

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS DIVISION  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

2-23-84

Date

From: Director

To:

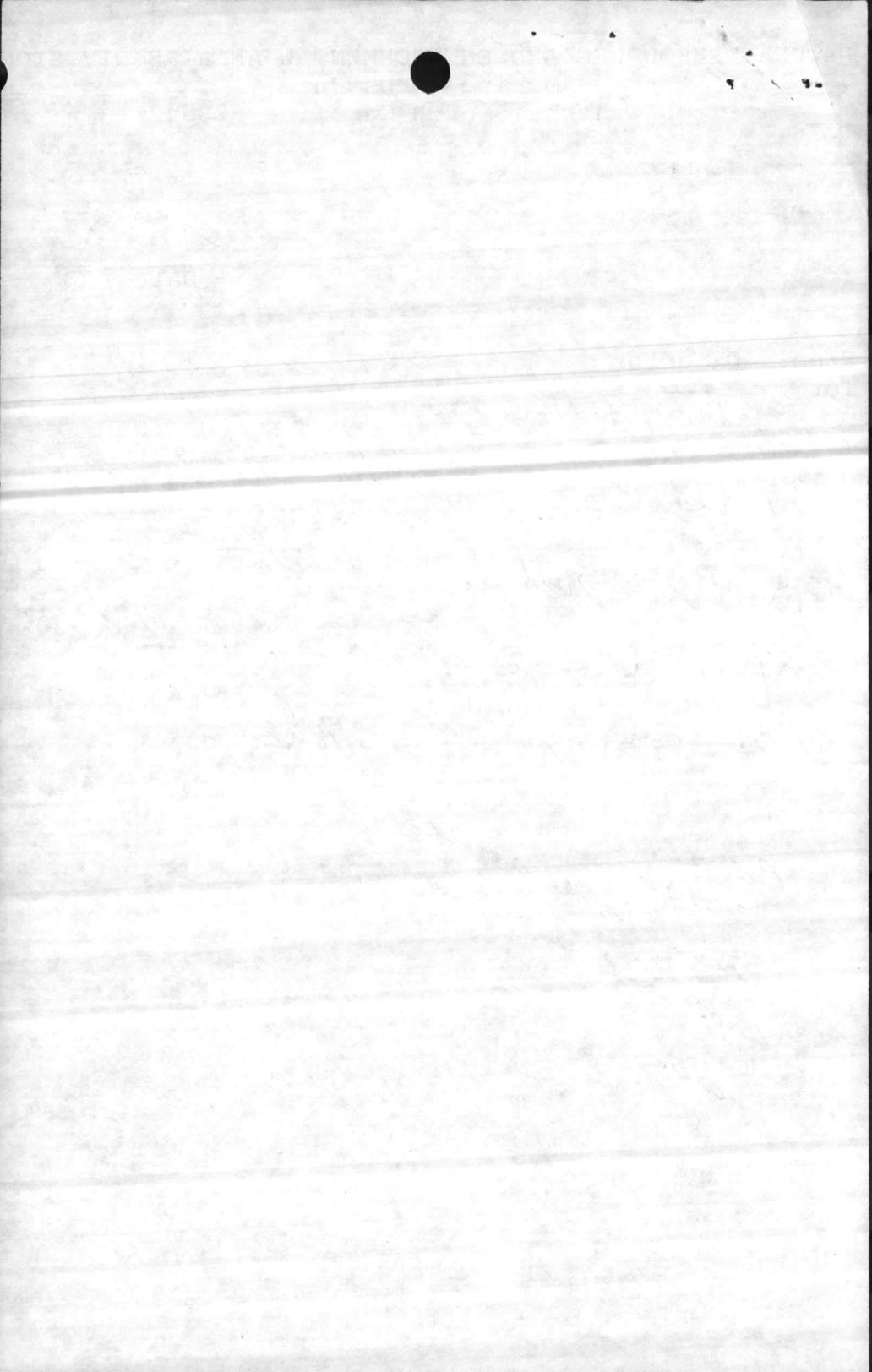
Peter Black

Follow up with Mr Rouse  
PWO on putting contractor in  
surface danger area. I talked with  
the commander yesterday. Juker

Called  
2-29-84

Eis said he would  
drop info in guard  
mail.

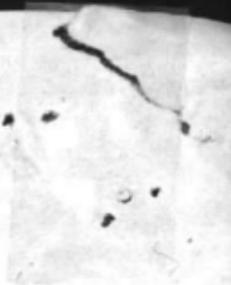
3-5-84  
CALLED FT. BRAGG. AB CORNFORD SAID THE  
MANAGED INTENSIVELY IN "DANGER AREAS" AND THERE  
DANGER AREAS WERE CONSIDERED EQUIVALENT TO OUR  
BUFFER ZONES



Write memo to AC/S Fac  
ref CG meeting on 13 Feb 84  
quote Lt Redman - Can't verify  
area is safe.

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Follow up with ROICC about  
logging -



*[Faint, illegible handwriting covering the majority of the page, possibly bleed-through from the reverse side.]*

UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

FAC/REA/nhh  
5100  
1 Feb 84

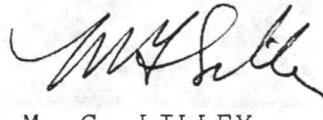
From: Assistant Chief of Staff, Facilities  
To: Assistant Chief of Staff, Training  
Staff Judge Advocate  
Director, Natural Resources and Environmental Affairs Division  
Subj: Range Safety

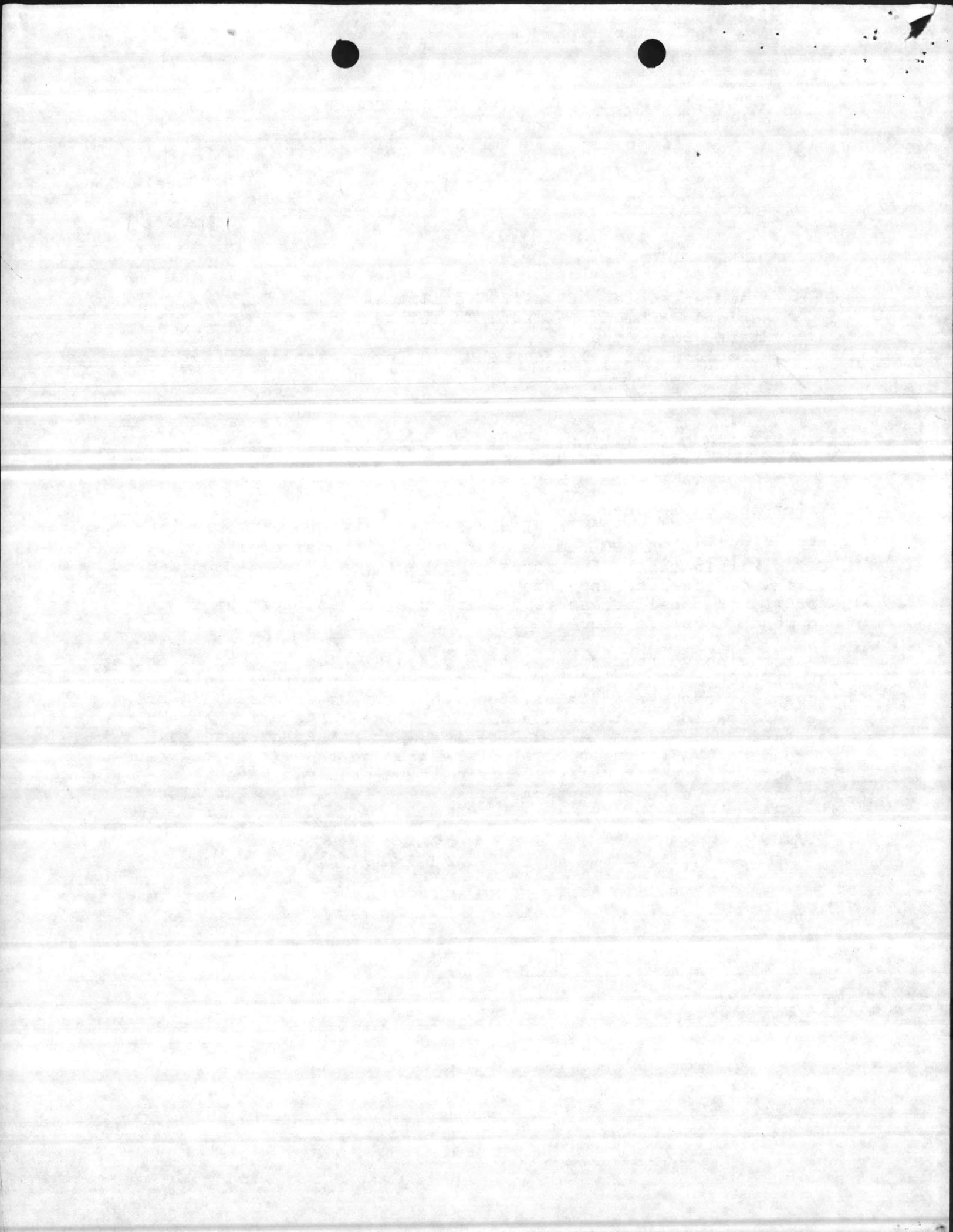
Ref: (a) MCO 3570.1A

Encl: (1) Commander, Army TRADOC ltr ATEN-s dtd 10 Jan 84

1. Per the enclosure, the program to control personnel access to buffer zones and impact areas was found lacking. Following the outbrief by the TRADOC representative, on 9 November 1983, all hunting within the buffer zones of impact areas was discontinued. A review of the reference, the training areas containing dud hazards, personnel access to the training areas, and the TRADOC recommendations are requested.

2. Accordingly, request that this discussion be held on 8 February 1984 at 1000 in Building 1 Conference Room. To aid in this discussion, request that Assistant Chief of Staff, Training provide information on those areas where dud hazards exist and that the Staff Judge Advocate and Director, Natural Resources and Environmental Affairs provide information on the extent to which personnel and, specifically, hunter safety problems have been documented. Point of contact for this matter is Mr. Bob Alexander, ext 3034.

  
M. G. LILLEY





DEPARTMENT OF THE ARMY  
HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND  
FORT MONROE, VIRGINIA 23651

REPLY TO  
ATTENTION OF:

ATEN-S

10 JAN 1984

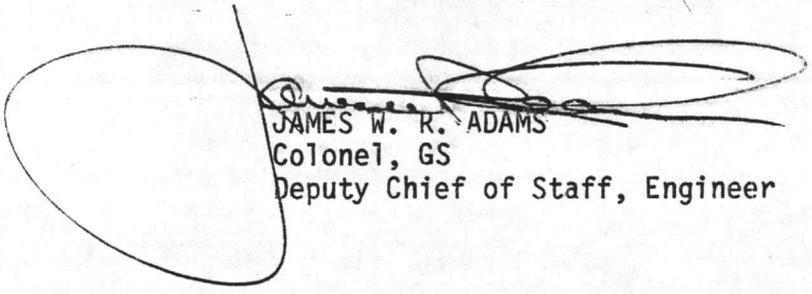
SUBJECT: Transmittal of Range Safety Assistance Visit Report

Commanding General  
Marine Corps Base, CLNC  
ATTN: ACofS, Training  
Camp Lejeune, NC 28542

Attached for your information and action deemed appropriate is the trip report of the range assistance visit to Camp Lejeune, NC, conducted by this headquarters on 8-10 Nov 83.

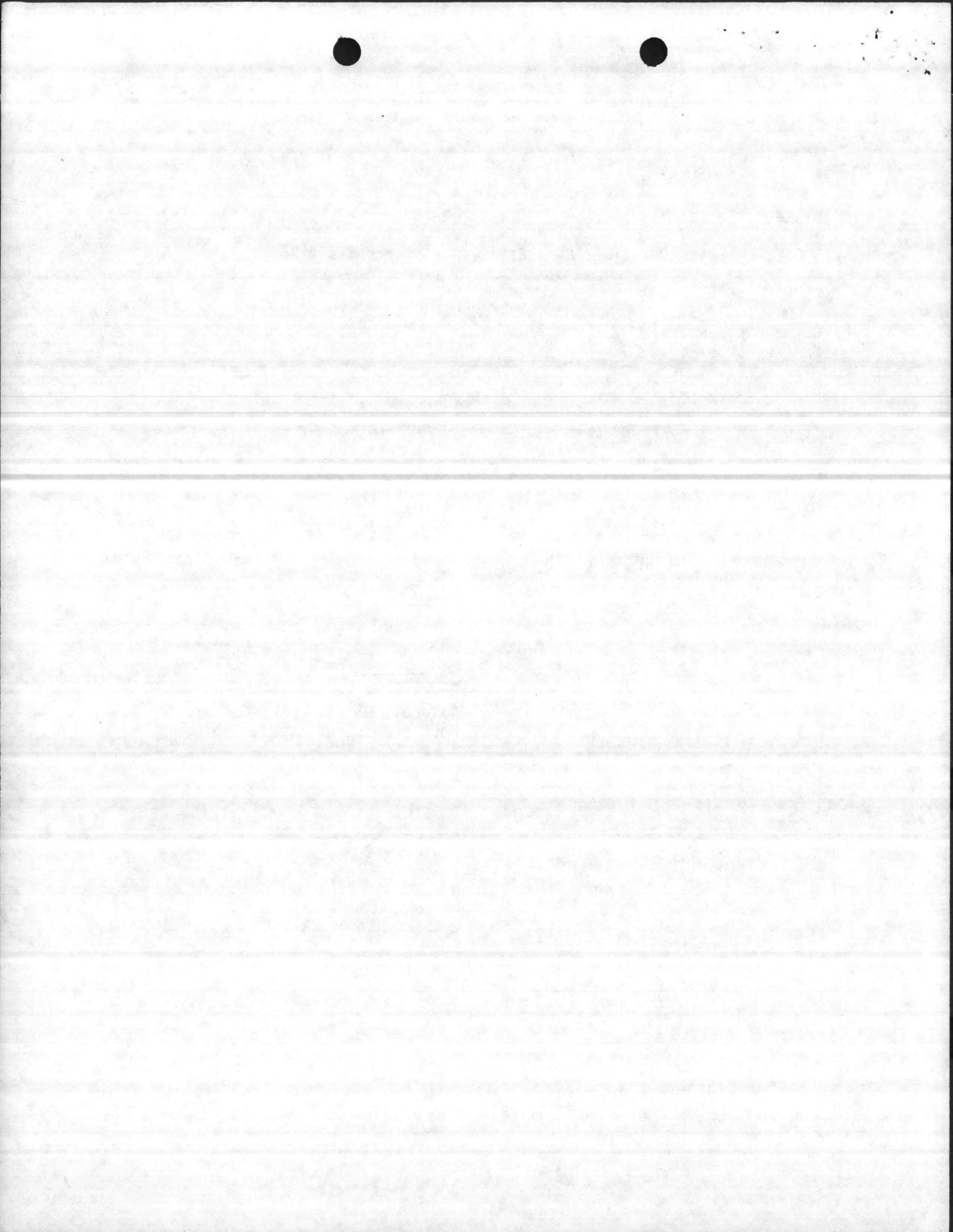
FOR THE COMMANDER:

1 Encl  
as

  
JAMES W. R. ADAMS  
Colonel, GS  
Deputy Chief of Staff, Engineer

CF: (trip rept only)  
CMC (Code TAP)  
CG, 2d MAR Div  
ATTN: AC/S G-3  
CO, 10th MAR Regt  
ATTN: Regt Arty Safety Mgr

Enclosure



# DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

ATEN-S

Report of Technical Assistance Visit - Camp  
Lejeune, NC (USMC)

TO

Dir, TRADOC Safety

FROM

Range Safety

DATE

10 JAN 1984  
Mr. Pennington/vp/3930

CMT 1

1. PURPOSE. To report results of a technical assistance visit to Camp Lejeune, NC, from 8 through 10 Nov 83. The primary purpose of this visit was to analyze artillery field firing procedures and observe general range operations.

## 2. DISCUSSION.

a. Subject assistance visit was requested and funded by HQ USMC.

b. Personnel contacted:

COL Cato, CofS, 2d MAR DIV (Acting).

COL Williams, CO, 10th MAR.

LTC Steen, XO, 10th MAR.

LTC Haughey, Asst Div, FSC.

LTC Zitts, MCB Range Control Officer.

LTC Weidner, Dep Asst Cof Tng for MCB.

MAJ Todd, S-3A, 10th MAR.

\*CPT Brisbois, 10th MAR Artillery Safety Manager.

\*1LT Redmon, MCB Range Control.

\*Mr. Alexander, MCB Environmental Engineer.

\*Accompanied Mr. Pennington during survey.

c. This survey was conducted IAW guidance and information contained in AR 385-63/MCO P3570.1A, Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat. This regulation is referred to as major reference.

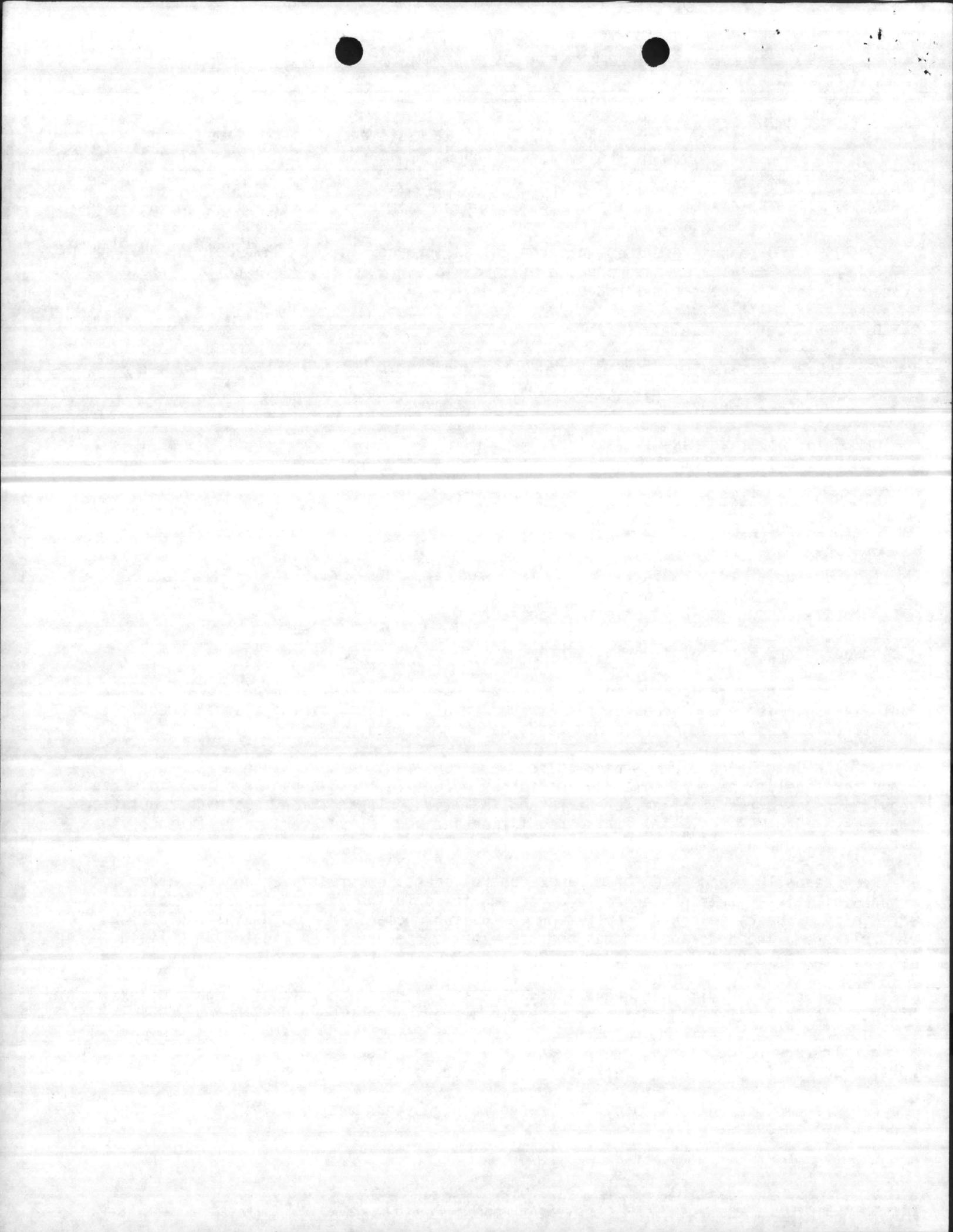
d. The Camp Lejeune range regulations were reviewed, annotated and discussed with range personnel. There is some duplication of effort in the generation of multiple range regulations as a result of different responsibilities. In addition to a base regulation, there is a 10th MAR artillery firing regulation and regulations for mortar firing, close air support, and aerial gunnery.

e. Presently, there are three range control operations that overlap each other in responsibilities. This procedure tends to add to confusion of control and affects efficiency. The range control operation in the cantonement area maintains radios for control/scheduling and range status boards. This procedure is duplicated at a field location (Lucky Mount) with another fully manned operation to control artillery firing.

f. Conversation with personnel indicate that a formal educational program on explosive hazards does not exist and that a responsible agency had not been designated.

g. There were no hearing protection warning signs observed at any ranges visited, nor were these requirements adequately addressed in the basic range regulation.

h. The emplacement of appropriate range warning signs that prohibit trespassing on the ranges is inadequate.



10 JAN 1984

ATEN-S

SUBJECT: Report of Technical Assistance Visit - Camp Lejeune, NC (USMC)

i. A program to actively prevent entry of unauthorized personnel into danger areas is lacking. Of major concern are the procedures controlling access to areas surrounding surface danger zones by unauthorized persons (civilians, military, and hunters).

j. Adequate historical records for impact areas are not maintained. These records are necessary for possible future plans to change range designs, clearance operations and determining degrees of contamination.

k. In addition to artillery firing procedures outlined in Chap 11, MCO P3570.1A, the following procedures are followed by the 10th MAR to emphasize safety and prevent the departure of munitions from the designated impact areas.

(1) To preclude ricochets, artillery rounds are fired at an elevation that insures maximum angle of descent into the impact area.

(2) The artillery firing SOP has incorporated in indepth certification program that insures all responsible personnel involved in firing exercises are safety certified.

(3) Pre-fire safety actions at the gun position have been increased to verify proper settings and correct charges are fired.

1. The subject of hiring a full-time civilian range control officer to augment the range control operation was addressed in light of the high turnover rate of range control personnel. Such a position would enhance the overall operation by providing continuity of knowledge, experience and management expertise.

### 3. CONCLUSIONS.

a. All personnel contacted during this visit were extremely helpful and provided all assistance required.

b. The range safety element of the Camp Lejeune safety program is operated by dedicated personnel interested in establishing a more effective range operation.

### 4. ACTIONS REQUIRED.

#### a. Actions taken:

(1) An exit briefing was held on 10 Nov 83. Topics outlined in paragraph 2 were discussed in detail.

(2) Camp Lejeune has initiated action to update current range SOP IAW MCO P3570.1A.

(3) The assignment of a civilian position to range control had previously been considered. Job descriptions for range control positions at three different grade levels are attached as enclosure 1.

(4) Examples of range warning signs to be positioned adjacent to range boundaries and roads are attached as enclosure 2.

#### b. Actions to be taken/recommended:



[REDACTED]

ATEN-S

10 JAN 1964

SUBJECT: Report of Technical Assistance Visit - Camp Lejeune, NC (USMC)

(1) A single base proponent should be identified and responsible for publishing one regulation that covers all range operations at Camp Lejeune. Annexes may be added if necessary to cover any specific range operation or procedure. Para 2-1, MCO P3570.1A.

(2) Consolidation and centralization of range control operations should be considered. This would conserve equipment and manpower, eliminate duplication of effort and result in better overall control.

(3) That a permanent civilian position be requested to augment range control.

(4) Establish an educational program at Camp Lejeune IAW guidance provided in para 2-10, MCO P3570.1A.

(5) That emphasis be placed on enforcing hearing conservation program IAW para 2-1m, MCO P3570.1A.

(6) That hazard warning signs be installed IAW directions provided in para 2-6, 2-7, 2-8, and 11-5f(6), MCO P3570.1A.

(7) That historical range records be maintained IAW para 2-1p, MCO P3570.1A.

(8) In addition to actions taken in paragraph 2k above to insure containment of artillery rounds within the impact area, the following recommendations may be considered:

(a) Establish a geodetic survey benchmark at the center of all permanent firing points for verification of firing data.

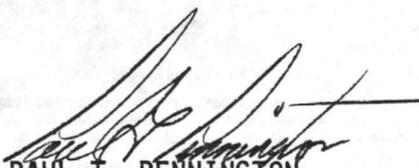
(b) Prepare a set of master overlays for each firing point to be used by range control personnel to verify accuracy of SDZ diagrams prepared by firing units.

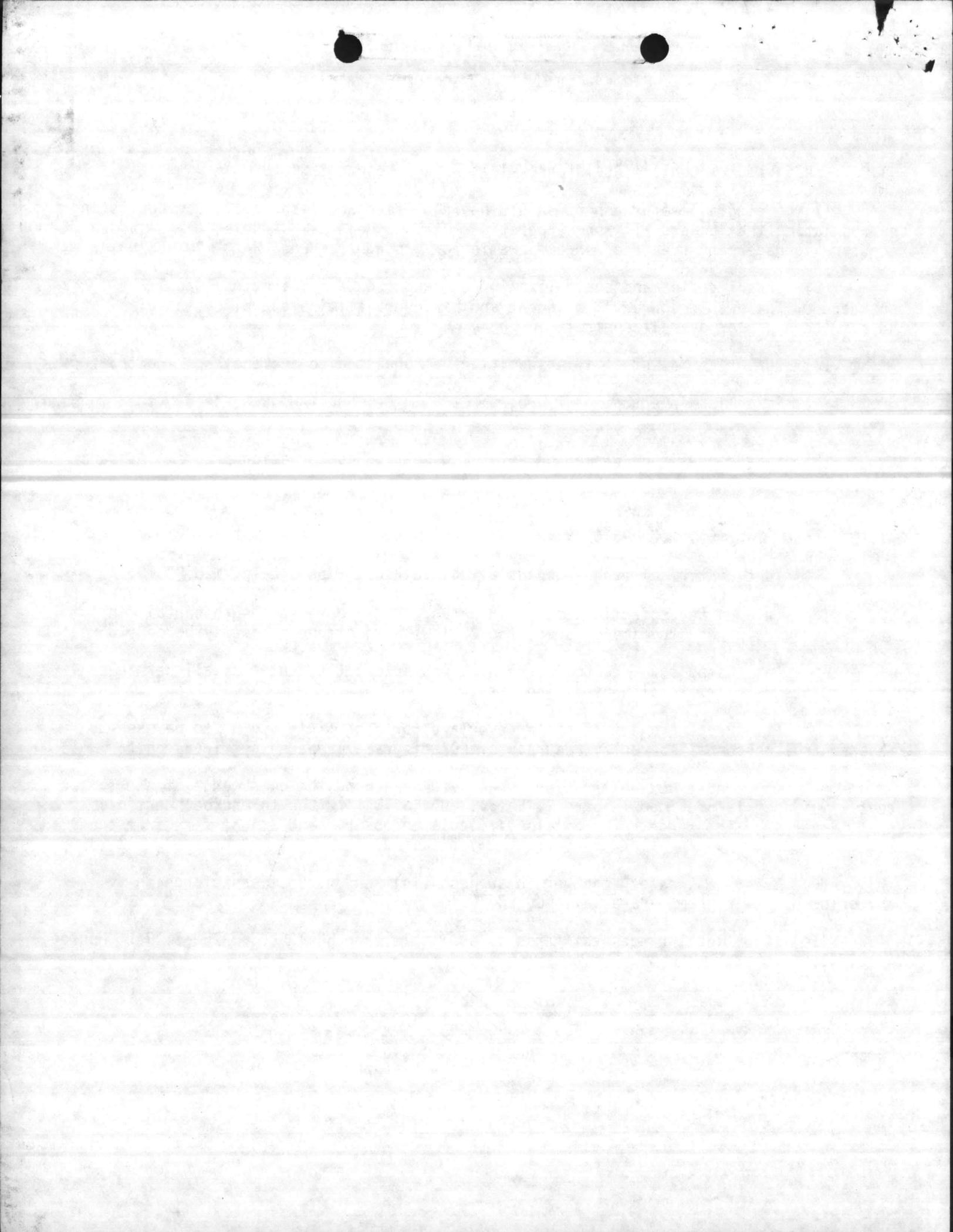
(c) Construct observation bunkers (OPs) around the outer edge of the target areas. Guidance is provided in para 11-5b(3), MCO P3570.1A. Due to encroachment of vegetation around the target area, it is difficult to observe and adjust fire from the OPs on the southern most target array as presently situated.

(9) Brief base safety manager on subject visit and request assistance in monitoring range program. Para 2-1, MCO P3570.1A.

(10) Additional range assistance is available from HQ TRADOC, ATEN-S, Fort Monroe, VA 23651.

2 Encl  
as

  
PAUL T. PENNINGTON  
Range Safety Manager





UNITED STATES MARINE CORPS  
Base Safety Office  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5000

IN REPLY REFER TO:  
5040  
SAFD  
2 Oct 84

SECOND ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

From: Base Safety Manager, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune  
Via: Assistant Chief of Staff, Manpower, Marine Corps Base,  
Camp Lejeune

Subj: SURFACE DANGER AREAS AND SAFETY

Ref: (a) MCO P3570.1  
(b) BO P11102.1J

1. The first endorsement to the basic letter requested this office conduct an investigation and provide comments and recommendations relative to safety of workers who must enter Surface Danger Areas (SDA's), formerly referred to as impact areas and buffer zones.

2. Subject investigation was conducted on 24-27 Sep 84 by Base Safety personnel.

3. Findings:

(a) Prior to a November 1983 range safety assistance visit conducted by Mr. Paul Pennington, U.S. Army Range Safety, all areas formerly designated as buffer zones (with the exception of the K-2 area) were included in the resource management plan. As a result of observations and comments made by Mr. Pennington, NREAD operations in SDA's were halted.

(b) In June of 1984 questions again surfaced relative to NREAD personnel operations in SDA's. Correspondence on 30 Aug 84 between the Base Wildlife Manager and the Director of NREAD, point out that no decision had been made and no written instructions or guidance were issued to NREAD personnel in regards to work in SDA's.

4. Recommendations and comments are as follows:

(a) All ranges and SDA's be divided into three categories

(1) Category I: Ranges/ SDA's into which exploding type ordnance and projectiles may be delivered or found.

(2) Category II: Ranges/SDA's that are used only for live firing of small arms (non-exploding rounds).

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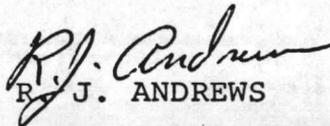
Subj: SURFACE DANGER AREAS AND SAFETY

(3) Category III: Areas used for training other than live fire.

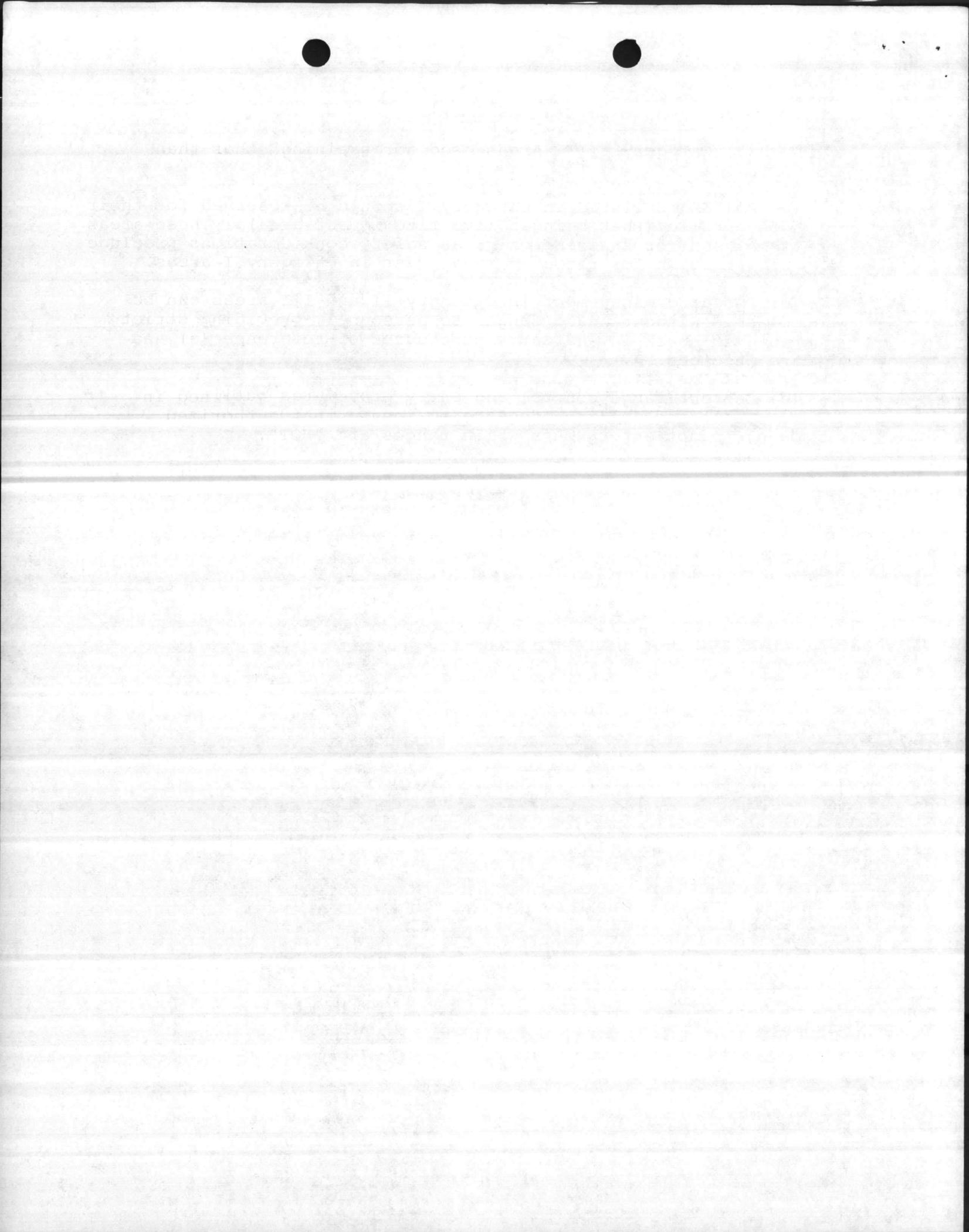
(b) All SDA's listed in Category I should be reserved for their intended purpose (that being a live fire impact area). These areas should be used for training only, as safety considerations preclude any justification for resource management in Category I areas.

(c) Resource management in Category II and III areas can be accomplished without undue danger to personnel, providing strict adherence to check in and entry procedures of reference (a) and (b) are enforced.

(d) Current range control and entry procedures outlined in reference (a) and (b) are adequate to insure that authorized personnel do not enter SDA's while ranges are "HOT".

  
R. J. ANDREWS

Copy to:  
✓ NREAD  
BMO  
CPD



UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5000

5100  
FAC  
21 SEP 1984

FIRST ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

From: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

To: Assistant Chief of Staff, Manpower <sup>DEC 9.4.84</sup> (Attn: Base Safety Manager)

Subj: SURFACE DANGER AREAS AND SAFETY

1. Readdressed and forwarded.

2. The basic correspondence expresses concern for the safety of personnel working in surface danger areas and requests guidance. Request you please investigate and provide comments and recommendations.

  
B. W. ELSTON  
Acting

Copy to:  
NREAD  
BMO  
CPO

1981 12 17

1981 12 17



**UNITED STATES MARINE CORPS**  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 29542

IN REPLY REFER TO:  
5040  
NREAD  
Sep 10 1984

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

Subj: SURFACE DANGER AREAS AND SAFETY

Encl: (1) Base Wildlife Mgr ltr 11015/1B NREAD of 30 Aug 84

1. The enclosure documents recent discussion concerning NREAD personnel accomplishing required work in a surface danger area. As you are aware from recent discussion on G-10 clearing and proposed K-2 clearing/drainage project, my staff and I view working in a surface danger area as being a serious matter from a safety standpoint. On at least two occasions, the Assistant Chief of Staff, Facilities has formally requested the Assistant Chief of Staff, Training to advise as to what activities (Base Maintenance, Public Works and Natural Resources) could be accomplished safely in surface danger and live-fire range areas. I am not aware of an official response on safety precautions for operating in surface danger areas or live-fire range areas. There have been meetings and discussions on the subject since an Army representative visited the Base on 8-10 November 1983 and raised several range safety points (including hunting) in what was originally called buffer zones. Currently, NREAD personnel pick up daily training schedules to try to make sure we do not get in a live-fire situation. If in doubt, NREAD personnel telephone Range Control to check on range utilization before entering a range or fan.

2. Considering the enclosure, it is respectfully requested the AC/S Facilities provide safety instructions for NREAD to operate in surface danger areas.

*J. I. Wooten*  
J. I. WOOTEN

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UNITED STATES MARINE CORPS  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 29542

IN REPLY REFER TO:  
11015/1B  
NREAD  
30 Aug 1984

From: Base Wildlife Manager  
To: Director, Natural Resources and Environmental Affairs Division

Subj: ONSLOW BEACH SEA TURTLE SURVEYS FROM NORTH TOWER-BROWNS INLET

Ref: (a) FONECON btwn Mr. C. D. Peterson, NREAD and LtCol E. J. Cizerle of 30 Aug 1984  
(b) Biological Opinion dated 10 April 1979  
(c) Meeting btwn Mr. C. D. Peterson, NREAD; LtCol E. J. Cizerle, and Capt T. B. Howard of 30 Aug 1984

Encl: (1) Memorandum 11015/1b NREAD of 12 Jun 1984

1. Reference (a) involved a telephone conversation relative to Wildlife management personnel entering the danger area between Onslow Beach, North Tower and Browns Inlet for the purpose of conducting survey work with seaturtles in accordance with reference (b). I described the activities involving the surveys in respect to reference (b) and entering the subject danger area when the ranges are secure. I further advised LtColonel Cizerle that the enclosure provided our last working instruction relative to entering the danger area.

2. LtColonel Cizerle requested a copy of the enclosure and after discussing the same with my immediate supervisor, Mr. J. I. Wooten, I hand carried the enclosure to him. Sea turtle surveys relative to personnel entering the danger area was fully discussed during reference (c). LtColonel Cizerle informed me that he did not consider the enclosure as being the proper authorization for personnel to enter the danger area; further, that he was interested in personnel safety from a moral and legal point of view.

3. LtColonel Cizerle questioned me about how I thought I would feel from a moral point of view if one of the employees I supervised was killed from live ordnance in the danger area. I responded that if one of my employees cleared entry through Range Training Facilities that I didn't think I would feel morally wrong due to the advisement contained in the enclosure, although I certainly did not want anyone injured.

4. During reference (c), informal and formal consultation procedures were discussed relative to survey work on Onslow Beach including the danger area in accordance with reference (b). I informed LtColonel Cizerle that the biological opinion rendered by the U. S. Fish and Wildlife Service accounted for the conditions

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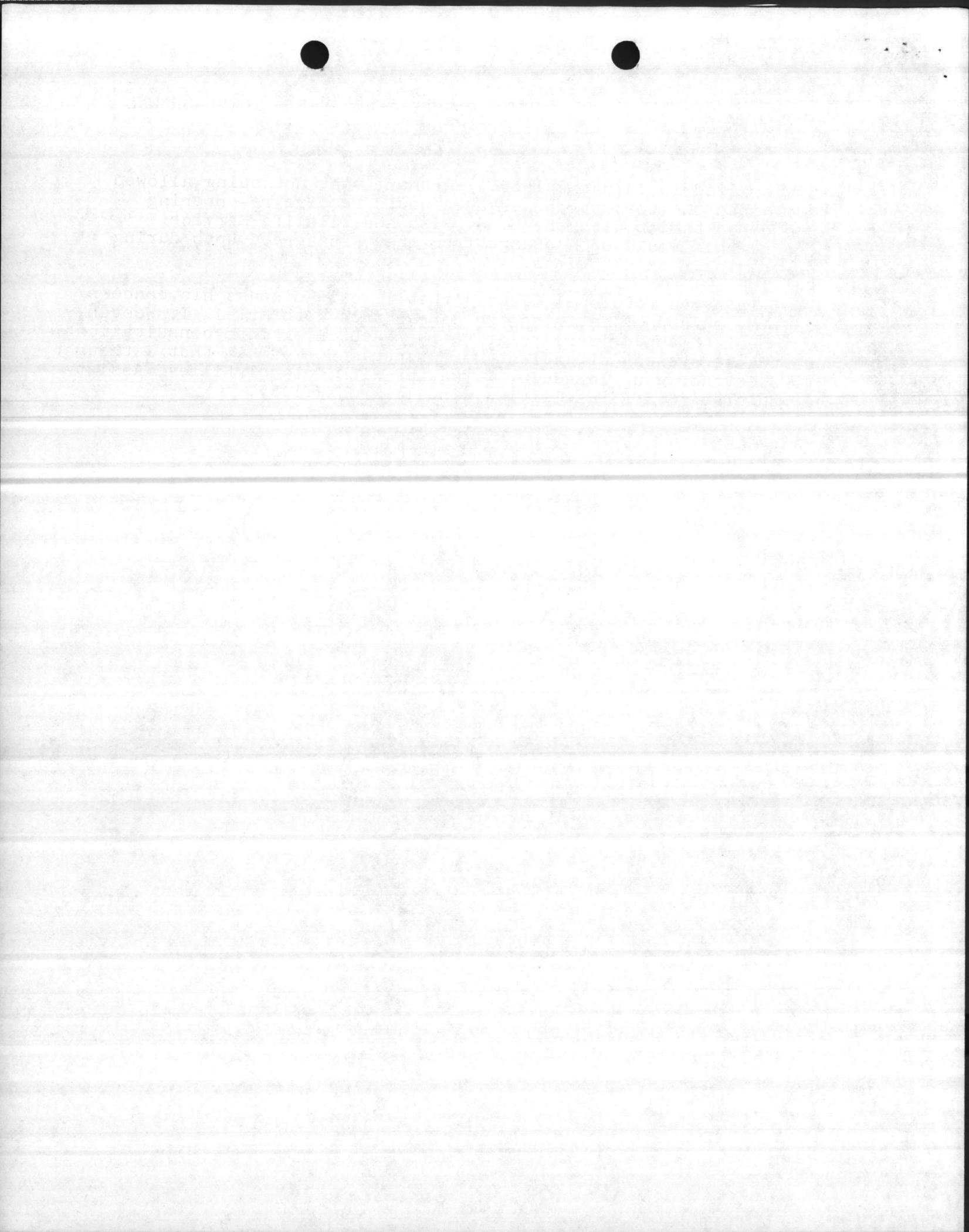
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Subj: ONSLOW BEACH SEA TURTLE SURVEYS FROM NORTH TOWER-BROWNS  
INLET

that existed in 1979 and 1980. Further, that not being allowed entry into the subject danger area would require re-entering into consultation with the U. S. Fish and Wildlife Service because this would be a change from what was agreed upon during the previous consultations.

5. I informed LtColonel Cizerle that I would discuss his concern about my personnel entering the danger area with Mr. J. I. Wooten, my immediate supervisor, relative to re-entering into consultation due to the present situation. I further informed him that I thought my supervisor would discuss the matter with Colonel Lilley, Assistant Chief of Staff, Facilities, in all probability.

*C.D. Peterson*  
C. D. PETERSON





UNITED STATES MARINE CORPS  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO:

11015/lb  
NREAD  
12 Jun 1984

From: Director  
To: Memorandum for the Record

Subj: ONSLOW BEACH (NORTH TOWER- BROWN INLET) SEA TURTLE SURVEY;  
EOD SUPPORT FOR

Ref: (a) AC/S FAC memorandum 11015/lb NREAD/JIW/j1 of 25 May 1984  
(b) EOD officer ltr EOD/HBR/hbr 8027 of 4 June 1984  
(c) First Endorsement  
(d) FONECON btw CAPT Howard Range Control Officer and Mr. Julian I. Wooten at 0830 on 8 June 1984.  
(e) FONECON btwn COL Lilley AC/S FAC and Mr. Wooten on 8 June 1984  
(f) FONECON btwn LTCOL Wiedner AC/S Training and Mr. Wooten on 8 June 1984

1. References (a), (b), (c), and (d) pertain to EOD support for subject work. During reference (d) I attempted to arrange a meeting with Capt T. B. Howard and Lt Redmond to discuss the EOD request for sea turtle survey. I told Capt Howard we only needed an area just large enough to transverse the beach at the base of the frontal dune. I also told Capt Howard the subject was to involved to resolve over the phone as I wanted to provide background on Sea Turtle Program. Lt. Redmond was not available and Capt Howard did not want to meet without Lt. Redmond. I told Capt Howard I understood but we needed to meet today, if possible, because if we were unable to get our sea turtle survey people in the North Tower-Brown Inlet area the base would be in a state of noncompliance with the biological opinion which was a binding document. Capt Howard responded that the base is in a state of noncompliance with a lot of other things. I told Capt Howard that might be true, but I was concerned about the Sea Turtle Program today and requested he let me know by 1200 O'clock, if possible, whether or not we could meet. Capt Howard said he would try but it would probably be next week before we could meet. At approximately 1100 reference (e) occurred at which time I advised Col Lilley of my discussion with Capt Howard and requested assistance in arranging a meeting. Col Lilley advised that he would talk with LtCol Wiedner, Assistant Chief of Staff Training.

2. At approximately 1205 hours reference (f) occurred. LtCol

13 JUN 1984  
HEAD  
11013/110

13 JUN 1984

Subj: ONSLOW BEACH (NORTH TOWER- BROWN INLET) SEA TURTLE SURVEY;  
EOD SUPPORT FOR

Wiedner advised that there had been no change in the Onslow Beach (North Tower- Brown Inlet) since the Sea Turtle consultation and there was no safety reason that would keep Natural Resources and Environmental Affairs Division (NREAD) personnel from doing the Sea Turtle Survey just as we did last year. With that statement I advised LtCol Wiedner that NREAD personnel would conduct the Sea Turtle Survey on Onslow Beach as we did last year. LtCol Wiedner acknowledged and our phone call ended.

*J. I. Wooten*

J. I. WOOTEN

Copy to:  
AC/S FAC  
Wildlife Mgr

SA

1001

P. Black's copy

12550  
CPD  
15 Apr 85

**From:** Civilian Personnel Officer, Marine Corps Base, Camp Lejeune  
**To:** Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune  
**Via:** Assistant Chief of Staff, Manpower, Marine Corps Base, Camp Lejeune

**Subj:** PAY DIFFERENTIALS FOR IRREGULAR/INTERMITTENT HAZARDOUS DUTY

**Ref:** (a) Director, NREAD ltr 12000 dtd 15 Mar 85  
(b) FPM Supplement 990-2, Book 550.S9-5  
(c) FPM Supplement 532-1 Appendix J

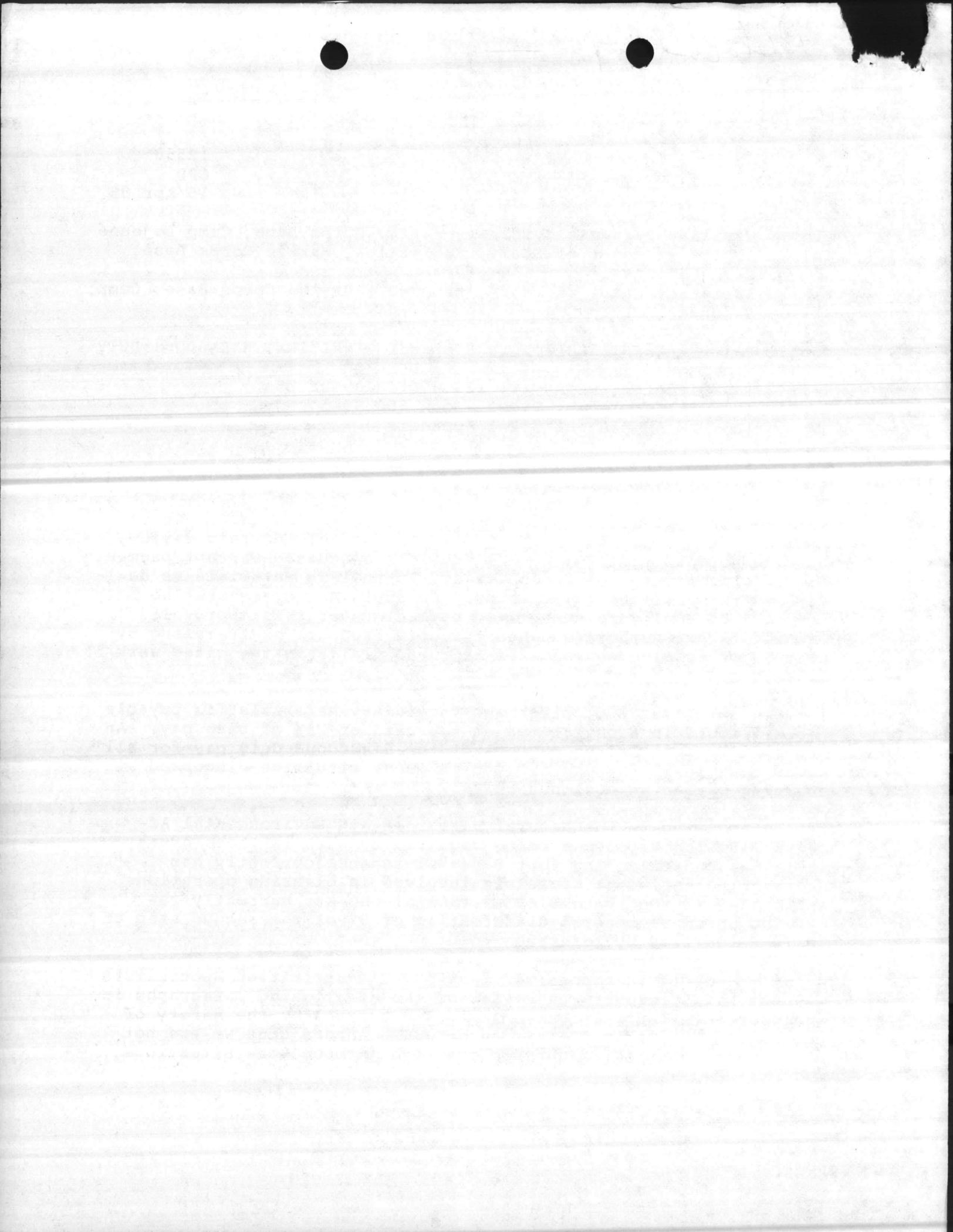
**Encl:** (1) CG ltr 5800/SJA dtd 13 Mar 85  
(2) Wildlife Manager MEMO 11015/NREAD dtd 4 Feb 85

1. The work situations described in reference (a) have been reviewed by the Classification Staff. As a result of this review, it is concluded that the work situations discussed warrant payment for hazardous duty for Explosive and Incendiary Materials as described in reference (b). General Schedule employees are the only category of employees authorized payment under this approval. Payment is not authorized when the only exposure is traveling by vehicle or walking on roads or improved trails in the cited work situations.

2. The category "Explosives and Incendiary Materials" is payable for all hours in a pay status at the rate of 25% of base pay. An employee is entitled to payment of the hazardous duty pay for all hours of a shift for exposure to the work situation discussed at any time during an assigned shift.

3. In addition to the Natural Resources and Environmental Affairs Division employees being required to work in these areas, it is our understanding that Base Maintenance currently has engineering equipment operators involved in clearing operations in the K-2 Surface Danger Areas (SDA's) who are currently receiving an environmental differential of 8% of the second step of WG-10 authorized by reference (c).

