lives on in the destruction that unexploded bombs continue to do to Laos.

I have been a journalist 30 years and written stories in more than 20 countries. Never have I found such a clear-cut issue that cries out for help on such a large scale as UXO in Laos. And never has the party that should pay for it been more clear either. With most stories I have researched and written over the decades I have walked away after publication. UXO in Laos is different. I see this thesis not as an ending, but as the beginning of an issue I will continue to cover for the rest of my life.

1.2 Literature Review

This literature review is divided into three sections: first the origin of the Ho Chi Minh Trail in Laos, second the American campaign to destroy that trail, and third the legacy and efforts

to clean up the remaining bombs along the old HCMT in Laos.

A review of previous work relevant to this study resulted in many books, papers, news features and documentaries that mention the issue but do not focus on it. There are extensive writings in English about the Vietnam War and all overviews of the war at least touch on the HCMT because of its importance. Few, however, say much about Laos and the trail there other than the bombing campaign and the significance of the trail to win the war. The issue of unexploded ordinance (UXO) is mentioned but not explored in detail with the exception of some news features of a few hundred words and short television news reports that are informative but offer minimal depth. Some journalists have done some good work, for sure, but space limitations mean they have to keep them short. Both Roger Arnold in his *Marie Claire* “Laos’ Female Bomb Squad” published in August 2008 and Dominic Faulder in his *Irrawaddy* “Laos: The Most Bombed Country on Earth” published in their August-September 2001 issue give good insight into the issue.

Well into my research I found Karen J. Coates and Jerry Redfern’s *Eternal Harvest The Legacy of American Bombs in Laos* that was published in 2013. It covers much of what I am researching and writing about and is a good source, or it would have been, if it had been published a year earlier. I found a few good sources in the book to chase up, but many of the sources Coates quotes are people and organizations I had also found on my own. For that reason it was a confidence booster as much as a source because we found many of the same people and had come to many of the same conclusions.

It should be noted my research included very little Vietnamese language writing, although, I did read a few translated books and papers and found the novels the most revealing. As John Prados points out the “People’s Army historians prefer to write of The Trail in heroic terms, and Vietnam has not published much in the way of realistic accounts of life in the Truong Son Command. Vietnamese have turned to fiction and poetry to recount the trials of The Trail.” [Prados 1999: 194]

1.2.1 Building the Ho Chi Minh Trail

There are extensive writings in English about the Vietnam War that also deal with the importance of the HCMT. Peter MacDonald in *Giap, The Victor in Vietnam* [1993] gives a detailed background of the trail he writes that Vo Nguyen Giap first instructed built in 1959. The trail was used by human portage until 1964 when it was expanded so trucks could carry goods and soldiers south. In one sentence he sums up how important the trail was.

“Strategically, the Battle of the Trail was the only one in the Vietnam war that really mattered. It was also the only one that never ceased.” [MacDonald, 1993: 253], and he offers many details to back that statement including the following: “... it was developed year after year until eventually there were three north-south laterals and seven major offshoots, plus many minor linking roads – in total nearly twenty thousand kilometers of route, along which was a network of repair workshops, stores depots, hospitals, staging and rest camps.” [MacDonald, 1993: 249]

MacDonald focuses on Giap and might inflate his importance a little because of that, for example he implies Giap alone ordered the HCMT built, but all other sources say the Hanoi leadership ordered it built. And although he backs up with documents what he writes, the book appears to aim to put Giap in a favorable light, although the information about the HCMT is well documented and believable.

Virginia Morris and Clive A. Hills in *A History of the Ho Chi Minh Trail, The Road To Freedom* [2006] tell us some of the original history of the team that built the trail and Ho Chi Minh, Giap and the Central Committee of the Vietnamese Communist Party that ordered it be built.

“In 1959 the unit responsible was referred to as the Special Military Action Group, a

name that was then shortened to the 559th Transport Group – or just 559 – the figures referring to the date, the 5th month in the 59th year, in which it was formed.” [Morris and Hills, 2006: 4]

Every good book about the war gives at least a brief history of the HCMT, but some offer deeper insight into what life was like on the trail. Wilfred Burchett in *Vietnam, Inside Story of the Guerilla War* [1965] tells what life was like for the guerillas from his experience traveling with them in the south and it is credible and believable, but he falters when it comes to the HCMT, which he never refers to by name, by arguing the fight was homegrown and supported with people and supplies coming from the south including the following passage.

“It is obvious that on the question of arms supply, even if it were possible to transport weapons in sufficient quantities, no military commander could ever base operations on supplies carried on human backs over a supply line of well over 600 miles (965 kilometers)¹) of jungle and steep mountain trails, leading across the formidable Annamite Chain.” [Burchett, 1965: 228]

But they did carry material down the trail and Burchett, who was sympathetic to their cause, probably did not want the public and certainly not the U.S. government to know back in the mid-60s, how important that trail was.

Still others focus more of the US bombing campaign examined in section two. There are many well-researched and detailed books about the bombing.

1.2.2 Bombing the Ho Chi Minh Trail

Two excellent histories of American involvement in Vietnam are given by Stanley Karnow in *Vietnam A History* [1983] and Neil Sheehan in *A Bright Shining Lie, John Paul Vann and America in Vietnam* [1989].

¹ The 600 miles refers to the original trail that terminated in the Central Highlands of what was then South Vietnam. Later it was extended to near Saigon, present day Ho Chi Minh City.

Sheehan, in the book he has said took him 17 years to write, convincingly argues the U.S. should have known the bombing would fail as it did in similar efforts in World War II and the Korean War.

“For the better part of two years during World War II the American and British air forces vainly sought to stop supplies and reinforcements from reaching the German army in Italy through just a few mountain passes. Operation Strangle in Korea, a more ambitious effort to interdict a stream of troops and supplies moving along roads and railways, was a fiasco.” [Sheehan, 1989: 676]

He writes more bombs did not help either and sending South Vietnamese troops into Laos in 1971 to cut the trail was another disaster with more than 3,000 Saigon troops killed before retreating from the country under U.S. air support.

Also very telling is the story of Heinie Aderholt as told by Warren A. Trest in *Air Command One* [2000] that recounts much of America’s efforts to stop the flow of arms and personnel down the trail from the general in charge of stopping it. Aderholt was often on the outs with commanding officers because they did not like his tactics, and often his blunt style. “Colonel (later general) Aderholt was one of the Air Force’s most outspoken critics of the U.S. buildup in Southeast Asia. He advocated minimal U.S. involvement.” [Trest, 2000: 153]

He preferred using small spotter planes but most people wanted to use the more glamorous jets that Aderholt said were too fast to spot trucks on the HCMT. He also fought against using B52 airstrikes.

“Aderholt disagreed that massive B-52 strikes were an effective weapon against the trail. They rained bombs on the trail and the surrounding jungle floor, but either the trucks by passed the craters, or coolie battalions had the roads repaired before the huge bombers got back to home base” [Trest, 2000: 209]. He preferred the gunships and asked for more of them sooner, and later voiced the opinion the war might have ended differently if they had gotten them.

Traveling part of the old Ho Chi Minh Trail in Laos with Aderholt and some of the former soldiers who had been under his command during the war on a visit to Laos in March 2003 on a route that included Boualapha district was very informative. Later interviews with him on the phone a couple times before his death at 90 on May 20, 2010, were also an education.

Books, however, are the backbone of the historical part of my research, but some in depth documentaries have also proven themselves useful. In “The Secret War in Laos Documentary Film: Laotian Civil War and U.S. Government Involvement” first screened in November 1969, President Richard Nixon is quoted as saying: “The great bulk of the men and supplies of the war in (South) Vietnam are infiltrated.”
(<http://www.youtube.com/watch?v=R0t1AZXRogU>)

Interdiction of the HCMT was a top priority for America in Laos because of that flow of men and arms. “Spilling North Vietnamese blood on the trail would save American blood in South Vietnam,” newsman Bernard Kalb is quoted saying in the documentary.
(<http://www.youtube.com/watch?v=R0t1AZXRogU>)

It also shows why America felt they must get involved in the struggle.

“The security of all of Southeast Asia will be endangered if Laos loses neutral independence. Its own safety runs with the safety of us all in real neutrality observed by all. I want to make it clear the American people and all the world that all we want in Laos is peace not war.” President John F. Kennedy is quoted as saying in a video from March 23, 1961.
(<http://www.youtube.com/watch?v=R0t1AZXRogU>)

The bombing is well documented and the fact that many of the bombs, as many as a third, and even half, by some estimates, did not explode and continue to damage the country is undeniable.

1.2.3 Legacy of the Ho Chi Minh Trail in Laos

There are newscasts and news feature stories after the war's end in April 1975, but most of those concern America looking for the bodies of airman and soldiers missing in Laos.

International NGOs that deal with UXO such as Handicap International and Mines Advisory Group (MAG) are better sources and the ones that news organizations and books most often quote.

One news feature about America trying to find soldiers who went missing during the war in Laos is a February 21, 2000 article I wrote for *U.S. News & World Report* titled "The Hunt for Those Missing Gets Harder", which was one of 11 missions the U.S. made that year costing a total \$20 million looking for those still missing in Laos, Vietnam and Cambodia. The article focuses on how difficult and expensive it was to find the remaining soldiers and airmen still missing and some calls to stop the search due to cost. But another more important fact for my thesis is the difficulty in getting permission to search from the government of Laos. If the United States does get more involved in cleaning up the unexploded ordinance they need to know how to deal with the Lao government. And America promised they would clean up.

Edwin Pettit in *The Experts* [1975] collects 450 pages of quotes about Vietnam from ancient times up to 1973 in a book he told me in 1995 "proves there are no experts about the Vietnam War". His exhaustive research finds an official record that shows the United States promised to help clean up the wreckage that was a result of the war. Pettit records what America promised in Paris on January 27, 1973 in the agreement to end the war and signed by Secretary of State William P. Rogers. "Agreement on Ending the War and Restoring Peace in Vietnam

"CHAPTER VIII - THE RELATIONSHIP BETWEEN THE UNITED STATES AND THE DEMOCRATIC REPUBLIC OF VIETNAM

"Article 21: ... The United States will contribute to healing the wounds of war and do postwar

reconstruction of the Democratic Republic of Vietnam and throughout Indochina.” [Pettit, 1975: 431]

That “postwar reconstruction ... throughout Indochina” clearly demonstrates American responsibility in helping Laos clear the UXO – the biggest problem remaining from the war – in the impoverished country.

Handicap International in their Laos Portfolio completed in May 2013 state: “Boualapha district (in Khammouane province), reputed to be the most UXO saturated district in the country. Route 12 runs down from the Vietnamese border through these districts. During the Vietnam War, it formed the upper reaches of the Ho Chi Minh Trail.” Handicap International in 1997 did an audit of UXO and one thing they found was of the 18 provinces in Laos, only three had no “significant” UXO problem, Handicap International. 1997. *Living with UXO*. The Mines Advisory Group (MAG) is another good source for raw information and perhaps sums it up best in the following statement.

“Lao PDR is the most bombed country in the world per capita. More than two million tons of ordinance was dropped on the country during the Second Indochina War. Up to 30 per cent of some types of ordinance did not detonate.” [Statistics from the Mines Advisory Group (MAG), www.maginternational.org]

And more telling to my thesis, “Since 1974 more than 20,000 people have been killed or injured by bombs or other unexploded ordnance. ... There have been approximately 300 new casualties annually over the last decade. Over the last decade 40 per cent of total casualties were children.” [Statistics from the Mines Advisory Group (MAG), www.maginternational.org]

1.2.4 Conclusion

So, the review of previous studies of the HCMT reveals considerable earlier research on the building of the trail and attempts to slow or stop the flow of equipment and personnel down the trail during the war. A considerable amount has been written about the history, including some concerning the destruction and aftermath. From my research, though, I have found very little has been published concerning the continuing dilemma of the UXO remaining in Laos. My goal was to address that issue and research the continuing problem of unexploded ordinance along the old Ho Chi Minh Trail in Laos focusing on Boualapha district in Khammouane province bordering Vietnam.

My literature review found a shortage on fieldwork about how the local population deal with the UXO and what they think could be done about the problem. There are many statistics that will be useful in the thesis, but that shortage of on-the-ground research to show the human dilemma would be well served by more research. For example, for the locals has living with the UXO danger become part of “life as usual” and accepted as normal. For all children and young adults UXO have been there their entire lives. On trips to Laos in 2013 and early 2014 I have found that UXO have become part of the geography for the generations who were born after the bombing stopped and that is a majority of the population because most Laotians were born after 1973 when the bombing stopped. Many live in fear of the bombs as old forest societies might fear tigers and not venture too far from the village.

Part of my research is examining how much having that land locked up by UXO is costing Laos. If the bombs were cleared more land would open up for cultivation of crops and tourism.

Laos also lives in the shadows of both Vietnam and Cambodia. It was called the Secret War in Laos and the continued UXO state is also a secret to many. It should not be that way.

1.3 Objectives

The aims of this study include:

1.3.1 To study the continuing impact of the Vietnam War and the Ho Chi Minh Trail on Boualapha district, one of the most bombed places on earth. That includes examining the actual damage the bombing caused and how much of the UXO have been cleaned up since the last bombs were dropped.

1.3.2 To investigate how Lao PDR is coping with the UXO remaining in the country more than 40 years after the last bomb was dropped.

1.3.3 To analyze how one district is dealing with the cost and challenges of living with UXO and to consider what can be done to improve the situation including assessing what it would take to clean up the remaining ordinance.

1.4 Research Questions

1.4.1 For the people living in the areas of the former HCMT; how does the continuing existence of unexploded ordinance impact their daily lives? This question will be addressed in a case study of a specific area, a village or two, in Boualapha district.

1.4.2 For both the government and non-government organizations dealing with the clean up of UXO; how big of a problem are the remaining UXO and what measures can be taken to clean up the problem, and how long and how costly will that be?

1.5 Keywords

Ho Chi Minh Trail, Vietnam War, Laos, bombing, unexploded ordinance, United States.

1.6 Hypothesis and Major Arguments

That the UXO remaining along the old Ho Chi Minh Trail in Laos can be and should be cleaned up and the necessary funds should be made available. Examples of how this has been done in parts of Laos are cited. That by clearing the UXO the livelihoods of the people, and the regional economies, will noticeably improve. Here the example of how some areas, be them villages or whole districts, were changed by having the UXO cleared will be useful in supporting the argument that clearing the remaining UXO would be a good measure proven by on the ground experience. That clearing 100 percent of the bombs from an area can prove virtually impossible due to some are buried so deep or are so remote the cost would be exorbitant and UXO clearing is not a perfect science. With that being the case this thesis argues that even once a clean up is completed the local population, and visitors to that area, must be informed of the possible dangers and that this would best be done by a trained local population. Even 70 years after World War II bombs from that global conflict are discovered from time to time and there are bomb disposal units that know how to handle the situation from crowd control to safely dispose of the bomb itself in countries effected. Laos should have the same type of trained experts in every province and district to deal with the UXO and the Lao government should initiate a plan to train the locals. And finally that the United States for making and dropping the bombs should shoulder the brunt of the cost.

1.7 Methodology

This study employs the qualitative research method including fieldwork interviewing people directly effected by the continuing problem of UXO. The study focuses on villages in Boualapha district and individuals there and how they deal with the situation. Some interviews were done in groups to enable people in the villages to rely on each other for more in depth information and in part because they often wanted others present. Both formal and informal interviews were used but mostly informal when I just rode my bike or walked up to people and started talking with them. Villages were visited at least twice and sometimes more with interviews conducted with some people on several occasions giving them the opportunity to get to know me and feel more open to talk. That helped the flow of information immensely. The research also included observing people and how they live.

Further research was interviews with organizations that directly deal with UXO; both government and non-government. And finally, it includes sources of the historical record of the UXO including the how and why they got there.

1.8 Significance and Usefulness of Research

The study works to provide a better understanding of what the people of Laos along the old HCMT continue to deal with while living with UXO. The focus was on Boualapha district but the situation in other UXO-saturated areas is very similar so findings in my area of research can be applied to other areas.

The study provides first-hand on-the-ground research of the continuing problem and how UXO continue to kill and injure and slow the country's growth.

The findings are policy relevant for individuals and parties interested in improving the

situation of UXO on the ground in Laos.

1.9 Limitations

There were some limitations due to constraints on time and the difficulty of travel in the region of the old HCMT. I walked, traveled by bicycle, rented motor scooters and on public transport that was almost non-existent off the main roads and the old trail area only travelable via four-wheeled drive vehicle, dirt bikes, by bicycle or on foot. Traveling by bicycle proved the most effective in part because locals seemed more willing to talk to someone who had made the effort to visit their village on one. Language and my limited spoken Lao also presented some challenges. Lao is the official language of Laos and the language of the land, so to speak, so spoken between most people including various ethnic groups but it is the second language for many. Lao is similar enough to Thai that in Boualapha district I found many people could converse with me in Thai but many conversations were limited because of that as well. And many I could not talk with at all because they spoke a different dialect, spoke only Vietnamese or I suspect in some cases acted like they could not understand me because they did not want to talk with a foreign stranger so quickly in their area: even one riding a bicycle.

