

WORKAW OFF-LEASH #
50 YMS.

20 STILL
MINE WHEN TRANSMITTING

260 DMY
ELMWOOD

COMPANY A
1st Military Police Battalion
Force Logistic Command, FMFPac
FPO San Francisco 96602

350-182

DAL/jls
3500
7 JAN 1971

From: Project Officer, Mine/Booby Trap Detecting Dogs
To: Commanding General, Marine Corps Development and Education
Command, Quantico, Virginia 22134
Via: (1). Commanding Officer, First Military Police Battalion,
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Subj: Dog Detection of Mines/Booby Traps, Evaluation; final report of
Project Number: 90-69-01
Ref: (a). CMC ltr AX-4E5-rdn of 2 Jun 69, Project Directive:90-69-01
(b). U.S. Army Limited War Laboratory Technical Report No.
LWL-CR-16B69, Draft Information on Use and Maintenance of
Mine Dogs of January 1970
(c). CG, MCDEC Ltr 46/9A/GHF:jfe of 3 Feb 70 Subj: Draft
Information on Use and Maintenance of Mine Dogs, Promulgation
of
(d). FM 20-20
Encl: (1). Definitions.
(2). Functional Suitability.
(3). Operational Suitability.
(4). User Acceptability.
(5). Effect on Current Tactics, Techniques and Doctrines.
(6). Requirements for Ancillary Equipment and Facilities.
(7). Size and Organization of Mine Dog Unit.
(8). Control and Employment of Mine Dog Unit.
(9). Suitability for Marine Corps Use.
(10). Training (Dogs).
(11). Training (Handlers).
(12). Conclusions.
(13). Recommendations.

Subj: Dog Detection of Mines/Booby Traps, Evaluation; final report of
Project Number 90-69-01

1. Pursuant to reference (a) and in accordance with references (b) thru (d) a 270 day field evaluation was conducted to determine the operational suitability of using dogs for the detection of mines, improvised mines and surprise firing devices; ascertain suitability for Marine Corps use; and develop data which may support the establishment of permanent T/O Mine Dog units.
2. The evaluation began with the arrival of the first group of eighteen (18) handlers, fourteen (14) dogs and one (1) Project Officer in RVN on 7 March 1970. The second group of twenty (20) handlers and fifteen (15) dogs arrived 30 May 1970.
3. The evaluation was conducted in one phase. The handler dog teams were employed with infantry and engineer units of the First Marine Division and elements of the Combined Action Forces. These areas of operation provided a representative sampling of the overall RVN environment.
4. Mission questionnaires completed by dog handlers and tactical unit leaders after each mission, interviews with personnel of the using units and, on site observation by all assigned supervisory personnel were the sources of data utilized to accomplish the evaluation.
5. Enclosure (1) consists of definitions of terminology related to dog handling. The objectives are reported on in the form of enclosures (2) thru (13) in the interest of providing a more detailed and comprehensive evaluation.
6. This report with enclosures (1) thru (13) is submitted in accordance with references (a) thru (d).

D.A. LUCERO

1. Definitions

a. Commitment. The length of time that a handler dog team remains with the using unit.

b. Mission. One patrol.

c. Detection. A good response to any type of ordnance. While in training it is stressed that the dog must sit within two (2) feet. But, under combat conditions the requirements for a good detection are not quite as rigid.

d. Search Pattern. A system of search that the individual dog develops by which he ultimately detects a mine on the trail.

e. Alert. An instinctive reaction by the dog to anything out of the ordinary on the trail.

f. Fear Response. A conditioned reaction of fear instilled in the dog, which he relates to something very unpleasant.

g. Marking on Trail. When a dog urinates while working on trail.

h. Gun Green Dog. An early stage of cowardice demonstrated by the dog in the presence of small arms fire and explosions. A Gun Green Dog is capable of being cured.

i. Gun Shy. An advanced stage of cowardice demonstrated by dogs in the presence of small arms fire and/or explosions. When dogs reach this particular stage they cannot be cured.

j. Stimuli. Objects to which dogs are trained to respond to. For example, ordnance and trip-wires.

k. Reinforcement. Any method utilized to strengthen the dogs response. (all rewards or corrections)

l. Positive Reinforcement. A reward used to convey to the dog that he has done something right or good.

m. Negative Reinforcement. A correction used to convey to the dog that he has not performed well.

n. Cuing the Dog. Any hint by the handler or sounder to prompt the dog to respond to the stimulus on the training trail.

o. ATP (Anti Tracking Procedure). A precaution taken in training by the mine layer to preclude the possibility of the dog tracking him from mine to mine.

Enclosure (1)

p. Handler Conscious Dog. A dog which lacks in confidence because of the fear he has of his handler. This precludes his total concentration on detecting mines.

q. Trail Shy Dog. A dog which has been corrected so severely for making mistakes on the trail, that he becomes unsure of himself, thus is reluctant to work.

r. Directional Control. The ability that the dog possesses to be directed or controlled by the handler with the use of verbal or silent commands.

s. Good Response. When the dog sits within two (2) feet of a target and waits for further direction from his handler.

t. Bad Response. When the dog sits more than (2) feet, but within ten (10) feet of a target.

u. False Positive. When the dog sits more than ten feet from the mine.

v. Kennel Ration. The amount of food that the dog is fed when he is to work the following day. This can vary from a small token to half of his full ration, depending on the dog's motivation to work.

w. Trail Ration. The amount of food that the dog earns on the training trail. The food is proportioned equally, depending on the amount of problems laid on the trail. The dog gets fed for each good response.

x. Full Ration. The amount of food the dog is fed when he is not to work the following day. The kennel and trail rations combined compose a full ration.

2. Mine Concealment Defined.

a. Trip-wires. The concealment of a trip-wire can vary from a drag line to eighteen (18) inches into the air. The trip-wire can be made of both natural and man made objects.

b. Deadwood. Mines concealed under, beside or behind tree stumps, logs and branches, on or beside the trail.

c. Off Trail. Off Trail mines may be concealed up to three (3) feet off either side of a trail under leaves, bushes, and shrubbery, but without burying it.

d. Buried. May be buried up to twelve (12) inches into the ground.

e. Elevated. Elevated mines can be placed in bushes and trees up to five (5) feet above ground level.