4. Although it is recognized that our Classification Specialists are not safety experts, a review of the highlighted paragraphs in enclosures (1) and (2) raises serious concerns for the safety of personnel working in SDA's. In order to ensure that we are not unnecessarily exposing our workers to hazardous work situations,

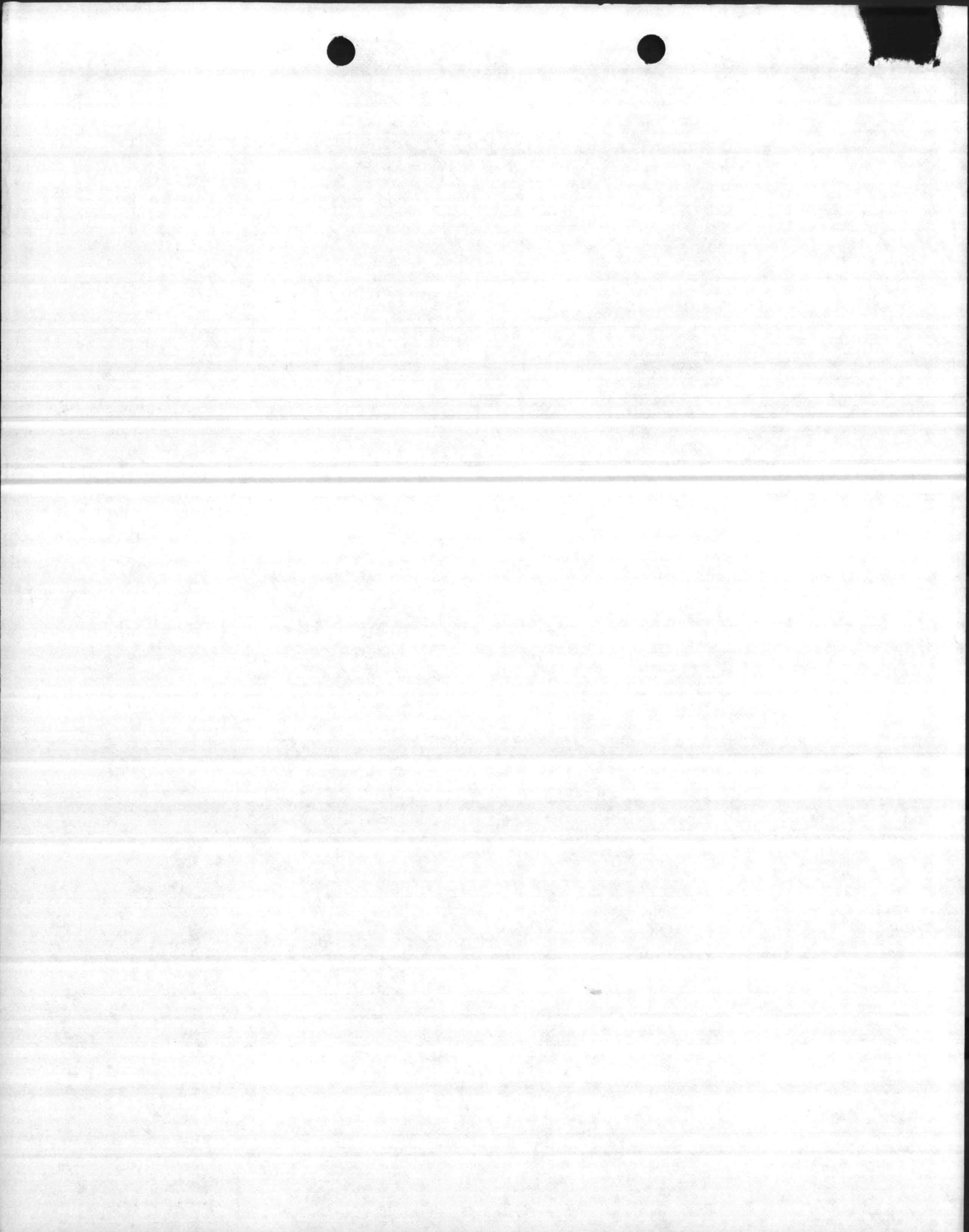


Subj: PAY DIFFERENTIALS FOR IRREGULAR/INTERMITTENT HAZARDOUS DUTY

it is recommended that the matter be referred to the appropriate staff section to determine the propriety of requiring employees to perform duties in the SDA's.

HOSEA HORNE, JR.

Copy to:  
Civilian Payroll  
NREAD



NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

10 Sept 85  
Date

From: Director

To: *Peter*

Subj:

*Phase review + comment  
by 20 Sept*

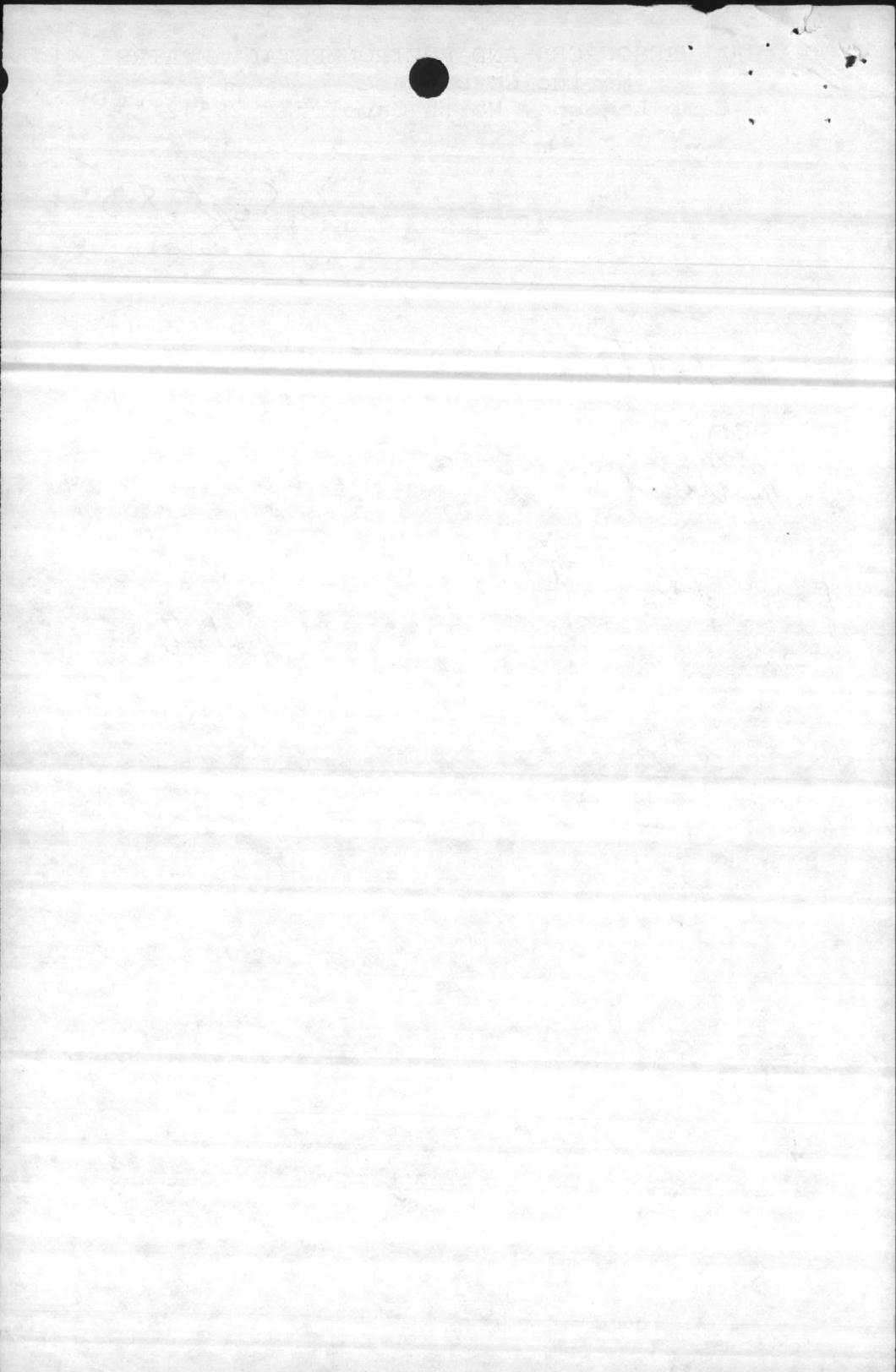
*JLW*

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DISCUSS

1. TRAINING MEMO
2. BOOKKEEPING FY-86

*HANK TO HAVE  
FIRST DRAFT BY WEDNESDAY.*





UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

IN REPLY REFER TO:  
5040  
TRNG/OPS  
5 Sep 85

FIRST ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 24 Jun 85

From: Assistant Chief of Staff, Training and Operations  
To: Director, Natural Resources and Environmental Affairs  
Division  
Via: Assistant Chief of Staff, Facilities

Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

Ref: (b) RCO ltr 1500 KWZ:kwz of 13 Nov 83  
(c) Base Wildlife Mgr ltr 11015/1B NREAD of 30 Aug 84  
(d) Dir, NREAD ltr 5040 NREAD of 10 Sep 84  
(e) Dir, NREAD ltr 12000 NREAD of 15 Mar 85  
(f) CPO ltr 12550 CPD of 15 Apr 85

1. Returned. The contents of the enclosures have been reviewed with regard to activities required and/or desired in both surface danger zones and impact areas. The review included local policies and directives as well as historical practices, applicable Marine Corps directives, and references (b), (c) and (d).

2. Outlined below are policy statements for each activity; if mutually acceptable they can be incorporated in local directives and SOP's:

a. Forestry Management

(1) Controlled burning

(a) Burning is required in impact areas to reduce the severity of wildfires, to improve visibility, safety and often for other considerations. NREAD will coordinate with Range Control and the Fire Department and schedule the burning well in advance so as to minimize the impact on training. EOD support will be provided. To improve safety for all hands, aerial ignition should be investigated as a technique to be used in impact areas.

(b) Controlled burning should occur in SDZ's for many of the same reasons, particularly to reduce the severity of wildfires originating in an impact area. Although weather will often be a controlling factor, burning should be scheduled through Range Control well in advance so as to minimize the impact on training. EOD support will be provided to visually inspect the area prior to the scheduled burn and to accompany the work crews.

(2) Fighting Wildfires

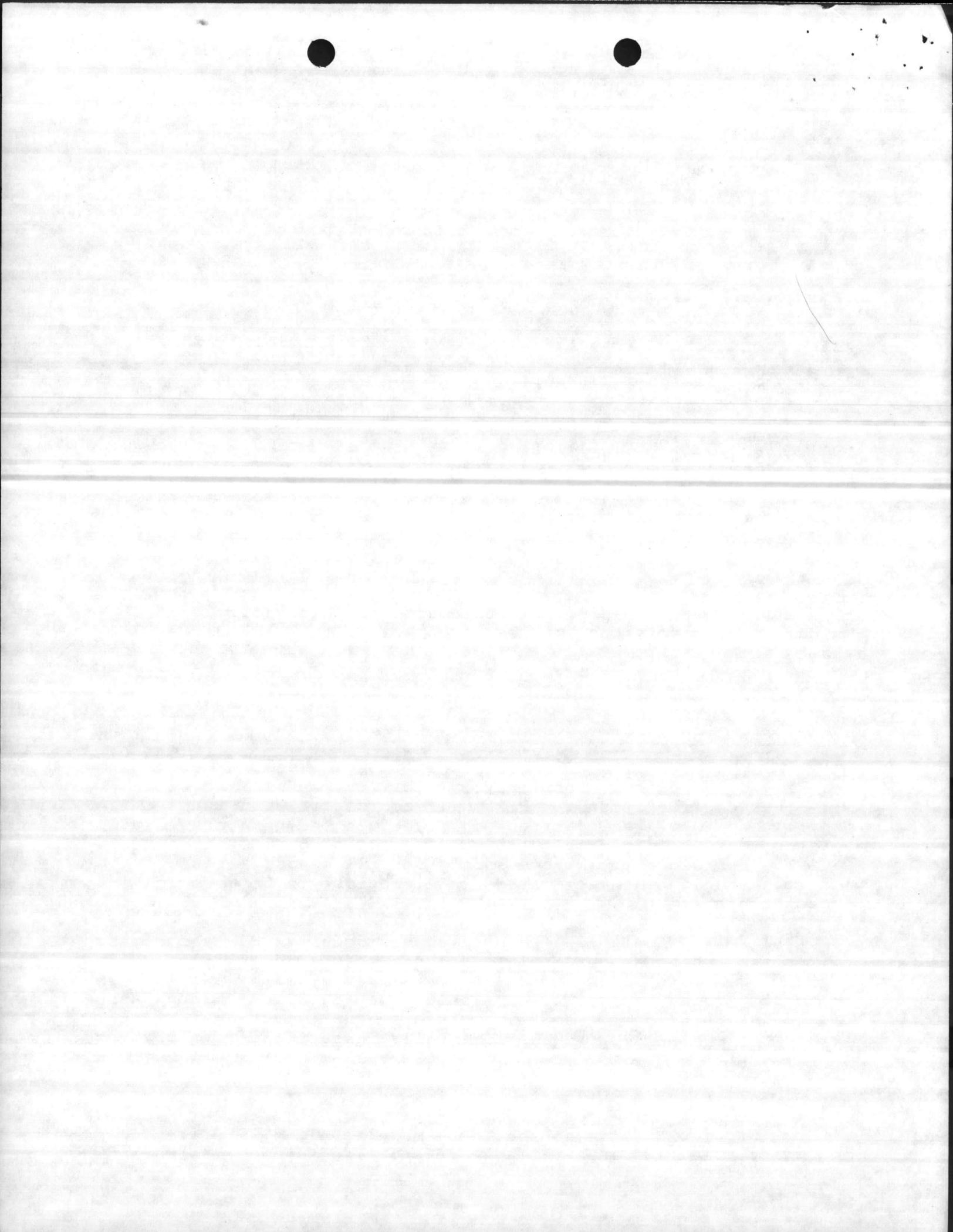
(a) No attempt should be made to fight wildfires in an impact area. Perimeter roads are prime containment lines and can be utilized.

CONTROLLED BURNING  
EIA

SDZ ROADS  
SDZ

FIRE FIGHTING  
IA

CAN PERIMETER ROADS BE MAINTAINED?  
G-10



Subj: NREA ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

*SDZ 2-10-83 EOD*  
*timely response*  
(b) Wildfires can and should be fought in SDZ's although there is a possibility of unexploded ordnance. Range Control should be kept informed of all fire fighting efforts and EOD support will be available.

*Other ACTIVITIES IA*  
(3) Site preparation, timbering, logging and reforestation areas. *OK* (a) These activities are not appropriate for impact

*SDZ*  
(b) Normally the stands of timber in SDZ's provide additional "insurance" in the form of a buffer to absorb the impact of ricochets, rounds fired or dropped "out of safe," and misdirected weapons firing. Accordingly, these activities are not desired on a routine basis. On the other hand due to range and SDZ configurations there are stands of timber with little or no contamination which could be safely harvested. In these instances a proposal to timber in an SDZ should be forwarded to AC/S, Training and Operations for review of the safety and training implications. Each case will be considered on its merits. Only limited EOD support can be provided depending on the size of the stand and the contract period.

*WE NEED TO KNOW THESE AREAS IN ADVANCE FOR PLANNING PURPOSES.*

*Firewood*  
(4) Firewood areas. These should not be established in either impact or surface danger zones.

b. Wildlife Management

(1) Red-cockaded woodpecker

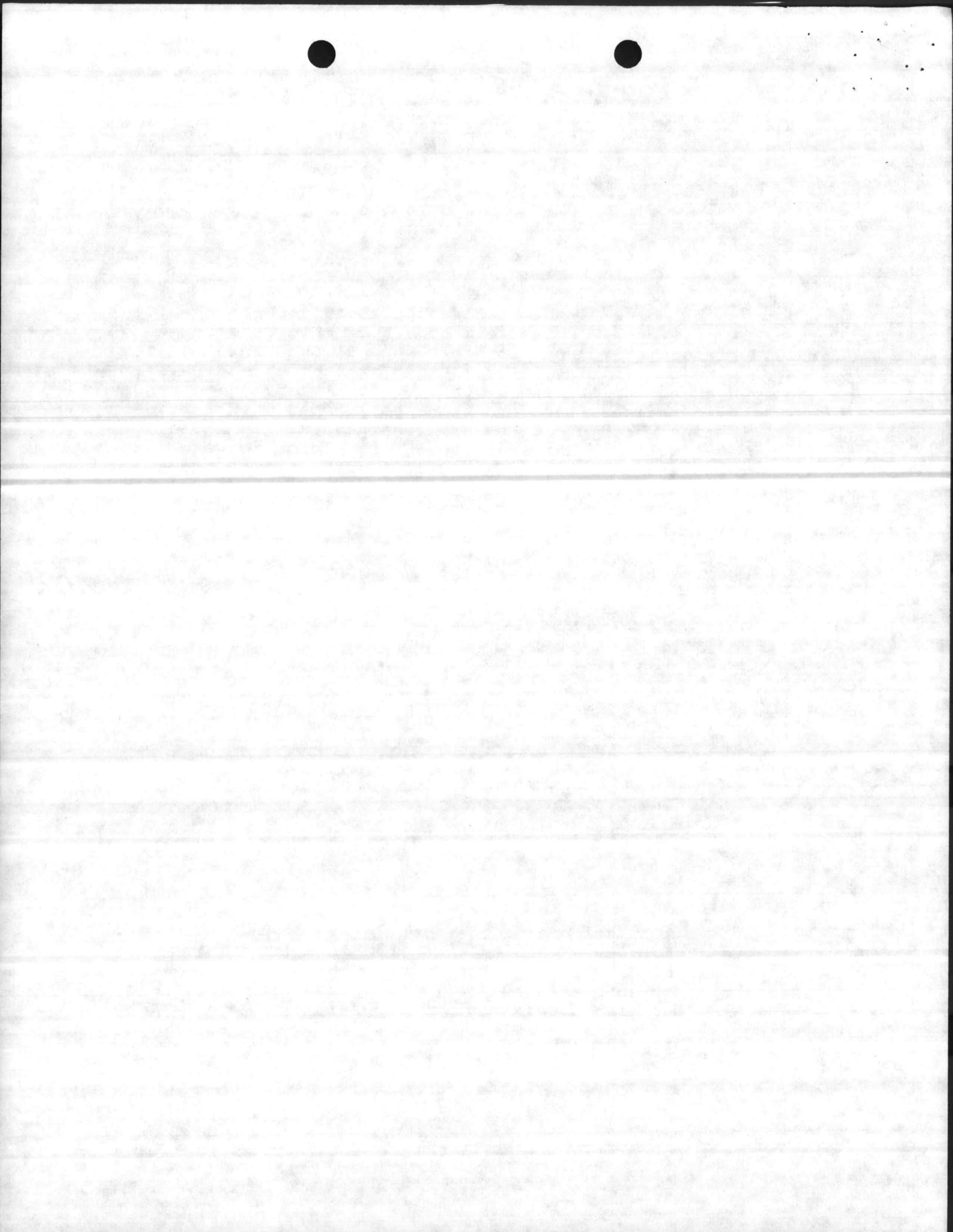
(a) All aspects of RCW management and protection should be continued in both impact areas and SDZ's.

(b) Activities should be scheduled through Range Control to minimize the impact on training and EOD support will be provided.

(2) White-tailed deer

(a) No management activities are authorized in the impact areas.

(b) Control of the deer population in the SDZ's may soon become a problem as much of this area is prime habitat and no hunting has been allowed in the 1983 or 1984 seasons. It is recommended that representatives of NREAD, the Game Warden and Training and Operations meet to discuss possible SDZ options including:



Subj: NREA ACTIVITIES IN SURFACE DANGER AREAS (SDZ)/SAFETY

- 1' size and health of the herd
- 2' number of deer to be harvested
- 3' controlled hunts
- 4' organized hunts
- 5' open hunting

(3) Turtle nesting

(a) The beach north of Onslow Beach recreation area includes both SDZ and impact areas.

(b) Due to increased use of the G-5, G-6, and G-7 ranges, safety cannot be guaranteed, particularly at night, nor can EOD escort be provided on a nightly basis. Accordingly, monitoring activities are not recommended in the impact area.

(c) Monitoring activities can be continued in the SDZ as long as personnel remain on the beach, proceed with caution, and are briefed on the possibility of dud hazards. Periodic visual sweeps by EOD can be made to help reduce the hazard.

c. Other activities of a special nature or one time requirements

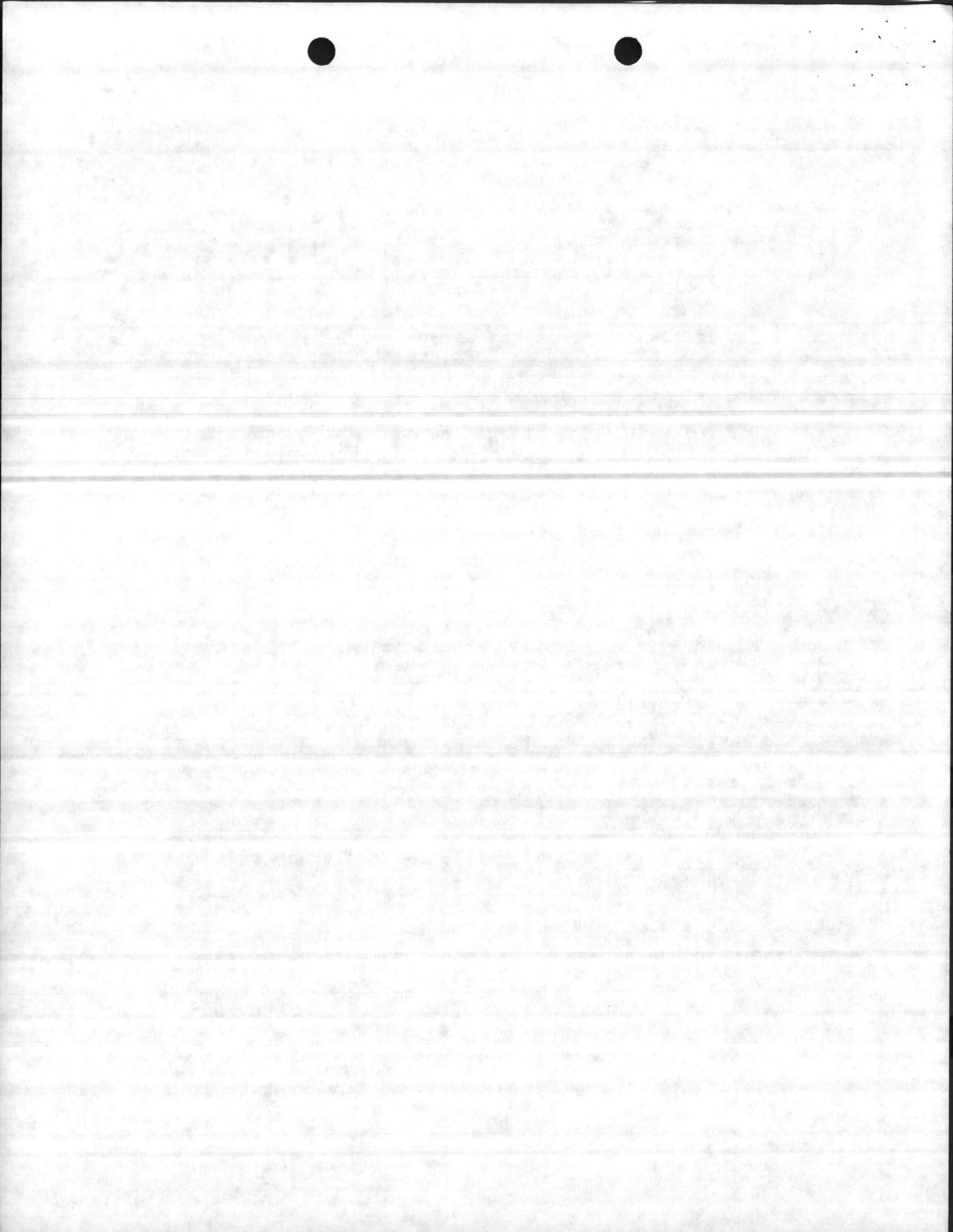
(1) Activities within a designated impact area are not desired and should be considered only in a truly unique case.

(2) Activities in SDZ's should likewise be discouraged but can be accommodated to comply with existing laws or regulations or when it is clearly in the best interest of the base to conduct such activities. In such cases the potential risk to personnel and equipment will be carefully weighed against the expected benefit and/or impact on training.

3. With regard to the related issue of hazardous duty or environmental differential pay discussed in references (e) and (f) the following guidance is offered:

a. Impact areas. Work required in any impact area is, by definition, hazardous and appropriate special pay or a differential is warranted.

b. Surface danger zones. By definition these are areas established to contain ricochets and fragments of ordnance exploding or ricocheting on the edge of the impact areas. While slightly more likely to contain unexploded ordnance than some other portions of the base, this is not a usual occurrence and controlled activities can take place in these areas in relative safety, particularly when swept visually by EOD personnel prior to entry and supported by EOD personnel during operations. In light of the selective functions outlined in paragraph 2 above

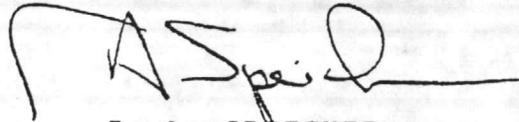


Subj: NREA ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

which are authorized in the SDZ's, it is considered that no differential or hazardous duty pay is justified, with one exception.

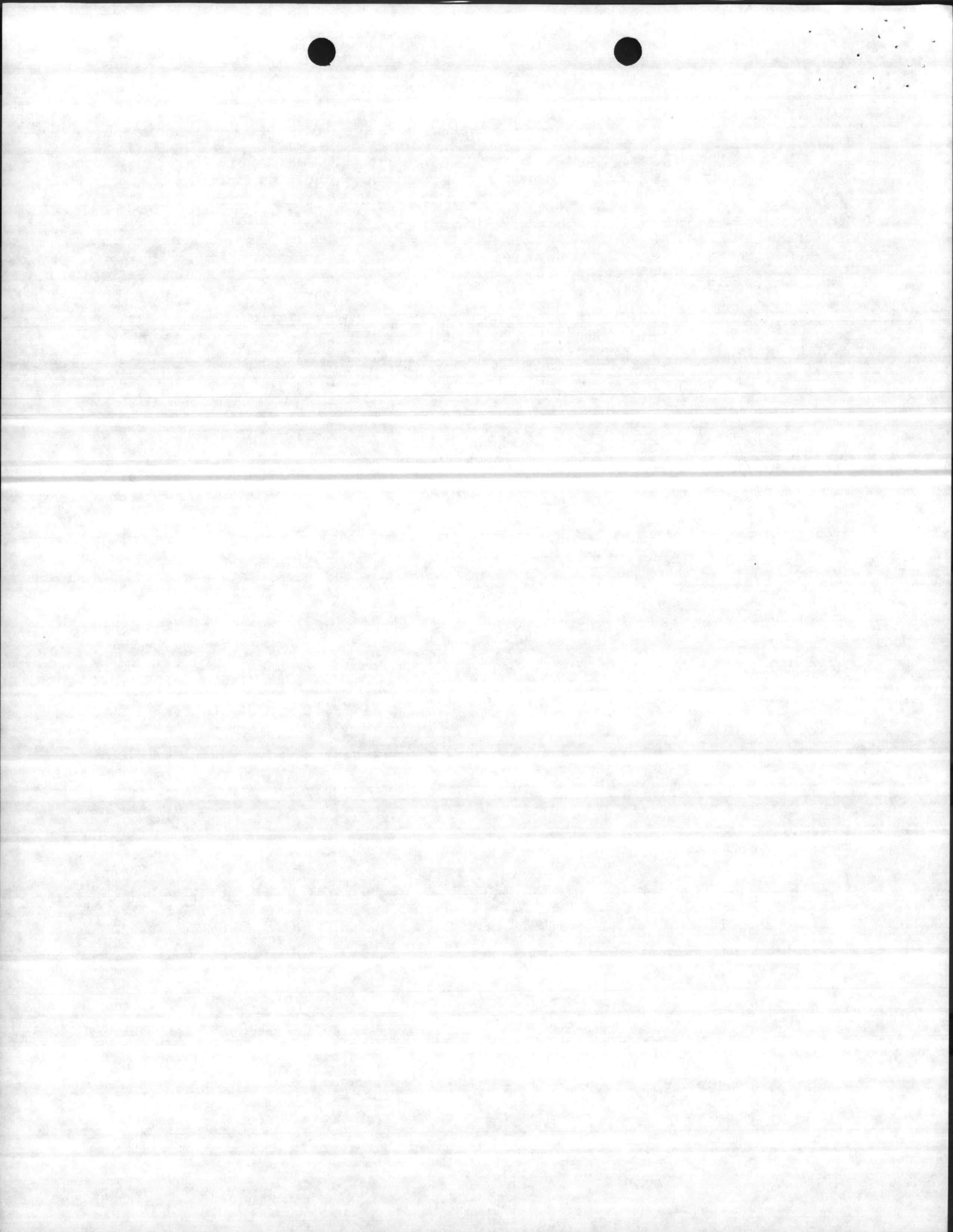
(1) When wildfires must be fought on the perimeters of impact areas and in surface danger zones there is no time for EOD to visually sweep the area first or accompany all fire fighters, nor can activities necessarily be closely or carefully controlled. In this instance the increased hazard would seem to justify the appropriate pay differential.

4. The delay in responding is regretted; however the issues are complex and safety is always worth the extra time required for research.



J. A. SPICHER

Copy to:  
DIR, NREAD  
RangeControlO  
EOD O  
CPO  
SAFETY O  
PMO (Game Warden)



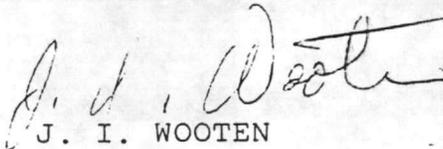


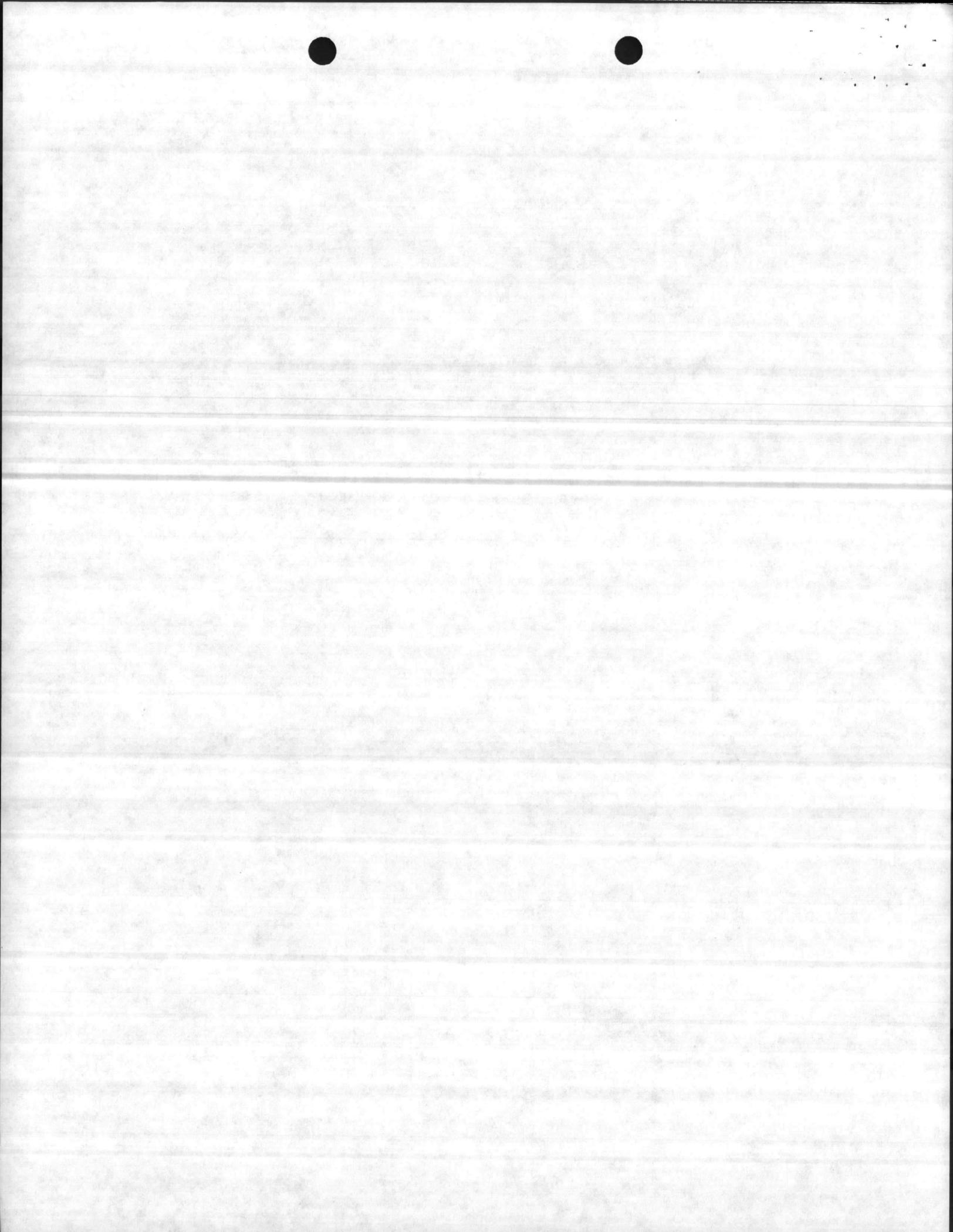
UNITED STATES MARINE CORPS  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO:  
5040  
NREAD  
24 Jun 85

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Training and Operations,  
Marine Corps Base, Camp Lejeune  
Subj: NREA ACTIVITIES IN SURFACE SECONDARY DANGER AREAS/SAFETY  
Ref: (a) Recent mtg btwn AC/S TRNG&OPRNS, DEP AC/S FAC,  
TRNGFACO, EOD and NREAD personnel  
Encl: (1) Forestry Management Activities in SDA's  
(2) Wildlife Management Activities in SDA's

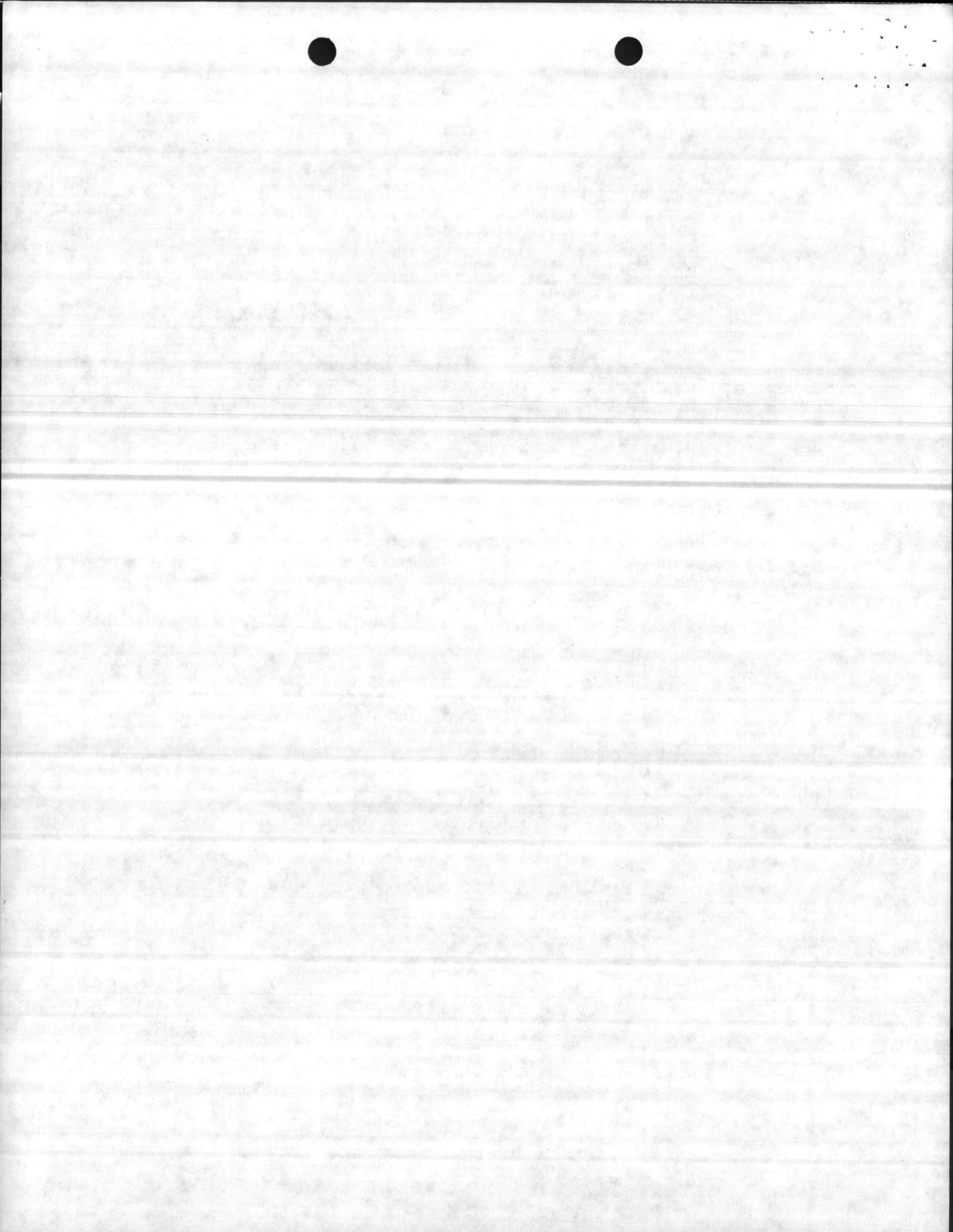
1. During the reference, forestry and wildlife management activities in secondary danger areas and safety were discussed. Enclosures (1) and (2) provides information pertaining to forestry and wildlife activities in subject areas for use in reaching a determination about civilian personnel safety in these areas.

  
J. I. WOOTEN



## FORESTRY MANAGEMENT ACTIVITIES IN SDA's

1. Due to the high degree of wildfire occurrence associated with the G-10 and N-1 Impact Areas and Secondary Danger Areas (SDA's), the need to control burn in both impact areas and SDA's to lessen wildfire severity is very important.
2. Historically, the perimeters of the G-10 Impact Areas and the road network in the SDA's have been used as base lines for ignition of the areas during control burning operations.
3. In the past, only the range fan of the G-5 and G-7 ranges in the N-1 SDA have been control burned. Presently, the NREA Division is investigating the possibility of using aerial ignition to control burn impact areas and SDA's. The use of this type of device, either purchased by NREA Division or contracted, would greatly increase the quality of the burn and reduce the man hours and hazard to employees engaged in the burning.
4. Also in the past, other timber management activities logging, site preparation and wildfire suppression have occurred in G-5, G-7 and G-10 SDA's without a safety problem. Currently, there is approximately 5.7 million dollars worth of timber in these areas. However, there is no legal requirement to manage timber resources in these SDA's.



WILDLIFE MANAGEMENT ACTIVITIES IN SURFACE DANGER AREAS (SDA's)

1. Red-Cockaded Woodpecker Management and Protection: The following activities are programmed for compliance with the Biological Opinion rendered by the U. S. Fish and Wildlife Service as provided for under Public Law 91-205, as amended (The Endangered Species Act of 1973).

- a. Locating, marking and posting habitat boundaries.
- b. Prescribed burning around cavity trees on an annual basis.
- c. Conducting annual population counts.
- d. Periodic inspections for monitoring land use impact.

2. Control of Deer Population: Although not a legal requirement, hunting to control the deer population should be considered.



20 Sep 1985

Base Forester, Natural Resources and Environmental Affairs Division,  
Marine Corps Base, Camp Lejeune  
Director, Natural Resources and Environmental Affairs Division,  
Marine Corps Base, Camp Lejeune

FORESTRY ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

Ref: (a) AC/S TRNG/OPS ltr 5040 TRNG/OPS of 5 Sep 1985

1. The contents of the reference pertaining to forest management have been reviewed with regard to activities required and/or desired in both surface danger zones and impact areas.

2. Outlined below are Forestry Management recommendations for each activity:

a. Controlled burning:

(1) The roads used for burning the G-10 Impact Area need to be maintained, as they are the prime containment lines for the areas. The responsibility for fire-proofing the roads around the impact areas will be Forestry's. This will be done with the aid of EOD.

(2) Due to their size and the inaccessible nature of the interior of the impact areas, aerial ignition is a highly desirable technique which would facilitate the controlled burning of these areas and ensure a more complete burn. The use of aerial ignition on Camp Lejeune should be pursued.

(3) SDZs - As with the roads around the impact areas, the roads in and around the SDZ need to be kept clear of brush and grass. This will aid in both controlled burning and wildfire suppression activities. The responsibility for the upkeep of these roads must be defined to ensure their proper upkeep. Although all efforts will be made to schedule controlled burning in impact areas and SDZs well in advance with the Training Facilities Officer, adverse weather conditions may make prescribed burn scheduling changes necessary due to the high priority these areas have for training and controlled burning. There seems to be some discrepancy as to where the actual boundaries of the SDZs are located. SDZ boundaries should be marked on the ground in such a way as to be highly visible to anyone moving through the area.

b. Wildfire suppression:

(1) Impact area - no attempt will be made to suppress fires in the impact area.

... the ... of the ...

SECTION 1. PURPOSE AND SCOPE

(a) This document is intended to provide information regarding the ...

The ... of the ... is to ...

2. ... of the ...

SECTION 2. DEFINITIONS

(1) The words used in this document shall have the meanings assigned to them in the ...

(2) For the purposes of this document, the term "person" shall include any individual, partnership, corporation, or other legal entity.

(3) ... of the ... shall be ...

(4) ... of the ... shall be ...

SUBJ: FORESTRY ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

(2) SDZs - With the possibility of unexploded ordnance in SDZs, EOD support is recommended when fighting wildfires in these areas. A timely response by EOD is essential for wildfire suppression activities in SDZs.

c. Site preparation, timbering, logging and reforestation:

(1) Impact areas - These activities are not appropriate for these areas.

(2) SDZs - For long range planning purposes, it is desirable to determine which areas in the SDZs are considered safe for management activities, with appropriate EOD support when required. With the large volume of timber in the SDZs associated with the G-10, BT-3 Impact Areas, it is highly desirable that Forestry management activities be carried out if these areas are considered safe. Forest management activity has been carried out in the past in portions of the SDZ without incident, and past management practices provided unrestricted entrance into the SDZ.

2. A meeting between NREAD personnel and the AC/S Training and Operations is essential in order to address these topics discussed in greater detail, and questions concerning long-range Forest management can be answered prior to publishing the Natural Resources Long Range Plan.

P. E. BLACK

Writer: A. Henry, NREAD 5003  
Typist: J. Cross 20Sep85



5040  
NREAD  
JAN 14 1987

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Base Safety Officer, Marine Corps Base, Camp Lejeune

Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ); SAFETY

Encl: (1) AC/S Trng&Ops ltr 5040 TRNG/OPS of 8 Dec 86  
(2) Map depicting G-10 SDZ prior to 8 Dec 86 and G-10  
SDZ as redefined on 8 Dec 86 prepared by NREAD  
from map provided by enclosure (1) of 14 Jan 87  
(3) Wildlife Biologist Memo to the Record of 18 Dec 86  
(4) Timber Mgt Forester Memo to the Record of 18 Dec 86  
(5) Dir, NREAD ltr 5040 NREAD of 24 Jun 85 w/end dtd  
5 Sep 85  
(6) CG MCB ltr 12550 CPD of 4 Mar 85

1. Enclosure (1) is provided for your review pertaining to civilian personnel performing official duties in the G-10 surface danger zones and that area around the G-10 which until 8 December 1986 was defined as the G-10 SDZ (See Enclosure (2)). Duties require entry with motor vehicles and entry on foot where visibility is restricted by grass, weeds and shrubs. Entry is for collecting field data to support Base mission, Natural Resources management and research, i.e., control burning, wildfire suppression, timber removal, reforestation, heavy equipment work and maintaining wildlife clearings; some of which result in significant ground disturbance.

2. It should be noted NREAD personnel continue to find unexploded high explosive ordnance as documented by enclosures (3) and (4) outside the new G-10 SDZ boundary, as depicted on enclosure (1), and they are concerned about their safety. Supervisors have raised the question of liability if an employee under their direct supervision is accidentally injured by unexploded ordnance by no fault of his/her own while working in the G-10 SDZ as defined prior to and after 8 December 1986 and other SDZs aboard base.

3. It is requested your office review enclosure (1) and provide safety guidance pertaining to NREAD activities within the G-10 SDZ as defined prior to and after 8 December 1986. A response is desired by 30 January 1987. During the mean time, NREAD personnel are continuing to enter all SDZs aboard base with EOD support, per enclosure (5), with hazard duty being approved in accordance with enclosure (6).

JULIAN I. WOOTEN

Copy to:  
AC/S FAC  
CPD

BCC: Eco/For/WMgr/Chem

1907 A T WASH



UNITED STATES MARINE CORPS  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:  
5040  
TRNG/OPS  
8 Dec 86

From: Assistant Chief of Staff, Training and Operations  
To: Director, Natural Resources and Environmental Affairs  
Division  
Via: Assistant Chief of Staff, Facilities: *Subletm 12/15/86*

Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

Ref: (a) AC/S Trng/Ops end 5040 over TRNG/OPS dtd 5 Sep 86  
on Dir NREAD ltr 5040 dtd 24 Jun 85

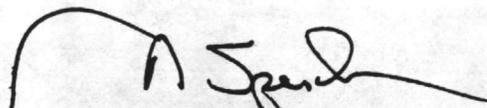
Encl: (1) Map of G-10 showing new impact area limits

1. As of 13 October 1986, the limits of G-10 impact area were redefined. The enclosure shows the new boundary, it is marked with international orange paint on trees and engineer stakes.

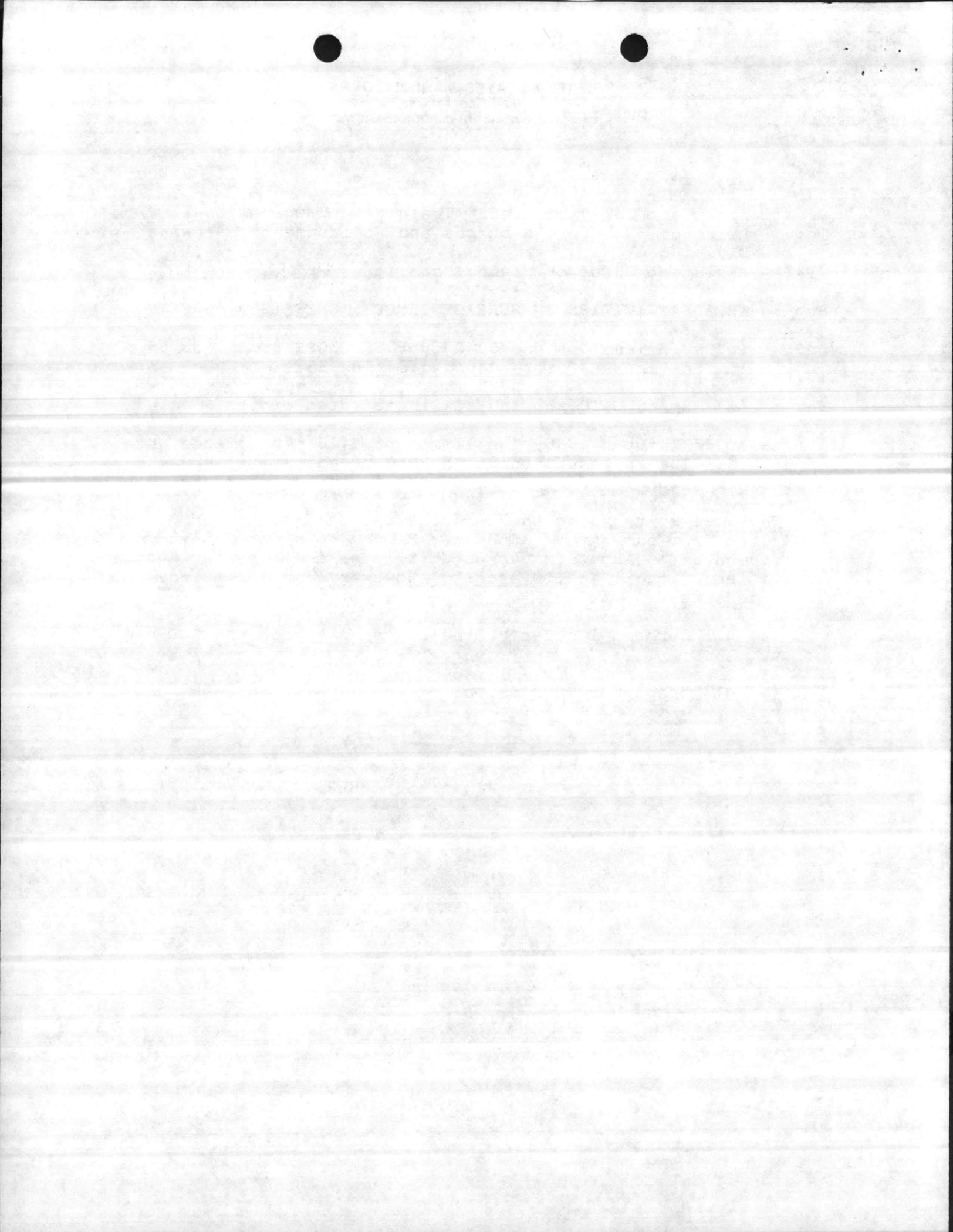
2. The area surrounding the impact area, Surface Danger Zones (SDZ), as defined in the reference, is now open for hunting, environmental/endangered species activities and other authorized activities, without an EOD escort. However, the following conditions must be met:

(a) All personnel entering the SDZ's must view the EOD dud brief.

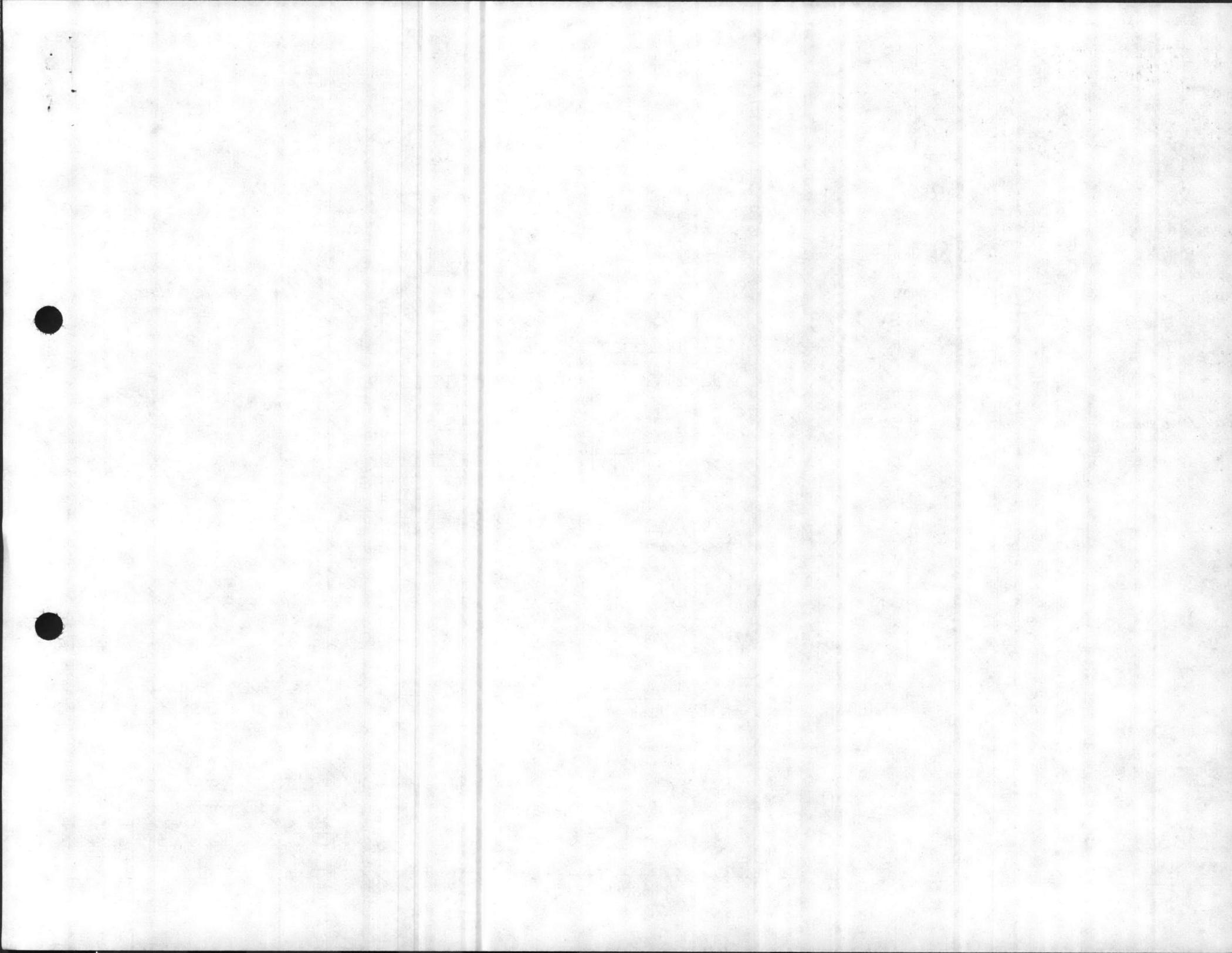
(b) All trips into SDZ's must be coordinated through Range Control.

