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Research By-Product
DETECTION AND AVOIDANCE OF
MINES AND BOOBYTRAPS IN SOUTH VIETNAM

Training and Tactical Procedures
of the 4th Infantry Division

Collected and Compiled by George J. Magner

March 1968

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The George Washington University
HUMAN RESOURCES RESEARCH OFFICE
operating under contract with
THE DEPARTMENT OF THE ARMY

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Technical Advisory Services

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HumRRO Division No. 4
(Infantry)

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This report describes interviews conducted in a project to: (1) evaluate prevailing training methods for detecting and avoiding mines and booby traps; (2) determine training requirements, especially for minesweepers; and (3) develop recommendations for improved training. This volume provides both summaries and transcripts of interviews from the 4th Infantry Division.

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FOREWORD

In response to a requirement from the Army Concept Team in Vietnam (ACTIV), HumRRO Division No. 4 (Infantry) undertook, as a Technical Advisory Service, to assist in a project, Study and Evaluation of Countermine Activities (SECMA), proposed as a response to increased casualties from mines and boobytraps in Vietnam. HumRRO participation was designed to accomplish or assist in the accomplishment of three subtasks:

a. Evaluate present training for detection and avoidance of mines and boobytraps.

b. Determine training requirements, particularly for mine sweepers.

c. Develop recommendations for improvements in training, particularly for mine sweepers.

To accomplish the second of these objectives, a HumRRO representative conducted interviews in Vietnam during January and February 1968. Persons interviewed included engineer and infantry personnel, both officers and enlisted men. Interviews were conducted in five different major commands in Vietnam to develop a data base representative of conditions in all parts of Vietnam, and thus to provide a basis for improving training for soldiers assigned to any part of the country. The collection of data was markedly facilitated by extensive assistance provided by ACTIV, which included transportation and a project officer, which is gratefully acknowledged.

The present volume consists of transcriptions of tape-recorded interviews from one of the five major commands furnishing data. It is divided into two sections. The first section consists of interview summaries which contain the key points mentioned in each of the interviews. The second section contains the interviews themselves.

Subsequent work on this project will include analysis of quantitative data extracted from the interviews and from data forms completed by the units contacted, and the publication of a consulting report based on the findings.

This work is being done at HumRRO Division No. 4 (Infantry), Fort Benning, Georgia. The Director of Research of this Division is Dr. T. O. Jacobs. Military support for the study was provided by the U.S. Army Infantry Human Research Unit, with which HumRRO Division No. 4 is co-located. LTC Ferdinand O. Barger, Jr. was the Unit Chief at the time the research was performed.

HumRRO research is conducted under Army Contract DA 44-188-ARO-2, and under Army Project 2J024701A712 01, Training, Motivation and Leadership Research.

Meredith P. Crawford
Director
Human Resources Research Office

[redacted] Only

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S U M M A R I E S

INTERVIEW WITH THE BATTALION S-3 AND TWO LIEUTENANTS,
ONE SERGEANT AND TWO SP4's OF COMPANY A, 4th ENGINEER BATTALION

Much of the information was obtained from working level personnel from the company, who had been in Vietnam for some time. They reported that there had been extremely few casualties from mines and boobytraps in the division. Almost all that were found were mines; very few boobytraps had been encountered. About 90-95% of the mines encountered were the M1A1 type antitank mine, with the other 5-10% being Chicom TNT with a blasting cap, and mortar or artillery rounds. It was noted that most of the M1A1 mines had a booster charge of Chicom TNT under them. About 85% of these have been located on road clearing operations with about as many being hit as were found. The clearing of much of the road net is done by running track vehicles over them, which accounts for most of those hit.

Of those found, about 15% have been off the roads and trails, about 70% in the roads, usually the ruts, and the rest on the shoulders of the road. There is no characteristic pattern to the mine planting except that the VC sometimes stagger them on both sides of the road.

Any boobytraps that are found in the jungle are usually on trails. Practically all fuzes have been instantaneous; about 98% have been the pressure activated type, with the others command detonated. There has been very little imagination shown in VC mine employment although a few minimum metal type mines have been found.

About 80% of the mines found during monsoon are located visually, as they are fairly easy to see then. In the dry season, they are hard to find because of the dust, and most of them consequently are located by the detector. Scout dogs were tried once, but without a great deal of success. Security elements watch for wires on the sides of the road to try to locate command detonated mines.

After a mine is found, APC's might use a grappling hook to pull it from its hole, after which it will be blown at the side of the road to avoid cratering the center. When they are found, mines are almost always blown in place. They had done night mine detecting once, but were not enthused about it. They make reports on mines they locate, to include filling out a form.

They think it takes two or three sweep missions before a new man can be considered reliable, and quite a few more before he is really proficient. The men reported that very little training was received on the mine detector in AIT. New replacements do receive four hours of mines and boobytraps training at the division school, but their actual mine detector training is primarily OJT in their units. There is no formal refresher training other than weekly training, but the squad leader's supervision helps to keep the men on the ball. They do some mine detector training for the infantry.

Lunar cycles, weather and other factors had been studied, but no correlations were developed. They did notice that an increase of fighting resulted in decreased mining. In their area, they had not been able to find VC signs and symbols that reliably indicated the presence of mines and boobytraps.

Overall recommendations for stateside training included an increase in the Vietnam orientation of mines and boobytraps training, more hours on the use of the mine detector and more emphasis on maintenance of equipment.

INTERVIEW WITH A 1st LIEUTENANT, A SP/5 AND THREE SP/4's
OF COMPANY B, 4th ENGINEER BATTALION

This engineer company was located well out west of Plieku, at a base called the Oasis, to support the 2d Brigade. The Lieutenant was the acting company commander and the men were experienced mine sweepers who had been in Vietnam for some time. The men had all gone through engineer AIT but didn't feel that they had received enough mines and boobytraps training, or that it was oriented toward the problems they were facing in Vietnam. They had trained, though not extensively, on the P-153 and were using it successfully in Vietnam but were not familiar with the PRS-4.

They had found most of the mines wrapped in plastic. They had also found quite a few 82mm mortar rounds, a few M1A1 mines and some CBU's. They didn't think the type of soil or the plastic wrapping was causing them any detection problems but they thought some rubber insulation put over mines did give a shielding effect against the detector. Chaff was reported to be a problem, though soil composition was not.

Almost all the mines are found on regular road clearing operations with most of them being planted in the ruts of the road. The majority are on roads near a village; practically all have instantaneous fuzes; and almost all are pressure activated. Most of the mines are found visually and the rest with the detector. The ground is hard and it is usually easy to spot places where the VC have planted mines. In some cases the plastic wrapping is sticking out of the ground. Locations where the VC have planted mines before are considered critical areas and inspected more carefully. They try to detect command detonated mines by checking for wires along the sides of the road. To their knowledge, dogs had not been used for detection.

When mines are found, they are carefully uncovered. Then the demolitions man blows them in place. Occasionally one is disarmed. They are not by-passed. The mine is reported through command channels when it is found and a more detailed written report is submitted if it is an unusual item.

More realistic training in the states was suggested as desirable, to include actual mine sweeps of stretches of roads planted with live or dummy ordnance. It was thought that the whole course should be more oriented toward Vietnam. The division replacement training in mines and boobytraps helped some but it indicated too much reliance on the EOD man coming out to help in the field; he cannot do it.

Punji stakes and other native devices are being used in this area by Montagnards and VC but this is not really a major problem. No mine detector training is given in the division replacement school. The use of the detector is learned on an OJT basis, primarily in the company.

They have not given any mine detector training to the infantry. However, they have been giving this training to a special forces CIDG element, and it

was enthusiastically received. They had been unable to detect any VC mine marking system.

Additional comments from the Lieutenant described the battalion system of pooling detectors to increase availability, and common maintenance problems.

INTERVIEW WITH THE S2 AND INTELLIGENCE SERGEANT
4th ENGINEER BATTALION

The S2 section of the engineer battalion had been keeping some statistics on the mines and boobytraps and seemed to have a good feel for the overall problem. They reported that boobytraps were a minor problem; mines caused most of their troubles. Most of the mines were the M1A1 version, which were originally given to the Chinese for use against the Japanese. These, or Chinese-manufactured versions, were not the main problem in this area. Most mines were pressure activated. Sometimes they used wired board contacts. Generally, the mines were not buried very deep and often had a board sticking up to activate them. From 10 July '67 to 4 February '68 there were 228 mine incident reports, practically all antitank types with around 10 pounds of explosives. In this same period the division had 45 wounded and one killed from mines, while two ARVN and 18 civilians were killed and two civilians wounded in the division area.

INTERVIEW WITH A FIRST LIEUTENANT, TWO SERGEANTS AND A SP5
FROM THE DIVISION TRAINING DETACHMENT

They were not conducting mines and boobytrap instruction at the time we visited the division training detachment but they had the NCO instructor give us a summary of the normal instruction. He started his instruction by telling them that boobytraps were often found on trails, in trees, on river banks on gateways, in old night positions and beside dead bodies or equipment. Likely places for mines were tank trails, paths, river banks, the edges of villages, and roads. Types of boobytraps mentioned were a sabotage grenade with a steel ring attached and an instantaneous fuze, and a mace, which is an item with many spikes on it. They said none of this type of thing had been encountered in their area, but could possibly be used further north in their 3d Brigade's area. Also mentioned were the bamboo arch, the rotating spike trench, a spear trap, and a steel arrow trap. Again, it was acknowledged that these items had not been encountered in the 1st or 2d Brigades' areas, which were pretty sterile, but might be seen in the 3d Brigade area southwest of Da Nang. The boobytrapped bridge was discussed, then an antipersonnel bomb made from a cigarette pack, a bangelore torpedo made from bamboo filled with explosive that had been used in a recent action, and the homemade Claymore that was simple but effective. He had little in the way of training aids and in discussing this it was discovered that the class was usually taught by EOD men from Camp Holloway who brought their own training aids. This arrangement had been disrupted temporarily by the recent Tet Offensive. The instructor talked about the enemy's mine detection capability with French and Chicom detectors. They didn't know of any actual cases where the enemy had used detectors, but they felt they could be used to pick up mines in old French mine fields to use against us. They talked about the NCO students going through the boobytrap confidence course as part of their course but said the replacements did not go through it as there were too many of them for the time available. They have no training on the mine detector at the school. Accompanying them through the heavily wooded, steep terrain of the confidence course, I felt it would provide an opportunity for excellent tactical training in addition to the boobytrap aspect.

INTERVIEW WITH THE S3
OF THE 2/8th MECHANIZED INFANTRY BATTALION

This unit, operating out of a base at the Oasis, was fully committed on tactical missions and the only one available to talk to us was a very busy battalion S3. He was able to give us a clear picture of the mine and booby-trap problems of a mechanized battalion operating in the highlands. Overall it was considered a minor problem with only 1.5% of the unit's casualties attributed to this cause. Most of these casualties were from mines with the main threat being the M1A1 antitank mine and, to a lesser degree, U.S. artillery rounds and CBU's. Most of them were encountered on road clearing operations but some were found on search and destroy operations. When moving through the jungle, the most likely place for boobytraps would be on trails. Most mining incidents on roads were near villages and many preventive measures were being used, to include firing white phosphorous (WP), ambushes, and keeping the road under observation. WP H and I fire was used instead of HE to avoid damaging the road. VC mines are put on any roads the Americans use, including some near our base camps. They almost always use instantaneous fuzes and they are normally pressure activated with some command detonated. The command-detonated mines are normally used in conjunction with an ambush. The mines are not offset and are usually catching the vehicle on the track. They have run into some punji stakes but they are considered a minor problem. They use both visual means and mine detectors to locate the mines, with slightly more by their support element with the detector. Visual detection is helped in the rainy season by the mud being washed away to reveal the mine and in the dry season by observing for any disruption in the track pattern in the dust. Tactical conditions often give a clue to areas requiring a careful search and critical items to check are dirt in the road, the condition of vegetation, trails or road intersections. Extended laterals are not used on their APC's and they do suffer some injuries, the most serious usually by the driver. They attempt to detect and neutralize command-detonated mines by looking for wires and reconning by fire. When a mine is found, the engineers, if accompanying, will come up and blow it in place. While some known types like the M1A1 are occasionally disarmed, most of them are blown in place. They are never by-passed and a report is always submitted on them. The information on the mines is kept by the S2 and made available as needed. The VC don't usually start mining an area until you move into it: they don't waste mines. The men in the mech companies have been trained in an OJT manner by the engineers and can use the detectors. They have two detectors organic to each company. Replacements are generally good overall when received but you have to watch for complacency if they don't run into anything for a while. The replacements do get some mine and boobytrap training at division which helps them to understand the problem. Tactical commitments make any training by the units almost impossible. More training on the mine detector in the States was recommended as well as a refresher course with the initial in-country training. No marking system of the VC had been detected and it was felt that they relied primarily on a local verbal warning system.

INTERVIEW WITH THE S2 AND S3
OF THE 1/10th CAVALRY SQUADRON

This unit was concerned with the security of long stretches of road, primarily 19 West. They operated out of the Oasis base and estimated that one-third of their total casualties had been from mines and boobytraps. During the period 4 January 67 to 6 February 68 they had 178 mine and boobytrap incidents. Many of these had occurred in the early part of '67 while running convoys on Route 14 West to Dak To. Most of the mines encountered have been the U.S. or Chinese versions of the M1A1 antitank mine with a five-pound booster. The 82mm mortar round was next in frequency and then U.S. and Chicom Claymores employed in a pressure-activated mine role. Of the mines that were found, most of them were detected visually rather than with the mine detector. However, the majority of the mines have been located by track vehicles that ran on them while clearing the road. Six vehicles of mine sweep teams had hit mines, and in one instance it was the third vehicle in the column. The mines were generally not large enough to destroy the track vehicles, but they did damage them and cause minor casualties. Nearly all mines were found on road clearing operations with most mines being in the ruts of the road and on roads near villages, indicating local people using a nearby source of supply. It is believed that almost all of the mines are pressure activated with instantaneous fuzes that occasionally develop a delay characteristic when dirt gets in the pressure plate and thus require extra force for detonation. As an example of this, a heavily loaded Vietnamese Lambretta set off a mine that a number of track vehicles had passed over without detonating. They did not know of any enemy use of offset techniques in planting mines and there was little use of command-detonated mines. The road sweeping job is done by the engineers on certain critical portions of the road where experience has shown the enemy frequently mines. The Cav squadron has mine detectors but does not employ them as this would detract from their primary mission of road security. The unit does get some help from local people in locating mines and uses an informal reward system to encourage assistance. They use a number of measures to prevent the VC from mining the road, to include night ambushes in problem areas, random firing of VT-fuzed white phosphorus on the road, and only scheduled mobile patrols along the roads, and random flying of the "Red Baron." This is one helicopter flying low over the road while the men observe with night vision devices, followed by two gunships that engage any targets observed, and one higher flying ship that drops flares as needed. When mines are found on a daylight sweep, they are usually reported and then blown in place by the accompanying engineers. Recently the Cav unit had been running along the sides of the roads to reduce the damage to their tracked vehicles. It was felt that the Cav unit personnel were not trained to employ mine detectors and that they should receive this training. Speaking of mine detector training, it was felt that the engineer sweepers knew how, but often become fatigued, bored, and careless, which resulted in undetected mines and casualties. On the other hand, too slow a sweep on a long road net would effectively deny the use of the road. Blacktopping the road was considered the best and, in the long run, perhaps the cheapest solution to the mine problem. It was recommended that CONUS mine training for armor crewmen be oriented more towards

the problems faced in Vietnam than toward conventional mine warfare as this is a major problem of armor. No VC mine marking system has been detected and with the number of civilian casualties suffered in this area, there is some doubt that any such system is there.

