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IDA PAPER P-1812

ANALYSIS OF CHEMICAL WARFARE OPERATIONS (U)

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*Performed under subcontract for
Institute for Defense Analyses*

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January 1985

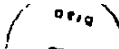


INSTITUTE FOR DEFENSE ANALYSES

Contract MDA 903 04 C 0031
Task T-3-202

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PREFACE

(U) This study, conducted by Burdeshaw Associates, Ltd. was commissioned by the Institute for Defense Analyses as part of its ongoing program of research in the area of Chemical Warfare. IDA supported the Burdeshaw Associates' research because it provides a view of chemical warfare--the analysis of chemical warfare issues and operations from the commander's point of view--that complements, in a unique manner, the research being done by IDA for the OSD and the OJCS.

(U) The report provides a well-thoughtout discussion and analysis of why the Soviet Union would use chemical weapons in an attack on Western Europe, an assessment of how they would structure such an attack, and a description of the impact that such an attack would have on US and NATO forces and their supporting infrastructure.

(U) Information for this study was developed and analyzed and the report written by experienced military commanders who, as a group, encompass a wide range of military backgrounds and disciplines. IDA personnel were involved in the discussion, design, and development of the research objectives and then served as project reviewers throughout the course of the study.

(U) This report contributes significantly to an understanding and an awareness of the issues and problems surrounding the use of chemical weapons.

(U) This research was sponsored by the Assistant to the Secretary of Defense for Chemical Matters under Contract No. WDA 903 84C 0031 and Task Order Number T-3-200.

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ANALYSIS OF CHEMICAL WARFARE OPERATIONS

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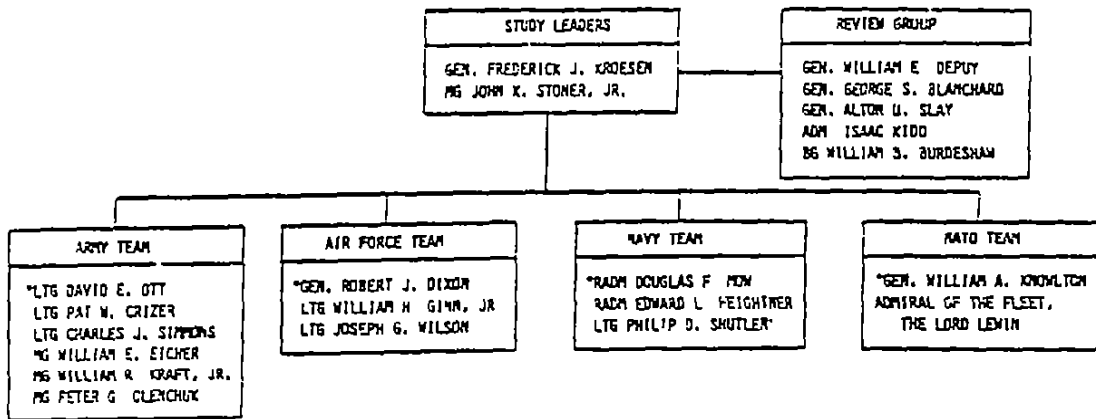
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GLOSSARY

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STUDY ORGANIZATION



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EXECUTIVE SUMMARY

(U) This report, responding to a Task Order issued by the Institute for Defense Analyses, addresses the subject of chemical warfare. It describes concepts for the employment of chemical weapons and for defense against chemical agents; it portrays the environment expected if war results in an interaction of these concepts. The report was prepared by a study group of retired military officers who based their consideration of the subject on their military experience, information and data provided by the Department of Defense and other military services and their interest in the subject.

(U) The report, in Section 2, summarizes current information regarding the chemical warfare capabilities of the Warsaw Pact, establishing a basic and common understanding of delivery systems, agents, and doctrines for employment. This summary is a succinct presentation of the information made available by Defense intelligence agencies for use in the study. The concepts and employment strategies in the study were based on this information.

(U) The report addresses in Section 3 the overall Red strategy and concept of operations to include answers to the questions: "Why chemicals?" and "How chemicals?" Postulating first that the Warsaw Pact nations will attack NATO in the year 1990, that the attack will follow the almost classic operational concepts that NATO has anticipated for many years and that chemical agents will be employed in support of the attack. The initial sections outline a Warsaw Pact campaign concept and a discussion of the advantages and disadvantages they can expect from the use of chemical weapons.

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~~OK~~
(c) Apart from the description of the operational concepts which are to serve as a basis for war-gaming planned in Phase II of this study, the significant element of the "Red" section explains the conclusion reached by a fictitious Warsaw Pact Commander who says, ". . . I have already advised our leaders that we would be militarily foolish if we did not employ these weapons at the outset of our attack." The reasons associated with his advice are expressed in detail in Section 3. In short they include:

~~OK~~
• ~~(a)~~ Chemicals against an unwarned, unprepared target can render it almost instantaneously and totally ineffective.

~~OK~~
• ~~(b)~~ Chemicals against a warned, prepared target result in a severe reduction of the capabilities and combat effectiveness of personnel and units operating in a protected environment. Selective employment creates conditions of enormous asymmetry which results in one side encumbered with clothing and equipment which restricts movement and dexterity, the other unencumbered or only partially encumbered in support of their operations.

~~OK~~
• ~~(c)~~ Chemicals create uncertainty, demoralization and panic, all of which are destructive of military capacities.

~~OK~~
• ~~(d)~~ "Surgical" employment of chemicals - at communications nodes, at senior headquarters, at logistics terminals - promises effects far beyond costs or risks involved in achieving the same results by other means.

~~OK~~
• ~~(e)~~ Chemicals destroy the effectiveness of military forces while leaving the infrastructure intact, a major factor to be contemplated when subjugation is the aim.

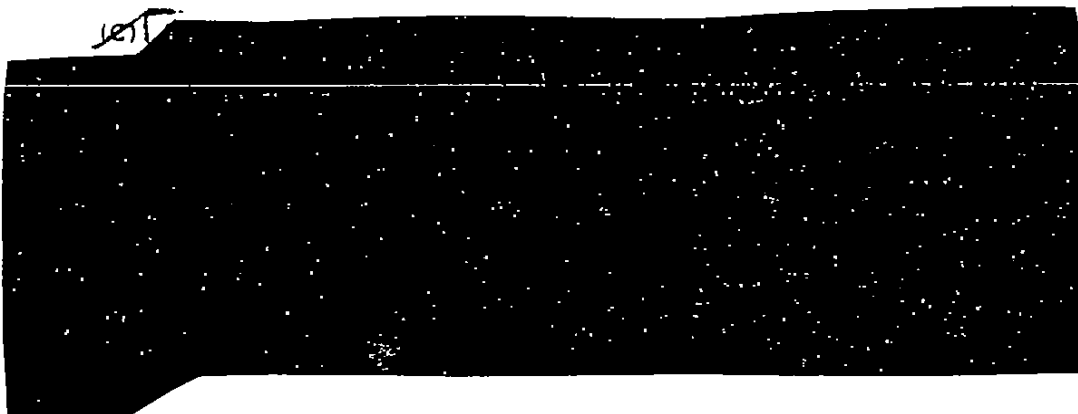
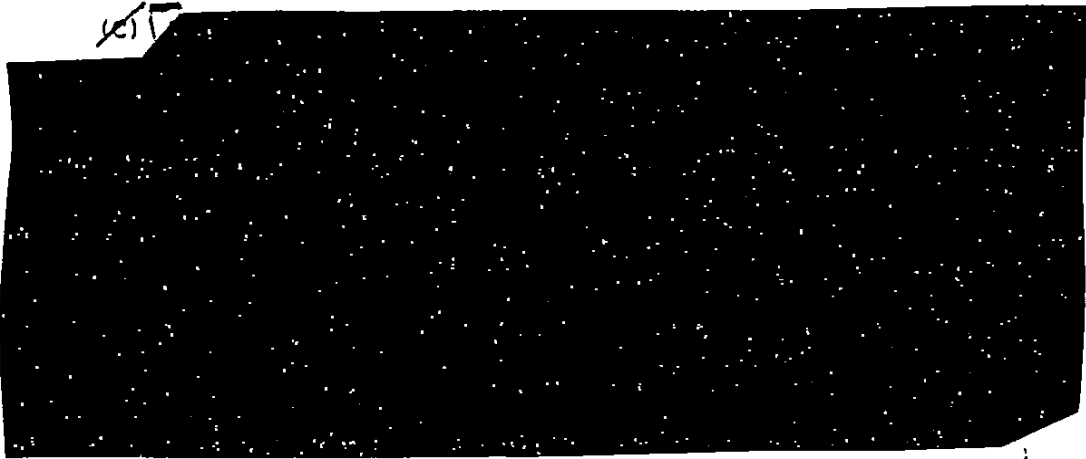
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ok Section 4 presents a parallel discussion for the NATO
forces - a strategic overview and a campaign challenge. NATO

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forces are postured in a reasonably favorable condition. T-day occurs six days before D-day. A general alert defense posture is established and reinforcement has commenced. Individual air and naval concepts are presented along with a general defense plan for NATO's central region.

(C) The details of Soviet and NATO strategic overviews and concepts are presented in a series of appendices addressing ground, air, and naval concepts and plans.

OK Section 5 describes the chemical battlefield. A general assessment highlights the air, land and sea environments. A series of anecdotes and detailed vignettes address conditions in a carrier battle group at sea, major Air Force operational bases, ports and naval shore facilities, land force command elements, combat forces, and logistics activities. Each of these reflects the individual judgment of a number of authors and each contributes to the following general observations which have been drawn concerning the battlefield:

• The initiation of chemical warfare by Warsaw Pact will result in a severe physical and psychological impact on both NATO forces and the civil population.

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• (S)

[REDACTED]

• (S)

[REDACTED]

(U) Section 6 of the study is an appraisal which identifies key limitations of the study and the conclusions which have been drawn by the authors. It presents the following policy and program observations.

• (S)

[REDACTED]

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[REDACTED]

•• (S)

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•• (S) [REDACTED]

•• (S) [REDACTED]

• (S) [REDACTED]

(S) The reader deserves a clear explanation of what all this means operationally in Europe:

• (S) [REDACTED]

[REDACTED]

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• (S) [REDACTED]

• (S) [REDACTED]

• (S) ^X Even in the face of these somber thoughts the moral repugnance which envelops chemical warfare in all the Western nations continues to block even the most modest efforts to begin to correct the chemical imbalance. _X

• (S) [REDACTED]

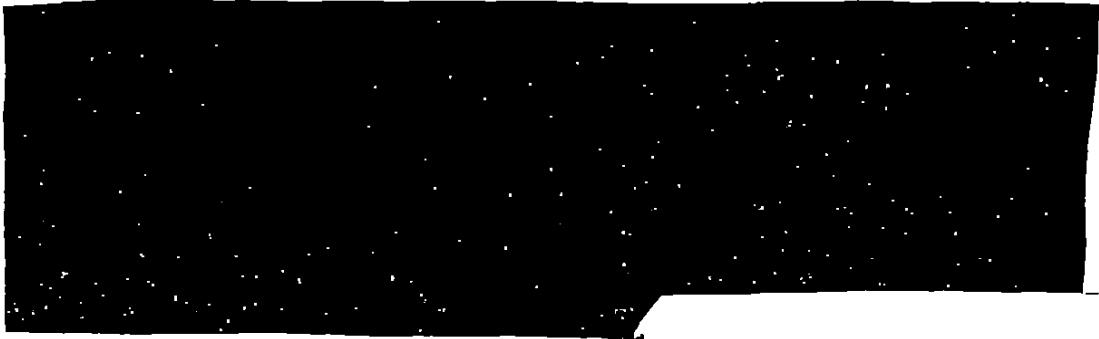
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ANALYSIS OF CHEMICAL WARFARE OPERATIONS
FINAL REPORT

1.0 (U) INTRODUCTION

(U) The purpose of this report is to satisfy Phase I requirements of Department of Defense Task Order MDA 903 79 C 0018:T-3-200 and the Institute for Defense Analysis sub-contract MDA-0018-7. They direct the production of a "comprehensive assessment of the probable nature of a future chemical conflict" which can be used as a base upon which U.S. policies, concepts, and doctrine can be developed.

(U) Phase I, produced by Burdeshaw Associates, Limited, focuses on an analysis and evaluation of the chemical warfare posture of US forces operating in the NATO alliance and the opposition and threat posed by the Warsaw Pact in the year 1990. It presents a Warsaw Pact military estimate and concept of operations designed to assure the capitulation of NATO Europe following a WARPACT general, conventional offensive campaign in which chemical weapons are employed. It presents a NATO military assessment of the situation faced by its field commanders and their plans to cope with the WARPACT threat. It provides a description of the environment in which the NATO military forces and civil populations must function if the WARPACT attacks and identifies the effects of chemical employment on the attrition and combat efficiencies of forces and on the pace of battle.

(U) This report is a narrative presentation based primarily on the military knowledge and experience of the authors. They were guided by the estimates and projections of the U.S. intelligence community and the three services and the known and proposed programs of the Department of Defense which are related to chemical warfare. They took cognizance of the known and presumed chemical programs of the other NATO nations.