  
J. A. SPEICHER

ENCLOSURE (1)

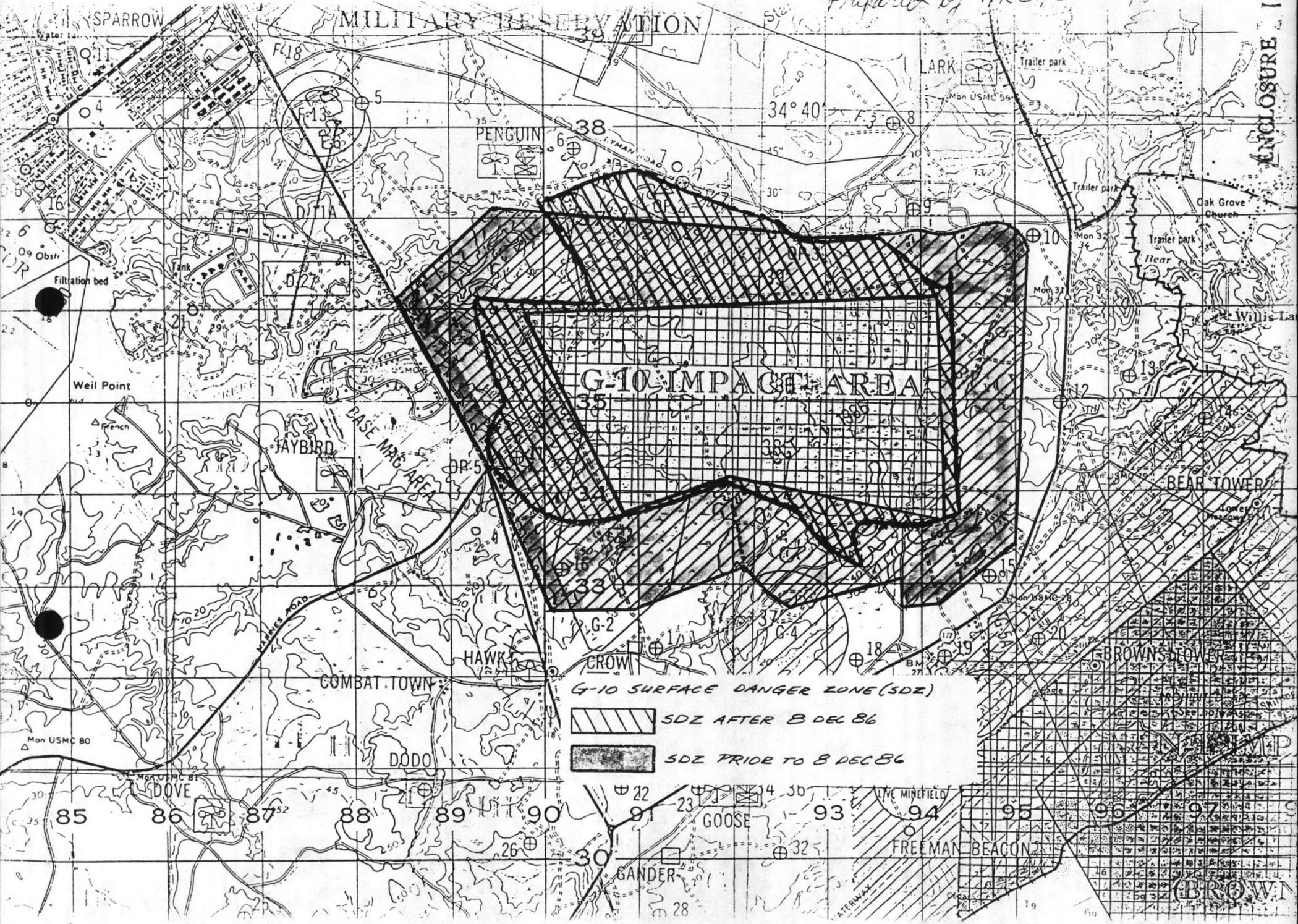






Prepared by NREAD on 14 Jan 87

ENCLOSURE 121



SPARROW

MILITARY RESERVATION

PENGUIN

JAYBIRD

HAWK

CROW

DOVE

GOOSE

FREEMAN

BEACON

GANDER

BROWN

57

34° 40'

30'

35

33

30

28

26

24

22

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18

16

14

12

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6

4

2

0

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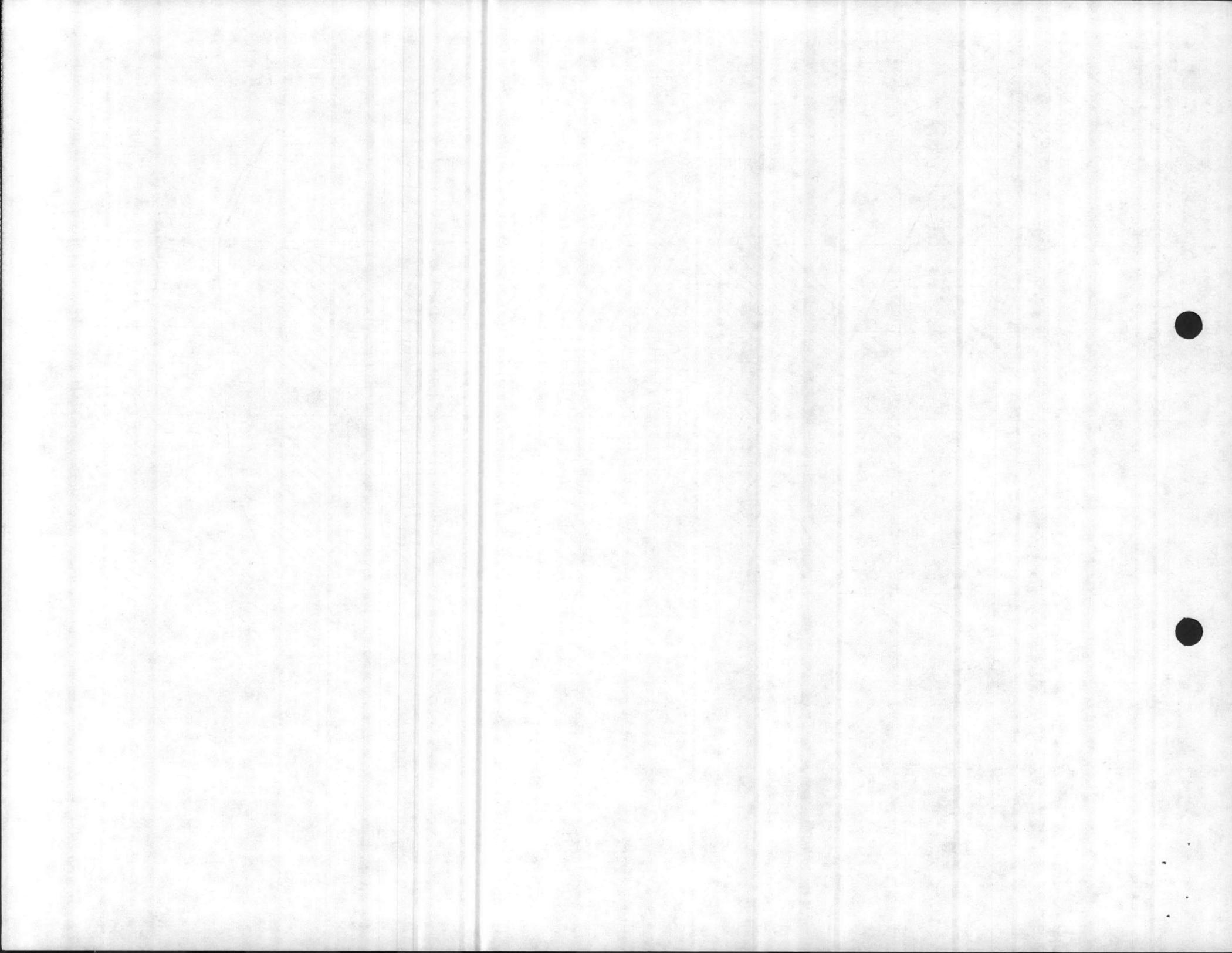
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# Memorandum

5200  
NREAD

DATE: 18 Dec 1986

FROM: Albert C. Henry, Jr., Wildlife Biologist, NREAD

TO: MEMO FOR THE RECORD

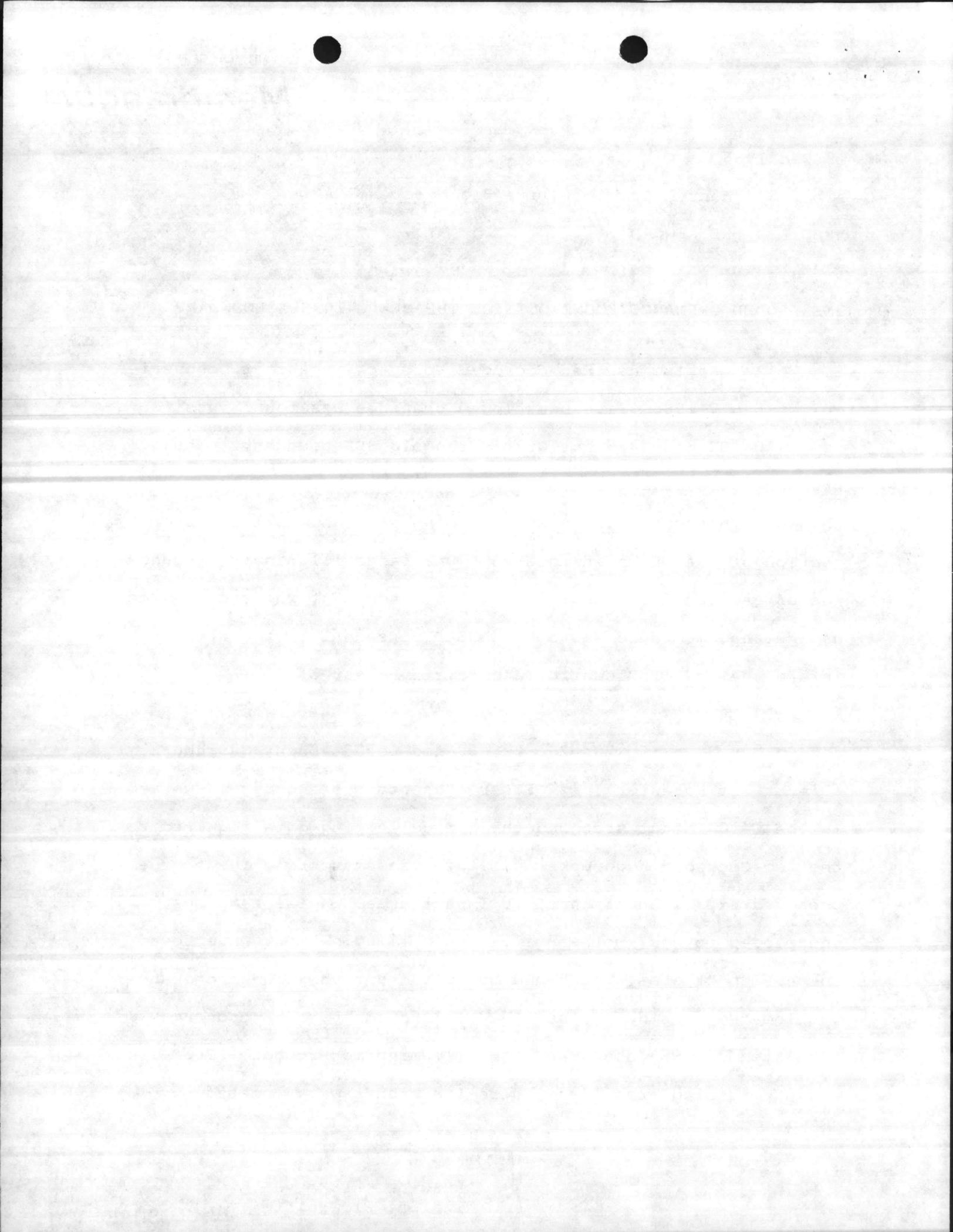
SUBJ: UNEXPLODED ORDNANCE FOUND OUTSIDE THE NEW G-10 SDZ BOUNDARY

1. While marking new Red-Cockaded Woodpecker habitat boundaries on Oct 6 & 7 1986, live unexploded ordnance was found outside the new G-10 SDZ boundary but within the old SDZ boundary. The ordnance both artillery and illumination rounds were located in the western section of the GD Training area and in the eastern section of the GE Training area. One large illumination round was of particular concern to the EOD Gunney Sgt who accompanied us. He had me radio all other NREAD personnel in the area to inform them of its location and to stay clear of it.

2. On Nov 3, 5, 6, 23, 28, 29, 30 and Dec 7, Danny Marshburn (Timber Mgt Forester), ~~an~~ <sup>an</sup> EOD representative and myself worked in the G-10 Impact area and the SDZ collecting data required for the Red-Cockaded Woodpecker habitat assessment relative to the proposed expansion of the G-10 Impact area. While numerous unexploded rounds, both artillery and illumination, were found in the Impact area, it should be noted that unexploded ordnance was located outside the new G-10 SDZ boundary. The ordnance consisted of 105 rounds and some illumination rounds. The GD and GE Training areas were where the rounds were located.

*Albert C. Henry Jr.*  
ALBERT C. HENRY, JR.  
Wildlife Biologist

ENCLOSURE (3)



# Memorandum

5200  
NREAD

DATE: 18 Dec 1986

FROM: Danny Marshburn, Timber Management Forester, NREAD

TO: MEMO FOR THE RECORD

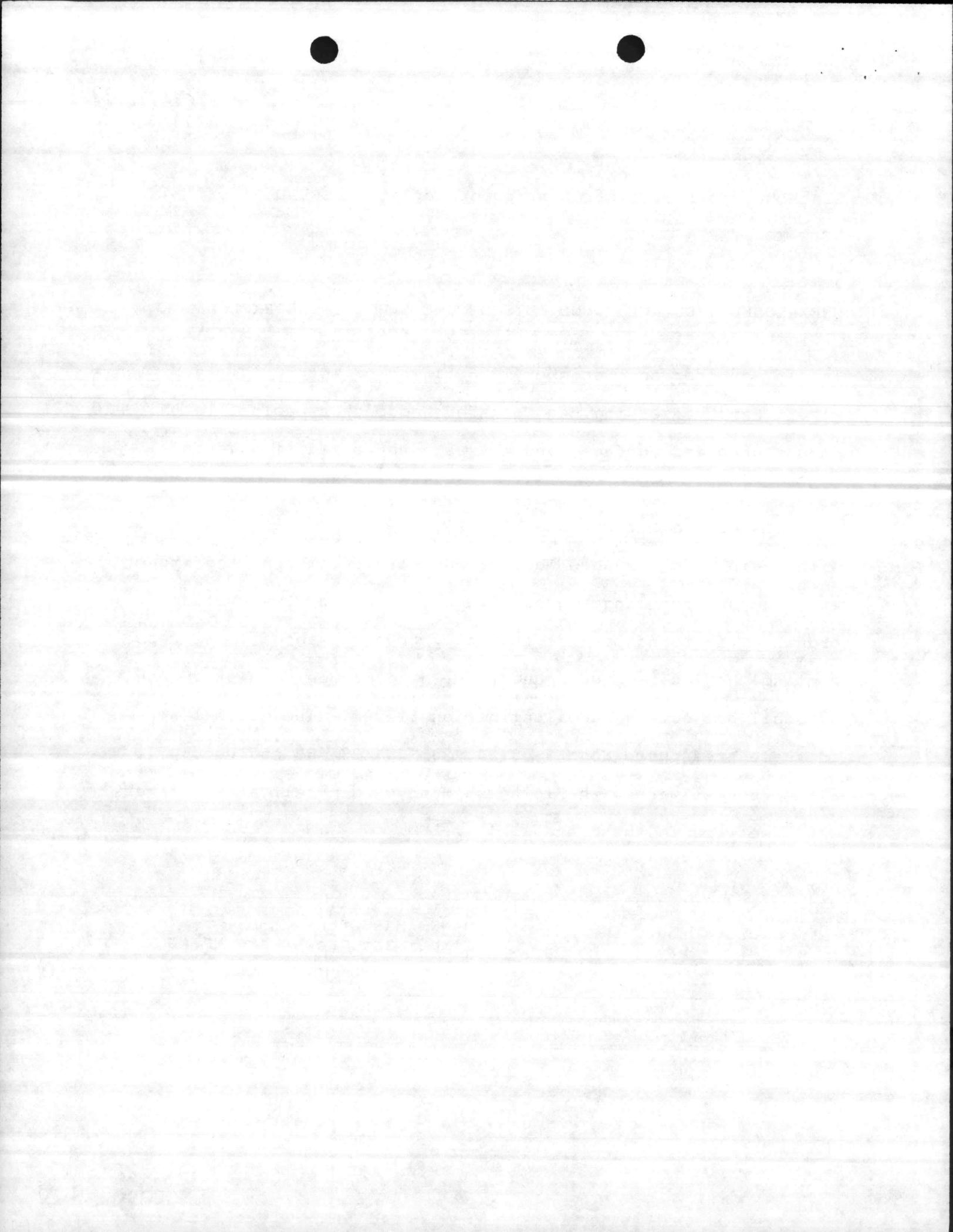
SUBJ: UNEXPLODED ORDNANCE FOUND OUTSIDE THE NEW G-10 SURFACE DANGER AREA

1. In November and December 1986, I worked with wildlife biologist Albert Henry assessing Red-Cockaded Woodpecker habitat in the G-10 Impact area and Surface Danger Area. We worked with various personnel from Explosive Ordnance Disposal. While working in the Impact area and Surface Danger Area, the area most prominent with unexploded ordnance was the southern section of the impact area and surface danger area. In areas GE and GD unexploded ordnance was found outside the newly orange painted lines representing the Impact area boundary. The ordnance consisted mainly of small projectile and illumination flares. The dates I worked in these areas were Nov. 3, 5, 6, 23, 28, 29, 30 and Dec 6, 7. EOD personnel were with Biologist Henry and myself at all times while we were in these areas.

DANNY MARSHBURN  
Timber Mgt. Forester, NREAD

*Danny Marshburn*

ENCLOSURE (4)





UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

T-5040  
IN REPLY REFER TO:  
5040  
TRNG/OPS  
5 Sep 85

FIRST ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 24 Jun 85

From: Assistant Chief of Staff, Training and Operations  
To: Director, Natural Resources and Environmental Affairs  
Division

Via: Assistant Chief of Staff, Facilities

Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

Ref: (b) RCO ltr 1500 KWZ:kwz of 13 Nov 83  
(c) Base Wildlife Mgr ltr 11015/1B NREAD of 30 Aug 84  
(d) Dir, NREAD ltr 5040 NREAD of 10 Sep 84  
(e) Dir, NREAD ltr 12000 NREAD of 15 Mar 85  
(f) CPO ltr 12550 CPD of 15 Apr 85

1. Returned. The contents of the enclosures have been reviewed with regard to activities required and/or desired in both surface danger zones and impact areas. The review included local policies and directives as well as historical practices, applicable Marine Corps directives, and references (b), (c) and (d).

2. Outlined below are policy statements for each activity; if mutually acceptable they can be incorporated in local directives and SOP's:

a. Forestry Management

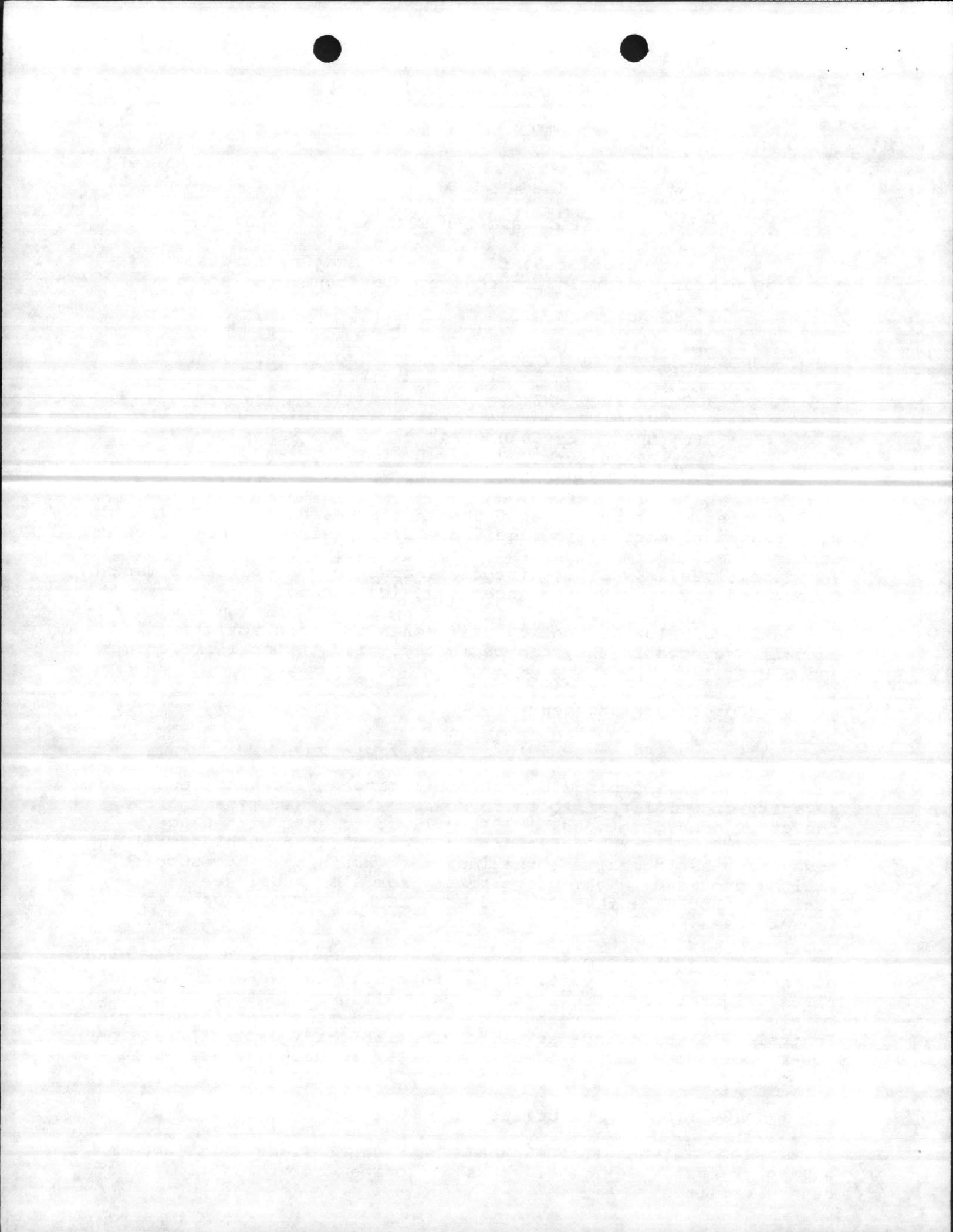
(1) Controlled burning

(a) Burning is required in impact areas to reduce the severity of wildfires, to improve visibility, safety and often for other considerations. NREAD will coordinate with Range Control and the Fire Department and schedule the burning well in advance so as to minimize the impact on training. EOD support will be provided. To improve safety for all hands, aerial ignition should be investigated as a technique to be used in impact areas.

(b) Controlled burning should occur in SDZ's for many of the same reasons, particularly to reduce the severity of wildfires originating in an impact area. Although weather will often be a controlling factor, burning should be scheduled through Range Control well in advance so as to minimize the impact on training. EOD support will be provided to visually inspect the area prior to the scheduled burn and to accompany the work crews.

(2) Fighting Wildfires

(a) No attempt should be made to fight wildfires in an impact area. Perimeter roads are prime containment lines and can be utilized.



Subj: NREA ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

(b) Wildfires can and should be fought in SDZ's although there is a possibility of unexploded ordnance. Range Control should be kept informed of all fire fighting efforts and EOD support will be available.

(3) Site preparation, timbering, logging and reforestation

(a) These activities are not appropriate for impact areas.

(b) Normally the stands of timber in SDZ's provide additional "insurance" in the form of a buffer to absorb the impact of ricochets, rounds fired or dropped "out of safe," and misdirected weapons firing. Accordingly, these activities are not desired on a routine basis. On the other hand due to range and SDZ configurations there are stands of timber with little or no contamination which could be safely harvested. In these instances a proposal to timber in an SDZ should be forwarded to AC/S, Training and Operations for review of the safety and training implications. Each case will be considered on its merits. Only limited EOD support can be provided depending on the size of the stand and the contract period.

(4) Firewood areas. These should not be established in either impact or surface danger zones.

b. Wildlife Management

(1) Red-cockaded woodpecker

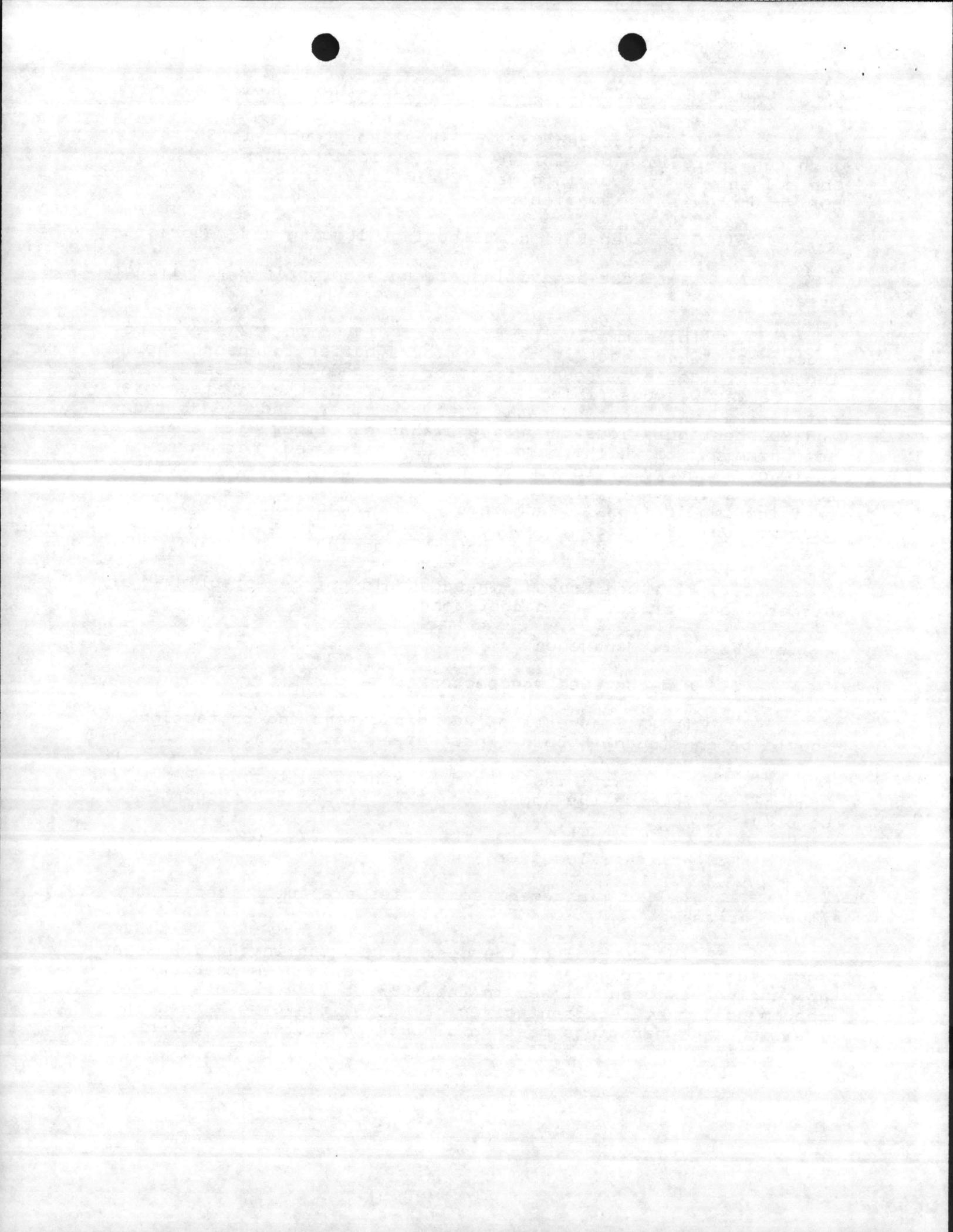
(a) All aspects of RCW management and protection should be continued in both impact areas and SDZ's.

(b) Activities should be scheduled through Range Control to minimize the impact on training and EOD support will be provided.

(2) White-tailed deer

(a) No management activities are authorized in the impact areas.

(b) Control of the deer population in the SDZ's may soon become a problem as much of this area is prime habitat and no hunting has been allowed in the 1983 or 1984 seasons. It is recommended that representatives of NREAD, the Game Warden and Training and Operations meet to discuss possible SDZ options including:



Subj: NREA ACTIVITIES IN SURFACE DANGER AREAS (SDZ)/SAFETY

- 1' size and health of the herd
- 2' number of deer to be harvested
- 3' controlled hunts
- 4' organized hunts
- 5' open hunting

(3) Turtle nesting

(a) The beach north of Onslow Beach recreation area includes both SDZ and impact areas.

(b) Due to increased use of the G-5, G-6, and G-7 ranges, safety cannot be guaranteed, particularly at night, nor can EOD escort be provided on a nightly basis. Accordingly, monitoring activities are not recommended in the impact area.

(c) Monitoring activities can be continued in the SDZ as long as personnel remain on the beach, proceed with caution, and are briefed on the possibility of dud hazards. Periodic visual sweeps by EOD can be made to help reduce the hazard.

c. Other activities of a special nature or one time requirements

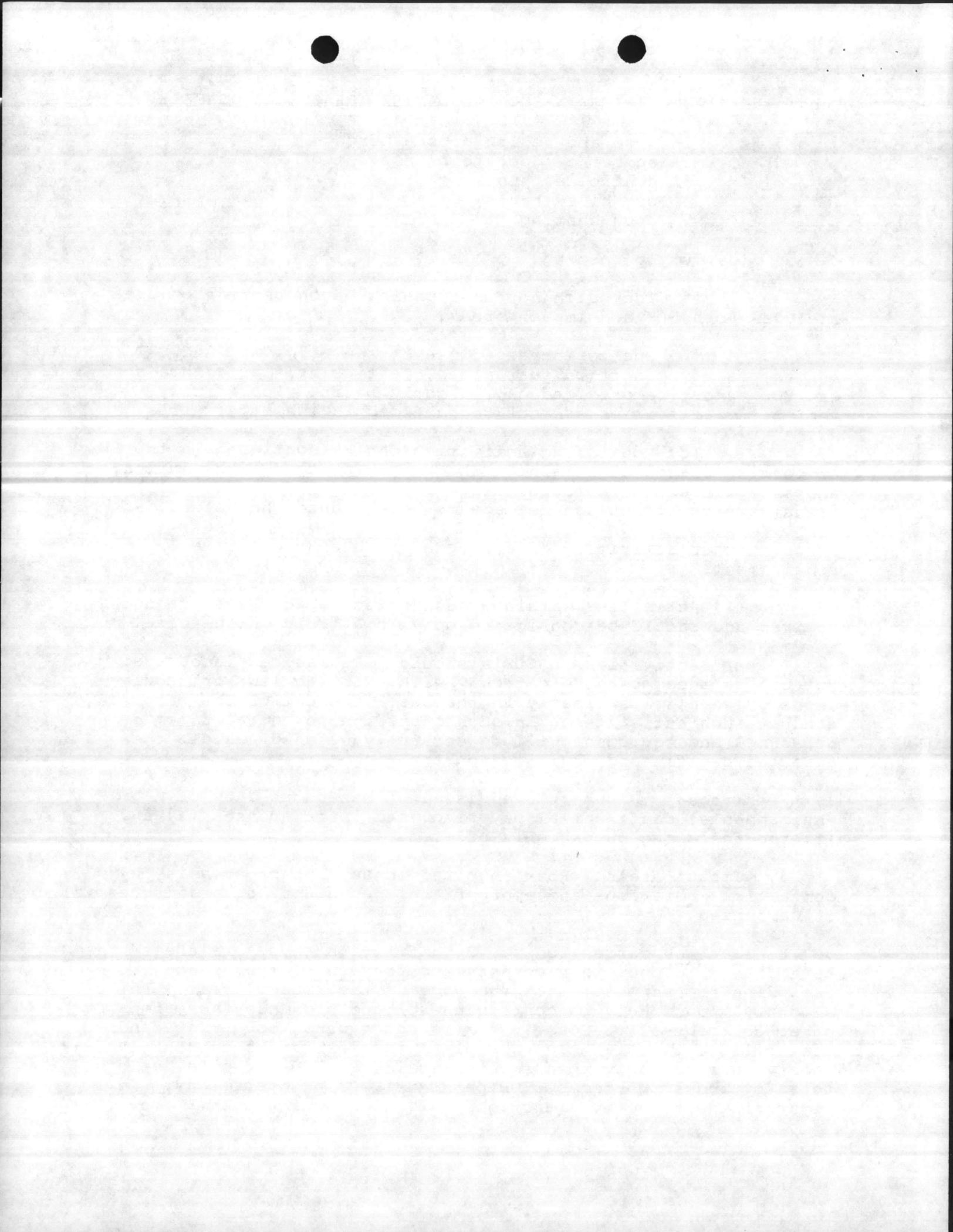
(1) Activities within a designated impact area are not desired and should be considered only in a truly unique case.

(2) Activities in SDZ's should likewise be discouraged but can be accommodated to comply with existing laws or regulations or when it is clearly in the best interest of the base to conduct such activities. In such cases the potential risk to personnel and equipment will be carefully weighed against the expected benefit and/or impact on training.

3. With regard to the related issue of hazardous duty or environmental differential pay discussed in references (e) and (f) the following guidance is offered:

a. Impact areas. Work required in any impact area is, by definition, hazardous and appropriate special pay or a differential is warranted.

b. Surface danger zones. By definition these are areas established to contain ricochets and fragments of ordnance exploding or ricocheting on the edge of the impact areas. While slightly more likely to contain unexploded ordnance than some other portions of the base, this is not a usual occurrence and controlled activities can take place in these areas in relative safety, particularly when swept visually by EOD personnel prior to entry and supported by EOD personnel during operations. In light of the selective functions outlined in paragraph 2 above

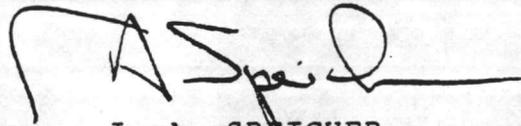


Subj: NREA ACTIVITIES IN SURFACE DANGER ZONES (SDZ)/SAFETY

which are authorized in the SDZ's, it is considered that no differential or hazardous duty pay is justified, with one exception.

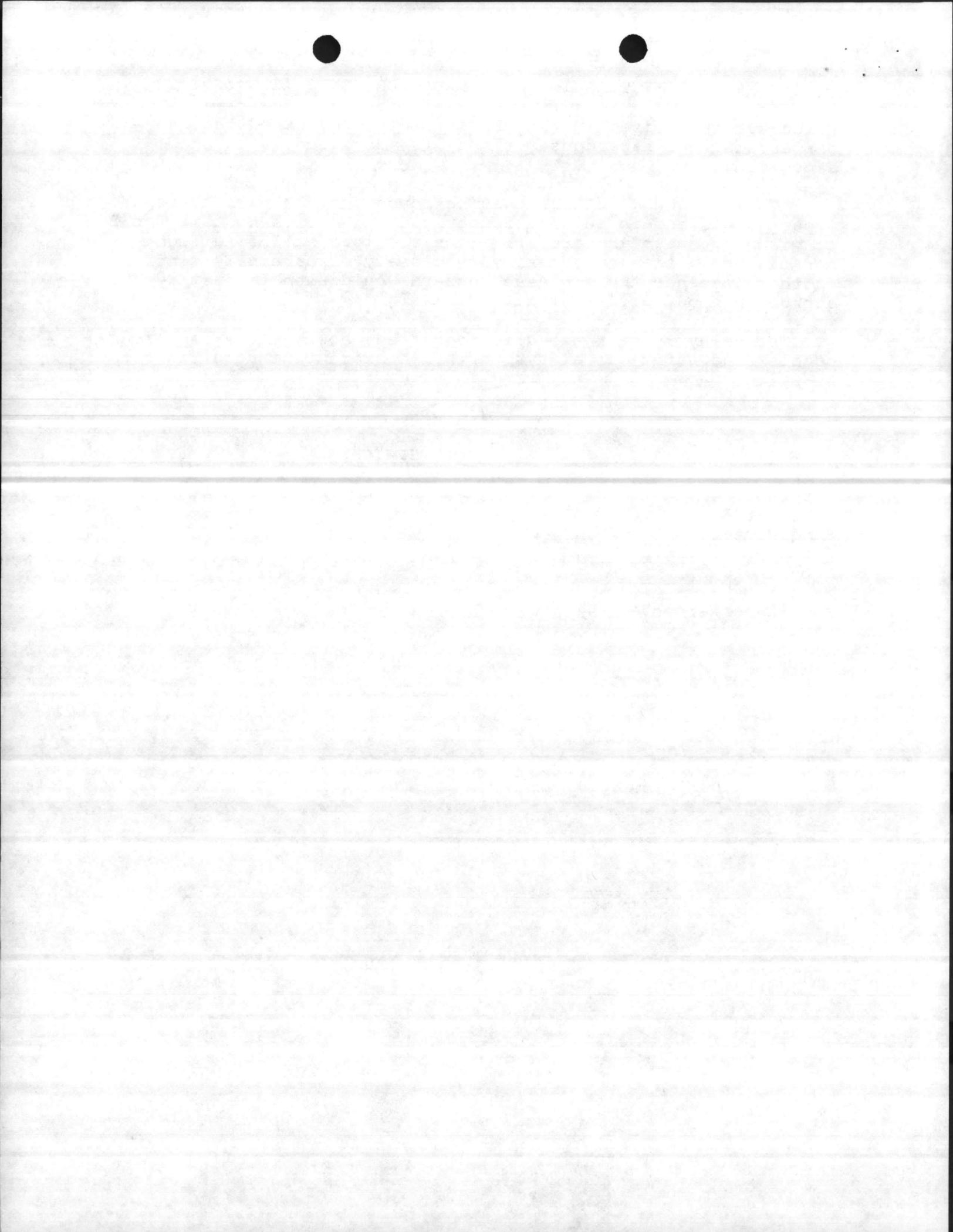
(1) When wildfires must be fought on the perimeters of impact areas and in surface danger zones there is no time for EOD to visually sweep the area first or accompany all fire fighters, nor can activities necessarily be closely or carefully controlled. In this instance the increased hazard would seem to justify the appropriate pay differential.

4. The delay in responding is regretted; however the issues are complex and safety is always worth the extra time required for research.



J. A. SPICHER

Copy to:  
DIR, NREAD  
RangeControl0  
EOD 0  
CPO  
SAFETY 0  
PMO (Game Warden)



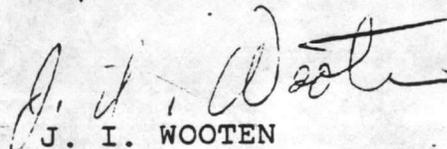


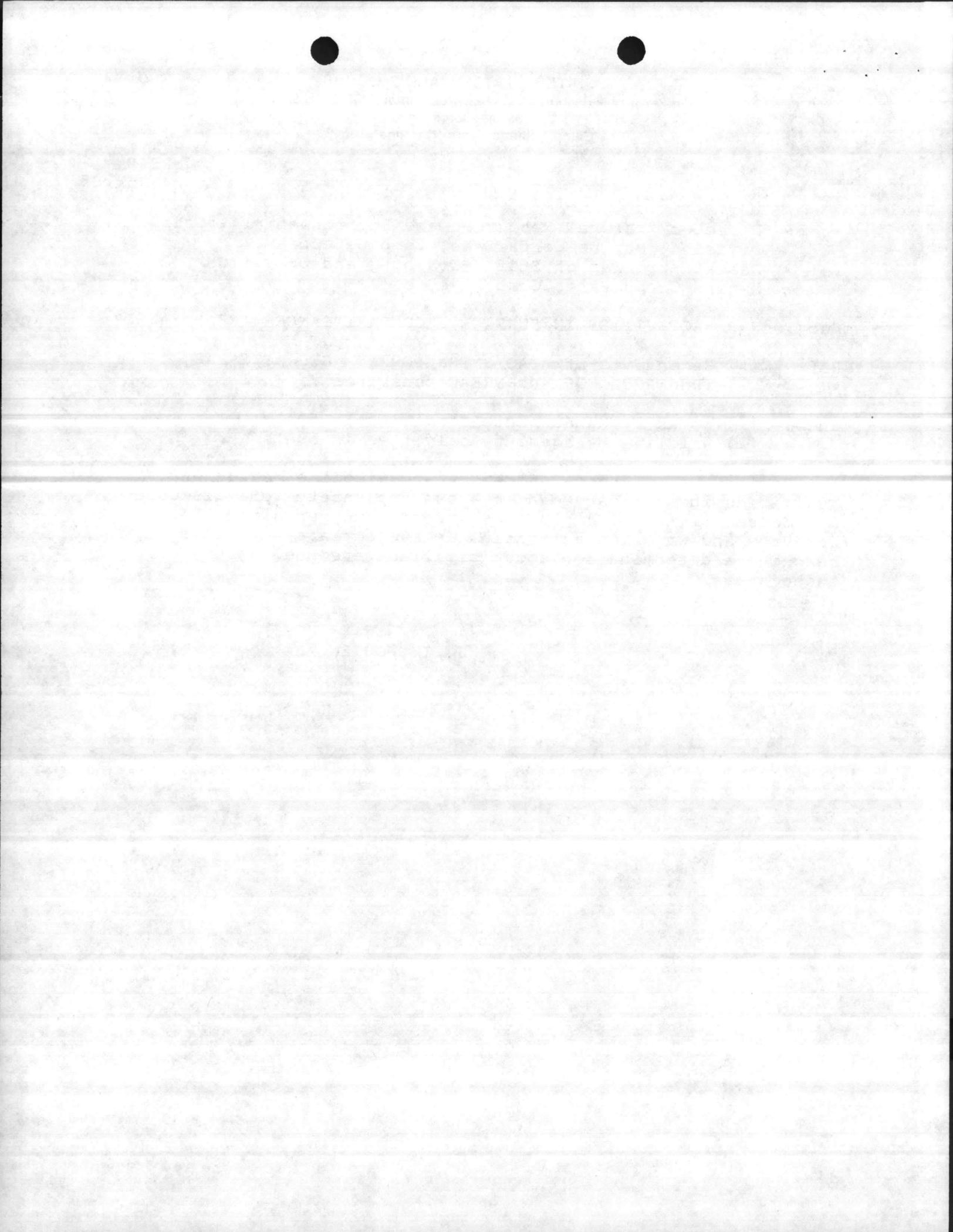
**UNITED STATES MARINE CORPS**  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO:  
5040 ,  
NREAD  
24 Jun 85

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Training and Operations,  
Marine Corps Base, Camp Lejeune  
Subj: NREA ACTIVITIES IN SURFACE SECONDARY DANGER AREAS/SAFETY  
Ref: (a) Recent mtg btwn AC/S TRNG&OPRNS, DEP AC/S FAC,  
TRNGFACO, EOD and NREAD personnel  
Encl: (1) Forestry Management Activities in SDA's  
(2) Wildlife Management Activities in SDA's

1. During the reference, forestry and wildlife management activities in secondary danger areas and safety were discussed. Enclosures (1) and (2) provides information pertaining to forestry and wildlife activities in subject areas for use in reaching a determination about civilian personnel safety in these areas.

  
J. I. WOOTEN



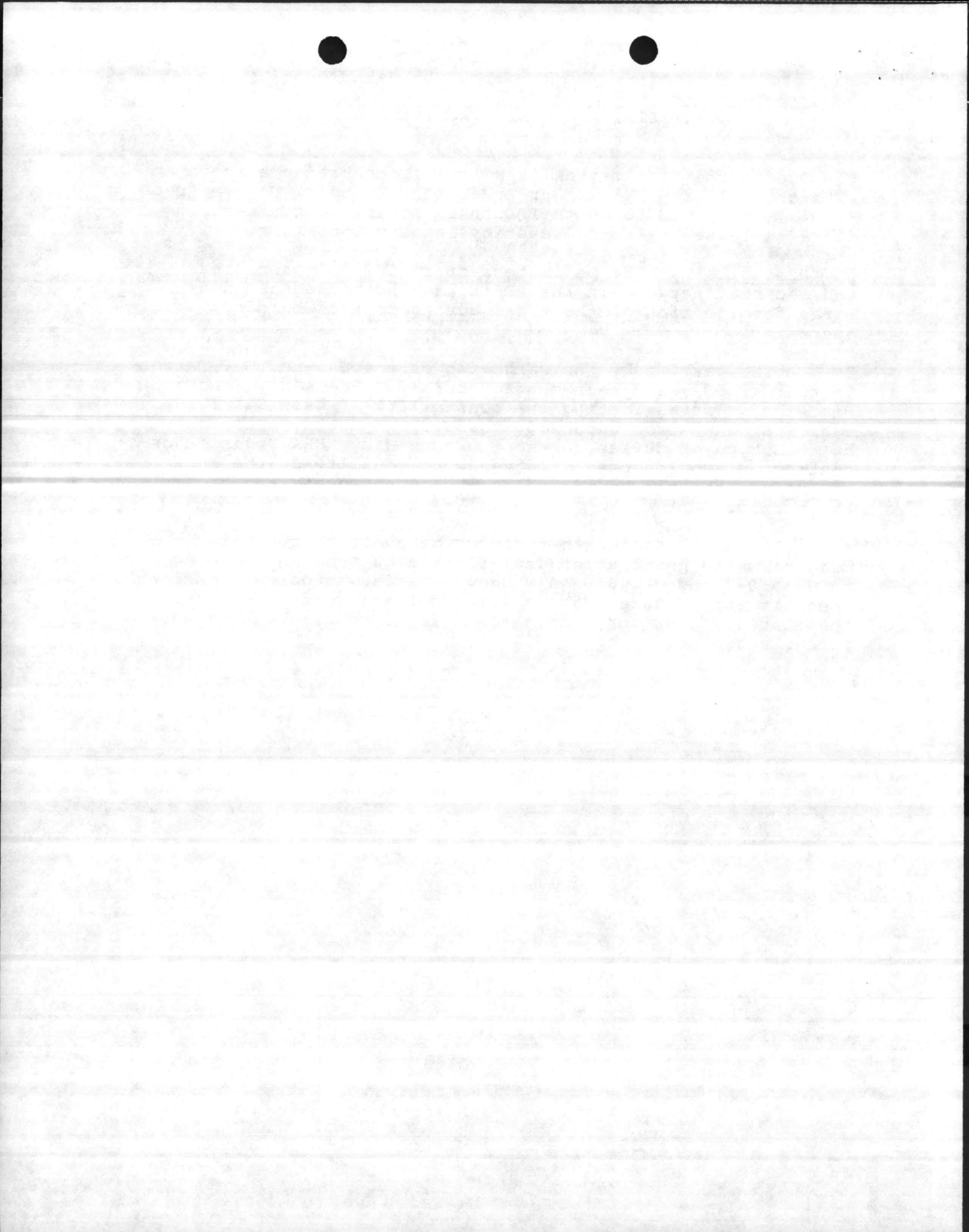
## FORESTRY MANAGEMENT ACTIVITIES IN SDA'S

1. Due to the high degree of wildfire occurrence associated with the G-10 and N-1 Impact Areas and Secondary Danger Areas (SDA's), the need to control burn in both impact areas and SDA's to lessen wildfire severity is very important.

2. Historically, the perimeters of the G-10 Impact Areas and the road network in the SDA's have been used as base lines for ignition of the areas during control burning operations.

3. In the past, only the range fan of the G-5 and G-7 ranges in the N-1 SDA have been control burned. Presently, the NREA Division is investigating the possibility of using aerial ignition to control burn impact areas and SDA's. The use of this type of device, either purchased by NREA Division or contracted, would greatly increase the quality of the burn and reduce the man hours and hazard to employees engaged in the burning.

4. Also in the past, other timber management activities logging, site preparation and wildfire suppression have occurred in G-5, G-7 and G-10 SDA's without a safety problem. Currently, there is approximately 5.7 million dollars worth of timber in these areas. However, there is no legal requirement to manage timber resources in these SDA's.

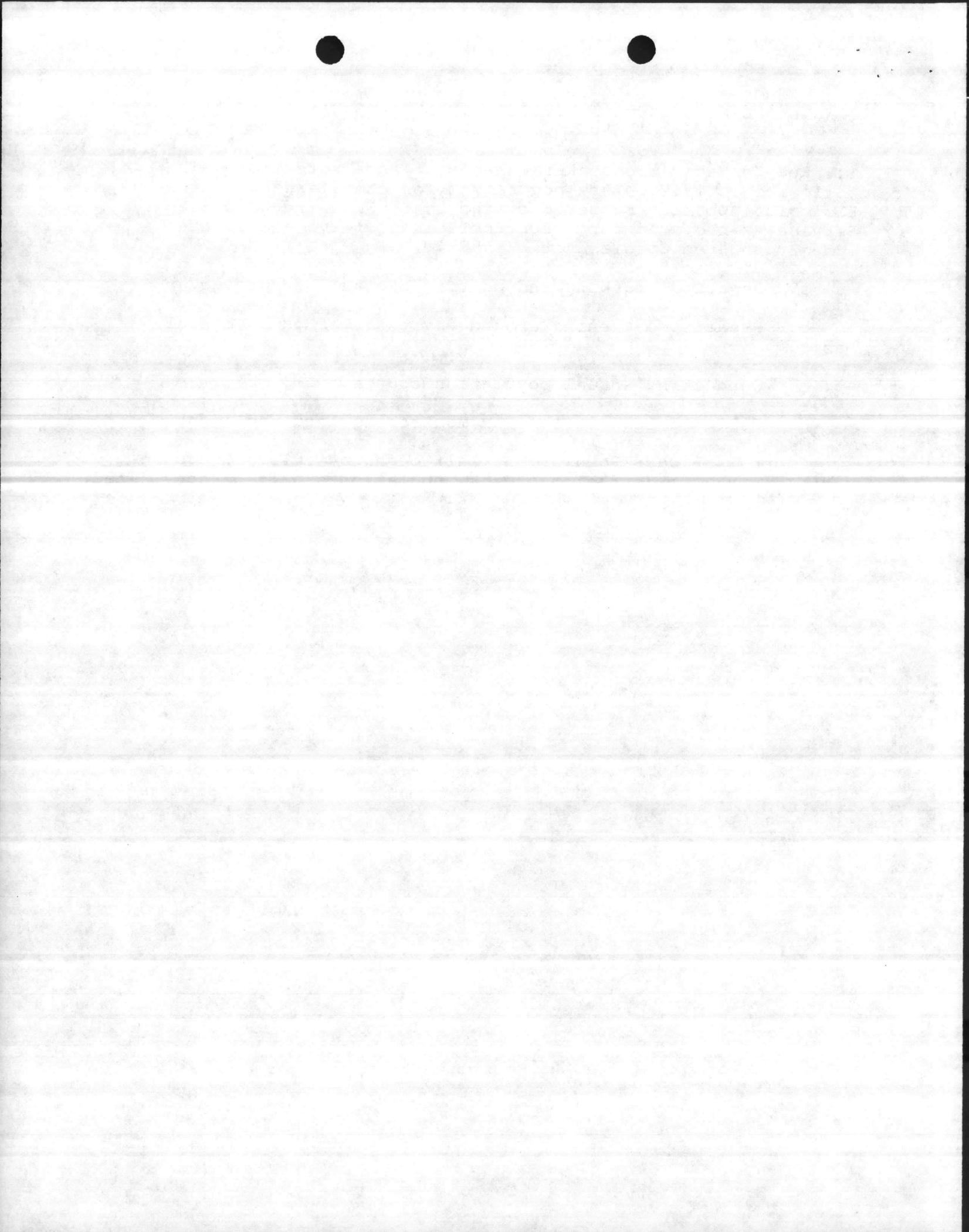


WILDLIFE MANAGEMENT ACTIVITIES IN SURFACE DANGER AREAS (SDA's)

1. Red-Cockaded Woodpecker Management and Protection: The following activities are programmed for compliance with the Biological Opinion rendered by the U. S. Fish and Wildlife Service as provided for under Public Law 91-205, as amended (The Endangered Species Act of 1973).

- a. Locating, marking and posting habitat boundaries.
- b. Prescribed burning around cavity trees on an annual basis.
- c. Conducting annual population counts.
- d. Periodic inspections for monitoring land use impact.

2. Control of Deer Population: Although not a legal requirement, hunting to control the deer population should be considered.





UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

IN REPLY REFER TO:  
12550  
CPD  
4 Mar 85

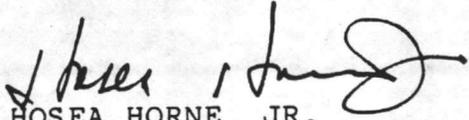
From: Commanding General, Marine Corps Base, Camp Lejeune  
To: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune

Subj: PAY DIFFERENTIALS IRREGULAR INTERMITTENT HAZARDOUS DUTY

Ref: (a) Director, NREAD ltr 12000 dtd 28 Feb 85  
(b) FPM Supplement 990-2, Book 550. S9-5

1. The work situation described in reference (a) has been reviewed by the Classification Staff. As a result of this review, it is concluded that the work situation discussed warrants payment for hazardous duty for Explosives and Incendiary Materials as described in reference (b). General Schedule employees are the only category of employees authorized payment under this approval.