CHAPTER 2 HISTORY OF THE HO CHI MINH TRAIL

2.1 The Beginning

The Central Committee of the Vietnamese Communist Party ordered the Ho Chi Minh Trail built in May 1959 and formed the Special Military Action Group to build it. [Morris and Hills, 2006: 4] The name Ho Chi Minh Trail, in Vietnamese Duong Mon Ho Chi Minh, is what Americans called it and is now the common term for what the North Vietnamese originally named the Truong Son Strategic Supply Route for the Annamite Chain where it was originally built in central Vietnam. Arguably the idea for the trail was born soon after the partition of Vietnam with the Geneva Agreements on July 21, 1954 when the country was split into North Vietnam and South Vietnam. Although those Geneva Agreements saw that partition as temporary and it was not meant as a border separating two countries that is what it became.

As France pulled out of Vietnam in the mid-1950s after having reestablished its colonial holdings with Japan's defeat in World War Two in 1945, the United States involvement with South Vietnam grew while North Vietnam strengthened relations with the Soviet Union and Communist block. So the political divide was deep between the North and South and the 17th Parallel became a couple-kilometer wide Demilitarized Zone (DMZ) stretching a little more than 100 kilometers from the South China Sea on the east to the Vietnamese border with Lao near the small village Lao Bao on the west.

Soon after the partition Ngo Dinh Diem was elected South Vietnam's first president in 1955 and a struggle quickly started against his American-back government. The Republic of

Vietnam was most often referred to as South Vietnam and that is how I refer to it in this thesis. For many years the North Vietnamese and guerillas in the south tried to deny the southerners were getting supplies, personnel or help of any kind from the north. Australian journalist Wilfred Burchett traveled with the Viet Cong as they were called [Burchett, 1965: 228] and wrote about their situation.

Burchett gave voice to their argument that the fight was homegrown and supported with people and supplies coming from the south. He wrote that most of the Viet Cong got their weapons from the South Vietnamese Army that they were fighting, which was officially known as the Army of the Republic of Viet Nam (ARVN), after firefights and sometimes from sympathetic soldiers or bought them from ARVN soldiers. The Communist Viet Cong also made many improvised weapons so they did not need to be supplied with weapons, Burchett wrote, so he argued they did not need help.

“It is obvious that on the question of arms supply, even if it were possible to transport weapons in sufficient quantities, no military commander could ever base operations on supplies carried on human backs over a supply line of well over 600 miles 1) (965 kilometers) of jungle and steep mountain trails, leading across the formidable Annamite Chain.” [Burchett, 1965: 228]

Burchett’s point that they manufactured often crude weapons in hidden jungle factories and captured and bought many more from South Vietnamese troops has been confirmed by former Viet Cong and has been well documented, but it is also true the Ho Chi Minh Trail was already playing a role by the very early 1960s and even before 1959 weapons and supplies filtered south by other means including in boats along Vietnam’s long coastline. [Sheehan, 1989: 313] Those other means were no longer sufficient by the late 50s and the trail was ordered built.

“In 1959 the unit responsible was referred to as the Special Military Action Group, a name that was then shortened to the 559th Transport Group – or just 559 – the figures referring to the date, the 5th month in the 59th year, in which it was formed.” Colonel Vo Bam was made the first commander of the trail. [Morris and Hills, 2006: 4]

The trail started as small simple foot trails that followed age-old ethnic minority routes through the mountains, but grew in importance and size from a series of paths to dirt roads then paved roads, pipelines and bridged river crossings in North Vietnam, Laos, Cambodia and into South Vietnam. It was used by human portage until 1964 when it was expanded so trucks could carry goods and soldiers south. [MacDonald, 1993: 249] Eventually the HCMT became critical to win the war.

“Strategically, the Battle of the Trail was the only one in the Vietnam War that really mattered. It was also the only one that never ceased.” [MacDonald, 1993: 253] The nature and purpose of the trail never changed from getting personnel and material from the north to the south, but the manner it was used and its size and location was continually being changed to fool the Americans and their efforts to bomb it.

“It was developed year after year until eventually there were three north-south laterals and seven major offshoots, plus many minor linking roads – in total nearly twenty thousand kilometers of route, along which was a network of repair workshops, stores depots, hospitals, staging and rest camps.” [MacDonald, 1993: 249]

The need for the trail, or a trail of some sort, and expanding it into Laos is well described by Bao Ninh in his 1991 novel *The Sorrow of War* that shows the need for moving men and material down a more protected route than the rails, roads and boats in Vietnam itself. The author was a veteran of what the Vietnamese call The War Against America (Chien Tranh Chong My) in the Glorious 27th Youth Brigade and his novel is based on real events, although it is fictionalized. His novel tells the story of Kien and he writes they traveled south between bombing raids.

“When President Johnson halted his bombing from time to time the army would seize the opportunity and ship soldiers south.” [Bao Ninh, 1991: 148] But sometimes they got caught, such as a troop train south that Kien was supposed to be on but had missed, that was bombed by B52s “giving them a nasty welcome to the war” and the survivors dispersed some continuing

by road and others by boat in the South China Sea, but “the B52s struck again, sinking all of the sea transports.” [Bao Ninh, 1991: 153]

Bao Ninh does not specifically mention the Ho Chi Minh Trail but his stories of traveling south show how dangerous it was to travel by other means and that there was therefore a need for the trail. And his character Kien does spend time in Laos and gets malaria there. “... he had been struck down my malaria in a march across Laos.” [Bao Ninh, 1991: 128]

William Shawcross argues the trail was needed because shipping supplies and soldiers down the coast was impossible so they shifted to the HCMT in Laos, then in 1966 moved some shipments from ports in Cambodia as he states in his book about Cambodia in the following.

“The American coastal blockade of Vietnam forced the Communists to find new supply routes. At first they began to make more use of the Ho Chi Minh Trail down through Laos, into northeastern Cambodia and so in Vietnam. Then, in 1966 Chou En-lai personally asked Sihanouk to allow supplies to be brought into the port of Sihanoukville.” [Shawcross, 1986: 64] And from that Cambodian port city they were transported into South Vietnam.

2.2 The Bombing Starts

The bombing started about 50 years before the writing of this thesis. Even before the bombing started the United States saw early on the need to stop that flow of material and soldiers down the trail. President John F. Kennedy had a “program of action” that included what on May 8, 1961 he said was to; “infiltrate teams under light civilian cover to southeast Laos to locate and attack Vietnamese Communist bases and lines of communications.” [Pettit, 1975: 107]

So some of the trail was already in Laos in the early 1960s although originally it was entirely in Vietnam.

The trail itself was actually a series of paths and roads sometimes covering an area 60 kilometers wide with some material stored in caves even further into Laos. One cave near Mahaxai, 40 kilometers east of the Mekong River and Thailand and nearly 100 kilometers west of Vietnam, was used to store material being moved down the HCMT. And like many caves along the route of the HCMT people moved into the cave for protection from the bombs.

“Tam (cave) Phanang is one such cave which can be visited today. Just south of Mahaxai it was home to some 2,000 people from 1971 to the end of the war.” [Morris, 2006: 29] The numerous trails over such a wide area made the bombing campaign nearly an impossible task. And the caves were virtually impossible to penetrate.

American President Lyndon Baines Johnson approved the bombing of North Vietnam in late 1964 and bombing commenced under Operation Barrel Roll on December 14, 1964 that included the first systematic bombing of the trail in Laos. The bombing campaign was expanded starting in March 1965 as part of Operation Rolling Thunder. But, arguably the bombing was misdirected overkill from the start.

“Giap offers a scathing general indictment of American tactics in the air war: ‘There were far too many targets, and so they dispersed their efforts. They used planes worth millions to attack a bamboo pontoon bridge!’.” [MacDonald, 1993: 316]

But stopping the flow of weapons, personnel and other material from reaching the south was vital for American efforts to help South Vietnam win the war so the bombing intensified and the option of sending American ground troops into Laos to block the HCMT was explored but never put into action.

The bombing, however, continued in Laos including when it was decreased in North Vietnam.

“When Lyndon Johnson decided to cut back on bombing of North Vietnam in November 1968, the Joint Chiefs reluctantly agreed after Secretary of Defense Clark Clifford assured them

that the strikes could be redirected against Laos. The statistics help tell the story. In 1968, 172,000 sorties were flown against North Vietnam and 136,000 against Laos. In 1969 the bombing halt reduced sorties against the North to 37,000 – the attacks in Laos rose to 242,000.” [Shawcross, 1986: 93]

The U.S. was in 1966 already considering a major military and engineering effort on the ground across Laos near the 17th Parallel to block the HCMT although sending American troops into Laos was considered to risky because the Soviet Union and China would consider that an escalation of the conflict and could enter the war. Other electronic and later bombing efforts are well documented. But by 1967 at least Minister of Defense Robert S. McNamara saw the folly of continued bombing, but still it was not stopped.

“I do not believe that the bombing up to the present has significantly reduced, nor any bombing that I could contemplate in the future would significantly reduce, the actual flow of men and material to the south,” he told a closed meeting of government officials. [Pettit, 1975: 317] Already the United States saw the folly, as McNamara called it, but the bombing intensified even though the U.S. military knew the cost.

“Sure, some of the villages get bombed, but there’s no other way to fight a war out there, for God’s sake. It’s a war, and the civilians have to suffer. We did it at Cherbourg, didn’t we??” L. Hafner, U.S. deputy director, Agency for International Development, Laos, on January 4, 1971. [Pettit, 1975: 404]

The North Vietnamese continued to improve and expand the trail network from where it took six months to walk single file down old trails originally used by local ethnic groups to one week to drive at the end of the war in trucks that were supplied by Russia and China. The United States saw the need to cut the flow of goods, but North Vietnam was well aware their victory depended on the trail. The HCMT “was the key to Hanoi’s success. North Vietnamese victory was not determined by the battlefields, but by the trail.” Americans called it “one of the great achievements of military engineering of the 20th century.” [Paterson: TED video at

http://www.youtube.com/watch?v=poE_nNW9-yk

Students of history and conflict know all wars have battles that stand out. The storms that sank most of the Mongols invading Japan in the late 13th century and saved the islands, and also Japan defeating the Russian navy in the Russo-Japanese War in 1904-1905, the first time an Asian power defeated a European power in battle.

All wars have events that students study and become part of the history passed through the generations while lesser battles and events are filed away in the dustbin of history only viewed by scholars and the occasional curious researcher. For example World War I is remembered for the battle of the Somme²) that left more than one million British, French and German soldiers wounded or dead from July to November 1916, trench warfare and the use of poison gas. World War II in Europe is remembered for the Battle of Britain, the invasion of Normandy, concentration camps and Stalingrad among other battles. In Asia that war is remembered for Pearl Harbor the Siam-Burma “Death” Railway and the atomic bombs that ended it. The First Indochina War between Vietnam and France is known for the French defeat at Dien Bien Phu and the Vietnam War that the Vietnamese call the War Against America for the TET Offensive in 1968 and the Ho Chi Minh Trail.

² The battle of the Somme is known for the folly of generals having columns of soldiers march to their deaths against machine guns when in less than five months in 1916 more than one million British, French and German soldiers were killed. “It remains the blackest day of slaughter in the history of the British Army! On the 1st July 1916 – the first day of the Battle of the Somme – 60,000 soldiers were killed or wounded, most of these in the first two hours of the attack,” *The Trench*, 1999 written and directed by William Boyd.



Map1 The general route of the Ho Chi Minh Trail.

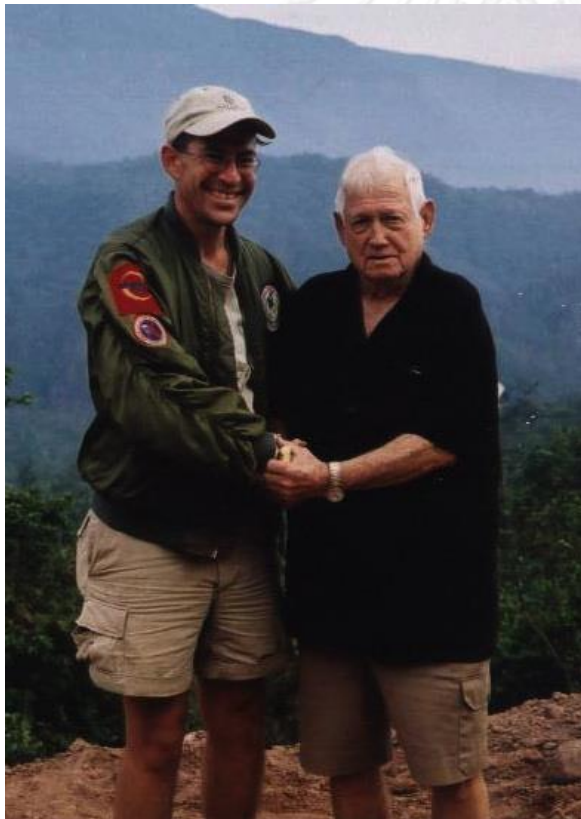
American General Heinie Aderholt knew the trail better than very few people because he was for many years in charge of American efforts to destroy, if not the trail itself, the people and material flowing down it into South Vietnam. During the second half of the 1960s Aderholt saw an escalation of bombing from attacks by pairs of fighter jets to massive carpet bombing by B-52s dropping tons of bombs at a time.

Aderholt was actually against using B52s, as told by Warren A. Trest in *Air Command One* about outspoken Aderholt who was often on the outs with commanding officers because they didn't like his tactics, and often his blunt style.

“Colonel (later general) Aderholt was one of the Air Force’s most outspoken critics of

the U.S. buildup in Southeast Asia. He advocated minimal U.S. involvement.” [Treat, 2000: 153] He preferred using small spotter planes but most people wanted to use the more glamorous jets that Aderholt said were too fast to spot trucks on the HCMT. He also fought against using B-52 airstrikes.

“Aderholt disagreed that massive B-52 strikes were an effective weapon against the trail. They rained bombs on the trail and the surrounding jungle floor, but either the trucks bypassed the craters, or coolie battalions had the roads repaired before the huge bombers got back to home base.” [Treat, 2000: 209]



American General Heinie Aderholt with Nick Ascot from North-by-Northeast Travel near Mu Gia Pass on the old Ho Chi Minh Trail in Boualapha district in March 2003. Photo by Mick Elmore

Aderholt preferred the smaller planes and then the gunships when they were introduced into the fighting in the late 1960s, and he asked for more of them sooner, and later voiced the opinion in an interview with me that the war might have ended differently if they had gotten them. But instead America increased the large-scale bombings of the HCMT in Laos, Cambodia and North and South Vietnam with much of it concentrated on Laos.

“There were more than 580,000 bombing missions on Lao PDR from 1964 to 1973 during the Vietnam War.” [Statistics from the Mines Advisory Group (MAG), www.maginternational.org]

Another American military officer who fought in Vietnam is former Chief of Staff of the U.S Air Force General Merrill McPeak and he found the tonnage dropped on Laos remarkable.

“We dropped two million tones of bombs on Laos. Something like our total tonnage during all of World War Two in both the European and Pacific theaters, most of it aimed at the trail.” [McPeak, YouTube 2012: General Merrill McPeak: In Search of the Ho Chi Minh Trail minute 5:10 reading from his book *Hangar Flying*, <https://www.youtube.com/watch?v=cirjdWSYGN4>]

He added that American efforts included other measures. “We seeded clouds to induce flooding, sprayed Agent Orange ³), mined the road. No doubt about it we extracted a heavy price.” [McPeak, YouTube 2012: General Merrill McPeak: In Search of the Ho Chi Minh Trail minute 5:20 reading from his book *Hangar Flying*, <https://www.youtube.com/watch?v=cirjdWSYGN4>]

Yet, none of those measures worked and the trail network expanded for example including building a new crossing from Vietnam into Laos north of Mu Gia Pass and Boualapha district through the mountains and then more than 30 kilometers west into Laos then south to

³ Agent Orange was a chemical defoliate the United States sprayed in jungle areas to kill the trees to deny the Viet Cong and North Vietnamese the ability to hide. Like UXO the areas sprayed with Agent Orange continue to ruin lives causing sickness and arguably deformities in newborn babies. Unlike UXO, though Agent Orange cannot be as easily found and destroyed and therefore cleaned up. The polluted areas require the soil to be cooked for long periods at high temperatures to decontaminate it and that is a huge task.

where it met up with where the trail first came across at Mu Gia Pass. As the trail expanded in Laos North Vietnam's control of the landlocked country grew as has been documented by several studies including the following.