INTERVIEW WITH THE EXECUTIVE OFFICER, S3
HEADQUARTERS COMPANY COMMANDER AND MAINTENANCE OFFICER
OF THE 2/1ST CAVALRY SQUADRON

This Cav Squadron had the mission of securing long stretches of road on Route 19E from Pleiku to Mang Yang Pass (50 Km) and 14N to Dak To (70 Km). On 19E they make early morning clearing runs with armored vehicles to open the road and then put strong points at strategic locations to secure it. From Pleiku to Dak To the road is patrolled and convoys are escorted from Kuntum to Dak To. During the Tet offensive, all convoys were escorted. This technique of making these clearing runs, or "thunder runs" as they were called, was for the purpose of triggering any ambushes as well as clearing mines. The tanks and APC's would run the road firing all their weapons, to include the 90's with canister. Certain areas that were considered likely trouble spots were then swept by engineers with mine detectors. Of their total casualties, 15% had been from mines and booby-traps, with almost all of them being from mines. The main type of mine encountered was the M1A1 with a booster. Second would be the bamboo stake mine which is pulled across the road just as a vehicle rounds a corner and is often used in conjunction with an ambush. The next most frequently encountered mine was the homemade wooden box filled with C4. The mines are often found as the result of a vehicle hitting one mine and a sweep of the nearby area resulting in the discovery of several more. There was no real pattern to identify suspected mine locations. Most mines were buried in the shoulders of the road since the road was hardtopped and, in some cases, they were command detonated to harass a passing vehicle. There had been none buried in pot holes, but they had been put in culverts under the road. Most fuzes are instantaneous, but the mine often has a delay effect as dirt will sometimes prevent the pressure-activated mines from going off until several vehicles have passed over it. About 75% of the mines were thought to be the pressure-activated type, with the rest being command detonated electrically. Most mines are found by hitting them, then by visual detection, and third, by mine detectors. Aircraft are used as a means of surveillance on the road. Preventive techniques are the thunder runs, H and I fire near the roads, night ambush patrols with night vision devices, and infrared-equipped tanks occupying strong points at bridge sites. When a mine is found, the engineers are usually brought up to sweep the nearby area and then the mine is blown in place. When a convoy is stopped because of a mine, everyone gets off the road and assumes a defensive position. Armored vehicles are also sent to assist the convoy and the mine is reported to higher headquarters. Information on mines is disseminated through the daily intelligence summary. There have been nine tanks, six APC's and two retrievers (VTR) that have hit mines, with two of the tanks being total losses. Fortunately, the APC's and wheeled vehicles have hit smaller mines. Although mines had gone off under the rear wheels of vehicles rather than the front, they still did not think that offset-type mines were being used. The unit had received a little mine detector training prior to coming to Vietnam and a little more from the engineers after arriving. The training for replacements at

the division school was considered to be mostly infantry oriented, emphasizing boobytraps with no mine detector training. It was recommended that armor training in CONUS stress many of the counter-mine activities utilized in Vietnam, and that in-country training include mine detector instruction for armor unit replacements. Offensive actions were recommended as the best defense against mines. This would include tanks with searchlights, radar, ambush patrols and artillery fire.

INTERVIEW WITH THE 2d BRIGADE COMMANDER

In a brief discussion, the brigade commander commented on the long distances involved in clearing his road net and the need for them to take some calculated risks if their mission were to be accomplished. Preventive measures have been emphasized to try to deny the enemy opportunities to mine freely. A recent increase in enemy activity had resulted in some decrease in mine planting.

INTERVIEWS

INTERVIEW WITH THE BATTALION S-3 AND TWO LIEUTENANTS
ONE SERGEANT AND TWO SP4's OF COMPANY A, 4th ENGINEER BATTALION

Q. Could you give me an estimate of the percentage of the total casualties in the engineer battalion that were caused by mines and boobytraps?

A. I don't think we've had any casualties from either a mine or a boobytrap.

A2. Not any KIA's. I've had a few WIA's, none killed primarily in this area.

Q. So really as far as your engineers are concerned, it's not a great casualty producer?

A2. That's throughout the division, as far as casualties are concerned from mines, except for equipment damage, of course.

Q. What percentage of the mines that have been found in your area would you say were the antitank or antivehicular type and what percentage were the boobytrap type?

A. Every one has been an antitank type. We haven't found one boobytrap. I haven't.

A2. I have never found one.

Q. How about your people that you put out with the infantry on operations? Do they run into boobytraps?

A. Not on any of the sweeps that we've conducted.

A2. On the sweeps themselves, we sometimes run across boobytraps.

A. Not mines though.

A2. They're by stakes along the side of the road or something like this.

Q. I was thinking about where an infantry unit goes out on a search and destroy operation and you put engineers with them?

A. I've got 15 missions with the infantry like that and I've never been called upon but once out of 15 to actually sweep a road for mines.

A2. Normally, the only mine detector we use out there is searching for metal objects. We did go on one operation outside of the base camp here where they had a tunnel, and a grenade wired across the tunnel.

Q. What I mean is, on a normal search and destroy operation when the infantry comes across a boobytrap and they have engineers with them, don't they normally have you come up and blow it for them or don't they run across many of this type?

A. Not in this area.

A2. Not too many. They get them mostly in the north.

Q. Could you tell me the main types of mines that you are running across?

A. The M1A1. It's a second World War type.

Q. Can you tell by the markings on them what they are?

A. Some of the markings may be gone. They may have found some. The ones I've seen have all had "M1A1 Antitank" marked on them.

Q. What is the next most frequently encountered type of mine?

A. I think that in this area it would probably be the blasting cap with the Chicom TNT.

A2. Then some mortar and artillery but not too many. I'd say 90-95% are M1A1.

Q. Any others that are worth mentioning?

A. None that we've come in contact with.

A2. No, the Chicom TNT, the M1A1 or the mortar round are the ones they run up on mostly.

A3. He's used a booster charged M1A1. I've seen a lot of times a large block of TNT right under the M1A1.

Q. You mean the Chicom explosive is the booster charge for the M1A1?

A. Right.

A2. Sometimes it's a C4 booster, but rarely.

A. The M1A1's usually have a booster under them.

Q. I presume about 90 percent of the mines that you find are found on the road sweeping operations, is this correct?

A. The ones we detect are, but 10-15% are found off the road on trails used by Army vehicles.

Q. About 85% you find on road clearing operations?

A. I know one of the Lieutenants said he was running about 50 or 60 percent being found visually. During a sweep operation, the point men will find them.

A2. This 85% doesn't reflect the number we find the good way, by detecting.

Here lately, we've had about as many hit, not on a mine sweep, as we've found, probably more. Most of them found lately have been hit by track vehicles.

Q. Actually, when you're running these tracks up and down it's really a mine clearing operation then?

A. In the initial sweep on a road, yes; sweep by track vehicle.

Q. And actually you find them by exploding them?

A. Right. After the road's been gone over during the day, sometimes in the afternoon, after they've had convoys running all day, a truck or track will hit one.

Q. That's kind of an unhappy way of finding them?

A. That's the hard way.

Q. Could you describe where you find them; for example, in your road clearing operations, are they buried in the road or on the shoulders?

A. Well, both places, but predominantly in the road. For awhile there, all the ones that we were exploding were the ones being found on the shoulders, right to the side. Then they start moving them into the tracks where the wheels have dug the ditches. Then we found them predominantly in the ruts.

Q. So about what percentage would you say would be in the road and what percentage on the shoulders?

A. I'd say about 70% in the roads, and 30% on the shoulders.

Q. Do you encounter any on these search and destroy operations other than these few boobytraps that you mentioned awhile ago?

A. I never have.

A2. I found one of those command detonated ones once.

Q. What type was that?

A2. I don't know what type it was but it was command detonated.

A3. Probably one of those M1A1's.

Q. Are these generally in an open stretch of road or are they in the vicinity of a village? Is there a characteristic way that they are put in the road?

A. The only characteristic I've noticed is the one we've encountered in this one stretch where they usually place two at a time. Stagger them, one on each side of the road, so they can catch them coming from both ways. It's not necessarily by a village. They have hit some right near one of the villages here and some of them have been on a stretch of road right out in the open.

Q. So there's no characteristic pattern that way?

A. No, sir.

Q. If I understand correctly, you're running into very few boobytraps or anything out in the jungle on these search and destroy operations.

A. Correct.

A2. One of the mechanized battalions has hit a number out on search and destroy operations running across country. But this was primarily on trails where they've been before. Down south of the Oasis is unopened area. It was on a trail and they found a number of them back in July and August. This was just south of the Oasis and we had two people hit by them.

Q. So it's normally on a trail if it happens at all? Now the fuzes that are used on these things, are they primarily instantaneous or delay?

A. Well the blasting caps on the M1A1's, everything we've encountered around here has been instantaneous. Now we ran into one out there where we use a security vehicle; it went past it and it went off between the two security vehicles.

A2. That was a Chicom mine.

A. We suspected it was command detonated. In fact, I'm pretty sure it was and I saw people running out of there.

A2. That was the one that was command detonated in front of the point men, where they saw the man running away later. They tried to get the sweep team itself. They blew it and took off. The mine was dug in a hole on the side of the road.

Q. What's the primary initiating action?

A. Pressure.

Q. About what percentage were the pressure type?

A. Every one I've seen. It's been 98% of them.

Q. Except this command detonated mine?

A. Right.

A. There's been very little imagination shown in this area. Just recently we started hitting what we suspected were plastic mines other than the M1A1. But it's been predominantly the M1A1.

Q. Are you hitting any non-metallic mines?

A. None, other than the one we described. It was in the same hole that had previously been blown by a mine and there was no evidence of it. It wasn't picked up on the sweep, and after it blew there was no evidence.

Q. So you'd have to conclude that it was nonmetallic?

A. We suspect and chances are that it was plastic.

Q. You've never uncovered one though?

A. No.

Q. It's just plastic with the contact switch on it or something like that?

A. The only thing we've ever found, like I said, was the block of Chicom TNT with one blasting cap on top of it.

Q. What's the primary method of detecting these mines? Is it visual, with a mine detector, or what?

A2. Well, I'd say, primarily, it is visual. Just about all of them during the monsoons were visual. We picked up, I guess, 80% visual, in the monsoons. The point man was picking them up during the monsoons. Here lately, the only ones we have been picking up have been by detectors because you don't see them for the dust. Now the majority of them are hit by vehicles.

Q. So mine detectors during your dry season is your primary method and during the wet season, visual. When you see an indication, do you have your mine detector come up and confirm or what?

A. The mine detector always comes up even if you are positive it's a mine. He'll come up to check for boobytraps or to see if there are wires. The prober'll come up to check for wires running off from it or around it.

Q. Do the tactical conditions sort of give you a clue as to where a logical ambush site might be, or one of these critical areas that you check carefully?

A. The critical areas we are finding here are certain areas they continue to mine. There's no particular reason, other than maybe they have access to it from wherever they may be.

Q. So it's critical because they're able to get to it and not because it's a logical ambush site or anything of that nature? And I believe you were saying that when you were able to clear the brush back from some of these troublesome areas that you were able to eliminate the threat?

A. Reduce it considerably, yes. This clearing of a 100 meters off to the sides of the road helps. That was one of our worst problems; they could slip up to the road and plant them in the dust in the dry season. I think it helps a great deal in all the areas that we've cleared. It gives us better observation so they can't move up to the road unobserved.

Q. Is there any other type of assistance that you use in mine and boobytrap detection, like dogs or mechanical equipment?

A. Scout dogs, again during the monsoons. It didn't last very long because the dogs' platoon leader was afraid one of his dogs was going to set off a mine when they had him out with our point man. That lasted about three days, I think, and then we had to discontinue using him.

Q. Did the dog do any good?

A. Wasn't really enough time to tell. A couple of times we thought he picked up a scent but the company commander out there got so tired of listening to the platoon leader tell him how expensive his dogs were that he just forgot about it. That's the only time we tried it.

Q. No other type of mechanical equipment? Any long rods or anything like that?

A. No.

Q. Ok. Now do you have any special techniques for detecting or neutralizing command detonated mines?

A. Detecting or neutralizing? Well, it's nothing special, the point men are walking and they're checking the ditches and the leads to the road both ways for wires and something like this.

Q. Do you ever have any infantry with you that screens the shoulders of the road?

A. No.

A2. A couple of times we've had flank security with a squad of infantry on each side.

A3. Now lately, we've had APC's on both sides of the road up even with the mine sweep team. But we rely on the men that are out ahead and on the sides for this command detonated detection. They walk along the shoulders,

in the ditches and up on the banks looking for wires and tracks. They have three men out checking.

Q. Do you ever use a grappling hook or anything like that?

A. To remove a mine. We very seldom do, unless it's a mortar round or something that you're not sure of. Very seldom do you try to remove it. If there's a mine, you look and see the top of it; if it's a mine, blow it. If you use a grappling hook, you pull it out and move it to the side of the road and then blow it. Of course, a lot of times you can say a booster charge might be under it.

Q. Do you ever do any night mine detecting?

A. We have.

A2. Only once we have.

A3. We were forced into it once--well, two days, really, but once in particular.

Q. You're not real enthused?

A. No.

A3. Not really.

Q. What method did you use to do it that time?

A3. It's the same type of sweep with the point men out, except we usually try to increase the point's size to where they can cover a small area, and the operation is slow. It's slowed down considerably, but still using a detector.

Q. Would you run through a typical situation where you find a mine in the road, and tell me blow by blow what steps you take?

A. I'll use the last one we found as an example. The sweeper spotted the mine, picked it up on the detector. He moved back and told the probe, he'd hit a metallic mine. Then he hollers, "Mine!" Everybody clears the road, gets in a ditch, gets away from it. Then the NCO or Officer in charge--normally, he's an officer--will go up there. He'll take a mine detector and check for boobytraps. He'll walk around and check for lead wires or anything to determine that the mine is not boobytrapped. Then the officer or the NCO will clear everybody away and he'll clear the mine so he can visually see what type of mine it is. Then he'll take a grappling hook, hook to it, and tie it onto a tank. Usually we have about 200 feet of lead wire. Everybody gets back out of the way, and the tank jerks it out. Then you go up, check the hole, see if there's a booster charge under it, and then they'll blow it. Sometimes they can disarm them. M1A1 mines you can disarm.

Q. Do you normally try to disarm it or do you blow it in place?

A. Normally, just blow it in place. The M14 mine--there's so many of them, no one wants any; there's no need to take one back. But if it's something new, and you could pull it out and knew how to disarm it, the G2 would be glad to get it. So you would probably bring it back.

Q. But normally, it's just blown in place, right?

A. Right. You try to get it off to the side of the road. You don't want a crater in the road.

Q. When you find these things, I suppose the first thing you do is pass the word back and then do you have to report it to higher headquarters?

A. We normally tell the security with us what we've found; then we have a radio ourselves to call in and tell what type of mine it is and if we blow it. Then we fill out a mine report, afterwards, giving the location, type mine, etc.

Q. Now do you ever mark and by-pass these mines because of lack of time?

A. We always blow them.

Q. Any other action taken that we didn't mention here?

A. No.

Q. On this reporting you mentioned, do you have a certain form?

A. A mine incident report. It's a preprinted form. I think it's probably local for the battalion and division.

Q. Then do you include this in any kind of after action report?

A. That is considered our after action report. It goes to the division and is included in the SITREP. Normally the SITREP includes the reports sent in by the security element. That's by the element that's responsible for the security of that zone, and they secure our mine sweep teams. They report it through their channels. On route 19 West, for example, the 1st of the 10th Cav provides security up there for the 2d Brigade. They report to 2d Brigade who reports to Division, on to SECMA and we include it on our SECMA application here at our level.

Q. How about the dissemination of this type information? Before you go out into an area, are you given any intelligence on the mines and boobytraps in the area?

A. No, not generally, we have a prepublished list of old French anti-personnel mines and our personnel mines. It's just distributed throughout our area here.

Q. Anything that's normally in the area is distributed, right?

A. Not specifically.

A2. Most of the places, we've been in them before and we know the area. If we go out with the brigade or something for a local operation, they'll usually brief us real quick; they'll say it's a live road, bushy--you know, general things.

Q. They give you the general characteristics and anything specific they know about it?

A2. What they've found in the past: what size mines; what caused them to believe there might be a mine out there.

Q. And the written information that you get is this summary that you put out every day?

A. Contacts that were found, things of that nature, yes. Very similar.

Q. What do you think about the adequacy of the training of enlisted replacements that you get from the States? I'm talking about the people that normally come to you directly out of engineer AIT?

A. Is this specifically in the use of the mine detector?

Q. Primarily.

A. Well, I find that it takes at least two or three sweeps here with a discussion before a man is really what you could consider sufficiently reliable. I don't think they ever become proficient until they've conducted quite a few of them. They get to learn the different sounds it makes and some of them get a feel for it. They can sorta tell if if's a tin can or a mine after listening to quite a few.

Q. Did any of you take AIT at Leonard Wood?

A. I did.

Q. How much mine sweeping did you get?

A. As far as I know, they only had one class on it, about 4 hours.

Q. Did you ever have a mine sweeper in your hand and use it?

A2. Five minutes apiece at our class. They also, if I recall, gave us an M1A1 mine out there and it was a pressure release device. We had to disarm it and put the pin back in.

Q. Do you feel like the AIT there prepared you for what you've had to do here?

A. Personally, I don't think so. I don't think it did very much at all.

A2. I learned more over here in one day than all the way through training.

A3. We were pretty rushed for time when I went through there.

Q. Did you get anything on Vietnam that would help you?

A. Not too much. When a man gets here, you can say we're going on a mine sweep. Then normally you've got to sit there and explain the first time. I mean there are exceptions but you've usually got to take 15 or 20 minutes to show him how to put the detector together before you can even start to sweep. And then they get out there and they don't know how to sweep. They're so nervous to start with and don't think. They're just unsure of themselves, because they don't know what to do.