2. The category "Explosives and Incendiary Materials" is payable for all hours in a pay status at the rate of 25% of base pay. An employee is entitled to payment of the hazardous duty pay for all hours of a shift for exposure to the work situation discussed at any time during an assigned shift.

  
HOSEA HORNE, JR.  
By direction

Copy to:  
Civilian Payroll

ENCLOSURE (6)



12000  
NRFAD  
28 Feb 1985

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Civilian Personnel Officer (Attn: Classification Division)  
Marine Corps Base, Camp Lejeune

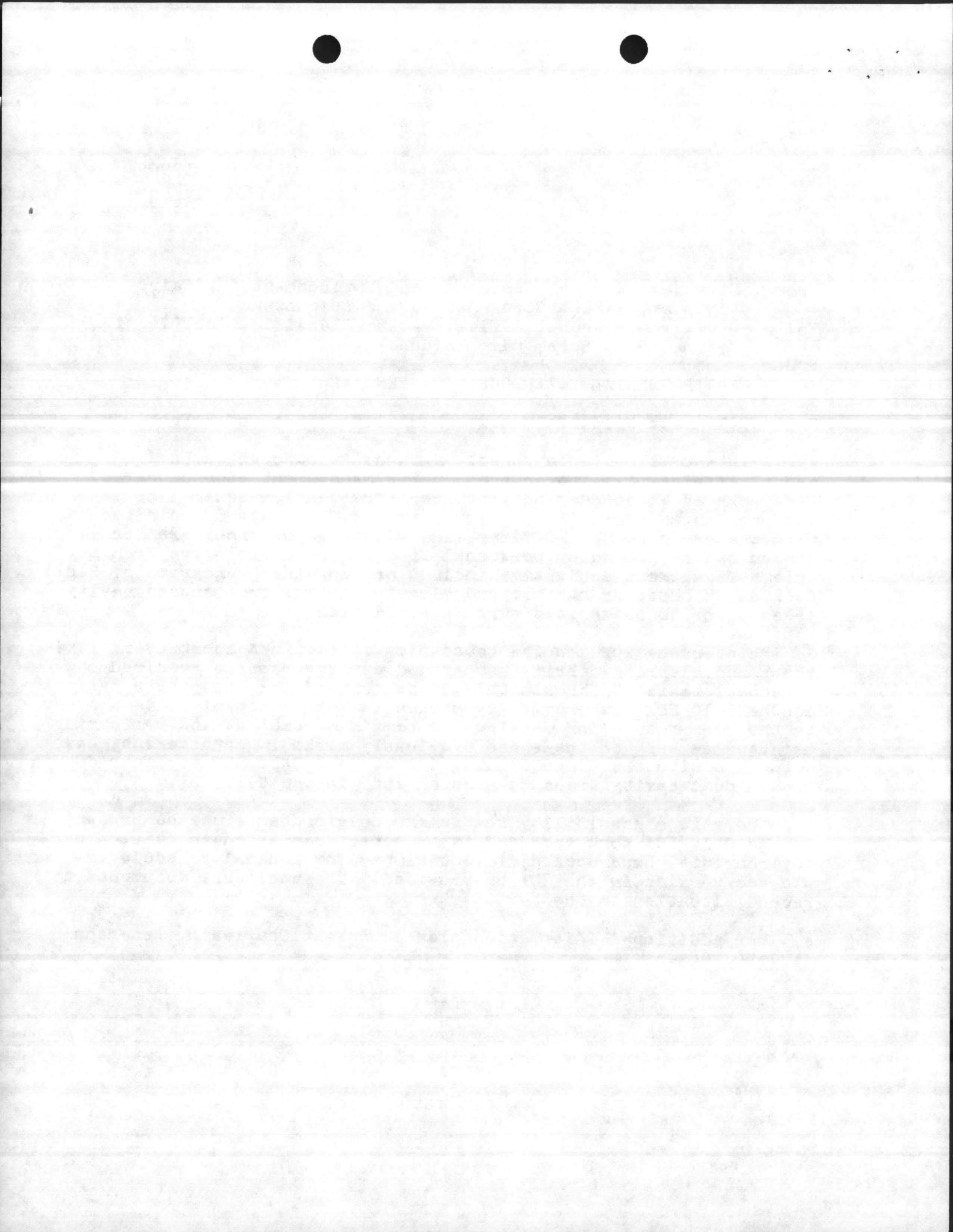
Subj: ENVIRONMENTAL HAZARDOUS DIFFERENTIAL

Encl: (1) Base Wildlife Manager Memo 11015 NREAD of 4 Feb 1985

1. Fish and Wildlife personnel, Natural Resources and Environmental Affairs Division engaged in the management of endangered Red-Cockaded Woodpecker habitat are infrequently required to enter surface danger areas (SDA). Entry to SDA is always coordinated with the Range Control Officer, and Wildlife personnel are accompanied on the ground by personnel from the Base Explosive Ordnance Unit. Management activities include marking the boundaries of Red-Cockaded Woodpecker habitat and clearing debris from around cavity trees prior to prescribed burning activities.
2. Maintenance work on the boundaries is required about every five years and clearing debris from around cavity trees is required on an annual basis. Approximately 90 percent of the woodpecker habitat in the G-10 SDA was previously marked in 1980. A project is planned in the near future for marking the remaining habitat and performing maintenance work on the areas previously marked. Arrangements have been made with the Range Control Officer and Base EOD to clear debris from around cavity trees on 4 March 1985 in the G-10 SDA.
3. There is a possibility that unexploded ordnance may be present in the G-10 SDA work area and it is hereby requested an opinion on environmental hazardous differential pay for general schedule employees working in the SDA be provided. The enclosure documents a recent situation in the K-2 SDA.
4. For additional information please contact Charles D. Peterson at 1690/2083.

J. I. WOOTEN

Copy to:  
AC/S FAC

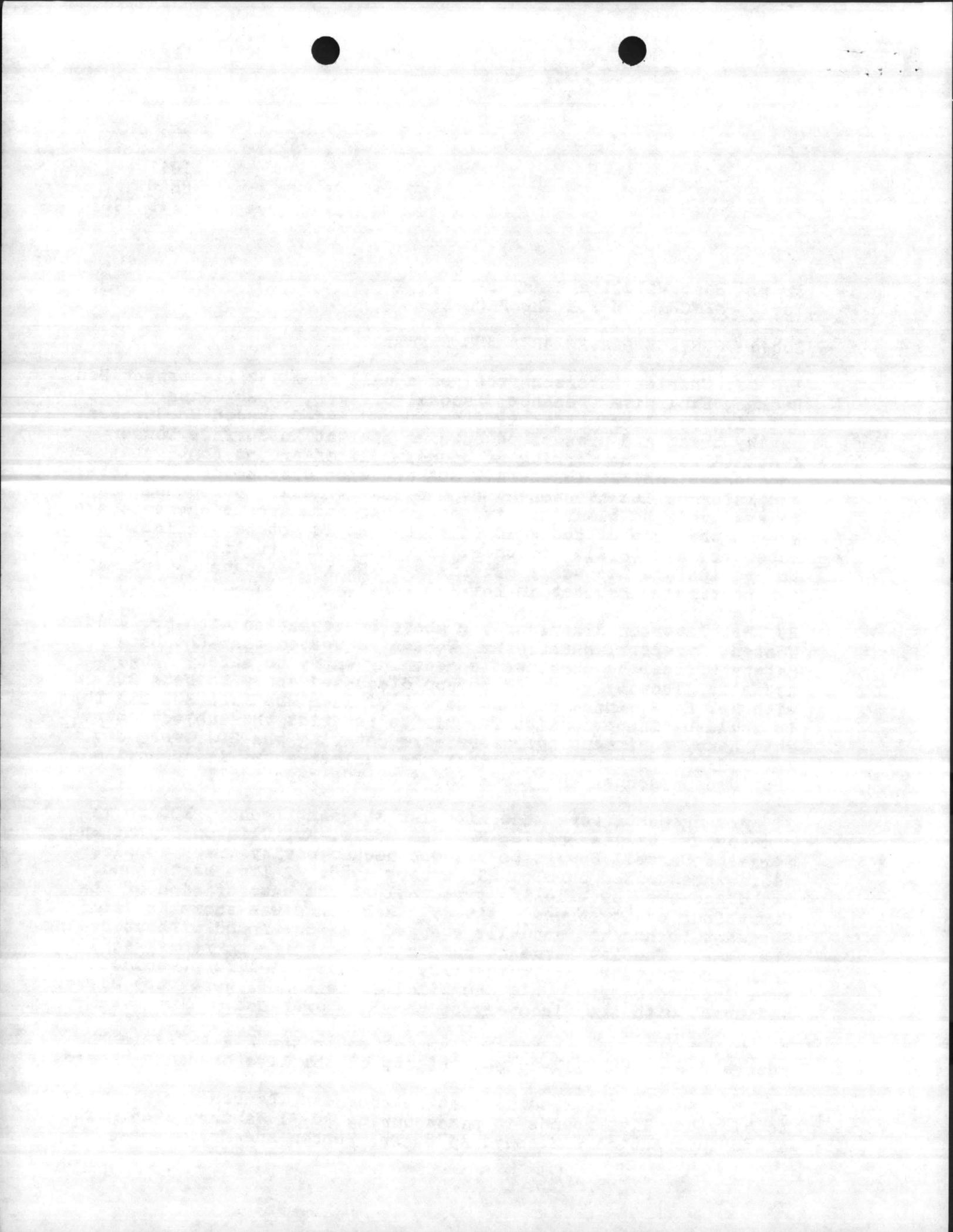


11015  
NREAD  
4 Feb 1985

From: Base Wildlife Manager  
To: MEMORANDUM FOR THE RECORD

Subj: SURFACE DANGER AREA AND SAFETY

1. Mr. Charles Peterson received a call from 1st Lieutenant Ben Redman, Explosive Ordnance Disposal Officer, on 28 January 1985 relative to clearing debris from around Red-Cockaded Woodpecker cavity trees and prescribed burning habitat in Surface Danger Areas (SDA). The marking of boundary lines around contiguous woodpecker habitat in the K-2 SDA was also discussed. Mr. Peterson informed 1st Lieutenant Redman that wildlife personnel would be available to clear debris/prescribed burn around cavity trees around the edge of the G-10 (SDA) but would not be available to enter the K-2 (SDA). Further, that NREAD instructions had been to provide the necessary materials to Range Maintenance for marking contiguous habitat in the K-2 (SDA).
2. Mr. Peterson discussed the above conversation with Mr. Julian Wooten, Director, NREAD. Mr. Wooten requested that the Base Safety Officer be contacted concerning entry to safety danger areas as discussed. Mr. Peterson discussed entry to both SDA with Mr. R. J. Andrews, Base Safety Officer who informed him that it would be inappropriate for him to restrict the subject entry when heavy equipment operators were entering the SDA every day. Mr. Andrews further stated that the subject entry is authorized provided personnel are accompanied by EOD personnel.
3. Arrangements were made with 1st Sergeant Lecher, EOD to accompany Mr. Willie Bostic, Mr. Sam Poole, Mr. Clinton Bryant and Sergeant Darrell Bowers to the woodpecker cavity trees to clear debris/prescribed burn on 29 January 1985. A live heat round was discovered by Wildlife personnel at the base of each of the first four cavity trees visited. Each round was shown to 1st Sergeant Lecher who actually stepped over one round without seeing the same. The 1st Sergeant used a pocked knife to remove soil from around one round to identify it while Wildlife personnel were located nearby. All the Wildlife personnel were very nervous and upset with the discovery of the live ordnance.
4. Mr. Bostic was instructed to not enter the K-2 (SDA) in the future due to the likely possibility of the live ordnance hazard.
5. Mr. Bostic informed me that 1st Sergeant Lecher was planning to blow the live rounds in place during 30-31 January 1985. The above information was conveyed to Mr. Wooten and Mr. Andrews.



5040  
NREAD  
9 Feb 87

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

Subj: SAFETY COUNCIL MEETING

Ref: (a) AC/S FAC memo 5101 FAC of 3 Feb 87

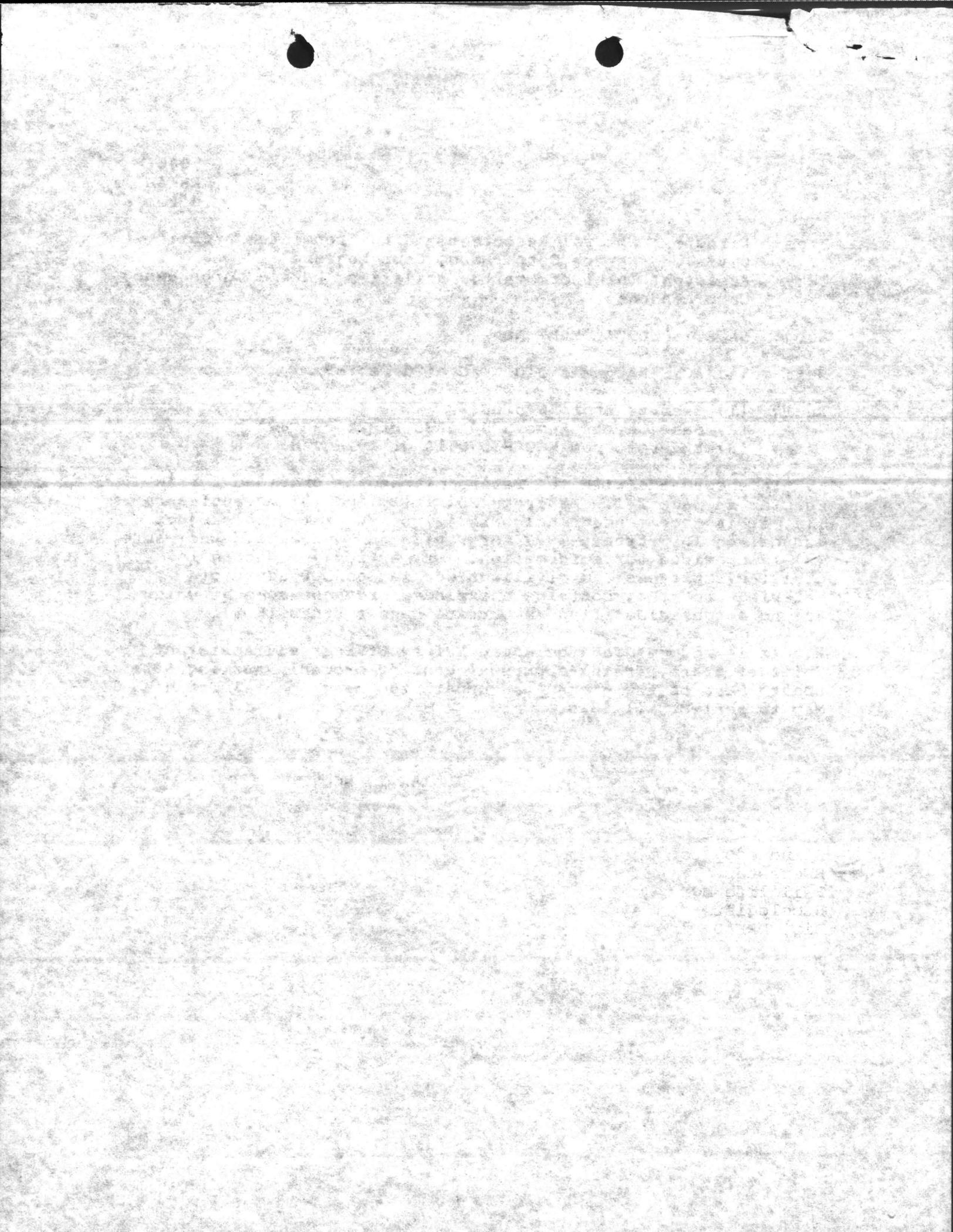
Encl: (1) Excerpt from BO 5100.3F  
(2) Base Safety Memo 5040 SAFD of 26 Jan 87  
(3) Excerpt from MCO P3570.1A of 15 Nov 83

1. In accordance with the reference, and as provided for in Chapter 2, page 2-1, paragraph 202 1b(2) and (3) of enclosure (1), it is recommended enclosure (2) be submitted to subject council on 19 February 1987 for review and guidance. Enclosure (2) is provided for information. Of particular concern is civilian employees and civilians working on DOD contracts entering area that contains unexploded ordnance some of which are no longer classified as Surface Danger Zones (SDZ).

2. It is recommended the Range Safety Officer and Assistant Chief of Staff, Training pursue means of properly marking SDZs aboard base on the ground and update the Base Special Training Map to reflect all SDZs.

JULIAN I. WOOTEN

Blind copy to:  
BForester  
BWildlife Mgr  
BEcologist  
Dir, NREAD



## CHAPTER 2

SAFETY COUNCIL AND COMMITTEES

201. Policy. The following Safety Council and Committees are established as a part of the Base Safety Program to initiate and take action to prevent accidents and injuries, through supervision, education of personnel, and by stressing safety consciousness.

202. Safety Council

1. The purpose of the Safety Council will be:

a. To review periodically the accident experience of the activity and reports of fatal and other serious accidents.

b. To make recommendations to the Commanding General for his action or the action of higher authority for:

(1) Physical or structural alterations designed to eliminate or control hazards.

(2) Changes in policies or procedures to minimize unsafe acts.

(3) Plans to strengthen the activity safety program.

c. The planning of educational and promotional efforts designed to create and maintain interest in safety and promote increased emphasis on accident prevention.

2. The Safety Council shall meet quarterly or more frequently as circumstances warrant.

3. The Base Safety Manager will ensure that all arrangements are made for the meetings and serves as recorder for all sessions.

4. The Safety Council will consist of the following members:

Assistant Chief of Staff, Manpower - Chairman

Security Officer/Provost Marshal, MCB

Safety Officer, 2d Marine Division, FMF

Safety Officer, 2d Force Service Support Group (Rain), FMFLant

Special Services Officer, MCB

Maintenance Officer, MCB

Motor Transport Officer, MCB

Fire Chief, MCB

Training Facilities Officer, MCB

Safety Officer, Naval ~~Regional Medical Center~~ Hospital

~~Safety Officer, Naval Regional Dental Center (Center), New River~~

Representative, American

Federation of Government Employees

Safety Officer, Marine Corps Exchange

203. Supervisor's Safety Committees. Supervisor's Safety Committees shall be established in accordance with the current edition of MCO 5100.8.

204. Shop Safety Committees. Shop Safety Committees shall be established in accordance with the current edition of MCO 5100.8.

205. Eye Hazard Determination Committee. The purpose of the Eye Hazard Determination Committee is to survey areas, processes and operations within their command to determine which are eye hazardous and require the use of eye protection, and whether or not others in the vicinity of these areas or operations should be provided with appropriate safety eyewear. This committee shall meet at the call of the chairman, and shall consist of: Base Safety Manager, Chairman; Chief, Occupational and Preventive Medicine Service, Naval ~~Regional Medical Center~~ Hospital; Assistant to the Assistant Chief of Staff, Logistics; Base Maintenance Officer; and Base Motor Transport Officer (or other designated representative).

206. Hearing Conservation Program. A Hearing Conservation Program is established and implemented in compliance with the current editions of MCC 6260.1, BO 6260.1 and BO 6260.3. It consists of audiometric hearing tests, noise-reduction measures, and personnel protection.

ENCLOSURE (1)



UNITED STATES MARINE CORPS  
BASE SAFETY OFFICE  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA 28542-5000

IN REPLY REFER TO:

5040  
SAFD  
26 Jan 87

From: Base Safety Manager  
To: Assistant Chief of Staff, Facilities (Attn: Director,  
Natural Resources and Environmental Affairs)  
Via: Assistant Chief of Staff, Manpower *SM 1-27-87*

Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ)

Ref: (a) Dir, NREAD ltr 5040 NREAD of 14 Jan 87  
(b) MCO P3570.1A

Encl: (1) BSafMgr ltr 5040/1 SAFD of 3 May 85  
(2) Dir, NREAD ltr 5040 NREAD of 10 Sep 84; 2d Endorsement

1. In response to questions and concerns expressed in reference (a), a thorough review of policy in regard to personnel hazards and safeguards in the G-10 Surface Danger Zone (SDZ) has been conducted by the Base Safety staff. It should be noted that two similar studies were conducted previously in May 1985 and October 1984. Findings and recommendations of those studies are submitted as enclosures (1) and (2), respectively.

2. The enclosures detail longstanding concern and questions of personnel safety, liability and resource management in SDZs.

3. The recommendations previously submitted by this office that SDZs be grouped into Categories (I, II, and III) and that resource management be discontinued in all Category I SDZs, is believed to be the most absolute solution to ensure personnel are not exposed to high explosive hazards known to be present in Category I SDZs.

4. In regard to the question of the redefined G-10 SDZ, it should be noted that the minimum size and configuration criteria for SDZs is specified in reference (b). This office does not have the engineering capability to certify the SDZ boundary. Any questions regarding SDZ boundaries should be forwarded to the Assistant Chief of Staff, Training and Operations.

5. Recommend that the recommendations contained in enclosures (1) and (2) be favorably considered and implemented.

*R. J. Andrews*  
R. J. ANDREWS

ENCLOSURE 12



ENCLOSURE



UNITED STATES MARINE CORPS

Base Safety Office

Marine Corps Base

Camp Lejeune, North Carolina 28542-5000

IN REPLY REFER TO:

5040/1

SAFD

3 May 1985

From: Base Safety Manager  
To: Assistant Chief of Staff, Facilities  
Via: Assistant Chief of Staff, Manpower

*MEB 3 MAY 85*

Subj: CIVILIAN PERSONNEL SAFETY

Ref: (a) Memo 12500 FAC dtd 19Apr85 w/encl (1)  
(b) CPO ltr 12550 CPD dtd 15Apr85  
(c) CG ltr 5800 SJA dtd 13Mar85  
(d) Memo 11015 NREAD dtd 4Feb85  
(e) MCO P3570.1A

Encl: (1) SAFD ltr 5040 2 Oct 84 SDA's and Safety

1. In response to reference (a), a thorough review of command policy, procedures and the hazards associated with entry and work in surface danger areas (SDA's) has been conducted by the safety staff.

2. Findings.

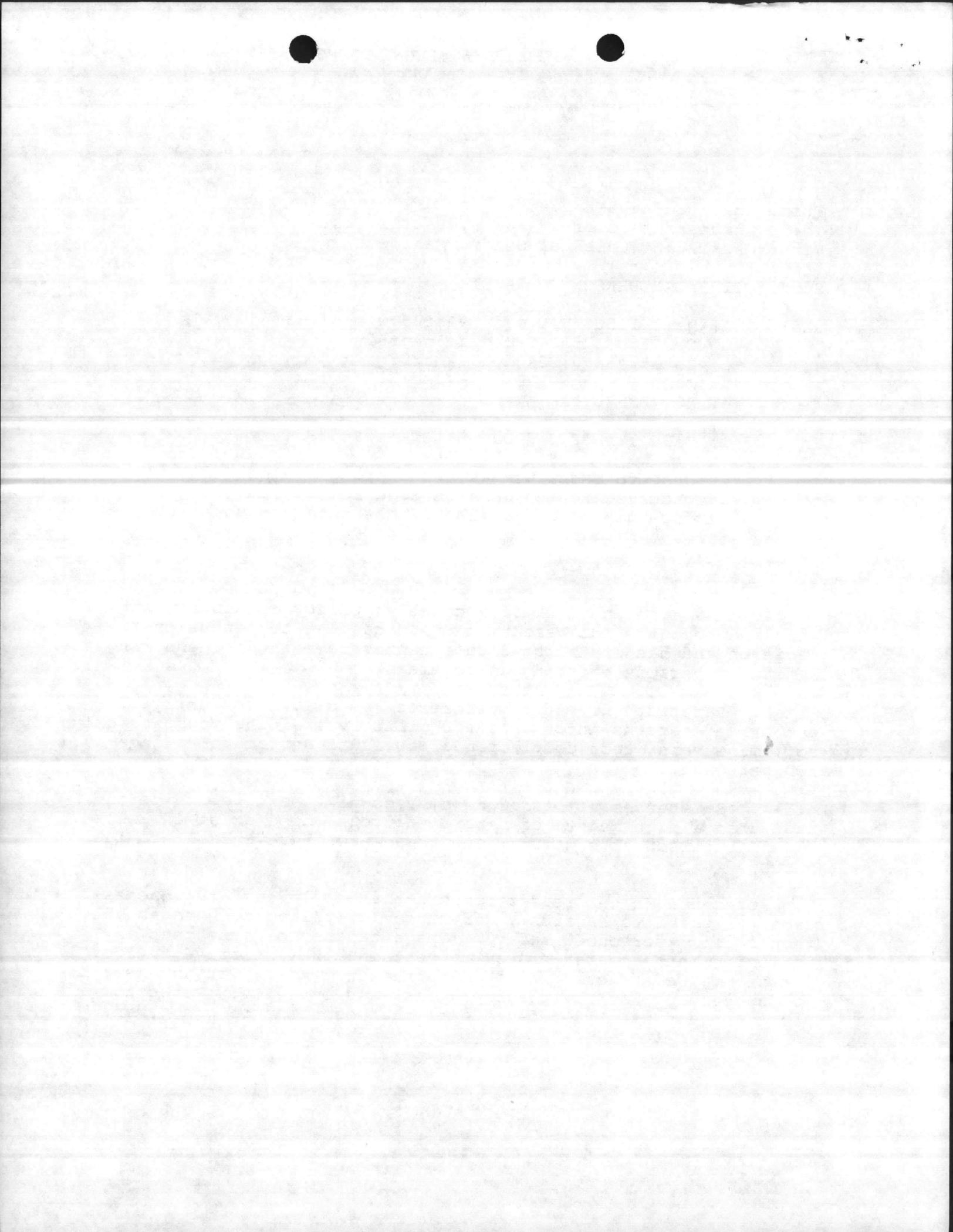
a. The apparent lack of a cohesive policy regarding entry, work and resource management in SDA's has led to confusion, indecision and has contributed to a haphazard method of ensuring the safety of persons entering these areas.

b. Paragraph 2 - 5d of reference (e) allows the entry of authorized persons into SDA's for military training purposes only, eg., maneuvers, upon completion of a visual surface clearance by EOD personnel.

c. References (b) through (d) recognizes and documents the fact that a high degree of hazard (serious) does exist in SDA's and that personnel entering into these areas are subject to the hazard.

3. Reference (b) expressed concern that employees are unnecessarily exposed to hazards. Reference (a) talked of unreasonably jeopardizing personnel safety. There can be no doubt that any intrusion into an area proven to contain high explosive devices constitutes a serious hazard. Whether that hazard is unreasonable or unnecessary must be viewed against its benefits. Personnel safety should take precedence over that of resource management.

ENC L (1)



Subj: CIVILIAN PERSONNEL SAFETY

4. Recommendation.

a. The enclosure is a copy of a letter from the Base Safety Manager to the Assistant Chief of Staff, Facilities dated 2 October 1984. The letter was in response to a request for comments and recommendations regarding employee entry/work in SDA's. The enclosure provided the Assistant Chief of Staff, Facilities with recommendations that would both ensure the safety of personnel and provide for viable resource management.

b. The recommendations contained in the enclosure are re-submitted for consideration with the following modifications:

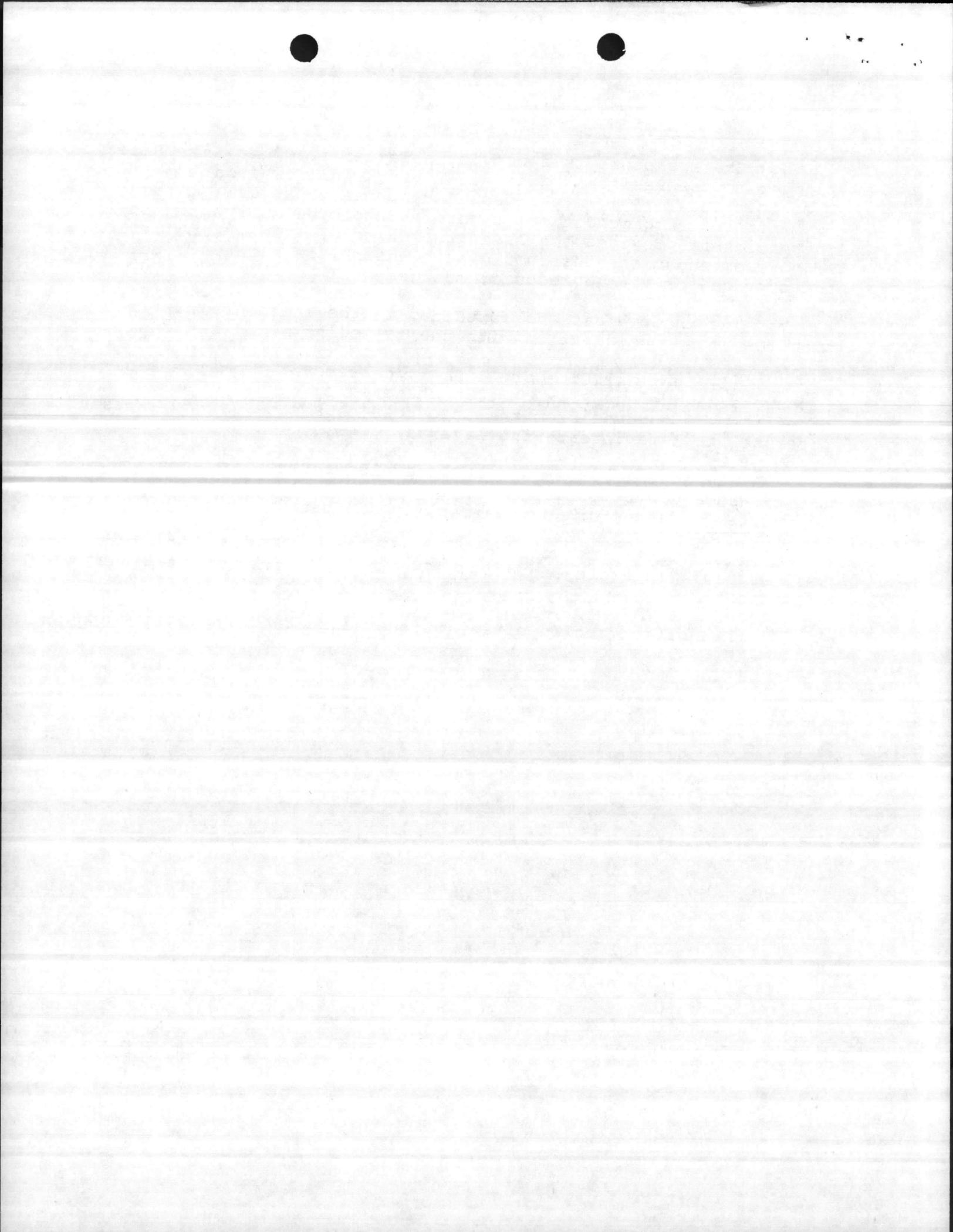
(1) That all Category I SDA's be removed from the Base Resources Management Plan. It is believed that the possible benefit to be derived from the resources does not justify exposing personnel to life threatening hazards.

(2) That a conference be scheduled between personnel of NREAD, Range Control, EOD and Safety to define categories and formulate guidance for SDA restriction and use.

(3) That entry/work policy apply equally to military as well as civilian employees except for bonafide military training missions.

5. If this office can be of any further assistance, please advise.

- *R.J. Andrews*  
R.J. ANDREWS



5040  
SAFD  
2 Oct 84

SECOND ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

From: Base Safety Manager, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune  
Via: Assistant Chief of Staff, Manpower, Marine Corps Base,  
Camp Lejeune

Subj: SURFACE DANGER AREAS AND SAFETY

Ref: (a) MCO P3570.1  
(b) BO P11102.1J

1. The first endorsement to the basic letter requested this office conduct an investigation and provide comments and recommendations relative to safety of workers who must enter Surface Danger Areas (SDA's), formerly referred to as impact areas and buffer zones.

2. Subject investigation was conducted on 24-27 Sep 84 by Base Safety personnel.

3. Findings:

(a) Prior to a November 1983 range safety assistance visit conducted by Mr. Paul Pennington, U.S. Army Range Safety, all areas formerly designated as buffer zones (with the exception of the K-2 area) were included in the resource management plan. As a result of observations and comments made by Mr. Pennington, NREAD operations in SDA's were halted.

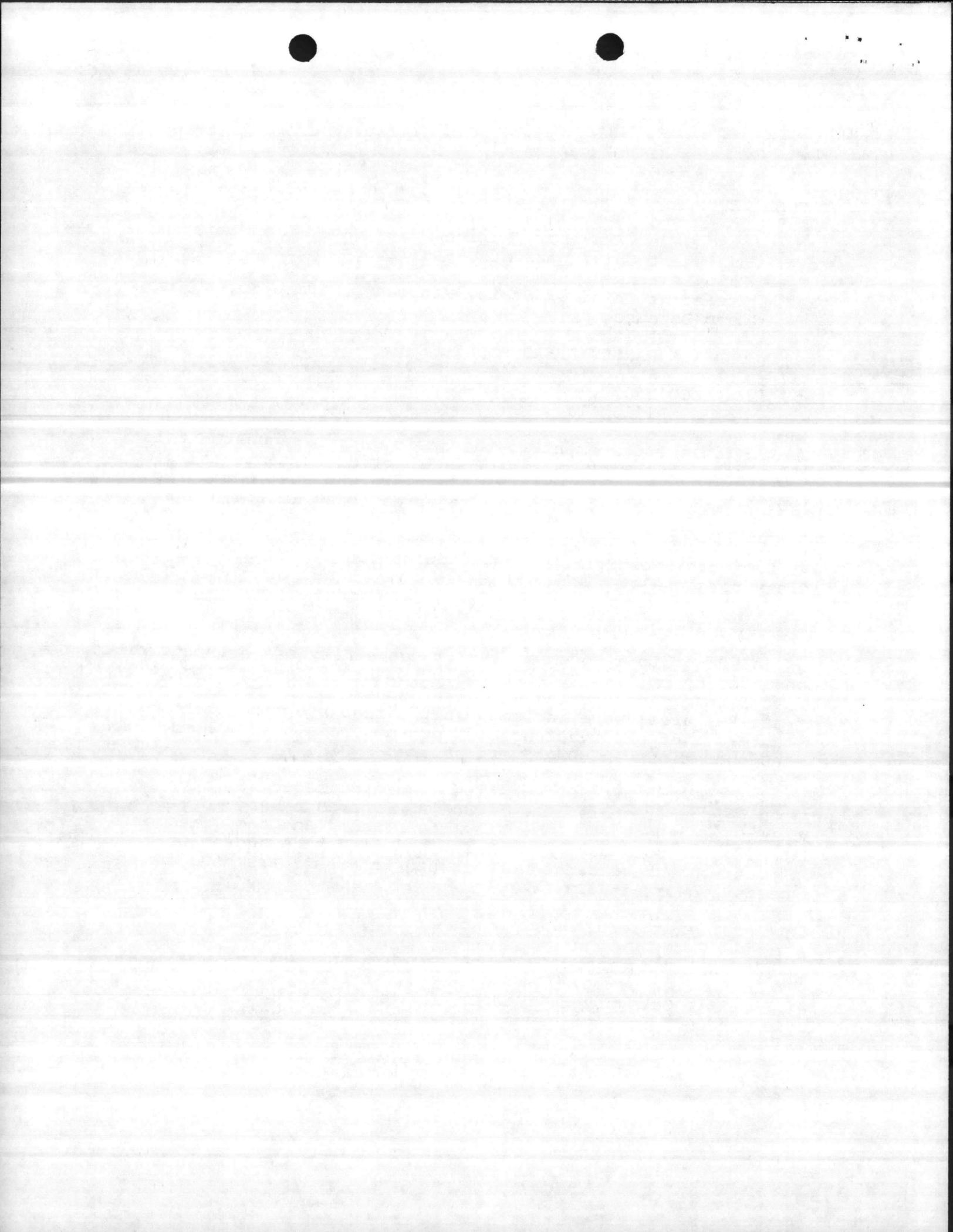
(b) In June of 1984 questions again surfaced relative to NREAD personnel operations in SDA's. Correspondence on 30 Aug 84 between the Base Wildlife Manager and the Director of NREAD, point out that no decision had been made and no written instructions or guidance were issued to NREAD personnel in regards to work in SDA's.

4. Recommendations and comments are as follows:

(a) All ranges and SDA's be divided into three categories

(1) Category I: Ranges/ SDA's into which exploding type ordnance and projectiles may be delivered or found.

(2) Category II: Ranges/SDA's that are used only for live firing of small arms (non-exploding rounds).



Subj: SURFACE DANGER AREAS AND SAFETY

(3) Category III: Areas used for training other than live fire.

(b) All SDA's listed in Category I should be reserved for their intended purpose (that being a live fire impact area). These areas should be used for training only, as safety considerations preclude any justification for resource management in Category I areas.

(c) Resource management in Category II and III areas can be accomplished without undue danger to personnel, providing strict adherence to check in and entry procedures of reference (a) and (b) are enforced.

(d) Current range control and entry procedures outlined in reference (a) and (b) are adequate to insure that authorized personnel do not enter SDA's while ranges are "HOT".

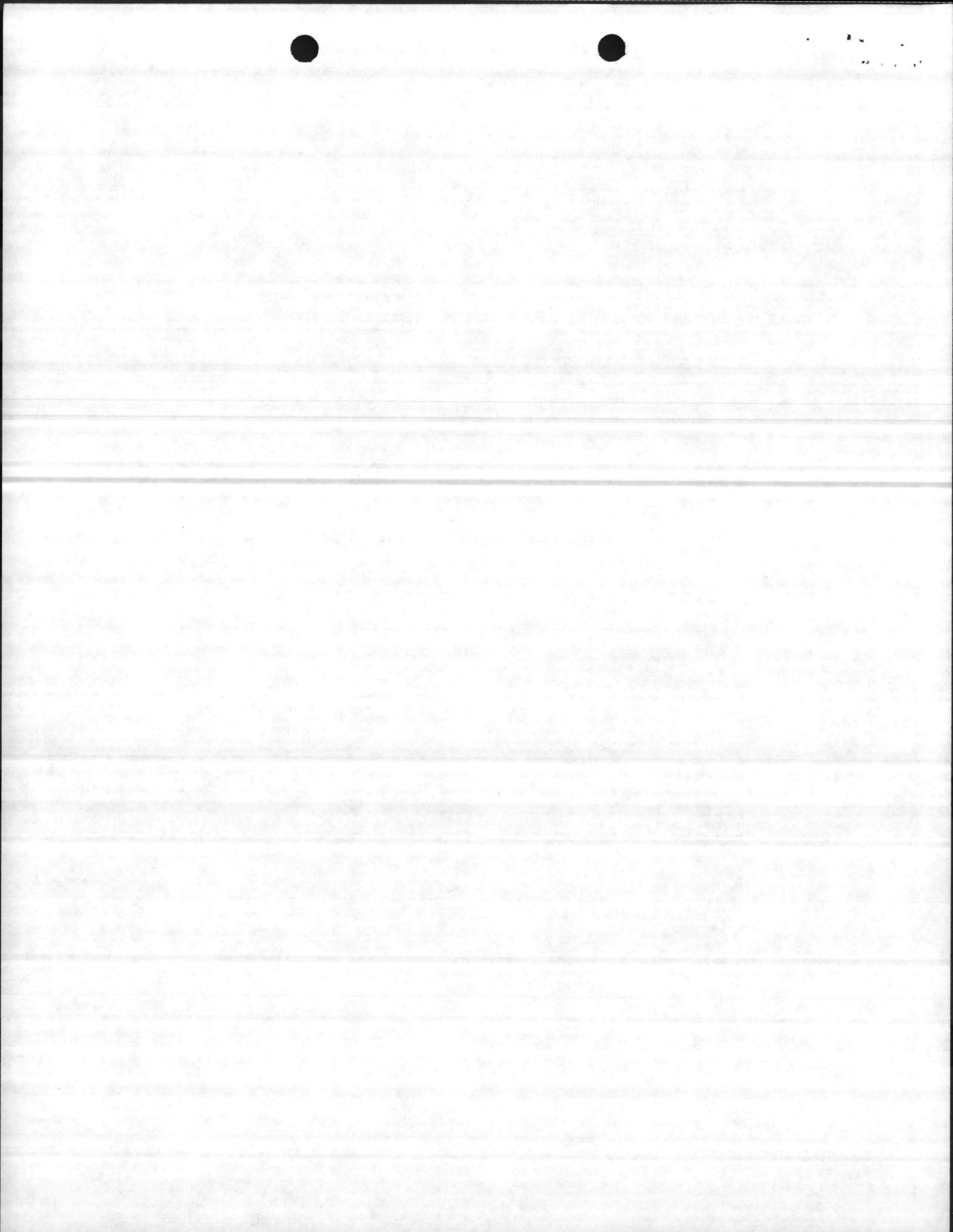
R. J. ANDREWS

Copy to:

NREAD

BMO

CPD



UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5000

5100  
FAC  
21 SEP 1984

FIRST ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

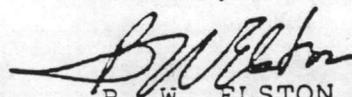
From: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

To: Assistant Chief of Staff, Manpower <sup>DWC 9-2-84</sup> (Attn: Base Safety Manager)

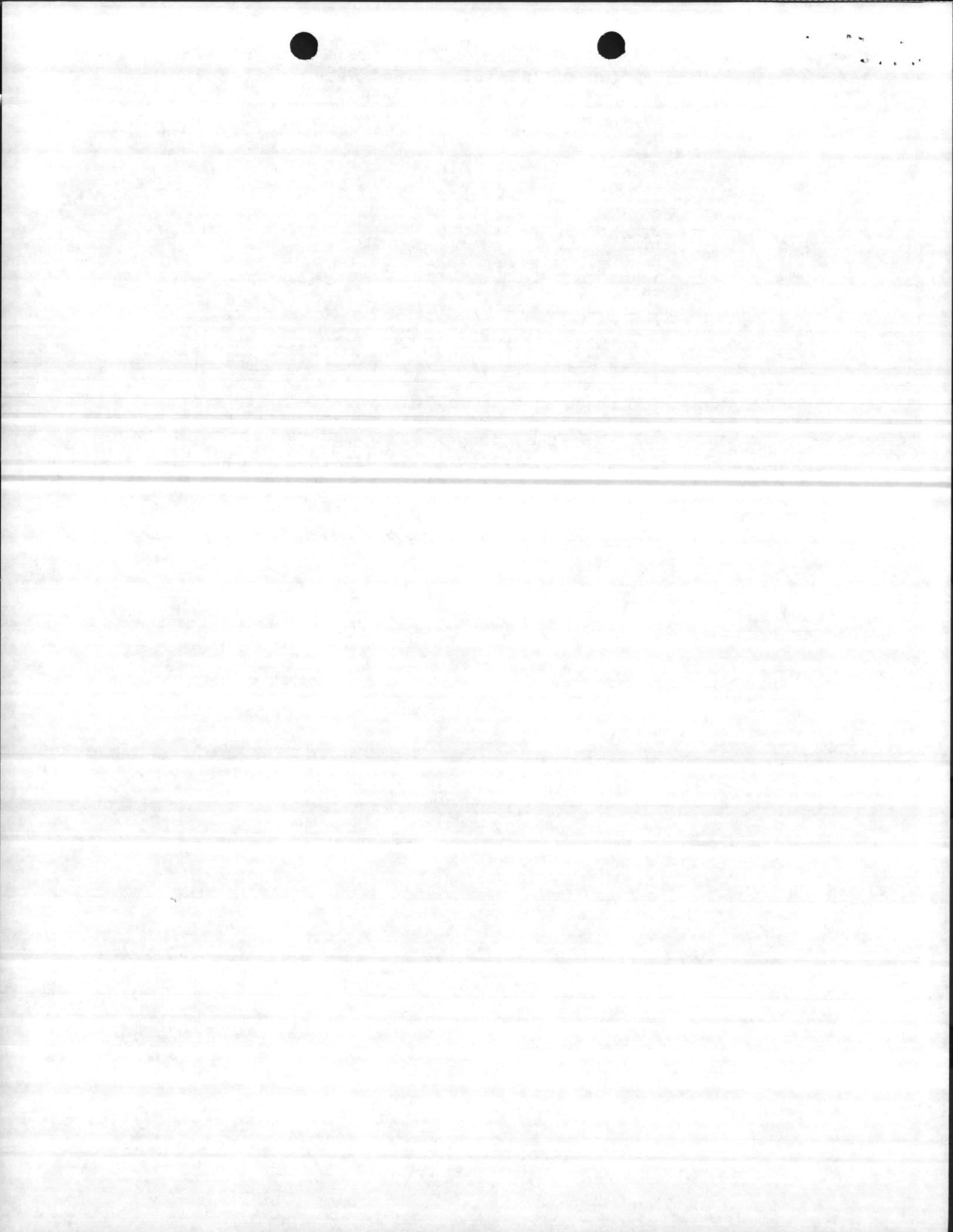
Subj: SURFACE DANGER AREAS AND SAFETY

1. Readdressed and forwarded.

2. The basic correspondence expresses concern for the safety of personnel working in surface danger areas and requests guidance. Request you please investigate and provide comments and recommendations.

  
B. W. ELSTON  
Acting

Copy to:  
NREAD  
BMO  
CPO





UNITED STATES MARINE CORPS  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 29542

IN REPLY REFER TO:  
5040  
NREAD  
Sep 10 1984

From: Director. Natural Resources and Environmental Affairs  
Division. Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff. Facilities. Marine Corps Base,  
Camp Lejeune

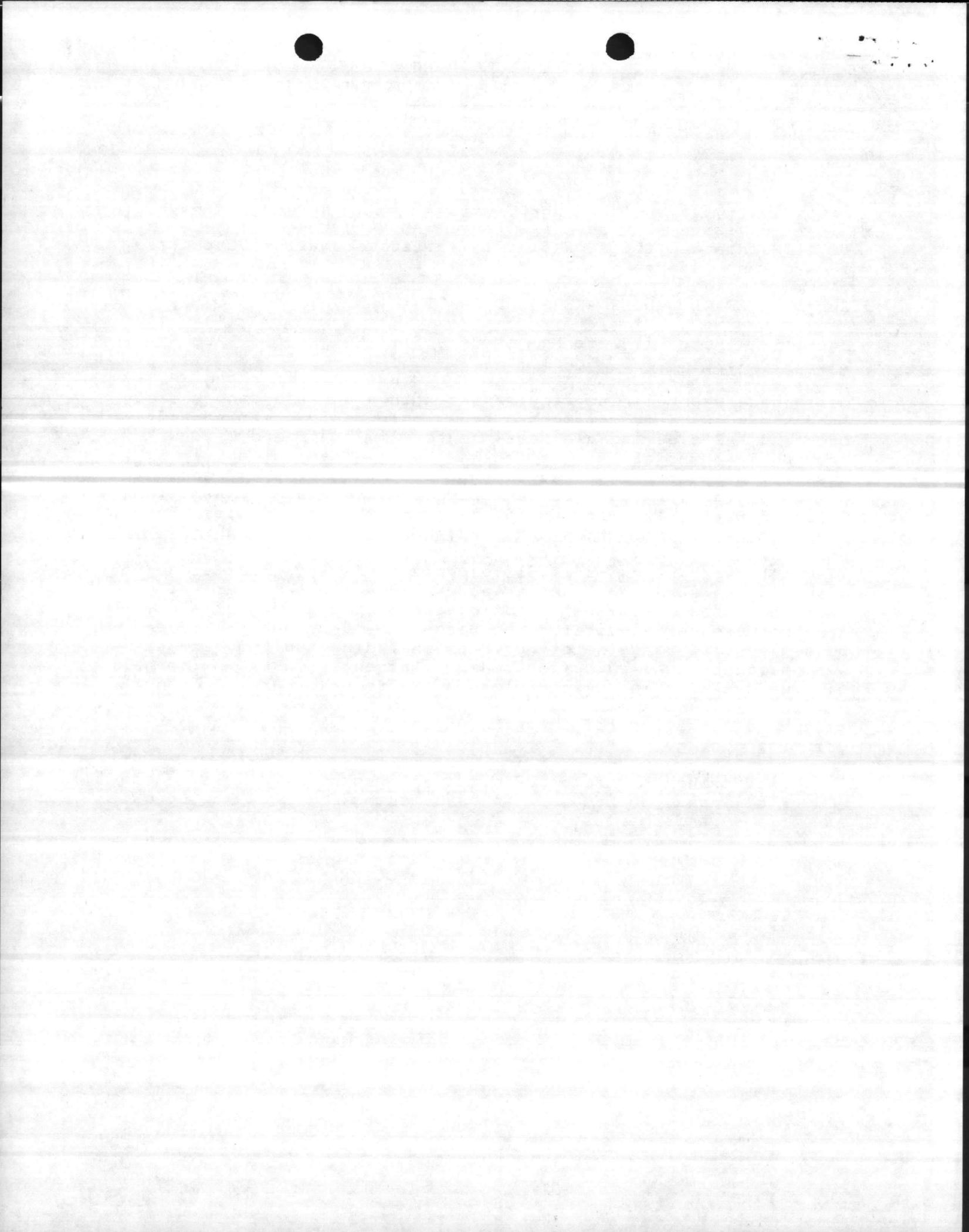
Subj: SURFACE DANGER AREAS AND SAFETY

Encl: (1) Base Wildlife Mgr ltr 11015/1B NREAD of 30 Aug 84

1. The enclosure documents recent discussion concerning NREAD personnel accomplishing required work in a surface danger area. As you are aware from recent discussion on G-10 clearing and proposed K-2 clearing/drainage project, my staff and I view working in a surface danger area as being a serious matter from a safety standpoint. On at least two occasions, the Assistant Chief of Staff, Facilities has formally requested the Assistant Chief of Staff, Training to advise as to what activities (Base Maintenance, Public Works and Natural Resources) could be accomplished safely in surface danger and live-fire range areas. I am not aware of an official response on safety precautions for operating in surface danger areas or live-fire range areas. There have been meetings and discussions on the subject since an Army representative visited the Base on 8-10 November 1983 and raised several range safety points (including hunting) in what was originally called buffer zones. Currently, NREAD personnel pick up daily training schedules to try to make sure we do not get in a live-fire situation. If in doubt, NREAD personnel telephone Range Control to check on range utilization before entering a range or fan.

2. Considering the enclosure, it is respectfully requested the AC/S Facilities provide safety instructions for NREAD to operate in surface danger areas.

*J. I. Wooten*  
J. I. WOOTEN



File  
DLC

15 October 1983

Effective 15 November 1983

Safety

Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat

**Summary.** This revision clarifies requirements on ranges for officers in charge and range safety officers, incorporates revised ballistic data affecting surface danger zone diagrams for small arms, incorporates new standardized range design for hand grenade ranges, and clarifies combined arms live fire exercises and laser operations.

**Applicability.**

a. This regulation applies to—

(1) The Active Army, United States Military Academy (USMA), Army National Guard, US Army Reserve, and Army Reserve Officers' Training Corps (ROTC) in range or firing activities located on or within a military installation.

(2) All Marine Corps activities of the regular establishment and to all units of the Marine Corps Reserve. Chapter 13, 16 and 19 apply to all Marine Corps units unless the requirements conflict with US Navy or local aerial range regulations, in which case the US Navy or local range regulations will take precedence.

(3) All training and target practice activities.

(4) All military real estate areas that are being or have been used as bombing ranges; artillery impact areas; target areas; and other areas exposed to contamination by military explosives, chemicals, or other dangerous materials.

b. The requirements of this regulation are advisory for actual combat conditions.

c. US Army Training and Doctrine Command (TRADOC) test organizations will comply with the provisions of this regulation unless HQ TRADOC, ATEN-S, grants a specific waiver.

d. Except for airspace safety requirements (para 2-2) and water traffic requirements (para 2-3), this regulation does not apply to development, proof, and function test ranges and laboratories of the US Army Materiel Development and Readiness Command (DARCOM); however, the necessary precautions will be taken to insure the preservation of life and property.

**Impact on New Manning System.** This regulation does not contain information that affects the New Manning System.

**Supplementation.** Supplementation of this regulation is prohibited unless prior approval of US Army Training and Doctrine Command, ATTN: ATEN-S, Fort Monroe, VA 23651.

**Interim changes.** Interim changes to this regulation are not official unless they are authenticated by The Adjutant General. Users will destroy interim changes on their expiration dates unless sooner superseded or rescinded.

**Suggested improvements.** The proponent agency of this regulation is the US Army Training and Doctrine Command. Army users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, US Army Training and Doctrine Command, ATTN: ATEN-S, Ft Monroe, VA 23651; Marine Corps activities to the Commandant of the Marine Corps (Code OT), Headquarters, US Marine Corps, WASH, DC 20380.

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\*This regulation supersedes AR 385-63, 22 February 1978.