"In southern Laos, the North Vietnamese exercised even greater dominance: they essentially annexed the panhandle of the country for their transportation and supply efforts into South Vietnam and Cambodia. As a result, more than 80 percent of U.S. losses in Laos are judged to have occurred in areas under Vietnamese control." [Castle, 1999: 195]

2.3 Lam Son and the End of the Bombing

By 1971 the United States was scaling back their involvement in the war under President Richard Nixon's "Vietnamization" strategy. For years sending U.S. troops into Laos was considered too politically risky because it would prove unpopular at home and risked the possibility of pulling China or the Soviet Union into the war. But, a joint American-South Vietnamese command decided that South Vietnam troops could do what American troops could not and invade Laos under U.S. air support near the DMZ and cut the Ho Chi Minh Trail and therefore supplies and troops to the south. The incursion named Lam Son was in February and was the only large scale cross border incursion into Laos and the HCMT and failed miserably and was a disaster that left more than 3,000 Saigon troops killed and North Vietnam still in total control of Laos and the HCMT. [Sheehan, 1989: 751]

That failure only strengthened efforts to stop the flow of arms and personnel down the HCMT with bombs, as William Shawcross states.

"The reliance of bombing increased after the catastrophic defeat of ARVN soldiers invading Laos on Operation Lam Son 719 in February 1971." [Shawcross, 1986; 217]

American bombing of the HCMT continued after the Lam Son failure, but they never

made any serious impact on slowing the flow of men and material and by 1973, the trail was no longer being needed in Laos as the North Vietnamese had built a new one in Vietnam itself in the later stages of the war after American combat troops had pulled out in 1973. [Dawson, 1977: 34]

“More than 30,000 soldiers and other youths from the north had built a road from the western demilitarized zone to within 75 miles of Saigon in a year. It was a two-lane road, mostly gravel. Alongside ran a fuel pipeline and pumping stations. The road eliminated the need to use Laotian territory to ship troops and war material south.” [Dawson, 1977: 66-67]

So two years before the end of the war the HCMT in Laos already started seeing less use, although it was far from abandoned, and the jungle started reclaiming much of the area. “Much of the Trail has since been taken back by the forest from which it came.” [Morris and Hills, 2006: xv]⁴)

⁴ The original route of the HCMT down Vietnam was developed into a road, called the Ho Chi Minh National Highway, early this century. Where in the early 1960s soldiers slowly trotted for months dodging bombs along the way today cars and trucks can zip down driving at 100 kilometers per hour. It is Vietnam’s second north-south corridor joining older coastal National Highway 1 running from Hanoi to Ho Chi Minh City. The road is meant “for national industrialization and modernization” former Prime Minister Vo Van Kiet said in 2000 when the project was launched. Population growth is one reason with the country having about 48 million people when it was reunified in April 1975 [Shawcross, 1986: 371] to some 90 million in 2013, according to World Population Statistics (<http://www.worldpopulationstatistics.com>).

Tourism is also being promoted because the road passes near many pivotal battles of Vietnam’s War with America including Khe Sanh near the old DMZ and the Ia Drang Valley where American and North Vietnamese regulars faced off in their first major battle. It also passes near what American soldiers called Hamburger Hill, Dong Ap Bia to the Vietnamese, where in May 1969 hundreds of American soldiers were killed or wounded in nearly two weeks of fighting. The road is meant to stimulate the economy in a remote and poor region of the country but not everyone thought cutting through the jungle was a good idea with the Switzerland-based World Wide Fund for Nature calling it a threat to biodiversity in Vietnam. “A tug of war between conservationists and developers has intensified on the Ho Chi Minh Trail ... a number of NGOs tried to put the brakes on the Ho Chi Minh Highway as asphalt began replacing the Ho Chi Minh Trail ... The highway, which has provoked road rage among Vietnamese and international conservationists since its planning stage, slices through ten national parks including the country’s first, Cuc Phuong, and Phong Nha-Ke Bang, declared a UNESCO World Heritage site in 2003.” [Kemf, 2013: 12]

The American bombing of the HCMT in Laos may have stopped in 1973 when U.S. troops pulled out of the war and the North was secure enough to use trails in Vietnam itself leaving the trails further away in Laos mostly unused. But up to 30 percent, and by some estimates even more, of the bombs dropped on Laos did not detonate and that remaining unexploded ordinance (UXO) is still a risk to anyone who comes in contact with them, according to the Mines Advisory Group. It is a legacy of the war. The main route of the trail passed from Vietnam into Laos at Boualapha district in Khammouane province on the Vietnam-Lao border east of Nakhon Phanom, Thailand. Boualapha is the most bombed district in the most bombed province in Laos, the most bombed country in the world per capita, according to Handicap International.

The legacy continues with more than 20,000 people killed or injured by UXO between 1974 and 2008, the Mines Advisory Group states. And casualties have continued since 2008 with news reports occasionally published about UXO “accidents”.

2.4 Conclusion chapter wrap up

Chapter 2 gives an introduction to the reason why North Vietnam built the HCMT in Laos and the efforts they went to get it built, expand it and keep it open. It also gives an overview of American and South Vietnamese efforts to stop the flow of material and personnel down that trail including the Lam Som operation in 1971, the only large-scale incursion by ARVN forces into Laos. In summary the chapter outlines the pivotal role the HCMT played in winning the war for the North. There are many aspects of the history of that trail that deserve more study. It indeed is a fascinating subject, especially for anyone interested in history. However, for the purposes of this thesis, it offers the summary of the past needed to understand the present.

Chapter 3 examines the current situation of Laos.

CHAPTER 3 LAOS IN PERSPECTIVE



3.1 Laos by the Numbers

The modern day location of Laos is as the land-locked poor neighbor in Southeast Asia. Even among the 10-member Association of Southeast Asian Nations (ASEAN) originally founded by Thailand, Indonesia, the Philippines, Singapore and Malaysia on August 8, 1967, and which Laos joined on July 23, 1997, it is one of the poorer members, the poorest according to many studies.

The United Nations has classified Laos as a “least developed country” from 1971 through 2013, according to the UN (http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf) and it is predominately agrarian with farming the most common job for its 6.46 million people, according to the World Bank (<http://data.worldbank.org/country/lao-pdr>) and many farmers are on the subsistence level.

It is also one of the world’s poorest and least developed countries rating with the poorest African nations, Myanmar and Bangladesh in per capita income, hunger and infant mortality. Even in literacy Laos lags behind its neighbors in ASEAN with the lowest percent of adults age 15 and above being able to read at 68.7 percent, according to the *UNDP Human Development Report 2005* (page 260). The next lowest is Cambodia at 73.6 percent and the remaining eight ASEAN members are all in the high 80 and 90 percentile. Lao people have the lowest life expectancy at birth in ASEAN as well, according to the report and the separate *ASEAN Statistical Yearbook 2005* (page 13).

According to the *Asia Development Bank Key Indicators 2012* (page 147) Laos also has the highest poverty rate in ASEAN with 66 percent of the population living on less than \$2 a day in 2008. Again only Cambodia is close with 53.2 percent living on less than \$2 a day in 2007.

Laos also leads ASEAN in the percentage of agriculture contributing to the country’s GDP, although that has fallen from about 43 percent in 2002 to roughly 28 percent in 2012, according to the Trading Economics website <http://www.tradingeconomics.com/laos/agriculture-value->

[added-percent-of-gdp-wb-data.html](#)

The *Bangkok Post* gives slightly different numbers, again showing how difficult getting accurate information about Laos can be.

“Agriculture accounts for around 33% of GDP and contributes to the livelihood of approximately 75% of the population, most of whom are smallholders producing rice for domestic consumption. It thus has a central role to play in the country’s development, according to Research conducted in 2012 by Economist at Large,” the *Bangkok Post Asia News* section (page 5) June 16, 2014.

The only category where Laos leads the world is in UXO where it has few rivals as the most bombed. Neighboring Cambodia and Myanmar, also known as Burma, in concentrated areas, have landmine problems similar to the UXO problems Laos has. Cambodia receives a lot of help in landmine clearing from governments and mine-clearing organizations from around the world where as Myanmar has only in recent years opened more to the outside world and the areas with landmines remain contested by various ethnic groups so little has been done on the issue of clearing them. The UXO problem is not unique to Laos; in fact it remains a problem in virtually every country where modern warfare has been fought. Laos is unique in the magnitude of the problem. It is superlative with UXO, having the most that are causing the biggest continuing problems. But it is also worth noting here that cleaning UXO is still not perfect in even wealthy⁵) industrialized countries.

⁵ On January 3, 2014 an unexploded bomb killed one and injured 13 in Euskirchen near Nuremberg 68 years after the end of World War Two, The Telegraph reported (<http://www.telegraph.co.uk/history/world-war-two/10550178/Digger-triggers-old-World-War-Two-bomb-explosion-killing-driver.html>). The accident occurred when the driver of a bulldozer struck an old World War Two bomb and it exploded. It damaged homes within 400 meters of the detonation. UXO are a continuing problem in Germany nearly seven decades after the war with nearly 2,000 found in Berlin alone since the city was cleaned up after the war. They are a “fact of daily life” a Berlin police spokesperson told CNN.

A 500-pound suspected World War II bomb found in Bangkok on April 2, was detonated and killed eight people and injured another 20 when a scrap yard took a welding torch to it for the scrap, the *Vientiane Times* reported

And since Laos is one of the world's poorest countries and can afford to do little by itself, Laos gets gifts from other countries including bridges built by Australia and other countries and buses from Japan to mention two. More importantly, countries also contribute toward UXO clearance, educating the population about the dangers of UXO and assisting victims.

Laos is changing, too, and is no longer held back to serve as a buffer between Vietnam and Thailand. It "is no longer a buffer state. Military and ideological confrontations have been replaced by economic competition." [Pholsena and Banomyong 2004: 181]

The authors see great potential for the small country, too.

"Laos could even become in the third millennium what it was five centuries ago, the center of the region, a crossroads of all the regional trading routes." [Pholsena and Banomyong 2004: 3]

3.2 Lao population

The Lao population nearly doubled from just over 3 million people when the Vietnam War ended in 1975 to just over 6.6 million in 2012, according to the website countryeconomy.com (<http://countryeconomy.com/demography/population/laos>). The birth rate has decreased but the population continues to grow in part because Laotians are living longer. Generally the current population is thought to be about 6.6 million.

The war brought great upheaval to the country.

"After 1975 around 300,000 Lao citizens – about 10 percent of the population – officially resettled abroad. Countless others simply blended into largely Lao-speaking northeastern

on April 4, 2014 (page 7) citing The Associated Press. The bomb was found at a construction site along a railway line where American bombers sometimes dropped their payloads on Japanese trains during the war.

Thailand ... By the 1973 ceasefire, most of the eastern provinces' population had been displaced." [Cummings et al., 1999: 337]

It is a young country with a median age of 21.6 years and predominately Buddhist with 67 percent saying they follow Buddhism and 1.5 percent saying they are Christian and the remaining 31.5 percent not specified, according to [www.indexmundi](http://www.indexmundi.com/laos/demographics_profile.html) (http://www.indexmundi.com/laos/demographics_profile.html) And from the same source, the average education is 10 years in school, with boys averaging 11 and girls 10.

Laos has a varied ethnic make up with more than 100 minor ethnic groups. The majority of the people are Lao at 55 percent according to the 2005 census and 11 percent Khmou and 8 percent Hmong, according to index mundi.

The majority of the ethnic groups are in the mountains with the lowlands populated with people related to the Thais.

"The lowland peoples of Laos and Thailand generally belong ethnically to the Tai group and share important cultural traits such as wet rice cooperative culture and a belief in Theravada Buddhism. The Lao and Thai languages, while different in important ways, are, nevertheless, mutually intelligible." [Fry, 2005: 128]

Savannakhet province is Lao's biggest and most populous province and Khammouane province is the next province to the north. It borders Vietnam on the east and Thailand, with the Mekong River marking the border, in the west. Thakhek is the provincial capital and the province's biggest town although the majority of the people live in small villages.

Thakhek town is mainly Lao people with a mix of people from other countries with the biggest number from Vietnam. The region's growing tourist trade also centers in Thakhek, on the Mekong River right across from Nakhom Phanom and the two are now connected by a bridge across the river 12 kilometers north of the towns. With the bridge and improved route 12 stretching 148 kilometers across the country and into Vietnam trade is increasing and the

economy growing, at least along the main route, but it is difficult to see if that growth has spread to the more remote villages and areas without more time there and further study.

Boualapha town is an exception with the economy obviously picking up there with a new dirt road built directly to Mahaxai and on into Thakhek so you know longer have to travel the 40 kilometers north to Langkang then take route 12 to Thakhek.

Boualapha town has a mix of Lao, Vietnamese and some Chinese. Boualapha district also has some ethnic groups with many in the smaller villages speaking Lao as a second language if at all. But, the ethnic groups are more prevalent in Savannakhet province and Champasak province south of there.

3.3 The Geography

Landlocked Laos is 235,000 square kilometers and borders Vietnam on its east, Cambodia on its south, Thailand on its west, Myanmar on its northwest and China on its north. The Mekong River is arguably its most important feature entering from the north and marking the border with Myanmar and much of its long border with Thailand and enters Cambodia from the far south of Laos. For comparison Laos is roughly the same size as Great Britain, but has hardly a tenth the 64 million people, according to countryeconomy.com figures.

Most of the more fertile, and agriculturally productive and therefore valuable land, lays along that Mekong River with much of the rice produced in those areas, particularly the southern panhandle running parallel and to the west of the old HCMT. The population is concentrated there, too, with other pockets in the other valleys spread through out the country, including Luang Namtha in the north that is the biggest fertile and populated valley away from the Mekong River.

More than 70 percent of the country is mountainous or high plateau in those mountains

including the Annamite Chain that runs north south along most of the border that separates the Ho Chi Minh Trail in Laos from Vietnam itself. The mountain regions are much less fertile so offer less agricultural potential and therefore ability to sustain larger populations although as research has found many people believe the mountains are fertile.

“Laos is often imagined as a frontier, rich in resources and virtually empty of people,” is a common misunderstanding. [Baird, 2012: 62] He is not alone with his observation.

“Westerners seem to have had foisted upon them, presumably by novelists and filmmakers, the myth that the Southeast Asian jungle is a tropical Eden, where exotic fruit is never beyond reach and meat is waiting for the campfire. Nothing could be more remote from bleak reality. The forests of Southeast Asia are dark and oddly barren of life. Insects and small reptiles are usually the sole inhabitants to be seen; birds and mammals are normally heard only in the distance of the matter forest ceiling or in the tangled undergrowth. For man, the jungle is a green desert.” [Williams, 1976: 9]

Although not overwhelmingly obvious, it can be seen even by the untrained eye and talking with locals that the low lying areas in the massive Mekong River flood plain growing rice is easier to grow and more profitable as seen by the many rice paddies in those areas and the people who till them. But further up in the wooded jungle area that is not always the case with rice growing less profitable it seems the further you move from the Mekong. Much of the Mekong River valley areas can grow two crops a year, too, basically doubling their annual output, where in the mountain valleys usually only one harvest a year is possible, although they do sometimes grow a second crop of something other than water-guzzling rice.

There is also the cost of transporting any rice to the market from those further places, although much of it is for local consumption so has to travel little.

The standard of living is poorer the further you travel from the river into the mountains in the panhandle evidenced by what people wear, where they live, what they drive and what they eat.

Khammouane province itself is the north part of the country's south, most often called the panhandle. It stretches from the Mekong River that marks the border with Thailand to its eastern border with Vietnam including Mu Gia Pass that marks the border between the two countries. Route 12 lays between the borders and is 148 kilometers from Thakhek to Mu Gia Pass.

Thakhek on the Mekong River right across from Thailand's Nakhon Phanom, is the provincial capital and only city in the province. The other towns number in the thousands of people and usually less than one thousand.

The Nam Thuen 2 dam and reservoir in the north of the province nearly halfway across is in addition to the Mekong River and Annamite Chain, the biggest feature in the province. The vast majority of the province is rural with small villages scattered through out that are predominately poor.

The Boualapha valley area could be an exception to a certain extent in it now produces a lot of rice that is transported and sold in Thakhek on the banks of the Mekong River. But, the standard of living in Boualapha does not match that of Thakhek or the other Mekong River towns or cities.

3.4 A New Geography

In some parts of the world people have to be wary of poisonous snakes, in others tigers or bears or other wild animals are feared and children from the time they can listen are warned to stay away from the dangerous areas and know what to look for. Earthquakes are a geographic reality in some regions and people sometimes live in fear of them, but life goes on. In much of Laos now one has to worry about UXO, the new danger in the land. The others predated man's arrival where UXO was put, or dropped there, by man in recent times.