Q. What do you think they ought to have in AIT to prepare him for this?

A. Well, I definitely think he should have more training in the use of the mine detector. Not only just the use of it, but also its assembly, dis-assembly and maintenance, in some form. In a lot of cases he'll say, "My detector won't work." You check it and the batteries are gone. Little things like that. If you're in a hurry you don't have time to really check it. Maybe you're on a rush so you'll say the detector's not operational and he'll throw it in the truck, when all he had to do was turn the batteries around. I think more training will help him.

Q. How about the NCO's? Do you think they come over pretty well trained?

A. It varies. A lot of them have been around training centers where they've used them before, those that have been in six, eight years. But we have a younger set of NCO's than we used to have; they've never been over here on a mine sweep, and they don't have any experience.

Q. They've never seen that phase of engineer training?

A. Not really, unless they happened to be in a basic training company. Now sometimes they go to Europe and they get to a unit where they perform this type of training, but not everybody gets it, all of it. A refresher course, something like this prior to coming would be good, like the POR qualification. It could include for the engineers some type of training on things they'll need over here, it appears to me.

Q. Now, how about the young officers? Do you feel that their course prepares them fairly well for Vietnam?

A. Well, I'm an OCS graduate and I went through six months of this type of training real quick. On the use of the mine detector, I think we were basically like AIT's. We had about two hours, two or three hours. We

may have never physically used the detector. I'd used one and seen one before in my enlisted service, so I knew a little bit about them.

A2. For instance, the M1A1 mine is very common here. Everybody knows it but you never see it in CCS. You get some but it's the basic U.S. types of mines. I don't think they have enough variety.

Q. Do you think their training is more U.S. conventional mine warfare oriented?

A. Oh, definitely. It's not enough oriented to the problems of Vietnam in the CCS or engineer course.

Q. They could stand more Vietnam orientation?

A. On mine warfare.

A2. And also more on the detector.

Q. Now, when an engineer replacement comes into the division here, what kind of training does he receive before he goes to the unit?

A. He receives a five-day training course which varies with his grade. Captains and above do not go through it.

A. 1LT's, E-8 and E-9 do not go through it. Everybody else goes through it. Five-day training period, and one very good thing that they're doing in those five days is the four-hour mines and boobytraps confidence course.

Q. That's four hours of going through a confidence course?

A. Right, four hours in the afternoon.

Q. How much of the replacements course is on mines and boobytraps training?

A. That's four hours actually in this confidence course, and they also have a number of classes, I believe in Lessons Learned. Lessons over here where they'll talk about most anything.

A2. Or you can ask them anything you want. They take you through that big gulley there showing you the spot of the holes, the trip wires and punji stakes on this simulated jungle-type trail.

A3. I think one of the best things with this five-day course is the fact that all the instructors are what you might call seasoned veterans. They all come from the field. For example, the NCO or officers in charge of patrolling are most likely infantry; been out there a long time and they'll give you the straight poop, you know, what's bad, what's good for you, how to fight. They're real good. The demo men cover the

engineer's portions about the engineers forward with the infantry, what they're looking for, what you need to know.

Q. How about follow-up training for engineers when the men get to their unit? Any kind of follow-up training other than OJT?

A. We have monthly training; like tomorrow, we have the employment and detection of NVA and VC mines and boobytraps. These are scheduled classes. There's a big pamphlet out showing the diagram of everything that they've employed.

A2. Mine detectors is mostly OJT. Usually take them out; one good way to do it is let them be a prober when they go out, because they follow the mine detector operator. They can learn this way and switch off with him for a short period.

A3. We also have a very rigid orientation program when they get here. They go into a unit and get their assignments. Then I think most of the 1st Sergeants give them this orientation.

A4. It covers what they expect you to do, what you run into, demolitions and so forth. Like in Bravo Company, the 1st Sergeant spends about two hours separately on each new man that comes into the company. He shows them blasting caps, all the weapons that might be used as an explosive and what their job will probably be; and he gives them sort of an introduction as to what they'll be doing when they go to battalion to be assigned. In the five days itself, you might have one squad out with a company or on a patrol base. I have seen where the men might observe something and they have informal discussions and training periods and the squad leader'll talk to them about these things and on his own continue that training.

Q. Is there any advanced training for selected personnel, or NCO's?

A. We have the NCO Academy.

A2. But the NCO Academy is not used as such; we're still oriented more to the engineers and mines and boobytraps training.

Q. In this advanced training at the NCO Academy, is part of this instruction on mines and boobytraps?

A. Yes, I believe so. I think it's the same confidence course that they run through.

A2. It's not so much advanced; it's a little more advanced but it's about the same thing as the five-day orientation except it's a little bit more detailed and it's a smaller group. Sometimes these five-day programs have up to 300 people. In the NCO Academy, they have 30 to 40 people, and they have more time to spend with the individual.

Q. Do you do any refresher training for people who might be going stale or to update them?

A. I do it on the squad level. If I go out and sweep, and see a man and he's doing something that's not right, I make a note of it. So when I come back here, I'll take this man and tell him just exactly what he did wrong and how to do it right.

Q. So it's mostly done by squad level supervision?

A. We have some scheduled refresher courses in the monthly training program. We train every Tuesday unless operational problems prohibit that. One or two hours in the afternoon. The division has also just initiated a battalion rotation program whereby they bring in an infantry battalion for about five days while we give them training to bring them up-to-date. Out of this five days, about three days are spent refitting, getting a hair cut, cleaning up and all this stuff, and about two days of solid training. We had a very full two days that we had scheduled for this platoon but I'm still trying to contact that platoon. Of course, this is the first time that we had it set up and it was just a forced test to start the program.

Q. How about training on mine detectors for the infantry battalion? Do you have them send back selected personnel for you to train?

A. Down in the field, Bravo Company was doing it out at the Oasis. I understand that when the infantry have company-type training, they request that the engineers give classes on demolition and mine detection.

Q. It's done by the attached platoon out there then?

A. I can bring up an isolated case of how I did this at Fort Hood. The unit commander, whether Infantry or Armor, would request that engineer personnel be sent to his unit for the purpose of demolition and mine warfare classes to include mine detectors. I did that eight hours a day, six days a week.

Q. Do you have any recommendations about improving training in the U.S. or in-country?

A. I think more time on the detector plus care and maintenance of the equipment. That should be the two primary duties, equipment and maintenance duties tied in with the types we're using over here, the chain saws and the mine detectors. We had many problems, up until just a month or so ago, on improper treatment of the mine detectors.

Q. What was happening?

A. Throwing them in trucks, handling them roughly. The handles are left out of the cases, this type of thing.

Q. How about getting a carrying case, some kind of a canvas thing that you could put on your back for when you're walking with an infantry unit, and it isn't practical to carry the regular case?

A. Often it isn't practical to carry a case; that's true.

A2. But actually the problem is the way the detector is built, really.

A3. On training in the states, you can't get into the details of everything a man is going to be doing in a specific location. You'd have to explain each specific thing relevant to a certain area only. So much of that would be impractical. I think the training programs the units have set up in the areas they're in stress the certain jobs they're going to be doing. That's probably the best way to have it. We're doing it this way here, giving OJT, briefings on what they're going to be doing, etc.

Q. Actually, then, this OJT is a continuous thing?

A. Yes.

Q. Like the Sergeant says, a lot of these bull sessions actually give a guy as much as he gets from formal instruction?

A. A lot more.

A2. Much more.

A3. You set him down in a day room or mess hall for training to listen to somebody, and the first thing he starts thinking about is if he's going to be at the EM Club, or finding out if he got a letter.

Q. Are there any marking systems that you've been able to detect here that the VC use to mark their mines?

A. I think they published a list of two types. And every time we found a place that even looks like a good spot, I'd usually look around the roads to see if there were rocks, grass tied, or something. But I've never been able to.

A2. The Corps of Engineers ran quite a study on the lunar cycles to see if that had any effect on the frequency of mines. The lunar cycle was studied, the weather conditions, etc., and they found no correlation whatsoever with the rate of mine incidents and the lunar period, or whether it's a foggy day, or anything.

A3. Only thing that they've been able to establish is that it takes just about a two day reaction period. If they're going to keep mining, they will place a mine and not the next night; but the following night, they'll place some more. I guess they wait to see what hits it. Then they run back to their little supply, bring it back and place another one.

Q. So it follows in a cycle like that?

A3. Out here we're starting to write up things like that to try to find a pattern. You might have a two month period where you might have a lot of mining and then two or three months of none, and then it increases again. From about the 1st of October to the middle of December, we had very, very few mine incidents. Prior to that, we had many.

Q. Does it correlate with the combat action around here?

A. Not particularly, no. Now this recent lull after the heavy action we've had does. It varies considerably. Just before this recent action they were beginning to increase the mine incidents quite a bit. More mines were hit.

Q. I understand none of you had much training on the detectors in the United States, is that right?

A. No, just about five or ten minutes. Then we came right here from AIT.

Q. Did any of you ever use the PRS-4, the non-metallic density detector?

A. I used it in Berlin, Germany. We were on a mine sweeper team in connection with destruction work. Everytime before they broke ground, we had to come in and sweep the area.

Q. Do you think it'd be safe to use over here?

A. Negative. Too many different types of ground, and different types of compactness.

A2. It just wouldn't work over here, I don't think.

Q. Have you ever heard of anybody using them over here?

A. No, sir.

Q. Are they pretty hard to use?

A. I think they are.

A2. We changed from the 4 to the PRS3 and I found it a lot easier to use. You're more definite, more sure of what you find in the ground. Uncle Henry (PRS-4) would do anything. He'd find a rock or a board in the ground itself.

Q. But if there's a mine there, it will find it?

A. If there's a mine there, right.

A2. But I find that with the metallic type, there's a lot less reading; that's what I'm trying to say. If you do get a reading, there's something metal there. It could be a can, naturally, but it could also be a mine. Where with your rocks, your boards and all this type of thing, I didn't like it at all, then, and I still don't.

Q. Have you other two ever used it at all?

A. Not that I know of.

Q. On your sweep formations, do you normally have three men staggered, four, five or six?

A. Six. There are probers right behind each detector operator. There'll be three two-man teams across, and up here in front you'll have your point out about 60 to 75 meters.

Q. What's the job of the point?

A. The point is supposed to visually spot mines which we've had very good luck in doing. And sometimes you'll see something that may look like a mine, a command detonated wire, something there in the road. We have found three or four in the side of the road, grenades that looked like they were left by someone who had to take off real quick like. The point's job is to clear the way and to protect against ambushes, trigger ambushes.

Q. What do your probers do?

A. The probers follow right behind each detector to guide them and they're right there to probe if he picks up a reading.

Q. How much time do you sweepers lose on chaff, small pieces of metal in the ground other than mines?

A. Half the time.

A2. I'd say at least half the time.

A3. At least half the time. The litter bugs around here leave C-ration cans.

Q. Do you ever wear your earphones over your steel helmet out from your ears and does this let you sweep longer?

A. Yes, we do that and I have swept up to two or three hours like that with occasional stops while they probed for something. It works okay.

Q. How about this requirement to change over every twenty minutes?

A. Well, if we have enough men we might do that, but that's not the way we normally do it here.

Q. Do you think it hurts a mine detector if you put the head down and jiggle it around when you find a mine?

A. I don't jiggle my head around.

Q. I'm thinking of where you had located the mine and put the sweeper head on the ground and did like that (demonstrating) to mark it?

A. This could hurt it if you'd do it enough.

A2. But we don't do it on a mine sweep. Generally, the wires get all tangled up.

Q. The wires from your head set?

A2. The head set wires, and the tube wires.

Q. Any other problems with the detector?

A. The clips that hold the small replacement cartridges in sometimes come loose. During operations the cartridges could slip out and lose contact.

A. It'd sound like the thing was falling apart. The trouble with most of these things is where the switch is up here. It always comes loose.

INTERVIEW WITH A 1st LIEUTENANT, A SP/5 AND THREE SP/4's
OF COMPANY B, 4th ENGINEER BATTALION

Q. Did you have any training in the mine detector in the United States?

A. We had some.

Q. What type of detector did you train with?

A. The same type we have here, the P-153.

Q. Did you have any training in other units?

A. Only OJT.

Q. In AIT at Leonard Wood did any of you actually operate the mine detector?

A. Everybody did. We had to find one antitank mine.

A2. When I went through, we didn't even do that.

A3. They just spent most of the time telling us how to breakdown the mine detector, and how to put it back together; we practiced taking it out of the case.

Q. Did they give you anything on its maintenance?

A. They gave a talk on maintenance and care and such things as removing the battery when you put it away and so on. Showed us how to pack it when we put it away, keep it clean and dry and stuff like this.

Q. Were you given any other instruction on mines and boobytraps that was oriented toward Vietnam?

A. Not until we got over here and reported as replacements.

Q. Did you have any training on mine detectors during your training as replacements here?

A. None that I know of.

A2. Not on the sweeper itself.

A3. None.

Q. How much combat experience as a sweeper have you had?

A. I've been doing it ever since I got here, 12 months.

A2. Six months.

A3. Seven months.

A4. Seven months.

Q. Have you been using the P-153, metallic detector all the time?

A. Right.

Q. Did you ever use any other type, like the PRS-4?

A. No, sir.

Q. Is the detector affected by what they call chaff, bottle tops, cans, can tops, fragments?

A. Yes, sir.

Q. How about when the mines are wrapped in plastic, can you detect them?

A. If it's wrapped in rubber you can't, but if it's in plastic you can.

A2. Almost all the mines we find are wrapped in plastic.

Q. Does the soil in this area give you any trouble?

A. No.

Q. What's the main type of mine that you're finding out here?

A. Chicom plastic wrapped antitank.

Q. Which is more frequent, the M1A1 or the Chicom?

A. It varies.

Q. How about this Chicom versus the M1A1?

A. This squad has found one M1A1.

A2. They're generally pretty rare.

A3. The 4th Battalion right now has found mostly 82mm mortar rounds. They found 10 in one day.

A4. All the mines we've found so far, we can usually see where they've been dug around before you even run a detector over them.

Q. Is there any other type that you find other than these dud rounds?

A. We found some bomb frags, CBU's, and stuff like that.

Q. When do you find most of them?

A. On a regular road clearing operation.

Q. Where do you find them, in the middle of the road, or the side of the road?

A. Where the tracks are.

A2. In any well worn track.

A3. For awhile they were in the middle of the road.

A2. Yeah. On the inside tracks, and the last two we found were on the outside tracks.

Q. Is there any particular area where you find these? Are they near a village, or out in the middle of nowhere?

A. Near the tea plantation.

A2. Well, a lot are located right near the outskirts of a town.

A3. The majority are found near a village.

A4. Not really in the tea plantation but at both ends of it.

Q. What type of fuzes do these things have mostly, instantaneous or delay?

A. Practically all are instantaneous fuzes.

Q. What kind of initiating action do they have?

A. Almost all are pressure activated.

Q. What's the primary way that you detect the mines? Is it visually or with your detector?

A. I'd say mostly visually.

A2. Sometimes the detector but mostly visually.

A3. We found about four mines and we saw all of them.

A4. You can see some of the plastic sticking out of the ground. The detector won't pick it up.

A. It's easier to detect by means of visual observation. You see it first and then check it out with the detector.

Q. What are you seeing, where the mine itself is buried or the initiating device or what?

A. The ground is all messed up and most of them are from that plastic sticking out of the ground.

A2. One had the actual tip of the mortar round sticking out of the ground.

A3. The ground's almost like cement out there in a lot of places and they chew it up putting a mine in there.

Q. Is there any kind of tactical condition that makes you look a little more closely at certain areas than others?

A2. Just the fact that there's been a lot planted in a place in the past.

Q. So you'd call this a critical area from what they've done there before. Do you ever use dogs or any other kind of special equipment?

A. No.

Q. Do you ever run into command detonated mines?

A. Some they thought might have been but couldn't really tell because they all went off before we saw them.

Q. Do you have any techniques for trying to detect these command detonated mines?

A. Well, you watch closely at the sides of the road and stuff. But other than just watching, nothing.

A2. At times we've run the sweeper out along the edge of the road. We might pick up the wire.

Q. Do you ever do any mine detecting at night?

A. We detected once I think.

Q. Could you tell me the sequence of what happens when this man in front spots a mine?

A. Well, usually, if he has an area where he's getting a reading, and he thinks there's a mine there, the prober will come up and test it. It doesn't take long. If there's a mine there, he'll uncover it within 15 seconds. Then he backs off and calls the demo man. The demo man completely

uncovers it or uncovers enough of the mine to lay a charge on it. Everybody backs off and he blows it in place.

Q. Do you ever attempt to disarm it?

A. I took one out. But there's nothing to disarming them. I took out the booster charge and all. I mean I could have just left it in there if I wanted to.