ENCLOSURE (3) 1

ENCLOSURE (3)

## Chapter 1 General

### 1-1. Purpose

This regulation prescribes general safety precautions necessary to minimize the possibility of accidents in the firing and other uses of ammunition and explosives by troops in training, target practice, and as much as possible, combat and range operations, including range clearance.

### 1-2. References

Required and related publications are listed in appendix A.

### 1-3. Responsibilities

*a.* Commanding General, US Army Training and Doctrine Command (TRADOC); Commanding General, US Army Forces Command (FORSCOM); Commanding General, US Army Materiel Development and Readiness Command (DARCOM); Commanding generals of oversea commands are responsible for assuring that range safety procedures are established consistent with this regulation.

*b.* The Commanding Generals of Fleet Marine Forces; Atlantic and Pacific; commanding generals of all supporting establishment commands; and the Commanding Generals of the 4th Marine Division and the 4th Marine Aircraft Wing are responsible for assuring that range safety procedures are established consistent with this regulation.

### 1-4. Explanation of terms

Abbreviations and special terms used in this regulation are explained in the glossary.

### 1-5. Special instructions

*a.* Instructions and dimensions for surface danger zone diagrams (safety fans) will be developed and specific danger areas will be indicated. The depicted surface danger zones are the minimum requirements. They are adequate only when employed with properly functioning safety equipment and devices, and when trained and competent personnel follow firing procedures (See sample drawings in figs 1-1 and 1-2).

*b.* In training with ammunition and explosives, general firing requirements will be followed. However, under certain conditions, specific types of firings may be conducted at locations having less land or air area than required. By employing additional controls and limiting the types of firings, the desired firing can sometimes be achieved under less restrictive conditions. (see waivers in para 1-6.)

*c.* The following types of procedures must be developed:

(1) Standing operational procedures (SOP) for the safe firing of specific munitions and explosive devices.

(2) Operational procedures for planning and conducting range clearance operations.

(3) Local procedures or regulations designed to minimize the potential for personal injury and property damage that prescribe or refer to additional precautions in applicable technical manuals (TMs) and field manuals (FMs) for the particular weapon, munition, explosive device, and classes of fire.

*d.* During prefiring preparations and firing, all munitions, components, and explosives will be handled according to the applicable TMs and FMs.

*e.* Any person who observes a condition that makes firing dangerous will promptly command CEASE FIRING and will give the locally prescribed signal for cease firing to the firing unit. This command signal will be included in the local firing SOP.

*f.* Accidents caused by firing or evidence that would indicate that the safety provisions of this regulation are inadequate will be reported by letter. The letter must give all pertinent information on the alleged inadequacy of the regulation (exempt report, para 5-2*n*, AR 335-15).

(1) Army activities will send reports to the Commander, US Army Training and Doctrine Command, ATTN: ATEN-S, Fort Monroe, VA 23651.

(2) Marine Corps activities will send reports through the normal chain of command in accordance with MCO 8025.1 to the Commandant of the Marine Corps (Code T), Washington, DC 20380.

(3) National Guard activities will send reports to the Chief, National Guard Bureau, ATTN: ARNG Safety Office (NGB-AVN-S), Aberdeen Proving Ground, MD 21010.

### 1-6. Waivers

*a.* The following persons may waive safety criteria of this regulation if it is acceptably safe and is in the best interest of the United States.

(1) Commander of each major Army command (MACOM).

(2) Superintendent, USMA.

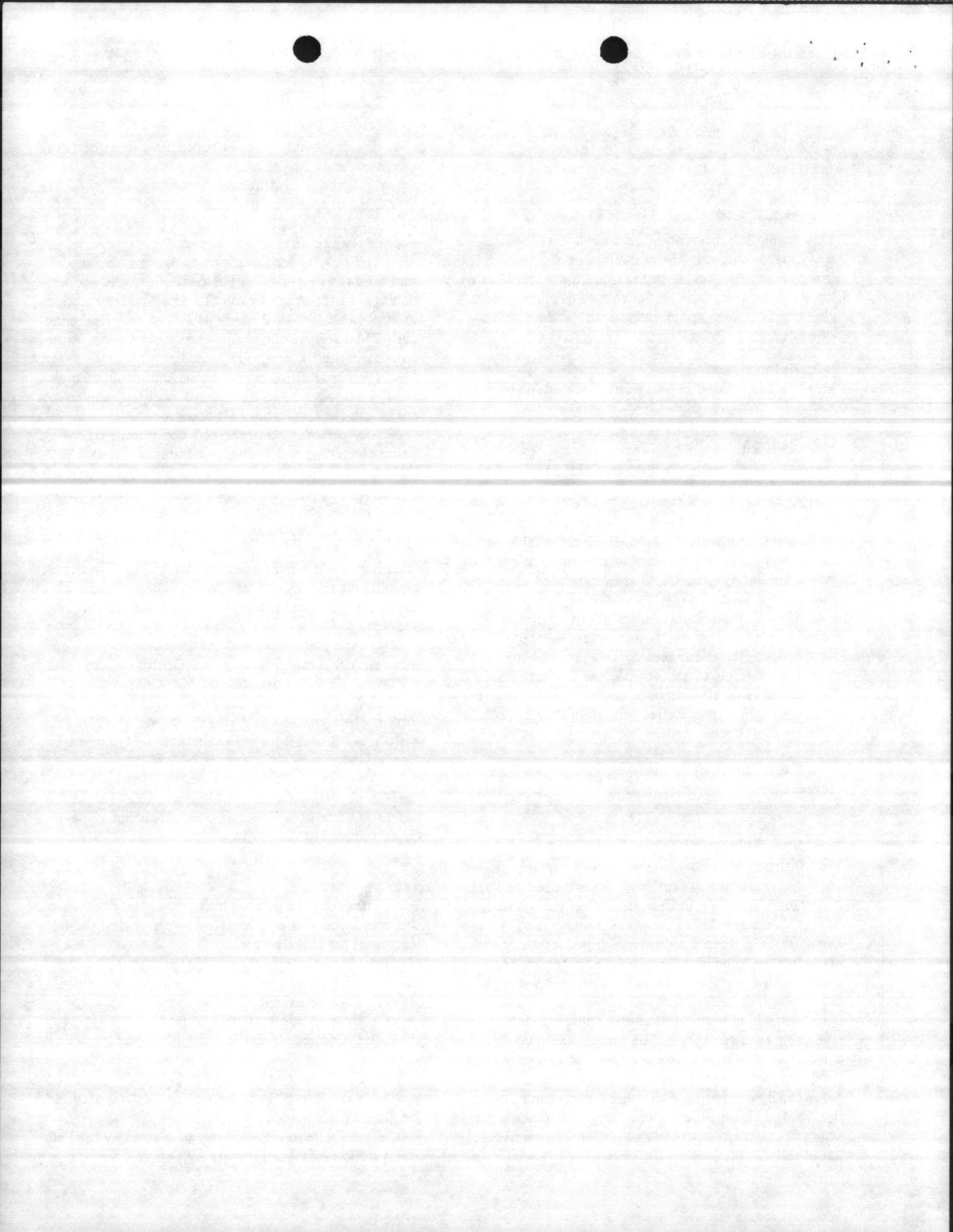
(3) Chief, National Guard Bureau.

(4) Commanding generals of Fleet Marine Force, Atlantic.

(5) Fleet Marine Force, Pacific.

(6) All Marine Corps recruit depots, air stations, air station (helicopter).

*b.* Airspace requirements may be waived by the Federal Aviation Administration (FAA) only.



c. Water traffic requirements, as they apply to firing over navigable waters, may be waived by the US Army Corps of Engineers only.

d. The authority delegated to a commanding general may be subdelegated to a general officer in a command position. This authority may not be further subdelegated. An installation commander delegated waiver authority will be limited to—

(1) Reducing the dimensions of surface danger areas when the terrain, artificial barriers, or other controlling factors make smaller areas safe.

(2) Modifying prescribed firing procedures appropriate to the training of participating troops to increase realism in training.

e. Commanders of each MACOM; the Chief, National Guard Bureau; and the Commandant of the Marine Corps may communicate directly with the CG, TRADOC (ATEN-S). They will obtain technical information that will help them to determine if it is advisable to grant waivers. When feasible, any range that fails to meet requirements will be redesigned, rebuilt, or relocated. A central register of waivers granted will be maintained at the MACOM level. It will be reviewed annually for corrections made. Marine Corps commanders will submit requests for technical assistance through normal chain of command channels to the Commandant of the Marine Corps (Code LMG).

f. The waiver authority does not affect the waiver responsibility in AR 385-62 and AR 385-64. It does not permit waiver of airspace safety requirements (para 2-2) and water traffic requirements (para 2-3).

g. The range safety planning for the firing of any ammunition and explosives must include the type of ammunition or explosives, the available terrain, purpose of the firing, atmospheric conditions, adequacy of safety equipment, and procedures. Projectiles or debris caused by firing ammunition or explosives must be contained

within the boundaries of the surface danger zone.

h. Only personnel thoroughly trained and qualified in firing ammunition complete rounds or their components will take part in combat firing and combined arms exercises. This will be on special courses designated for mental conditioning for actual combat.

i. When the technical assistance of TRADOC, the Commandant of the Marine Corps, or Chief, National Guard Bureau (e above) is requested, the MACOM will furnish, in writing, the following data to assist in evaluation.

(1) A statement citing the paragraph of this regulation to be waived.

(2) Description of conditions, scaled maps showing distances to internal and external exposures, topographical maps of the area, personnel involved, and facilities exposed.

(3) The type of ammunition and weapons as identified in proper technical manuals.

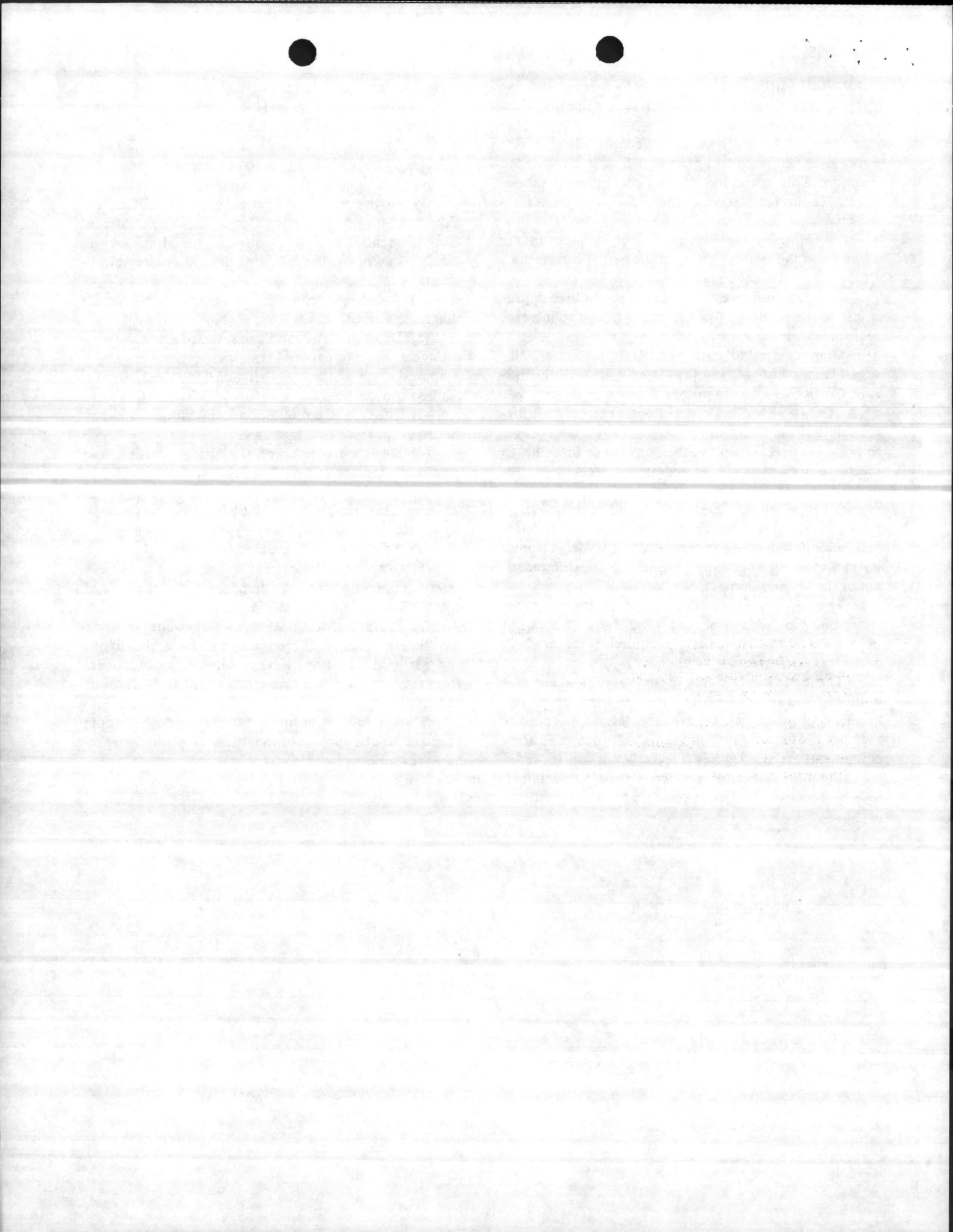
(4) Map coordinates of the firing position and quadrant elevation of fire. The firing position and direction of fire will be plotted on the scaled map and a scaled surface danger zone will be furnished as an overlay for the map. All distances will be shown in meters.

(5) An SOP for firing and range control.

(6) Other precautions that will be taken to achieve safety in operations to fully compensate for the lack of compliance with this regulation.

(7) Profiles through the gun-target-line showing the relative elevation of the piece to be fired, the target, and earthen backstop, if any. Also, furnish profiles from the firing position through the right and left limits of fire.

(8) A MACOM position statement recommending approval or disapproval or modification of the basic request for training.



**SURFACE DANGER ZONE**

**Surface danger zone.** That segment of the range area which is endangered by a particular type of weapon firing and which consists of the following areas:

(1) **Dispersion pattern.** The distribution of a series of rounds fired from one weapon or group of weapons under conditions as nearly identical as possible, the points, bursts, or impacts being dispersed about a point called the center of impact.

(2) **Impact area.** The primary danger area for indirect fire weapons that is established for the impact of all rounds. When applied to direct fire weapons, it is the area located between established range limits. The impact area is within the approved surface danger zone.

(3) **Ricochet area.** The area between the impact area and Area A (or Area G, when applicable) which parallels the line of fire and which is provided to contain ricochet projectiles.

(4) **Area A.** The area (secondary danger area) which parallels the impact area laterally and which is provided to contain fragments from items exploding or ricocheting on the right or left edge of the impact area.

(5) **Area B.** The area (secondary danger area) which is on the downrange side of the impact area and Area A. It is designed to contain fragments from items exploding on the far edge of the impact area.

(6) **Area F.** The area which is immediately to the rear of a weapon or group of weapons and which is endangered by the effects of the weapon being fired.

(7) **Rear range.** The area to the rear of the firing position.

(8) **Gun target line.** An imaginary straight line drawn between the gun and the target.

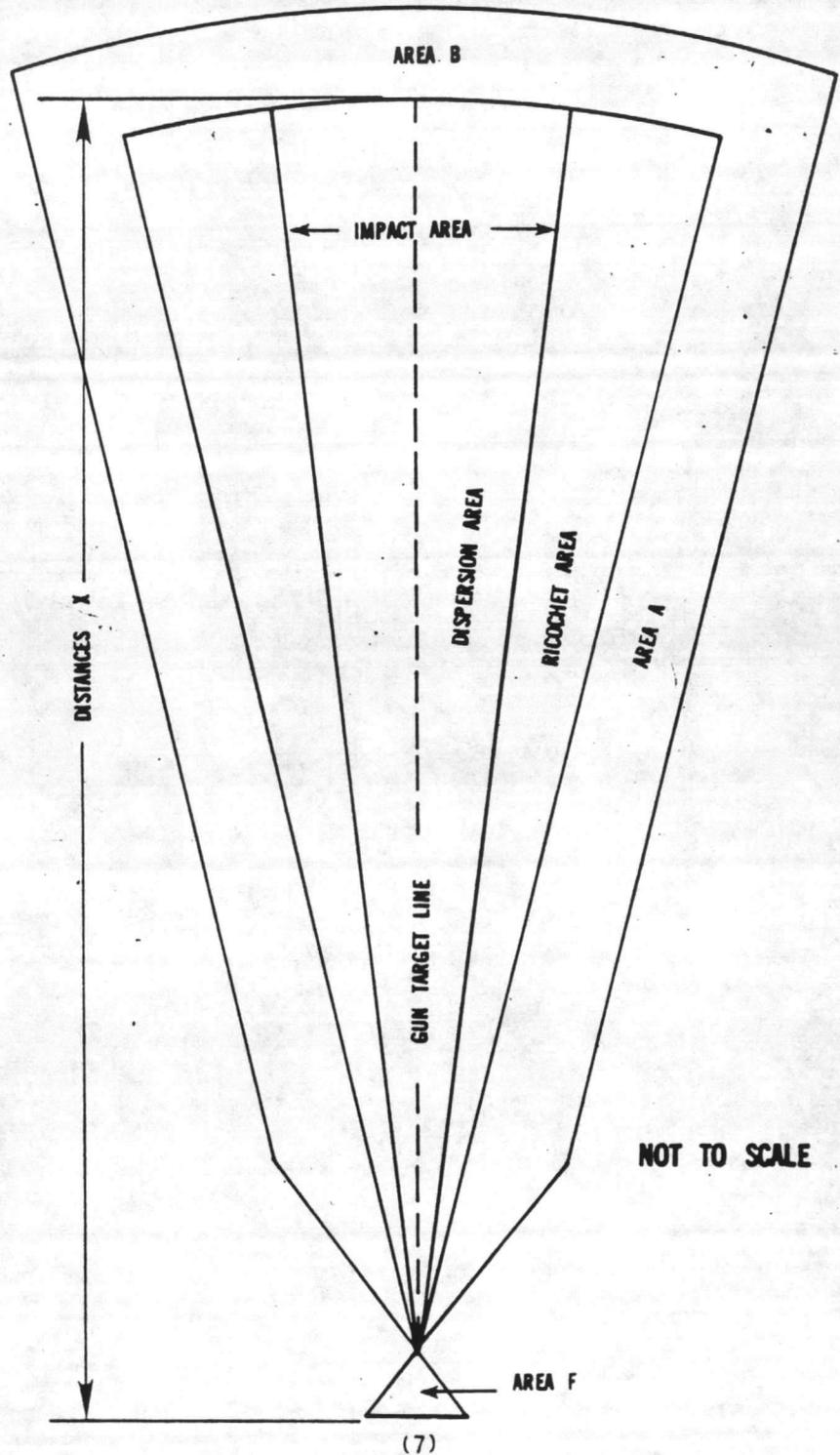
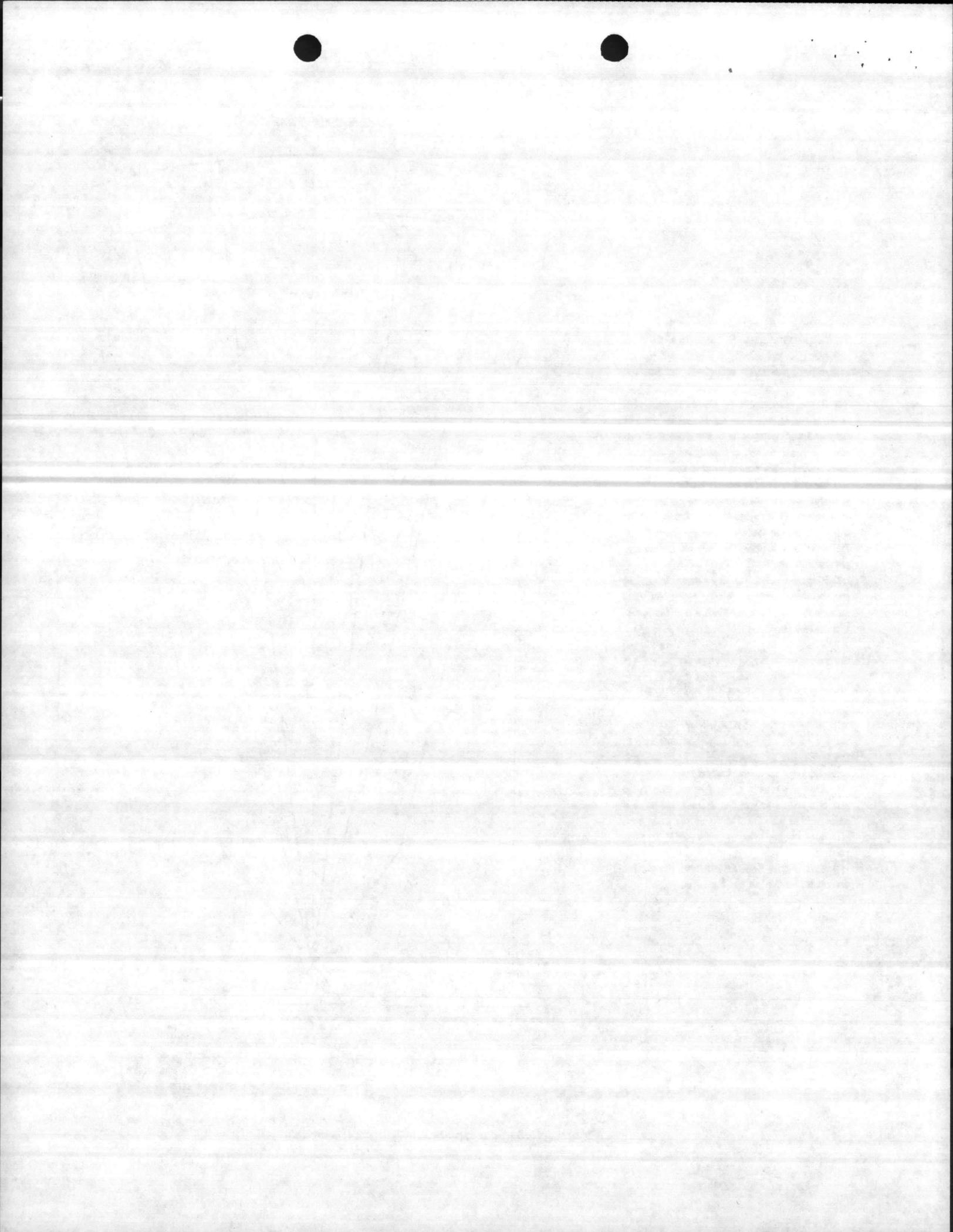


Figure 1-1. Sample explanation—Direct fire mode



**SURFACE DANGER ZONE**

**Surface danger zone.** That segment of the range area which is endangered by a particular type of weapon firing and which consists of the following areas:

- (1) **Target area.** The point or location to which the weapon is to be fired. (For demolitions, the target area is the point or location at which the demolition charge is emplaced.)
- (2) **Impact area.** The primary danger area for indirect fire weapons that is established for the impact of all rounds. When applied to direct fire weapons, it is the area located between established range limits. The impact area is within the approved surface danger zone.
- (3) **Probable error.** Measure of the impact distribution in the dispersion pattern around the center of impact, dimensionally expressed in firing tables as one interval of the dispersion rectangle.
- (4) **Area A.** The area (secondary danger area) which parallels the impact area laterally and which is provided to contain fragments from items exploding or ricocheting on the right or left edge of the impact area.
- (5) **Area B.** The area (secondary danger area) which is on the downrange side of the impact area and Area A. It is designed to contain fragments from items exploding on the far edge of the impact area.
- (6) **Area C.** The area (secondary danger area) which is on the uprange side of the impact area and parallel to Area B and which is intended to contain fragments from items exploding at the near edge of the impact area (also referred to as the short limit of the target area).
- (7) **Area D.** The area which is between Area C and Area E and which is considered a safe area for troop occupation for training purposes.
- (8) **Area E.** The area which is between Area B and the firing position and which is endangered by muzzle debris, overpressure, and injurious noise levels. Area E may be occupied only by weapon crews firing from an approved tactical configuration (circular, box, star, etc.).
- (9) **Near edge.** The boundary of the impact area which borders Area C and is nearest to the firing position.
- (10) **Far edge.** The boundary of the impact area which borders Area B and which is farthest from the firing position.
- (11) **Downrange.** All areas of the surface danger zone which are located beyond the target point or center of a target area for multiple targets.
- (12) **Uprange.** All areas of the surface danger zone which are located between the firing position and the target point or center of a target area for multiple targets.
- (13) **Rear range.** The area to the rear of the firing position.

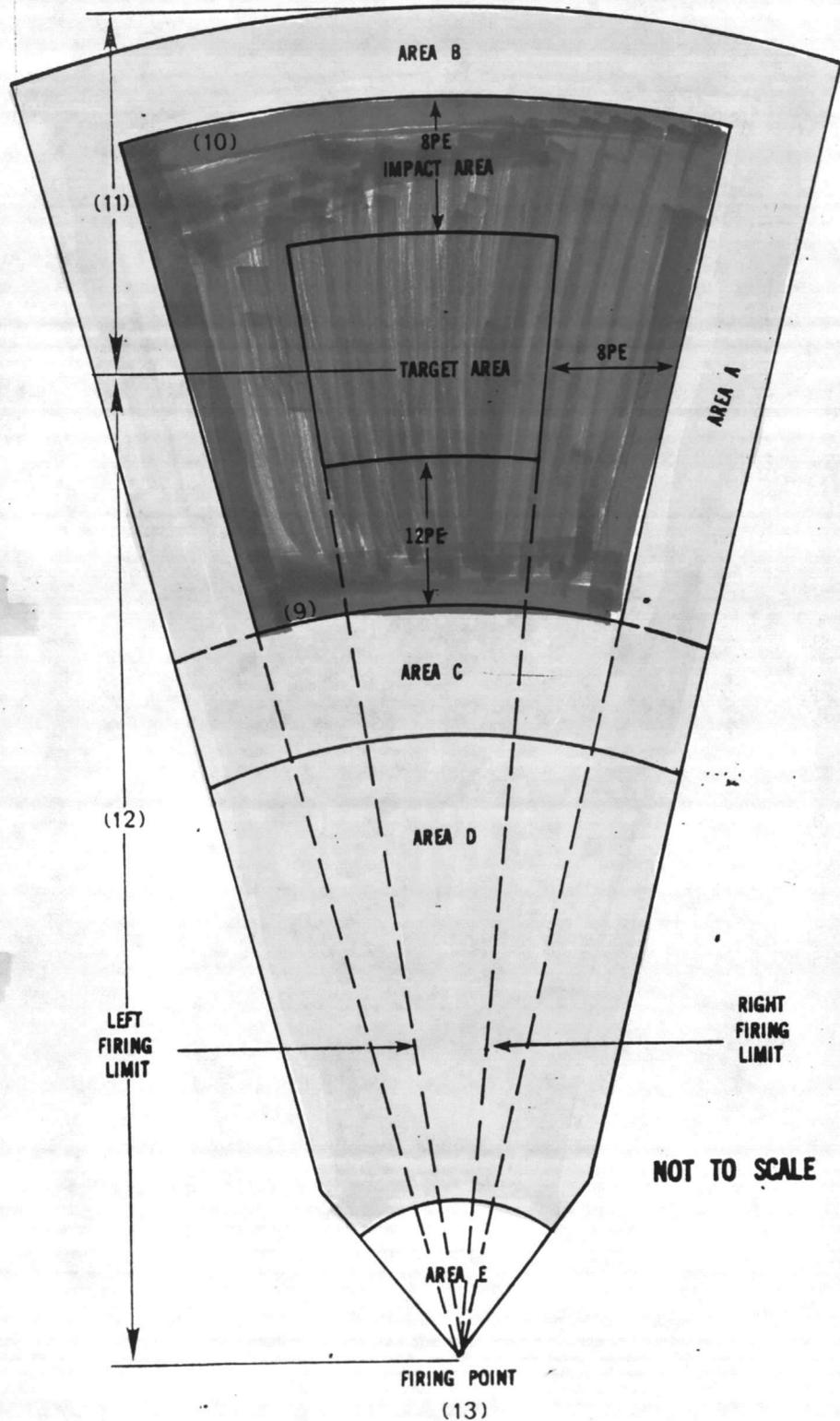
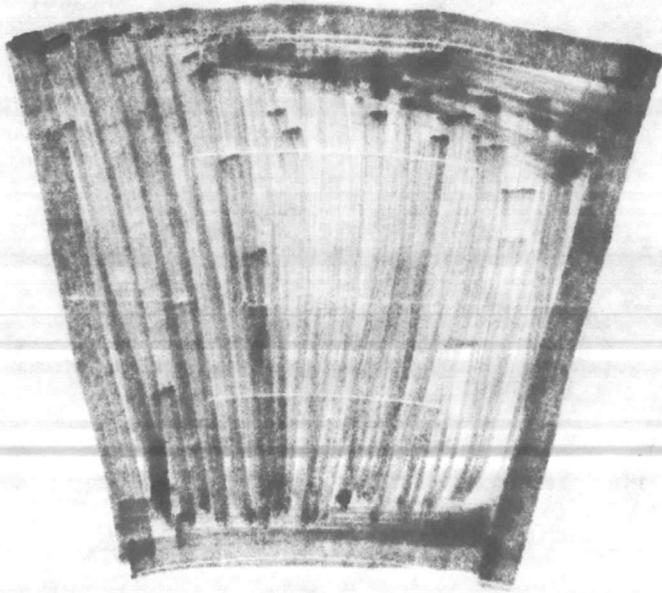


Figure 1-2. Sample explanation—Indirect fire mode



## Chapter 2 Ranges

### 2-1. Range safety

Installation commanders will establish a range safety program. The commander will—

a. Appoint qualified range control personnel to monitor and enforce range safety and operational requirements.

(1) The range control officer (RCO) (together with the other range control personnel) will enforce the installation range safety program.

(2) The installation command safety manager will monitor the effectiveness of enforcement of the installation range safety program.

b. Publish local SOPs for the safe operation and use of ranges and training facilities.

c. Maintain and police ranges, maneuver areas, and training facilities.

d. Notify installation personnel and the public of firing and exercises involving possible hazard to the public.

e. Coordinate and schedule all firing.

f. Establish procedures for controlling and coordinating use of airspace.

g. Survey and post range boundaries and off-limit areas to prevent trespass and entry by unauthorized personnel into surface danger zones and impact areas.

h. Clear duds from ranges before allowing people to enter.

i. Post range guards, barriers, limit of fire markers, and signals.

j. Prescribe the wear of steel helmets under certain conditions.

k. Station ambulances, emergency-type medical vehicles, and medical personnel. Ambulances, emergency-type medical vehicles, and medical personnel are not required to be at every firing range and at all practice firing. Only when flamethrowers are used is there a stated need for such precautions. In determining other occasions when medical personnel and emergency-type medical vehicles must be present during practice firing, installation commanders should consider past accidents. They should also consider demonstrated actual need for emergency medical attention at the scene. When approved by the responsible Director of Health Services, reservists who are medically qualified by their civilian occupation, but who do not possess a medical military occupational specialty (MOS) may be stationed at firing ranges when Army medical personnel are not available.

l. Take measures to protect uprange personnel.

m. Make certain personnel wear hearing protection

devices in accordance with AR 40-5, MCO 3574.2, and other applicable safety directives referring to hearing protection.

n. Authorize overhead fire over the heads of unprotected troops.

o. Investigate incidents or accidents involving weapons or ammunition with firing units.

p. Establish and maintain detailed records that—

(1) Describe the range area, including detailed permanent charts and overlays.

(2) Provide information on the types and amounts of ammunition fired into the range areas.

(3) Record known or estimated number of duds located in range impact areas.

q. Educate on-post and off-post personnel on the dangers of trespassing in impact areas and the handling of unexploded ordnance (duds).

r. Clear temporary impact areas.

s. Perform other duties and activities related to the safe operation of ranges.

### 2-2. Airspace safety requirements

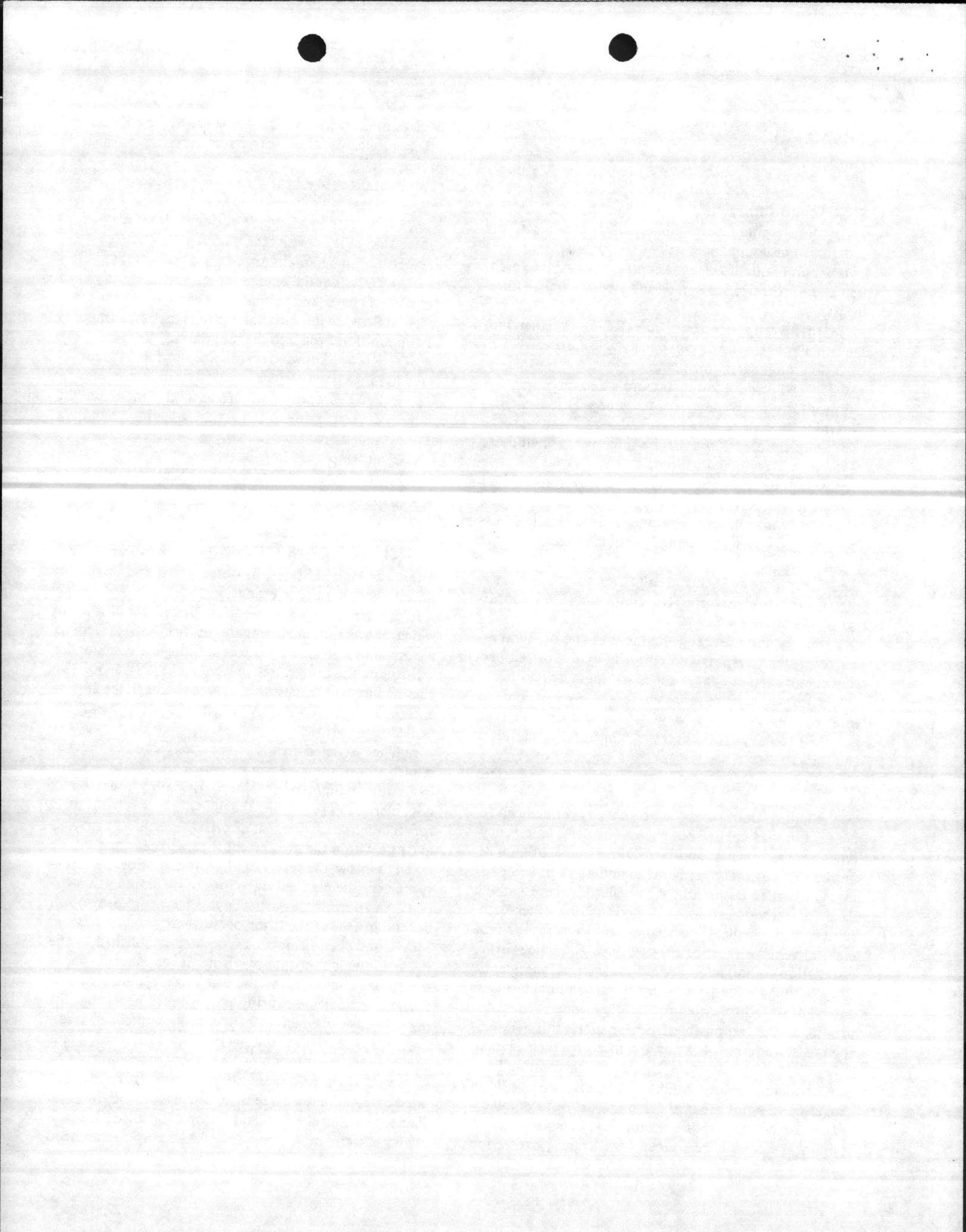
a. Airspace referred to in this regulation is that within the United States, its possessions, and territorial waters overlying a firing range.

b. Before firing any weapon under conditions in which the maximum ordinate of fire will exceed 45 meters above ground level, the responsible commander will follow the procedures prescribed in AR 95-50. The commander will request the FAA to establish the area as a permanent or temporary restricted area or as a controlled firing area.

c. The restricted area is an area designated by the Administrator of the FAA within which an invisible hazard to aircraft in flight exists. Nonparticipating aircraft may not enter such area during the time the area is being used for the purpose designated. All hazardous activities must be within the area established. Precautions will be taken to insure the safety of aircraft operating in the airspace near the planned trajectory of all ammunition firings. An appropriate vertical danger zone (glossary) will be established for the firing operation.

d. Controlled firing area is an area established by the FAA in which ordnance firing is conducted under conditions controlled by the using agency. As a part of this responsibility, the using agency must insure that firing will cease when aircraft traverse the controlled area.

e. For safety, the number of controlled firing areas will be held to a minimum. The safety procedures to be followed when using a controlled firing area are stipulated by FAA in the agreement that established the area. These procedures will include some or all of the following safety measures. The FAA may recommend



other necessary restrictions.

(1) Conduct firing with at least 5 miles of visibility in all directions from the fire control point and a ceiling of 1,000 feet in excess of the maximum ordinate of fire.

(2) Cease firing if the projectile will enter any cloud formation.

(3) Maintain visual surveillance of the entire trajectory and target areas, plus 5 miles additional distance in all directions, before and during all firing.

(4) Provide radar surveillance (when equipment is available) of the area and beyond to detect aircraft approaching the controlled firing area. (While radar is highly desirable, it need not always be included in the restrictions since there may be unusual circumstances that would make this requirement unnecessary.)

(5) Use patrol aircraft to spot other aircraft approaching the area, when appropriate.

(6) Provide spotters who will have continuous and efficient communication with all safety officers who, in turn, are in direct communication with all firing positions.

(7) Provide a range safety officer (RSO) to insure that all firing has ceased when aircraft are approaching the area. When required, reliable communications will be established between the RSO and appropriate FAA facilities to exchange information on air traffic.

(8) Give the local flight service station a schedule of firing hours of local distribution.

f. Army airspace representatives will be located at each regional FAA office. They will help commanders prepare requirements for establishing, modifying, or rescinding restricted or controlled firing areas and presenting them to the FAA.

g. Effective dates of the establishment of restricted and controlled firing areas will be determined as follows:

(1) For restricted areas, it is the date stipulated in the designation published in the Federal Register by the Administrator, FAA.

(2) For controlled firing areas, it is the date stipulated by the assistant administrator of the regional FAA office.

h. The FAA requires complete reports at least annually to justify the use of airspace. Controlling agencies will maintain data on the use of airspace under their control in accordance with AR 95-50.

### 2-3. Water traffic requirements

a. Before firing over navigable waters, the installation commander will notify the US Army Corps of Engineers district or division engineer and the US Coast Guard district office of—

- (1) The type of operations to be conducted.
- (2) The water area involved.
- (3) The closed water area required.

b. Federal laws to protect traffic on navigable waters authorize the Secretary of the Army to prescribe regulations for the use and navigation of waterways endangered or likely to be endangered by firings and target practice. The US Army Corps of Engineers will have notice of the danger zone restricted area published in the Federal Register.

c. The installation commander will not authorize firing until notice of the danger zone restricted area is published in the Code of Federal Regulations (33 CFR 204) and navigation maps have been revised. The installation commander will enforce the closed water area, including radar and surface boat surveillance. No firing will start until the US Coast Guard marks the water danger zone area by the number and placement of buoys.

### 2-4. Notice of firing

a. Before firing involving possible hazard to the public, the commander will issue a warning order through the public news media. It will indicate the date and time of firing and describe the boundaries of the range area. The commander will enforce all closed danger areas involving possible hazard to the public.

b. When there is to be a firing, a warning order will be published and issued to the entire population of the installation at least 24 hours in advance. The place of firing, the hours it is to begin and cease each day, and the boundaries of the danger area will be given in the order.

### 2-5. Trespassing on range areas

Precautions will be taken to prevent—

a. All unauthorized persons from entering the surface danger zone before firing. Livestock will also be excluded unless an agreement, in writing, has been completed with the owner or owners.

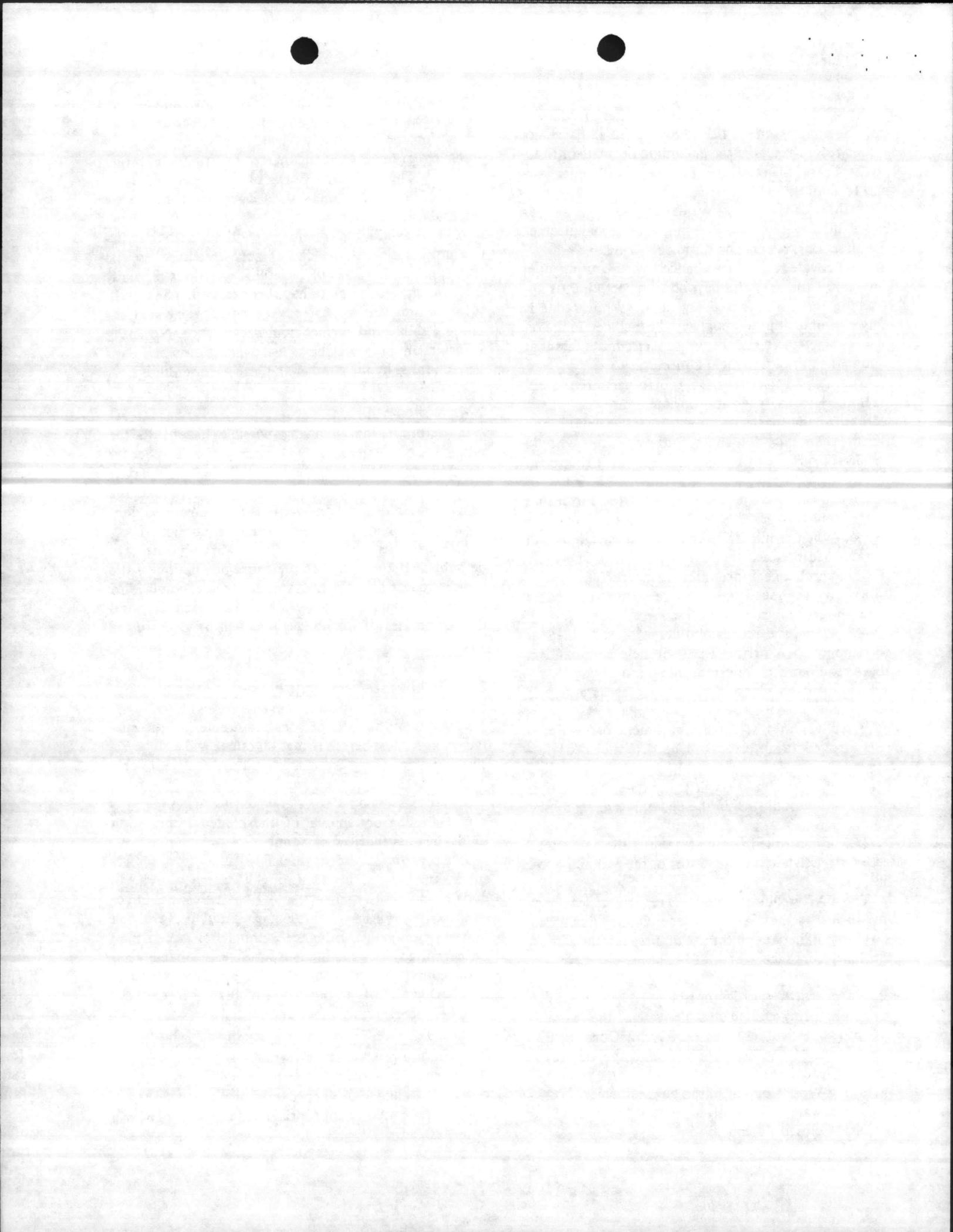
b. Trespassing on target ranges during firing.

c. Handling or removal of unexploded ammunition (duds) by unauthorized personnel.

d. ~~Entry into the impact area by all unauthorized personnel until it has been thoroughly searched and any duds found are destroyed by qualified personnel in accordance with TM 9-1300-206 and Volume 1, Naval Sea Systems Command Ordnance Pamphlet 5.~~ Access may be permitted for training purposes (e.g., maneuvers, upon completion of a visual surface clearance operation). Digging of entrenchments, foxholes, and slit trenches, however, will not be permitted.

### 2-6. Range guards or barriers

All normal approaches to the danger area will be covered. Range guards properly instructed in their duties will be used or appropriate barriers with signs will be posted.



**2-7. Warning signals and signs**

Persons approaching a firing area in use will be warned. Scarlet danger flags and, when necessary, warning signs will be displayed at appropriate points.

**2-8. General limitations**

a. Ranges will be located so that personnel engaged in firing activities will not be nearer than inhabited building distance to ammunition storage areas. If available land areas are inadequate, the separation distance from personnel on the firing range to ammunition storage areas may be reduced to not less than public highway distance. These distances may be determined by referring to the tables of quantity-distance in TM 9-1300-206 and volume 1, Naval Sea Systems Command Ordnance Pamphlet 5. Compute quantity distance based on the quantity and class of ammunition in the limiting magazine or storage point within the ammunition area. The limiting magazine or storage point is the one requiring the greater distance based on the quantity and class of ammunition in storage.

b. The scarlet streamer during daylight hours substituted by blinking red lights during night hours, will be displayed from a prominent point for a range complex and at all times during firing. No firing will take place unless these conditions are met.

c. Individual vehicles, tanks, and armored personnel carriers will display a red flag when firing (para 12-10).

d. Signs warning persons of the danger from projectiles, bombs, and duds will be posted near the firing area at all times.

e. Limit of fire markers both external (outer) and internal (inner) will be emplaced to denote right and left limits of fire. Where cross-firing is to be conducted, internal limit markers will be emplaced to denote internal right or left limits of fire from specific firing positions.

f. Besides the warning signals and signs used to prevent entry to the range during firing, the boundaries of all range areas adjacent to roadways and points of entry, or along the outside limits of ricochet areas, will be posted with permanent signs. They will be placed at 200 meter intervals or less, or in a way that will insure that a person cannot enter the range without seeing at least one sign within a legible distance. The signs will emphasize the danger connected with the range area and the handling of unexploded ammunition. They will prohibit trespassing or the removal of items under penalties provided by law. The design, color, and size will conform to guidance in AR 385-30. (Hilly or wooded terrain may require more signs than would flat, open terrain.)

g. Procedures will be established to cover the turn-in of military ammunition and explosive items by unauthorized persons.

**2-9. Range clearance operations**

The commander responsible for range clearance operation will—

a. Review all records on an area to be cleared to determine the types of duds present and the degree of contamination.

b. Determine the type of clearance to be done.

c. Request the supporting explosive ordnance disposal (EOD) element to scout the area to confirm the information in the records. This will help in the preparation of a detailed clearance plan.

d. Prepare a detailed plan of operation. It will include—

(1) Number of EOD qualified personnel needed to supervise the operation.

(2) Number of other personnel needed (e.g., searchers, supervisors, and drivers).

(3) Amount and type of equipment needed (such as vehicles and engineer equipment).

(4) Dates and time to conduct the clearance.

(5) Funding for the clearance operation.

(6) Administration and logistical support.

(7) Medical personnel and emergency-type medical vehicles needed.

(8) Safety training for all searchers, markers, and supervisory personnel. Training will be conducted before the start of an operation and as required during operations. All personnel who will participate in range clearance will view Army Training Film 7-6153.

e. Prepare after-action reports, including the information required by AR 405-90, or applicable US Navy or Marine Corps directives, as a permanent part of the range records.

**2-10. Education**

a. Installation commanders having range impact areas will place special emphasis on aggressive educational programs. All personnel must be properly cautioned on the dangers of dud ammunition and other items of unexploded ordnance. In this regard, maximum use should be made of the US Army Forces Command (FORSCOM) EOD personnel and guidance in FM 9-15.

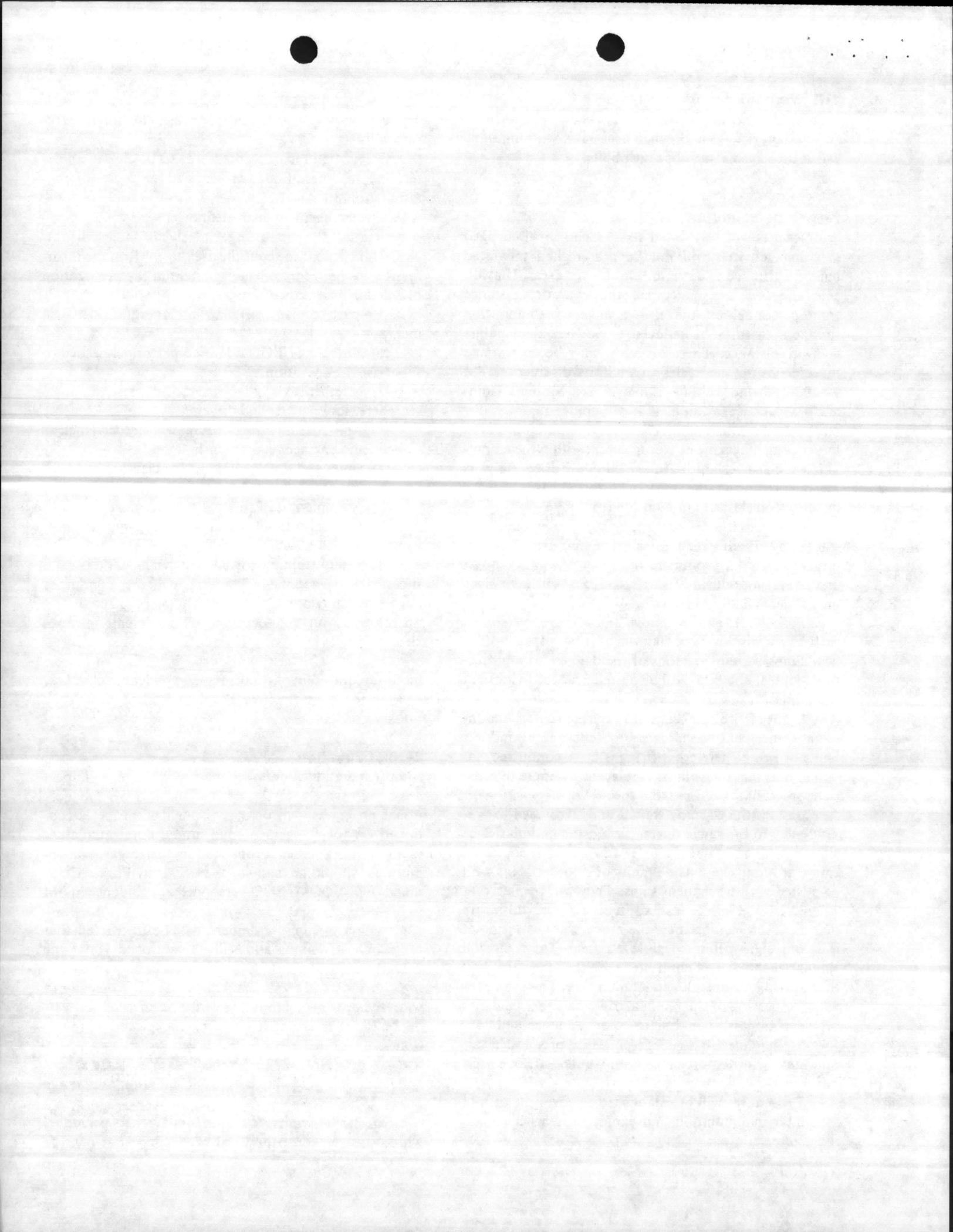
b. Military family members will be instructed that ranges are off limits and will be cautioned about the hazards.

c. Local news media will be used periodically to warn the nearby communities of the hazards in trespassing on range areas and in handling unexploded ammunition.

d. A program will be established to educate school children, both on and off the installation, on range hazards.

e. Military parents, children, and other personnel will be instructed in the local procedures that provide

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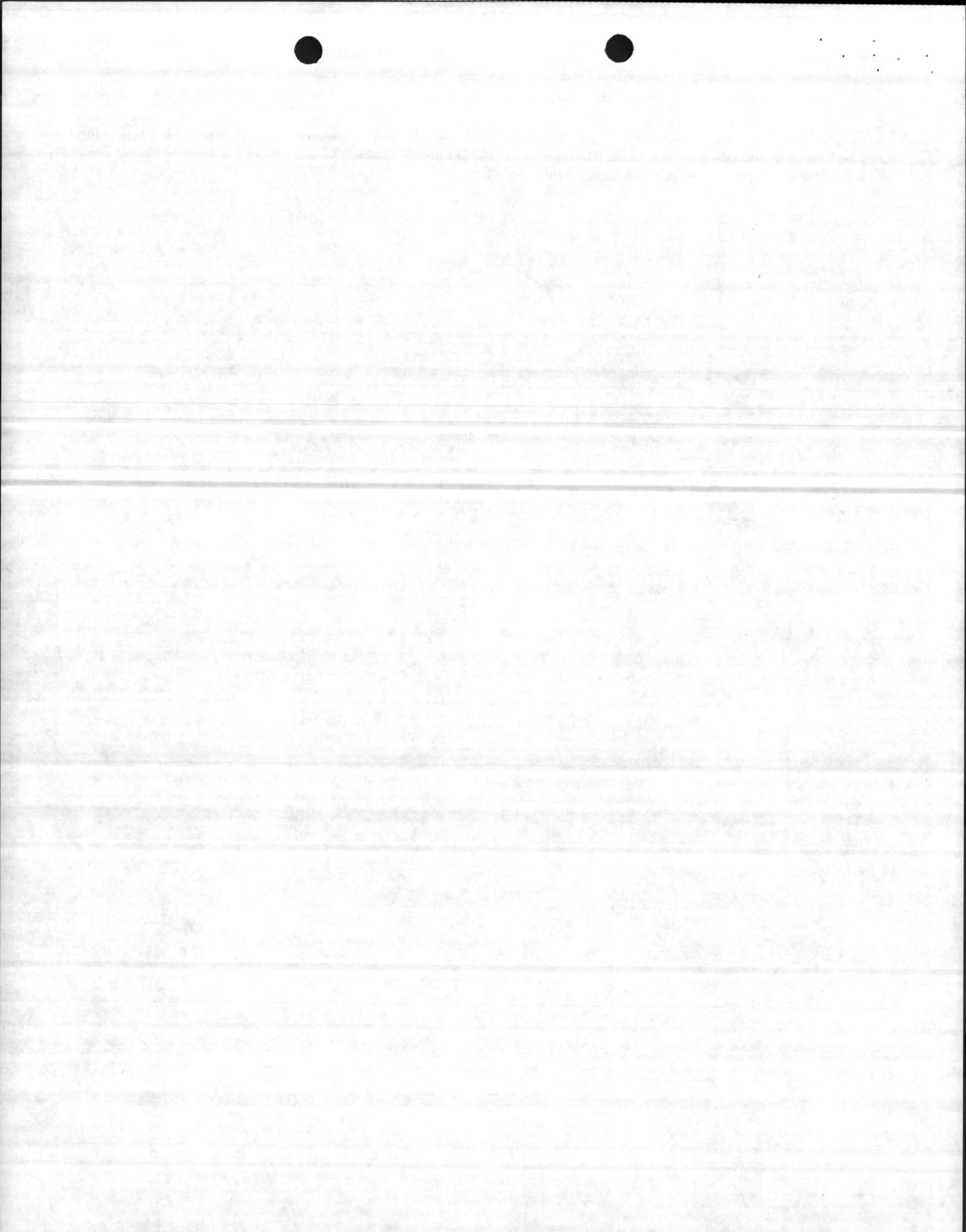
for turning in or reporting of unauthorized Government ammunition or ordnance to military authorities.