The bombs and now UXO changed the geographic landscape and since geography dictates what mankind can do where, it changed the way people can live. Just as the geography of the mountains, jungles and rivers, dictated where North Vietnam could build the Ho Chi Minh Trail, the bombs dropped and left there now dictate where the current inhabitants can go.

But UXO is now a way of life in Laos because they have been around so long they are now just part of the landscape, in other words part of the geography. If they were to appear now for the first time it would be considered a catastrophe, but the UXO where in Laos before most of the approximately 6.5 million people who now live there were born. For the others UXO have gradually been accepted as a new reality that cannot be avoided so must be lived with.

To foreigners being introduced to the problem for the first time UXO is just too weird and at first thought absolutely unacceptable. But to locals they are a fact of life and life cannot stop because of UXO. Life must go on. What choice is there?

Geographic change is rare occurring in geologic time not human time. Volcanoes can change a region, but other forces of nature like floods and catastrophic forest fires are temporary with their effects lasting maybe years at most. The tsunami that struck Thailand, Indonesia and other Indian Ocean countries on December 26, 2004, is a good example of catastrophic geographic change, as was the tsunami that struck Japan on March 11, 2011. But, life is adjusted, infrastructure repaired and rebuilt and there is little to no long-term effect on the geography of the area affected, nuclear spills non-with-standing.

One would hope UXO in Laos will be a temporary geographic problem that will be cleaned up, but after more than 40 years it remains and only a small percentage has been removed so far.

It is enchanting to speculate what the effected area of Laos would be like if the bombs had not changed the geography. It has limited resources, but at least they would be available for

use. The financial and physical drain the UXO bring, which is very substantial by any calculation, would not have to be dealt with.

There are a lot of indirect costs with land that cannot be used, in the case of Laos because of the UXO danger.

The region of the old Ho Chi Minh Trail is not poor because of the bombing campaign and the continuing problem of UXO, but that UXO does exacerbate that poverty. And Jim Harris, a retiree from Wisconsin, U.S.A. who has been working to clear UXO for years in Laos, points out there is more to it than the economics.

“We do not do measures of the fear factor people have. People are scared to farm. People are scared to go in the forest and forage for food and medicine,” he said in an April 14, 2014 interview via computer on Face Time. There will be more from Harris later in this thesis.

As stated before, the only category where Laos leads the world is in UXO where it is in a class with few other countries. They include neighboring Cambodia with landmines causing the same problem there as UXO do in Laos. Angola in Africa has a similar problem with landmines, as does Afghanistan, according to the International Campaign to Ban Landmines’ Landmine & Cluster Munition Monitor (<http://www.the-monitor.org>) that keeps track of the situation in every country that has a problem.

Vietnam was also heavily bombed during the Vietnam War, but has done a reasonable job clearing the old bombs. Myanmar, also known as Burma, is heavily mined in its border regions where ethnic armies have struggled for more autonomy for decades.

3.5 Cost of UXO to Laos

A death in a family causes trauma no matter who it is, but when it is the main breadwinner or farmer the economics can also be life changing to the rest of the family. Injuries also cause trauma and can have dire economic consequences with the rest of the family having to care for members who are no longer productive members of the family, or at least greatly reduced contributors to the family. In farming communities where everyone has to work that can create serious hardship and a fall in economic wellbeing.

When you consider the number of killed and injured in Laos the overall effect must be substantial to the society as a whole as well as the individuals effected.

According to Handicap International figures through 2011, there were 50,370 casualties nationwide since the end of the Vietnam War in April 1975 with 29,469 killed and 20,901 injured, according to the Handicap International Laos Portfolio completed on May 2013. Each one of those cause emotional trauma within a family and each hurt the economy to some degree.

There is also the cost of not being able to use tracks of land that would otherwise be productive and contribute to the income and wellbeing of a family.

There are no figures concerning how much the country loses because of UXO and such a figure would be impossible to find because much of the suffering UXO causes goes unreported and as stated it has changed the geography and people have adjusted their lives accordingly so the way life could be without UXO is not measured. Harris is right, too, in that we do not give enough measure to the fear factor and its cost.

3.6 Clearing the Bombs

The clearance of UXO and education about its dangers are working it appears because in the few years before 2009 about 300 people on average were killed or injured in UXO accidents each year, but since 2009 that average has fallen to about 87, the *Vientiane Times* (page 1) reported April 4, 2014, citing Minister to the Government Office Bounheuang Dounagphachanh, and he adds in a NRA report was down to 56 in 2012. And according to Mike Boddington it went down further in 2013 to 41, but already in the first three months of 2014 there had been 20 showing trends can mean little and “anything we say about it is speculative,” he said in an interview at his home in Vientiane on April 6, 2014.

One UXO is one too many, but as Boddington, one of the foremost authorities in the UXO situation in Laos says, although it would be best to clear 100 percent of the UXO, that is an impossible dream. Boddington, who for several years worked with UXO Lao and later helped set up the Cooperative Orthotic and Prosthetic Enterprise (COPE) in 2008 to help locals in conjunction with the National Rehabilitation Center in Vientiane originally studied agriculture and economics in his native England and first visited Laos in 1994. Now he crunches numbers concerning the overall UXO situation in Laos. He is one of the go-to people when dealing with cleaning up the mess in Laos.

The Lao 10-year strategy called The Safe Path Forward II sets out to clear 200,000 hectares by 2020, according to Bounheuang Douangphachanh. [*UXO Sector Annual Report 2012*, National Regulatory Authority for USO/Mine Action in Lao PDR, page ii] That average 20,000 hectares a year is considerably more than the average 5,000 to 6,000 annually the past few years.

From past experience UXO Lao finds an average 12 UXO per hectare and each hectare is 10,000 square meters and each of those square meters takes time because technically UXO clearance teams must go over every square inch to be certain.

First, however, it is important to understand that by any estimation clearing the UXO is a painfully slow process with each square meter sometimes taking hours. UXO Lao has a team of a few more than 100 based in Khammouane province. In the first 11 months of 2013 those teams working fulltime cleared a bit more than 3 million square meters in the province. The first table below, a picture of their progress chart at their Thakhek headquarters, shows their monthly totals.

The second table shows their totals since they started in 1999 when, as seen in the third column from the left, they cleared 33,794 square meters that year and the number grows most one year to the next to 2,329,206 square meters in 2011, which is the last full year recorded.

During three casual conversations with staff at the UXO Lao office in Thakhek in December 2013 and January 2014 some of the UXO clearers said the monthly totals in July and August fall mostly because of rain slowing them down. In table one, in the ninth column from the left the numbers are in the three-hundred thousands (square meters cleared) but on lines 07 and 08 (July and August) they dip to about 160,000 each month. Still on table one, the first column numbered 01 through 12 are the months of the year. The top column from left to right are the seven teams and their totals each month recorded before that. Some months some teams did not work as can be seen with the dash in April for groups one, three and five. Many were away for the traditional New Year, they said, but they could not explain why the total of that April, 310,860 square meters, was nearly the same as the other months when all seven groups were working.

The charts are open to some interpretation and there is at least one minor math mistake, but all in all, the tables give a good feel for how much area is being cleared of UXO in Khammouane province.

The math mistake is the group totals in the bottom column from left to right do not add up to the total 3,119,360 square meters, but is 3,119,366, but a mistake of 6 is very minor in such a long number. The total for the 11 months so far recorded is correct.

The annual increases show in table two are due to more clearers adding up to more hours in the field, they said. They added the clearers get better with time and practice, but that has contributed little to the increase because there are limits to how fast they can work and the task cannot be rushed because they must be thorough.

They also said they are traveling further to areas that they clean, but that also has minimal impact on the amount of area they clear because once they are there they can stay for weeks in the area so travel time to and from is minimized.

Land is most often defined in rai in Laos with each rai 40 by 40 meters so 1,600 square meters, but another way to look at it that would be understood by more people is, using the size of the Olympic football field used in the London Games 2012 finals match of 105 by 68 meters (7,140 square meters) they cleared the equivalent of a fewer than 140 football pitches the first 11 months of 2013; more than 100 people working fulltime. Perhaps that seems like a lot, but when it comes to farming that is not a whole lot of land.

ຕິດຕາມການຮັດວຽກຂອງພາກສະໜາມ ປີ 2013.

ລ.ດັງ.	cl1	cl2	cl3	cl4	cl5	cl6	Is	ລວມ: cl/Is	CA	SV	RV
01	50,533	16,440	117,384	69,811	14,605	41,251	-	310,024	9	17	4
02	31,388	72,896	73,687	47,568	28,976	84,580	25,597	369,692	8	17	12
03	20,956	24,122	13,866	24,122	15,075	8,094	224,116	330,351	10	7	12
04	-	48,554	-	32,084	-	76,885	152,937	310,860	6	11	3
05	40,866	10,500	36,044	51,100	41,206	35,983	148,551	364,250	8	10	8
06	58,052	21,996	72,902	24,219	60,494	54,110	61,263	353,036	4	10	9
07	9,365	12,671	28,227	22,744	9,494	46,558	30,850	159,909	4	7	6
08	9,064	46,977	39,207	13,131	9,064	40,066	11,704	169,213	6	14	15
09	2,920	39,494	30,521	24,431	46,274	109,274	50,655	303,569	8	7	10
10	-	25,263	24,459	49,919	43,167	57,303	69,666	270,137	9	9	16
11	4,323	21,888	43,492	16,932	43,033	46,233	2,418	178,319	8	7	21
12											
ລວມ	227,467	341,561	484,789	376,061	311,388	600,337	777,757	3,119,360	80	116	116

ຕາມແຜນປີ 2013 ມັດລະໝ່ວຍງານ. * ຕາມໝາຍສູ່ຊັບມັດລະໝ່ວຍງານປະຕິບັດໃຫ້ສໍາເລັດ
 ວຽກງານ cl/Is = 302,559 ຮຕ.
 ວຽກງານ CA = 87 ຫ້ມ.
 ວຽກງານ SV = 120 ຫ້ມ.
 ວຽກງານ RV = 120 ຫ້ມ.

* ຕາມໝາຍສູ່ຊັບມັດລະໝ່ວຍງານປະຕິບັດໃຫ້ສໍາເລັດ
 ວຽກງານໃຫ້ສໍາເລັດ 4,6 ຮຕ/ເດືອນ
 ຈຳນວນວຽກງານໃຫ້ສໍາເລັດ 32,2 ຮຕ/ເດືອນ
 ວຽກງານ CA/CAV 8 ຫ້ມ/ເດືອນ
 ວຽກງານ SV 10 ຫ້ມ/ເດືອນ
 ວຽກງານ RV 10 ຫ້ມ/ເດືອນ

Table 1. This chart shows what Thakhek-based UXO Lao cleared the first 11 months in Khammouane province in 2013.

ສະຫຼຸບສະຖິຕິຄາວເລກ.ການເຄື່ອນໄຫວ.ວຽກງານ ຄ.ກ.ລ ຄໍາຜ່ວນ

ປີ	ແຜນປີ	ກວດກຳ ພື້ນທີ່ຕົວຈິງ			ກວດພົບລະເບີດຊະນິດຕ່າງໆ						ຂັບຂີ່ກວດກາລະເບີດຊະນິດ /RV		ວຽກງານເຄື່ອນໄຫວ ຂຶ້ນສາມຊັບ							
		ຄວມເປີດ / ກິ.ກວ. / ກິ.	ຄວມເປີດ / ກິ.ກວ. / ກິ.	ຄວມເປີດ / ກິ.ກວ. / ກິ.	ພິກັດ	ພິກັດ	ສໍາພາດ	ມິນ	ລວມ	ຈຳນວນເບີດຊະນິດຕ່າງໆ	ພິກັດ	ພິກັດ	ສໍາພາດ	ມິນ	ລວມ	ຈຳນວນເບີດຊະນິດຕ່າງໆ	ພິກັດ	ພິກັດ	ສໍາພາດ	
99		7,245	26,543	33,794	0	193	1,197	0	1,390	27	5	2,354	451	10	2,820	57	13,985	3	1	
00		70,722	31,452	102,174	0	68	421	37	526	127	49	3,537	1,147	32	4,765	99	20,395	3	4	
01		280,859	20,260	301,119	2	150	402	6	560	143	177	5,151	1,469	18	6,815	75	20,686	7	3	
02		163,252	238,089	407,341	10	165	327	0	502	58	266	1,935	2,572	0	4,773	69	15,773	2	8	
03		465,285	18,166	483,451	4	475	869	0	1,348	37	46	1,185	1,198	4	2,433	52	11,342	4	5	
04		887,180	186,433	1,073,613	4	3487	2,258	0	5,749	77	44	5,077	2,463	0	7,590	49	11,951	9	6	
05		978,738	467,444	1,446,182	11	867	2,002	0	2,880	53	86	2,214	3,138	0	5,439	48	11,222	15	5	
06		1,117,550	536,196	1,653,746	4	1,024	1,777	0	2,805	71	76	2,948	2,137	0	5,161	48	15,250	0	0	
07		1,493,269	609,234	2,103,503	18	1,048	2,145	0	3,211	83	81	2,230	1,951	2	4,264	51	15,573	4	5	
08		2,862,841	588,572	3,451,413	9	701	1,678	0	2,388	110	48	2,353	1,653	4	4,059	52	17,885	19	1	
09		1,907,350	252,322	2,159,672	17	2,499	8,099	0	4,815	130	60	4,085	1,998	9	6,137	51	15,910	0	5	
10		842,862	161,529	1,004,391	17	418	1,649	0	2,084	164	111	1,782	1,124	0	3,017	69	21,199	17	13	
11		1,911,448	417,758	2,329,206	0	155	1,569	0	1,724	160	30	1,469	1,351	0	2,850	69	26,312	0	0	
12																				
ລວມ		12,778,157	2,592,831	15,370,988	96	11,445	18,406	43	29,900	1,240	1,080	24,330	22,654	70	60,424	739	244,444	86	96	

Table 2. This chart shows what Thakhek-based UXO Lao has cleared each year starting in 1999 through 2011. They cleared land in 2012 and 2013 but had yet to record them on their chart.

To be sure many other organizations have teams working hard to clean Laos of UXO. In Khammouane province, for example, MAG has a large presence. Handicap International on the other hand focuses their UXO clearing efforts in Savannakhet, which is the biggest province in Laos. In 2012 there were “3,512 personnel working in the UXO sector in Lao PDR,” according to Mr. Minh Pham. [*UXO Sector Annual Report 2012*, National Regulatory Authority for USO/Mine Action in Lao PDR. Page iv] The UNDP Resident Representative. He added nearly 30 percent of them were women and total of dozens of companies.

For all of them the process is getting slower as the easier more convenient areas are cleared and UXO teams have to travel to more inaccessible areas to work.

Another way to look at it is the number of bombs remaining in the country. Here are some figures Boddington calculated concerning cleaning up the cluster bomb munitions, what Lonely Planet calls, “1.5m-long torpedo-shaped packages of evil whose outer metal casing was designed to split open lengthwise in mid-air, scattering 670 tennis-ball-size bomblets (‘bombies’) over a 5000-sq-meter area. Once disturbed, a bombie would explode projecting around 30 steel pellets like bullets killing anyone within a 20m radius.” [Bush, 2010: 199]

If 270 million (270,000,000) bombies were dropped and 30 percent of those were bomb live unit (blu), meaning they did not explode, that means there were 80 million remaining UXO bombies.

So far, according to Boddington’s statistics, about a half million (500,000) have been cleared since 1994 when MAG was the first to start clearing UXO in Laos later joined by dozens of ordinance clearing agencies working in Laos. That means 500,000 were cleared in 20 years or 25,000 a year. If that rate were to continue to clear the remaining 80 million, or 75 million, bombies, it would take another 3,200 years to clear the remaining bombies.

These numbers are estimates and real numbers of bombies dropped and the percent

that did not detonate “we don’t know. It might be double that, it might be half that,” Boddington said in an April 6, 2014 interview in Vientiane. That 30 percent failure rate when considering cluster bombs is open for debate, Boddington said. Estimates are between 15 and 50 percent with the 30 percent perhaps the most often cited. If it is 50 percent that means 135 million of the 270 million remained after the war and if it’s 15 percent it is just over 40 million. In a sense it does not matter because even the lowest estimate is an enormous number of unexploded bombs.

It should be noted the 500,000 cleared is only that reported by clearance teams and monitored by NRA and the fact is much old ordinance was cleared by farmers without telling anyone and perhaps even more removed by scrap dealers. So the real number could be quite a bit less, but still a huge amount of UXO remains contaminating Lao soil.

It should also be noted an area is only considered cleared if done so by one of the ordinance clearing agencies working through the NRA. If a farmer cleared a few bombs out of a field that does not mean the whole field was systematically cleared and therefore safe.

Sometimes rebuilding has proceeded clearing UXO including some roads, according to people in Boualapha district. That may never prove to be a problem, but you never know.