5. Mine Concealment

a. The intensity of mine concealment is measured by a grade system. The system is used to ensure that the dog's ability to detect mines on the training trail is closely similar to the type of concealment he will encounter under the actual combat conditions. The grades are measured one (1) thru five (5). Of the five (5) only grades three (3), four (4) and five (5) should be employed to maintain the dog's ability to detect.

Grade I---Completely visible.

Grade II---Half ($\frac{1}{2}$) visible.

Grade III---Takes the mine out of visibility, but leaves the method of concealment slightly obvious. (disturbed environment)

Grade IV---Mine is completely concealed (environment disturbed to a lesser degree than in Grade III)

Grade V---Mine is completely concealed with no visual clues.

Functional Suitability
Table #1

1. Total Commitments	<u>266</u>	
2. Total Detections	94	— 98?
a. Rigged Mines/Booby Traps	<u>19</u>	
(1) Trip-Wires	<u>25</u>	
(2) Buried	<u>21</u>	
(3) Punji Pits	<u>3</u>	
b. Live Ordnance (Not Rigged)	<u>15</u>	
(1) Caches	<u>8</u>	
(2) Potentially Lethal	<u>37</u>	
3. Alerts	49	
a. Tunnels, Bunkers, Spider Holes	<u>18</u>	
b. Enemy Personnel	<u>13</u>	
c. Ambushes	<u>3</u>	
d. Ordnance Exploded/Unexploded	<u>15</u>	
4. Misses	14	
a. Detonated by Dog	<u>2</u>	
b. Detonated by Personnel	<u>5</u>	
c. Detected by Personnel	<u>7</u>	

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Enclosure (2)

1. As depicted on table T-1, although the dogs were specifically trained to detect mines/booby traps, they demonstrated a capability for alerting to non-mine objects such as tunnels, bunkers, personnel and punji pits which ultimately resulted in the dogs accomplishing their purpose, saving lives. Additionally, in aiding the using unit in better accomplishing their given mission. Although the dogs have demonstrated these unexpected capabilities, they should neither be expected or relied upon to perform in a capacity other than mine detecting.

2. There were fourteen (14) confirmed cases where dogs completely missed surprise firing devices, two (2) were actually detonated by the dogs, five (5) were detonated by personnel and seven (7) were detected by either members of the using unit or the dog handler.

a. Synopsis of these incidents are as follows:

(1). Dog missed a trip-wire connected to a C-4 mine. Trip-wire was woven through small hedgerow off trail. An ARVN found the device, no casualties resulted.

(2). Dog missed two (2) M26-A1 grenades in cans. Dog was not working because he had been sick earlier. Members of the patrol found the ordnance, no casualties resulted.

(3). Dog missed M26-A1 grenade (pressure release) buried in pool of water which was on the opposite side of the road from the dog, no casualties resulted.

(4). Dog missed drag-wire attached to M26-A1 grenade in a can. Handler tripped the booby trap and received minor wounds.

(5). Dog missed a buried 82MM Motar shell (pressure release). The dog handler was responsible for the detonation and received serious shrapnel wounds to head and chest.

(6). Dog missed a booby trapped box mine which was found off-trail by one of the members of the patrol. The mine was concealed with hard packed dirt. No casualties resulted.

(7). Dog missed a trip-wire which led to a M26-A1 grenade off trail. It was found by members of patrol, no casualties resulted.

(8). Dog missed a Clay-more, the detonating device was approximately two (2) feet off trail, the ball box was approximately seven (7) feet off trail. Incident resulted in three (3) KIA and three (3) WIA Marines. Dog and handler were not injured, however, the dog was so frightened by the explosion that he ran away which resulted in the dog MIA.

(9). Dog missed a trip-wire which led to a rocket warhead. It was raining and the area had been heavily bombarded by air strikes, no casualties resulted.

(10). Dog missed a dud 105 MM projectile that was partially buried off trail. The ordnance was not booby trapped and was detected by the handler.

(11). Dog missed a buried 81 MM Mortar shell on rice paddy dyke. The surprise firing device was detonated by a member of the patrol. Incident resulted in two (2) KIA Marines, handler and dog were not injured. Triggering device was deduced to have been an under water trip-wire.

(12). Dog missed a buried 60 MM Mortar shell with a pressure release triggering device. The booby trap was buried in a puddle of mud on a rice paddy dyke, it was detonated by the handler, the handler was wounded seriously.

(13). Dog detonated a booby trap of unknown size. Incident resulted in the handler receiving severe wounds.

(14). Dog missed a trip-wire to a M26-A1 grenade. Wire was stretched accross a ditch. The dog detonated the ordnance while in the process of jumping the ditch. Incident resulted in the inflicting of serious wounds to the handler and dog.

3. Although the dogs have missed on several occasions, the lives that they have saved with good detections as well as alerts to non-mine objects, by far outweigh that which has resulted from their misses. The dogs are functionally suitable in an operational environment.

Operational Suitability

1. Stamina

a. The dog's lack of endurance was immediately obvious upon the arrival of the first group in RVN. Approximately three (3) days after their arrival, the greater majority of the dogs suffered a considerable loss of appetite which resulted in the dogs becoming unusually lethargic. This was attributed mostly to the fact that the dog was initially trained in very cold weather in Raleigh, North Carolina, and cool weather in Okinawa. The primary reason for the intermediate stop in Okinawa was to slowly adapt the dogs to a climate which was as closely similar to that of RVN as possible. However, as it turned out the stop did not serve its purpose because seventy-five per cent of the time (23 January thru 7 March) rain and cold weather prevailed. Lack of experience in regard to rations for the dogs in order to satisfy the requirements of their diet was also a major contributing factor. As experience was gained and as dogs progressively became acclimated, their apathy slowly, but not totally, disappeared. As temperatures subsided somewhat, the dog's appetite increased, they became more alert and to this date all symptoms of lethargy have self extinguished. This problem was not realized with the second group of dogs because their stay in Okinawa proved to be effective. This was primarily because throughout their training period in Okinawa hot temperatures prevailed.

2. Distractions

a. The dogs on many occasions were distracted by Vietnamese, animals, butterflies, snakes, water and occasionally were found to be curious about flowers on their trails. This problem was rapidly resolved by virtue of harsh negative corrections.