Q. Do you send a report back up immediately?

A. In this case, we brought the charge in here and turned it into brigade.

A2. Anytime we find one it's called back to our unit and then our people here notify brigade.

Q. In your sweep team, do you have a demolition man right with you?

A. Yes, so while he's blowing it the sweeper can go right on.

A2. Usually there's at least one demo man.

Q. Do you ever by-pass these mines?

A. Negative.

Q. Do you have to make a follow-up report on a written form?

A. We used to; I don't know if they still do.

A2. Sometimes, if it's a wierd setup or something, the company commander will ask us to draw it out. We did that one time.

A3. They used to have a form they filled out that gave coordinates.

A4. They still have to give the grid coordinates. If we're out with an infantry company, the infantry notifies their battalion, and battalion notifies brigade. If we find one here, I have to notify our people, and they notify brigade. This is on 19 West. I also have to notify my battalion base and report the site. As far as they're concerned, they usually pass it back to the infantry company and they go on with their job. Then it's their problem.

Q. When the average enlisted man first gets here, is he adequately trained for the job that he has to do?

A. The best way to train them would be on an actual mine sweep in the states. I knew it would be kinda hard to actually take training this way but maybe they could set up a certain road that was planted with mines even

if they weren't real mines. Just take mortar rounds and plant them in there with dummy booster charges and have dummy mortar rounds and stuff like that on a road, an actual stretch of road, say a mile and a half long. Have an actual mine sweep on that. All we did in training was to go down sort of an obvious setup. You know, you had your lane maybe 30 feet long, and it wasn't really much of a test.

Q. So you feel that it could be a little more realistic, a setup similar to what you have to do over here?

A. Right.

Q. Do you think the whole course there in land mine warfare should be re-oriented more towards Vietnam?

A. Now, they're definitely pointing towards a more conventional type of mines and boobytrap training there. There's nothing that really prepares you for this but they could set it up, I believe a little bit more oriented towards Vietnam. You'd also have to include some of the conventional because you don't know when you're going to run into something like that. And they also have conventional type triggering devices on some boobytraps that are used on conventional mines. You run into the unconventional ones also, but there's not a whole lot to them, really.

Q. Did you see any of that VC stuff when you were in AIT?

A. We didn't.

Q. When you came through the division replacement setup back there, how much training did you get?

A. A lot of it was a lot of talk and not of much use, really.

Q. How many hours on mines and boobytraps did you get?

A. Maybe two.

A2. We spent a couple hours on it. You get the impression from them that anytime you run into something you're supposed to call the EOD and they'll come out and blow it for you.

Q. But that's not what's actually happening?

A. It'd be awfully hard to. It really would, because the only thing that you could really call a boobytrap, that I've seen, was one of these Montagnard spears. They've got it in the trail where you trip a vine and a five-foot bamboo spear sails down the trail at you.

Q. Have you actually seen some of these things?

A. We disarmed three of them.

Q. Do they use punji stakes and that sort of thing around here?

A. Yes.

Q. Is it really a problem to you?

A. It's not a great problem. A lot of it is the Montagnards actually. You know, if you run into a field where the sticks are going in a random direction, usually a round-circular field, it's Montagnards. The VC put them in front of their positions and they're all pointing away from their positions.

Q. Didn't you go through some kind of course there in your division replacement training on mines and boobytraps?

A. They explained about a few of the things they had over here but as I said, there wasn't a whole lot on detection.

Q. Was there any mine detector training at all?

A. No.

Q. When you came to your unit, did they have any kind of a formal training for you?

A. We had the introduction they called it where we were told a lot.

A2. There is no practical exercise involved. It's just an orientation on company policies. Just tells us what we are doing and not any training in great detail.

Q. From that point on it's OJT?

A. Yeah. When new guys come out, we take them out with us and assign an old man with a new man. You sweep first and he watches; then when he starts sweeping, you're right there with him. You tell him to watch out for certain stuff.

Q. Do you get any additional advanced training or is it pretty much just OJT?

A. Just OJT and what you can learn from the older guys around here.

Q. Do you conduct any mine detector training for the infantry people that you're with?

A. The only time we train is when we're sweeping.

A2. They're riding behind us on tracks.

A3. The only time we did any training at all was when the CIDG's were up here.

A2. This is something I forgot to mention. We're in the process of training CIDG's , for the special forces Strike Forces, to use detectors. We started before on this and had to lay off during the TET offensive. We'll start again and take them on sweeps with us on 19 West and eventually try to turn it over to them to release our committment. They seem to be taking to it quite well.

A3. Yeah, they went wild about it.

Q. They liked it?

A2. Yeah. We used a tin can to demonstrate it, you know. They didn't quite understand that but they had some old mines lying around in a bunker and we pulled a few of those out, antipersonnel mines, and they went over it and saw them sticking up. Then they really took to it.

Q. They got the message?

A2. Right. They couldn't get it down with the tin can bit, but when the actual live mine was used they picked it up.

Q. But as far as the infantry is concerned, you never really conducted any classes for the men there?

A. Anything that they learn, they learn from OJT.

Q. Do they ever actually help you with any of the sweeping?

A. Negative.

A3. Just security, that's all. Road security in tracks and stuff like that.

Q. Do you ever see any marking systems that are used here by the VC?

A. I've never actually observed it. I've been told that they're always marked in some way or another, but it may be just by a tree in the road or maybe a small stake in the side of the road or something. If they're mining a road we use and we stop using it, they're going to come back and get their mines or whatever they have in there. So they need something. They can't waste the stuff.

Q. But you really haven't seen any markings?

A. I've never seen any. I think some of the guys have told me they have.

NOTE: Following this interview, additional untaped comments were made by the Lieutenant that are reconstructed here from notes taken at that time.

The company has four mine detectors per platoon. The battalion pools detectors and operates a reserve float to improve maintenance. It issues detectors to the companies as needed. Some common problems with the P-153 are: it breaks at the neck quite often; the threads on the handle connections do not tighten properly; and modules keep coming loose. A carrying strap and back pack for the battery would be desirable for situations where the operators must carry the detector through heavy brush and need their hands free. The heavy case is not practical in this situation. Many times the men are rushed by the tactical units and do miss one occasionally. It is common practice for the sweepers to operate with the ear phones out from their ears. In a test they had conducted, they felt the rubber placed over a mine by the VC had reduced the detectors ability to locate the mine. It was noted that the proper method of sweeping was taught in the states but the sweepers actually used many different procedures in Vietnam. Where appropriate, some of these procedures could be included in stateside instruction. Most training is OJT and after two sweeps men feel that they are proficient. They can only do first echelon maintenance on the detector, which is mainly just keeping it clean, checking the batteries and changing modules.

INTERVIEW WITH THE S2 AND INTELLIGENCE SERGEANT
4th ENGINEER BATTALION [1]

Q. Could you give me a general picture of the mine and boobytrap problem in your division's area and any statistics you might have on incidents or casualties?

A. Most of our problems are with mines. The infantry suffer very few casualties from boobytraps out in the bushes. They do run across some grenades in cans and this sort of thing. It seems they are more numerous north of here and down south, near Saigon, where there are more people.

Most of the mines we find around here are the old M1A1 antitank type that was originally given to the Chinese to use when they were fighting the Japanese. What we are finding now could be some of the same ones that were stored all these years or they could be a Chinese-manufactured-version of the M1A1.

Almost all of the mines they use are pressure activated. In some cases they used wired board contacts. The mines are not offset and generally are not buried very deep. They often have a board sticking up to activate them.

From 10 July '67 to 4 February '68 there were 228 incident reports on mines. Practically all of these were the antitank type with around 10 pounds of explosives in them.

Casualties in the division for this same period were 45 wounded and one killed. In the division area there were two ARVN and 18 civilians killed and two civilians wounded in this period.

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[1] Not taped, reconstructed from notes.

INTERVIEW WITH A FIRST LIEUTENANT, TWO SERGEANTS AND A SP5
FROM THE DIVISION TRAINING DETACHMENT

Q. I would like to start by asking the NCO that normally gives the mines and boobytrap instruction to the replacements to just give me a summary of the instruction?

A OK. In the introduction I tell them that during this period of instruction they will learn the different types of mines and boobytraps, their use, where they're most likely to be found, and the NVA mine detector capabilities and equipment. During their tour in Vietnam, they are going to come in contact with mines and boobytraps. Therefore, it is important that they know something about the weapon their enemy will be using against them. As combat soldiers this is important, because any time they leave the perimeter, they are subject to coming in contact with the enemy. At the end of this period of instruction, they will be expected to know where they would most likely find VC and NVA mines and boobytraps. They will also know what to look for in mines and boobytraps, and most important, how to avoid them.

Where are boobytraps most likely found? On trails, in trees, on river banks, on gateways leading into villages, at previously used night locations, on dead enemy or GI bodies, and attached to equipment. Where are mines most likely to be found? On tank trails, paths, river banks, outer edges of villages, and roads. The types of boobytraps they will find, a complete definition of each and its use, are as follows: a sabotage grenade is used with a steel ring attached that when pulled detonates it instantly; and a mace is a bamboo bent back like a bamboo whip with 80 to 100 steel spikes in the end of it.

Q. Have any of these maces or this type of thing been encountered in this area?

A. Not to my knowledge, no.

A2. Third Brigade, that's up north, people come through our replacement training and they encounter quite a few VC mines and boobytraps. I don't know specifically if the mace is used, but they get the whole thing. Up there it's almost like the Delta in the south because they have a lot of people. This is what this training is for.

Q. OK, go ahead please.

A. The bamboo arch is merely two bamboo poles 15 feet high with either a grenade or a cocanut mine attached to the top of it. It is set off by a trip wire running across the base of it, three to four inches above the ground. The rotating spike trench is a pit dug two by four with punji sticks at the bottom of it and a steel grate across the top. This

is camouflaged to fit in with the terrain features so that it cannot be detected by either the enemy or the friendly troops coming upon an enemy position. A spear trap is merely a spear set in a wedge, either a bamboo clump of trees or set in a "V" position. It is angled approximately 30 to 45 degrees and once set off by trip wire, it will either engage in a man's thigh or his mid-section. The spear launch is very similar to the spear trap. It is set up on the same principles and has the same techniques. A steel arrow trap is merely like a modified cross bow which sits in bamboo and is shot with either rubber bands or bamboo used with a draw string. This is set off by a trip wire so when a person trips it, this either engages in a man's thigh or his mid-section.

Q. Do you get many of these spear traps and other things now?

A. I have not come in contact with these spear traps, spear launches, and steel arrow traps, but maybe the 3d Brigade has further up north in NVA country.

A2. The area where the 1st and 2d Brigades operate is pretty sterile of people. Just NVA and they're like conventional troops. They don't mine or boobytrap anything. Well, they mine, but I mean as far as on trails and that it's pretty sterile. But again, up in the 3d Brigade, they do encounter similar devices and any variation of them being shown to a class might help to detect them.

Q. Third Brigade is where now?

A2. Right now they're about nine miles southwest of Da Nang. They've operated since January on the Bong Son Plain and Duc Pho, Chu Lai, Tam Ky, and right now they are about nine miles southwest of Da Nang. I think there are plenty of people up there.

A. Next, the bamboo whip is a five-foot piece of bamboo with sharp, pointed stakes at the end. These vary in size and each one is a different length. Some vary from a quarter of an inch to three-quarters of an inch. They can be any length--four inches, five inches, or six inches--it doesn't matter. This depends upon the enemy's use and what he feels would enable him to kill a victim. This is set up along a trail or heavy jungle terrain where it is hard to detect. It is set up by trip wire and when the person trips it, it catches him in the chest or in the stomach. The barbed wire plate is a piece of board with spikes driven through the bottom of it and just thrown on a trail. A spike trap pit is merely punji sticks placed in the bottom of a pit and the top of it is camouflaged. This is set along either well used trails where the troops go or the most likely avenue of approach to the enemy's position. A trap bridge is a bridge or foot path bridge across a stream. Directly beneath the bridge are punji stakes. The center of the bridge is deliberately cut, and two small pieces of bamboo are placed underneath the bridge to keep it erect so it does not look like the bridge has been tampered with. The enemy fills this in with mud, grass, or dead leaves scattered across the top of the bridge.

Then we discuss different types of mines and the use of each. A cigarette antipersonnel bomb is what the enemy uses very frequently over here. He finds his own dead NVA or VC and he plants these cigarettes on them. These look like ordinary cigarette packs but they are antipersonnel bombs. When you flip the pack, the pack has a pressure release on the top where the label is. Underneath the label there is an acid well. This acid well eats through the membrane and detonates the charge inside which is TNT or anything else that explodes that the enemy can get his hands on. Around the outside of this explosive are steel BB's, glass slivers and anything else that you can imagine that the enemy will put into it to inflict casualties. The enemy uses our own bangelore torpedoes against us when he has the opportunity to get his hands on one. The bamboo bangelore torpedo is the same as our own bangelore torpedo except that it's made from bamboo and it's used with either Chinese, Russian, or North Vietnamese TNT placed on the inside. The way they make this is to take a piece of bamboo five to six feet long, split it in the middle and place these half pound or pound charges on the inside. Then they place a piece of bamboo over the top, tie it with wire or tape, and use a cone for the nose of it. This is connected to an electrical blasting cap. It is placed about 12 to 15 meters from their position or they place it alongside a trail that they know we are going to use. It is set off by command detonation or it can be set off by a time delay; whichever the enemy feels is to his advantage. The NVA and the VC do not have a Claymore that is the same as ours, but they make some that are just as effective. They are composed of No. 10 cans bent into a half-moon shape, filled with black powder or our own C4, and embedded with loose glass and so forth. They place a light tin cover over the front and put an electrical blasting cap in it. This can be set off by an electrical blasting cap or by a friction pull delay. A friction pull delay is merely a trip wire set across a trail, and when it is broken the charge goes off.

A2. Right now the 3d Brigade has instances of Claymores in dikes up in their area and they have suffered a lot of casualties from them. No contact, just this detonation of these makeshift Claymores. Also, the only use I've ever heard of the bangelore was where one battalion got hit by an enemy suicide squad. They knocked out three 105's and used the bangelore to blow their way out of the encampment. The EOD covers this. They show one of the bangelore torpedoes that was not properly used and did not detonate. These people got caught in the barbed wire and got run over by the tanks. So we have proof they actually have these things.

Q. Do you have a pamphlet on the things that you cover?

A. No, sir. The only thing that I have the use of is this little booklet that came out in June, 1967 on VC-NVA mines and boobytraps from MACV.

Q. Do you show them these things on the blackboard?

A. I do draw pictures of what it looks like on the blackboard. But the troops themselves do not get the full picture of it. They come to me after the class and I show them the things in the booklet. I tell them that we're waiting for G2 to send us down some pamphlets.

Q. How hard would it be to get the actual thing to show them?

A. It's pretty hard right at the present time. I've called the EOD and they say that just as soon as they get hold of some of this equipment, they'll be glad to bring it over.

Q. Could you construct this bamboo arch and the mace?

A. Yes, we could construct them, but it would be best if we could have the enemy's homemade version. Then we could show them exactly how he made it. We can make it up ourselves, but it wouldn't be the real thing and it wouldn't show the enemy's use of his intelligence.

Next we talk about the enemy's mine detector. The USSCR 625, which is a French mine detector, weighs 26.4 pounds. It's capable of picking up nonmetallic mines to a distance of 13.8 inches beneath the earth's surface. It is a fixed mine detector. It can be fixed either on a bayonet or on a three pole section, the three pole section being between five and six feet in length. It uses dry cell batteries.

Q Did you ever have any knowledge of them actually using a mine detector?

A. No, not to my knowledge. The only thing I've ever heard is that it's possible that they might use them down south or up north. To my knowledge, I have not heard of the enemy using them over here.

Q. What do they use them for?

A. They're picking up our own mines that we plant and are planting them against us. In other words, if we find a French mine field and we don't pick up all the mines, they come along behind us and pick up the French mines. Then they find a well used road, plant the mines, arm them and take off. Like at night, after we've swept the road and we know that it's clear, they go out, set the mine in, and arm it. Then the next day, we'll think the road's clear, so we'll go driving along and lose anywhere from two to three trucks.

A2. I'd like to say something here, on this class. We have just started this within the last week or two because we've had trouble outside the perimeter and the EOD instructor hasn't been able to get over here. Normally they gave this class in the past and they have all kinds of training aids that they use. It's stuff they picked up during their operations. Now the class that we give to the NCO students has just enough to provide what they're being tested on. All this other stuff is actually covered by EOD when they're here.

Q. Where does the EOD come from?

A2. Camp Holloway.