There are also different degrees of clearing with 3 meters down considered required for farming, but UXO have been found as deep as 12 meters by the Australian-operated MMG Lane Xang Minerals Limited goldmine near Xepon when, before mining, they hired a commercial UXO clearing company to clean down to 15 meters, Boddington said.

3.7 Clearing Cost

Clearing UXO takes money: A lot of money.

The United Nations Development Program (UNDP) works to secure funds from the international community to foot the bill to clear UXO in Laos. The UNDP is a “major supporter of UXO clearance” and some funds are also earmarked for victim assistance and educating the public, particularly in high-risk areas, about the dangers associated with UXO, according to the *Vientiane Times* (page 1) on April 4, 2014.

Total funding contributions to UXO clearance activities totaled about \$US19 million in 2010 then rose to about \$US30 million in both 2011 and 2012 and to \$US41 million from all international donors combined in 2013, according to the *Vientiane Times*, Friday, April 4, 2014, page 1 story “UNDP seeks more funds to clear UXO”. Many of the donors choose “to channel their funds through the UNDP-administered UXO Trust Fund” that allows the Lao government to steer the funds where they are most needed, according to Mr. Minh Pham [*UXO Sector Annual Report 2012*, National Regulatory Authority for USO/Mine Action in Lao PDR]

America has picked up its game on that front, too, although arguably it is only a small percentage of what it should be. “Between 1993 and 2011, the United States contributed more than \$US52 million to conventional weapons destruction in Laos. In 2012 Congress allocated \$9 million for clearance in Laos – more than any previous annual allotment and tripling of the budget since 2006,” according to U.S. Department of State figures. [Coates, 2013: 327] The figure was reportedly \$12 million in 2013, but that could not be confirmed by the U.S. Embassy in Vientiane at

the time of this thesis.

Boddington points out the United States spent, in dollars adjusted for inflation to 2012 dollars, \$17 million a day on the bombing. Boddington did another calculation concerning the cost of cleaning up the remaining UXO and in January 2010 dollars arrived at \$16 billion. That was done by calculating who has cleared what, where and when and adding them together and coming up with an average cost for clearing one hectare then multiplying that by the number of remaining hectares to clean. The total was \$16 billion, but clearing 100 percent of the problem is a dream, a delusion.

The cost of the U.S. war in Laos was \$2 million a day in the rate of the dollar during the war and closer to \$17 million a day in inflation-adjusted dollars, Boddington said.

That is \$6.2 billion a year at the current rate. Even if his calculations are twice what they should be, the cost of dropping the bombs will remain much higher than the most optimistic cleanup. The \$12 million American gave in 2013 is an average of \$46,500 a day.

Boddington has crunched a lot of numbers and here is another telling one. If the U.S. did increase its annual figure to \$12 million a year in 2013 from the \$9 million figure in 2012, at that rate to pay for the full \$16 billion figure, a estimation Boddington says, it would take 1,333 years to fully clear the country.

The clearance is also complicated by the fact that most heavily bombed areas are more remote and “communities there have little access to information and

education, thus making the risk they are exposed to by UXO more hazardous,” according to Handicap International, which focuses its UXO clearance operations in Savannakhet province, Handicap International Laos Portfolio completed in May 2013.

The costs are also increasing because “we are currently picking the low hanging fruit,” said Boddington. By his estimations it currently costs on average about \$100 per item to clear the first 50 percent, then \$400 per item half of that remaining half, then \$800 per item to clear half of that remaining half.

Currently funds are given for clearing UXO, for education and for victim assistance and a small amount for advocacy. The most is for clearing UXO, and maybe less than 5 percent of the total to victim assistance, according to Handicap International’s Laos Portfolio completed in May 2013.

Boddington suggests that one long-term way to deal with UXO is to train locals to find and destroy them and train other locals in victim assistance, that being first aid for injured people but also for how to deal with living without an arm or leg or eye, which are common UXO injuries.

Education should be an on-going part of school education not special classes held every so often.

Using locals would be more efficient and keep the cost down because they know their particular area, live there all the time and have stronger emotional bounds to the land and people.

Jim Harris agrees with this approach and in the longer term it appears like the only one that will really work. Many of the rural areas do not have response teams

so when they find something they may have to wait a long time, so sometimes they do not wait and sometimes that leads to disaster.

If there was funding for local response teams, to train them and pay them when they are needed, that would make immeasurable difference.

“Half the people in Lao killed by UXO are killed moving it. Where people want to expand their fields we should have that service available. People are eager to farm land,” Harris said in an April 14, 2014 interview via computer on Face Time. Areas cleared for agriculture should be cleared down to at least 30 cm and nothing should be missed. “If we miss the spot the size of a Ping-Pong ball we could be setting up a farmer for a fatal accident,” he said.

As for training locals, Harris said many are already skilled with metal detectors because the scrap business has been big for many years and “most skilled people recognize a danger.” He said those local skilled people should be used.

3.8 Scrap

Scrap is another important factor when researching UXO in Laos because reselling the metal the bombs are made of is one reason many have been cleared, but not by official organizations but instead by farmers and mostly young boys trying to earn a little disposable income.

Visiting Boualapha district on their walk in the 1990s Morris and Hills found scrap remained a big money earner in the region then but not as much as a few years before.

“What remained some twenty-five years after was nothing compared to what was there at the end of the war. Whole industries had been set up selling scrap metal. Bua La Pha District was the main place to trade. Some locals even downed their farming tools and made all their money from scrap metal. The trade started in 1980 and ended as a full-time business in 1993-94. In its heyday, big companies would come from Savannakhet to buy from wholesalers along Route 12 and in Ban Xieng Phan. Private boats were hired to ship the metal along the Nam Se Bangfai to Mahaxai.” [Morris, 2006: 41]

The scrap business cleaned up a lot of the old bombs and they were not recorded by the NRA and that further complicates trying to figure what has been cleared where.

Scrap was still an important source of income when General Aderholt and his friends drove through the region in March 2003 from evidence of boys working metal detectors and stacks of scrap. But in 2014 that industry was nearly done. Or perhaps on hiatus because the easier to find ordinance had been dug up and sold and the price for scrap had fallen making looking for the more difficult to retrieve scrap not worth the risk and effort. If the price of scrap increased the scrap business could rebound.

Tracy Taylor, First Secretary, Chief, Political/Economic Section, with the U.S. Embassy in Vientiane suggested the death rate could well have fallen at least in part because the price of scrap had fallen and fewer people were digging for it, she said in a November 29, 2013 interview in Vientiane.

Because of the danger “Lao’s legal code makes it illegal to trade in war leftovers of any kind. Purchase, sale or theft of any old weaponry can result in a prison term of between six months and five years.” [Lonely Planet Lao Guide, 2010: 199] Problem is, law and regulations will not work because they cannot be enforced. The only real way to deal with the UXO problem is to get rid of the UXO or as much of it as possible.

Scrap is part of the new geography, but it is decreasing as the easier to find bombs are found. Scrap is a crop that is becoming harder to harvest, or a wild plant more difficult to find.

That could be a good thing.

It is not good enough to tell people not to search for scrap when it is one of the few ways to earn disposable income. Societies look for ways to make money and human nature is generally to take the path of least resistance. In rural Laos there are few paths to pick from and scrap one of those few. It can be seen as money for a bit of effort searching and digging, expect it can kill you, too.

The politics of Laos also play a role. Laos is one of the world's few remaining Communist States and some would argue a failed Communist State. China, Vietnam, South Korea and Thailand all have business interests in the country. Electricity produced by hydro-dams exported to Thailand is the landlocked country's biggest foreign exchange earner. Many restaurants are owned and run by Vietnamese and many merchants traveling the country are Vietnamese. In the north of the country in towns like Luang Namtha whole sections are Chinese and roads in the region are being built by Chinese workers employed by Chinese companies as was seen on four trips bicycling through the north in 2008 through 2012.

Culturally Thailand has a big influence because the languages are so similar and people in Laos watch Thai television programs, they prefer the soap operas, and listen to Thai music, in large part probably because they produce so little of their own. The influence of Thailand, Vietnam and China cannot be ignored as it is everywhere in the country.

How this all translates into dealing with UXO is, like most everything dealing with UXO in Laos, complicated and varies from region to region.

Building the dams is big business and dealing with the government is streamlined because of the central and autocratic control. But although that may be the case for big projects including dams it does not necessarily apply to everything and some regions retain strong self-control and resent the central government telling them what to do.

In 1999 I was "invited to leave Laos" in a struggle between the Foreign Ministry in

Vientiane, which invited me, and a Major General in the Lao military in Savannakhet province who did not want the central government telling him who could and could not visit the remote parts of his province.

What I was trying to do was travel to join the American military's Joint Task Force Full Account team searching for the remains of America serviceman still missing in Laos from the Vietnam War for a story for *U.S. News & World Report*. The Foreign Ministry said I could go, the Major General said I could not. In the end the local man won and the Foreign Ministry sent me a fax at my hotel inviting me to go the Mekong River and take a boat back to Thailand. I should note less than a year later I returned, but this time went to Vientiane and traveled with a large group to a new search site. The Major General was there and he explained there were no hard feelings about the year before and invited me to eat with the Lao workers accompanying the team of Americans searching for the remains. The story is included in the appendix.

New York-based Human Rights Watch is critical of the autocratic control of the government in Laos.

“The government severely suppresses the rights to freedom of expression, association, and assembly. The penal code outlaws activities that the government deems to be ‘slandering’ or ‘weakening’ the state. The government strictly controls all television, radio, and print media in the country. It bars any article or mass media broadcast considered contrary to ‘national interests’ or ‘traditional culture and dignity.’,” they state in a press release titled “Laos: No Progress on Rights” released on June 10, 2014.

Still, the government through UXO Lao does at least a reasonable job, and probably better than that, working to clear as much of the country as they can of bombs. And that is a monumental task.

UXO Lao is the umbrella organization that the Lao government set up in 1995, its full name is Lao PDR Trust Fund for UXO, to oversee all the various organizations working to improve the situation. It works under the government's National Regulatory Authority (NRA), which tells

organizations where they are most needed and where to work.

They work closely with the UNDP, which raises funds from foreign governments.

3.9 Road Safety

It should be noted when considering the dangers of UXO that road accidents kill and injure far more people now in Laos. This is added for perspective.

Handicap International introduced their Road Safety program in 2003 targeting Vientiane, Luang Namtha province in the north and the country's largest province Savannakhet just south of Khammouane province. Their figures from 2011, for the nation as a whole, are startling. Motorcycles totaled 79.5 percent of all registered vehicles and not surprisingly of the 6,541 traffic accidents in 2011, 95 percent involved motorcycles, according to Handicap International Laos Portfolio completed in May 2013.

The situation in Khammouane province in 2013 and early 2014 reflected those of the country.

Doctor Khamtay Phommachanh has been the head orthopedic surgeon in Khammouane province for 14 years and said he could recall no bomb victims in 2013, adding most serious injuries in the province come to the sprawling grounds of the provincial hospital on the southwest of Thakhek. The number of UXO victims has decreased, but that is partly due to lack of funding in the province with some going directly to Vientiane where they have a better chance of being helped with rehabilitation.

“In 2011 there were more (UXO) injuries, but that is about reporting, too,” he said in an interview on December 30, 2013 at the provincial hospital in Thakhek. The province was given funds to help UXO victims from foreign NGOs and foreign governments but when those funds

dried up people stopped reporting to Thakhek for treatment. He added they still perform amputations then the patient goes to Vientiane for rehabilitation.

Doctor Khantay said UXO remains a problem in Laos that needs to be dealt with, but in recent years the number of motorcycle accident victims has concerned him more.

“Everyday we see them. Sometimes five in a day. I imagine about 50 percent of them (of the accident victims) in the province end up here,” he said of the provincial hospital.

3.10 Conclusion chapter wrap up

Chapter 3 has shown that Laos is a country facing many economic challenges as one of the least developed nations in the world and the continuing problem of UXO only acerbates the situation with a new geographic reality that closes areas to agriculture cultivation, grazing and other development, as well as continuing to kill and maim. The technology and knowhow, however, are available to clear UXO from Laos. The costs are substantial and perhaps appear at times out of reach, but they are not insurmountable. The chapter describes some efforts being made to clear the country and what further efforts are needed to improve the situation. The chapter deals with the situation countrywide and what UXO mean to Laos as a whole. Chapter 4 of the thesis focuses on Boualapha district, which happens to be the most bombed district in the country, and how the situation effects villages.

CHAPTER 4 BOUALAPHA DISTRICT DEALING WITH AN EXPLOSIVE

HISTORY: UXO



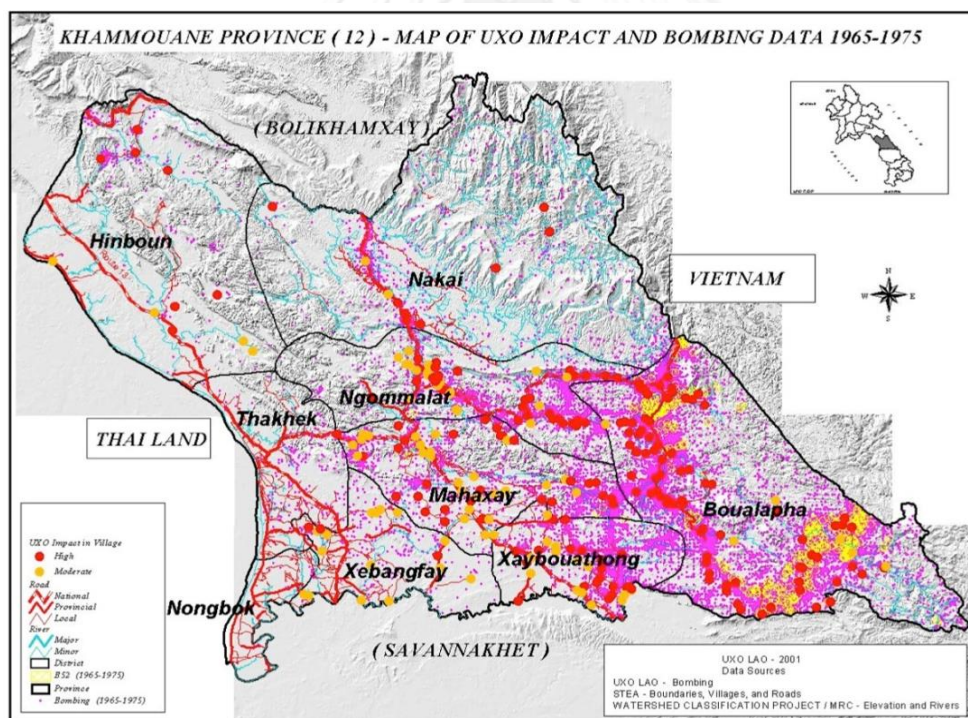
A truck drives past a welcome sign entering Boualapha district from the west of route 12. Photo by Mick Elmore

4.1 Examining Boualapha district

This chapter examines Boualapha district from Mu Gia Pass south for about 60 kilometers to Boualapha town. For approximately the first 20 kilometers the road is paved until it passes through Langkang and from there the rest is dirt and was traveled several times in early 2014 with the main two towns, Lankang and Boualapha, visited on additional trips. This is similar to the route traveled in March 2003 with General Heinie Aderholt and suited the needs for an area to

focus on researching this thesis. One reason it was chosen was because it was accessible from Route 12, which is a good paved road all the way from Thakhek on the Mekong River to Mu Gia Pass on the Lao border with Vietnam.

Another reason to focus on what is the original northern most section of the HCMT in Laos from Mu Gia Pass through seven villages for 60 kilometers to Boualapha town is because it is similar to other parts of the HCMT further south and serves as an example of what happened along most the route during the war years and the continuing problems the region faces today. For that reason as a case study Boualapha district is a good area representing the HCMT in Laos as a whole. It is also the poorest district in Khammouane province and “has the heaviest level of UXO contamination in” the province, according to the *UXO Sector Annual Report 2012* [page 11] produced by the National Regulatory Authority for UXO/Mine Action in Lao PDR.



A map showing the amount of bombing in Khammouane province including Boualapha district. Supplied by Jim Harris.

4.2 Logistics

Looking at the 60-kilometer route on a satellite map shows much of it remains pot-marked with bomb craters. From north to south starting at Mu Gia Pass the first village is Langkang about 18 kilometers from the border. From there it is about a 5-kilometer side trip to the second village Ban Nongboua. Going south from Langkang is the third Ban Senphan, then the fourth Ban Xieng Phan, then cross the Xe Bangfai River at the fifth at Pak Phanang, then into the sixth small Sompeng then finish at the seventh at Boualapha town.



A truck travels Lao Route 12 leaving Mu Gia Pass with the Lao customs border office in the background in early 2014. Photo by Mick Elmore

The spelling of all of the towns varies and those used in this thesis are the ones that were the most common and sounded most like the way locals pronounced them.