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(U) The appendices of the report present the more detailed and specific information and data upon which the narrative depends. They also provide information more specifically addressing service interests, problems and plans.

(U) Finally, the report expresses conclusions and observations concerning defense policy, guidance, emphasis, and the plans or programs which now guide the US chemical warfare efforts.

(U) The methodology employed to develop this study was straightforward. Following normal military doctrine, the members of each service group, after hearing presentations by the intelligence community and the three services, summarized their interpretations of the situation projected for the year 1990 and the capabilities of the NATO military forces to cope with the threat posed by the capabilities of the Warsaw Pact. Representatives of each service then produced, collectively, the strategic assessments and concepts of operations appropriate to the capabilities and limitations of the opposing forces. They also produced descriptions of the battlefield environment envisioned if the postulated operational concepts were executed. The products of the individual service groups were combined, first by the study team leaders after the collective consideration by the service group leaders, and finally by a senior tri-service review group. The result is an Army-Navy-Air Force appraisal and description of the environment which will encompass military operations in 1990 if the USSR makes a preemptive attack using conventional weapons and munitions, augmented by the employment of chemical agents.

(U) The study team produced its conclusions and discussion points after considering the observations and proposals submitted by each service group. Some of these are of specific service

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interest and do not necessarily reflect a group consensus, but all were considered by a joint panel of the study team and are considered pertinent to an overall NATO defense program.

(U) An essential prelude to the development of this description of a chemical battlefield in NATO Europe is to define in realistic terms the nature of the Soviet/WP capability to introduce chemical weapons into an attack on Western Europe. The definition used by the study group as the base for developing operational plans and capabilities of the Red forces is presented in Section 2 of this report.

OK (S) There is no doubt that the Soviet/WP military command has at its disposal a vast and formidable capability to wage chemical warfare. [REDACTED]

(S) [REDACTED]

OK (S) The study team followed certain general rules, either expressed in the directive or developed by the team for limiting the scope of the study. First, NATO chemical capabilities were established as those now projected by DOD and Service plans.

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Finally, it will be noted that this report contains no recommendations, it being prudent to await the more detailed study to be accomplished in Phase 2 before recommendations are formulated.

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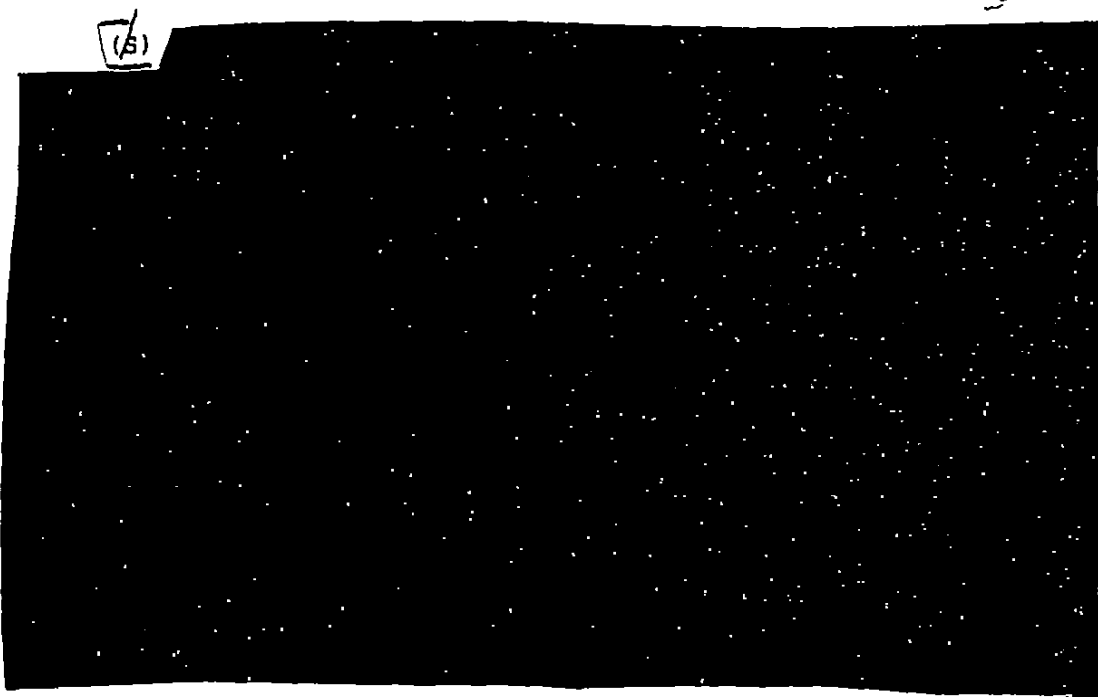
2.0 THE CHEMICAL THREAT

2.1 PURPOSE AND SCOPE

OK *to* The purpose of this section is to establish the common base of intelligence used in the development of the WARPACT and NATO concepts of operations for this study. It is a compilation of the best intelligence facts and estimates available and the best threat study projections we can find. It is intended to be a credible technical explanation of the chemical threat foreseen for 1990, one that provides a plausible base for the other parts of this study. It describes WARPACT.

- Delivery systems and characteristics
- Stockpile of weapons and agents
- Soviet employment doctrine and parameters of use *OK*

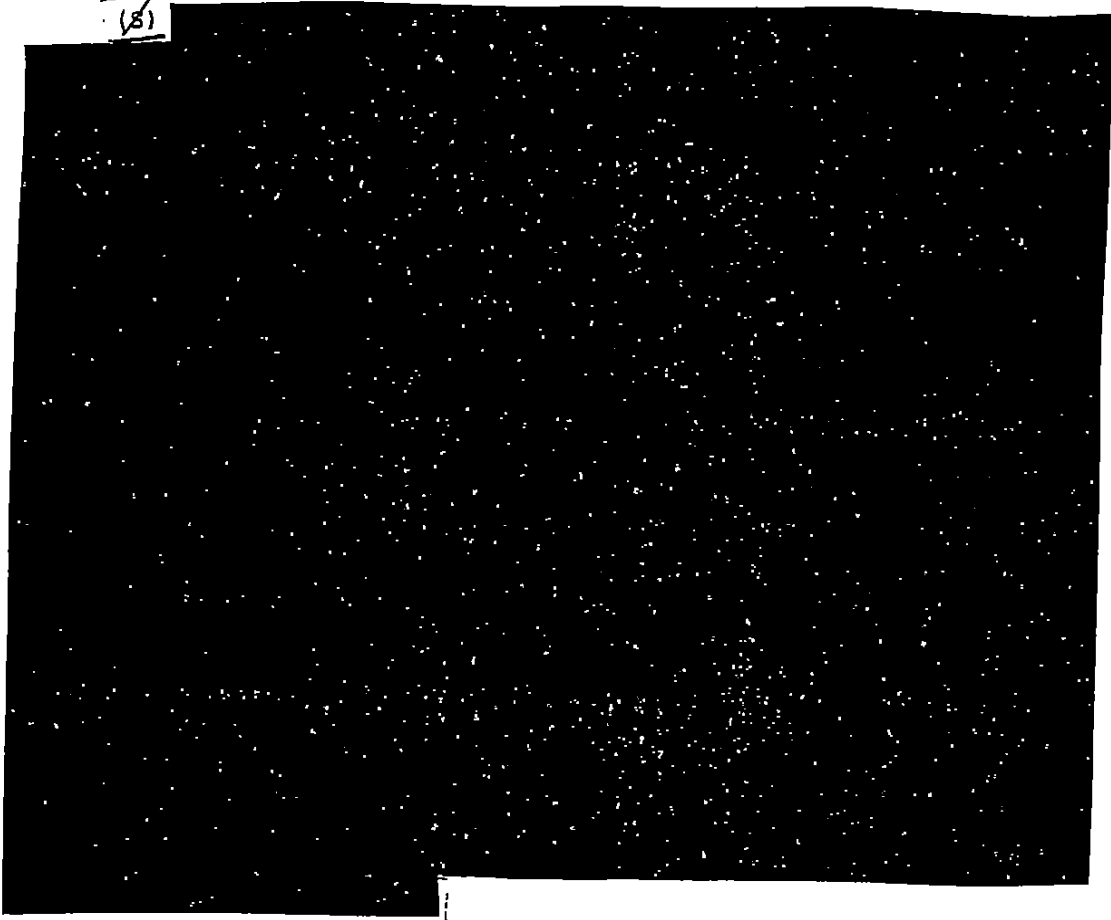
2.2 DISCUSSION



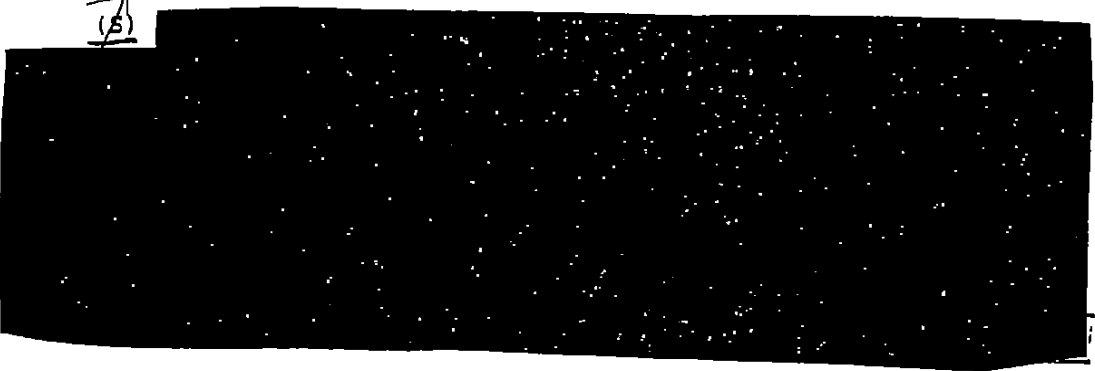
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[REDACTED]

• (S)

[REDACTED]

• (S)

[REDACTED]

• (S)

[REDACTED]

• (S)

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(S)

[REDACTED]

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(S) [REDACTED]

TABLE 2-1. (U) STOCKPILE SOVIET CHEMICAL AGENTS IN 1990

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Table 3-1 Condensed

NOTE: Table based on elements of information assembled in the 1970's. It projects only toxins as new agents which might be available by 1990.

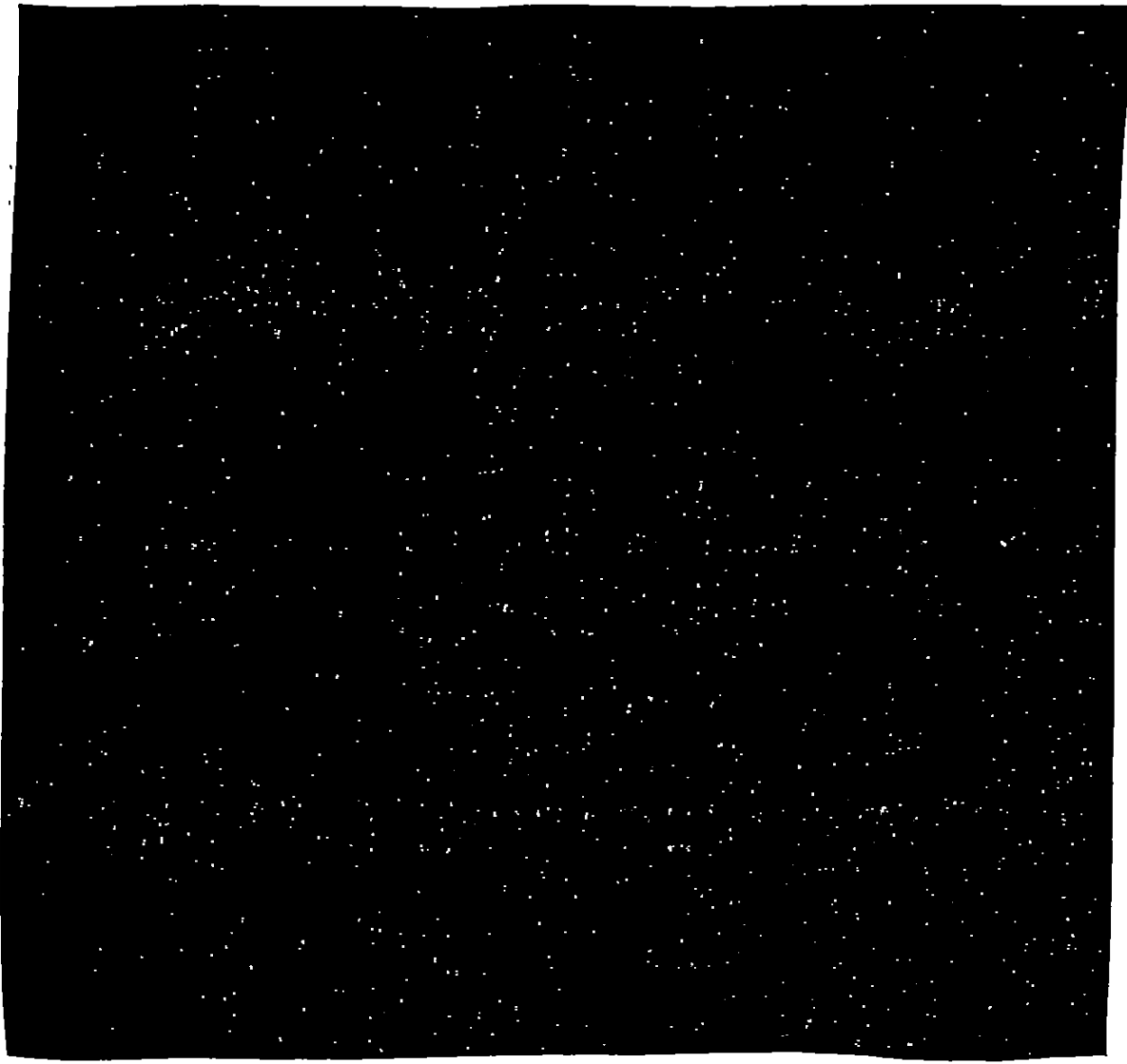
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TABLE 2-2: A TYPICAL DISTRIBUTION OF THE 1000 TON CAPABILITY