3. Movement

a. On many occasions when the using units were required to operate in the heat of the day (average temperatures from 90° to 100° and above) the dog's pace was not compatible with that of the unit's. When this occurred the dog was taken out of the working status and he and the handler regressed to the rear of the formation. This problem was resolved by virtue of the handler making the unit leader totally aware of the dog's capabilities. The unit leaders then started scheduling their missions either early in the morning or later in the afternoon. However, frequent rest was necessary for the dog even when worked in the early morning or late afternoon. These procedures did not prove to hinder the given mission of the unit in that, the troops themselves worked much better in the cool part of the day and they also benefited from occasional breaks.

Enclosure (3)

4. Control

a. During excessively high temperatures the dogs did not respond at all well to commands. Additionally, they continually searched for water and a shady area in which to rest. To combat this problem all training was conducted during the hottest part of the day, this proved to be effective only to a certain extent due to the fact that the dog failed to respond well to commands, his effectiveness was somewhat reduced.

b. If the dogs are utilized with discretion and in accordance with their capabilities, they are operationally suitable for Marine Corps use.

User Acceptability

1. Unit Leader Comments

a. The documented comments listed in this enclosure may appear one sided and to a certain degree are misleading. On many occasions interviews with unit leaders regimental level and below disclosed that there was tremendous lack of confidence in the dog's over all ability. For some unknown reason or other however, they failed to document this on the After Action Reports. This problem was resolved by virtue of sending contact teams directly to the using units to ensure that all personnel involved in the utilization of the teams were being briefed thoroughly on the overall capabilities and limitations of the dogs. To further enhance the overall situation a mine dog demonstration and class was presented at the 1st Engineer, Mine/Bobby Trap Visual Detection School on a weekly basis. Lack of understanding of the concept was determined to have been the problem, in that, as time progressed the demand for dogs was so great that occasionally they could not be met.

"Unit Commanders Comments"

RENNIE

- (1) H&S 2/7 / Road Sweeps / H.C. FLORENCE - 02
"They are definitely beneficial to the purpose they were assigned. Since we have used the dogs, no mines have been detonated."
- (2) Delta 1/7 / 15 April 70 / James NEWCOMB - 01 / Patrol
"Dog team performed wisely and maneuvered well while moving through M-79 and automatic weapons fire. When fire was returned and platoon moved again, there was no loss of efficiency."
- (3) Kilo 3/7 / 11 May 70 / C.A. KNIGHT - B6 / Patrol
"If I personally had a choice I would be glad to have a Mine dog with me whenever I have a patrol."
- (4) Golf 2/5 / 22 May 70 / KOYAK - 02 / Patrol
"After working with the Mine dog it is my opinion that more dogs should be assigned to units. Mine dog handler teams are the best method I have used when working beebie trapped areas."

Enclosure (4)

- ✓ (5) ZuluGAG, 2/1 / 31 May 70 / Kelly MILLON / Patrol
"Dog found rounds which could have been left for future
booby trap use. Dog was very effective. I would like
this team back if possible."

SINBAI

- (1) Bravo 1/7 / 29 Apr 70 / John WILSON - 03 / Patrol
"The dog worked outstanding until a fire fight began. He
then ran away and then it required hours of searching to
find him. I do not feel he should be used where firing
is involved."
- (2) Kilo 2/5 / 7 Aug 70 / J.L. SALAS - E5 / Patrol
"From what I've seen of this team's performance, and Mine
teams in the past, they are outstanding."

WOODCO

- ✓ (1) Kilo 3/5 / 13 Aug 70 / D. WADBILL - 02 / Patrol
"Any time this team is available for assignment, I would
be particularly glad to have them, as they are an
extremely professional unit."

PANDORA

None

DUKE

- (1) India 3/5 / 5 Apr 70 / T. JONES - E6 / Patrol
"I personally think that more experienced men should be used.
By that I mean experienced in walking point."

JERRY

- (1) Mike 3/1 / 2 Jun 70 / Thomas SPILLER - 01 / Patrol
"The dogs find well hidden SFD's which the average point man
would detonate. Mechanical detectors are not as reliable
especially in thick terrain and against trip-wires."

RUSTY

- (1) Golf 2/5 (3) CUP 5 / 13 Oct 70 / M. GOYETTE - E4 / Patrol
"Mine dogs have proven themselves and I think they are good
for USMC use."

... / P. O. IDMAN - 01 / Patrol
"I feel the dog is extremely beneficial in this type of
warfare with so much crawling in booby trapped areas."

INDIAN

- (1) Bravo 1/1 / 7 Aug 70 / D. SWITCH BILL - 02 / Patrol
"I feel the mine dog, with it's additional training is
more useful for units operating in a mine and booby
trapped environment than scout dogs."
- (2) 2nd CAG CACO 2-4 / 24 Aug 70 / R.W. JOHNSON - 02 / Patrol
"I request that TIMBLER and handler be sent back to my unit,
because of proficiency."

OZLEY

- (1) 2nd CAG CACO 3/6 / 15 Jul 70 / W. MILLER - E5 / Patrol
"Dog handler kept complete control of dog even in heavy
undergrowth. Dog found several devices which could have
been used to delay or hinder our mission."

FRINZL

- (1) 3rd Bn 7th MAR / 15 Aug 70 / CO of plt. 02 / Patrol
"Marines have confidence in these dogs which mold Marines
and team into a solid unit. When utilized correctly the
team adds a "sixth sense" as far as troops are concerned.
My opinion is that these dogs are operational and a
necessity."

PRISSY

None

KAISER

- (1) 2nd CAG 1st CACO 4th CAP / 28 Aug 70 / CACO-CO-02 / Patrol
"The team detected a 155 round and a M-79 dud and this
built up the confidence of our Marines that the team
could detect the above devices."

- ROTC (1) C-CO. 7th Eng / 20 Jun 70 / Co. CO - 02 / Road Sweep
"Provides utmost in mine and booby trap detection,
surpassed mere visual detection."

MICHELLE

- (1) Kilo Co. 3/5 / 30 Mar 70 / P. NAPPI - 02 / Patrol
"The team enabled my unit to proceed in an area that
would have been too dangerous to enter otherwise,
Team proved it's effectiveness (found (4) trip-wires/
SFD's and (1) pressure SFD) as a reliable aid in
detecting mines."