A bicycle was the mode of transportation for three basic reasons, those being a sturdy mountain bike could more easily handle the roads that in places are in poor shape, the locals seemed to appreciate someone pedaling a bicycle more than driving a big car into their villages, and the biggest reason is bicycling is more affordable.

Nick Ascot who for many years owned and ran his North-By-Northeast Travel agency based in Nakhon Phanom on the Mekong River in northeast Thailand often traveled parts of the HCMT in Laos. He has since left North-by-Northeast and now works in Bangkok and said in a November 16, 2013 interview there that during his travels in the late 1990s and early 2000s he had many of the same experiences as me with the locals and their welcoming hospitality. Like me, he preferred traveling alone or with one or two others and by bicycle in part because of the reception he received in villages. Driving into a village in several big vehicles automatically seems to make people more standoffish, while when you pedal in on a bicycle they seem more willing to talk. Visiting more than once also opened doors. A good example is when I pedaled up to the one store in Bang Xieng Phan the lady running it just started talking because she remembered me from an earlier visit and did not have to wait for me to get out of my car.

It is worth noting that Ascot said the area south of Boualapha district is very similar supporting my belief that the district is a good representation of most of the area the HCMT traveled through Laos so a good case study.

The 18 kilometers from Mu Gia Pass down Route 12 to Langkang is a good example of how the UXO situation has changed in recent years and how much remains to be done. Lao Route 12 winds into Laos from the east over Mu Gia Pass from Vietnam down into windswept Langkang. Route 12 passes through the Annamite mountains at slightly under 425 meters (1,400 feet) altitude between mountains towering from 1,200 to nearly 1,400 meters (4,000-4,500 feet). The Annamites are not as high as the Himalayas but are rugged and tropical rainforest covers the slopes of the steep mountains making moving through them very difficult. During the May to October monsoon season what was difficult became near impossible and travel was greatly

decreased during those months in the war years. And this difficulty was without being attacked and bombed.

The curvy drive from the border down into Langkang now takes less than 30 minutes in a car and not much longer on a bicycle, although going the other way up the step climb pedaling takes about two hours, all due to the rebuilt road opened in the early 2000s.

That is a big jump from less than 10 years before when Virginia Morris, Clive Hills and a guide named Vong hiked from Langkang to the pass and back taking a full day. There was a road over the pass before the Vietnam War the French built that was the main thoroughfare between the countries in the north but the jungle reclaimed it after the war by the time Morris hiked it.

“With trees forming an archway over the path, it seemed almost inconceivable that trucks could have been driven this way during the war, yet they had. Mr Vong pointed out foxholes now filled with vegetation. A few meters away in the undergrowth there was a stack of oil drums, rusted and out of shape with shrapnel holes in their sides. More noticeable were large bomb craters either side of the route filled with slimy stagnant water.” [Morris, 2006: 32-33]



A bomb crater near Mu Gia Pass in early 2014. Photo by Mick Elmore

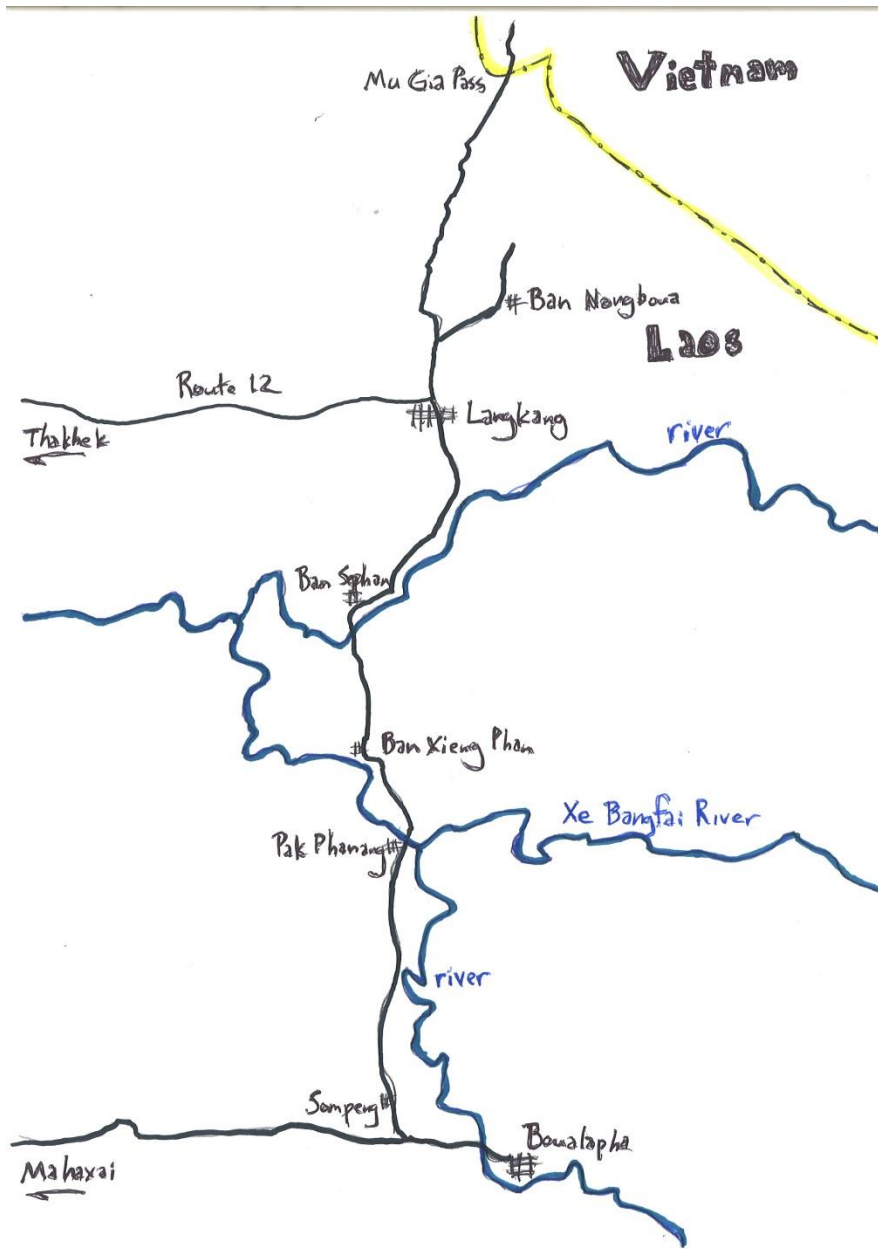
They hiked on through leech-infested jungle and eventually reached the pass.

“Mr. Vong was as shocked as we were when the forest opened to reveal a large clearing and a tiny wooden shack. We had walked too far. Although it looked abandoned this was the border, the start of no man’s land. ... The door opened and a young officer dressed in civilian cloths came out, expressionless, as if he was used to hoards of foreigners queuing for their passports to be stamped here, rather than a few Vietnamese. Yet no foreigner had ever been here or was likely to. The journey was too far, the location too hidden.” [Morris, 2003: 35]

Less than 10 years later the trip was easy and Route 12 was a good paved two-lane road connecting the countries, illustrating that UXO is a solvable problem and all that is needed is the resources to clear the country. Route 12 hugged the step escarpment of the north of the Mu Gia Pass valley itself, but in early 2014 a second road was being cleared up the center of the valley.

In general along the route from Mu Gia Pass to Boualapha town, the road at times seem to be owned by children playing or on bicycles going to and from school. Livestock also seem to think they own the roads, with water buffalo, cows, goats, pigs and chickens sometimes sleeping and often just milling about the road. And it should be noted there is very little other traffic. When asked about the road being the village playground they said it was the best place – flat, convenient and without buildings or crops – and not because other areas were dangerous with UXO.

The people, too, are friendly and easy to talk with. Well most of them. Certainly some of them seem to have suspicions of someone pedaling into their village and asking about old bombs, even after some casual conversation. This was more true in the smaller villages than in Langkang and Boualapha town with their larger populations and people often passing through.



Mu Gia Pass to Boualapha village. Map by Mick Elmore.

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4.3 Economic Development

Boualapha district was also a good choice to study because it remains with small landholders for the most part with the big landholders in the more fertile areas along the Mekong River and regions with resources where investors see a potential for exploitation.

Large landholders generally have the funds to have their land cleared often flipping the bill to have commercial clearance teams brought in to do the job. The Australian-operated Minerals and Metals Group, or now known as MMG, Lane Xang Minerals Limited goldmine north of Xepon in Savannakhet province is one of the few large land holding along the old HCMT route and is an example where the company before it started mining paid a qualified UXO clearing company to clean the entire area they were to mine for gold. Small landholders do not have the funds to do that even when they are cultivating only a few rai of land.

The road improvement of the early 2000s over Mu Gia Pass greatly increased traffic between the neighboring countries to levels of trade never seen before. Now one of the first signs of development is 16 kilometers into Laos when approaching dusty Langkang and the Naphao Sabaidy Guesthouse and restaurant that opened in 2013 and was being expanded in 2014 in anticipation for more traffic. It is noted for the display of four big old bombs painted green that stand next to the road with an assortment of other smaller bombs laying around looking like an afterthought that advertise you have arrived. The owner, who only gave his name as Sithong, said in a December 13, 2013 interview outside his guesthouse that the bombs are good advertising because they draw attention to his new establishment. To be sure, the bombs are deactivated, but they do grab attention. Sithong also knows traffic on Route 12 will increase and he saw the business opportunity to take advantage of that growth in a prime location.

A towering mountain rises just behind the guesthouse and to a suggestion it could be a tourist attraction for hiking if a trail was made to the top Sithong pointed to about 50 meters from his guesthouse and said the area was cleared of UXO only up to that point, from there on

would be dangerous for hiking. His area was cleared for free, though, so he did not have to pay a commercial contractor to clear it.

Sithong was not the only one who expected growth in the area as another hotel was being built about 5 kilometers west and also close to Langkang. There are also two small ones in town including the 10-room Khon Pan Ya opened in late 2013 with the husband and wife owners saying they expect the town of about 1,000 people to grow and more people to travel through.

In January Mines Advisory Group (MAG) teams who were working in the area said they were clearing the forested area up the middle of the valley cleaning the land a good 50 meters each side of the red dirt road. It as being built to help handle expected increased traffic.



A new road being cut to Mu Gia Pass in early 2014. Existing Route 12 can be seen in the background. It is the white cut into the green mountainside above the new road Photo by Mick Elmore

During the war there were two roads, too, giving the North Vietnamese more options through the pass.

Langkang itself is very much a transit town with increasing traffic between Vietnam and Lao and points further west including Thailand. Tuy, a young woman who moved there in 2010 from Thakhek, 130 kilometers to the west and the end of Route 12 on the Mekong River across from Thailand's Nakhon Phanom, runs a noodle shop. "The economy was opening up and there were more opportunities (in Langkang) than in Thakhek," she said in a December 27, 2013, interview. There are few people who live in town with most of her business being drivers passing through with Langkang serving as a transit spot.

Langkang is safe from UXO having already been cleared and people do not venture out of town, so the remaining bombs are only a problem for people wanting to expand the town. MAG did most the clearing, but also other UXO clearing groups have worked there. There are many rice and other crop fields around the town but as you head south the fields are less distance from the road until after about 5 kilometers there are no fields, although there is flat land that could be cultivated in the future.

Bombs dropped during the war pulverized Langkang and it seems the dust has never left with every visit finding it a wind-swept crossroads. Spend even one day there and you are covered in dust.

But, it is an important transit point and the government has directed UXO clearing teams there, starting with the roads in the early 2000s then to expand the town itself and now to build a second road.

It's a good focal point of how things can be changed through UXO clearing. And plans for growth continue with a government Agriculture and Forestry Extension Center about 4 kilometers south of town.

Langkang also has a clinic that can deal with illnesses and injuries common to farming, but staff there said if it is a serious injury they need to get in a vehicle and drive the 130 kilometers to the provincial hospital in Thakhek.

About 10 kilometers south of Langkang is Ban Senphan, a village of about 350-400 people first populated about 30 years ago after the UXO were cleared in the surrounding area. Everyone is involved in agriculture but some also have second jobs like working on the motorbikes and other machinery that sometimes break down. But there is not a single store, restaurant or food stall in the small town that has electricity but no running water, which they get in the river that runs by the village and boil it to make it safe for consumption. The locals say they do not worry about UXO and know of no known case of a UXO accident in the history of the village.



A river crossing just outside Ban Senphan where the trail used to go. Some choose to drive across the shadow fire bridge while others, in the background, take a boat across. Photo by Mick Elmore

The fields have been safe for decades having been cleared a long time ago, but none of the handful of villagers knew which organization had cleared the area and if as they said was true and their families had lived there for 30 years that predates the existing UXO clearing agencies. That was a curious inconsistency. It was the same situation with collecting wood for cook fires. They said it is not yet a problem with the nearby forests safe and still offering a sufficient supply that regenerates.

Their livestock, too, is safe they said with the valuable water buffalo well tended and the goats that are common in the region covered in this thesis of no worry. They do not fear they will set off bombs. The same is true of the numerous pigs that run free in the village. UXO are not mines and are not pressure sensitive. Small animals could walk over a bomb for many years and not set it off. The problem arrives when people start digging. Or, in an example given at the Cooperative Orthotic and Prosthetic Enterprise (COPE) museum in the Lao capital Vientiane located at the National Rehabilitation Center. One exhibit at the small museum that packs a large punch is about a lady named Thong who on May 10, 2010 built a cook fire on the floor in her home. She did not know “there was a bombie buried beneath the fire. The bombie exploded, sending shrapnel flying. Thong and her 15 year old daughter were both seriously injured,” according to the exhibit at the museum, but they both survived with shrapnel remains in their bodies.

In Ban Senphan there is evidence of bombs from the past with many of the small planters made with the old bomb casings that carried the cluster bombs. Onions are the most common vegetable grown in them. As they rust and wear out, though, they are being replaced with wooden boxes and sometimes tires. Those lack the mystique for travelers as the bomb casings but for locals they offer the same practicality.



Two old bomb casings used as planters with a typical farmhouse in the background in Boualapha district. Photo by Mick Elmore

Further south and you come to Ban Xieng Phan that used to have a bomb in the center of the village. Much of the wide valley where it is has been cleared and agriculture is expanding. The area high school is just south of the village and children from the smaller surrounding villages all travel to study there. Almost all of them travel by bicycle.

On one visit while interviewing a lady shop owner on the side of the road there was a big explosion to the north. “MAG’” she said, knowing that would be enough of an explanation. “They do a lot of work in the area and after finding a bunch of bombs blow them up” in a controlled explosion, she said in Lao. Because of MAG’s work the area available to farm or use for grazing is slowly expanding around Ban Xieng Phan and the standard of living is rising with more land to use. But still, the lady running the store said, no one should venture off the beaten

path. Locals know which areas have been cleared, but visitors should be weary she gave as advice that makes good sense. She also said large areas remain contaminated.

Continuing south from there next is Pak Phanang where the road, and the HCMT, crosses the Xe Bangfai River. It was a heavily bombed target because the river is big enough trucks needed bridges to cross it or at least rock roads built just below the surface of the flowing water called fire bridges. In January 2014 there was a rock road with waist-high water rushing over that could easily have washed away small cars and even took considerable skill to drive SUVs across, but it would have served well the trucks transporting goods down the HCMT except during the monsoon season when the river swells at which time even trucks must have had difficulty.

In January 2014 there was also a small boat that would ferry two motorbikes across at a time for 10,000 kip each (about \$1.20 or 40 baht). The first foundations for a concrete bridge across the river were under construction in January so soon enough it will be passable by all vehicles all year round. The surrounding area along the river was considered wild and dangerous due to remaining UXO, although the river itself was used for fishing, locals in a small shop said. The flat land to the south of town was cultivated with Japan having funded a UXO clearing effort, according to a sign posted beside the road, but much of the other hillier country had been left to clear later because there were so many bombs. And the prospects for improved standards of living in the town are held back by so much of the land still being locked up by the UXO contamination.

Onward south and there is little Sompeng with only a few hundred people who subsist on the land and grow some cash crops. They are about 12 kilometers from Boualapha village and 7 kilometers from the new bone-jarring dirt road between there and Mahaxai to the west offering easy access to market to sell their produce. The town has a little clinic with a couple nurses who stay there and a doctor who can be called on. But any serious illness or injury and the person is sent to the hospital in Boualapha village. Kaew who only gave one name and is one of the nurses who works there said in a short interview at the clinic on January 4, 2014, that they have

not seen any UXO injuries for “a while” from the surrounding area with about 500 people, but she said there have been some further away.