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TABLE 2-3 (U) SOVIET/WP DELIVERY SYSTEMS AND AGENTS

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~~(S)~~

[REDACTED]

• ~~(S)~~

[REDACTED]

• ~~(S)~~

[REDACTED]

~~(S)~~

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3.0 WARSAW PACT CAMPAIGN CONCEPT

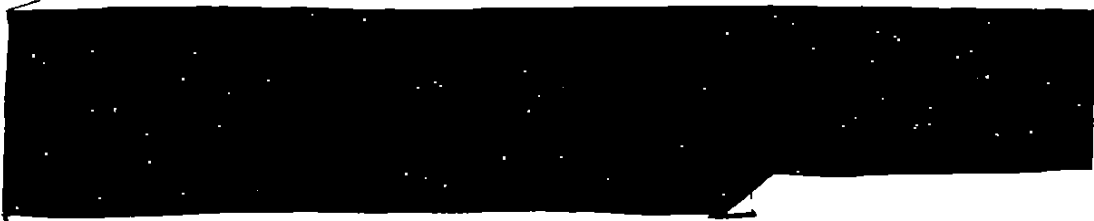
jk (c) Let us imagine that we are listening to Marshal of the Soviet Union Ivanov - Commander-in-Chief of the Warsaw Pact Forces - addressing his senior commanders in an underground headquarters somewhere in the heartland of the Soviet Union. The time is December, 1989.

(c) [REDACTED]

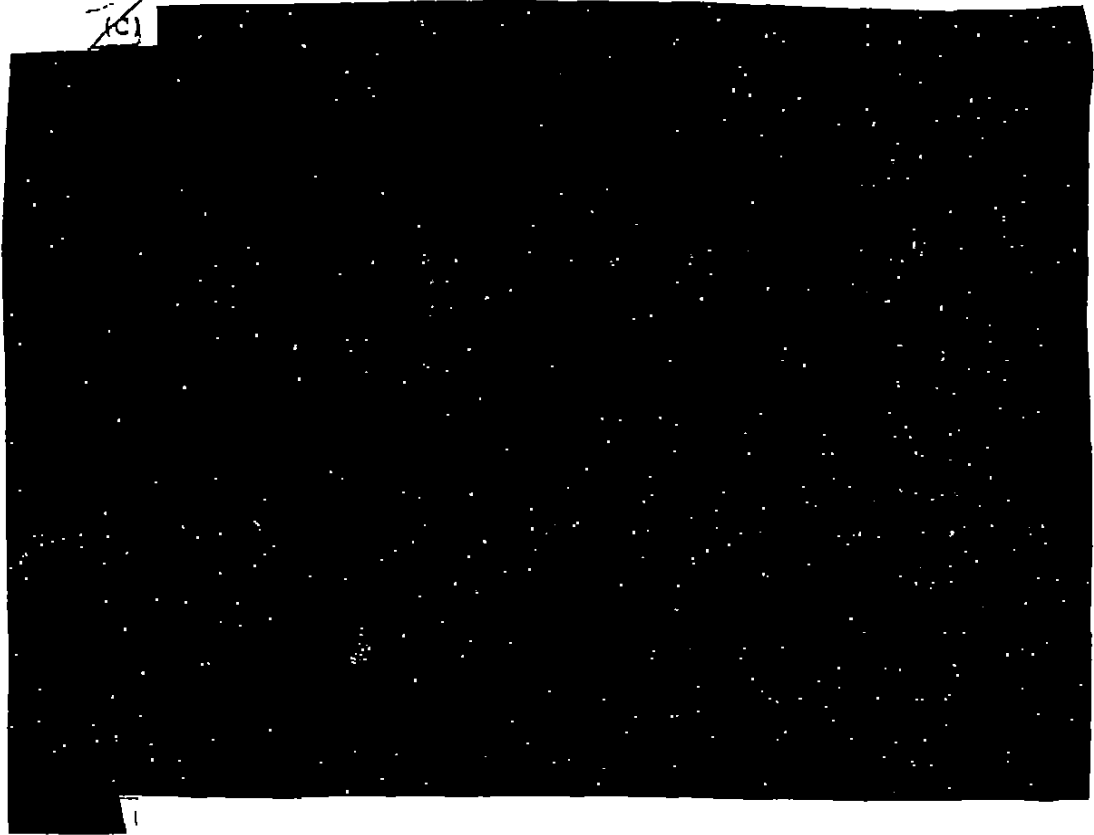
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THE STRATEGIC BACKGROUND



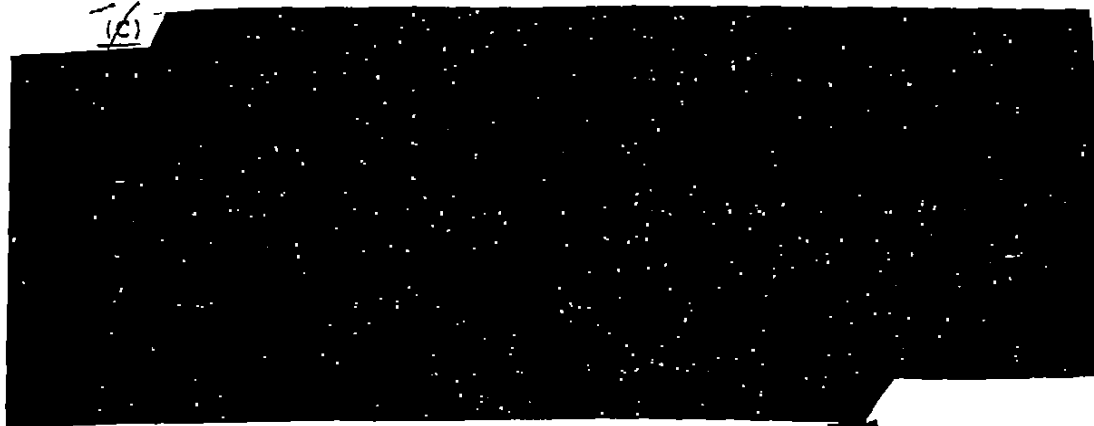
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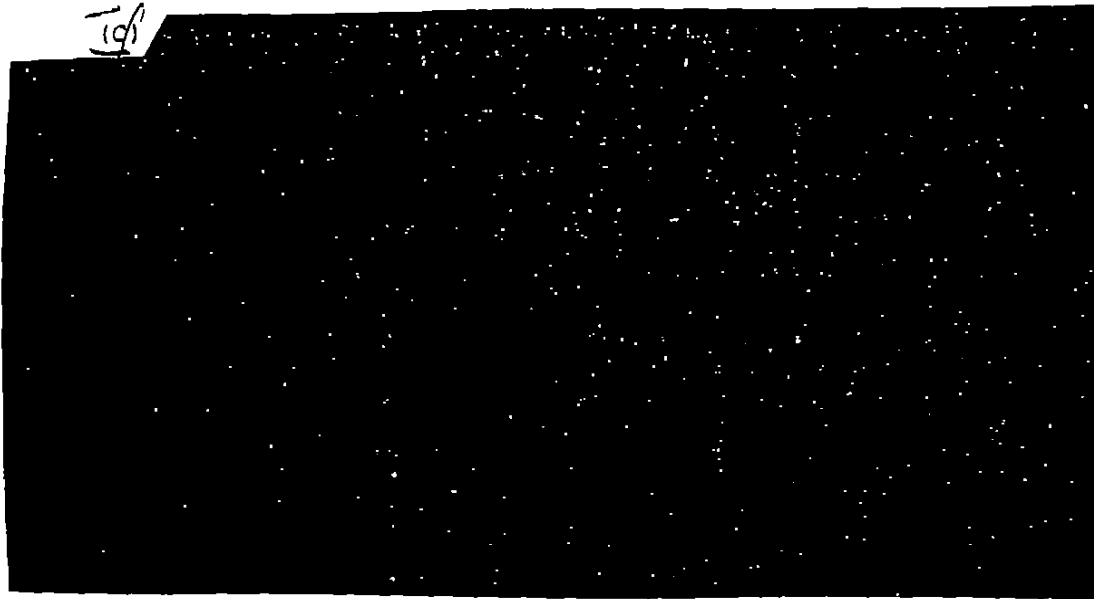
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(b)



(b)



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[REDACTED]

(c) [REDACTED]

(c) [REDACTED]

OK (c) "Nevertheless, my friends, our enemies are competent, clever and desperate. The combination of Western technology and professional armed forces poses risks about which we must be realistic and frank, and so let us look more closely at the strengths and weaknesses of NATO."

NATO Tactical Air Forces

(c) [REDACTED]

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[REDACTED]

OK (c) "The NATO fighter force is modern and generally capable of very high performance. [REDACTED]


[REDACTED]


(c) [REDACTED]

(c) [REDACTED]

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NATO Air Defenses

ok ~~9~~ (c) "Both the Hawk and Patriot air defenses are technically very effective systems, as are the NATO short range weapons, the Roland, Gebhardt, Sgt. York, Rapier and Stinger. 



(c)



NATO Intelligence

(c)

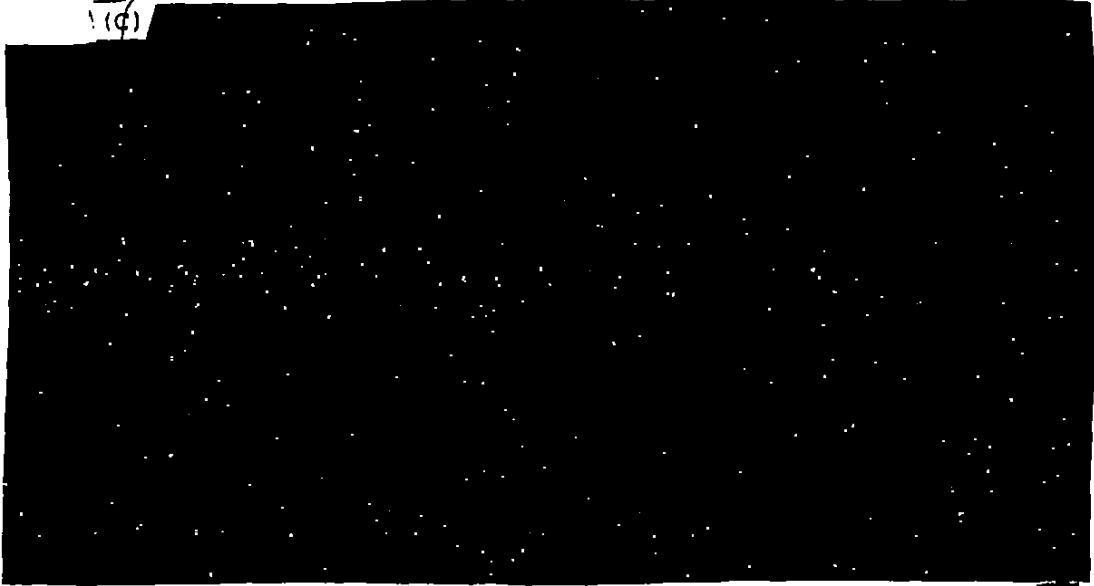


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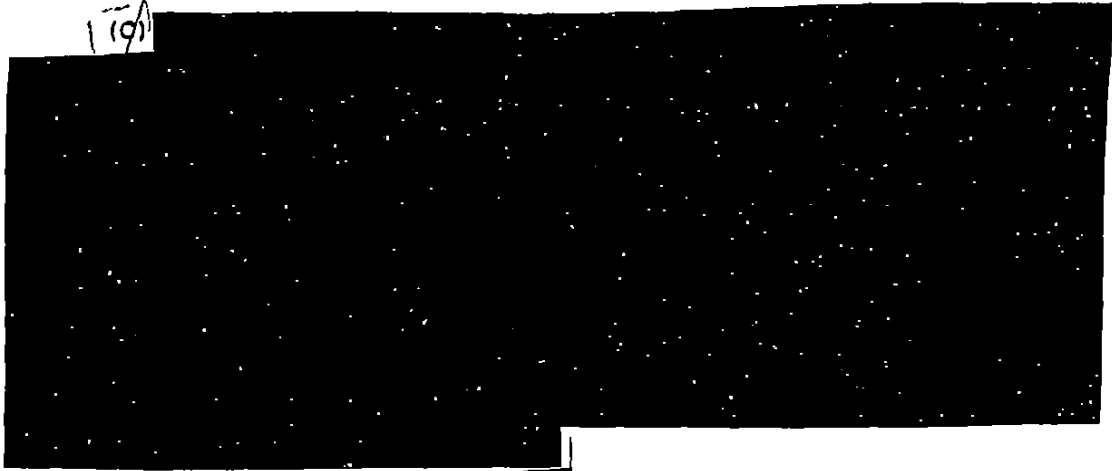
NATO Reinforcement and Resupply