**2-11. Police of ranges**

The collection of spent brass is not required when am-

munition is expended from aircraft-mounted weapons over extended terrain or otherwise inaccessible areas (e.g., impact areas containing high explosive (HE) dud ammunition.)

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## Chapter 3 Ammunition

### 3-1. Ammunition positioning and issuance

a. Locate all ammunition at firing sites outside the blackblast area (when applicable) for the weapons involved. Store ammunition at a position that will minimize the potential for ignition, explosion, or rapid burning.

b. Issue ammunition to firing units immediately before scheduled training exercises. Distribute small arms ammunition to troops only when they are on-the-ready line or firing line.

c. Cover all ammunition to protect it from the elements and direct rays of the sun. Provide air circulation between the ammunition and cover for proper ventilation.

d. Limit the unpackaging of ammunition at the firing line to the minimum number of rounds needed for efficient firing of the exercise. Retain packaging material, propelling increments, and fuzes until firing is complete. Army and Marine Corps units will not burn wooden containers or indiscriminately fire ammunition to preclude return to a storage site.

### 3-2. Ammunition qualification or restriction

a. The use of nonstandard items is prohibited unless specifically approved by the Commanding General (CG), DARCOM, or the Commandant of the Marine Corps (Code LMG); CG, US Army Combat Development Experimentation Command, Fort Ord, CA; CG, US Army John F. Kennedy Center for Special Warfare, Fort Bragg, NC; and the Commanding Officer, 10th Special Forces Group, Fort Devens, MA. The commanding officer of special forces groups may also approve the use of nonstandard items of explosives when necessary to their operations of special forces training. Inform the Commander US Army Armament Material Readiness Command (ARRCOM) (CDR ARRCOM Rock Island IL//DRSAR-QAS), by message, of the approval for nonstandard item.

b. Small arms ammunition (SAA) with loss of lot identity (unknown lots) that have been inspected and classified according to HQ ARRCOM criteria will be assigned priority of issue for training. Training use is authorized for hand weapons (rifle, pistol, shotgun), ground and vehicle mounted machinegun, M60 series (7.62mm), and M2/M3 series (cal .50). These munitions are prohibited from use in overhead fire and qualification exercises while firing the M73, M219, and M240 series (7.62mm) and M85 series (cal .50) machinegun.

c. Any alteration of loaded ammunition (e.g., in-

creasing the amount of propellant) is prohibited. Exceptions may be made by CG, DARCOM, or the Commandant of the Marine Corps (Code LMG) or the commandant's authorized representative. Alterations will be under the supervision of a commissioned officer or qualified civilians from DARCOM. Assembly of explosive components into inert rounds is also prohibited, unless CG, DARCOM, or Commandant USMC (Code LMG) or the commandant's authorized representative has approved.

d. All ammunition for demonstrations, training, or similar activities will be used for the purpose for which it was manufactured. Any attempt to use ammunition in an unorthodox manner or to purposely attempt to make it malfunction, such as by jamming VT fuzes with signal equipment, is prohibited. Exceptions may be granted for special tests and demonstrations when plans are reviewed and approved, in writing, by CG, DARCOM, or Commandant, USMC (Code LMG).

e. Those who control ammunition for a unit must know the inherent hazards of the specific type of ammunition and the proper identification markings and color codes. Firing restrictions and lot suspensions for the specific ammunition involved will be recorded in the unit (not applicable to Marine Corps units) ammunition property book (records).

f. The officer in charge (OIC) and RSO will have on hand and be familiar with, current field and technical manuals for the weapons or weapon system being fired. These manuals provide limitations and warnings for type of ammunition being fired.

g. The following rounds will not be fired unless the firing vehicle is "buttoned up" and no unprotected observers are near the firing vehicle:

(1) 152mm SHILLELAGH missile (driver's hatch only)

(2) 165mm Gun (CEV) when range to impact is less than 1,000 meters.

h. The following rounds will not be fired over the heads of unprotected troops:

(1) Cartridge, 105mm, APDS-T, M392 (L36A1)M392A2.

(2) Cartridge, 105mm, TPDS-T, M724, M724A1.

(3) Cartridge, 105mm, APDS-T, M728.

(4) Cartridge, 105mm, APFSDS-T, M735.

(5) Cartridge, 105mm, APFSDS-T, XM774.

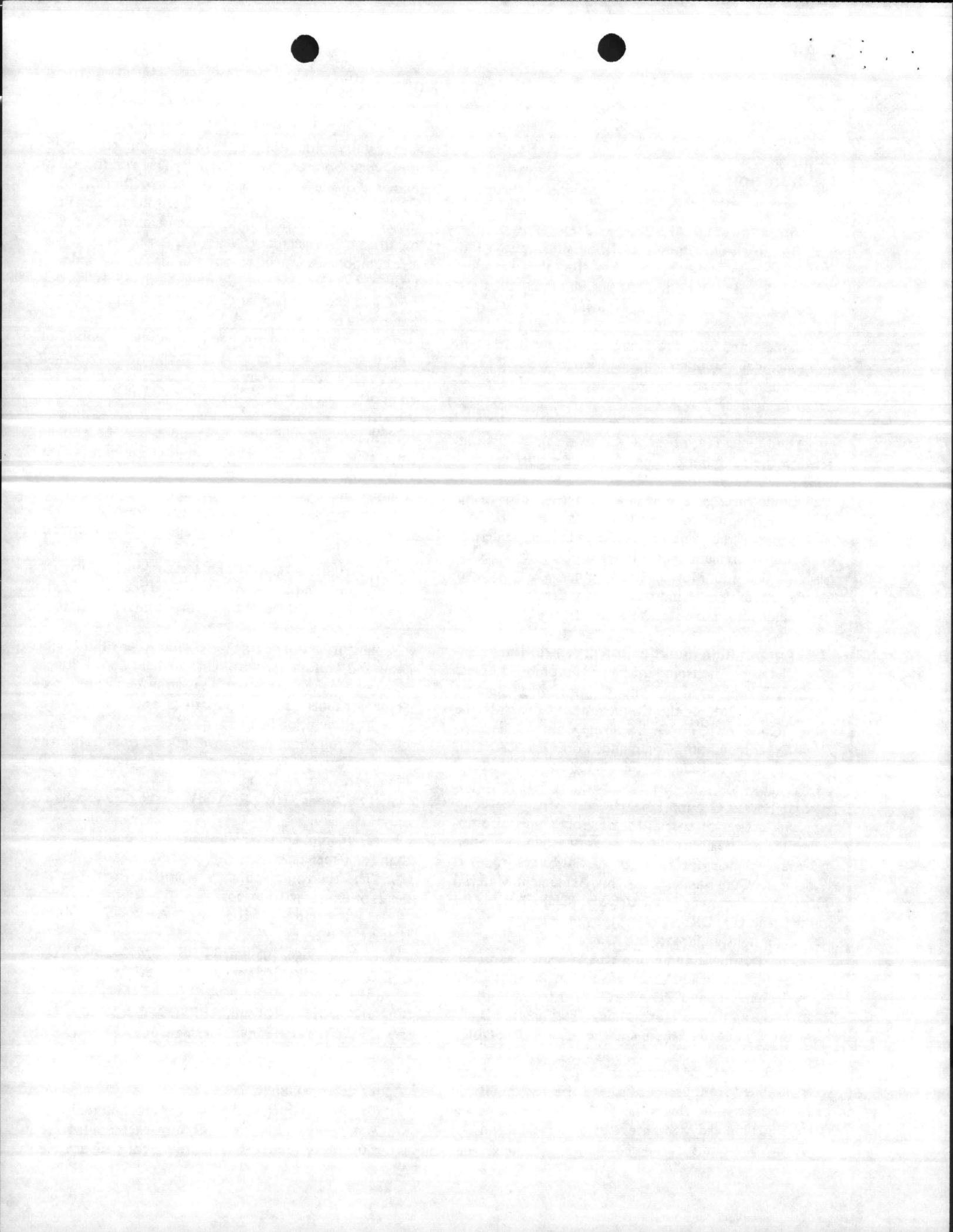
(6) Cartridge, 105mm, German, HVAPDS-T, DM 1381.

(7) 152mm SHILLELAGH missile.

(8) 165mm Gun (CEV).

(9) New production discarding sabot ammunition.

i. Ammunition intended for any exercise that requires overhead fire must be approved for such use. Re-



quests for lot clearance will be sent to Commander, ARRCOM, ATTN: DRSAR-QAS, Rock Island, IL 61299, by letter or message, in a time frame consistent with training requirements. Only those lots to be used in overhead fire should be included in the request. Emergency requests will be honored by telephone. Confirmation will follow by message or letter. Receipt of a restriction or suspension message from ARRCOM on any lot previously cleared automatically cancels overhead fire certification. The requisitioner must identify requests for ammunition that require clearance for overhead fire use. Requisitions processed by the national inventory control point (NICP) on a materiel release order (MRO) with project code "YTT" in card columns 57-59 of DD Form 1348 (DOD Single Line Item Requisition System Document Manual), or equivalent, indicate lots require clearance. Internal control procedures will be established at depots, plants, arsenals, and supply points to make certain that requisitions for ammunition to be used for overhead fire are filled with ammunition that has been cleared and approved for overhead fire.

(1) Ammunition lots determined, after formal requests, to be satisfactory for overhead fire will be listed in appendix C, TB 9-1300-385-1.

(2) Ammunition lots determined not to be suitable for overhead fire use will be listed in appendix D, TB 9-1300-385-1. Lots of ammunition currently listed in TB 9-1300-385-1 and TB 9-1300-385-2 with restrictions "not to be used for overhead fire" will be deleted from current editions of these manuals and appear only in appendix D of TB 9-1300-385-1. Marine Corps activities will use the reclassification system in NAVSEA TWO 24-AA-ORD-010 to determine ammunition serviceability.

j. Only lots of artillery ammunition that have been cleared and are not suspended or restricted by TB 9-1300-385-1 or TB 9-1300-385-2 will be used in training exercises requiring overhead fire and close support of ground troops by overhead or flanking fire and overhead fire attack courses. Each lot of ammunition used in these exercises will be fired for adjustment before firing over the heads of troops in training. When overhead firing exercises are conducted under waived conditions in accordance with paragraph 1-6, functional clearance, lot by lot, will be obtained. Request for such clearances will include a statement describing the waived condition.

### 3-3. Suspension of ammunition and explosives involved in malfunctions

a. When any round or item of ammunition or explosives (or their components) has malfunctioned, further use of rounds or items will be suspended. Appropriate action will be taken as required by AR 75-1 or MCO

8025.1. Firing suspensions and restrictions are published in TB 9-1300-385-1, TB 9-1300-385-2, NAVSEA TWO 24-AA-ORD-010, and appropriate technical manuals.

b. If a malfunction is suspected, firing of the lot will cease immediately and further use of all weapons involved will be discontinued. All materiel involved in the incident will be secured undisturbed until designated personnel investigate the incident and determine appropriate disposition of the materiel. Marine Corps units will also report defective ammunition in accordance with MCO 8025.1.

### 3-4. Disposition of materiel involved in malfunctions

a. Materiel involved in malfunctions or accidents and any evidence, such as components or fragments of the weapon or ammunition, will be carefully preserved until disposition is directed by ARRCOM (DRSAR-MAD).

(1) If, in the opinion of the local ammunition officer or quality assurance specialist (ammunition surveillance), the preservation or shipment of the materiel may endanger life or property, local disposition instructions may be directed. Components, fragments, and residue will be secured and retained for 90 days after the report of a malfunction. When disposition instructions are not received within 90 days, local disposition is authorized. If the cause of the malfunction is doubtful or undetermined, all affected materiel will be held until disposition instructions are furnished by Commander, ARRCOM.

(2) When shipment of materiel involved in, or affected by, a malfunction is directed by Commander, ARRCOM, copies of the shipping document will be promptly sent to the consignee and Commander, ARRCOM, ATTN: DRSAR-MAD, as evidence that the materiel has been shipped. To insure correct identification, the shipping document will contain appropriate references to the report of malfunction. When shipped by registered mail, a message will be dispatched, indicating registry number, date of shipment, shipper, and destination. Marine Corps units will comply with MCO 8025.1.

b. For the destruction of ammunition and explosives, see TM 9-1300-206. Assistance from EOD personnel is recommended if such services are available. A commissioned officer, noncommissioned officer (grade E6 or above), or Army civilian employee trained in ammunition and explosive operations will supervise the destruction of ammunition or explosives and will be responsible for compliance with TM 9-1300-206. Marine Corps explosive ordnance and demolition personnel must supervise the destruction of ammunition and explosives at Marine Corps activities.

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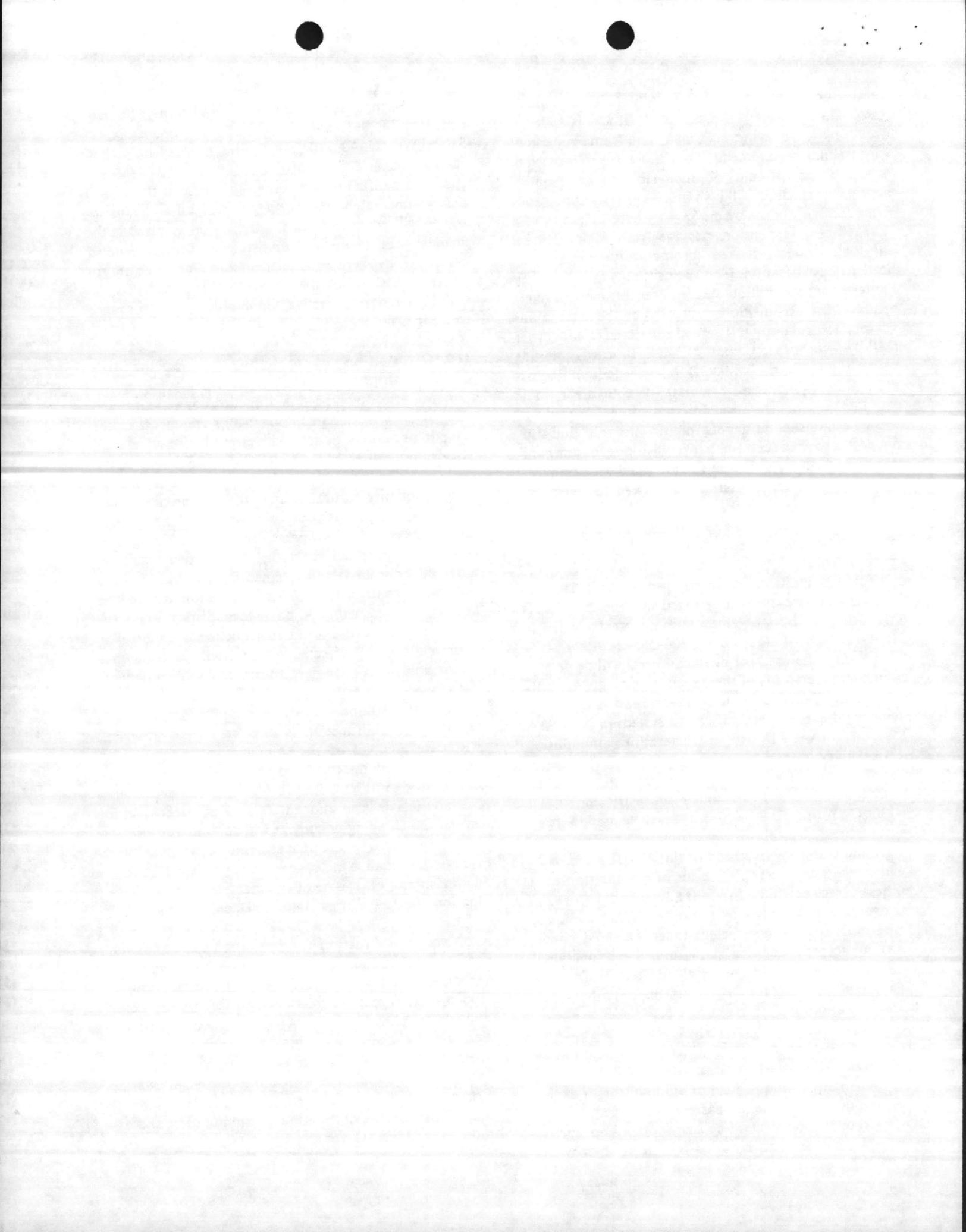
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## Chapter 4 Firing

### 4-1. General

Persons in charge of, or using ranges, maneuver areas, and training facilities are responsible for compliance with the safety requirements of this regulation and with applicable TMs and FMs.

### 4-2. Range safety

a. The installation commander is responsible for overall range safety in accordance with chapter 2.

b. The commander of using units will—

(1) Insure that all personnel are familiar with local range procedures and safety requirements.

(2) Designate an officer in charge (OIC) (commissioned officer, warrant officer (WO), noncommissioned officer (NCO)) for each firing point or range as specified in table 4-1 to be responsible for the safe conduct of firing and proper use of facilities.

(3) Comply with installation procedures for certifying individuals who will perform the duties of OIC, WOIC, NCOIC; range safety officer; and section chief to insure they are—

(a) Competent and properly instructed in the performance of their duties.

(b) Knowledgeable of the weapons systems for which they are responsible.

(4) Coordinate plans for firing exercises and maneuvers with range control.

c. The officer in charge will—

(1) Be responsible for the overall safe conduct of training and proper use of facilities.

(2) Be present at the unit firing area.

(3) Be a commissioned, warrant, or senior non-commissioned officer (table 4-1) from the training or firing units' chain of command and weapon system qualified as designated by the commander.

(4) Appoint an RSO when required (table 4-1) to help perform safety responsibilities. (Additional assistant range safety officers (ARSO) may be appointed as required.)

(5) Determine when it is safe to fire.

(6) Supervise the procedures for misfires, hang-fires, and cookoffs.

(7) Insure required communications are established and maintained.

d. The range safety officer will—

(1) Be responsible for the final determination before firing that—

(a) Weapons are properly positioned.

(b) Only authorized ammunition, to include

proper charge, fuze, and fuze settings, are used.

(c) Firing settings and weapons are within prescribed safety limits and verified.

(d) Appropriate safety measures are taken and the surface danger zone is clear of personnel. (This includes closing of barriers denying entry into the impact area and the posting of road guards.)

(e) Proper hearing protection is worn by personnel engaged in firing.

(2) Order an immediate cease fire or check fire when any unsafe condition is observed.

(3) On completion of firing, verify weapons are clear to the OIC and range control and record duds and their approximate location.

### 4-3. Who may be an OIC or RSO

a. A commissioned, warrant, or noncommissioned officer (table 4-1) from the training or firing unit chain of command may be an OIC or RSO.

(1) Noncommissioned officers serving as range safety noncommissioned officers (RSNCOs) will normally be in the grade of E6 or above. NCOs in the grade of E5 may serve as RSNCOs if they are filling E6 positions.

(2) The RSO on combined arms live fire exercises (CALFEX) will be of the grade prescribed in table-4 based on the complexity of the exercise and number of participants (i.e., squad, section, platoon, company, troop, squadron, battalion and larger).

b. Personnel detailed as RSO, range safety warrant officer (RSWO), or RSNCO must—

(1) Have satisfactorily completed a standard program of instruction in the duties of RSO developed by the battalion to which they are assigned.

(2) Be qualified and knowledgeable in the weapons systems involved and the RSO duties required.

c. Civilians may act as OIC and RSO of firing ranges if they are qualified and approved to perform such duties by the installation RCO (e.g., weapons testing and competitive shooting).

### 4-4. Firing conditions

a. Firing by other US military services may be conducted on Army or Marine Corps ranges in accordance with this regulation.

b. Firing of weapons systems not provided for in this regulation will be in accordance with the appropriate Service's safety requirements.

c. Firing by other nations on Army or Marine Corps installation (owned, operated, controlled) ranges requires approval by the MACOM Army or Marine Corps commander.

~~d. Ammunition will not be fired over ammunition~~



CHAT. 11 occup AREA-13  
 ( storage areas, public traffic routes, or other nonrelated  
 +inhabited areas. Firing will be directed away from  
 ammunition storage areas, if possible.

e. Data on the type of dud-producing HE ammunition fired into the impact area and the number of duds and their approximate location will be recorded by firing units. The installation commander will maintain these data as permanent records.

#### 4-5. Duties of the OIC

a. *Prior to firing.* The OIC will insure that—

- (1) The correct range or firing position is occupied.
- (2) The impact area is clear of unauthorized personnel and safety measures directed by the installation commander have been taken (use of barriers to deny access into the impact area and posting of road guards).
- (3) Required communications are established and operative.
- (4) Only authorized ammunition, including proper charges and fuzes, are used.
- (5) Ammunition to be fired is within prescribed safe temperature limits.
- (6) All firing precautions (including bore sighting) have been taken.
- (7) Clearance to fire has been obtained from range control.

b. *During firing.* The OIC will insure that—

- (1) Personnel do not move to or leave from the firing line on small-arms ranges or crew-served-weapons ranges without the permission of the OIC or RSO.
- (2) Materiel is not removed from the firing line without permission of the OIC or RSO.
- (3) The surface danger zone is monitored to insure it remains clear.
- (4) Impacts are observed to insure projectiles land within the prescribed impact areas.
- (5) Misfires are removed from the weapon only on command of the OIC in accordance with procedures established for the weapon.
- (6) Weapons are cleared and checked during temporary suspensions of firing.
- (7) Records are maintained on the type of ammunition fired, the number of rounds fired, the number of duds and their approximate location.
- (8) Firing is stopped promptly when any unsafe act is observed or reported.

c. *After firing.* The OIC will insure that—

- (1) All weapons are cleared. (Tank commanders and section chiefs will insure that their weapons are cleared on completion of firing.)
- (2) The number of duds and their approximate location are reported in accordance with local procedures.
- (3) Firing status of ranges or vehicles is properly designated by flags or lights.

d. *Misfires, hangfires, and cookoffs.*

(1) The OIC is responsible for supervising the handling and disposition of misfires, hangfires, and cookoffs.

(2) Procedures for each of these malfunctions depend on the type of weapon and ammunition. The nature of each malfunction and proper handling procedures must be understood to avoid injury to personnel or property damage.

(3) Pertinent technical and field manuals will be used to determine proper handling procedures for each malfunction.

(4) These types of malfunctions will be reported in accordance with AR 75-1. If they result in injury or property damage, report in accordance with AR 385-40.

#### 4-6. Special firing considerations

a. *Overhead fire.*

(1) Fire over protected and unprotected troops will be as prescribed in chapter 16.

(2) Ammunition authorized for overhead fire will be approved in accordance with chapter 3.

b. *Records.* Data required by paragraph 2-1p will be recorded for each firing of dud-producing ammunition. The installation RCO will maintain these records permanently.

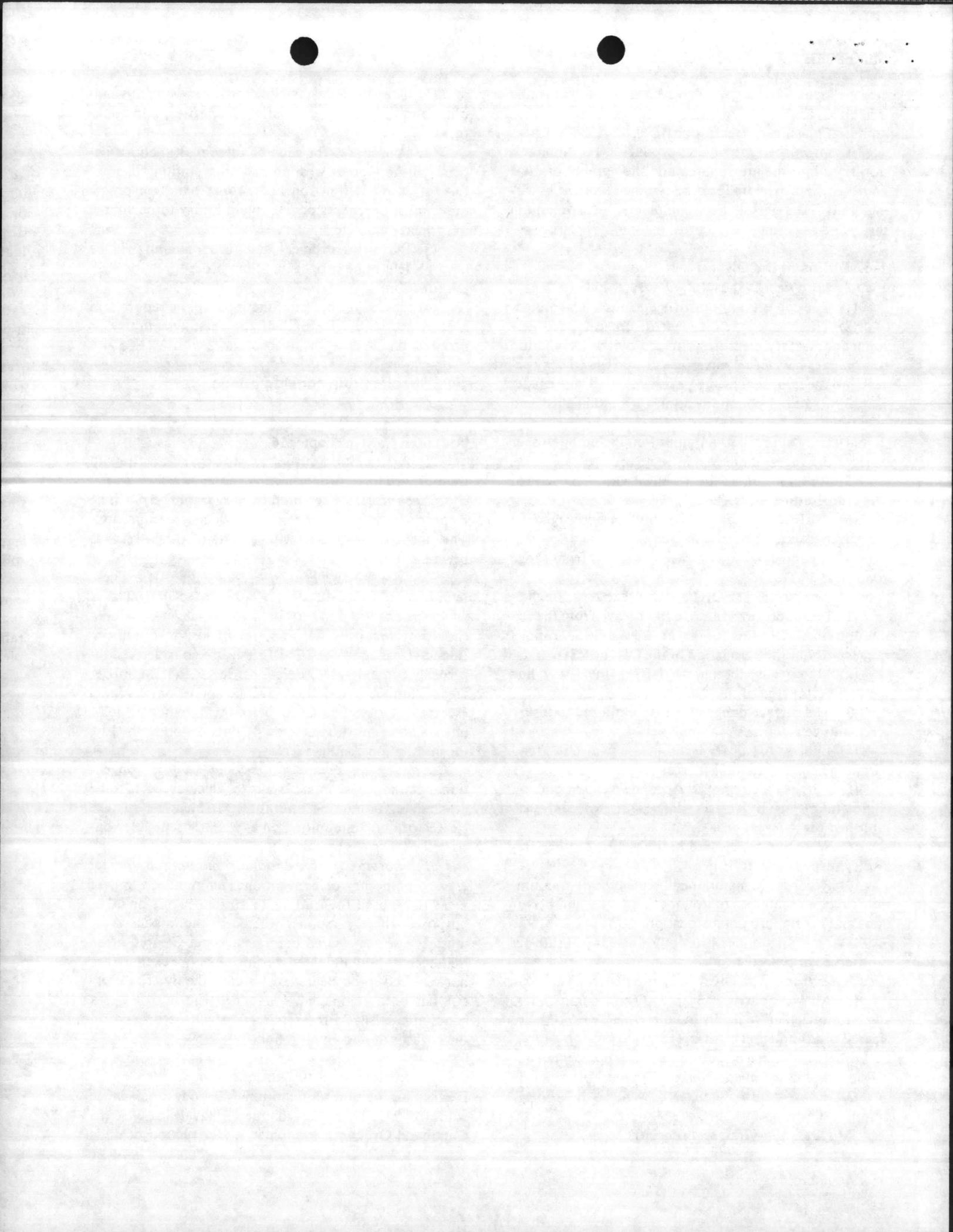
~~Improved conventional munitions (ICM)~~ These munitions must be fired into a dedicated impact area where troops are not permitted to maneuver. The area should be relatively flat and free of heavy vegetation. Impact areas used for ICM firings are considered dangerously contaminated. Personnel access to ICM impact areas is limited to qualified EOD personnel or personnel escorted by qualified EOD personnel. Dedicated ICM impact areas must be cleared of duds as prescribed by the installation commander.

~~Conventional ammunition impact areas~~ Conventional ammunition impact areas to which access is to be granted (e.g., hunting and forestry) must be surface cleared of dud ammunition on a regularly scheduled basis before access is permitted.

e. *Temporary or conventional ammunition impact areas.* Temporary or conventional ammunition impact areas to be used for training (e.g., maneuvers or other purposes where personnel will be in the impact area) must be surface cleared before such use. Cleared areas that become contaminated during a live fire exercise are not required to be cleared again until the live fire exercise has been completed. Personnel who must enter a contaminated live fire exercise area will be briefed on the hazards of dud ammunition.

#### 4-7. Destruction of dud ammunition

Destruction of dud ammunition will be in accordance with TM 9-1300-206 or volume 1, Naval Sea Systems Command Ordnance Pamphlet 5. Destruction of duds



will be done only by or under the supervision of EOD personnel who are fully aware of the hazards.

#### 4-8. Other range usage

a. Use of ranges by Rod and Gun Club members are subject to the same requirements as Active Army personnel. A bilateral agreement should be in effect between the installation and the club. It should spell out rights, liabilities, procedures, and regulatory requirements and responsibilities.

b. Use of ranges by police or other civic organizations is sanctioned. All ranges constructed, wholly or in part, with funds provided by Congress will be open for use by clubs, schools, colleges, and other responsible organizations, under regulations prescribed by the controlling authorities. Bilateral agreement should also be developed as discussed above. Completion of some type of National Rifle Association approved pistol and rifle instructor courses, or installation equivalent, is mandatory. Those who satisfactorily complete these courses should be competent to perform OIC or RSO duties on small arms ranges.

c. The controlling commander may withdraw privileges of using the range and installation from any person or organization that willfully disobeys rules and regulations prescribed for the range, or from any person whose conduct on the range or installation warrants such action. Commanders may refuse the use of the range to any individual whose knowledge of the principles of marksmanship is deficient to the degree of posing a safety hazard.

#### 4-9. Control of spectators and military family members (MFM) on firing ranges

a. The only time an MFM (minor) will be permitted on the firing line is under competent adult supervision and when engaged in an approved course of marksmanship training (e.g., junior ROTC training). These MFM must obey all firing and safety regulations (including the wear of personnel protective hearing devices). Failure to comply with these rules will result in immediate removal from the firing line and a denial of the right to take part in live weapons firing. All other MFM not actually engaged in firing or coaching must remain behind the firing lines.

b. Spectators frequently come to small arms demonstrations, training courses, competitions, and other types of firing. Normally they must stay behind the firing line or firing activity. There may be exceptions when experienced personnel are demonstrating weapons or where several persons in an inspection party are observing firing activities. In any case, the firing line and the area authorized for spectators will be well defined with the proper signs and markings. Spectators (as part of an inspection team or official observers), even though required to be on the firing line as an exception to the foregoing policy, must remain behind or to the side of shooters. They must also stay to the rear of the muzzle but away from the recoil and back-blast area of all weapons on the firing line. OIC and RSO or ARSO are responsible for range safety and the control of all spectators. Any spectator who compromises safety or distracts shooters or range personnel will be removed from the range.

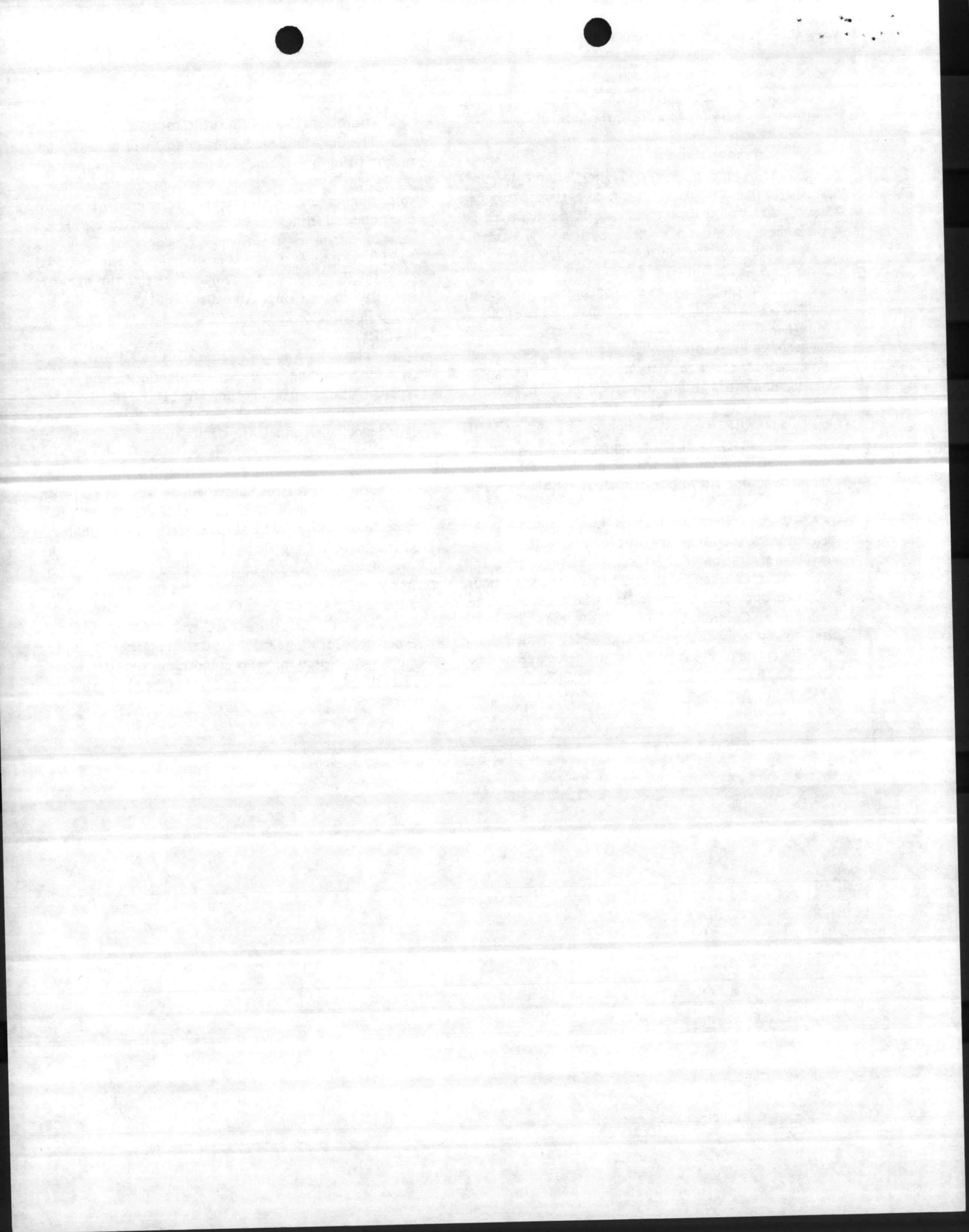


Table 4-1  
Officer in charge and range safety officer requirements

Weapon system	Officer in charge <sup>1</sup>			Range safety <sup>1</sup>		
	OFF	WO	NCO	OFF	WO	NCO
Practice hand grenade and rifle grenades; subcaliber training devices; LASER ranges; firing devices; simulators, trip flares; small arms and machineguns	X	X	E6	None required except for LASER ranges <sup>2</sup>		
Chemical agents and smoke	X <sup>3</sup>	X	X	None required <sup>3</sup>		
Aerial gunnery, air defense weapons; flamethrowers; live grenades (hand and rifle); mines and demolitions; mortar; recoilless weapons; rockets; guided missiles (chap 12), tank cannon	X	X	E7	X	X	E6
Artillery	X <sup>4</sup>	X	E7	X <sup>5</sup>	X	E6
Live fire exercises using organic weapons, squad through company, battery, troop	X	X	E7	X	X	E6
Combined arms live fire exercises using outside fire support: Squad-section-platoon Company, battery, troop, battalion, squadron or larger	X X <sup>6</sup>	X	E7	X X	X	E6

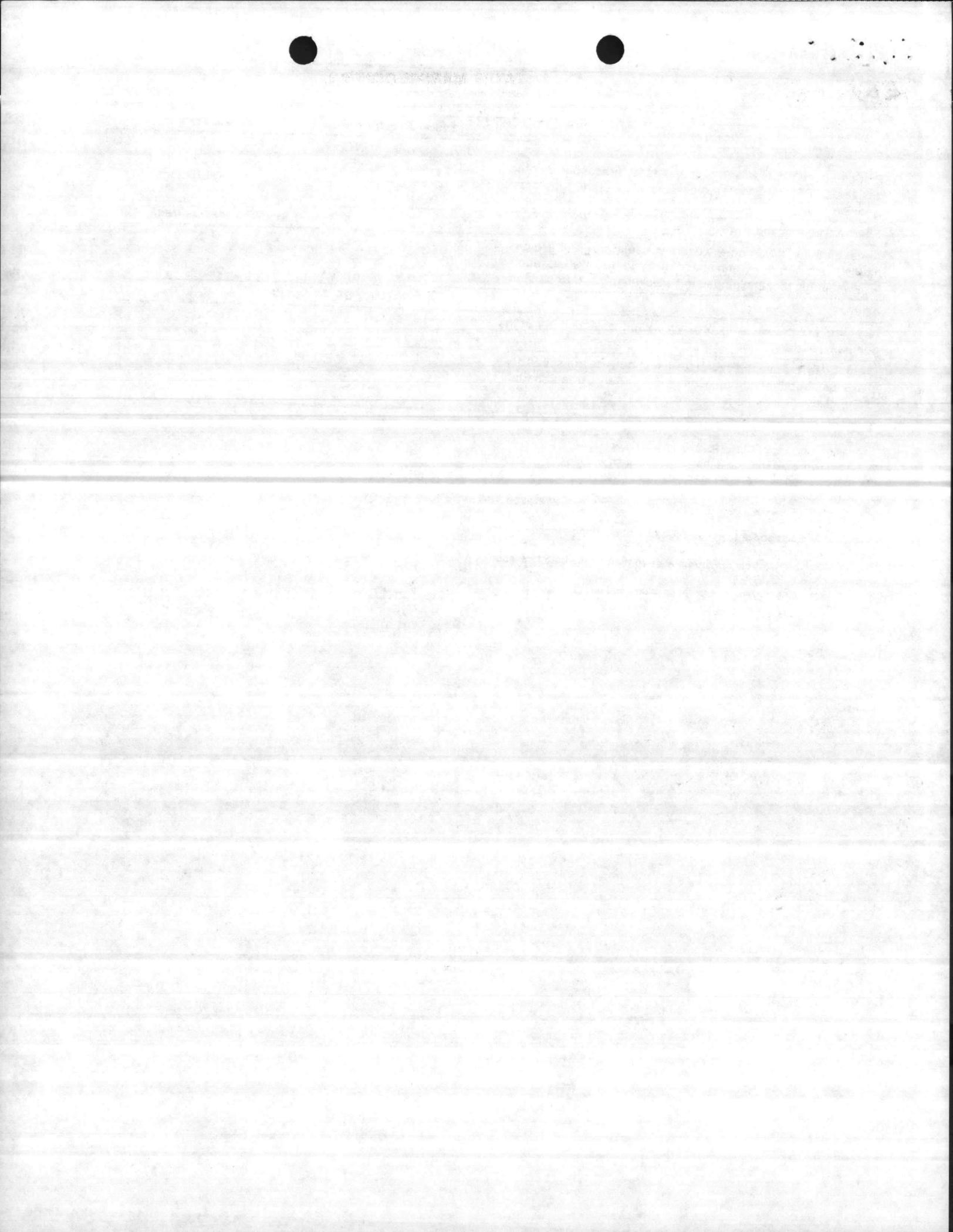
Notes:

1. Civilians may act as OIC or RSO (para 4-3c).
2. Complexity of exercise, number of participants, and physical separation of OIC from firing point may indicate need for RSO.
3. When nuclear, biological, chemical (NBC) training is being conducted, OIC must be NBC qualified. If an RSO is used, he or she must also be NBC qualified.
4. Use of E7s and above to act as OICs of artillery firing ranges is authorized only when approved by the installation commander.
5. Duties of safety officer are normally performed by the battery executive officer.
6. OIC will be a field grade officer for battalion and larger size units.

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UNITED STATES MARINE CORPS  
BASE SAFETY OFFICE  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA 28542-5000

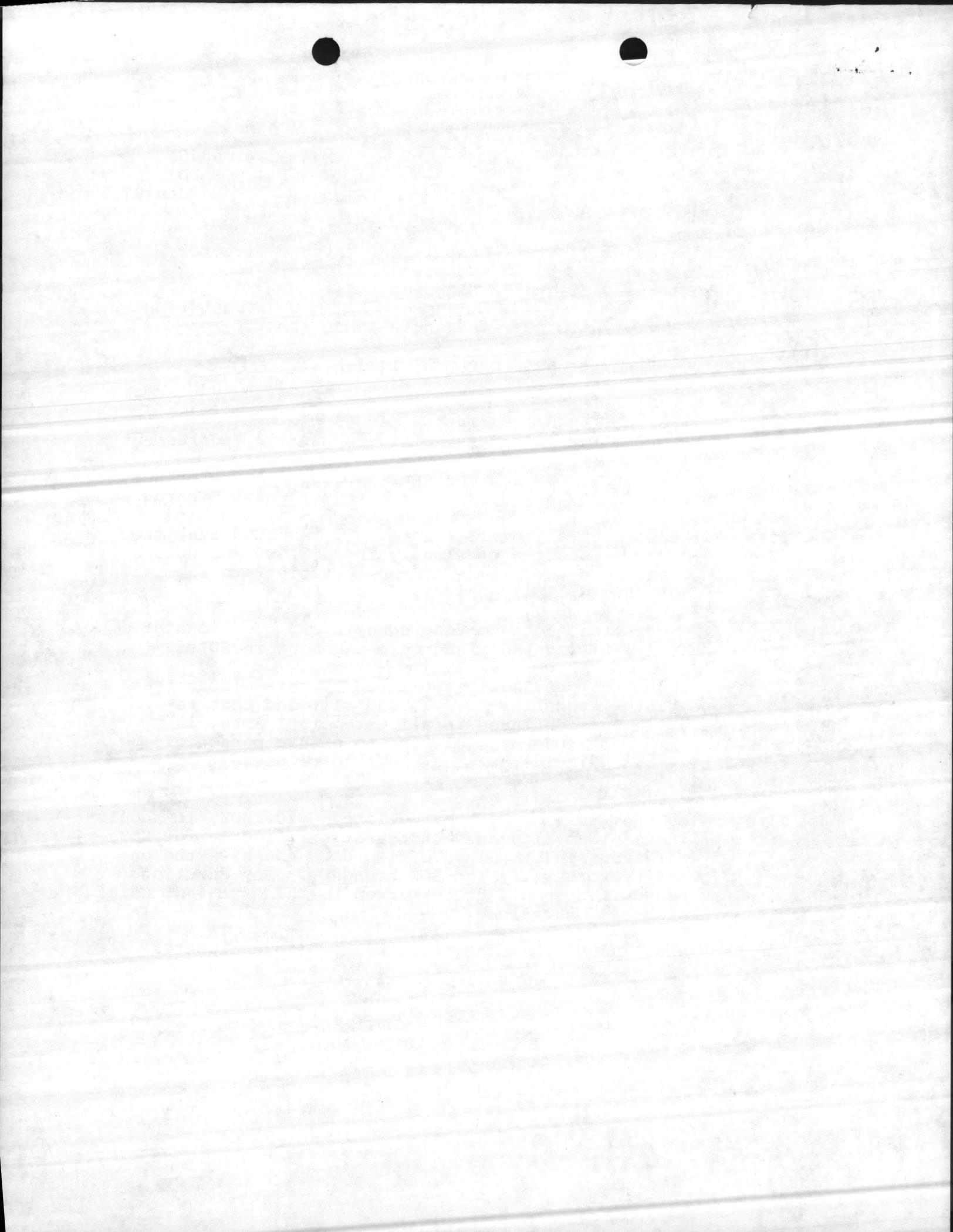
Peter

IN REPLY REFER TO:  
5040  
SAFD  
26 Jan 87

From: Base Safety Manager  
To: Assistant Chief of Staff, Facilities (Attn: Director,  
Natural Resources and Environmental Affairs)  
Via: Assistant Chief of Staff, Manpower *MC 1-27-87*  
Subj: NREAD ACTIVITIES IN SURFACE DANGER ZONES (SDZ)  
Ref: (a) Dir, NREAD ltr 5040 NREAD of 14 Jan 87  
(b) MCO P3570.1A  
Encl: (1) BSafMgr ltr 5040/1 SAFD of 3 May 85  
(2) Dir, NREAD ltr 5040 NREAD of 10 Sep 84; 2d Endorsement

1. In response to questions and concerns expressed in reference (a), a thorough review of policy in regard to personnel hazards and safeguards in the G-10 Surface Danger Zone (SDZ) has been conducted by the Base Safety staff. It should be noted that two similar studies were conducted previously in May 1985 and October 1984. Findings and recommendations of those studies are submitted as enclosures (1) and (2), respectively.
2. The enclosures detail longstanding concern and questions of personnel safety, liability and resource management in SDZs.
3. The recommendations previously submitted by this office that SDZs be grouped into Categories (I, II, and III) and that resource management be discontinued in all Category I SDZs, is believed to be the most absolute solution to ensure personnel are not exposed to high explosive hazards known to be present in Category I SDZs.
4. In regard to the question of the redefined G-10 SDZ, it should be noted that the minimum size and configuration criteria for SDZs is specified in reference (b). This office does not have the engineering capability to certify the SDZ boundary. Any questions regarding SDZ boundaries should be forwarded to the Assistant Chief of Staff, Training and Operations.
5. Recommend that the recommendations contained in enclosures (1) and (2) be favorably considered and implemented.

*R. J. Andrews*  
R. J. ANDREWS





UNITED STATES MARINE CORPS  
Base Safety Office  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5000

IN REPLY REFER TO:  
5040/1  
SAFD  
3 May 1985

From: Base Safety Manager  
To: Assistant Chief of Staff, Facilities  
Via: Assistant Chief of Staff, Manpower *AKR 3 May 85*  
Subj: CIVILIAN PERSONNEL SAFETY

Ref: (a) Memo 12500 FAC dtd 19Apr85 w/encl (1)  
(b) CPO ltr 12550 CPD dtd 15Apr85  
(c) CG ltr 5800 SJA dtd 13Mar85  
(d) Memo 11015 NREAD dtd 4Feb85  
(e) MCO P3570.1A

Encl: (1) SAFD ltr 5040 2 Oct 84 SDA's and Safety

1. In response to reference (a), a thorough review of command policy, procedures and the hazards associated with entry and work in surface danger areas (SDA's) has been conducted by the safety staff.

2. Findings.

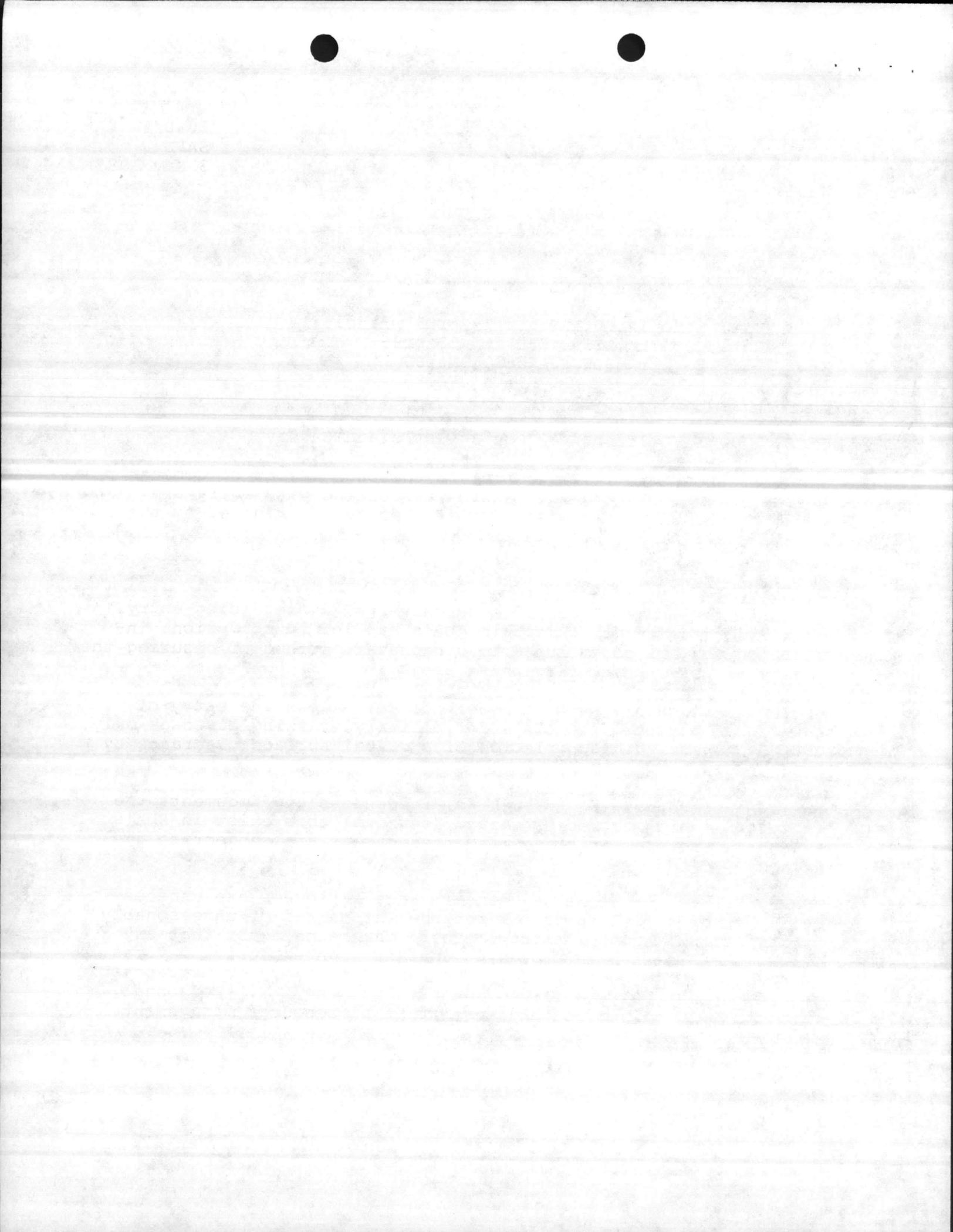
a. The apparent lack of a cohesive policy regarding entry, work and resource management in SDA's has led to confusion, indecision and has contributed to a haphazard method of ensuring the safety of persons entering these areas.

b. Paragraph 2 - 5d of reference (e) allows the entry of authorized persons into SDA's for military training purposes only, eg., maneuvers, upon completion of a visual surface clearance by EOD personnel.

c. References (b) through (d) recognizes and documents the fact that a high degree of hazard (serious) does exist in SDA's and that personnel entering into these areas are subject to the hazard.

3. Reference (b) expressed concern that employees are unnecessarily exposed to hazards. Reference (a) talked of unreasonably jeopardizing personnel safety. There can be no doubt that any intrusion into an area proven to contain high explosive devices constitutes a serious hazard. Whether that hazard is unreasonable or unnecessary must be viewed against its benefits. Personnel safety should take precedence over that of resource management.