Boualapha village itself is a thriving little town now, by easy-going Lao standards anyway, with the expansive valley cleared by many MAG and UXO Lao visits over the years and unrecorded scrap collectors before them. It has changed radically from when Morris and Hills were there in the 1990s and it was a center for the scrap trade. Now that “crop” is pretty much depleted and replaced with agricultural produce and being a provincial center. There are several restaurants and two guesthouses, the second scheduled to open in mid-2014. The first is also a brothel and has fewer than 10 rooms. The one main street is lined with shops selling various types of farming equipment and are owned by Lao, Vietnamese and Chinese who recently moved there. During my visits, though, I did not see another Westerner, although was told a few pass through on their way to caves nearby. Perhaps none stayed because the only rooms available were in a brothel and tourism will pick up when the “Lao” guesthouse opens, the road is improved and caves in the area make it onto the tourist maps. On one of my visits the brothel was full so a restaurant owner turned her establishment into a homestay for the night giving me the room of a daughter who had moved to Vientiane.

Boualapha is growing, though, with the area UXO problem cleared and business in the crossroads picking up. Some crops are taken to Thakhek and sold bringing cash into the community. One January morning a man was loading big sacks for rice into a songtaew to drive to Mahaxai and then the remaining 40 kilometers to Thakhek. Each bag weighed 12 kilograms and sold for 25,000 kip (about \$3.10 or 100 baht). For comparison big watermelons were selling for 5,000 kip (about \$0.60 or 20 baht), in Thakhek that week. At that rate you have to sell a lot of rice to earn much disposable income, but the town was obviously experiencing growth.

Another village in Boualapha district is Ban Nongboua, which is about 5 kilometers toward Mu Gia Pass from Langkang. It is a shadow of Boualapha or Langkang, or any of the other four villages along the route, in part because it is not on a road to anywhere, yet. A new road is

being built through the town from just out of Langkang to Mu Gia Pass and things could pick up once it opens. But a MAG UXO team clearing the path ahead of the road said it was a very heavily UXO contaminated area and other than the road and both sides of it would have to wait to be cleared leaving little improvement in livelihood other than what increased road traffic would bring.

Another place worth mentioning in this study is the Nam Theun 2 dam and reservoir, which is in Khammouane province northwest of Boualapha district but noted here as a good example of what is involved when a large area is developed for any purpose, in this case a reservoir and power production. Before the Nam Theun 2 Power Company Limited could build the dam and let the reservoir flood the low-lying area they had to make it safe for the workers and the people who would live in the area once the dam was completed, which is was in about 2005.

Both the Australian-operated MMG, Lane Xang Minerals Limited goldmine near Xepon in Savannakhet province just south of Khammouane province and the Nam Theun 2 development are big enterprises with big financial backing. Small farmers in Boualapha district and elsewhere along the old HCMT do not have those resources. In fact they have few if any wealth to pay to clear more land so they can expand their farming and earn more money planting rice, banana, cassava, which are Lao staples, and other crops.

The Nam Theun 2 area was not a target of the HCMT but instead a “dumping area”. Those were places where, when pilots flying out of Thailand and perhaps out of South Vietnam could not drop their bombs over North Vietnam or their targeted area in Laos because of weather or some other reason they would off-load them so they did not have to land loaded down with bombs, which would be dangerous. Information about these flights is even more difficult to obtain than the successful sorties.

Khammanolack Kongvongsa, the communications officer for the Nam Theun 2 Power Company Limited at the NT2 Visitor Center, said in a December 13, 2013 interview they first had

to clear the construction site for the dam, the road that surrounds the reservoir and the easement route for the power lines. They found more than 24,000 UXO. That included the area where the villages were built for the 6,300 people relocated by the reservoir. The problem of the UXO in the reservoir itself was submerged.

4.4 Ethnic Movement

North Vietnam first moved the Ho Chi Minh Trail into Laos over Mu Gia Pass in early 1961 [Prados, 1999: 15] and it remained an important point throughout the war although other crossing points were later built both north and south of Mu Gia Pass. The North Vietnamese commandeered the region and moved most of the local population out of harm's way along the route of the trail including the route traveled decades later for this thesis.

“The Laotian hinterlands west of the Annamites were sparsely populated to begin with, and the VPA moved many villagers away.” [Prados, 1999: 85] Many of those who remained lived in caves to survive the frequent bombings.

The people who returned after the war were a mix of people looking for new opportunities like Tuy with her noodle shop in Langkang and everyone in Ban Semphan that is only 30 years old, according to the people who live there. Seldom can you find someone who lived in the area during the war, Ascot said, adding he remembered most of the villages along this route from all his travels when he became familiar with the dangers of traveling the numerous stretches of the old HCMT. He visited many villages and got to know some of the villagers, he said when interviewed November 16, 2013.

Further study of which ethnic groups lived in the area before, during and after the war would be worth doing.

4.5 UXO Memory Buried

During the war, though, it is a good thing the locals were moved because it was also one of the first places bombed in Laos along the HCMT in October 1964 by Lao pilots in planes and bombs supplied by America. Laotian General “Ma personally led a flight of four T-28s against a storage area just south of the Mu Gia on October 14. Another flight hit the post at the pass itself.” [Prados, 1999: 88] It became one of the most bombed parts of the HCMT and most protected by anti-aircraft batteries with “no fewer than 302 sites”. [Prados, 1999: 190]

Americans first stuck Mu Gia Pass and the HCMT the end of February 1965.

“Navy planes from the *Coral Sea* made the first interdiction strike on the Mu Gia Pass on February 28 (1965) ... The planes dropped bombs that ranged from 500 to 2,000 pounds, some set to detonate as long as six days later. ... and on March 21 planes from the carrier *Hancock* struck the Laotian side of Mu Gia.” [Prados, 1999: 110]

It was a bottle neck where trucks could only travel through a narrow point where most of the HCMT was actually many trails running parallel to each other some tens of kilometers apart so covering a vast area making saturation bombing ineffective.

One result is Mu Gia Pass and the surrounding vicinity became one of the most bombed places on earth. On a first visit to the pass in March 2003 traveling as a photographer with General Heine Aderholt, who was 83 years old at that time, and about 10 American veteran soldiers who were under his command during the war said they mostly flew smaller planes to spot along the HCMT and called in the fighter-bombers when they saw trucks or storage depots. They were called forward air controllers (FAC) and they would mark the targets with white phosphorous rockets so the fast-flying jets could see them. They lived in Nakhon Phanom, Thailand during their years in service because of its proximity to the HCMT, less than 150 kilometers as the crow flies, and the 2003 trip was the first time they visited on the ground the

areas they had marked for bombing during the war. We traveled in four-wheel drive vehicles between Route 9 that crosses Savannakhet province and Route 12 across Khammouane province about 100 kilometers to the north. We traveled where the HCMT had been between Xepon and Langkang including Boualapha district taking a very indirect route in part because we got lost a time or two.



Southern Laos including Khammouane and Savannakhet provinces and showing Routes 12 and 9. The road heading east from Thakhet, spelled “Tha Khack” in this map is Route 12, and the one heading east out of Savannakhet is Route 9. It should be noted that there is now a border crossing on the Lao-Vietnam border on Route 12. That is Mu Gia Pass.

There was more obvious UXO in 2003 with bombs stacked to the side of the narrow dirt roads we travelled and ample warnings from locals to stay on the beaten paths and do not venture off the tracks into the wooded areas or fields. One small village we passed through was called Ban Xieng Phan, which was also visited in 2014, and it had a “town square” worth noting with a big bomb sticking out of the dirt and surrounded by a rather flimsy looking bamboo fence to keep children and live stock away. Morris writes of the same village where “in the center of the village there was another large bomb now fenced off to stop the children playing on it.” [Morris, 2006: 39] Even if it was a 500-pound bomb it could have destroyed a large part of the village and anyone in that area if it detonated. And if it had been a 1,000 or 2,000 pound bomb the damage would be worse. The most remarkable thing about that bomb was just how ordinary it was to the local people because it was such a common thing. Bombs were everywhere and part of their lives so they took little notice. Or perhaps, they grew accustomed to them and accepted them, because they had no choice, until authorities came and removed or destroyed them.

When traveling in the area in 2013 and 2014 it took quite a while to get used to how the locals just kind of shrugged their shoulders about the bombs. In longer conversations they offered the opinion that, yes they are bad and we do not like them, but they are part of the reality.

Ascot and his North-By-Northeast Travel agency organized the Aderholt drive and Ascot has traveled along various parts of the Ho Chi Minh Trail by himself and led tours for many years in the late 1990s and early 2000s. He said in a November 16, 2013 interview that the Ban Xieng Phan bomb was still there when he last visited in mid-2000s. In early 2014 it had been removed, though, although locals were not exactly sure how long before the government clearance agency UXO Lao had done so. As town “monuments” go the Ban Xieng Phan bomb might seem unbelievable having something that could do such major damage in the middle of the village, but the most unbelievable thing about it is just how ordinary it was at that time and place, but without knowing how to move it without blowing it up what could the villagers do?

That bomb was removed as have many more, particularly the more obvious and easiest to find and located near a lot of people and for that reason more dangerous ones while the less seen bombs are still waiting to be cleared.

The danger is brought home again about 5 kilometers into Laos from Mu Gia Pass on Route 12 where there is a stream and small waterfall just off the road. Looking into the canopy of forest from where the stream comes from is inviting to any intrepid hiker, but venturing up that stream could be deadly. In many countries you might have to worry about wild animals or snakes and spiders. In Laos you have to worry about old bombs.

4.6 Challenge of Development

If all UXO were like the “town square” in Ban Xieng Phan the problem, strangely enough, would be easier to fix because everyone would know where the old bombs are. The first part of the challenge to clear the UXO is to find them. Disposal experts are needed to either defuse or blow up the UXO in controlled explosions. But first the old bombs must be found and that is a slow and arduous process that takes time.

In the meantime, farmers look at vacant land and calculate how tilling that soil could improve their living. The challenge there is to have patience and wait for the areas to be professionally cleared.

The Lao government through the National Regulatory Authority (NRA) for the UXO/Mine Action Sector and in conjunction with the UNDP has initiated a program to increase UXO clearance in the country. Called The Safe Path Forward II (SPF II) it sets key objectives for 2020 [UXO Sector Annual Report 2012, National Regulatory Authority for UXO/Mine Action in Lao PDR , page ii] It has the aim of “releasing” 200,000 hectares of land by 2020, NRA Chairman Bounheuang Douangphachanh writes in the same report.

“The Government of Lao PDR is committed to significantly increasing its own financial contribution to the UXO sector and urges the international community to maintain and hopefully increase its generous support to this important work ... The SPF II also directs that UXO survey and clearance activities become more closely aligned with national development priorities.” [UXO Sector Annual Report 2012, National Regulatory Authority for USO/Mine Action in Lao PDR, page ii]

An important thing to note about SPF II is it aligns UXO activities with national development goals bringing UXO into the mainstream. That could be a more important development than the stated 200,000 hectare goal because UXO can no longer be sidelined by itself.

“The vision guiding this strategy is a Lao PDR free from the threat of UXO, where individuals and communities live in a safe environment contributing to development. [National Strategic Plan for the UXO Sector in the Lao People’s Democratic Republic 2011 – 2020. “The Safe Path Forward II”, page 3]

In light of the overall development challenges in a poor country like Laos, incorporating UXO clearance into the overall development plan will work both in favor of clearing the remaining UXO and development in general.

4.7 Conclusion chapter wrap up

Chapter 4 looked at the challenges UXO present on a more local and personal level in seven villages in Boualapha district, which was the most bombed district in the most bombed province, Khammouane, in the country. The seven villages differ in size, accessibility and wealth, but they all have UXO in common. They all could be greatly helped if remaining UXO was cleared from their area. The most prosperous of the seven, Langkang and Boualapha town

are also the most cleared of UXO. That is certainly not a coincidence. This area deserves more study, but this chapter offers a introductory look at what the situation is like on the local level.



CHAPTER 5 CONCLUSIONS

In addressing my two research questions, namely how does the continuing existence of UXO impact the daily lives of people who live along the old route of the HCMT in Boualapha district two visits to villages in that area provided an answer; they adjust their lifestyles to deal with the new geography. The UXO dictates what they can do where and puts a lot of land out of reach for farming or foraging for food and other things and therefore restricts their opportunities to improve their livelihoods. The bombs have been there for so long, in fact longer than most of them have been alive, that living with them is not foreign. Still, part of living with them is family members and neighbors on occasion being killed or injured by UXO and that causes trauma and often increases economic hardship.

As for the second question of how big of a problem are the remaining UXO and what measures can be taken to clean up the problem, and how long and how costly will that be, and how do government and non-government organizations deal with clearing up of UXO, the answer is it can be done but will take time and cost a lot of money. The cost of UXO deaths and injuries is clear and there are additional costs of land being off limits to farmers because it is too dangerous to till. However, clearing UXO is being effectively done but is a painfully slow process. Currently the total of all the various UXO clearing organizations is an average 5,000 to 6,000 hectares cleared each year and the Lao government recently initiated a 10-year strategy called The Safe Path Forward II that sets out to clear 200,000 hectares by 2020.

The aims of my study focus on researching the continuing impact of the Vietnam War and the Ho Chi Minh Trail on Boualapha district and how Lao PDR is coping with the UXO remaining in the country more than 40 years after the last bomb was dropped.

My hypothesis has also been addressed and will be considered including a suggested \$1 billion dollar plan in more detail later in this summary. Certainly the UXO remaining along the old HCMT in Laos can be cleared up and examples of how this has been done are sited. My research also found that clearing 100 percent of the bombs will prove virtually impossible, so even once a clean up is completed the local population, and visitors to that area, must be informed of the possible dangers. That must be a part of the future in Laos. The reason 100 percent of the UXO cannot realistically be cleared is some are so remote and others are so deep in the soil it would take a monumental effort to find each and everyone. Most UXO clearing efforts used metal detectors that search little more than a meter deep and to look deeper increases the cost drastically. Others are so remote in steep mountain areas searching would be a risk even without the bomb danger. Those areas and others will never be used so it makes more sense to leave any bombs in those areas alone and focus on the easier to find UXO that pose a bigger risk to people.

My research also found that the livelihoods of the people and the regional economies improve when UXO are cleared with added land available for cultivation and cutting the cost of deaths and injuries caused by UXO.

The part of my hypothesis that the United States, for making and dropping the bombs, should shoulder the brunt of the cost of the clean up is a little more difficult to argue because it is a value judgment and although it might be painfully obvious to some people that America can afford to do it and should, other people will find arguments against that by putting the blame for the bombing on Vietnam and China and the former USSR, now Russia, for supporting them, and Laos itself.

In the end, though, America needs to listen to the better angels of its nature, to borrow a phrase from President Abraham Lincoln, and do the right thing for Laos, but more than for Laos, for America itself. This thesis does not try and argue justifications for the reasons for the bombing, but only the reasons the UXO should be cleared up. The history in this thesis makes it

clear the Ho Chi Minh Trail helped win the war for North Vietnam and played a pivotal role in doing so, but, arguably the U.S. did not lose the war because they could not stop the flow down the Ho Chi Minh Trail: the war was lost in America because a growing number of American citizens felt it was politically and morally wrong and could not be sustained.

“By the last stage of the conflict the antiwar movement had acquired so much preponderance, and the political consensus against the war had hardened to such a degree, that the U.S forces necessary to give an invasion (of either Laos or North Vietnam) some chance of success could not be used.” [Prados, 1999: 377] For anyone who grew up in America during those years the moral dilemma of the war could not be ignored. That being the case, it remains morally wrong to just leave the UXO and walk away. Especially since it has been shown they can be successfully cleared. And American agreed in the Paris peace accord in 1973 to help Indochina.

More recently American Vietnam War veteran and former U. S. Secretary of State Colin Powell warned America before invading Iraq in early 2003 that if they did take action he said, "you break it, you buy it" meaning if the country for whatever reason created a problem for Iraq, it would be America's responsibility to correct it. Powell made the well-recorded statement when he was Secretary of State and was referring to a different country, different war and different time. But, the principle is the same and if it applies to Iraq in 2003 it should apply to Laos in the 1960s and 70s.

UXO are a part of Lao's future. They always will be, that is a fact the population will have to live with, and sadly probably continue to die with. That is true at least until some so far unimaginable new technology is developed. As it stands, as stated before the task of clearing up 100 percent of the remaining bombs is impossible. That, however, does not preclude the fact that much more can be done and should be.

Nearly as clear as all UXO cannot be cleared is the fact that a lot more of them should be and much faster than they are being cleared now. The sobering fact that all of them cannot

be cleared should not lead to throwing in the towel, so to speak, and focus should be on clearing them as much as is reasonably possible. You can feel a strange relief each time you cross back into Thailand from Laos and not have to think about where you are walking. Perhaps you do not realize it at first, but your feet may feel lighter. The truth is you do not need to worry about UXO in Thakhek and most places in Laos, but if you frequent the areas with high UXO contamination you can become so accustomed to thinking about exploding soil in Laos that once you leave you experience a relief when back on Thai soil.