(c)

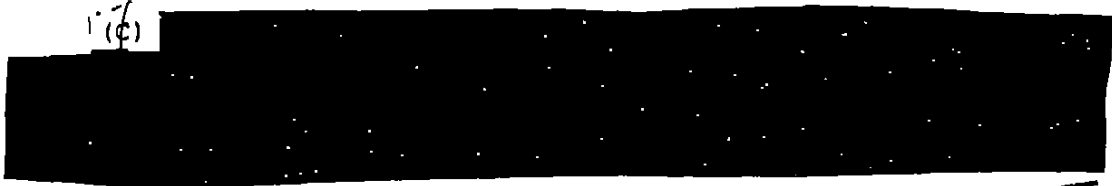


NATO Operational Doctrine and Tactics

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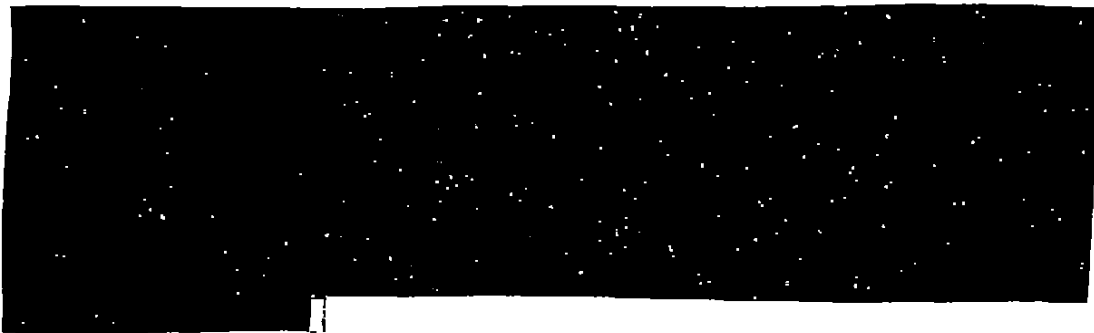


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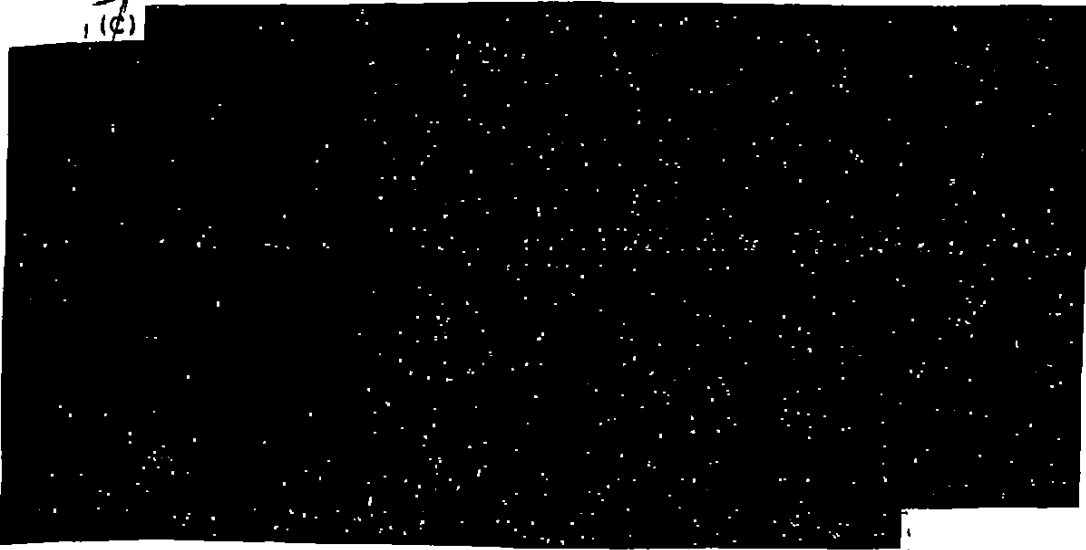


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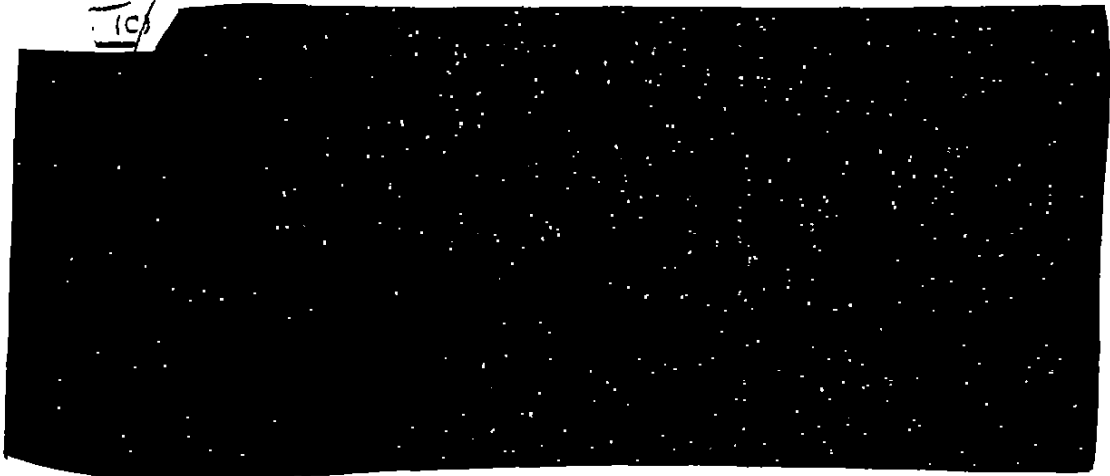


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Chemical Warfare Capabilities

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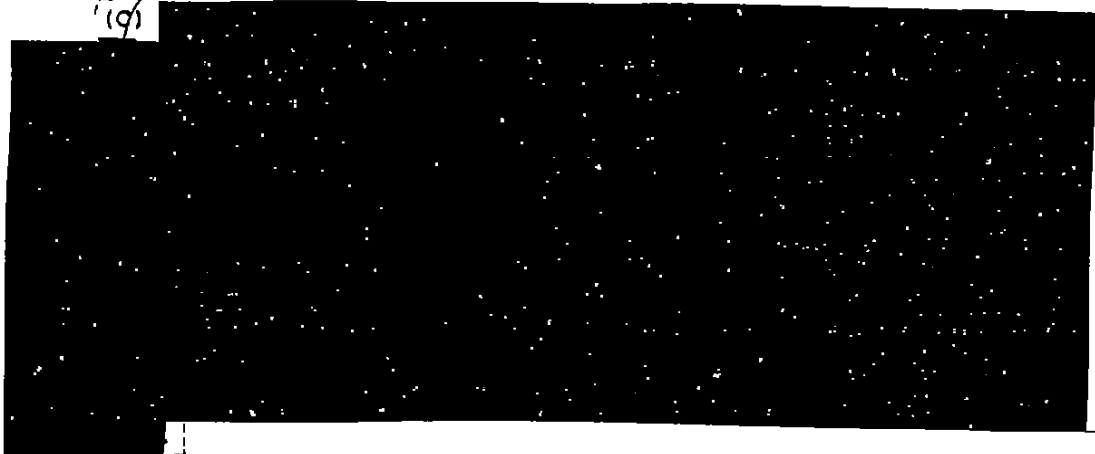
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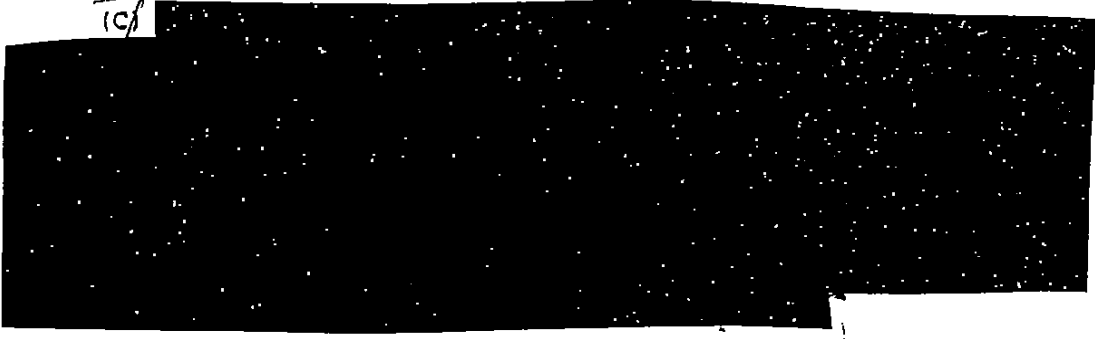


(c)



NATO Cohesion

(c)



(c)



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[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

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[REDACTED]

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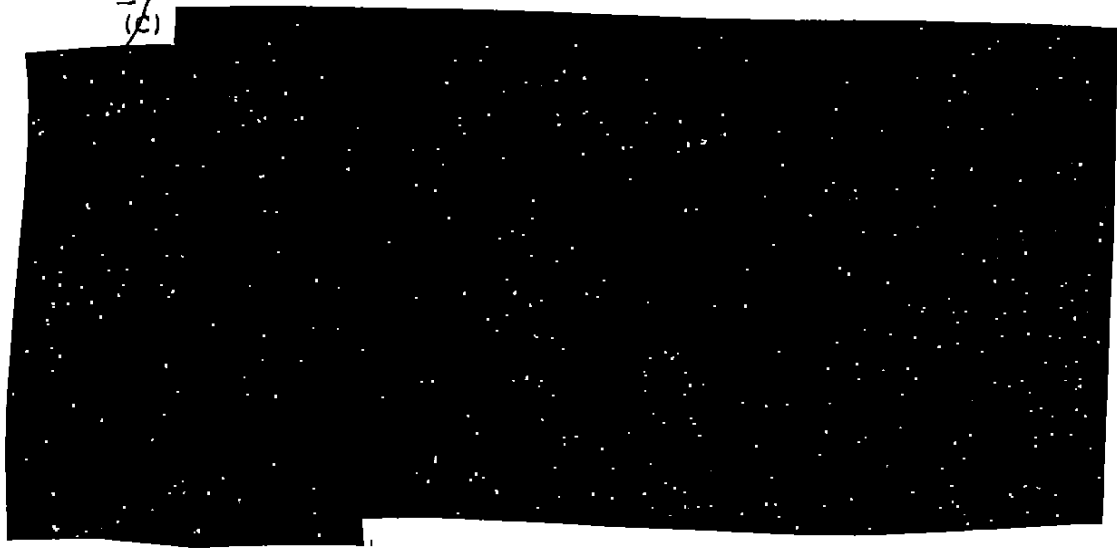
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Nuclear

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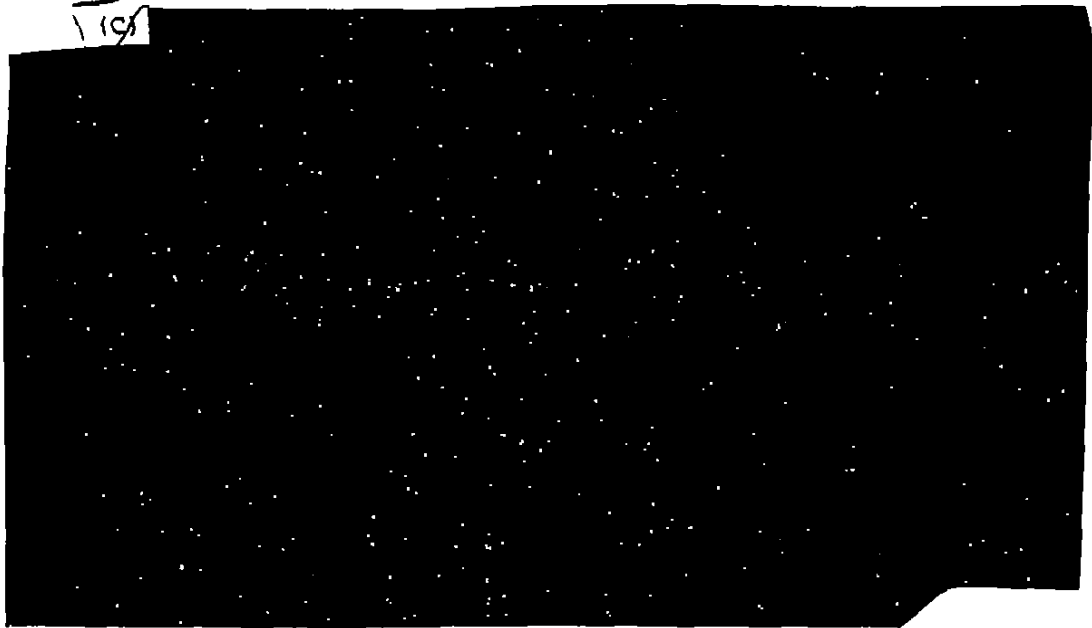
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CONCEPT OF OPERATIONS

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[REDACTED]

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[REDACTED]

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3.1

WARSAW PACT CHEMICAL OPERATIONS

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3.1.1

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3.1.2

(c)



An attacking force, on the other hand, can plan to pass units quickly through a contaminated area or can replace units after a calculated exposure with fresh units. OK

OK 3.1.3 (c) Chemical agents, both historically and by projection, are demoralizing and generate panic reaction. Nothing is more destructive of military capabilities than panic; nothing is more destructive of civilian governmental control than panic. [REDACTED]

* US Army Materiel Systems Analysis Activity (AMSAA) report: The Effects of Chemical Protective Clothing and Equipment on Combat Efficiency states, inter alia, that a maintenance task which requires 9.3 hours normally (replacing an M113 engine), requires 65.8 man-hours when personnel are in protective clothing.