A. That's a little southeast of Pleiku by the helipad of the 52d Aviation Battalion The tactical situation is such that they can't get out here right now This has only been for the last two classes at the most. Usually they'll come out with an ordnance team and they'll give this class

A2. Now as far as the NCO students are concerned, we take them down to the confidence course, give them a 20-minute orientation on the course itself, and take then through squad by squad. Of course, the squad leader is the man that has the whole show. We go through and grade them and at the end of the trail we give them a little orientation on how they've done This is basically what the people learn to do around this area here. They have a lot of items here that you normally wouldn't run into unless you ran into the VC themselves.

Q. Could I get a copy of your lesson plan? Actually, it pretty well covers the class except for the detailed description you give.

A. Right I'm sure we'll get you a copy. To go on now, the Chicom-type mine detector 55-625 is similar to the Russian 203M or VIN. This is on the same principle as the USSCR-625. It's a few pounds lighter but has the same capabilities For the examination, I ask the troops the following questions: (1) Where would you most likely find a VC or NVA grenade? (2) How would you disarm the bangelore torpedo? (3) How would you disarm a cigarette pack antipersonnel bomb? and (4) What type of mine detectors do the VC have? Then I answer any questions that they had asked during the past class and make my closing statement: "During your tour here in Vietnam, all of you, especially you field troopers, are going to come in contact with boobytraps and mines. From this class you should have an idea of what to expect. However, the best defense against them is to stay alert and keep your eyes and ears open." And that is the end of the class.

Q. How many days of training do the replacements get?

A. The replacements go through a five-day training cycle.

Q. How many hours of mine and boobytrap training do they get?

A. First there are two hours with the EOD instructors. These are your specialists from Holloway with their own ordnance and their NVA/VC ordnance They demonstrate it, show the capability of it They show and tell about American ordnance such as CBU units, the butterfly bombs, and how these things are used as mines. They do use them as antipersonnel mines. The little butterfly bomb, actually it's a pressure-release thing because once it comes in contact with the ground

it's supposed to blow up. But if you step on it, it'll blow up. About five to ten percent of them are duds. Sometimes they don't get fully expended from the CBU unit itself and these things can be used as mines. which is demonstrated by the EOD.

Q. How much instruction do you give them on demolitions?

A They get a four-hour class on demolitions. We cover everything from C4 to TNT to detonation velocity, our new types of safety fuzes, electrical and nonelectrical firing systems. We tell them three to four different means of lighting safety fuzes, such as when out in the field, use two matches, a cigarette, a cigarette lighter.

A2. Then there's also these little antipersonnel packets. They are triangular shaped mines. They're made of plastic and go off when you step on them. That's U.S. stuff dropped by B52's. The EOD goes through that and they have pretty good instruction.

Q. Do the replacements go through this confidence course or only the NCO's?

A2. No, we did run the replacements through the confidence course But since we started getting from 200 to 500 replacements and we had a time limit, we had to cut the confidence course out. This was during the Dak To crisis when a lot of people were going to be shipped up there. Each unit was given a list of training and training that had to be supplemented once they're on a tactical situation. We've had inquiries from different units about the mines and boobytrap lesson outline so that they could conduct their own training. What we've deleted has been supplemented by them.

Q. How about any training on the mine detectors?

A2. Not as such. Did you give any to the engineers?

A. No. The only mine detectors that we have over here are broken.

Q. Then you don't give any training here?

A. No, we do not.

A2. Conventional line companies wouldn't be able to carry the detector. If they'd have a mission, it would be very seldom that they would get the equipment.

Q. Don't many have the equipment already?

A. Right, sir, but they can't carry it. Like your 81's, you don't take those either. This sort of deal. This area here, like I say, is pretty sterile. I've been here almost 19 months now and I've only heard of about 10 incidents, besides mining a road, where there have

been boobytraps. One was in July when they had a grenade underneath an NVA body. But this was pretty obvious and they found it real quick. Another was one of these signs, "Yankee Go Home" or something similar to that. This was boobytrapped. But these are few and far between and like I say, this area around Pleiku, Dak To, and Ia Drang is very sterile. I was with a line company for 11 months and I walked from the Ia Drang to Kontum and I've only encountered punji stakes that were about a year old. No sophisticated firing device for example. It was pretty obvious. The point man spotted it and tried to trigger it but he couldn't. He walked by it and it went off. He was aware of it, but he got hit in the leg. I think it was s superficial wound. It wasn't bad.

NOTE: After concluding this interview we accompanied several of the NCO's and the Lieutenant to the confidence course which was some distance outside the perimeter. It was well set up in a thickly wooded area leading into a steep ravine, down through it and back up the other side. There were many locations for explosive or nonexplosive boobytraps, plus a number of well-concealed enemy positions. With the brush and the steep incline requiring your attention, it was easy to see how you could inadvertently trip a boobytrap. It was a very good course and one that should be beneficial for tactical training as well as boobytraps training.

INTERVIEW WITH THE S3
OF THE 2/8th MECHANIZED INFANTRY BATTALION

Q First, could you tell me what percentage of your total casualties are suffered from mines and boobytraps.

A. This represents a very small part of our casualties, probably not more than 1.5%

Q. Of these 1 5%, how many of them were from mines and how many from boobytraps?

A. Most of them were from mines and, of course, next would be boobytraps.

Q. What type of mines and boobytraps do you encounter most?

A. Most of the ones we find around here are the U.S. or Chicom version of the M1A1 antitank mine. Next, I guess, would be their use of dud rounds from U.S. artillery. Then it would probably be these CBU's that are dropped by the Air Force.

Q. On what type of operations do you run into most of them?

A. We run into most of them on road clearing operations, but we do get some on search and destroy operations.

Q. If you're moving through the jungle, where would you find them?

A. Moving through the jungle you'd be most likely to find boobytraps on a trail.

Q. Do you find many mines or boobytraps near villages?

A. Yes, but we do a lot of things to try to prevent them from planting them by keeping the area under observation, ambushing, and so forth. Therefore, they are unable, with any degree of safety, to plant a mine within a thousand meters of a village. This is mainly where our mining incidents occur. And we fire what they call a road runner, which is a counter-type thing to keep Charlie off the road. We normally fire white phosphorous which doesn't damage the road bed. But it does keep Charlie away from the roads. This has some effect in keeping the roads clear.

Q. When you get near enemy base camps, do you usually find anything there?

A. Sometimes. Even in what we call our tactical area of operations and within eight klicks of our base camp there have been mining incidents. Now these are normally the VC that do this.

Q. Where are the ones near your base camp?

A. Only on the roads that are bound to be used by American vehicles.

Q. Let me ask you about the fuzes they use. Are they primarily instantaneous or delay?

A. Only instantaneous. Very seldom do they use a delay fuze.

Q Do you run into any that have been offset so they catch you right under the belly?

A. No. Normally they're catching us right on the track.

Q. What initiating action do they use mostly?

A. Normally pressure detonated, but they do use command detonated also.

Q. Have you been hit by any of these command-detonated mines?

A. Yes, a couple of them. Normally, they're used in conjunction with an ambush or something of this nature, because when you have a command-detonated mine, you're going to have the enemy around very close. He doesn't use a command-detonated mine unless he's got something further planned for you.

Q. Do you ever run into these punji stakes or are they really a problem any more?

A. They're not really a problem any more. We did run into a couple of big fields of them particularly down south of us here. One of them was about 100 meters square, which is a nice size. But as far as being a real problem they're not with tracks. We can run right over them squash them down

Q. Don't your men operate dismounted?

A. Quite a bit. In fact, we go as far as we can on the tracks and then we dismount. But in getting down in draws and things of this nature, we haven't been plagued with very many punji stakes.

Q. So even in a dismounted configuration you're not worried too much about punji stakes?

A. No.

Q. What's the primary method that you have of detecting mines? Is it by visual means or by detectors?

A. Normally we use both, but we use the mine detector quite a bit and it's produced some good results. We do use a visual method by having somebody look at the road for any fres ggings. I will say that the VC do a pretty good job of camouflag their mines. It takes both visual and mine detector.

Q. How do you think you get most of your clues, by visual means or by detectors?

A. In our case here, we are the support section, we have two detectors within each company, and with my people here it's mostly mine detectors.

Q. Now in this visual detection that you say you use sometimes, what do you see mainly, the signs of the buried mine itself, the triggering device, or what?

A. Well, in the rainy season, a lot of times you might just detect a metal object. And this is just by a visual look at the road, because the rain has washed the road away. This sometimes works. Or maybe you notice a sign of fresh digging along the side of the road or anything that looks unusual about the road. In the dry season the road's used a lot. Regardless of the last track or vehicle that went past, you can tell if it's been disrupted in any way. After he's dug the hole, you can't make tracks and go back over it. So in effect you can just ride down the road and see that the ground's been disrupted.

Q. You say the tactical conditions give you a clue sometimes, like, for example, a logical ambush area?

A. Oh, yeah. This is something you always look for. I mean if you're moving down a road and see a logical ambush site, and if the road has been disturbed even when you know there's been a lot of military traffic over it, this is a clue. You immediately start searching the road to be on the safe side.

Q. Do you have certain critical things that you look for?

A. Oh, yes. One is the landscape; two is dirt on the road; and three would probably be the vegetation--in and around a road, any trails leading off the road, any intersection of the road with another smaller road.

Q. Do you ever use any additional means to help you, like dogs or any other mechanical apparatus?

A. Well, dogs are not too much help in that respect and we don't use them.

Q. Do you use extended laterals on your M113's to get the drivers out of the inside of an APC?

A. No.

Q. Have you had any of your men seriously injured?

A. Occasionally they are. As I say, most of the wounds are superficial, but I think it comes more from blowing them off the track than it does from anything else. If a man's inside the track with the top open and he gets blown out, some types of serious injuries will occur there. The drivers, I think, probably sustain the greatest injuries. Normally, it's broken arms or legs, sometimes it's concussions.

Q. Do you have any techniques for detecting and neutralizing these command-detonated mines?

A. No, nothing other than just looking for a wire maybe along the road. Normally they bury their wire. So it goes back to just looking for a mine, whether it would be command detonated or pressure detonated.

Q. You don't ever use grappling hooks or recon by fire?

A. We do use recon by fire down the road. If we haven't been into an area for a while and yet we know that the VC or the NVA have been in the area, then we'll do a lot of reconning by fire right down the road. This technique does work. Occasionally it will set off a mine. We fire these road runners, as I mentioned before, and the white phosphorous. That'll set off mines. It's also a deterrent to keep people from putting mines in.

Q. Do you ever do any mine detecting at night?

A. No.

Q. When a man up front spots a mine, what is the sequence of events that takes place?

A. He'll normally say, "Mine", and then he's either got engineer marking tape with him or some means of marking the mine. Then one of the engineers normally comes up, if we have the engineers with us, and explodes the mine in place. He'll blow that thing right there. He won't fool around with it.

Q. You don't ever try to disarm it, you blow it in place?

A. Well, it depends on what kind of mine it is, too. These homemade jobs, the majority of them we'll blow in place because I don't like to mess with them and I don't like to have anybody else do it either. If it's something that I know, like the M1A1, we can disarm them. The majority of the time we just blow them.

Q. You report this right away to higher headquarters?

A. Oh, yeah.

Q. Do you ever by-pass these things, you know, due to lack of time?

A. We'll mark it and call back for it to be destroyed. But very seldom do we ever by-pass anything as far as mines are concerned. There's too much of a risk in somebody else coming back into the area.

Q. Do you have to follow this up with any kind of a written report on the incidents?

A. Nothing other than the report that we send in through operational channels. Normally the S2 sends it through intelligence channels for any patterns that are being set up.

Q. How is this mine information disseminated? How do you know what's in an area that you might have to go into?

A. We usually check the records that are kept by the S2 before we go into an area. He'll give us a fairly good terrain analysis and what's been in that area in the past, and mines are just part of it. If we've had a lot of mining in a given area, this is brought out. But as far as moving into a new area, normally Charlie hasn't bothered to put mines there. He's not really using it. He waits till we get into the area before he starts planting mines. However many he has to go around he uses.

Q. Is there any regular form of written information that you get that keeps you posted on them?

A. Well, there are pamphlets that are published and it's even in our little Lessons Learned booklet that the division and other agencies throughout Vietnam put out. We get information on the various types of mines and the various types of demolitions that have been employed in the past by units down south and up north of us.

Q. Do your men operate the mine detectors in the companies and how many do they have per company?

A. Two per company. If the engineers are with us, they operate them; if only our people are there, they operate them. We use them a lot in search and destroy operations. Like if we go into a village or something, we'll use them to detect weapons.

Q. So your men are trained to use the mine detectors?

A. Yes, sir.

Q. How were they trained, by the engineers that are with you or did you send them back to a school?

A. Well, I think for the most part it was just them being with the engineers

Q. Sort of OJT?

A. Yes. I think the majority of the people can operate them. I think almost anyone can operate a mine detector because they're out there every day operating with the engineers. Lately their engineer platoon's been so short of people that sometimes they don't have two people with the company. They would operate the detectors and somebody else would probe, and then they'd switch around. Therefore, I would say almost anyone in the company could operate a mine detector.

Q. When your average enlisted replacement arrives over here, how well do you think he's trained in this mine and boobytrap area?

A. Well, initially, I think he's indoctrinated to the point where he is wary of mines and boobytraps and there's always the complaciency factor. If they don't run into anything for a while, they tend to let down until something happens. Once it happens, they get this wariness back and they keep their eyes open. I think they're aware of them. It's like anything else--it's what you stress at the time. If there are a lot of mines being employed, then everybody's on the watch for mines. If there are boobytraps, everybody's looking for boobytraps.

Q. Do you think they have a pretty good background?

A. Oh, yeah. I've been very pleased with the people that have been coming over.

Q. Do any of them know how to operate the mine detector when they get here?

A. Specifically, I don't know.

Q How well trained are the NCO's?

A. Well, for the most part, I think they're familiar with it. I don't necessarily believe that they have any real skill at it until after they've worked with it for a while.

Q. How about your junior officers in the area of mines and boobytraps training?

A. The junior officers are aware of the mine detectors. Occasionally they'll get together and practice with one another. I think the main area here that we rely on is our engineers, because they've assisted us more in this respect than anybody else. They've done the majority of it and I think they've helped our people become proficient in it.

Q. Now when the replacements first come into the division, what do they get in the way of training?

A. Well, they have a mine and boobytrap course that everyone must negotiate, which is set up back at base camp, and a confidence course which employs the various types of boobytraps.

Q How many hours is this, do you know?

A. It's about four hours, three here lately, and it gives everybody a pretty good feel for it.

Q. Do you give them any follow-up training when they get down here to the unit?

A. If we're in a fire base and we have time, we bring a unit back in here. I'd say within the last three months operational commitments have precluded us from even doing this. But I think that everybody is getting on-the-ground training.

Q It's definitely the hard way to get the training.

A. Yeah. Really, there's not that much time to conduct training here. If a man's not trained when he gets here, he's just out of luck. The way we jump around, and the way we react to intelligence, we just don't have time to set up a formal mine training program.

Q. Any recommendations for improvement in mine and boobytrap training in the U.S. or over here?

A. Well, I think familiarization possibly with the mine detector, that old buddy system that they use where one guy probes a little bit and one guy uses a mine detector. Let him know what a mine detector is. I think there is something there. They're getting made aware of the mines and boobytraps to the extent of having to go through a confidence course or something of this nature. But when it comes down to turning that little thing on and knowing what the sounds are like, I think this is something that they could educate the people on. It would facilitate the use of the mine detector over here. I think that would enhance the program. But as far as an orientation, I think everyone's getting a pretty good orientation before coming over. I've been real pleased with them.

Q. Do you think that the in-country training here ought to include a little training on the mine detector?

A. I don't think it would hurt. In fact, I think it would make people that much more aware of what to do. If a guy knows there's a mine out there and he's at least had the familiarization of turning this thing on and recognizing the different sounds, I think that would help him a little.

Q. So maybe a little refresher before he comes to the unit would help? Is there anything that you think would improve the mine and boobytrap situation in the field, like in the area of detection, reporting, disseminating or destruction?

A. The only thing that possibly would help would be accurate records of where boobytraps have been set up. In other words, we form a pattern and so does the enemy. He forms a pattern, too. If this data can be compiled either in a central depository or even down at brigade or division level, I think this would be a good project for units coming in here in the future. In other words, if our division leaves this area and if they've got some information that they can turn over to another unit, like this area is saturated with mines and boobytraps and so forth, this would give them a starting point which they wouldn't have. I think this could be a very simple matter. Just take it off of SITREP's or dig it out of a journal. I don't thing there's any major problem here.

Q. Have you found any kind of a marking system that the VC use around here so the local people won't walk into their mines or boobytraps?

A. No, but I think they do have a system within their own language capability to tell people to stay away from a road or stay away from an area or they'll get blown up.

Q. So you think this is a verbal warning?

A. I think it's verbal. I don't think there's anything to it. I'm sure that the VC do keep records of how many rounds they've spent as well as how many mines they've put out and where they've planted them. But I think it's more on a very local basis rather than on any kind of a higher echelon system.