ISSA

- (1) 2nd CAG CAGO 2/7 / 14 Apr 70 / J. SCUSAS - 03 / Patrol
"Keep them coming. We take a few casualties from Mines and Booby traps. I feel by wide spread use of these dogs on a small unit basis we should be able to find and destroy these devices before detonation by a Marine."

LI KL

- (1) Bravo 1/7 / 30 Jul 70 / T.W. MILLER - E6 / Patrol
"Dogs are vital in the protection against booby traps."

DEVII

- (1) Mike 3/1 CUP / 2 Jun 70 / T. SHILLER - 01 / Patrol
"The dogs easily find SFD's which the average point man would detonate. The only other way to find SFD's is with a mechanical detector which is unreliable in thick terrain and has no chance of finding trip-wires."
- (2) 1st Eng / 23 Oct 70 / I. WILLIAMS - E6 / Road Sweeps
"From what I have seen of the work that these dogs do, I believe that the Marine Corps made a very good investment."

KRINKLE

- (1) Echo 2/5 / 21 Aug - 26 Aug 70 / RUSSEL - 02
"Due to type of terrain and vegetation dogs were not used. Past experience under these conditions has shown that Scout Dogs are preferred."

- (1) Echo 2/5 / 21 Aug - 26 Aug 70 / RUSSEL - 02
"Due to type of terrain dogs were not used. Past experience under these conditions has shown that Mine Dogs are difficult to control and cannot be used successfully for their job."

- (1) Echo 2/5 / 26 Aug 70 / RUSSEL - 02
"One major problem and why I do not like to [redacted] No matter how much you tell young troops that [redacted] not perfect, they tend to get lax when he is [redacted]"
- (2) 2nd CAG / WILLIAMS - 05
"Gunshyness distracted the dog from his normal performance."

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Situation

- (1) Mike 5/5 / 8-11 Sep 70/ JOHNSON - E6
"If dogs could be slightly trained in scout dog tactics it could be more valuable to Marines in the bush."
- (2) Fox 2/5 / 14 Nov 70 / OBRILN - O1
"Dogs seem to work best in the morning. Should avoid use during day when it's too hot."

effect on Current Tactics, Techniques and Doctrine

1. Tactics

a. If the dog is to be utilized effectively it is of paramount importance that the infantry units conform to the dog's pace and not the dog to the unit's. If it ever becomes necessary to move at a more rapid pace the team should not be utilized as point element.

b. The dog is capable of clearing a trail three (3) to six (6) feet wide. Therefore, the column has proven to be an ideal formation in which to work the team as the point element. Formations which require personnel to be positioned to the extreme right or left of the team would cause these personnel to walk in an area which is not considered to be within the dog's range of detection.

c. The dogs work at their best on defined trails. This does not imply that the dog does not work in open fields, but it does present a problem in maintaining the direction of movement. Therefore, for a more effective utilization of the dogs, the using units should try to stay on defined trails with as few obstacles as possible.

d. Tall grass or thick vegetation of any type presents a tremendous problem for the dog in that, he loses his direction to getting through the densely vegetated area. This loss of efficiency is to a great degree. When the dog is utilized in such an area, the team should be kept in the rear of the formation.

2. Techniques and Doctrine

a. On many occasions the dog was unable to detect the presence of the enemy units. This was due to the fact that the elements that the dog responded to were not in the area.

b. Although the dogs were effective in detecting mechanical road sweep mines, it was found that dogs are effective only on roads that are not heavily littered with petroleum products. It was found that the dogs were unable to distinguish between the components of the ordnance.

Requirements for Ancillary Equipment Facilities

1. Kennels

a. The kennel facilities that were made available for the dogs in RVN were outstanding permanent structures. They consisted of thirty (30) runs, one (1) dip room w/ two (2) dip tanks, storage area, office space and kitchen equipped w/sink and hot water heater. The decking is of poured cement, runs are a combination of concrete and reinforced steel mesh (sides and top) with a sleeping platform in each and the roof is galvanized steel.

b. These type facilities are nice to have, but not essential. The portable kennels or any type of structure which would provide adequate protection to the dog would suffice.

2. Training Areas

a. The confidence course with eleven (11) obstacles proved to be most effective in every respect. Primarily the course is utilized to build and maintain the dog's confidence. This aided the dogs in overcoming their fear for obstacles that they encounter under combat conditions. Additionally it was instrumental in maintaining the dogs in top physical condition for combat. The confidence course is considered to be essential.

b. Maintenance Training Areas should consist of at least trails as possible but not less than two (2) per dog. It is all possible the trails should be made of concrete or stone to avoid the possibility of the dog slipping on grass. The trails should vary in width from 10 to 15 feet in length. These areas should be located in areas where the terrain is very similar to that which the dog will meet when under the actual combat condition. Some trails should be located where there should be a shelter to protect the dogs from the elements. A sign to run should be erected. The maintenance training areas should be located in areas where the terrain is very similar to that which the dog will meet when under the actual combat condition.

3. Photographs of the Kennels and Training Areas will be sent directly to the Marine Corps Development and Research Command. They will not be included with the copies of this report.

Signature (5)

Size and Organization of Mine Dog Unit

1. Size and Organization

a. Recommended T/O

Billet Title	Grade	MOS	Quantity
		8672	
Platoon Commander	O1 or O2	0302	1
		0369	
NCOIC	E6	8672	1
		0311	
Platoon Sergeant	E5	8672	1
		0311	
Training NCO	E5	8672	1
		0311	
Admin. Clerk (Vet. Tech. Tr.)	E3	0311	1
kennel Master	E4	8672	1
		0311	
Assist Kennel Master	E3	8672	1
		0311	
Veh. Operator M-35	E3	3531	1
		0311	
Veh. Operator M-37	E3	3531	1
		0311	
Veh. Operator M-109	E3	3531	1
		0311	
Dog Handler	E3/E5	8672	32

b. The above recommendation is based on a twenty-eight (28) dog platoon. Total of forty-two (42) personnel may appear out of proportion or unjustifiable primarily because the Vehicle Operator and Administrative duties have been accomplished by dog handlers which in many cases proved to be detrimental to the handler dog team support mission. The Kennel Master should be trained as a Veterinarian Technician. It was not necessary to have a Veterinarian Technician due to the excellent facilities and support that were afforded the platoon by the U.S. Army. Had this not been the case all dogs, regardless of how minor their injuries might have been, would have had to be transported to the Navy or Air Force hospitals for treatment.