3.1.4

(S)

3.1.5

OK (C)

A significant advantage provided by chemical attack is the preservation of the infrastructure in the combat area. The use of high explosives, certainly the use of nuclear weapons, reduces buildings, bridges and stockpiles of supplies to rubble and destroys the utility of installations.

3.1.6

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[REDACTED]

3.1.7

(d)

[REDACTED]

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(d)

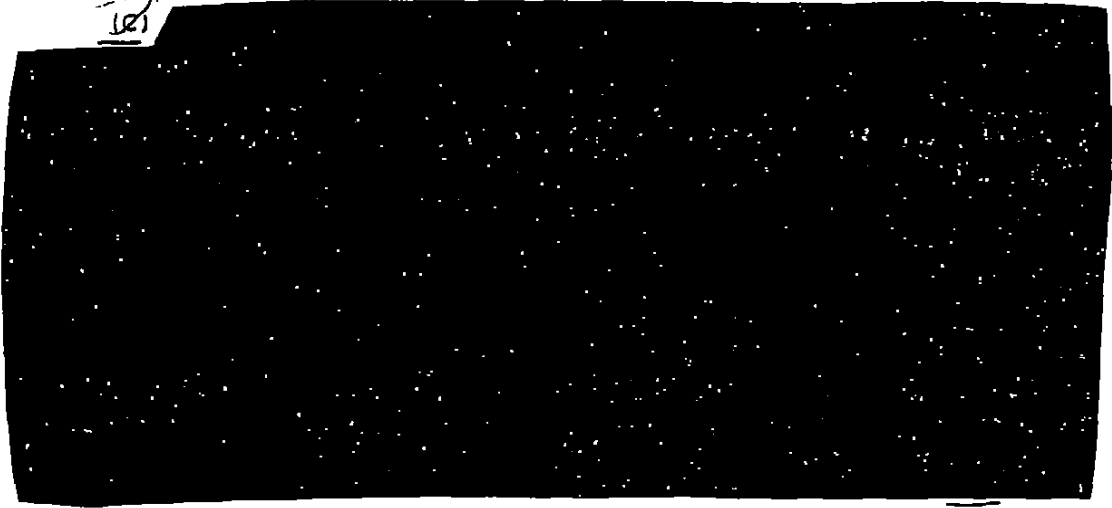
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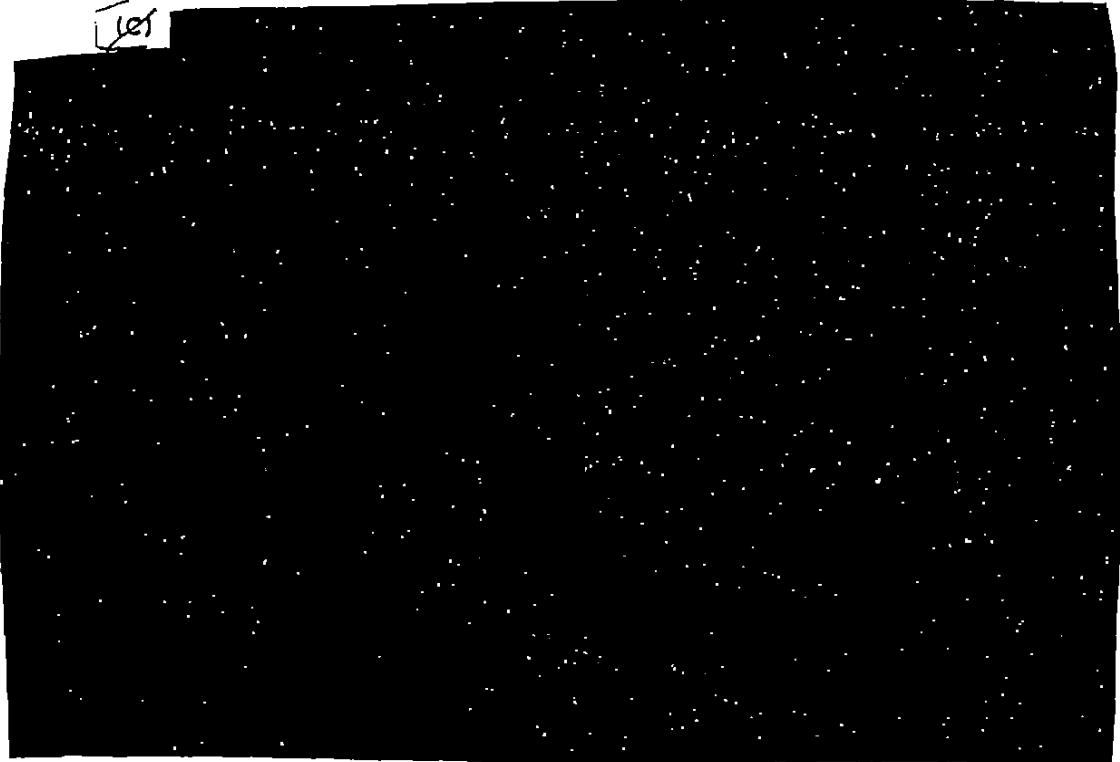
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Yes



Yes



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[REDACTED]

3.2 (U) RED LAND FORCES STRATEGIC ASSESSMENT
AND CONCEPT OF OPERATIONS

JK (U) A few days after the meeting held by Marshall Ivanov, Marshall Smirnoff, Commander-in-Chief of the Western TVD, assembled his army, air, and naval commanders to discuss his plans for the proposed campaign against NATO. He reiterated Marshall Ivanov's assessment of the situation and his charge to the field commanders who had been chosen for the coming campaign, leading finally to the missions which had been assigned to the Western TVD.

(U) [REDACTED]

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(c) [Redacted]

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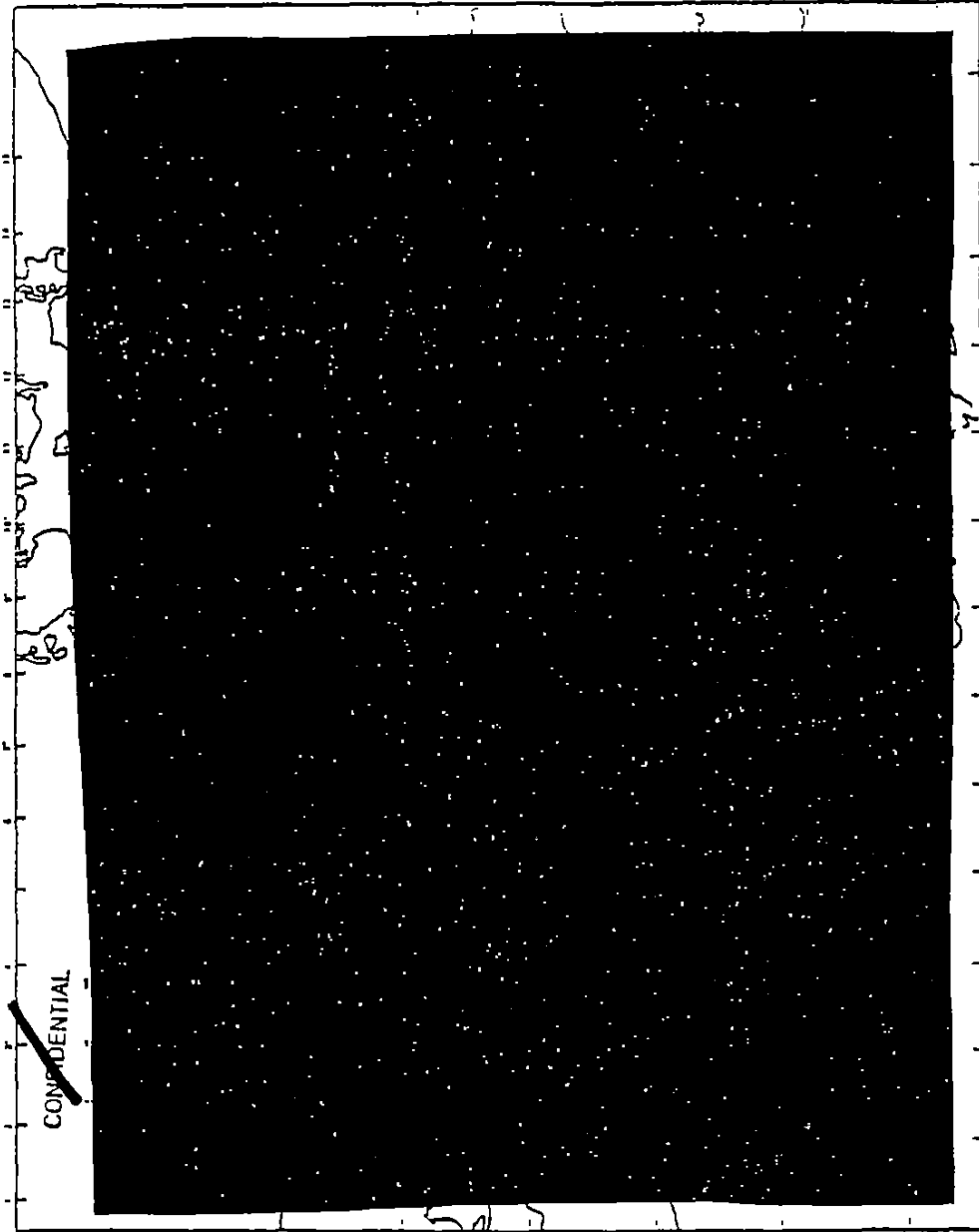
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FIGURE 3-1 (U) WESTERN AND TVD CONCEPT

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• ~~(c)~~ [Redacted]

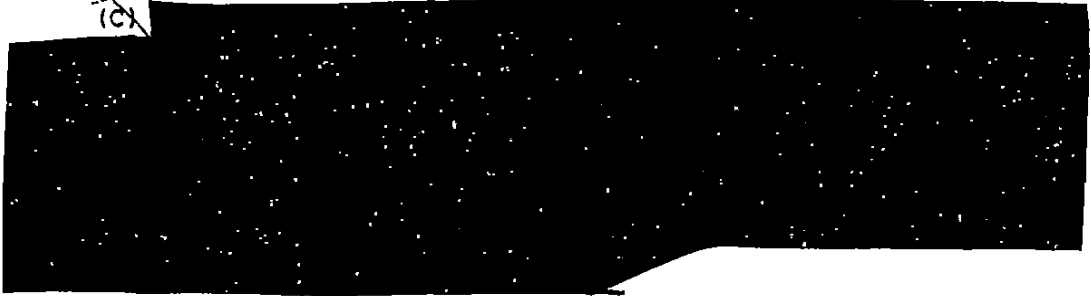
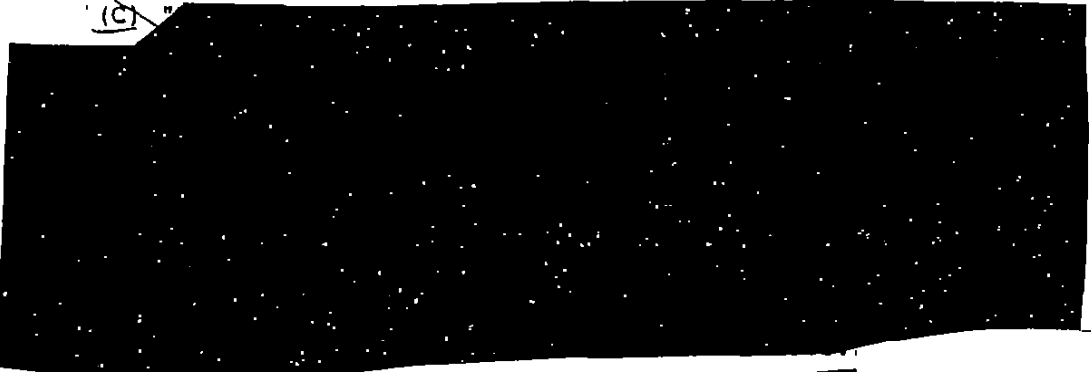
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[REDACTED]

3.3 (U) RED AIR STRATEGIC ASSESSMENT AND CONCEPT OF OPERATIONS

OK [REDACTED] Following his attendance at the meeting with Field Marshall Ivanov, Chief Marshal of Aviation Paver Kutakhov, of the Air Forces of USSR assembled the senior air commanders to discuss the mission and tasks laid before him.