Q. You think that they're not worried about travelers that come through and they probably guide them around a bit?

A. No, that's right. But as far as them being warned previously by anyone, that's a local village thing. I don't think NVA really care. If a couple of Vietnamese get wiped out or a couple of Montagnards, that's the way it goes.

Q. But do the NVA plant these things or is it primarily VC?

A. Primarily VC, because your NVA are mainly organized in larger units. They're concerned more with the heavy stuff. The VC are more harassers.

Q. You said you had two detectors per company. Are these organic to your units?

A. They're organic to our infantry units.

Q. Are they the P153 type, the transistorized metallic detectors?

A. Yes.

INTERVIEW WITH THE S2 AND S3
OF THE 1/10th CAVALRY SQUADRON

Q. To start with, could you tell me the percentage of your total casualties that were suffered from mines and boobytraps?

A. I've never prepared figures on that, but I guess that would be about one-third of our total casualties.

Q. How many of those were from mines and how many from boobytraps?

A. Almost all of these were from mines; there are very few boobytraps.

Q. Can you give me any kind of a recent figure on your mine and boobytrap incidents?

A. We do have some figures. For the period of 4 January 67 to 6 February 68, we had 178 incidents, nearly all mines. A large number of these mines were on Route 14 West, or 14 Bravo as we call it. Most of these were encountered during the first part of the year, up till March. At this time there was a brigade headquarters at Dak To. They also had some battalions up here in the Plei Djereng area west of here and we were running convoys quite regularly up and down the road. That's why the large number of mines here. There have been very few recently in this area because we just don't operate on the road. The mines may well be there. We had the same thing up till about September in another area where we had been, but we haven't hit any mines there recently. Now I'll show you in a minute what we've had in the last 90 days. The most recent mining activity has been between Checkpoint 33 and the Catecka Tea Plantation. Most of the mines encountered in this area west of us have been the Chinese-produced M1A1 antitank mine.

Q. Do you have a copy of it?

A. Well, it's Chinese made and the 937th Engineers put out in a bulletin last week that a US M1A1 hasn't been made since 1943. It's just a psychological operation on the part of the Chinese. This is a Chinese produced mine with our markings put on it to make the Americans think their own mines are being used against them. The 937th Engineers said it's Chicom antitank mine No. 8.

Q. But it's a reasonable facsimile of the M1A1?

A. This is what I always thought.

Q. I saw one just like that in the U.S.

A. That may very well be, but generally with this type mine they have a booster of some sort. Now the booster is normally around five pounds of TNT.

If they don't have the TNT available, they'll use anything. We've found two 82mm mortar rounds as boosters and all sorts of boosters. Now the type of mines we've been finding in the local area are usually 82mm mortar rounds with a round wooden plate that has two nails driven into it. When you run over it, it just pushes the nails into some sort of detonator. I'm not sure that it's the usual detonator they use to detonate the mines.

Q. The 82 mortar round is about the second most frequently encountered, is that right?

A. Right, it's about the second most frequently encountered.

A2. I have not broken this down by exactly which type we found but those are the two most common. Our Alfa Troop the other day hit a mine in a fording site. Now they've been using this ford quite extensively in the last week, and Charlie stepped in there and put in a mine. They found fragments of a Claymore mine in there and nearby they found wrappings from U.S. TNT. So this was probably a Claymore with some sort of detonator and TNT. The mines are mostly all along the road, but occasionally we do have mines in maneuver areas.

Q. Do you run across any type mine other than these two that's worth mentioning?

A. This thing that we call the M1A1 Chicom, of course, is the most frequent. Followed by the 82mm mortar round. In all cases they appeared to be boosted by some kind of other explosive under the mine or near the mine. U.S. and Chicom Claymores are also being employed in a pressure-type role rather than as directional fragmentation mines. The sole purpose apparently is to mine the road rather than inflict casualties.

Q. Now how are these encountered normally?

A. I can show you. Let me take this map out. This is just for the last 90 days, and the ones marked in blue have been found by the engineers during a sweep. The rest of them we hit.

Q. Then the majority, I take it, you found by hitting?

A. That's right. Now there's one thing this doesn't take into consideration. We've had at least six incidents of a mine sweep teams' vehicles hitting the mines. One involved a three-quarter-ton truck that a mine sweep team was driving at Checkpoint 99. The sweep team had just gone down in front of them sweeping the road, and the truck was following behind. Did it kill the NCOIC?

A2. I don't know if it killed anybody, but two were seriously wounded.

A. It was preceded by the mine sweep team itself, followed by two personnel carriers that rolled over the mine and didn't set it off. The third

vehicle in the column was the three-quarter-ton truck.

Q. On these ones that you're setting off with your track vehicles, are they big enough to damage a 113?

A. Oh, yes.

Q. How much, how badly?

A. They usually tear off a front wheel or two and break the track.

Q. But no casualties, other than minor?

A. Broken eardrums, pieces of rock or gravel flying up and hitting people.

A2. Or banging your head on something in the vehicle.

A. Occasionally these mines will crack the hull, warp the hull, or put a hole in the hull. Not always, about 50% of the time it will on an armored personnel carrier. On a tank, they've done no damage to the hull so far.

A2. Vehicles in most cases are returned to service.

Q. Were most of them encountered on a road clearing operation?

A. Yes, 178 mines since 4 January 67.

Q. Were they in the road, on the sides of the road, or where?

A. Generally in the roadbed itself, or one of the sides of the road, either right or left hand side, within two or three meters of the edge of the road--in other words, where the wheels are likely to go. Usually it's where there's heavy traffic, where the ruts are.

Q. Do you have many on the shoulders of the roads?

A. Generally, the mines that are hit off the road are at places where an armored vehicle has gone through once before. They'll put a mine in there and the vehicle that hits the mine is following in the tracks of a vehicle that had passed a week, two weeks, or a month before.

Q. Assuming it was safe.

A. So off the road, they'll put them right in the old vehicle tracks.

Q. You said you hadn't run into any command-detonated mines?

A. Not to my knowledge, no.

Q. Now were these mines usually near a village or was there any particular characteristic about where you found them?

A. You can see by the tactics that we developed that in all cases they were near a village. I don't think that was the sole criterion though. I think they've been put in places where they know that we use the road a lot and we don't have continual surveillance of it. I don't know whether this is coincidental or not, but there is a fairly large village right here (on the map) and in this point we've had a lot of mining incidents. There's a fair size village right here and right in this point we've had a lot of incidents too. There's a good size village here and up on in here. Of course, this was several months ago. I would think, though, that the proximity of the village does have something to do with it. Obviously, the guy's not going to walk 10 kilometers at night to place a mine when he can take a few steps outside his village to put it in.

Q. So you have to believe that these people are coming from the villages?

A. I'm pretty sure they are.

A2. Yes, sir.

A. The actual mines themselves are probably cached somewhere outside the village. These people are smart; they wouldn't be stupid enough to keep them in the village.

Q. Now what type of fuze do they normally have?

A. Well, it's hard to tell. Of the mines that we've actually set off, in almost every case it's not the first vehicle that will set it off. Rather, four, five, six vehicles or more run over it. In fact, I can think of several cases where 14 or so tracks roll across the same mine and the 15th one set it off.

A2. Here are pictures of one mining incident. A Lambretta set this off. A Lambretta is a three-wheeled vehicle like a motor scooter. This one was completely loaded with passengers and the ground pressure was so much more where the wheels hit the road than for a track vehicle. At least four tracks and part of a wheel-mounted cavalry troop from the 17th Cav went over this particular mine, about 10 vehicles, and the Lambretta set the mine off.

Q. Would this be an intentional delay or, because of the way they put it in, that it just took that much pressure to set it off?

A. I would think, perhaps, that a certain amount of dirt gets between the pressure plate or the fuze and that it just takes a repeated number of separate pressures against it before it'll finally push it down to set it off. I don't think that this is a delayed fuze. We've never had a case where a mine goes off after a vehicle has passed it. It's always when the vehicle's right on it.

Q. What type of initiating action do the mines usually have?

A. Almost all of them are pressure activated.

Q. Are any of them offset?

A2. I can think of only two cases. As he was moving west, the engineer in a three-quarter-ton truck set it off with his rear wheel. The front wheel rolled over it first.

Q. Is there a good possibility that they're offsetting the charge?

A2. No, they don't do that.

Q. Down south they'll have a pressure plate up front and when the front wheels run over it, this initiates the action.

A. We've never found anything like this offset initiating action. The pressure plate has been right over the charge.

Q. Then there's no other type used that's worth mentioning?

A. I don't think so. I think they're all strictly pressure detonated.

Q. What is the primary method of detecting these things?

A. The primary method is to roll over them and blow them up. We do sweep the road. I don't have any exact percentage figures, but I would guess by far the majority of those that we do detect with the sweep team are detected visually and not with the detector itself. It's obvious that the sweep team itself has missed mines because there have been a number of cases where they've gone right by and a vehicle following the sweep team has detonated the mine. In any case, it's a long way to walk and the guy does this day after day after day. He's probably bored and tired; he's just walking along sweeping. I would say his actual sweep pattern of the area that he covers with the dectector head is maybe 50% of the area that he's actually walking across. As he takes a step forward, obviously he is swinging this thing and missing some things. If he's not watching very, very closely, it would be very easy for him to go over mines. Obviously, this is what happens.

Q. Are these all engineers doing this sweeping?

A. For the most part, yes, it is the engineers. These are the sweep teams provided by the 4th Engineer Battalion and by the 20th Engineer Battalion. Some of the infantry units have engineers attached to them on a semi-permanent basis.

Q. Do you have detectors of your own and do you have men trained to use them?

A. We have detectors of our own, but we don't employ them.

It isn't so much a matter of training, it's a matter of manpower in the location. If we were to conduct our own sweeps, to get the people to actually conduct them we'd have to dismount crewmen from fighting vehicles and we'd lose that many vehicles.

Q. Are there any areas that you consider critical, that you check more carefully, and what type of areas are these?

A. Yes, there are. These are areas we have found dangerous just from experience, from the pattern established in recent mining incidents.

Q. Can you tell anything by the attitude of the local people when you are around these villages?

A. No.

Q. Do you get any help from them?

A. Yes, we do. One Cavalry troop in particular has an awful lost of kids that will hang around the gate and report anything. They'll set up their fire base and become friends with the kids. They'll throw them C-rations and all this. And from time to time they have received information from these kids that there's a mine in the road at a certain place. In fact, the kids have actually gone out and dug up the mine and brought it to them. There's one case, here at Checkpoint 33 just about 100 meters down the road, the kids dug up the mine and brought it to them.

Q. Do you give them any kind of a reward or anything?

A. Oh, yes. There is a reward of 1,200 piasters for a mine.

Q. How much red tape is there?

A. In order to claim the reward, very little red tape. This is not very well known by the people on the road. If they do it, it's not because of the reward. They just see a mine and they tell us about it. They like to get it out of there so none of them will get hurt.

Q. Is there any other source of detection assistance that you use, like dogs or any type of mechanical equipment.

A. We never use dogs.

Q. Do you use these extended laterals to drive these APC's from up on top?

A. No, we never use any of these.

A2. If there were ever any indication that mines were of such a size that they would destroy a PC or cause extensive hull damage or injure crewmen, we might consider such things as the extended laterals to put the people up

on top. But so far the mines are so small that all they do is tear off a road wheel or two, or break the track. Flying debris hurts people sometimes.

Q. Do you have any techniques for detecting or neutralizing command detonated mines?

A. No, we have never had anything.

A2. We haven't found very many command-detonated mines.

Q. So really, there's been no requirement?

A. No.

Q. Do you ever do any night mine detecting?

A. No, but we have a program by which we think we have reduced to a certain degree some of the mine incidents. First, we attempt to establish night ambushes in those areas that we've experienced a lot of mines in the past. Secondly, we fire white phosphorus, fuze VT, at random points along that stretch of road during the night. This is obviously an attempt to discourage mining along the road. We also run mobile patrols along the road at night.

Q. Three preventive methods--ambush, WP, and mobile patrols?

A. Right. And the special value of this white phosphorous is that when it's fired, it goes off above the road. The road is not cratered and there is no significant amount of fragments that remain in the road that would interfere with the regular mine sweep following up. We also conduct something called "Red Baron." This is something that we thought up. We have our own organic air cavalry troops and they fly out of camp at night with two slicks (troop helicopters). One slick flies very low and close to the road with men inside observing the road with night vision devices. He's followed by two gunships which will engage anybody seen on the road by the first ship. Then there's a fourth ship that flies considerably higher carrying flares. If the people in the ship with the starlight scope see anybody, immediately a flare is thrown out and the gunships engage them. They'll fly these at random times and in random circumstances an the roads in the area.

Q. I noticed a helicopter with a light on flying around the camp area last night. Did that have anything to do with this?

A. No.

A2. That's what they call a five-day sweep. He's looking for indications of movement out there.

Q. If you find a mine out here, what is the action that's taken?

A. The engineer sweep teams normally have C4 and blasting caps with them and they normally detonate the mine in place.

A2. I suppose we've actually dug up mines a few times, if they're a special type, but most of them have been blown in place.

Q. Do you pass the word to your people and report to higher headquarters?

A. Right, we always do.

Q. Do you ever by-pass these mines due to lack of time.

A. No.

A2. Normally, we're not that pressed for time while we're out sweeping the road.

A. In the past three months we have damaged so many tracked vehicles by running along the road with mines that we simply do not drive on these roads with track vehicles. We drive beside the road, using a different track each time. The only people that use the road are those with wheeled vehicles.

Q. I thought they were having you run over them intentionally?

A. We did do this a few times when we didn't have a mine sweep team or we had to open up certain roads in a hurry. We ran down roads with track vehicles intentionally to detonate them, but lost too much equipment that way.

Q. So you will normally stay off the roads?

A. We will stay off the roads. So far we have not encountered mines along side the roads. The only mines we have gotten was right in the road itself.

Q. On these mine reports, do you have to follow-up with any kind of a written report?

A. No, these are just verbal reports back up to higher headquarters.

Q. Do you get any information disseminated on mines when you're going into another area? Are you given intelligence on what to expect in that area?

A. Well, in our particular case, no, because we've been a part of the 1/10th Cav since we were assigned to Vietnam. We've had the same area. We've always been here.

Q. So you're familiar with it?

A. When new units come into the area, such as we had the 17th Cav in here for awhile, I give them a briefing on mines that have been found in the

area and what they can expect. Likely areas, what types of mines, and when they can expect to encounter them.

Q. Is there any kind of document put out that gives everybody the information on the mine situation?

A. No, there's no weekly SITREP.

A2. There's a daily SITREP that includes information on the location of mines. If you happened to have hit any that particular day or happened to have found any it's entered in that day's SITREP. But there's no mine bulletin as such that's put out.

Q. How do you feel about the adequacy of the training of your enlisted replacements in mines and boobytraps? Do you think they're well trained?

A. No. I believe if we were actually required to go out and sweep the roads on a routine basis, we would have to institute our own training program. I feel certain that if I were to hand somebody a mine detector and say, "Sweep the road," he wouldn't know what to do. In fact, he probably couldn't even turn the machine on.

Q. In a lot of areas down south they're making special efforts to conduct this training because of the large number of mine incidents.

A. I'm surprised that we haven't been required to do this before. I'm certain the engineers are not happy with having to sweep a section of the road every day. But so far we've been able to convince brigade and higher elements that if we were to do this it would detract significantly from our combat standpoint.

Q. How about the training for NCO's and officers?

A. I've noticed that most of our company specialists are familiar with mine detecting equipment. I can't really say what the exact status of training is for NCO's and officers because we simply haven't been required to do it and I haven't been able to witness their performance. I don't know exactly what they're capable of doing. It would be a safe bet to say that our junior enlisted people have no experience in it and probably would require training before we could expect them to do it.

Q. When your replacements come in, do they get some kind of training up at division?

A. Yes, they do. They have a one-week in-country orientation, but I'm not certain of what the program is that they go through.

A2. They cover mines and boobytraps.

Q. What do they give them?

A2. Mostly boobytraps. I'm sure it's at least two hours and it's more like a whole day. When I went, their instruction in the morning actually consisted of about 2½ hours. Then they went out and did some practical work in the afternoon.

Q. On the confidence course they have?

A2. Similar to that. The people watched the NCO's do it.

Q. What were they doing?

A2. They set off some Claymores.

Q. Was that pretty heavily oriented towards boobytraps?

A2. It was, almost all of it. I don't think there was a mine covered in the class at all.

Q. Was there any mine sweeping instruction in this?

A2. Mine detectors were mentioned.

Q. OK. Do you have any opportunity to do any mine detector training here in the unit or are you kept too busy with operations?