c. Since the Mine Dog Platoon has been in SVN a total of twelve (12) dog handlers have been wounded and three (3) have been killed in action for a total of fifteen (15) casualties. Of the wounded personnel only

Enclosure (7)

five (5) returned to duty after a minimum recuperation period of one (1) month. This of course resulted in the kenneling of the dog until such time as his handler was back to full duty, or a new handler was trained. The aforementioned is offered in the interest of clarifying the requirement for thirty-eight (38) personnel with dog handlers MOS's to handle twenty-eight (28) dogs.

2. Equipment-Supplies, Dog Related

a. Recommended T/E

(1). Harness (leather)	38 ea.
(2). Choke Chain (stainless steel)	38 ea.
(3). Collar (leather)	38 ea.
(4). Leash (5' leather)	38 ea.
(5). Leash (25' cotton web)	38 ea.
(6). Muzzle (leather)	38 ea.
(7). Comb (6" steel)	38 ea.
(8). Brush (5" grooming)	38 ea.
(9). Guide Book (handlers)	38 ea.
(10). Buckets (2½ gal. cap. galven.)	38 ea.
(11). Pans (3 qt. cap. feeding)	38 ea.
(12). Chain (stake out)	38 ea.
(13). Mine (bell)	56 ea.
(14). Pouch (food canvas)	38 ea.
(15). Shock Collar	5 ea.
(16). Holder (accessory /w clip)	5 ea.
(17). Batteries (BA-42)	480 per month

b. The above is figured inclusive of a one third (1/3) replenishment factor.

3. Food

a. Composition D (Gaines Burgers) proved to be ideal in every respect. Primarily, this type of food is vacuum packed in tin containers, the cans proved to be ideal for carrying on committments. Additionally, the spoilage factor was greatly reduced as compared to Prims.

b. Horsemeat has also proven to be an ideal motivator for the dogs while working on the training trails. Although the nutritional value is not considered to be as great as that of Gaines Burgers, it is strongly recommended that the dogs continue to receive small portions mixed with Gaines Burgers. In view of the dog's restricted diet, the vitamins are also considered to be an essential item.

4. Clerical

a. It is impossible to determine in what amounts the below listed forms are necessary per month due to the fact that usage data is strictly dependent on the dog's current status. The forms essential to the platoon are listed below.

- b. Commander Briefing Form
- Commander Debrief Form
- Handlers Debrief Form
- Score Sheets
- Physical Check Sheet (Dog)
- Maintenance Trail Graph

c. Copies of these forms will be submitted directly to the Marine Corps Development and Education Center.

5. Ordnance

a. A good variety of ordnance of both American and Chinese origin is essential in the maintenance of the dog's training.

Employment of a Mine Dog Unit

1. Control

a. The first Marine Mine Dog Platoon to be employed in RVN was administratively controlled by the 3rd and 1st Military Police Battalions respectively, operational control was exercised by the III Marine Amphibious Force. No problems of an unusual nature ever materialized due to this organizational set up, mainly because neither of these organizations ever became involved in the actual decisions that had to be made concerning the employment of the teams. All requests for teams were referred directly to the dog operations office and were processed by personnel trained in all aspects of dog handling. Transportation for the teams to and from using units presented somewhat of a problem occasionally, but this was resolved without very much difficulty.

b. The transportation problem would not have been existant if the platoon would have been situated on LZ's Baldy or Ross. This however, would have meant that the platoon would have had to be attached to one of the regiments, this would have presented problems greater than those encountered along the lines of transportation. Problems of a logistical, and training nature would immediately be inherited by the regiment. The extensiveness of these areas either has been or will be discussed in the following enclosures of this report. In a conflict such as the one we are currently involved in, and considering all factors, this manner of organization worked out well in all respects.

2. Employment

a. As previously mentioned, all requests for handler dog teams were referred to and processed by the dog operations personnel. The handler dog teams that were to be employed were immediately notified and driven either to the Combined Action Groups or Engineer Units by vehicle. Those to be transported to infantry regiments were driven to LZ's for further transportation by helicopter.

b. When the platoon first came in country the length of one commitment was three (3) days. This proved to be totally impractical due to the fact that on many occasions the teams would have to return to their parent command without having been employed. To resolve this problem the length of employment time was progressively increased to fifteen days. This did not have an adverse effect on the dogs ability to detect. Handlers in the majority of the situations were able to conduct maintenance runs. The duration of commitments should not surpass fifteen days in that it has proven to be adequate in all respects. If anything, it is anticipated that it will have to be decreased as temperatures and humidity rise.

Enclosure (8)

Suitability For Marine Corps Use

1. Suitability

a. The mine dogs have been exposed to the most adverse conditions possible in RVN, these conditions have decreased their ability to detect on some occasions, but not to the extent where it has rendered them totally ineffectve. Positive recommendations have been made in this report many times, however it should be reiterated that if the recommendations that were offered are implemented the mine dog concept will prove to be totally effective and of great value to the U.S. Marine Corps.

✓
The End

Enclosure (9)

Training and Selection of Dogs

1. Selection

a. The German Shepherd is a working dog, strong, agile, well muscled, alert and full of life. Aggressiveness, steadiness, vigor, and responsiveness are necessary qualities. He is considered to be the most suitable breed because of his temperament, size, availability for procurement and suitability to adapt rapidly to all types of climates and terrain. Should he ever demonstrate cowardice toward gunfire and/or man he is immediately rejected as unsuitable for military use.

b. Seventy-five per cent of the problems which were encountered in the conduct of this evaluation are attributed to the fact that the criteria as set forth by the U.S. Army for the selection of dogs for military use (para. 1) were not adhered to. Of twenty-nine (29) dogs procured for this evaluation thirteen (13) were full bred German Shepards, of these thirteen (13), two (2) became so cowardly that it was impossible to continue to employ them. They are now kennel dogs. The dogs were trained strictly to detect mines and nothing else was considered. Therefore, it is strongly recommended that if the Mine Dog capability is to be pursued by the U.S. Marine Corps, that the quality of dogs and handlers be considered paramountly important.