(TS) [REDACTED]

(TS) [REDACTED]

(C) [REDACTED]

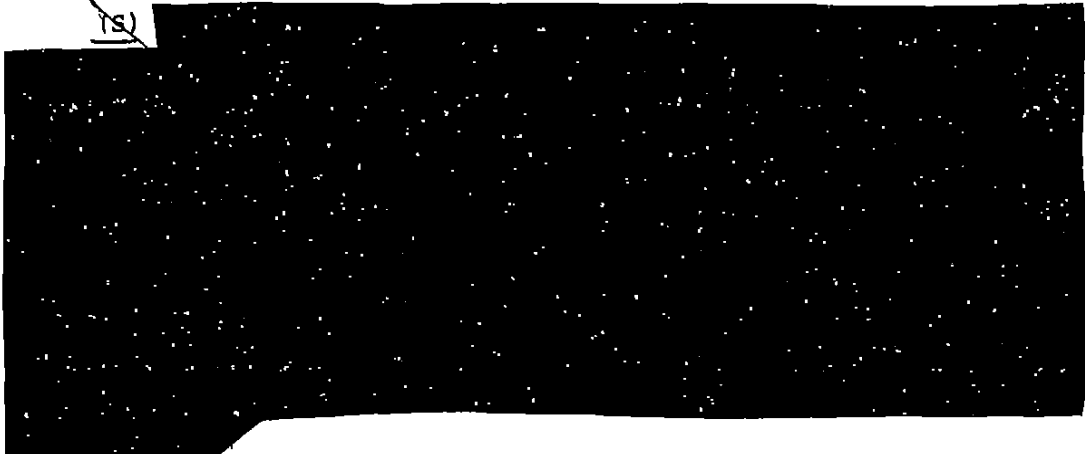
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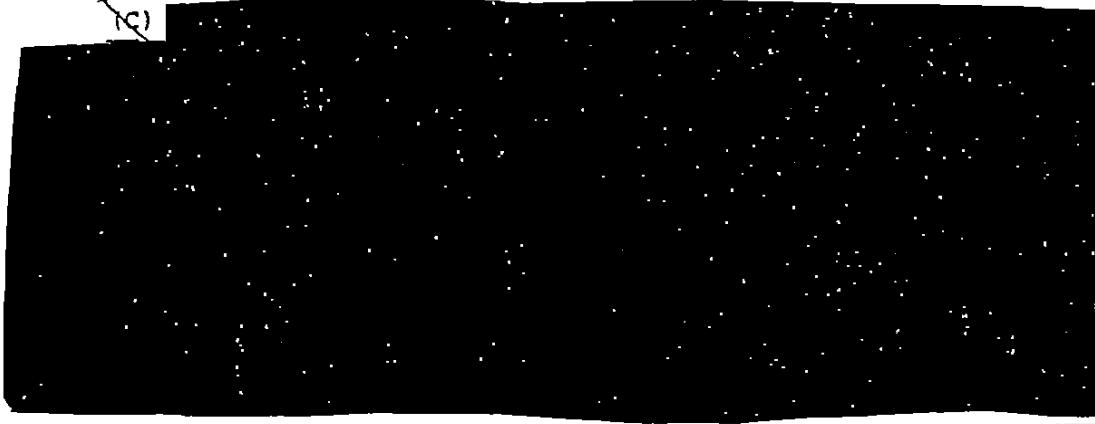
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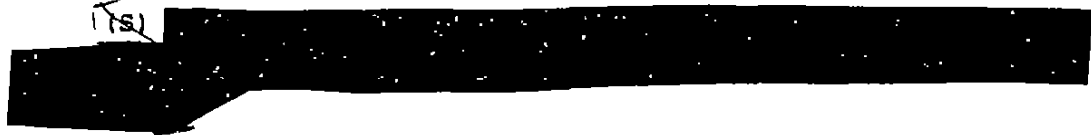
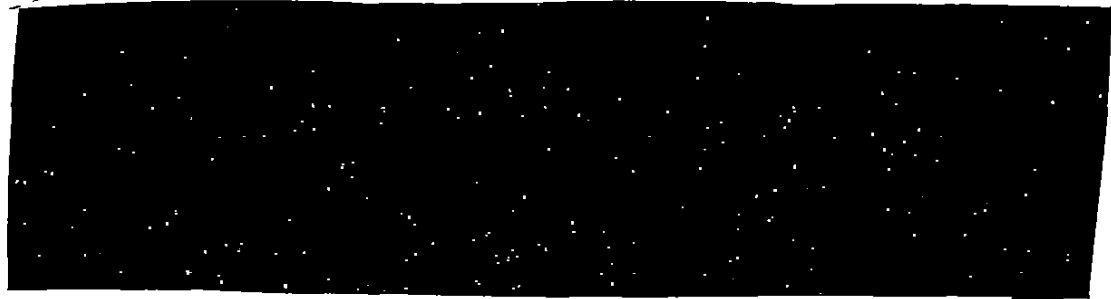
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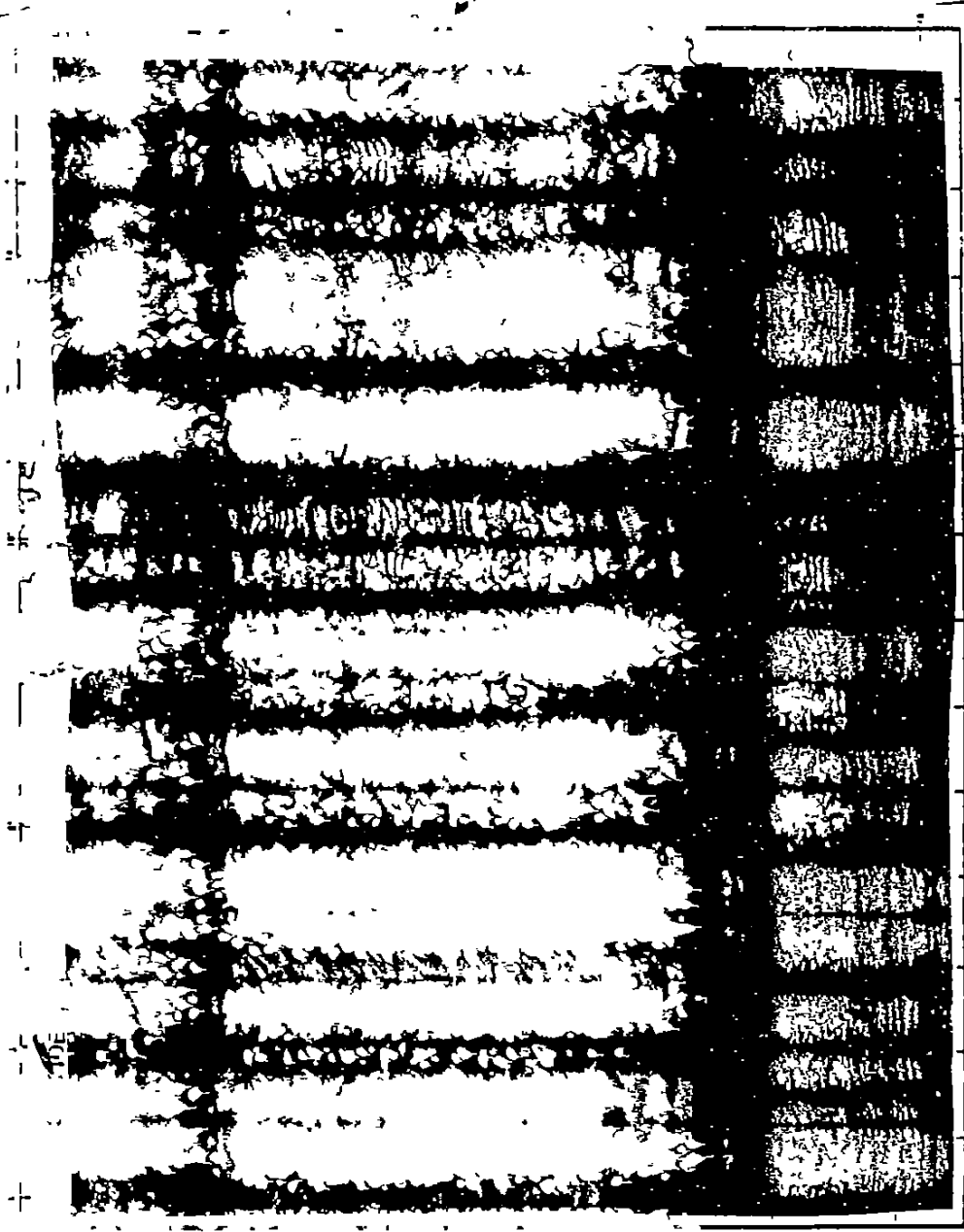
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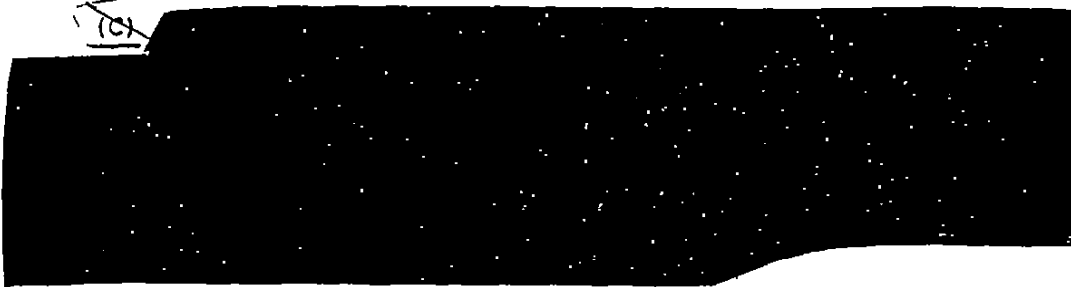
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FIGURE 3-2 (U) AIR DEFENSE SUPPRESSION CORRIDORS

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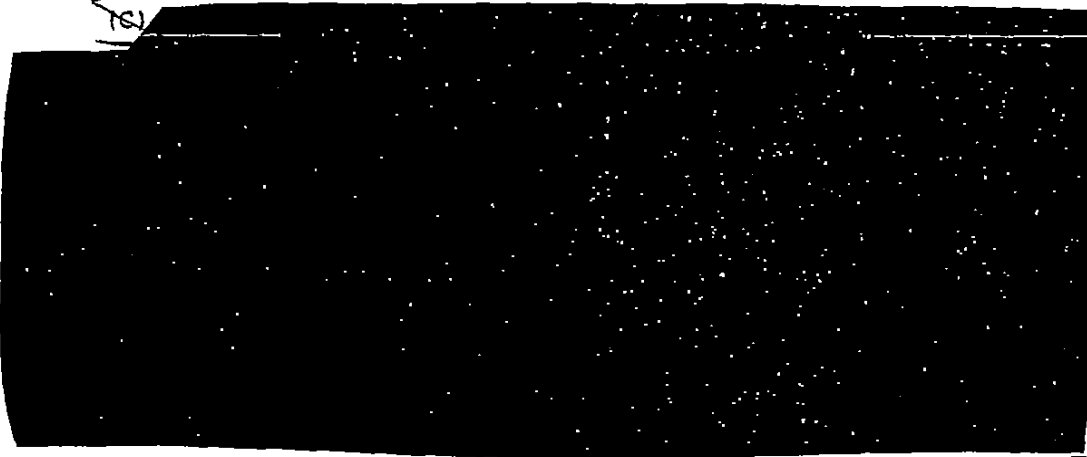
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~~(C)~~


ok ~~(C)~~ "Gentlemen, I need not explain that we are on the threshold of our greatest opportunity to contribute to the destruction of world capitalism. I implore you to dedicate yourselves and inspire your commands to satisfy fully every task assigned, every mission implicit in our concept. My staff has prepared the detailed instructions (Appendix B) which I believe you will need as you prepare your own plans."

3.4 RED NAVAL STRATEGIC ASSESSMENT AND CONCEPT OF OPERATIONS

ok ~~(C)~~ In late December, 1989, Admiral Petrov, Commander of Warsaw Pact Naval Forces, called a meeting of Senior Warsaw Pact Naval Commanders in Leningrad to discuss plans to implement actions recently directed from the Kremlin.

~~(C)~~


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[REDACTED]

(U) "Today I am directing that all naval units take whatever actions are required to reach the highest possible state of readiness by early spring of next year. You are all familiar with the threat facing us, but I would like to take a moment to review with you the formidable strength of the NATO naval forces.