A. The only mine training that we are required to perform is oriented mostly towards informing people as to what areas are likely to be mined, making them aware of the fact that there are such things as mines, not specifically going out and sweeping roads. As for formal classroom training, we don't have any. The best we could ever do at any given time would be to have training at the platoon level because of operational commitments.

Q. Do you have any recommendations for improving the training for people in the U.S. or over here in this respect?

A. I don't think it's a matter of not knowing how to operate the mine detectors. I think it's a matter of operator fatigue and boredom with the whole thing. If you've ever been able to watch one of these mine sweep teams go down the road, they'll sweep along until their arms get tired, then they'll put the detector at right shoulder arms and walk along for about 15 yards, then put it back down and sweep a ways. They generally don't pay attention to what they're doing. When we do have a careful mine sweep, we've got an NCO along with this mine sweep team that says, "Be careful, take your time, and make a thorough sweep." They actually do this and it takes an excessive amount of time. For instance, to cover a small area, it would take them maybe six hours. This consumes most of the day and by the time you get through sweeping, the day's almost over and you can't use the road anyway. I would say that the machine itself is simple enough. With just a little bit of instruction, the guy can use it effectively. It's just the amount of time that's involved.

Q. Any recommendations for actions in the field that you think might help improve things?

A. I have one thing, sir. I think they should blacktop the whole damn road.

Q. That would sure solve the problem?

A. Considering the cost of blacktopping a road versus the cost in damage to combat vehicles, I think blacktopping the road in the long run would offset the cost. I know of no mining incidents once the road has been blacktopped.

A2. It is planned for the future, but the availability of an asphalt plant is a problem.

Q. Any other recommendations?

A. I had a training unit in the States where we conducted advanced individual training for scouts in M114 armored personnel carriers. Of course, I haven't seen them in Vietnam yet. The mine training that we conducted was a day and a half on mines and demolitions, which was broken down to eight hours on mines and mine detection and four hours on demolitions. The eight hours on mines was exclusively on mine fields. There was nothing on intermittent mining of roads, nothing on vehicles hitting mines or the precautions to be taken, such as sandbagging the floor in the bottom of a personnel carrier. None of this was mentioned. If I was back there again, I would certainly put it in the program. As for mine sweep techniques we had no mine detectors available that we could use. It was a go-out-and-roll-up-your-sleeves-and-probe-for-them method. This was generally oriented towards mine fields, which we haven't encountered over here.

Q. It was conventional land mine warfare. Then you feel that it should be more oriented towards your problems here in Vietnam?

A. Right, specifically intermittent mining of the roads. And they could be taught some techniques to avoid mines--such as when they're maneuvering off the road, never go in an already-used vehicle track; or be especially aware of your firing site, where you pull off the road. We hit this mine with our tank the other day and we used the same firing site. This was the fourth time in two days we had used it.

Q. Was this training at Knox?

A. Well, I was conducting training at Knox, which is the only place that scouts are trained in armor advanced individual training. Prior to coming over here, some units' squadrons conducted their own advanced individual training. They trained the replacements that they got. I don't know how much they covered on this in the States before they came over. I know the replacements weren't getting anything like this and most of the people that we trained were going to armored units in Vietnam.

Q. The Vietnam-oriented training centers at Gordon, Jackson and Polk do give some of this.

A. Again, that's primarily infantry-oriented training. The armored training is done at Fort Knox and the armored are the ones who are having the most problems with mines over here.

Q. So you definitely think we ought to emphasize it a little more?

A. Yes, sir. Armor and artillery are having the most problems.

A2. Artillery.

A. Artillery resupply convoys invariably hit them. I believe most of them.

Q. They're vulnerable wheeled vehicles?

A. We could, I guess, make an effort to run our tracks up and down and explode them for everybody else, but we've been staying off the road as much as possible.

Q. You keep your tracks off the road but run the wheels on the road?

A. Well, we have to run the wheels on the road. They can't make it without doing that. It'd be impractical. But we sometimes intentionally run our tracks 10 to 15 feet in the road for the purpose of detonating mines.

Q. That's mine detection with your tracks also?

A. Right. We certainly have set off mines with our tracked vehicles.

Q. Is there a great difference in the PSI of the tracks as opposed to the wheeled vehicles?

A. The wheel itself, in most cases, puts out more pounds per square inch at the actual point where the detonater is than the track does.

Q. Are there any VC marking systems that you've been able to detect in this area?

A. No.

A2. The only thing that we've been able to pick up visually is broken or disturbed earth right at the point where the mine is placed. As I say, the majority of those mines that we have detected without detonating have been detected visually, not with the detector.

A. You're thinking of some sort of indicator whereby the local people would know that the mine is there. We've had several pictures showing where

the civilians weren't warned, if you care to look at them. The Lambrettas have been hitting mines around here. They hit all the mines except the ones we do. That particular one there was an antitank mine with a booster. It killed eight people. It completely destroyed the Lambretta and some of the Vietnamese were blown in half. This is also from this same village that we've had the mines outside of. So apparently the people don't know about the marking system.

Q. The civilians are the big losers here?

A. As far as lives are concerned, the civilians are the big losers.

Q. How many were killed in that auto?

A. There were six in one and eight in another, total of 14. We've had other incidents too. I'd say within the last six months there have been about 16 or 18 killed around here.

Q. How many mine detectors do you have in the squadron?

A. We have three assigned per cavalry troop.

Q. Do you know what type they were?

A. They're metallic mine detectors, the P-153.

Q. Do you use them at all?

A. We have used them occasionally when we have been unable to obtain help from the engineers.

INTERVIEW WITH THE EXECUTIVE OFFICER, S3
HEADQUARTERS COMPANY COMMANDER AND MAINTENANCE OFFICER
OF THE 2/1ST CAVALRY SQUADRON

Q. Would you first explain your mission and how you accomplish it?

A. The mission of the squadron is route security. It encompasses two highways actually: one is Highway 19E from Pleiku up to the Mang Yang Pass; the other is Highway 14N from Pleiku all the way up to Dak To. In order to accomplish this mission, we've put two troops along Highway 19E and in that area our method of operation is to strong point the road--allowing traffic to flow freely under the control of the MP's, without escort. We are available on these strong points to react to any enemy threat against the convoys, and we also conduct search and clear operations along the sides of the road, out to an area 2,000 meters from the road on either side. We also have conducted operations further or deeper into the areas bounding the road. We've gone as much as 15 to 20 kilometers south of the road and the same north of the road looking for the enemy or his base areas. The terrain varies from rolling country cut by streams and rice paddies to mountainous terrain in the east, especially up towards the Mang Yang Pass. From Pleiku north to Dak To the road is patrolled by us with a troop that is based in Kontum, halfway up. The method of operation here is different than that on Highway 19 in that we do escort convoys from Kontum to Dak To. As you can see, it's about 30 to 35 kilometers, so we put an awful lot of mileage on the vehicles that are based in Kontum. For this reason, we rotate troops to Kontum. We change troops there every two months. There are roughly two or three convoys a day using the road between Kontum and Dak To. Now there's a gap, and that is what we do on the highway between Pleiku and Kontum. Well, this varies with the enemy threat. Right now all the convoys must be escorted because of the current situation. Generally speaking, however, that road had been run much the same as Highway 19. Up until just before TET, we had no responsibility on this road. The 3d ARVN Cav had responsibility for this road and they outposted it and let traffic flow freely with an MP escort. The major problem from Kontum to Dak To has been enemy interdiction to keep supplies out of Dak To. Apparently they're still trying to, as most mining incidents in the squadron area have come on this road here, with a second area being roughly from here over to the Mang Yang Pass. The first 10 kilometers west from Mang Yang has been a trouble spot for mines.

Q. I understand that your method of clearing these roads is to run your tracks down them in the morning, is that right?

A. That's right. We have an engineer company with us in this fire base on Highway 19. It is not attached to us and naturally they don't have to work for us. They have responsibility for the maintenance of the

road and this responsibility is assigned through [illegible]. They do, of course, cooperate with us. Now they are able to provide, on most mornings, one or two mine sweep teams that go out using their mine detectors to sweep a portion of the road. They coordinate with our S3 here at the fire base to see which section he would like to have checked. Of course, understanding the reliability of the mine detectors themselves, there's no way to effectively clear the road other than to run down it with tracked vehicles. Now the main point in doing this is not merely to set off mines, because we've missed quite a lot. The main point is to trip or trigger any ambushes that might be set up along the road. In areas where they can, where civilians aren't located, they'll make what they call a thunder run. This is a technique developed by the 11th Cav which we picked up by reading their reports. This is, recon by fire. Just go down the road and blast every bush.

Q. Using your 90's?

A. 90's with canister, the Coax on the tanks and the machineguns on the APC's.

Q. That would be very discouraging to someone on the side of the road?

A. Yes, it is. It eats up ammunition, but it does the job. As far as the road itself is concerned, it's supposed to be a paved road. It is most of the way, but the surface width varies from about seven meters to 3½ meters. So for two-way traffic to roll, lots of times these big trucks have to ride on the shoulders, or what really looks like the shoulder but should be paved. There are plenty of opportunities to plant mines on that road because of the wearing away of the pavement on the sides.

Q. Do you have these engineers sweep what you consider the critical areas?

A. Yes. For instance, they've been concentrating their attention lately on these 10 kilometers west of the Mang Yang Pass that I mentioned. We've also had quite a bit of activity at another point on the road which is about 25 kilometers west of the Mang Yang. We had several ambush sites there and we've had several minings there but not as many as further east.

Q. That gives me a good picture of the area of operations. Now what percentage of your total casualties were suffered from mines and booby-traps?

A. Oh, I'd say about 15%.

A2. It's been very small.

A. We had one man killed by a tremendous mine blowing up under a tank and that's the only KIA we've had from mines. We've had several others wounded.

Q. Now of this 15%, how much was due to mines and how much to boobytraps?

A. That's hard to say. When the thing goes off, you don't really know what it was. Are you classifying the command-detonated mine as a boobytrap?

Q. No, as a mine.

A. We haven't had too many incidents with boobytraps. You're talking about a grenade with a vine or string across a trail.

Q. Or the just-off-the-road type thing--you know, where you go out to beat the bushes so far off the road.

A. Our experience there has been almost nothing. We've run across one or two, but we never had anybody injured. We had one man injured by a boobytrap in A Troop one time.

Q. So really almost all would be from mines?

A. Yep.

Q. What is the main type of mine that you encounter?

A. The M1A1 with explosive booster is what the troop commanders have reported just about all the time. We have had some encounters with wooden box mines.

Q. What would be about the second most frequent type?

A. If you count the road mines that we have gotten involved with as a result of going to the rescue of an ambushed convoy, I'd say the second most important type would be the bamboo stake mine. This is the electrically detonated job where you've got a piece of bamboo with two metal strips running inside of it, two flashlight batteries, and a satchel charge.

Q. How is this set up?

A. Well, the explosive is in a separate satchel and then a stake is tied to the mine as an initiating device. They drag it across at the last minute; then a truck runs over it and detonates it.

A2. Normally, it's some of this real crude ammonia nitrate explosive that they have. It could be in a vat or any type of container which would be attached to the end of this long bamboo and would serve merely as the initiating device. We ran into this several times in ambushes.

Q. How soon before the truck hits it do they pull it across?

A2. Well, it's what they use to start their ambush with.

A. They'll wait and they'll have a lookout up the road who will give them a signal. They'll yank the thing across when it's the right time.

Q. Can it easily be picked out by the driver?

A. Yes it can, but it's too late. They always pick a place around a corner. You'll come barreling around a corner and that's it.

A2. And while this is going on, he's taking RPG rockets and shooting down your throat. The only thing is to get the hell out of there.

Q. Get out of the ambush area?

A2. Right.

A. Recently, they ambushed a column east of our fire base and we sent a reaction element down there. They tried to pull it on the reaction element. They pulled the mines out in the middle of the road, but the reaction element saw them in time and just went around them, because a track is going a lot slower.

Q. Your on-the-road clearing plan would be pretty tough in a case like this?

A. Well, they've gotten to the point where they know when we're going to do it. We have to have this road open by a certain time and they know it. They just sit back in their caves and wait.

Q. You're committed to a time element?

A. Yes.

Q. About what would be the third most frequently encountered mine?

A. That would be hard to say. Possibly boosted mines. They will take an M1A1 and just put all kinds of stuff under it.

Q. That would be a variation of the M1A1?

A. I really don't know of any other except for the wooden box mine. We did have a rash of those for a while.

A2. I think occasionally they put out some plastic C4 in a bag, just dig a hole in the ground and plant it.

A3. I'd say the next most important would be these homemade jobs of any kind. There's not really any identification. One type is a handmade wooden box with wooden pegs, completely wooden, and it's full of C4. Where they get the C4, I have no idea. The one that I saw that the engineers managed to disarm must have weighed about 15 pounds. It was a box about 18 inches long, eight inches high, and eight inches wide.

Q. How was it detonated?

A3. With an electric blasting cap.

Q. Was it a pressure type?

A3. I don't know because we didn't get the energizing device. All the engineers found was the box with the blasting cap on it.

Q. Obviously, these things aren't picked up when it's swept?

A3. No.

Q. Do you encounter most of these on your road clearing operations?

A3. No. I'm sorry to say that most of the ones we've encountered have been the result of an ambush or a truck hitting one. We will stop traffic, sweep the area and maybe pick up three or four more. On our actual road sweeping operations, as I said before, once in a while we'll detonate one with a tank, but we don't like to do it.

Q. Would that be your second most frequent way to find the, this intentional road clearing with tanks?

A3. The main purpose of the early morning sweep down the road is to be sure there aren't any ambushes set up.

Q. Is there any characteristic type of area that you hit these mines in?

A3. It varies. We suspected one village on Highway 19 for a while. There were a lot of incidents near it right around Christmas time, but then they died off. I think they ran out of explosives. There is no pattern to it as far as I can tell.

Q. The ones that you get on a road clearing operation, where are they planted, right on the road?

A. No. Our latest experience indicates that in the last three months they've been on the shoulders. In fact, they will go so far as to bury a mine on the shoulder of the road as close to the pavement as they can. Even though the truck is on the pavement, as it passes by they will command detonate it hoping that it's big enough to damage the truck. It's just harassment.

Q. Do you have any buried in the road?

A. We have not run across any buried in the pavement. Strangely enough, we haven't had any buried in pot holes. We were very afraid of that for a while, but apparently they don't do this.

Q. Do they dig under the road and shove it under the pavement?

A. There are several places where they have done this but they don't go to the trouble of digging. There are plenty of culverts that run under the road and they'll load those up.

Q. Do these command detonated in the side of the road affect your road clearing?

A. Right, that type and the bamboo type. I think are command detonated because we run into them always in an ambush. They block the road with them, but given time you can find them on the morning sweep.

Q. What type of fuze do you normally encounter?

A. That would be hard to say. I couldn't tell you. They seem instantaneous to us when they go off, but we couldn't tell whether they set it up an hour ahead of time or what.

A2. I would say instantaneous. I don't think there's any sophistication. I don't think they have that capability down around where we are.

A3. There were two engineer lieutenants--one got killed and the other was pretty badly messed up trying to disarm one of these. We always have an engineer company attached to work with us. If we're ever called upon ourselves to take care of a mine, we always blow them in place.

Q. You don't touch them at all?

A. Right. The incident involving these two engineer officers happened the day they tried to get the reaction force with these bamboo mines that I mentioned. The reaction force spotted them and went around them. The engineers followed up and went down to look at these mines, and somehow they set one off. Now whether it was on delay or what I couldn't say, but it went off and killed one and badly injured the other.

Q. What type initiating action do most of them have?

A. I'd say 75% of them have pressure-type action and the others are command detonated electrically.

Q. Now what are the primary ways that you have of detecting these mines?

A. By hitting them mostly. Once they're hit, using the mine detector in the general area will usually produce results. There's so much of the road to look at. After all, it's 50 kilometers on Highway 19 and another 70 up to Dak To. You can't hope to sweep the entire thing with a mine detector. Once your attention is drawn to a particular area, you're pretty sure to find a couple more in the area. Then you can begin a visual inspection. Sometimes you can find them this way and then follow up with the mine detector.

Q. So actually it's first hitting them; second, mine detector finding others near-by; third, visually.

A. Right, but I'd say visually before the mine detector.

Q. But while driving down the road, you can't detect them visually?

A. No.

Q. Do you have any kind of assistance in detecting these things in the way of dogs or any other mechanical equipment?

A. No. We do have aircraft that conduct visual reconnaissance of the roads every morning just to see if they can spot anybody in the area. That's all.

Q. Do they try to keep it under observation during the day?

A. Yes.

Q. Do you have any techniques for detecting or neutralizing command-detonated mines?

A. The thunder run would be one technique.

Q. Do you use indirect fire on the road?

A. Yes, we fire but we're not allowed to fire within 500 meters of the road, I believe it is. Of course, we use H and I fire at night and we also put out ambush patrols. If we have an area that we suspect the enemy is going to keep operating in for a couple of days with mining incidents, we'll set out ambush patrols at night.