2. Maintenance Runs Area

a. Maintenance runs are conducted in an area as closely similar as possible to the terrain and conditions that the dog will encounter under the actual combat situation. The training consists of the dogs actually detecting ordnance that has been concealed twenty-four (24), forty-eight (48), seventy-two (72) or occasionally up to five (5) days before the dog is required to work. The intensity of concealment and amount of problems (on occasions none) on a trail is determined by the individual dog's needs. They are essential and continuous throughout the dog's working life. The training area, in order to conduct this training effectively should consist of as many trails as possible, but never less than two (2) per dog, there should be as many undefined as defined trails. The trails are defined by erecting a three (3) foot engineer stake every one hundred and seventy-five (175) feet. These stakes must be painted, the color of paint should be conspicuous against the terrain in order that mine layers and handlers can easily distinguish them from a good distance. They should be marked in numerical sequence, while the trails should be lettered alphabetically.

Enclosure (10)

The trails should extend from one half ($\frac{1}{2}$) of a mile to one (1) mile. These training areas should if at all possible be situated as far from one another as possible, this precludes the possibility of the dog becoming too familiar with the terrain and conditions in one particular area.

b. Adherence to the aforementioned is of paramount importance, as it is from this training and these maintenance runs that all information derives and all decisions are made as to the dog's combat readiness. The following essential information derives from this training:

- (1). The motivation or desire that the dog displays in the working status.
- (2). What percentage of the problems on trail he is able to detect.
- (3). How well he is responding to directional commands.
- (4). What rate of speed he is working at.
- (5). What temperatures he is capable of enduring and still perform effectively.
- (6). What ordnance he is weak at detecting.
- (7). Are the handler's commands timely.
- (8). Is the handler adhering closely to the prescribed procedures.
- (9). If the dog is rejecting food as a reward, what is the next best item to reinforce him with.

c. A dog could easily run trails daily and consistently detect one hundred per cent (100%) of the problems which have been concealed for him and not be ready for employment if he or his handler are found to be deficient in any of the above related areas. So it is obvious without saying that the percentage of problems that the dog is able to detect is not totally indicative of his or his handler's combat readiness. Effectually what this relates is that a dog could

detect one hundred per cent (100%) of the problems for three (3) days straight, the fourth day be employed and miss the first mine or booby trap that he comes up on, conversely he could miss fifty per cent (50%), of the problems for three (3) days straight, be employed and detect the first mine or booby trap that he comes up on. What is truly significant is "WHY" he missed. As Table #3 relates, the majority of the dogs detected an average of fifty per cent (50%) of the problems during their training in RVN, it is therefore obvious that the theory, that the dog must detect seventy-five per cent (75%) for three (3) consecutive days is unrealistic. Had this been adhered to, very few dogs would have been employed. A more realistic figure would be fifty per cent (50%) for three (3) consecutive days. Also, to be considered during this period are the dog's motivation, stamina, response to commands and his overall trail behavior. Should the dog be found deficient in any of the above respects, he should not be employed even though he has detected the desired amount of problems.

d. It is impossible to determine what percentage of mines/booby traps the dogs have missed or detected under actual combat conditions because there is no knowledge of how many pieces of ordnance were not detected or detonated by personnel.

e. Table #3 is submitted in the interest of providing an appraisal of the quality of dogs made available for the conduct of this evaluation. Additionally, to reaffirm the fact that if the dogs are procured in accordance with the specification as determined necessary in this report, the mine dog concept should be seriously considered for continuance in the U.S. Marine Corps.

f. Table #4 is a chart reflecting the actual misses that were experienced by the dogs on the training trail during the evaluation period. It's purpose is to keep supervisory personnel aware of an individual dog's weakness in detecting any specific type of mine or booby trap. Additionally, it reflects the type of concealment on which the dog is weakest. This knowledge is essential in order to conduct proper training of the dog and to employ him properly in the field. A map is maintained in dog operations showing what different A.O.'s commonly experience in mines and booby traps. Different colored pins are used to reflect each different type of mine or booby trap that is most often found in an A.O. Information of this nature is taken from handlers experiences, engineer unit reports, combat intelligence reports, and any other available source that is reliable. The map should be updated daily for best results. Cross referencing of chart and map gives dog operations a basis on which they can determine which dog can be employed most effectively in specific A.O.'s.

DOGS

DOG	BLIND							CALCULATION							OFF-TRAIL							DEAD											
	M	S	4	6	8	10	12	M	S	4	6	8	10	12	M	S	4	6	8	10	12	M	S	4	6	8	10	12					
Sweetiepie	1	20		4	5	7	9	18			3	3			7	3	2	4	7	12	13	13	8				18						
COUNTRY JOE	1	40		7	5	12	8	11			1	1	11		4	3	1	4	10	10	12	2	2				9						
DONALD	2	27		2	9	6	9	12			1	2	11		4	10	1	7	8	1	13	4					9						
Kaiser	2	35		17	5	23	13	12			2	1	6		6	11	2	2	10	2	9	16	3	8			5						
Jenny		24		7	4	15	14	8			3	1			6	6	1	2	4	3	8	2	2	2									
MISSY	1	29	2	11	3	4	3	15				9	4		2	4	2		6	1	7	6	1	1			5						
PANDORA	1	24	1	10		13	7	16	1			1	7	6												8	1						
PRISSY	2	18		1	2	5	7	9			2	2	6		2	6	1		4	11	2	7	2	4			5						
PIGEON		38	1		15	1	24	18							10	8	1		4	6	10	5	15	5			2	1					
RUSTY	1	34	2	6	13	6	11	19			1	10	1	3	2											6							
SINBAD	1	45	1		21	3	5	15			3	3	1	4	9											1	6						
TIMBER		43			14	5	15	2			2	1	3	10																			
WINNIE		19			2	4	5	11				1	1	1																			
WANDER		21			10	2	4	5			1				4	1	2	1	1	5	5	10				2							
LUCY		27			12	3	13	13			2		1	5												1							
GAMPSAN		37	1		14	6	13	11			2			1	1	7	2	1	4	8	5	8	3										
NAPOLEON		25	2		6	4		3			1		4		1	8	1		5	3	3	9	1	4									
ADRIAN		54	1		2	13	4	3					1	8											1								
OZKEY		24	1		2	14	6	2			2	1	4	2	8																		
LUKE		17			1	2	2	3			1	3	3		3	4	2	4	1	7	6	4	3			2							
SPINKLE		26			4	3	8	11			1	1	6		1	12	4	1	9	1	8	7	10	2	2	1							
RICOCHET		22			16	3	9	8			1		8		6	3	3	5	2	1	7	2			7								
ZEE (MIA)		14			3	4	5	6				2	2		7	1		2	4	1	6	5	6		9								
MICHELLE (KIA)		7			2		2	10				4	6		1	1	1		2	7	1	5	7	2	5								
BENNIE (KIA)	1	13				2	3	9				2	3	6											9								
BLACKY (KIA)		10			3		1	13				2	2		3	4	2		4	2	2	2	1		6								
JOSE (KIA)	3	7				4	2	2			1	1	5		8			2	1	5	8	4			11								
BOB (KIA)	1	9				1	6	13			3		6		3	5			7	4	1	4	9	1	2								
JOHN (KIA)		15				3	1	16				5	1		1	5	1	2		2	2	2											