UXO are an identifiable problem, a material that you can see and feel and there is an end to them if they are cleaned up. Unlike problems that are disputed, say like Climate Change for example, UXO are material objects that can be touched (and kill you for touching). They are material, metal, and cannot be denied. The good thing about that is all you have to do is find them and destroy them and the problem is fixed.

Jim Harris points out though the bombs and their chemical compounds also changed the composition of the soil and that is a factor that is little understood nor studied. For lack of research no one knows what the chemicals in the bombs did to the soil where the food is grown. “These contain nasty things you do not want in the food chain,” Harris said from his home in Wisconsin in an interview via Face Time on the Internet on April 14, 2014. Suffice to say the issue deserves further attention, but UXO and removing them are a more pressing issue and this thesis focuses entirely on them.

“A rough rule of thumb is in 100 years most of them will be harmless,” Harris said in the same April 14, 2014 interview, but some people argue the bombs will take longer to decompose.

“UXO may have been dropped on Laos as part of a ‘secret war’, but the need for their clearance and for assistance to the victims should be an open issue” ... (there is a) ... “moral obligation to systematically, and effectively address the unacceptable harm on the ground,” Noeleen Heyzer , UN Under Secretary-General and Executive Secretary of the United Nations Economic and Social Commission for Asia and the Pacific, and Minh H. Pham Resident

Coordinator of the United Nations in Lao PDR wrote in opinion piece posted April 4, 2013 on UNDP website, http://www.la.undp.org/content/lao_pdr/en/home/presscenter/articles/2013/04/04/a-moral-obligation-to-act-and-remove-the-threat-of-cluster-munitions-by-noeleen-heyzer-and-minh-h-pham/ Laos is one of Asia's and in many cases the world's poorest countries and has few resources to tackle the UXO problem by itself.

In a perfect world all UXO would be cleared, but the reality is they will remain part of the geography of Laos for generations to come so that must be addressed as well; education and rehabilitation are tantamount. The government and various organizations dealing with UXO in Laos are aware of this and divide their funds between the three, UXO clearing, UXO education and rehabilitating people injured either directly or indirectly by UXO. Laos faces many difficulties such as crippling poverty and a tough life for many particularly in the rural areas, and a shocking number of motorcycle deaths and injuries that one might argue it would be better to address those issues. This thesis argues to take away as much as possible the threat that UXO present to ease the situation. America did not create the poverty that cripples much of Laos, but they dropped the bombs that continue to contribute to the problem and make it more difficult for the country to crawl out of poverty.



A UXO Lao poster warning of the dangers of digging in uncleared land. This one is part of a display at the UXO Lao office in Thakhek, but in the rural areas they are in the Lao language. Photo by Mick Elmore.

America could unilaterally increase funds to Laos to address the UXO issues. The richest country in the world could easily afford a \$1 billion program of \$100 million-a-year for 10 years that would set Laos up to address the issue until the last bomb is mute. Other countries should also take some responsibility for the UXO in Laos, specifically Vietnam that first took the HCMT over the Annamite Chain into Laos and China and Russia for supporting that move. America, however, with its wealth could easily afford, and should afford, a \$1 billion dollar 10-year program and that is a lot less than they spent dropping the bombs. Any funds from other countries and organizations would help all the more.

UXO Lao run by the National Regulatory Authority (NRA) with assistance from the UNDP already has an infrastructure that handled \$41 million in donations in 2012 and could be expanded to handle much more and much of the funding needs to be redirected to the

provinces. It might take a couple years but the 3,512 trained personnel working in the UXO sector in 2012 that UNDP Resident Representative Mr. Minh Pham talked about could be increased. [UXO Sector Annual Report 2012, National Regulatory Authority for USO/Mine Action in Lao PDR]

Just as important as the funds, though, would be a little different approach relying more on people in each region to work in their area down to the village level. Laos would do well to loosen the central control out of Vientiane when it comes to dealing with UXO and give some of the responsibility to the people living with the problem.

People in each village in the UXO contaminated regions could be trained and given licenses for UXO clearing. They should also be given good equipment. They would coordinate with the NRA which has a record for all the areas cleared by UXO organizations. Although they do not have a record of the unofficial clearing sometimes done by farmers and scrap collectors.

Local UXO workers would be more cost effective, too, if only by saving on traveling to the sometimes out-of-the-way locations. As it stands now, according to Boddington, the cost of UXO clearing varies greatly with UXO Lao costing about \$30 per item found, MAG about \$300 and Handicap International about \$500 and most the other organizations within that range.

Locals already have skills and they should be used. Many have already learned to earn disposable income collecting scrap and the people in the UXO contaminated areas are the people who know their cost the best with many having family members or neighbors killed or injured. As Boddington said; “The problem is a human one and it impacts very many individuals; children, women, men, in Laos.”

The skills to work on clearing up the mess, however, are already there and should be expanded and employed to good use. Boddington said there are about 3,000 villages where UXO is a problem in Laos. Three people in each village could be trained in “village-based clearance units”. That would mean training 9,000 people. Or 12,000 people if each unit had four members. That is a considerable expansion from the current 3,500 in the field now, but village-based units would be more cost effective and more efficient and only called on when they are needed.

Each village should have at least one person trained in how to address UXO injuries and deal with the trauma they cause. This training, obviously could carry over to other injuries and trauma so is a worthy investment not only for UXO. If there was one person trained in each village you are looking at another 3,000 people, or 6,000 if two were trained. For all of these they may not necessarily have to be fulltime but trained and prepared to deal with UXO when it is found and clear areas when people in the village wanted to expand their fields or grazing area. Arranging all this would require working with a Lao bureaucracy and that is often a challenge. Even getting information is challenging so setting up an expanded system of UXO clearance could prove daunting. But the difficulty should not prevent the effort.

Seldom are problems and solutions such a clear-cut issue as UXO in Laos. It cries out to be addressed and solutions are available. And never has the party that should pay for it been more clear either.

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APPENDICES

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A

List of People Interviewed

Interview with Jim Harris, April 14, 2014, via computer on Face Time. Harris was at his home in Wisconsin, U.S.A.

Interview with Anne Rouve Khiev, Country Director Handicap International in Lao PDR, April 9, 2014 at her office in Vientiane, Lao

Interview with Mike Boddington, April 6, at his home in Vientiane, Lao

Interview with Nurse Kaew, who only gave one name, on January 4, 2014 at the Sompeng clinic.

Interview with Khamtay Phommachanh, orthopedic surgeon, December 30, 2013, at the provincial hospital in Thakhek, Khammouane province, Lao.

Interview with Tuy, a young woman who owns a noodle shop in Langkang, December 27, 2013, at her noodle shop.

Interview with Sithong who only gave one name and owner of the Naphao Sabaidy Guesthouse and restaurant on December 13, 2013 outside his guesthouse.

Interview with Khammanolack Kongvongsa, the communications officer for the Nam Theun 2 Power Company Limited on December 13, 2013 at the NT2 Visitor Center

Interview with Tracy L. Taylor, Embassy of the United States of America, First Secretary, Chief, Political/Economic Section, on November 29, 2013 at the U.S. Embassy, Rue Bartholonie (Thatdam), Vientiane

Interview with Nick Ascot, November 16, 2013, at his office of Mintra Metrics in Bangkok, Thailand

Earlier interviews

Interview with General Heine Aderholt, March 2013, traveling in Savannakhet and Khammouane provinces in Laos. And later telephone interviews with him in Florida until he died in 2009.

Interviews with Edwin Pettit, author of *The Experts*. We met several times in 1995 while he was in Bangkok and talked about the Vietnam War and his *The Experts*. The meetings interviews were casual with other people sometimes present, but with his permission I kept notes of our conversations.

Appendix B

Chronology of the Ho Chi Minh Trail

1953-54

Viet Minh troops are already in southern Laos and two regiments march from southern Laos into northern Cambodia. The information they recorded of the area was used by the VPA when they built the HCMT years later.

1954

Cambodia's King Norodom Sihanouk, who was considered at that time strongly anti-communist, requests American aid after the Viet Minh launched a probe into northeast Cambodia from Southern Laos.

1959

In May the Central Committee of the Vietnamese Communist party forms the Special Military Action Group to build the Truong Son Strategic Supply Route, later to be generally known as the Ho Chi Minh Trail.

In June, in the rainy season, the first troops infiltrate down the HCMT.

1960

At the beginning of the year ARVN Rangers ambush a three-man North Vietnamese scouting party leading to the HCMT's first death, VPA soldier Truong, memorialized in the North as the man to die on the Trail.

1961

U.S. President John F. Kennedy authorizes small infiltrating teams into southeast Laos. They go in as civilians to locate and attack Vietnamese Communist bases

1962

In July, American Green Berets see VPA soldiers for the first time near Tchepone. They hide and do not officially report the sighting because neither the Green Berets nor VPA are supposed to be there.

1963

The first plane shot down during the Vietnam War was late in the year. It was an Air America plane on a flight from Savannakhet to Han Houei Sane along the HCMT. Two American airmen were killed and another was captured along with four Thai aircrew.

1964

Trucks start to travel down the HCMT.

Former U.S. Vice-President and future President Richard Nixon, but at the time out of office, says the enemy should be pursued into Laos and North Vietnam.

October 14, Mu Gia Pass bombed for the first time, by Lao pilots in American planes with American bombs.

December 14 American President Lyndon Baines Johnson approves Operation Barrel Roll that includes the bombing of North Vietnam and first systematic bombing of the trail in Laos.

1965

February US plane shot down. There were flights targeting a HCMT staging area from the aircraft carrier *Coral Sea*. Edward A. Dickson was killed and Lieutenant Robert H. Schumaker taken prisoner.

February 28 American pilots bomb Mu Gia Pass for the first time. Planes from the *Coral Sea* drop 500 to 2,000 pound pounds.

March Operation Rolling Thunder intensifies bombing of the HCMT in Laos.

March 21 Planes from the carrier *Hancock* strike the Laotian side of Mu Gia Pass

December 10 The U.S. uses B-52 to bomb the HCMT in Laos for the first time. On the bombing runs 24 B-52s also drop cluster bombs for the first time in Southeast Asia

1967

May the U.S. starts classified missions into Laos code named Daniel Boone.

1968

The U.S. 136,000 sorties flown against Laos, compared to 172,000 against North Vietnam.

1969

The U.S. flies 242,000 sorties against Laos, compared to 37,000 against North Vietnam.

1971

ARVN invades Laos just south of the DMZ in operation Lam Son 719. It fails to stop the North Vietnamese and the South Vietnamese withdrawal under U.S. air support.

1973

The U.S. and North Vietnam sign a peace agreement in Paris.

April 17 The U.S. Air Force flies its last military strike against the HCMT in Laos.

Joint Task Force Full Accounting makes first Lao expedition

1974

June 3 the last Air America plane leaves Laos.

2009

About 300 people are killed by UXO in the year.

2012

There are 56 reported UXO deaths for the year.

July 12 U.S. Secretary of State Hillary Rodham Clinton on a visit to Laos pledges to help get rid of millions of unexploded bombs in the country.

2013

There are 41 reported UXO deaths for the year.

2014

First three months of the year 20 people are killed by UXO.

Appendix C

U.S. News & World Report

Scan of February 21, 2000 *U.S. News & World Report* story "The hunt for those missing gets harder, Teams still seek 'closure' from Vietnam War".

WORLD REPORT

The hunt for those missing gets harder

Teams still seek "closure" from Vietnam War

By MICK ELMORE

SAVANNAKEHT, LAOS—The crash site is teasing the Americans digging deep into a hillside in this remote corner of Laos along the old Ho Chi Minh Trail. They have recovered bits from an American A-6A Intruder attack jet in "the pit." What they are seeking now are traces of the two Marine Corps aviators who perished during the Vietnam War when their jet plowed into the jungle hillside.

After three one-month missions here, the pit is more than 20 feet deep. With no shade and no breeze, the heat is nearly unbearable at the bottom, where 12 American soldiers take turns digging and rotate out to supervise the Laotian workers sifting the dirt for any foreign objects. They suspect this is where the A-6A went down Sept. 29, 1969, but they can't be sure since other warplanes went down in the area during the Vietnam War. (*U.S. News* is withholding the names of the two aviators to protect the privacy of their families.)

Air Force Master Sgt. Keith Williams, a "wrecker" who can recognize the smallest bits of aircraft parts, identified pieces of two life support systems, and that's how they know two men perished with the plane. "I like to find remains to put to rest some of the questions that still need to be answered," said Williams, who has participated in more than 25 such missions. But he added that the pit guards its secrets well.

DNA traces. And they're not asking for much. Human remains weighing as little as 5 grams is all the Army's Central Identification Laboratory in Hawaii requires to make a reliable identification using new DNA technology. The American servicemen and -women searching the remote corners of Vietnam, Laos, and Cambodia for the remains of soldiers lost during the Vietnam War consider it closure when they are able to find and identify remains of someone previously unaccounted for. So far, the

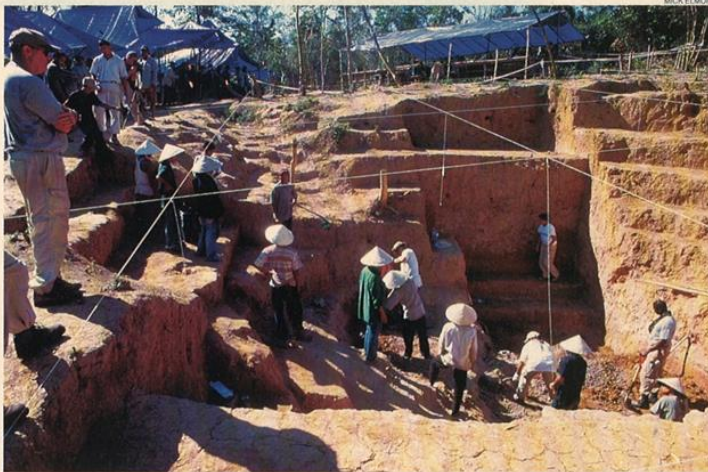
Pentagon has been able to complete that task in the cases of 552 personnel listed as missing at the end of the war in 1975, while another 622 are considered "not recoverable," for instance, those lost when their planes crashed into the South China Sea. The remains of 236 others are in the identification process or await approval from the families, who must sign off before a case is closed. That leaves 1,173 cases.

After years of searching, the easy ones

who has worked for the identification lab since 1986. "Another reason is the witnesses are getting older, if there are any left. Fifteen years ago we had witnesses that could pinpoint, and that made it easier to dig. Now it's second [-generation] witnesses."

The crash site, in mountainous terrain thick with bamboo, shows just how difficult the task is. It's no picnic digging and sifting Laotian dirt eight hours a day in a stifling heat in a high malarial area. Choppers fly the team to the site each morning and out at night to the base camp, which has such creature comforts as fans in the tents, hot showers, a restaurant with cold drinks, and a recreation room with satellite television. It's not Club Med, but after the nearly 40 soldiers and three archaeologists return from digging in three remote crash sites, the camp offers rest and relaxation.

Despite hardships, the soldiers are enthusiastic about their work. Williams,



Digging at the site where two American airmen perished during the Vietnam War.

● "I like to find remains to put to rest some of the questions that still need to be answered."

are done. The Pentagon's Joint Task Force-Full Accounting has \$20 million this year to conduct 11 missions—five in Vietnam, five in Laos, and one in Cambodia. The hunt extends into some of the region's most remote terrain, making excavations difficult, expensive, and often fruitless. The fact is, most of the remaining missing will never be found—though neither Congress nor the Pentagon wants to call off the search. "The sites have been harder to find. And when we do find the sites, they have been picked over more," says archaeologist Pete Miller, a civilian

for instance, signed on for an additional two-year stint with the Air Force with the understanding that he would continue to work on these search missions. Staff Sgt. Mike Henshaw shows off the tattoo on his right shoulder: "POW-MIA, You are not forgotten," with seven stars below it. He adds a star after each mission, just as a pilot paints on his aircraft the number of planes he has shot down. Now, he can add one more; the dig concluded last Thursday. But it may be many months yet before the Hawaii lab will determine whether the pit gave up its secrets. ●

VITA

Michael Elmore has been a journalist for 30 years and written for nearly 100 publications and reported from more than 20 countries including all of them on mainland Southeast Asia. An American he studied a year in Bogota, Colombia working on his BA in Latin American Studies, then after reporting along the Texas-Mexico border for three years moved to Australia in 1987. After working there for four years, in 1991 drove a car from Melbourne to Bangkok including through seven Indonesian islands. Since then he has lived in Thailand and Cambodia with long spells working in Pakistan, India, back in both the United States and Australia and with frequent visits to Vietnam, Laos, Malaysia and Indonesia. He is currently a lecturer at Chulalongkorn University's Communications Arts Faculty and working on his Master's degree in the university's Southeast Asian Studies program.