(S)

[REDACTED]

(S)

[REDACTED]

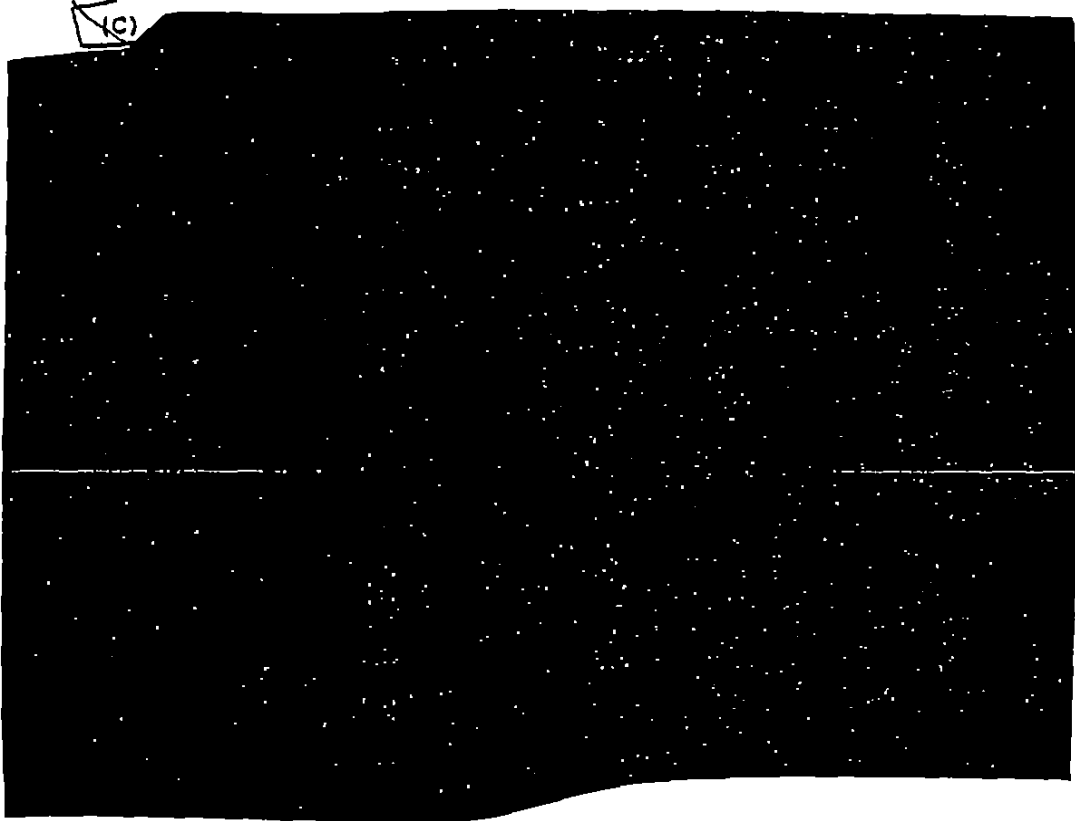
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(U) "Gentlemen, my review of the threat has been deliberately brief and general in scope. The NATO naval order of battle will be continuously updated for you so I will not describe the specific capabilities residing at each of the installations or afloat units. That order of battle, particularly the combined air-sea firepower possessed by the U.S. Battle Groups, is formidable, as you know.

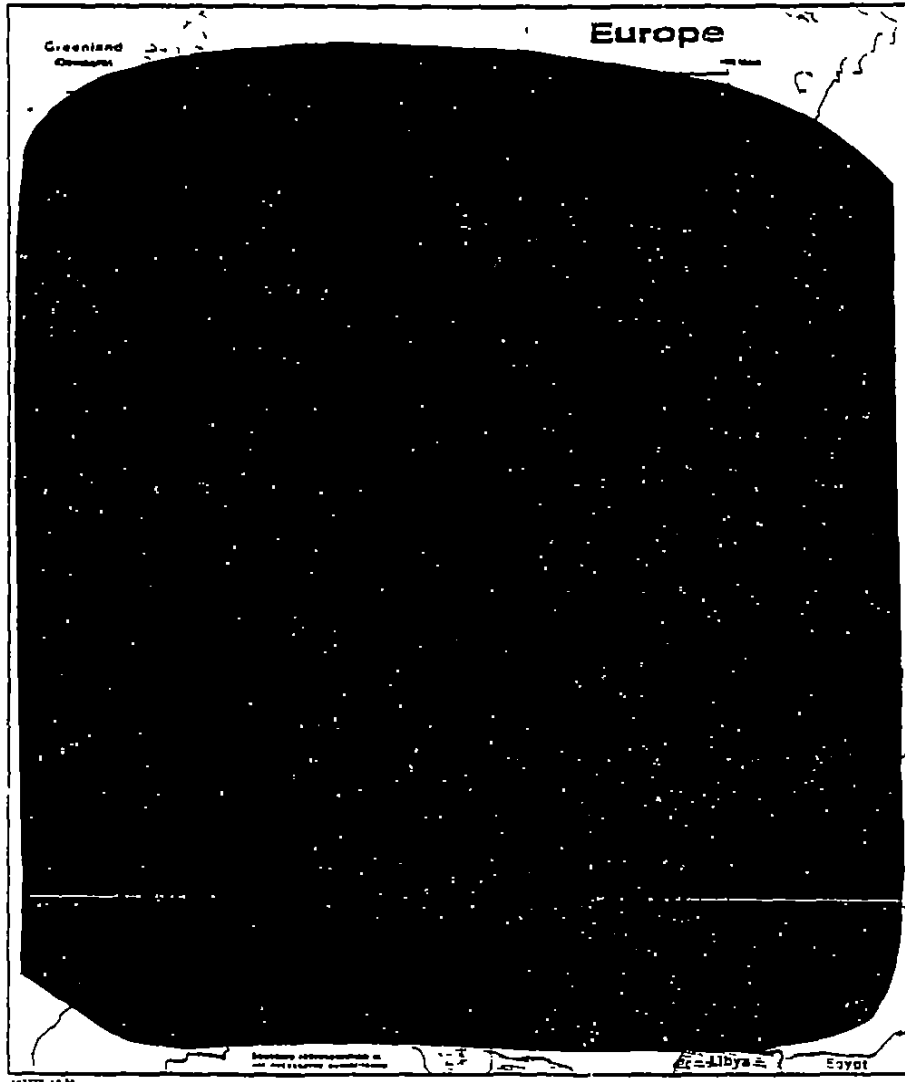
(U) "Let me now describe, in general, my concept of operations."

CONCEPT OF OPERATIONS



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FIGURE 3-3 (U) NAVAL CONCEPT OF OPERATIONS

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[REDACTED]

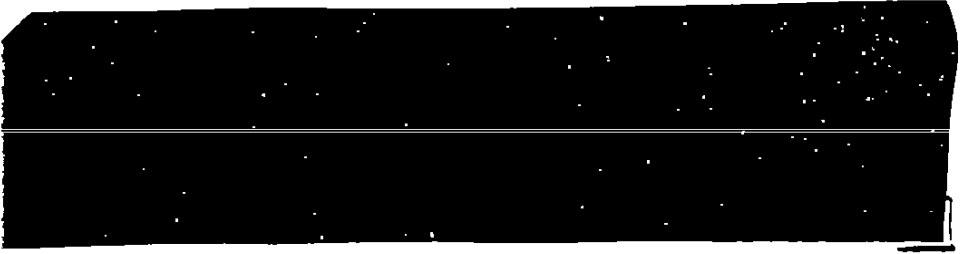
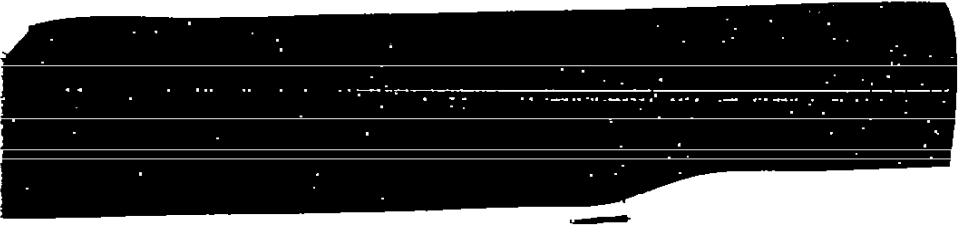
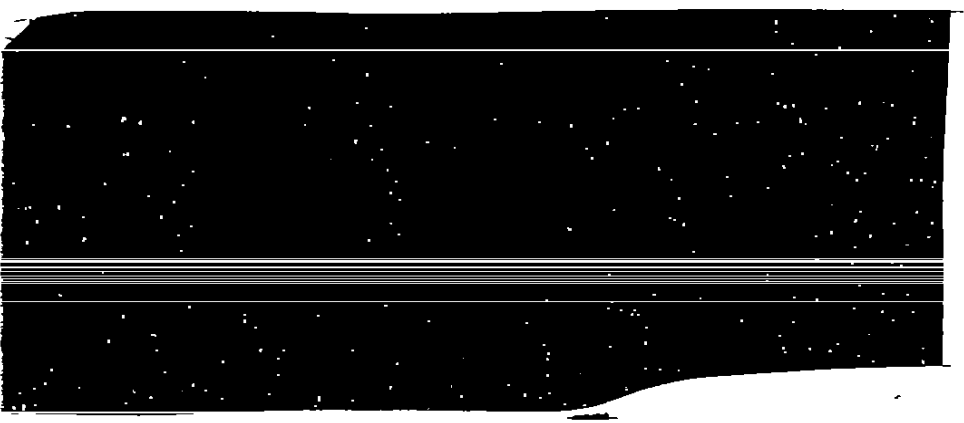
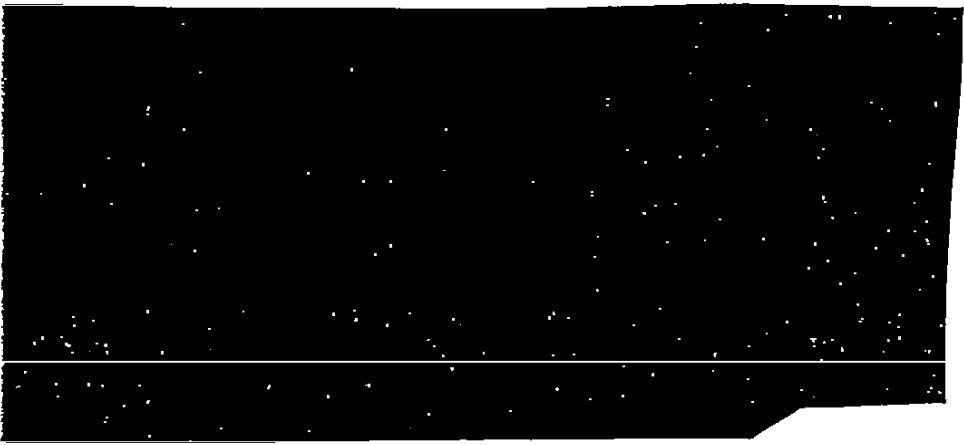
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[REDACTED]