DOG	MAINTENANCE RUNS	OVERALL PER CENT	COMMITMENTS	TOTAL MISS (TR)	BREED	DISPOSITION	GRADE
JERRY	74	50	9	166	MIXED	PEOPLE SHY	A
PIEDPON	90	36	4	206	MIXED	VICIOUS	P
TIMBER	93	50	6	211	MIXED	MOTIVATED	A
WINNIE	67	61	10	102	G.S.	TASK ORIENTED	AA
VOODOO	68	60	8	117	MIXED	GUN SHY	P
LUCKY	91	55	7	180	MIXED	MOTIVATED	AA
SAMPSON	83	37	7	174	MIXED	GUN SHY	P
NAPOLEON	58	51	6	121	G.S.	WORTHLESS	P
ADRIAN	84	42	6	209	MIXED	GUN SHY	P
ORLEY	82	49	9	203	MIXED	MOTIVATED	A
LUKE	62	63	7	108	G.S.	MOTIVATED	AA
KRINKLE	73	51	9	180	MIXED	OVERLY TEMPERAMENTAL	AA
RICOCHET	76	57	7	153	MIXED	TASK ORIENTED	AA
KERK ###	55	56	7	119	MIXED	GUN SHY	P
SWEET THING	87	62	18	154	MIXED	TASK ORIENTED	AA
ROPE ###	21	63	2	51	MIXED	GUN SHY	P
GOOSEY JOE #	115	56	14	226	G.S.	TOO SLOW	A
DEVIL *	112	60	12	199	MIXED	TASK ORIENTED	A
KAISSER	117	53	13	265	G.S.	GUN SHY	P
HISSEY	7137.96	63	17	136	MIXED	TASK ORIENTED	AA
PANDORA	89	59	9	196	G.S.	GUN SHY	P
PRISSY	91	61	15	157	G.S.	TASK ORIENTED	AA
RUSTY	118	55	14	224	G.S.	TASK ORIENTED	A
SINBAD	121	49	14	286	G.S.	GUN SHY	A
MICHELLE *	60	72	10	81	G.S.	GUN SHY	AA
RENNIE *	57	65	10	114	MIXED	TASK ORIENTED	AA
BLACKIE *	31	59	3	75	G.S.	TASK ORIENTED	A

WAL COPY MIA
NEARBY

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3500

T-3

DOG	MAINTENANCE RUNS	OVERALL PER CLMT	COMMITMENTS	TOTAL MISS (TR)	BREED DISPOSITION	GRADE
DUKE *	32	53	2	96	G.S. HARD TO CONTROL	P
ALICE **	77	44	11	169	G.S. NOT TASK ORIENTED	A

* KIA
** WIA
*** DIED, CAUSE OF DEATH UNKNOWN
**** MIA

AA ABOVE AVERAGE
A AVERAGE
P POOR

(5) KIA

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Training and Selection of Handlers

1. Selection

a. In the majority of the cases the handlers that were selected for the conduct of this evaluation were found to possess all or enough of the essential traits to become good mine detecting dog handlers. Mature, responsible persons of average intelligence and who are career oriented as well as those who have some experience in the military by far proved to be most desirable.

b. The majority of the personnel that volunteered to be trained as handlers had an ulterior motive for having done so. They were not made fully aware of the long hours involved in the overall aspect of handling and employing mine dogs. Since there were no definite trends revealed in the information provided in Table No. (2) as to what qualities a good mine dog handler should possess, the below attributes should be used as a basis for selecting handlers in the future.

c. Essential Traits

- (1). Friendly attitude toward dogs.
- (2). Average intelligence.
- (3). Patience and perseverance.
- (4). Mental and Physical coordination.
- (5). Physical endurance.
- (6). Resourcefulness.
- (7). Dependability.

d. Table No. (2) consists of the handlers that are presently in the platoon. Their educational background, GCT, marital status, age, rank and recorded disciplinary action is submitted in the interest of possibly providing a broader outlook on what traits are most desirable for prospective handlers.

Enclosure (11)

2. Training

a. The training period in Okinawa left much to be desired. Upon completion of this training period, the handlers should have been totally professional in all aspects of dog handling and not limited to learning basics. This is not to imply that the material that was presented to the students was totally inadequate, but rather that more emphasis should have been placed on better preparing the handlers for the problems which they were destined to encounter in their role as lead elements in the actual combat condition. The six (6) weeks training period was inadequate to a certain degree to properly accomplish the training mission. It is with the interest of educating handlers in all aspects of dog handling and combat that the below training recommendation is submitted. It is based on a six (6) day working week, ten (10) hour working day.