1  
ENC L (1)



Subj: CIVILIAN PERSONNEL SAFETY

4. Recommendation.

a. The enclosure is a copy of a letter from the Base Safety Manager to the Assistant Chief of Staff, Facilities dated 2 October 1984. The letter was in response to a request for comments and recommendations regarding employee entry/work in SDA's. The enclosure provided the Assistant Chief of Staff, Facilities with recommendations that would both ensure the safety of personnel and provide for viable resource management.

b. The recommendations contained in the enclosure are re-submitted for consideration with the following modifications:

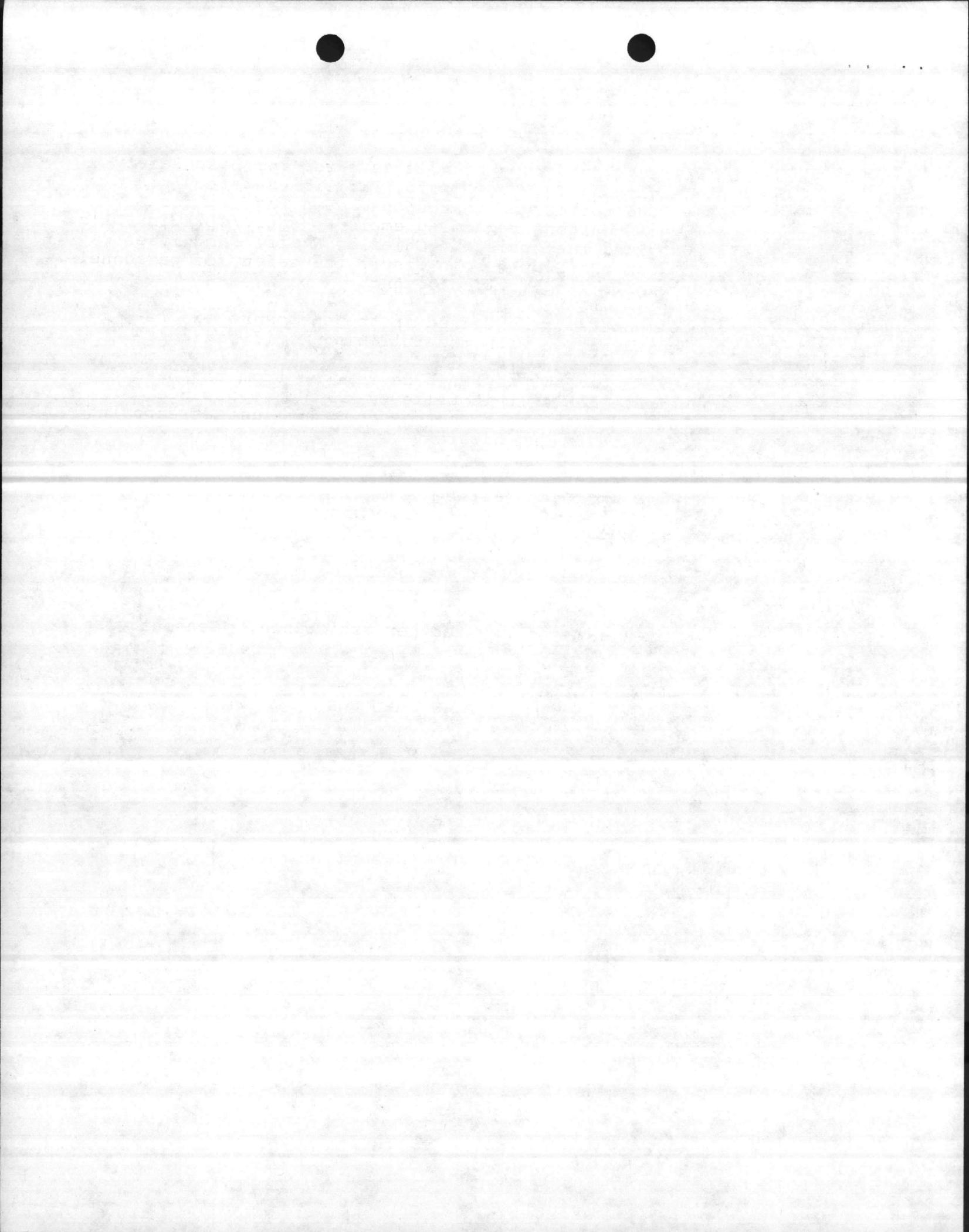
(1) That all Category I SDA's be removed from the Base Resources Management Plan. It is believed that the possible benefit to be derived from the resources does not justify exposing personnel to life threatening hazards.

(2) That a conference be scheduled between personnel of NREAD, Range Control, EOD and Safety to define categories and formulate guidance for SDA restriction and use.

(3) That entry/work policy apply equally to military as well as civilian employees except for bonafide military training missions.

5. If this office can be of any further assistance, please advise.

- R.J. Andrews  
R.J. ANDREWS



5040  
SAFD  
2 Oct 84

SECOND ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

From: Base Safety Manager, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune  
Via: Assistant Chief of Staff, Manpower, Marine Corps Base,  
Camp Lejeune

Subj: SURFACE DANGER AREAS AND SAFETY

Ref: (a) MCO P3570.1  
(b) EO P11102.1J

1. The first endorsement to the basic letter requested this office conduct an investigation and provide comments and recommendations relative to safety of workers who must enter Surface Danger Areas (SDA's), formerly referred to as impact areas and buffer zones.

2. Subject investigation was conducted on 24-27 Sep 84 by Base Safety personnel.

3. Findings:

(a) Prior to a November 1983 range safety assistance visit conducted by Mr. Paul Pennington, U.S. Army Range Safety, all areas formerly designated as buffer zones (with the exception of the K-2 area) were included in the resource management plan. As a result of observations and comments made by Mr. Pennington, NREAD operations in SDA's were halted.

(b) In June of 1984 questions again surfaced relative to NREAD personnel operations in SDA's. Correspondence on 30 Aug 84 between the Base Wildlife Manager and the Director of NREAD, point out that no decision had been made and no written instructions or guidance were issued to NREAD personnel in regards to work in SDA's.

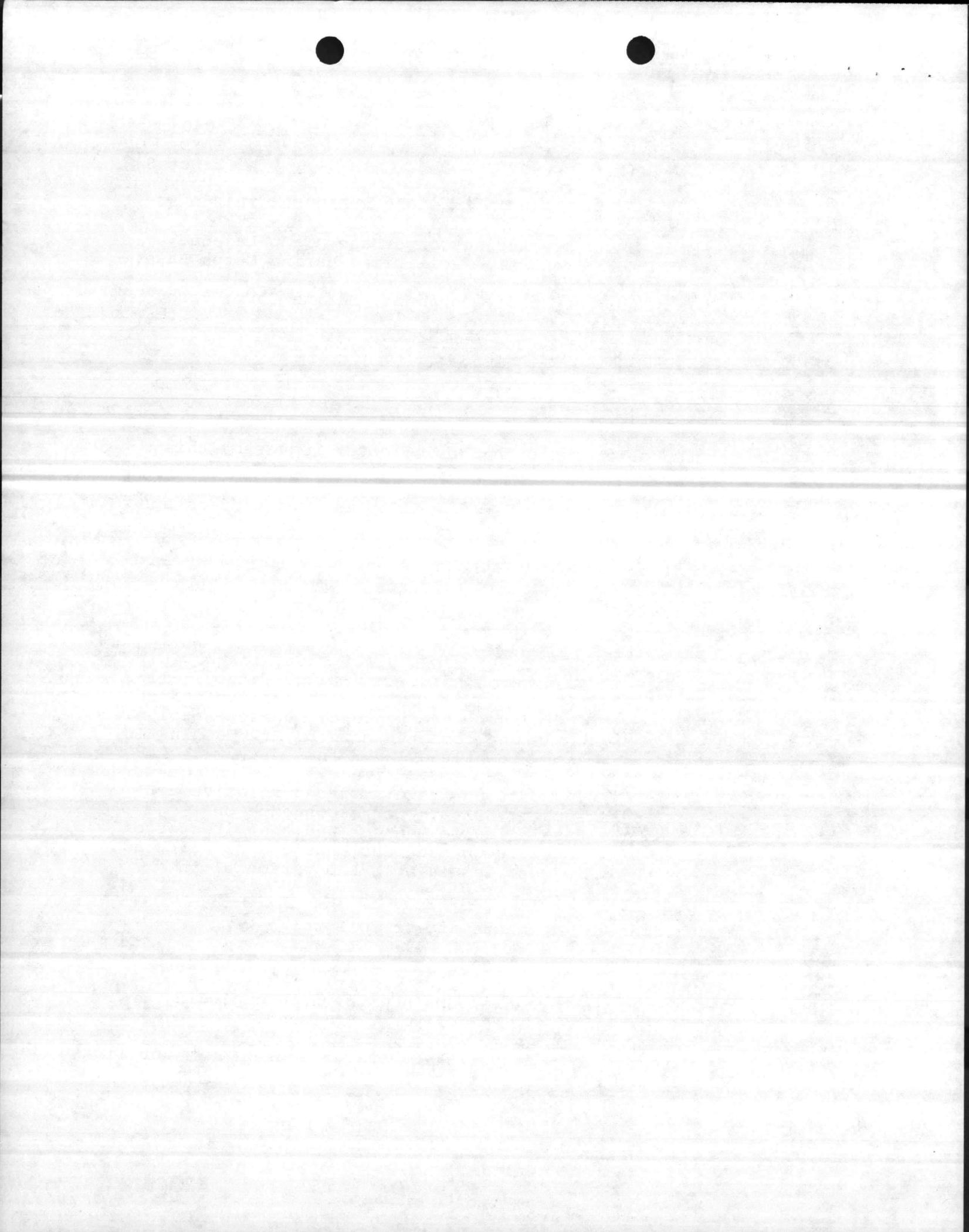
4. Recommendations and comments are as follows:

(a) All ranges and SDA's be divided into three categories

(1) Category I: Ranges/ SDA's into which exploding type ordnance and projectiles may be delivered or found.

(2) Category II: Ranges/SDA's that are used only for live firing of small arms (non-exploding rounds).

1  
ENCL (2)



Subj: SURFACE DANGER AREAS AND SAFETY

(3) Category III: Areas used for training other than live fire.

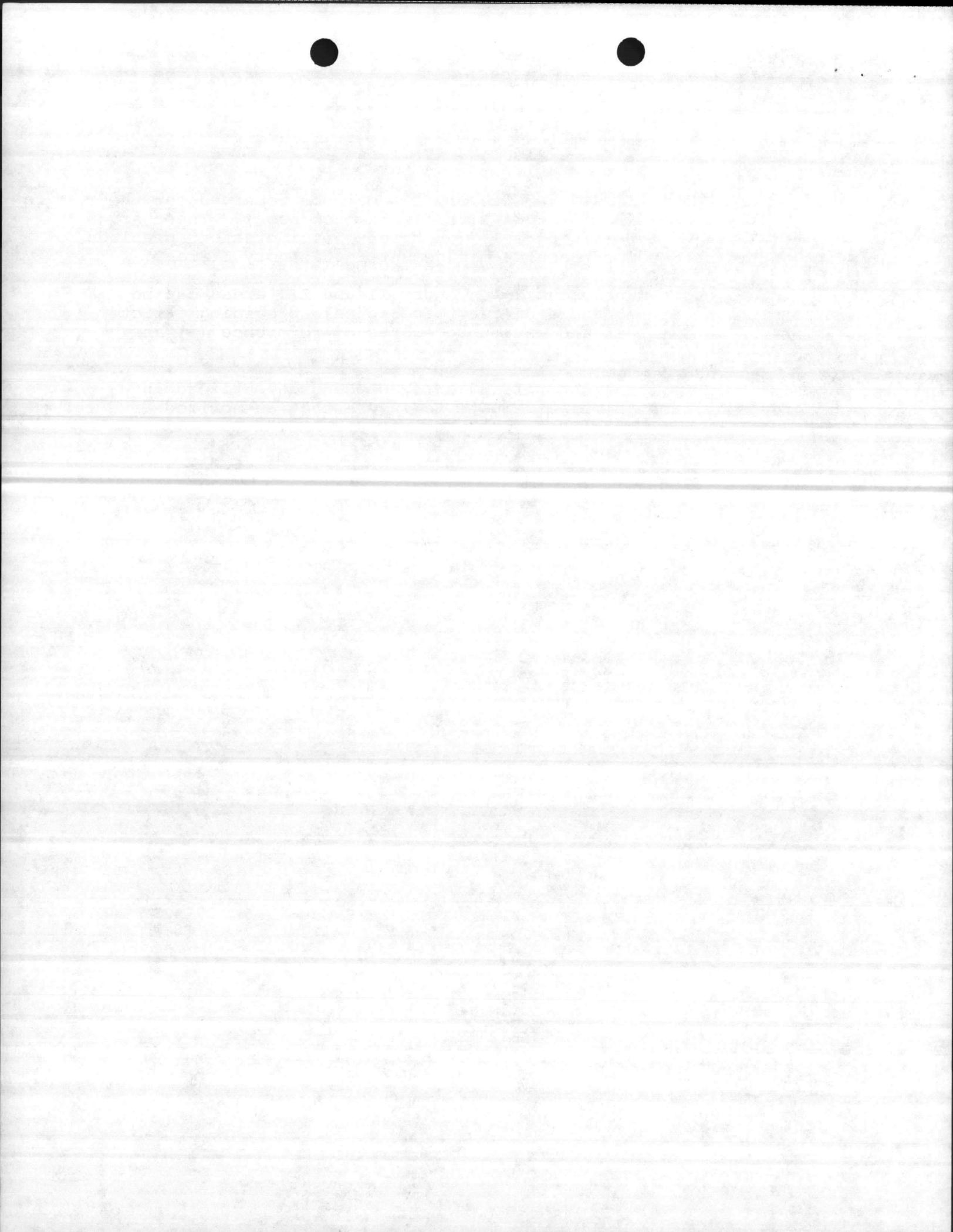
(b) All SDA's listed in Category I should be reserved for their intended purpose (that being a live fire impact area). These areas should be used for training only, as safety considerations preclude any justification for resource management in Category I areas.

(c) Resource management in Category II and III areas can be accomplished without undue danger to personnel, providing strict adherence to check in and entry procedures of reference (a) and (b) are enforced.

(d) Current range control and entry procedures outlined in reference (a) and (b) are adequate to insure that authorized personnel do not enter SDA's while ranges are "HOT".

R. J. ANDREWS

Copy to:  
NREAD  
BMO  
CPD



UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5000

5100  
FAC  
21 SEP 1984

FIRST ENDORSEMENT on Dir, NREAD ltr 5040 NREAD dtd 10 Sep 84

From: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

To: Assistant Chief of Staff, Manpower <sup>DOC 9.2.84</sup> (Attn: Base Safety Manager)

Subj: SURFACE DANGER AREAS AND SAFETY

1. Readdressed and forwarded.

2. The basic correspondence expresses concern for the safety of personnel working in surface danger areas and requests guidance. Request you please investigate and provide comments and recommendations.

  
B. W. ELSTON  
Acting

Copy to:  
NREAD  
BMO  
CPO





UNITED STATES MARINE CORPS  
Natural Resources and Environmental Affairs Division  
Marine Corps Base  
Camp Lejeune, North Carolina 29542

IN REPLY REFER TO:  
5040  
NREAD  
Sep 10 1984

From: Director, Natural Resources and Environmental Affairs  
Division, Marine Corps Base, Camp Lejeune  
To: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

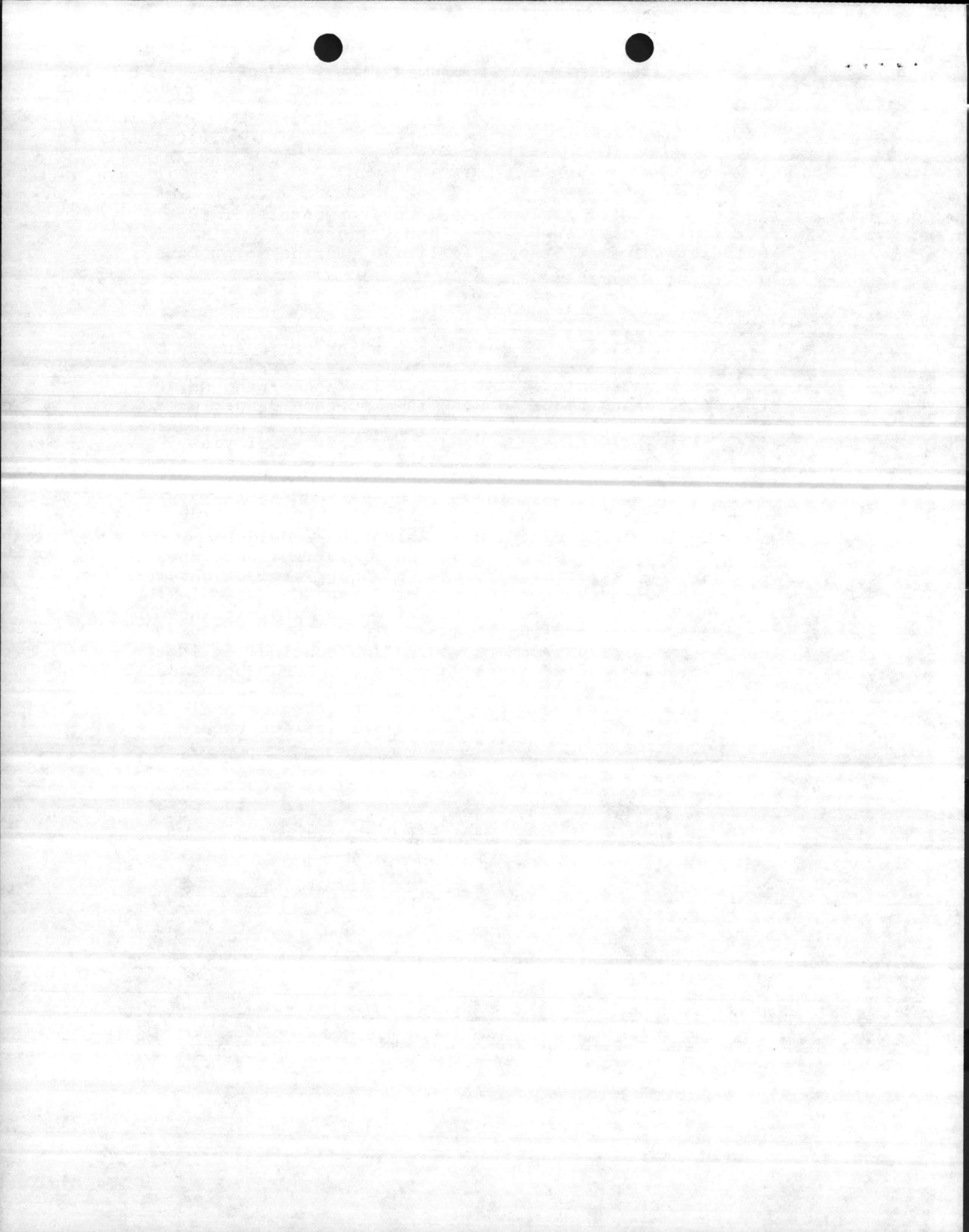
Subj: SURFACE DANGER AREAS AND SAFETY

Encl: (1) Base Wildlife Mgr ltr 11015/1B NREAD of 30 Aug 84

1. The enclosure documents recent discussion concerning NREAD personnel accomplishing required work in a surface danger area. As you are aware from recent discussion on G-10 clearing and proposed K-2 clearing/drainage project, my staff and I view working in a surface danger area as being a serious matter from a safety standpoint. On at least two occasions, the Assistant Chief of Staff, Facilities has formally requested the Assistant Chief of Staff, Training to advise as to what activities (Base Maintenance, Public Works and Natural Resources) could be accomplished safely in surface danger and live-fire range areas. I am not aware of an official response on safety precautions for operating in surface danger areas or live-fire range areas. There have been meetings and discussions on the subject since an Army representative visited the Base on 8-10 November 1983 and raised several range safety points (including hunting) in what was originally called buffer zones. Currently, NREAD personnel pick up daily training schedules to try to make sure we do not get in a live-fire situation. If in doubt, NREAD personnel telephone Range Control to check on range utilization before entering a range or fan.

2. Considering the enclosure, it is respectfully requested the AC/S Facilities provide safety instructions for NREAD to operate in surface danger areas.

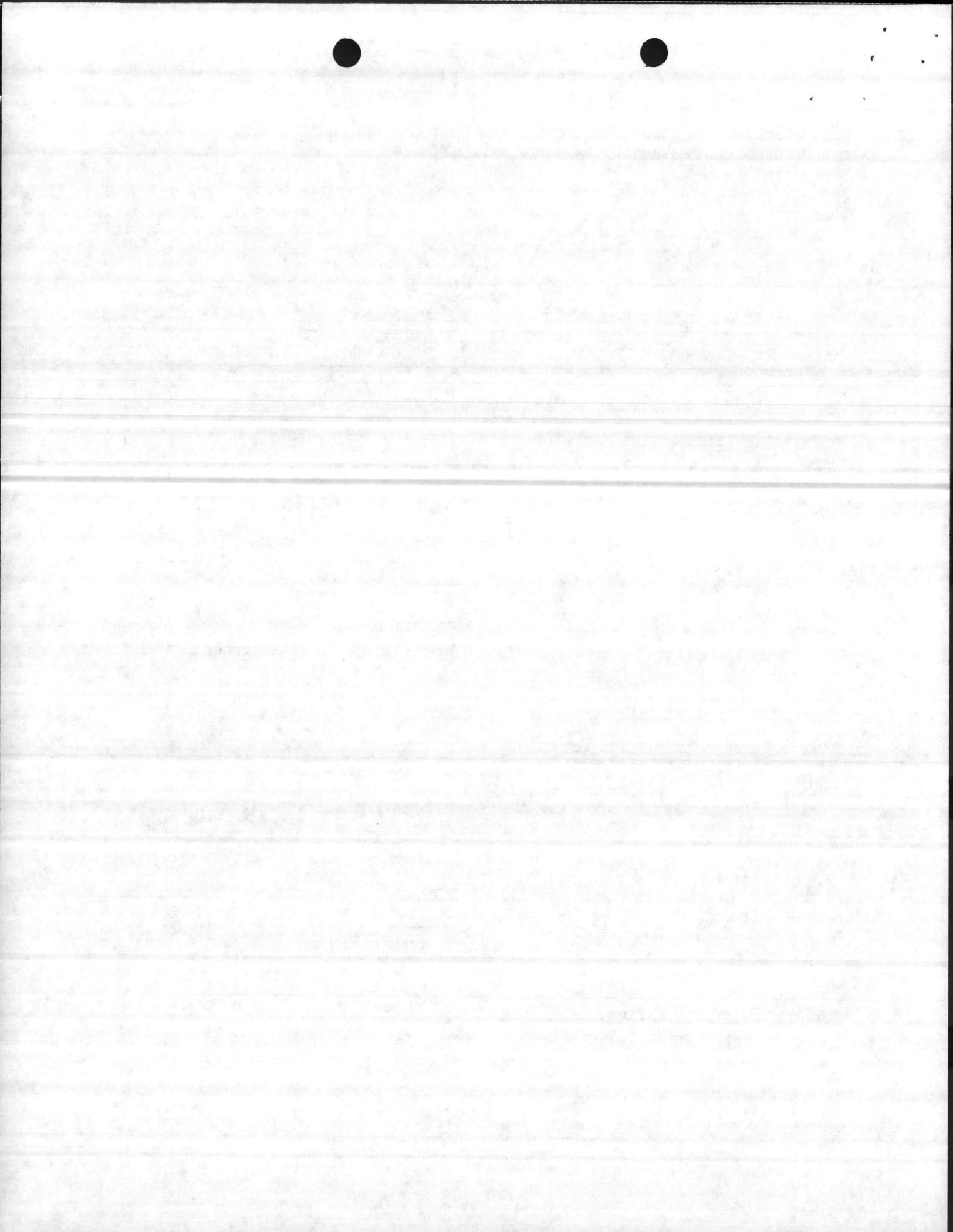
*J. I. Wooten*  
J. I. WOOTEN











TRNG/OPS  
24 Apr 87

TALKING PAPER

Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN THE G-10 SURFACE  
DANGER ZONE/IMPACT AREA

Ref: (a) MEMO FOR THE CG 5800 SJA 47 of 21 Apr 87

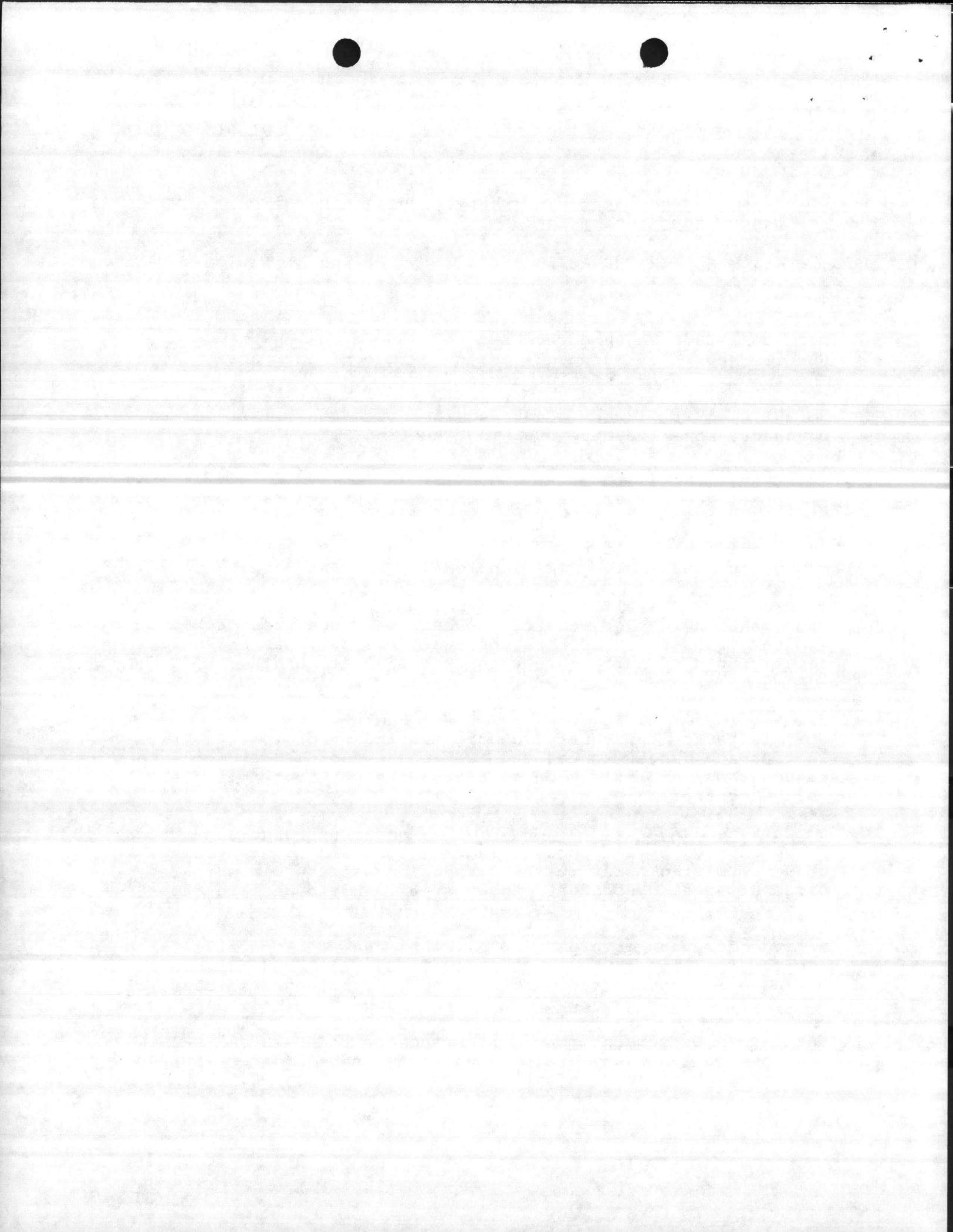
BACKGROUND

- For years Camp Lejeune referred to those areas on the CLNC Special Map which surround the three major impact areas and are shown in yellow as "buffer zones."
- Normal activities were conducted in these areas; i.e., hikes, bivouacs, non-live fire training, hunting, etc.
- As a result of a training accident involving an artillery round fired out of safe and the death of a dependent wife, a review of the range safety procedures was conducted (1983-1984).
- The local term "buffer zone" was subsequently discarded and the proper terminology was adopted.
- Terminology is still the basis of the problem and the only organization that objects to the current procedures is NREAD who have raised issues first of hazardous duty pay and now safety, both of which have been explained at length.

DISCUSSION

- The minutes of the safety council meeting refer to activities in "surface danger zones" and the referenced SJA memo continues this terminology despite explanations from this office to the contrary.
- A "surface danger zone" (SDZ) is a segment of range area which is endangered by a weapon firing and consists of everything from the firing point to the dispersion pattern, impact area, ricochet areas, secondary danger areas, and in certain cases, an area to the rear of the weapon.
- A "secondary danger area" (SDA) is an area which parallels the impact area, laterally, on the downrange side, and on the uprange side which "contains fragments from items exploding or ricocheting on the edge of the impact area."
- The design of common impact areas such as the G-10 and K-2 result in a secondary danger area (SDA) around the periphery very similar to the old "buffer area."

ENCLOSURE (7)



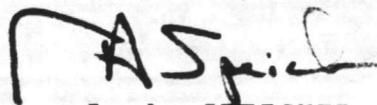
- There are no restrictions on entering a secondary danger area beyond being "authorized;" there is no requirement for hazardous duty pay, EOD escorts, or to restrict activities in these zones except when firing is actually in progress.
- There are restrictions on entering an "impact area"; any employee ordered to work in these areas should be paid accordingly and provided EOD on site assistance/escort.
- To help identify the boundary between the secondary danger area and the impact area, large signs have been erected and international orange bands have been painted on trees around the G-10 impact area. Further, where new dud-producing weapons or ranges have been introduced since publication of the CLNC Special Map, their impact areas are protected by concertina wire, marked with signs, and outlined by the international orange rings on the trees.
- Unexploded ordnance is periodically discovered at various locations throughout the base since documentation of range use from the 1940's and early 1950's is lacking and the EOD will not certify any area of the base as absolutely safe.
- The SJA memo misquotes, or only partially quotes, the Base EOD officer who fully discussed these matters during the 25 March meeting.
- In fact of all the EOD calls covering the last six months and involving 10,561 pieces of various types of ordnance recovered, not one call was received from NREAD nor was one piece of ordnance recovered from a secondary danger area or "buffer zone."

*We haven't been in the SDA since Nov. 85, except with EOD.*

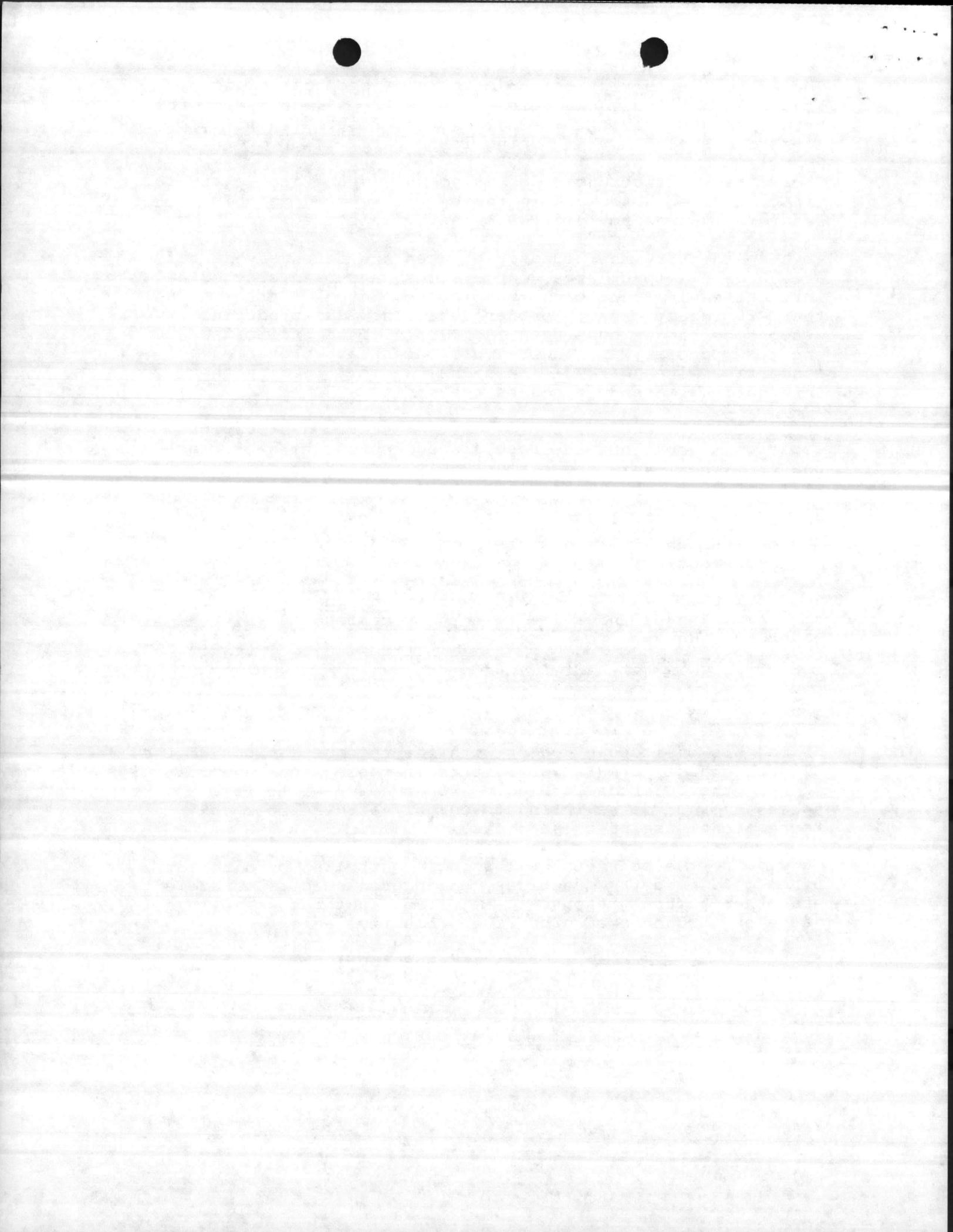
#### RECOMMENDATIONS

- While this office can concur with the recommendations of the SJA to conduct no NREAD activities in these areas and to redraft the orders accordingly, we do not feel it is necessary, nor do we intend to curtail either troop or recreational use of these areas.
- To give up the benefits of logging, controlled burning and other good forestry practices, endangered species management, and other natural resources activities in these areas is a waste of thousands of otherwise productive acres.

Very respectfully,



J. A. SPEICHER  
Assistant Chief of Staff,  
Training and Operations





UNITED STATES MARINE CORPS  
MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:

5050

FAC  
MAY

8 1987

SECOND ENDORSEMENT on Chairman, Safety Council ltr 5101/1 dtd  
13 Mar 87

From: Assistant Chief of Staff, Facilities, Marine Corps Base,  
Camp Lejeune

To: Chairman, Safety Council

Via: (1) Assistant Chief of Staff, Training and Operations  
(2) Chief of Staff

Subj: MINUTES OF SAFETY COUNCIL MEETING

Ref: (c) MCO P3570.1A

Encl: (4) Surface Danger Zone diagram  
(5) Surface Danger Zone G-10, K-2 ranges  
(6) SJA memo 5800 SJA 47 dtd 21 Apr 87  
(7) AC/S Trng&Ops Talking Paper dtd 24 Apr 87

1. Development and layout of firing ranges to include dimensions for surface danger zone (SDZ) diagrams (safety fans) for all ranges aboard Marine Corps Base, Camp Lejeune are in accordance with reference (c).

2. A surface danger zone (SDZ) is that segment of a range area which is endangered by a particular type of weapon firing and which consists of the dispersion pattern, impact area, ricochet areas, secondary danger areas, and in certain cases, an area to the rear of the weapon.

3. The secondary danger area (SDA) is an area which parallels the impact area laterally and on the downward side of the impact area/ricochet area. The SDA is designed to contain fragments from items exploding or ricocheting on the far edge of the impact area. The SDA is area A and area b on enclosure (4).

4. The design layout of the G-10, K-2, and N-1 ranges results in a secondary danger area (SDA) around the periphery as shown on enclosure (5).

5. During firing no unprotected personnel or equipments are authorized in the surface danger zone (SDZ). When firing is not being conducted, authorized personnel may enter the surface danger zone (SDZ), secondary danger area (SDA), and areas A and B on enclosure (4) without EOD support, as these secondary danger areas (SDA) are areas in which it is reasonably foreseeable that unexploded ordnance will not be found. Entry into other areas of the surface danger zone (SDZ) such as the ricochet area or impact area requires EOD support.



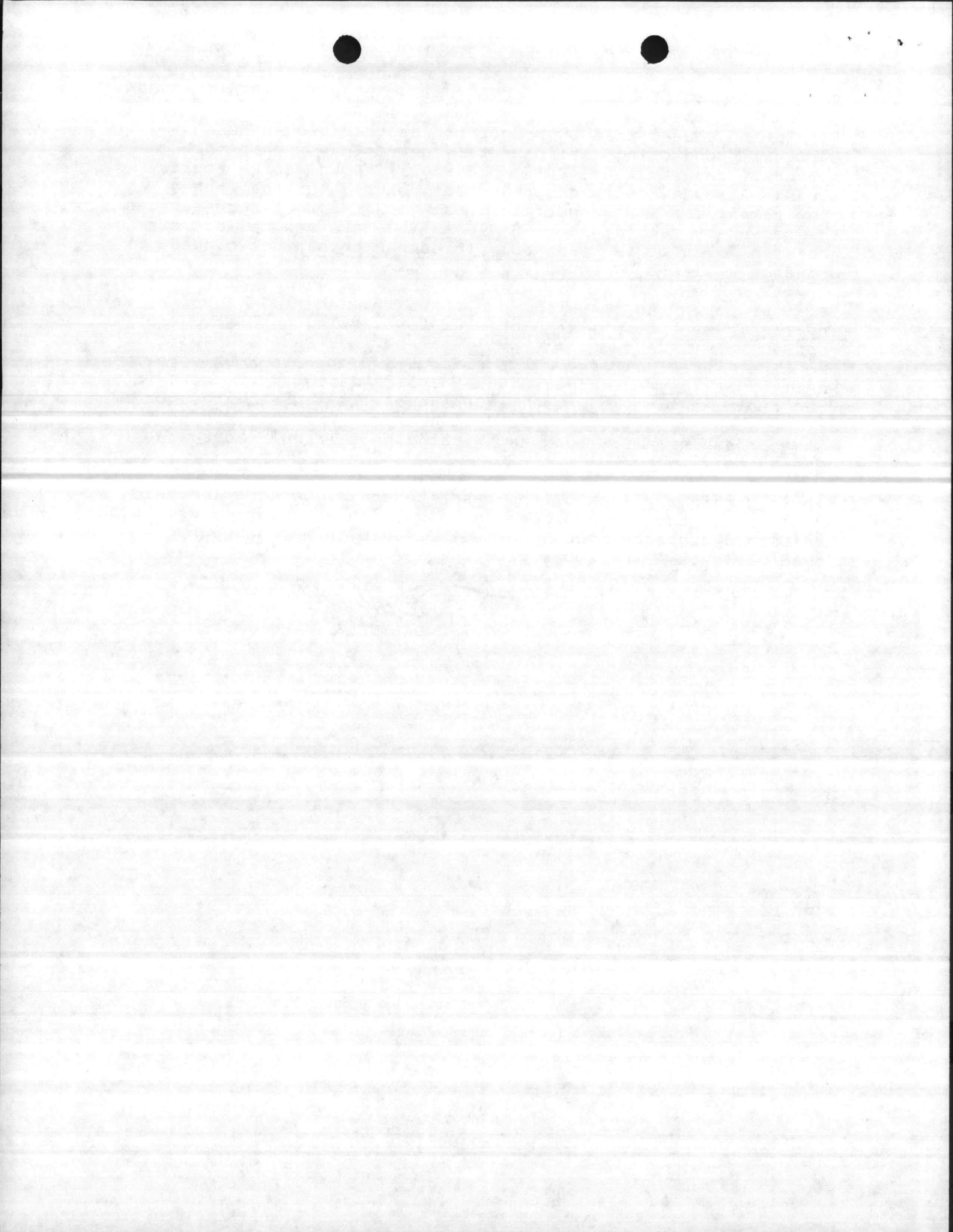
Subj: MINUTES OF SAFETY COUNCIL MEETING HELD 19 FEBRUARY 1987

6. In the recent past, EOD support was provided to NREAD personnel conducting environmental inspections within the secondary danger areas (SDA), previously known as the "buffer area." A review of range procedures pointed out that the requirement for EOD support in these areas was not necessary as the secondary danger areas (SDA), as they are now called, are areas in which it is reasonably foreseeable that unexploded ordnance will not be found.

7. Based upon the above and enclosures (6) and (7), I do not see any requirement to initiate changes to existing regulations or procedures. NREAD personnel will not be required to do work in the impact areas/ricochet area without appropriate EOD support. Routine work may be conducted on the secondary danger areas (SDA) when firing is not underway. EOD support is not required nor is any personal liability incurred by ordering personnel to work within these areas as long as existing range regulations are adhered to.

8. As within any area of the base, personnel working in field areas are to use extreme caution; and if they happen to come upon unexploded ordnance, they must not disturb the ordnance but immediately call for EOD support.

  
T. J. DALZELL



**SURFACE DANGER ZONE**

**Surface danger zone.** That segment of the range area which is endangered by a particular type of weapon firing and which consists of the following areas:

- (1) **Dispersion pattern.** The distribution of a series of rounds fired from one weapon or group of weapons under conditions as nearly identical as possible, the points, bursts, or impacts being dispersed about a point called the center of impact.
- (2) **Impact area.** The primary danger area for indirect fire weapons that is established for the impact of all rounds. When applied to direct fire weapons, it is the area located between established range limits. The impact area is within the approved surface danger zone.
- (3) **Ricochet area.** The area between the impact area and Area A (or Area G, when applicable) which parallels the line of fire and which is provided to contain ricochet projectiles.
- (4) **Area A.** The area (secondary danger area) which parallels the impact area laterally and which is provided to contain fragments from items exploding or ricocheting on the right or left edge of the impact area.
- (5) **Area B.** The area (secondary danger area) which is on the downrange side of the impact area and Area A. It is designed to contain fragments from items exploding on the far edge of the impact area.
- (6) **Area F.** The area which is immediately to the rear of a weapon or group of weapons and which is endangered by the effects of the weapon being fired.
- (7) **Rear range.** The area to the rear of the firing position.
- (8) **Gun target line.** An imaginary straight line drawn between the gun and the target.

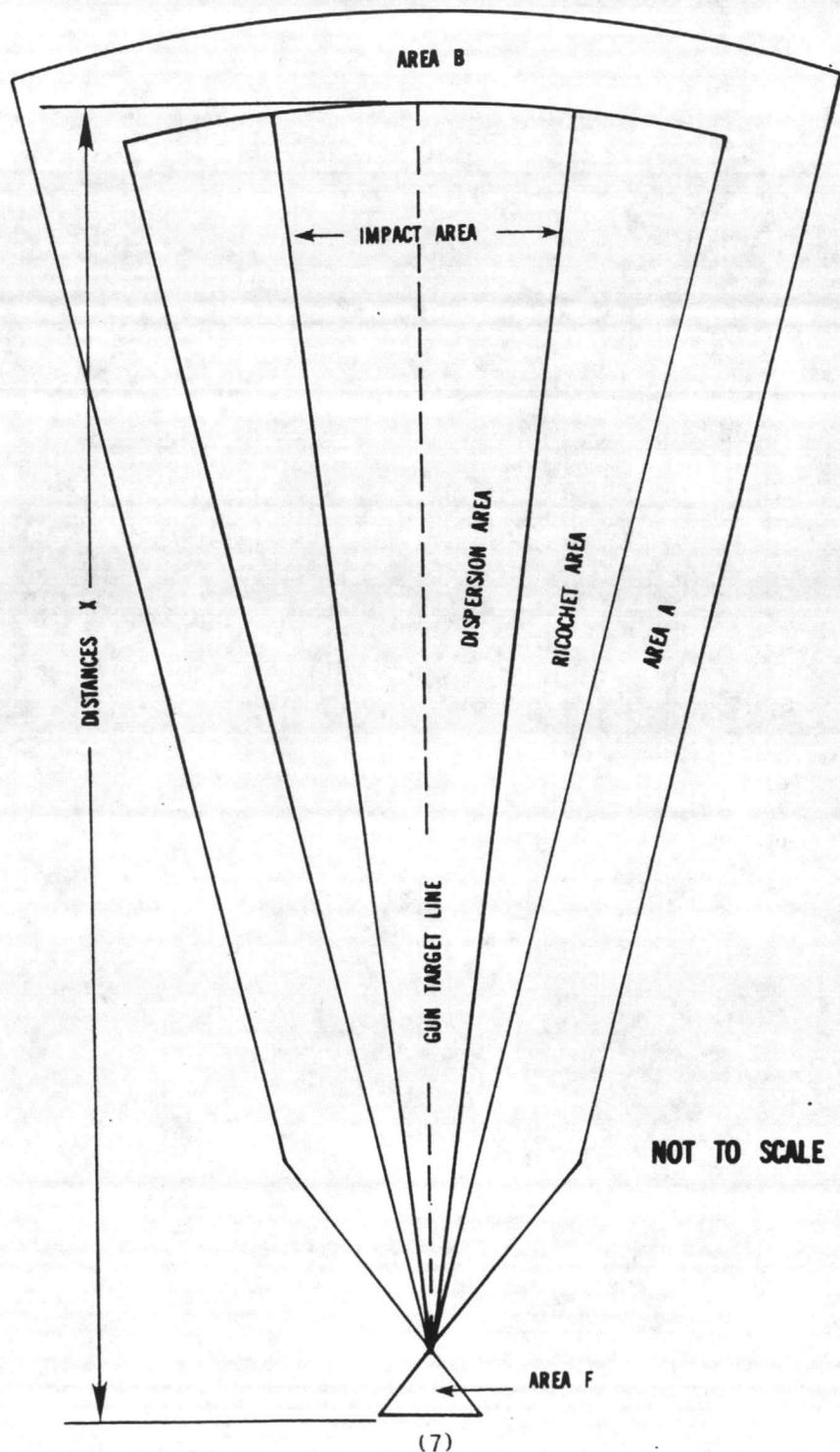
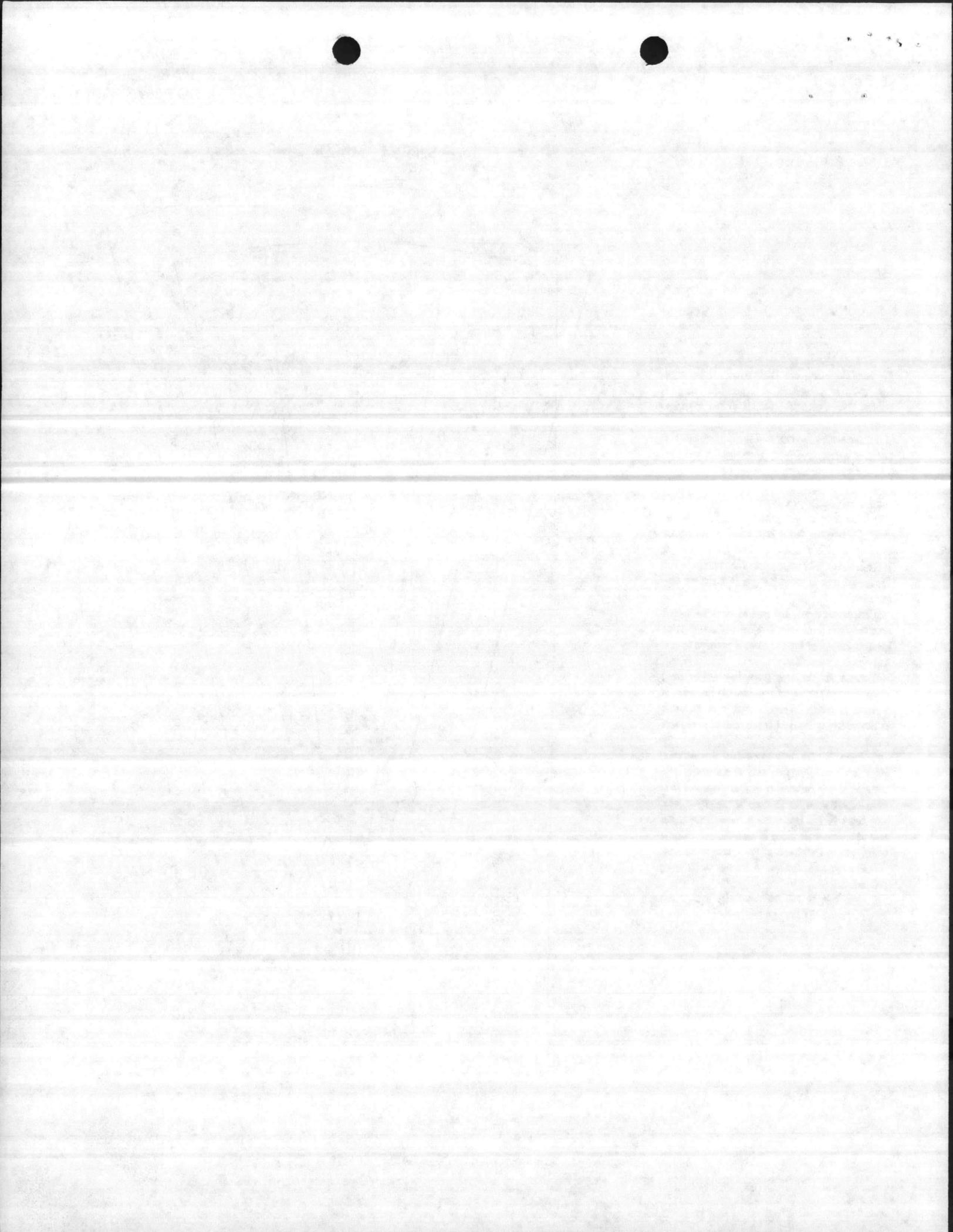
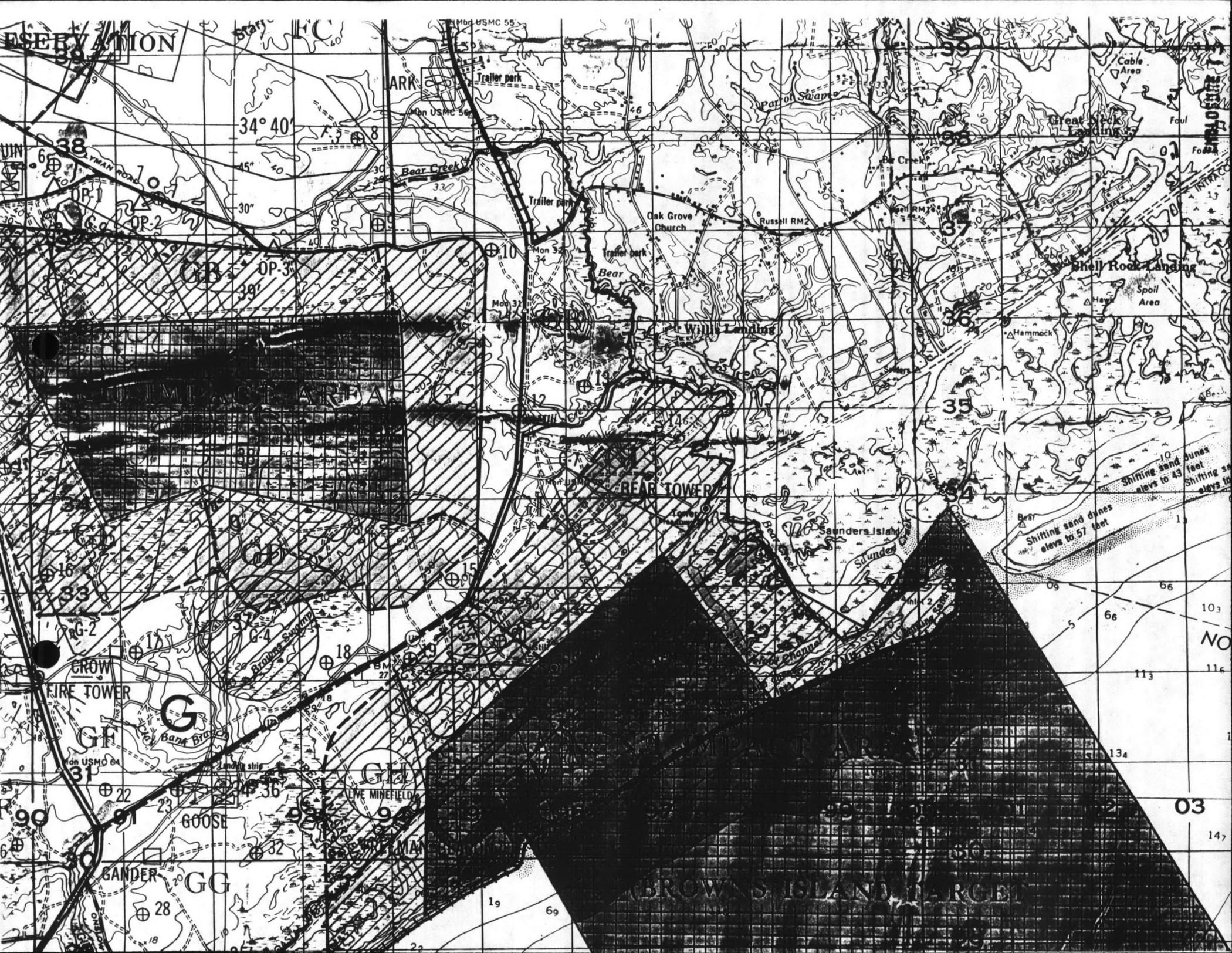
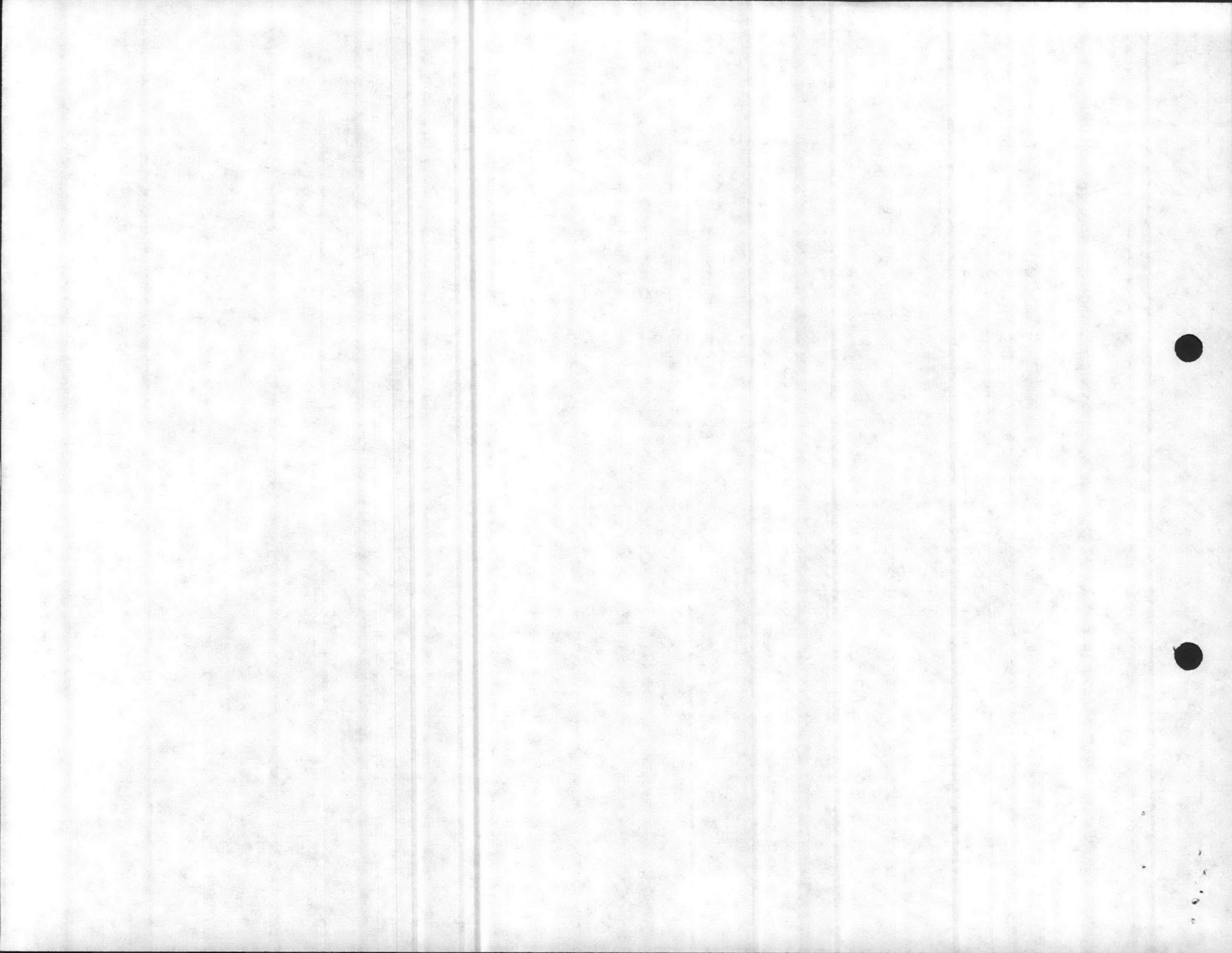
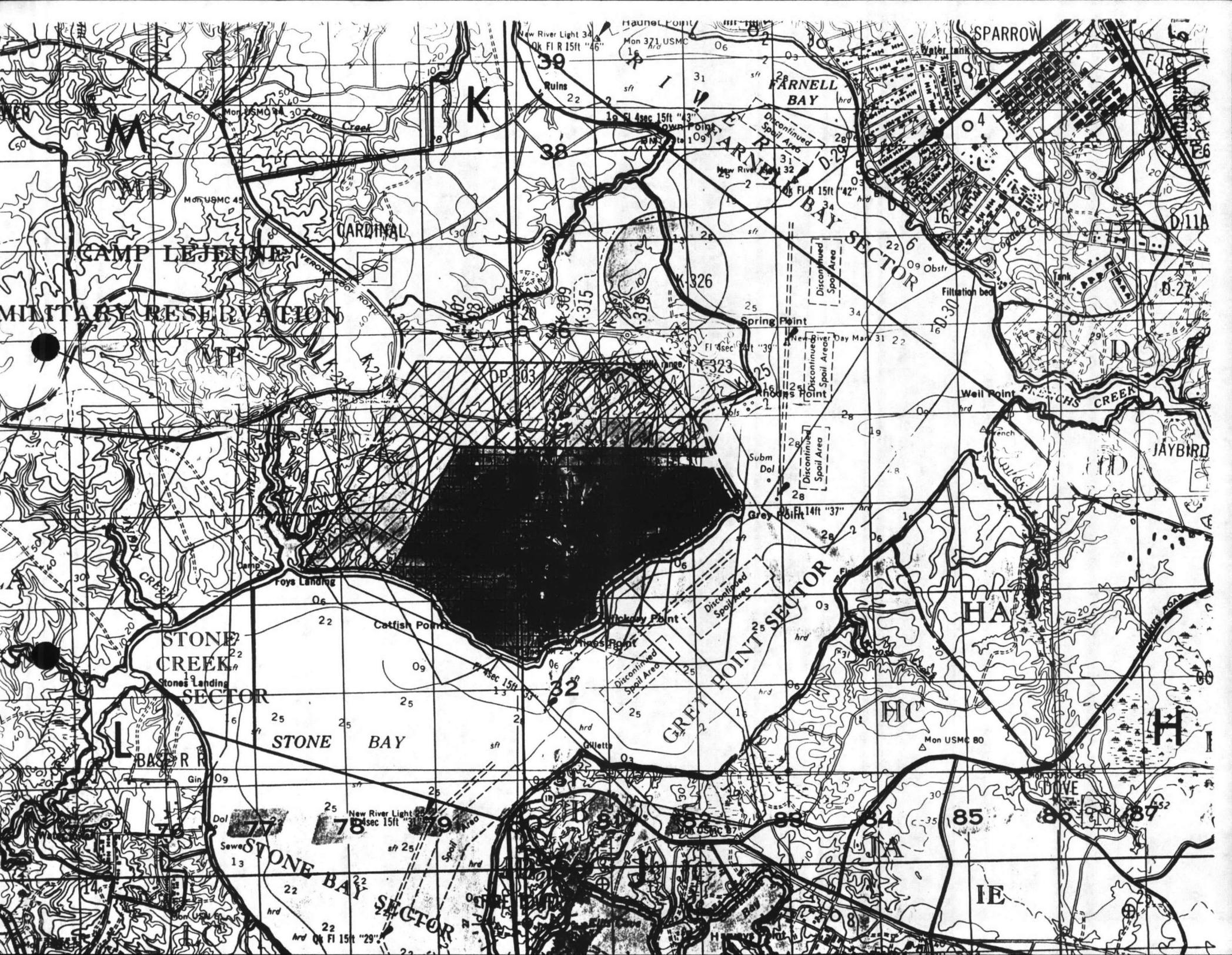