Q. On this H and I fire, do you fire HE or WP?

A. HE mostly.

Q. On some of these other roads, they try to keep the metal off of them?

A. Well, as I said, we don't fire that close to the road. There's no restriction here to keep from contaminating the road with metal fragments. Of course, the only principle with indirect fire is that you try to hit areas where you don't have any observation, to prevent the enemy from just coming in and setting up freely. In other areas you may have ambush forces in case they move over there.

Q. Do you attempt to do any night mine detection?

A. Well, these ambush patrols are equipped with night vision devices and the tanks are equipped with an infrared capability and they sweep. At night, the vehicles pull in and occupy strong points on all the bridge sites along the road.

Q. Do you have strong points all along the road both night and day?

A. Night and day. During the day, the strong points are not as strong as at night because some of their elements are out on sweeps or on small platoon-size operations off the road. At night, they're back on the road guarding these bridges. And the tanks survey the area with their night vision devices around the bridges. As a result, we have had very few incidents in the immediate vicinity of any bridge. Then we kind of fill the gaps between the bridges with these ambush patrols.

Q. What is the normal sequence of events, when a unit of yours detects a mine? Do you call the engineers?

A. Yes, we call the engineers and they come down to sweep the area with their detectors. If the mine is just on the surface of the road, sometimes they'll just blow it with machinegun fire if they can to get it out of the way. But if it's buried, the engineers will be called in to dig it up.

Q. What happens to your convoy when you find a mine?

A. Traffic is stopped on the road and the SOP calls for everybody to get off to the side of the road and to take up some sort of a defense position. The convoys are stopped and they're under the control of the MP's. What we'll do is send armored vehicles down to guard the convoy while it's stopped. They will get off the road and take up defensive positions, covering the convoy the best they can. Some of the convoys are 150 to 200 vehicles long and it's kind of difficult.

Q. Is a report made to higher headquarters?

A. Oh, yes.

Q. Do you ever by-pass these mines or do you always neutralize them?

A. We don't by-pass them.

Q. Do you have to give a written follow-up report and is there any kind of a form used to do that?

A. Yes there is. The S3 handles this out of the fire base. It'll go in through his channels. The engineers, of course, have to write follow-up reports to their headquarters.

Q. The circumstances on how it was found and all that sort of stuff?

A. Yeah.

Q. How is this information disseminated to the units? Is there an overall dissemination program?

A. At this level, no. The information we get concerning mine warfare comes from USARV or MACV in the form of these booklets that are put out periodically on enemy mining techniques. We get enough of these through distribution to enable each platoon to have a few.

Q. I was thinking more in terms of information that units operating around here might be concerned with?

A. Oh, that comes down through the daily operation and intelligence summary. Every mining incident is included in the INSUM that the division puts out. For instance, I have a meeting in here and there's one held out at the base camp or fire base every evening. We have an S3 liaison officer working from here with division. He goes to the meetings, picks up the INSUM's and he comes back and posts them on this map so that I know what happened during the day in the way of incidents.

Q. I'm curious about the damage that's done to these vehicles. What happens to an M113 or a tank when it hits the average mine?

A. The maintenance officer has some nine tanks damaged from mines, two of which are total losses.

Q. The tanks were destroyed?

A. Beyond repair, yeah. Usually it'll warp the hull.

Q. Where are these vehicles being hit, on the track or underneath?

A. The track.

Q. Have you had any where they're hitting underneath the belly of the tank?

A. No, I don't think so. We had one we suspected was a command-detonated mine. We estimated it at about a 50-pound charge and it was the first tank that we lost. We had to turn it in because of mine damage. It went off under the rear, but it was either under the track or so close to it you couldn't tell the difference and it completely sheared the sprocket off the final drive. That big thick piece was sheared completely off, and it warped the hull so badly that it was non-repairable.

Q. Down south they're offsetting their mines so that it gets you right under the belly.

A. We haven't had this happen to us yet.

Q. Then to destroy these tanks, it has to be a fairly sizeable charge?

A. Yes.

A2. We also had two retrievers totaled out while trying to get a mined vehicle.

Q. How about the M113's when they are hit?

A. We only had a few and oddly enough the M113 hasn't hit a big one. There have been about six and the damage has been minor in most cases. I don't know why this is, but the vehicle has hit a mine commensurate with its size, for us anyway. We've been lucky because we haven't had a PC hit one of these great big ones. It's always been a tank or a VTR. If a PC hit one of these big ones, it would have knocked it over or done something else to it.

Q. How about the wheeled vehicles, are they hitting the bigger ones?

A. Lately, no. They're hitting them big enough to maybe knock off a front wheel. We've had several of them the last few days that have gone off under the rear wheels, and we can't figure out whether it's command detonated or whether it's just a pressure type where the front wheel doesn't have enough weight and the rear wheels do. Usually if it goes off under the rear, it'll knock one set of duals off.

Q. You think these may be offset?

A. Well, I would think the best way for an offset to work would be electrically.

A2. They would have to on an offset, for the most part. But they could, theoretically, devise something where they would have a plunger here and an extension on it further back. I would say a bamboo-type mine with a pressure-type activator in the middle, so that when the pressure went down it would hit. They're capable of doing this, I know. We've run into them.

A3. Something else, I don't think there's any pattern. They're placed on the track--front of the track, middle of the track, and rear of the track. Normally in a formation, you would lead with a tank so any of the mines will be encountered by a tank.

A. Also, in an armored study that was being made over here, they talked about dirt and other foreign matter working under the pressure plate to cause a delay.

Q. That was the theory of another car unit we talked to, this delay caused by foreign matter which required additional pressure to detonate the mine.

A. Right, and this totally destroyed some of the wheeled vehicles. What they're also using that would add a little to this delay thing is thicker pieces of bamboo. So it may take 15 vehicles to run over it or it may take five or six. With the heavier bamboo, it might require a heavier vehicle later in the convoy.

Q. With some of these 113's that were hit, the aluminum bends and doesn't break as quickly as the steel. Does having a little more give to them help?

A. We haven't had that many PC's badly damaged. Usually a couple of road wheels will be blown off or some tracks, that's about all.

Q. What do you think about the training of your average replacement in the mine and boobytrap area?

A. We don't worry about the boobytrap business because the cav's different from the rest of them and we run into very little of this. The replacement training people here give a class on mines and boobytraps and the replacements come in oriented completely toward the infantry.

Q. Do you have mine detectors?

A. We sure do, two per troop. These are the P153 type.

Q. Do you think your men need to know how to operate them?

A. Well, in the headquarters troop, we received the equipment right before we left the States. We had the old "dash 4" models and I don't think the were handled too carefully. I made no effort to use these things. Some of them needed new batteries and the rest of them were not available. We had two of them and one was issued specifically for training before we left the States. However, I had one of the two transistorized, so this is the one I put in. We had an initial shakedown that was conducted by the division's NCO Academy, essentially the same thing that they give the replacements when they come in for the whole unit. This was while we were at base camp right after we arrived here, before we assumed any mission. The one mine detector I had in the ground surveillance section, we took to an area out here. This area at the time was just one big muddy area with tin cans and metallic objects. They spent quite a bit of time out working on these mine detectors. When we went to the field, this section normally secured the CP's and then they went out on the road--a lot of odd missions to check out various areas with the mine detectors.

Q. You did have some skilled people in the headquarters?

A. We just kinda trained them ourselves on an OJT basis. Out here, before they went to the field, they detected mines with these new detectors.

A2. We had some training in the States but not extensive. We had the infantry squad leaders trained once and they tried it. Each man in the troop could not use the mine detector. I intended to get them on it as a means to get the area swept. After the squad would move up, the squad leader would then take the mine detector and use it.

Q. But at the time the people got here from the States, they really didn't have this training?

A2. We had used the mine detector. The training had not been extensive but they had been demonstrations a lot of times and we'd used it some.

Q. When did you say you received your mine detector?

A2. We received it shortly before we pulled out.

A3. Another part of the problem is we got the equipment too late to really get a good training program going and we knew we'd have to do more when we got over here.

A. The training that we feel is more important is the defensive measures. Detection is kind of an art really. The equipment is simplified, but the detectors that we have, as everybody knows, aren't that reliable. They're reliable in picking up stuff, but what in the heck have you got once you pick it up? Like he said, a tin can, a nail, or something like this. I think that each platoon is given this mine detector, not for general purpose use, but for special missions like clearing an area that you suspect has mines, either through hitting one or through other knowledge. The best training in mine warfare is teaching the men to keep their cotton-pickin' hands off the mines they find and taking defensive measures such as sandbagging the light thin-skinned vehicles,reconning by fire, and the other things that we're doing now.

Q. Do you think this should be crammed into the mine training in the States?

A. Yes, and specifically the use of mines in ambushes should be stressed more.

Q. Do you think the NCO's and officers have had enough training in the mines and boobytraps area?

A. I'm trying to recall. I was at Fort Knox before I joined the unit and I think they have a pretty extensive period of instruction in mine warfare. It's hard to say.

Q. In a visit to the training centers, we noticed that much of it was oriented toward conventional land mine warfare.

A. If that's the case, then yes, I think they ought to have an amplification of the normal instruction they give. They then ought to go into the specific uses encountered over here.

Q. How they use them in Vietnam?

A. Yeah. As an instructor at Knox, I ran into this in other subject areas. The students all wanted to hear about Vietnam. And you found it hard to get them to listen to the basics first. They wanted to know

what it was like in Vietnam right away, how to fight the war. If you spice the basics with what is actually occurring here, you get better results from your instruction. Whereas if you go through the basics then get in the Vietnam thing as a separate body of instruction, I don't think the overall effectiveness is as good.

Q. In other words, you think the basics are still fine, but you need to relate them to actuality?

A. Oh, yes.

A2. My own general impression was that I heard so much about Vietnam. There are many cases where they go off on wild tangents. Even during briefings around here, we can sit there for 30 minutes and not have the vaguest idea of what they're talking about.

A. There's an awful lot of new language that's cropped up since this Vietnam thing started. I taught cav for a year and all that time we were hearing about search and destroy, search and clear, things like this. Actually, it's nothing more than a zone reconnaissance or an area reconnaissance. It has the same effect except you have to give your troops special instructions, like, "We're going to burn all huts during the time we're in this area," or something like this.

A2. When I was in the 3d Brigade in the States back in March before I came to this unit, we were still conducting the training that was called for in the Army training program of AIT which was largely European oriented, laying mines and everything. Then there was what I considered quite an extensive amount of training given on subject in the 9th week of AIT, the Vietnam-oriented part where we went out to the village. The people we had teaching were all NCO's who had just returned from Vietnam. They were all very competent men. It seemed to me that we normally spent about four hours in one afternoon on conventional mine training. Actually, one good way to get a program of instruction would be to talk to the Special Forces people and see how much of their instruction could be integrated into basic training. They're taught to do the kind of things that Charlie is doing over here.

Q. What training do your people get as replacements from the division?

A. They get basically a week's infantry-type training.

Q. How much is in mines and boobytraps?

A. I'd have to look at the training program, I don't know.

Q. We understand it's two hours.

A. Well, if that's what they tell you. I'm not even sure if it includes a Vietnamese village or anything like this. We had a Vietnam village set up for training back at Hood.

Q. Do you have any comments on the training your replacements receive or have you gotten many replacements?

A. Yes, we've gotten replacements, but we haven't really had an opportunity to judge. We rely on that week's training to orient the people as to the environment, the terrain, and the tactics used against us. But when you get specific about a thing like mine warfare, that thing is infantry oriented. We're performing a rather specialized mission, localized to the terrain along the roads, and I don't think it would stress this. It would not be able to. They probably are more oriented toward boobytraps than they are land mines because it's an infantry thing.

Q. Do the engineers give your men any kind of training on the mine detectors?

A. When they're requested to, yes. We haven't had to request this lately. When we first got here, we had about 11 or 12 days of orientation-type training, and they just came over and worked with our people on the mine detectors. A class was also given by a representative from another armor unit, 10th Cav, and I know that he covered in great detail the mining techniques that they had encountered.

Q. An in-country orientation?

A. Yeah.

Q. Do you have any recommendations for improving training either in the United States or in-country?

A. Well, for armor training, this again is pretty localized, training armor crewmen. If you had the time, it would be a good idea to teach them recognition techniques--what to look for on the road in the way of telltale signs of mining, how to react to a mining. For instance, our SOP dictates that if one of our vehicles hits a mine--it is never alone, there's always at least another vehicle with it--they automatically start firing, spraying the whole general area. Sandbagging the vehicles, of course, is an SOP-type thing. As a general thought, the integration of mining techniques used by the VC and the NVA against armored vehicles.

Q. For in-counrry, do you think there's anything that could be added that would help your people?

A. Well, for armor again, yes. Mine detector training would help. But since this is an infantry division and their basic philosophy is for the man out in the brush, it would be hard to get it integrated in the system here.

Q. So if you get it at all, it'd probably be OJT?

A. Right.

Q. Have you run across any kind of a marking system that they use that aids you in detecting?

A. No. The marking systems that they would use would probably be off the roads, and since we have control of the road itself, it's kind of difficult for us to see anything like that. I don't know of anything like that. Of course, you can look for wires.

Q. After you have swept a lengthy road, do you outpost them for eyeball-to-eyeball observation or just strong points?

A. Just strong points. There's too much road to keep eyeball-to-eyeball observation.

Q. Would the employment of observation towers help?

A. Well, that would help if we had the materials to build the towers. We have found several pieces of terrain that we've set up as OP's and this has helped. We had some mining incidents on one section of road that was in a dip and we put an OP up on one of the hills nearby that was able to look down on this and then the mining incidents stopped.

A2. The tower system would work during the day, but at night, the way we're set up now, we wouldn't have enough forces available to both man the tower and to check the area. I think this would probably have to be just a daytime affair.

Q. How do they secure the road in the daytime other than by ambush?

A. Well, it appeared that the mines we hit were placed at night. We hit most of them sweeping the road in the morning so most of our minings, we believe, have been done at night. And until we set this OP up on that one particular stretch of road, about every morning we'd run into some down there. We had a tank up there at one time to fire direct fire into this area. We put an ambush patrol down on the road in the area too. The ambush patrol would say, "we hear something." The tank would traverse around and turn the searchlight on and sweep the area. The OP there with the tank would call in artillery fire to generally harass the area, to let them know that we hear that they're down there doing something. This would stop the mining. This is the kind of activity you have to generate in order to keep them from going out at night and mining the road.

Q. It's an offensive defense?

A. Right.

A2. Surveillance at night is, of course, one of the primary methods, or troops on the ground to sterilize the roads, or radar systems.

Q. Do you have any regular schedule for sweeping the roads?

A. Yes, it's fairly regular. Every morning at first light we go up. We cover every inch of the road, at least we travel over every inch. The road is usually open by eight o'clock.

A2. It is a disadvantage that the road has to be open for traffic at a certain time, of course.

Q. To do your sweeping, do you use engineers mostly or do you ever use other people?

A. We don't have any infantry as such right now. We have armored vehicle strength as such and we don't have an infantry squad. As I said, sweeping, the actual use of the mine detector by engineers, is a localized thing. We can't hope to do the whole road in one morning.

Q. But when you do sweep these certain spots, who does this, you or the engineers?

A. A combination of the two.

A2. Normally on 19, the engineers. On one occasion we hit one mine with a tank. The engineers came down and swept the area for us. Then we used the VTR and it hit a mine. That sort of thing you just expect.

Q. Why do you think the engineers missed the mine?

A2. Well, they didn't pick the mine up. Why, we don't know. It's hard to say what kind of a mine it was that went off.

Q. Has anybody ever used this nonmetallic PRS4 over here?

A. We don't have the nonmetallic, never have used it.

INTERVIEW[1] WITH THE 2d BRIGADE COMMANDER

Q. We have been talking to people from some of your units on the mine and boobytrap problem and wondered if you might have some comments?

A. As you can see from this long road net we have running out here to our brigade base, we do have a big problem here. We do whatever we can to try to combat the problem, but we also have to take some calculated risks in order to accomplish our mission. There's obviously too much road for engineer teams to sweep effectively without taking too much time, so we do have to run some of them. Preventive measures are emphasized: here we have cut the brush well back from the road to improve our observation and we put up towers that now help us to keep much of the road under observation. I'm sure you've been told about some of the other preventive means, such as unscheduled running of the road by armored vehicles, aircraft observation, night ambushes, H and I fire with WP and some others. Right now the tactical units are all pretty well out on operations, and the mine threat seems to have lessened during this period of increased fighting by the enemy. A surprising development here was a daylight attack on our base over here the other day. They attacked at 12:00 o'clock and were thrown back with heavy losses, while ours were very light.

[1] Reconstructed from notes.