1st and 2nd week - 120 hours

- (1). Basic Obedience - Handler Dog Relationship - 24 hours
- (2). Health Care - Upkeep - 4 hours
- (3). Care and Maintenance of Equipment - 1 hour
- (4). Background - Quality - Procurement of War Dogs - 3 hours
- (5). Scent Cones - Wind Affects - Terrain - 4 hours
- (6). Construction of Shelters - 5 hours
- (7). Dists - 5 hours
- (8). Background Mine War Dog Concept - 5 hours
- (9). Mine Concealment - 2 hours
- (10). Handling Procedures on Maintenance Runs - 5 hours
- (11). Practical Application of Maintenance Runs - 32 hours

3rd thru 12th week - 384 hours

The remainder of the ten (10) weeks should be devoted to Maintenance Runs simulated as closely to the combat situation as possible. During this time the special techniques shown below should be concurrently interjected. During these ten (10) weeks at least forty-eight (48) hours should be allotted for functions of an administrative nature.

- (1). Repelling.
- (2). River Crossing.
- (3). Cordon Search.
- (4). Quartering.
- (5). Village Search.
- (6). Land Navigation.

T-2

Name	Rank	Age	Education		Time in		Disciplinary Action	Courts		Grade
			H.S.	COL	USMC	Martial		GOT		
BENDZUS	LCpl	19	8-4	None	16 MO.	None	None	123	P	
BLEVINS	LCpl	19	8-4	None	16 MO.	None	None	97	P	
CARINCI	LCpl	20	8-4	None	15 MO.	Art. 86	None	98	A	
CASANOVA	Sgt	23	8-2	None	40 MO.	None	None	113	AA	
COX	Cpl	20	8-4	None	15 MO.	None	None	101	AA	
DAVIS *	Cpl	22	8-4	2 YR	17 MO.	None	None	126	AA	
HILL *	Cpl	21	8-3	None	24 MO.	None	None	113	AA	
HITCHCOCK	Cpl	21	8-4	2 YR	12 MO.	None	None	116	AA	
HOFFMAN	Opl	19	8-4	None	16 MO.	None	None	125	AA	
HUDSON	Cpl	20	8-3	None	12 MO.	None	None	109	AA	
LOWERY	Sgt	19	8-0	None	30 MO.	None	None	97	A	
MILLER	Sgt	21	8-3	None	24 MO.	None	None		A	
MOORE	LCpl	20	8-3	None	14 MO.	None	None	107	A	
PORTER *	LCpl	21	8-4	None	15 MO.	None	None	116	A	
FOST	Cpl	19	8-4	None	15 MO.	None	None	106	A	
QUINLIVAN	Sgt	21	8-4	None	28 MO.	None	None	117	A	
RICHARDS	LCpl	20	8-4	None	14 MO.	None	None	102	A	
SCHOSSOW	Sgt	21	8-4	4 YR	31 MO.	None	None	137	AA	
SEARFOSS *	Cpl	21	8-4	None	44 MO.	None	None		P	
SMITH *	Sgt	33	8-4	None	15 YR.	None	None	105	P	
SOYAK	Sgt	21	8-3	None	36 MO.	None	None		AA	
SUINA	LCpl	20	8-4	None	12 MO.	None	None	111	A	
TISDALL	Cpl	23	8-4	3 YR	18 MO.	None	None	135	AA	
TORTOLANO	Opl	22	8-4	4 YR	25 MO.	Art. 92	None	136	AA	
WESLEY	Cpl	20	8-4	None	24 MO.	None	None	95	A	
WILLIAMS *	Cpl	20	8-4	None	15 MO.	None	None	106	AA	
YARRINGTON	Cpl	20	8-4	3 YR	15 MO.	None	None	113	AA	
HARDWICK	Cpl	20	8-4	1 YR	18 MO.	None	None	99	P	
GRAISHE	Pvt	19	8-4	None	16 MO.	Art. 86/134	None	110	P	

* Married Personnel

AA Above Average

A Average

P Poor

Mike Bowman?

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Conclusions

1. That personnel who have previous dog handling experience (Military or otherwise) make excellent prospects for retraining as mine dog handlers as opposed to recommendations that advised against this practice.
2. That the dog must be aggressive and confident and not non-aggressive and docile as previously recommended.
3. That the mine simulator (bell mine) is totally effective for maintaining the dog's fear response, but a like item which is more durable, requires less maintenance and is not as expensive is necessary. A ball with pull device would suffice as long as the dog is initially trained to respond to it.
4. That many dogs loose their fear of trip-wires therefore, it is necessary to re-shock them hence, the recommendation for shock collars.
5. That only in the absence of a ball mine should the choke chain correction be used when the dog misses a trip-wire, then it should be used discretely.
6. That a minimum of thirty (30) minutes a day must be devoted to basic obedience in order to ensure good directional control on the trail.
7. That a short five (5) minute session of basic obedience should be conducted prior to each patrol the dog is to participate in.
8. That the dog's endurance is enhanced greatly by running him on the confidence course at least four (4) times daily.
9. That high temperatures and humidity proved to be detrimental to the dog's ability to detect.
10. That rainfall does distract the dogs to the point that it decreases their effectiveness at detecting.
11. That the dog encounters considerable difficulty detecting effectively on sand and hard packed dirt.
12. That the female dogs proved to be more effective and easier to task orient than the male dogs.

Recommendations

It is recommended that:

1. The choke chain be used in conjunction with the harness on maintenance runs for the purpose of physical as well as verbal corrections.
2. When excessively high temperatures prevail, water as well as food should be used to reinforce the dogs for making a good detection.
3. Three mine dogs be utilized at one time for road sweeps - one (1) on each shoulder and one (1) in the center of the road.
4. Fourteen (14) handler dog teams should be provided for every regiment to be supported.
5. If the mine dog concept is adopted by the U.S. Marine Corps, a training manual should be published and immediately distributed throughout all infantry units; further, instruction along these lines should be incorporated with infantry tactic courses offered by the Marine Corps Institute.
6. Except for the few recommended changes that are made in this report, all recommended procedures that were made by the personnel who initially trained the dogs (Behavior Systems Incorporated) be followed as closely as possible.
7. If a dog responds to a mine under combat conditions, immediate recall is necessary. Dog must not under any circumstances be fed on the mine. After recall he should be reinforced as the situation permits.
8. The U.S. Marine Corps should consider strongly the adoption of the Mine dog concept; further, if it is adopted that all recommendations made in this report be implemented.

Enclosure (13)