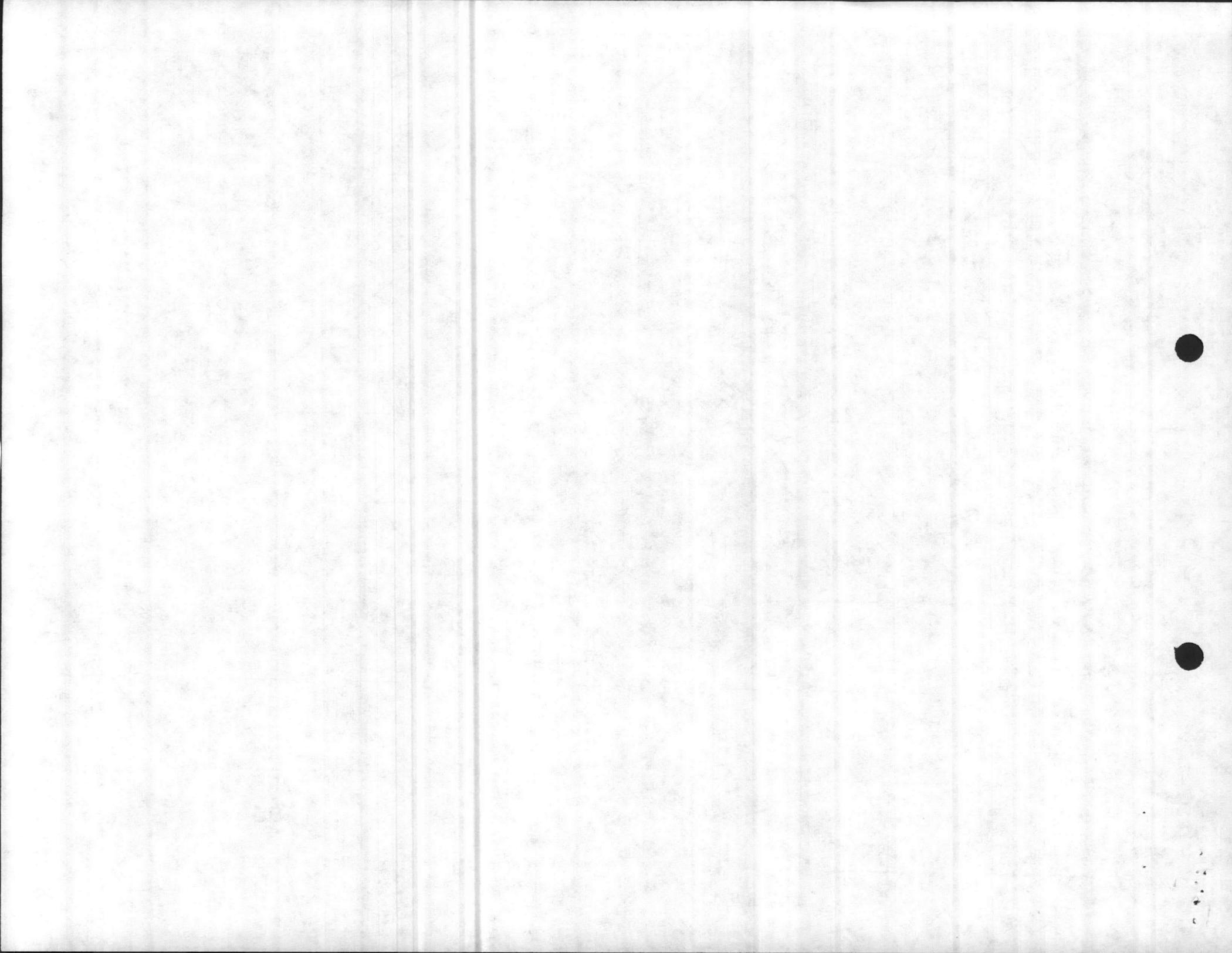
Figure 1-1. Sample explanation—Direct fire mode











08  
WP

UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

5100

FAC

DEC 08 1987

FIRST ENDORSEMENT on SJA Memo for the Chief of Staff 5101 SJA41  
of 18 Sep 1987

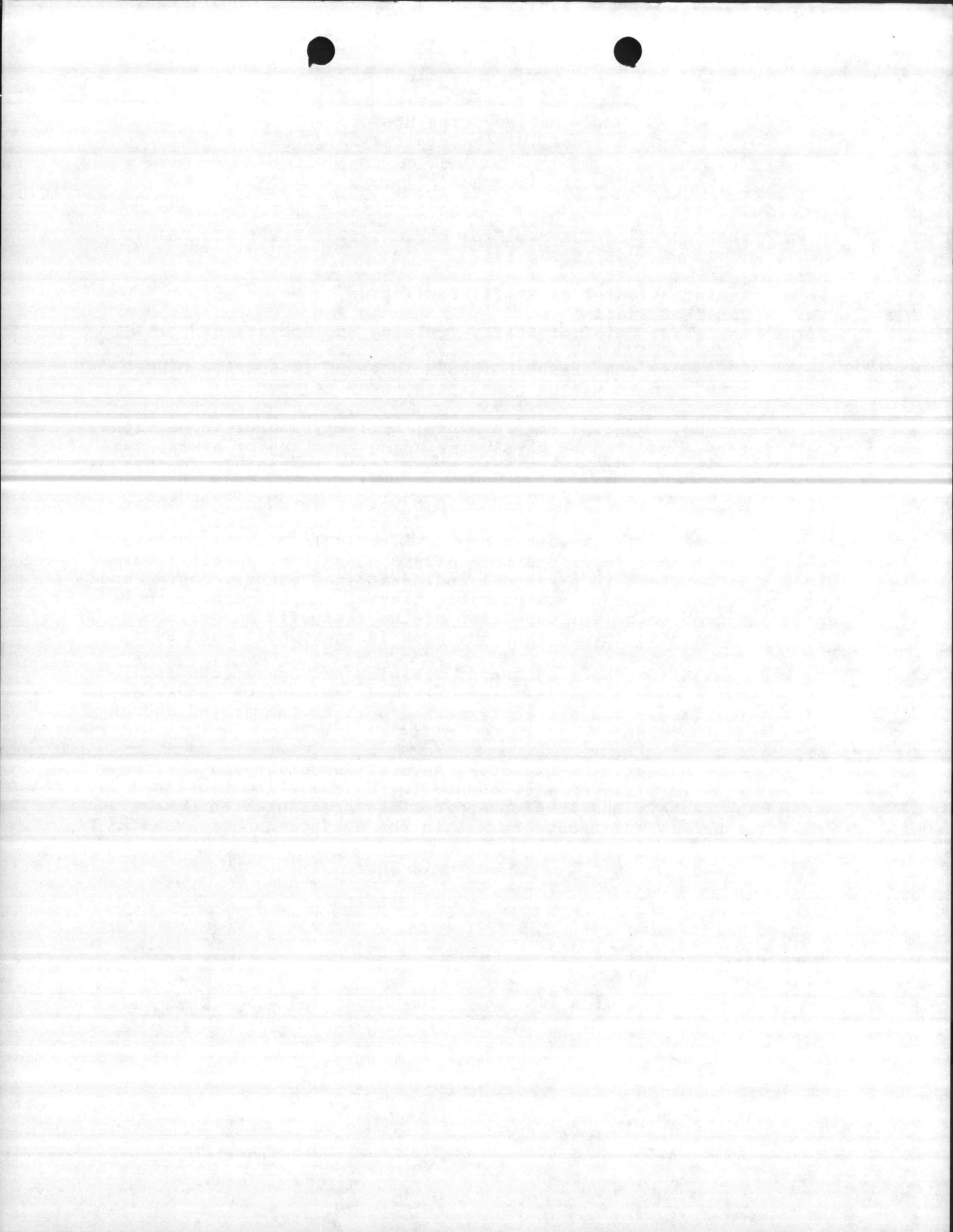
From: Assistant Chief of Staff, Facilities  
To: Chief of Staff  
Via: Assistant Chief of Staff, Training and Operations

Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. Forwarded. Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods. In those instances where personnel may be required to enter impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists, detailed, specific warnings will be given to personnel indicating the nature, degree and potential locations of all possible risks. In addition, a thorough and comprehensive inspection of the area will be performed and documented to ensure that the area is reasonably made safe.
2. The Assistant Chief of Staff, Training and Operations is requested to ensure that all impact areas and surface danger areas are appropriately and correctly marked both on the ground and on base training maps.
3. By copy hereof, the Director, Natural Resources and Environmental Affairs Division will adhere to the guidelines outlined in paragraph 1 above and develop appropriate procedures to manage the wildlife and forest resources within the surface danger areas.

T. J. DALZELL

Copy to:  
→ NREAD  
BMC







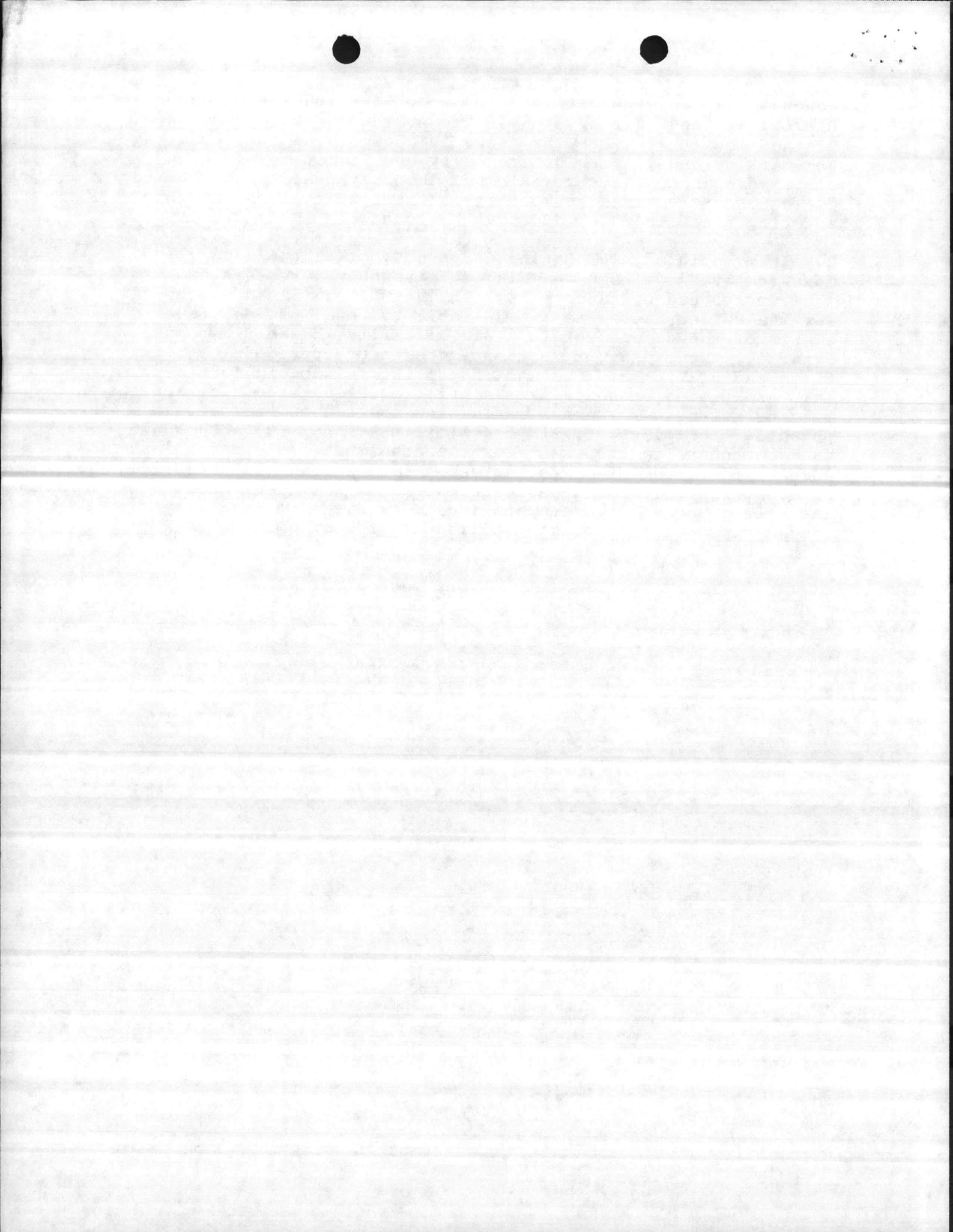












# Memorandum

5 040

NREAD

DATE: 22 Dec 1987

FROM: Director, Natural Resources and Environmental Affairs Division,  
Marine Corps Base, Camp Lejeune  
TO: Distribution List

SUBJECT: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER ZONES  
ABOARD MARINE CORPS BASE, CAMP LEJEUNE

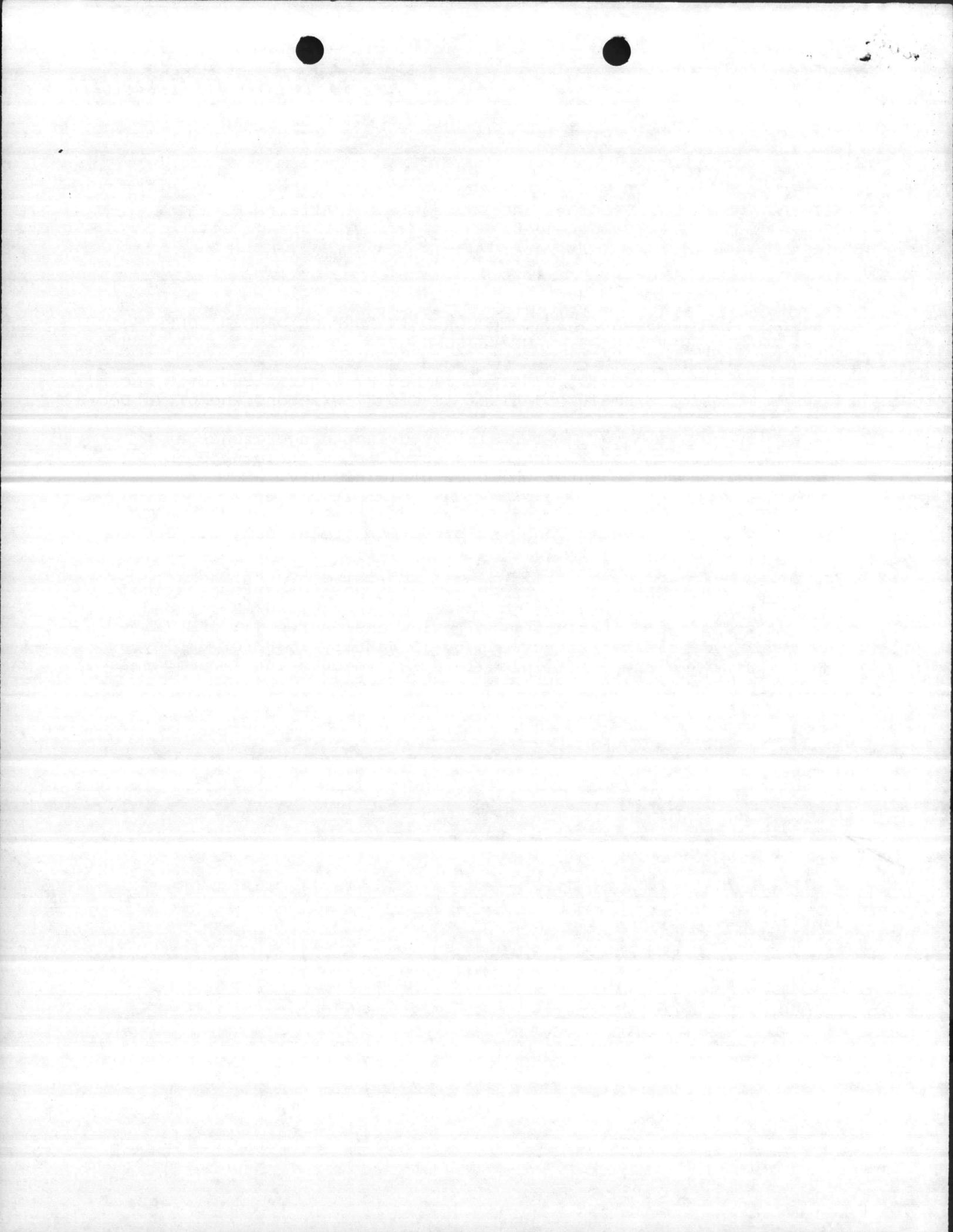
REFERENCE: (1) SJA memo for C/S 5101 SJA41 of 18 Sep 87 w/first end of 8 Dec 87  
(2) SJA memo for C/S 5101 SJA41 of 18 Sep 87 w/second end of 11 Dec 87

1. Enclosures (1) and (2) pertain to surface danger zones at Marine Corps Base, Camp Lejeune and establishes procedures to follow if required to enter while on official duty.

2. Historically NREAD personnel have physically entered impact areas and surface danger zones to perform official duties. Due to safety concerns of subordinate personnel, I have attempted on several occasions to get command guidance for NREAD personnel entering impact areas and surface danger zones to perform official duties. The latest guidance is contained in enclosures (1) and (2). Addressees are instructed to review enclosures (1) and (2) and develop specific instructions by 15 January 1988 for employees under your immediate supervision relative to entering impact areas and surface danger zones while on official duty.

JULIAN I. WOOTEN

Copy to:  
Base Ecologist  
Base Forester  
Base Wildlife Manager



DS.  
DF  
Ply

UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

5100

FAC

DEC 08 1987

FIRST ENDORSEMENT on SJA Memo for the Chief of Staff 5101 SJA41  
of 18 Sep 1987

From: Assistant Chief of Staff, Facilities  
To: Chief of Staff  
Via: Assistant Chief of Staff, Training and Operations

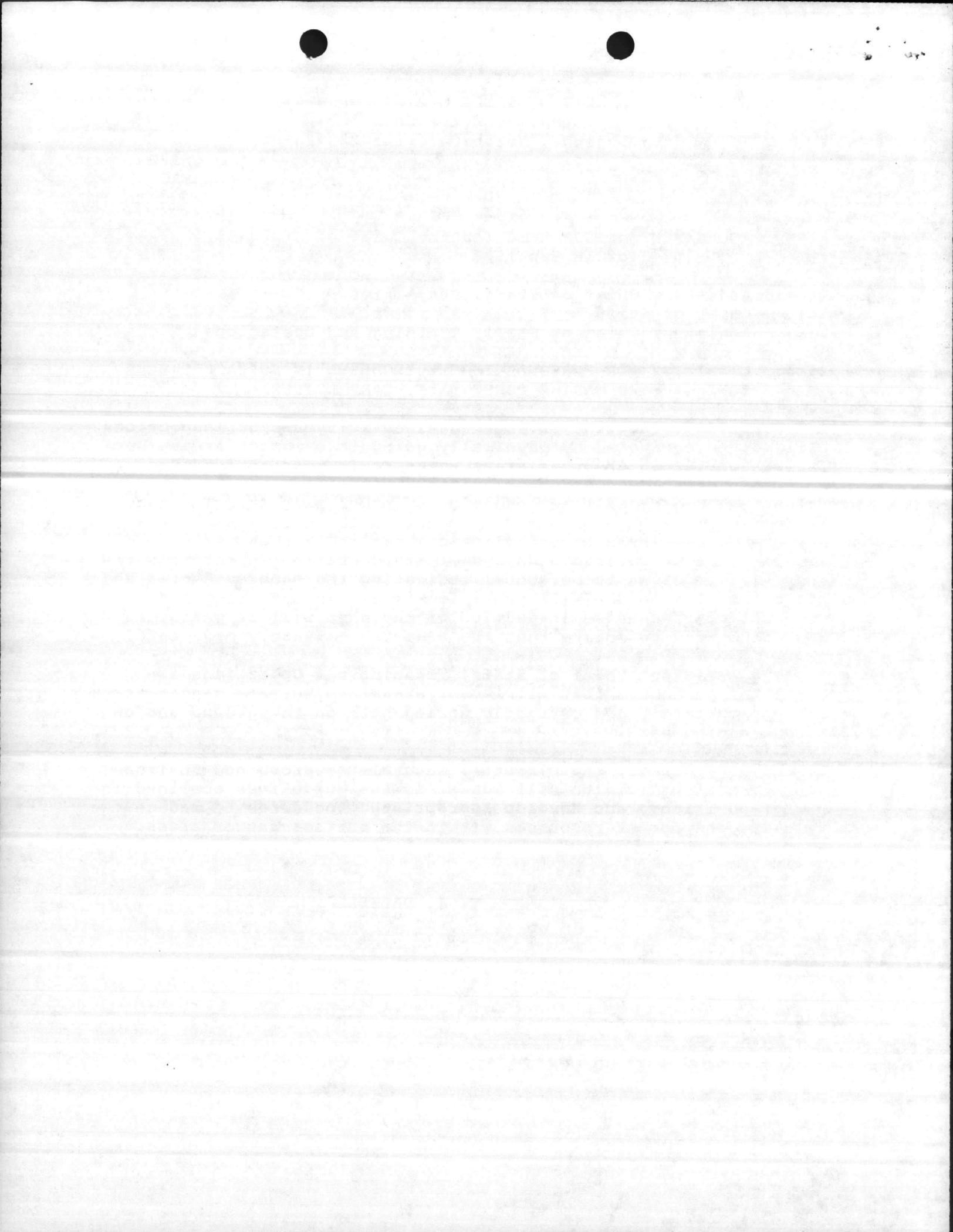
Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. Forwarded. Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods. In those instances where personnel may be required to enter impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists, detailed, specific warnings will be given to personnel indicating the nature, degree and potential locations of all possible risks. In addition, a thorough and comprehensive inspection of the area will be performed and documented to ensure that the area is reasonably made safe.
2. The Assistant Chief of Staff, Training and Operations is requested to ensure that all impact areas and surface danger areas are appropriately and correctly marked both on the ground and on base training maps.
3. By copy hereof, the Director, Natural Resources and Environmental Affairs Division will adhere to the guidelines outlined in paragraph 1 above and develop appropriate procedures to manage the wildlife and forest resources within the surface danger areas.

T. J. DALZELL

Copy to:

→ NREAD  
BMC



5100  
TRNG/OPS  
11 Dec 87

SECOND ENDORSEMENT on SJA memo for the Chief of Staff 5101 SJA 41  
of 18 Sep 87

From: Assistant Chief of Staff, Training and Operations  
To: Chief of Staff

Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. The SJA memo makes clear the possibility of government and individual liability in the event of injuries suffered as a result of dud ordnance. This should come as no surprise — other than perhaps personal liability — but the question becomes one of responsible, practical operations or the avoidance of any possibility of injury and subsequent suit.

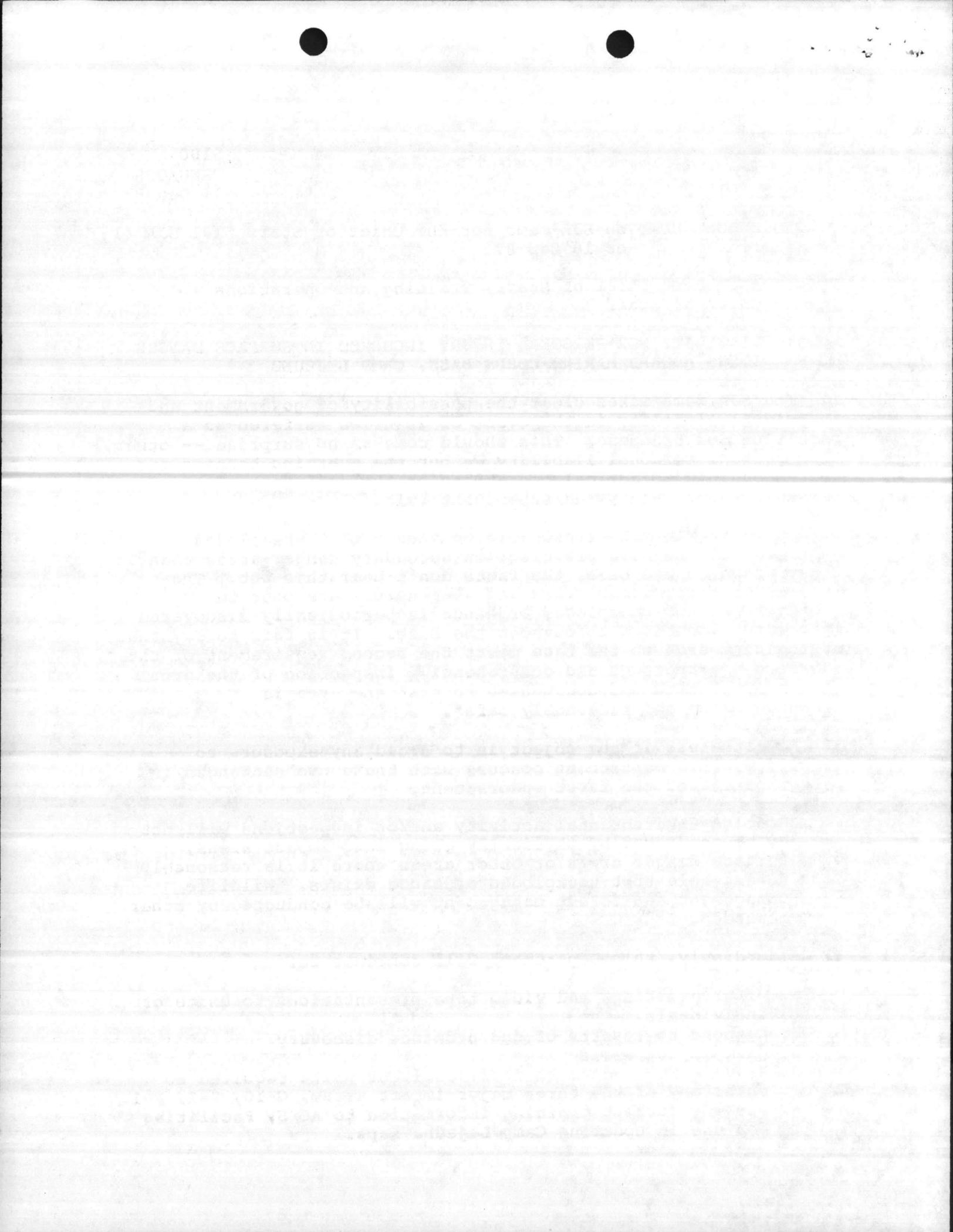
2. While it might be reasonable to assume that unexploded ordnance will be more prevalent in secondary danger areas than in other areas on the base, the facts don't bear this out. The records of early range areas and weapons use are poor to non-existent and unexploded ordnance is periodically discovered at various locations throughout the Base. It is fair to say that no training area on the Base meets the second requirement of the SJA memo, "a thorough and comprehensive inspection of the area must be performed and documented to that the area is decontaminated and reasonably safe".

3. Nevertheless if the object is to avoid any exposure to liability, this Department concurs with these two sentences in paragraph one of the first endorsement.

"Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods".

4. Accordingly, this Department will continue to:

- a. Offer briefings and video tape presentations to units or individuals.
- b. Respond to reports of dud ordnance discovery
- c. Mark impact areas
- d. Provide EOD escort to individuals or units required to enter any of the three major impact areas, G-10, K-2, N-1.
- e. Provide current training information to AC/S, Facilities for use in updating Camp Lejeune maps.



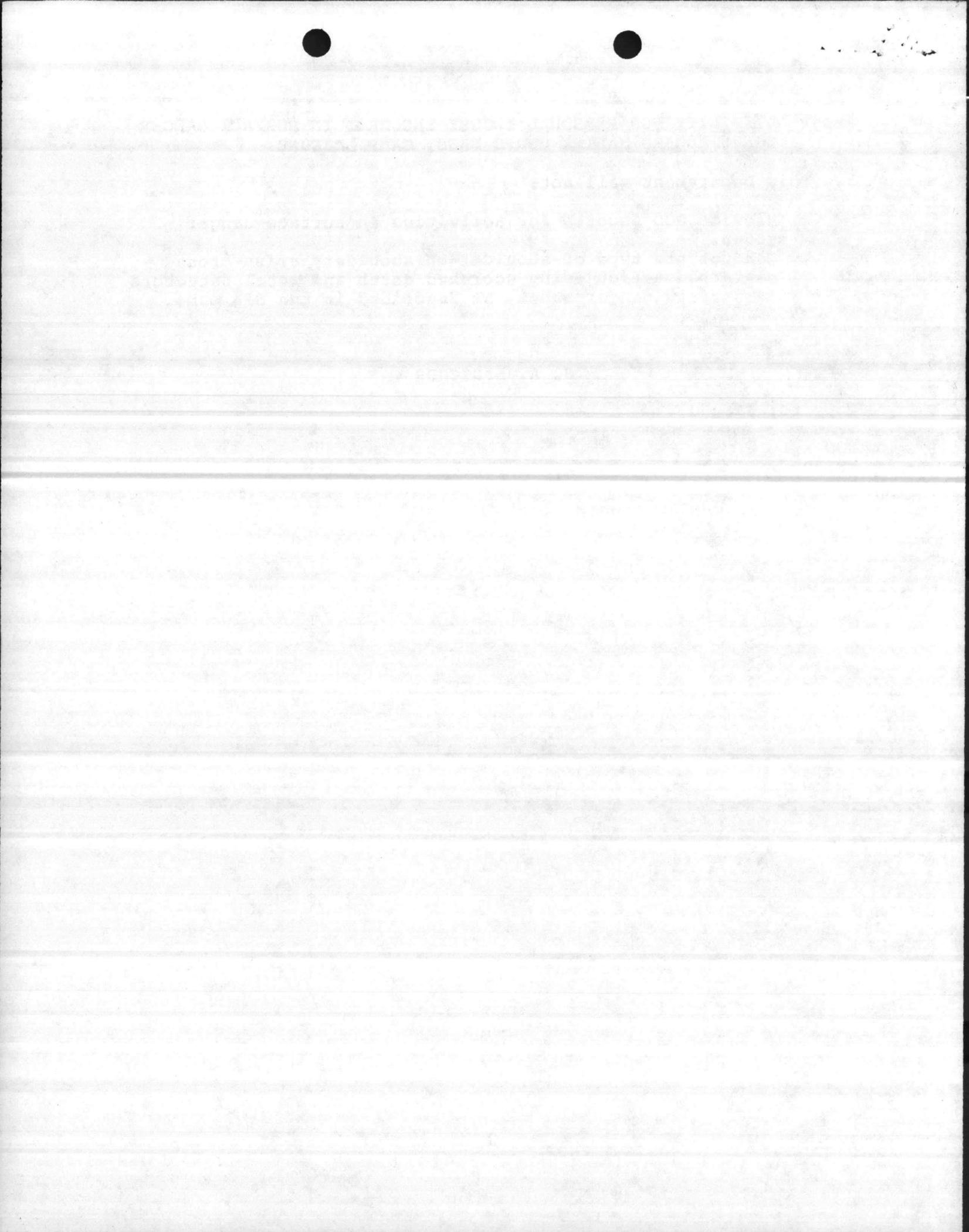
**Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE**

**5. This Department will not:**

- a. Provide SOD escorts for activities in surface danger zones.**
- b. Conduct the type of shoulder-to-shoulder, criss-cross patterned search using scorched earth and metal detectors in surface danger zones, as described in the SJA memo.**

**J. A. SPEICHER**

**Copy to:  
TFAC  
EOD  
NREAD  
BMO**



Date: 11/9/87

From: Pete  
To: All Forestry Personnel  
Subj: BASE SDZ AND P.I.

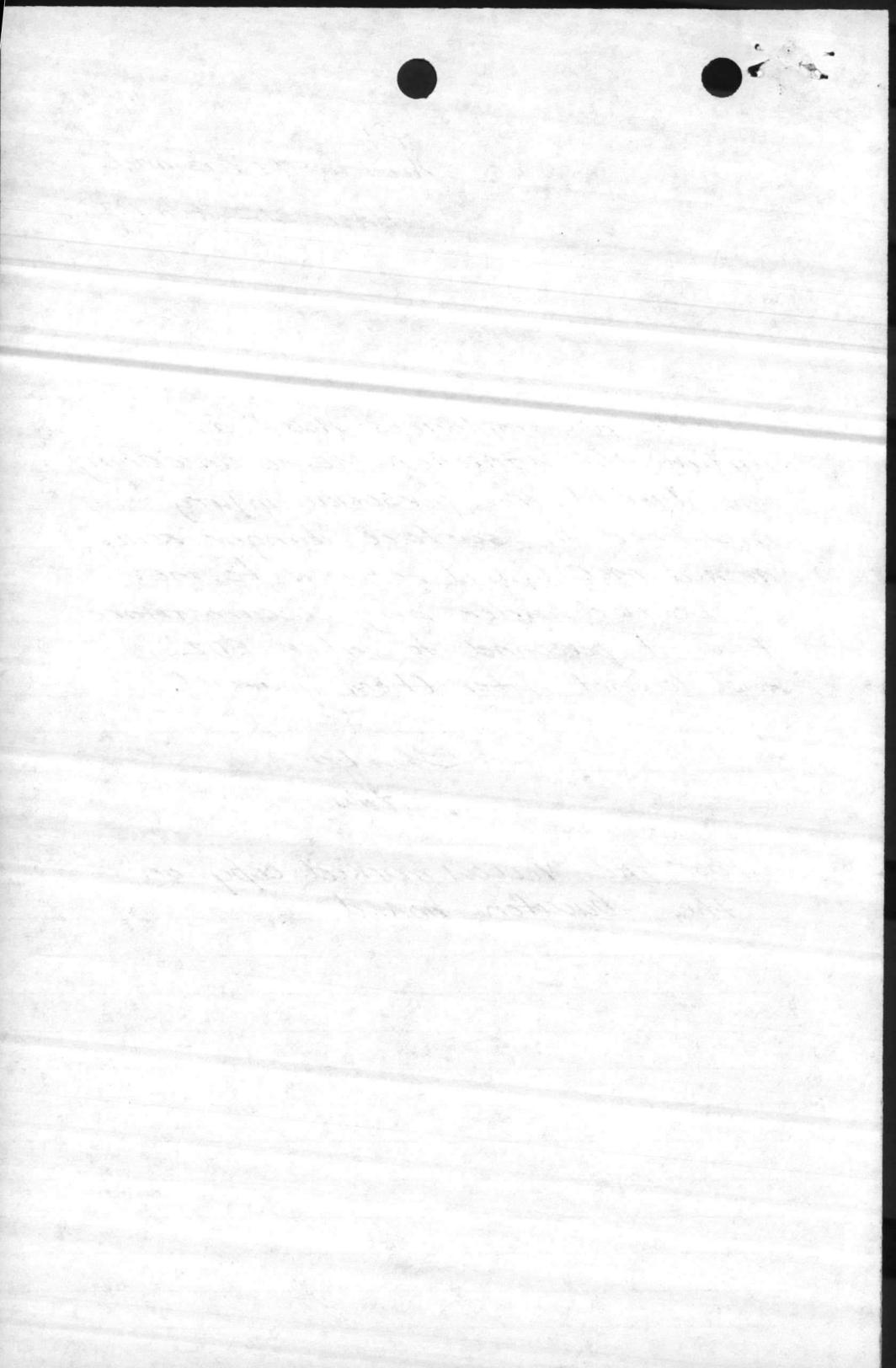


HAVE ALL employees read as  
initial the ATTACHED MEMO concerning  
the liability for personal injury  
incurred in surface danger zones  
around MCBCL, and return to MS.

Do NOT, under any circumstance  
permit personnel to enter SDZ's,  
and do not enter them yourself.

Thanks  
Pete

Post THE yellow marked copy on  
the bulletin board.



28  
100

UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

5100  
FAC

DEC 08 1987

FIRST ENDORSEMENT on SJA Memo for the Chief of Staff 5101 SJA41  
of 18 Sep 1987

From: Assistant Chief of Staff, Facilities  
To: Chief of Staff  
Via: Assistant Chief of Staff, Training and Operations

Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. Forwarded. Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods. In those instances where personnel may be required to enter impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists, detailed, specific warnings will be given to personnel indicating the nature, degree and potential locations of all possible risks. In addition, a thorough and comprehensive inspection of the area will be performed and documented to ensure that the area is reasonably made safe.
2. The Assistant Chief of Staff, Training and Operations is requested to ensure that all impact areas and surface danger areas are appropriately and correctly marked both on the ground and on base training maps.
3. By copy hereof, the Director, Natural Resources and Environmental Affairs Division will adhere to the guidelines outlined in paragraph 1 above and develop appropriate procedures to manage the wildlife and forest resources within the surface danger areas.

T. J. DALZELL

→ Copy to:  
NREAD  
BMC

DI Becker  
DBM  
WHH  
RW  
JL  
LHC  
Jm

JEP  
CHS



Handwritten scribble or mark.

Handwritten text, possibly a signature or initials, located at the bottom center of the page.

Memorandum

5 040

NREAD

DATE: 22 Dec 1987

FROM: Director, Natural Resources and Environmental Affairs Division,  
Marine Corps Base, Camp Lejeune  
TO: Distribution List

SUBJECT: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER ZONES  
ABOARD MARINE CORPS BASE, CAMP LEJEUNE

- REFERENCE: (1) SJA memo for C/S 5101 SIA41 of 18 Sep 87 w/first end of 8 Dec 87  
(2) SJA memo for C/S 5101 SIA41 of 18 Sep 87 w/second end of 11 Dec 87

1. Enclosures (1) and (2) pertain to surface danger zones at Marine Corps Base, Camp Lejeune and establishes procedures to follow if required to enter while on official duty.

2. Historically NREAD personnel have physically entered impact areas and surface danger zones to perform official duties. Due to safety concerns of subordinate personnel, I have attempted on several occasions to get command guidance for NREAD personnel entering impact areas and surface danger zones to perform official duties. The latest guidance is contained in enclosures (1) and (2). Addressees are instructed to review enclosures (1) and (2) and develop specific instructions by 15 January 1988 for employees under your immediate supervision relative to entering impact areas and surface danger zones while on official duty.

JULIAN I. WOOTEN

Copy to:  
Base Ecologist  
Base Forester  
Base Wildlife Manager



08  
DP  
Ply

UNITED STATES MARINE CORPS  
Marine Corps Base  
Camp Lejeune, North Carolina 28542-5001

5100  
FAC  
DEC 08 1987

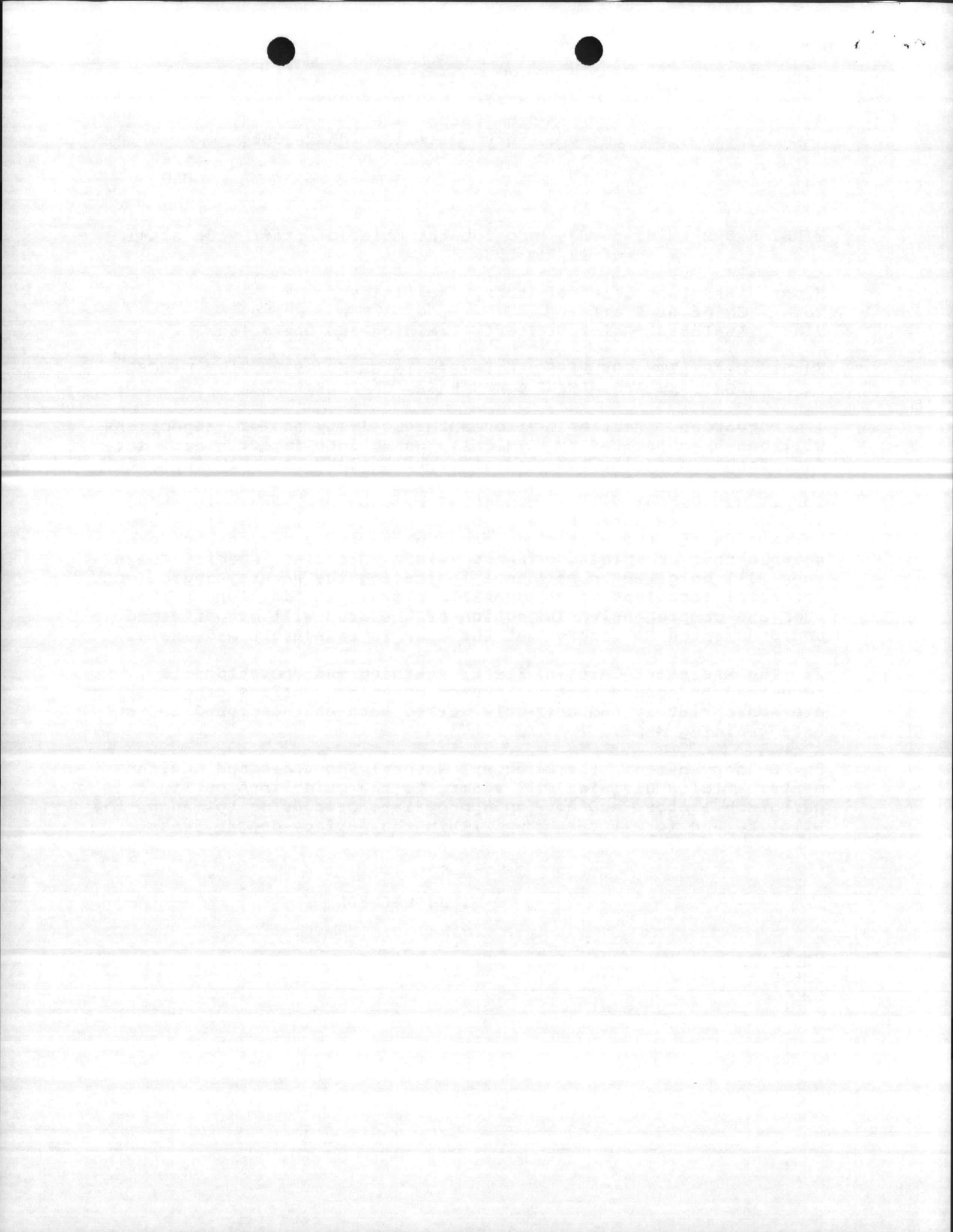
FIRST ENDORSEMENT on SJA Memo for the Chief of Staff 5101 SJA41  
of 18 Sep 1987

From: Assistant Chief of Staff, Facilities  
To: Chief of Staff  
Via: Assistant Chief of Staff, Training and Operations  
Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. Forwarded. Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods. In those instances where personnel may be required to enter impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists, detailed, specific warnings will be given to personnel indicating the nature, degree and potential locations of all possible risks. In addition, a thorough and comprehensive inspection of the area will be performed and documented to ensure that the area is reasonably made safe.
2. The Assistant Chief of Staff, Training and Operations is requested to ensure that all impact areas and surface danger areas are appropriately and correctly marked both on the ground and on base training maps.
3. By copy hereof, the Director, Natural Resources and Environmental Affairs Division will adhere to the guidelines outlined in paragraph 1 above and develop appropriate procedures to manage the wildlife and forest resources within the surface danger areas.

T. J. DALZELL

→ Copy to:  
NREAD  
BMO



5100  
TRNG/OPS  
11 Dec 87

SECOND ENDORSEMENT on SJA memo for the Chief of Staff 5101 SJA 41  
of 18 Sep 87

From: Assistant Chief of Staff, Training and Operations  
To: Chief of Staff

Subj: LIABILITY FOR PERSONAL INJURY INCURRED IN SURFACE DANGER  
ZONES ABOARD MARINE CORPS BASE, CAMP LEJEUNE

1. The SJA memo makes clear the possibility of government and individual liability in the event of injuries suffered as a result of dud ordnance. This should come as no surprise -- other than perhaps personal liability -- but the question becomes one of responsible, practical operations or the avoidance of any possibility of injury and subsequent suit.

2. While it might be reasonable to assume that unexploded ordnance will be more prevalent in secondary danger areas than in other areas on the base, the facts don't bear this out. The records of early range areas and weapons use are poor to non-existent and unexploded ordnance is periodically discovered at various locations throughout the Base. It is fair to say that no training area on the Base meets the second requirement of the SJA memo, "a thorough and comprehensive inspection of the area must be performed and documented to that the area is decontaminated and reasonably safe".

3. Nevertheless if the object is to avoid any exposure to liability, this Department concurs with these two sentences in paragraph one of the first endorsement.

"Routine environmental activity and/or inspections will not be conducted by physically going into impact areas, surface danger areas or other areas where it is reasonably foreseeable that unexploded ordnance exists. Wildlife management and forest management will be conducted by other methods".

4. Accordingly, this Department will continue to:

- a. Offer briefings and video tape presentations to units or individuals.
- b. Respond to reports of dud ordnance discovery
- c. Mark impact areas.
- d. Provide EOD escort to individuals or units required to enter any of the three major impact areas, G-10, K-2, N-1.
- e. Provide current training information to AC/S, Facilities for use in updating Camp Lejeune maps.



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- 5. This Department will not:**
- a. Provide SOD escorts for activities in surface danger zones.**
  - b. Conduct the type of shoulder-to-shoulder, criss-cross patterned search using scorched earth and metal detectors in surface danger zones, as described in the SJA memo.**

**J. A. SPEICHER**

**Copy to:**  
**TFAC**  
**EOD**  
**WREAD**  
**BHO**