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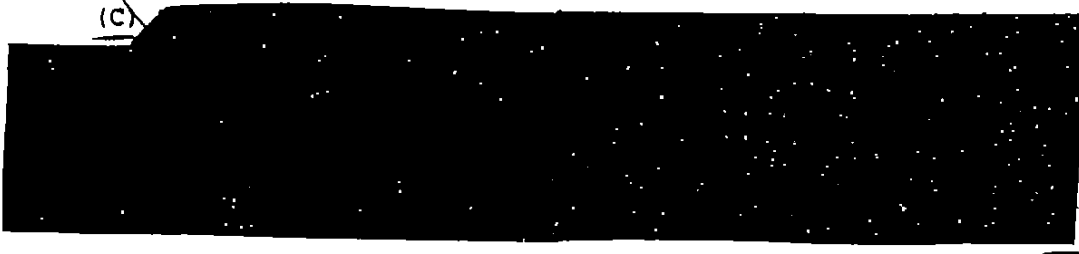
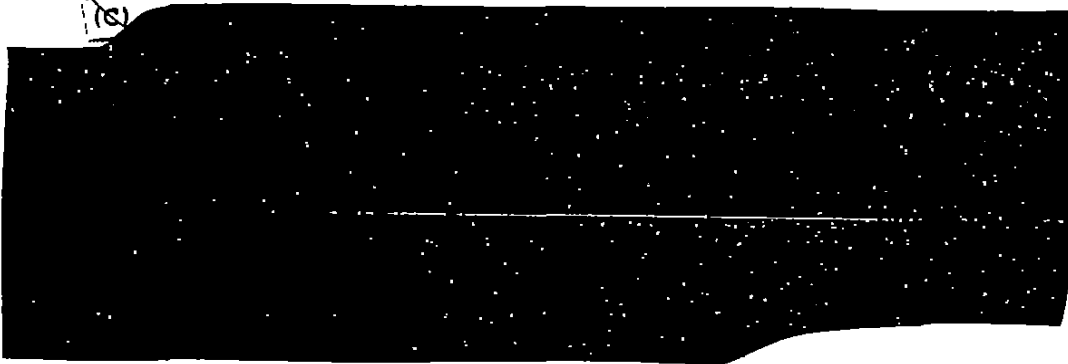
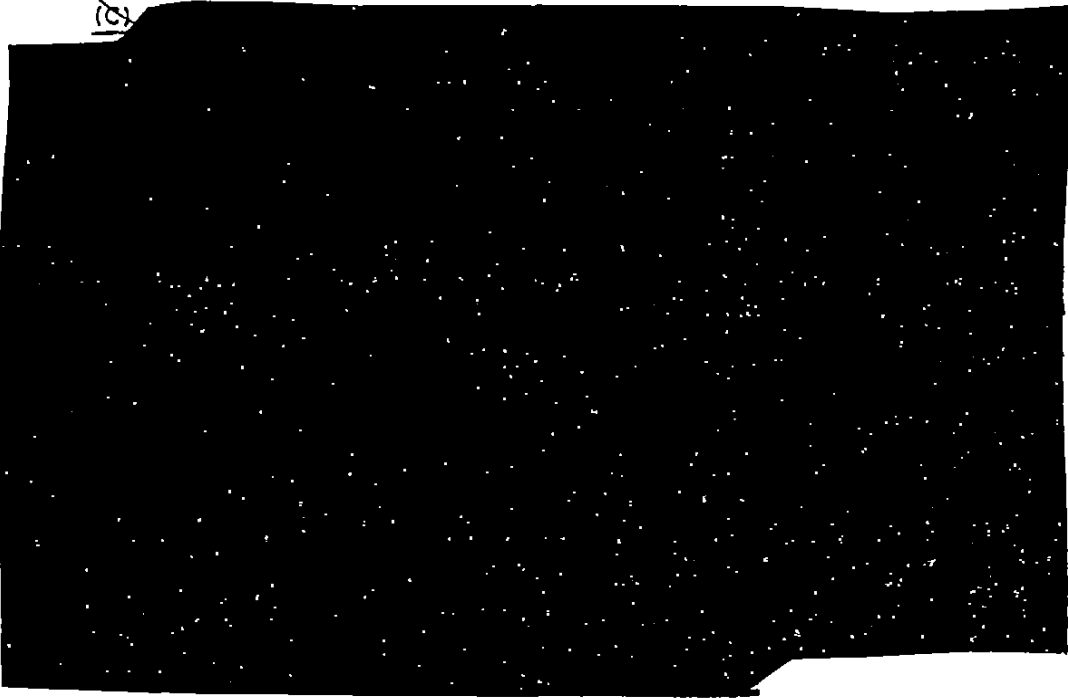
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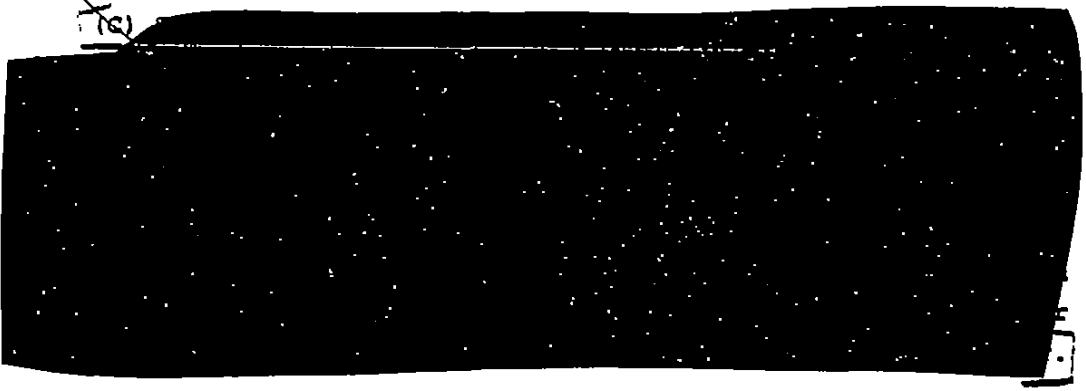
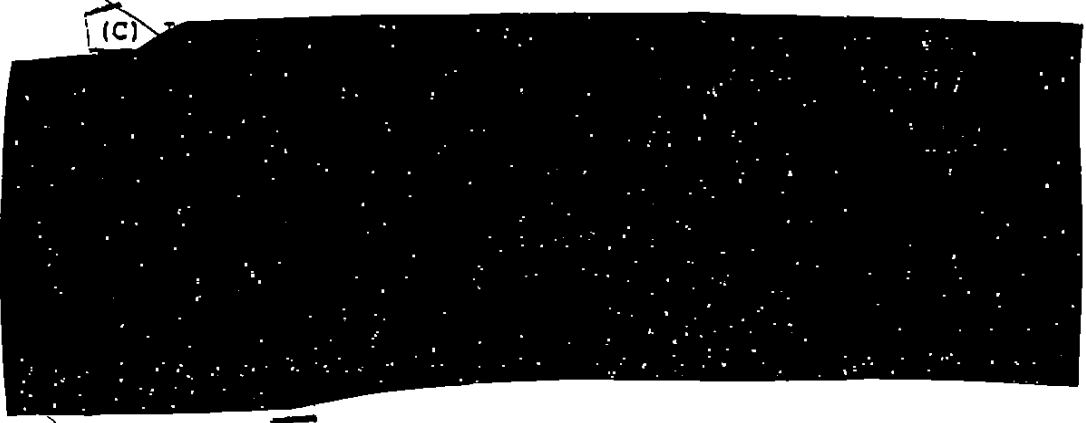
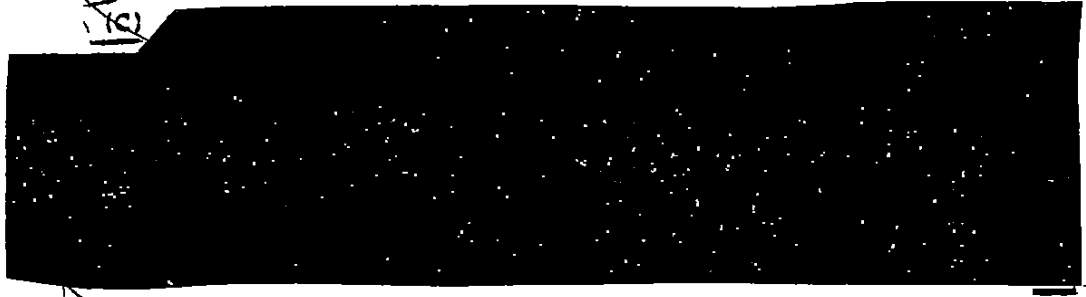
BLUE STRATEGIC OVERVIEW



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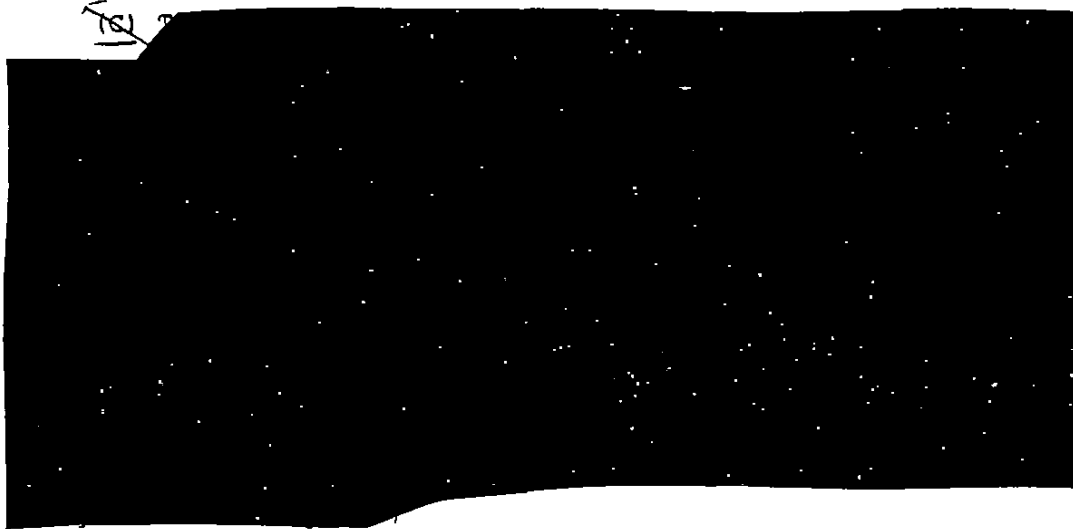
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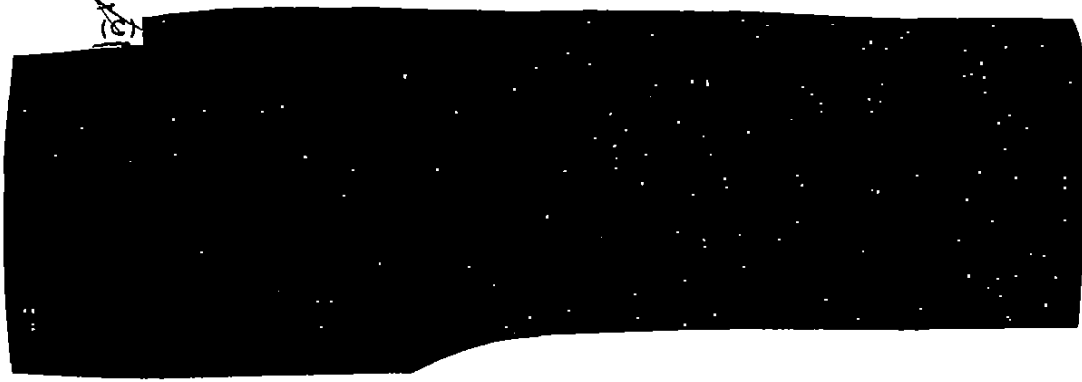
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sk (U) This general background pertains in the presentation of Blue concepts and operational plans in the following pages, beginning with the SACEUR assessment and guidance presented in the next section.

4.1 NATO CAMPAIGN CHALLENGE

sk (U) In the early spring of 1990, the Supreme Commander, Allied Forces of Europe (SACEUR) has called his major subordinate commanders (MSC) and their principal subordinate commanders (PSC) to a conference to discuss the deteriorating international situation and to provide guidance for the military activities appropriate for the portending crisis.



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~~(S)~~



THE STRATEGIC BACKGROUND

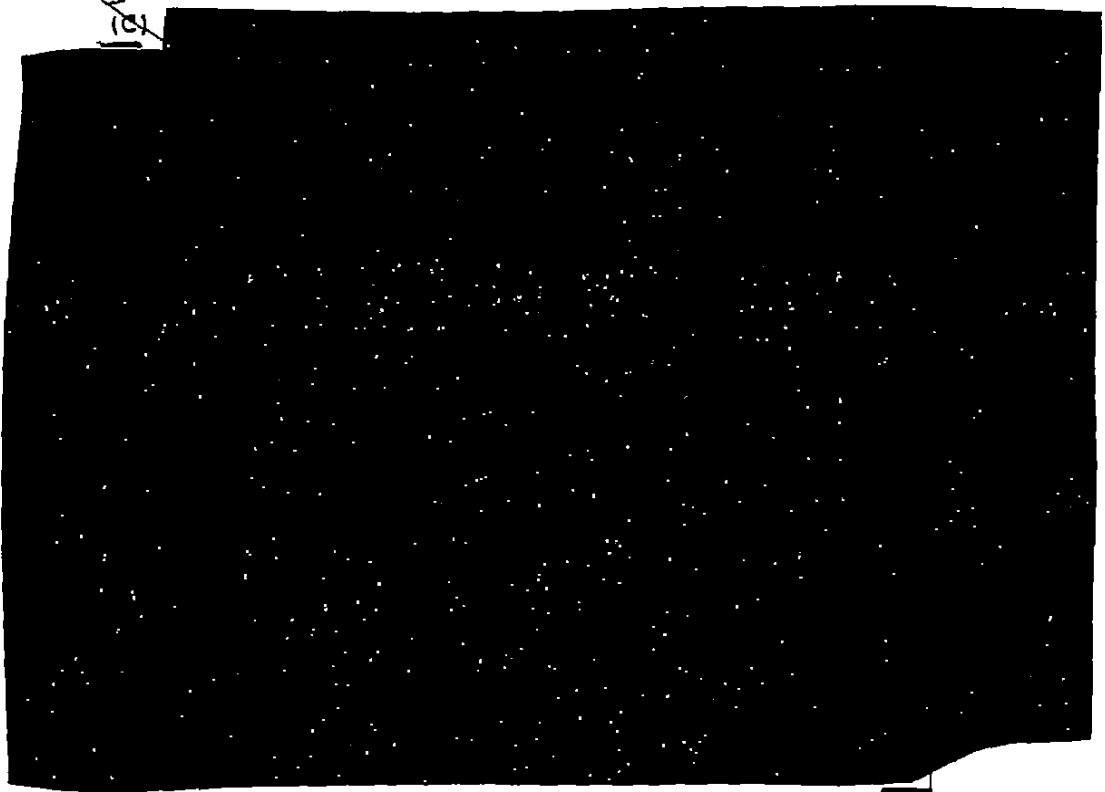
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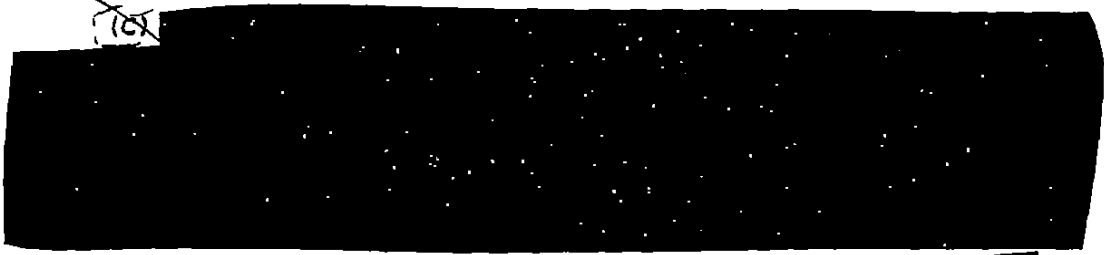
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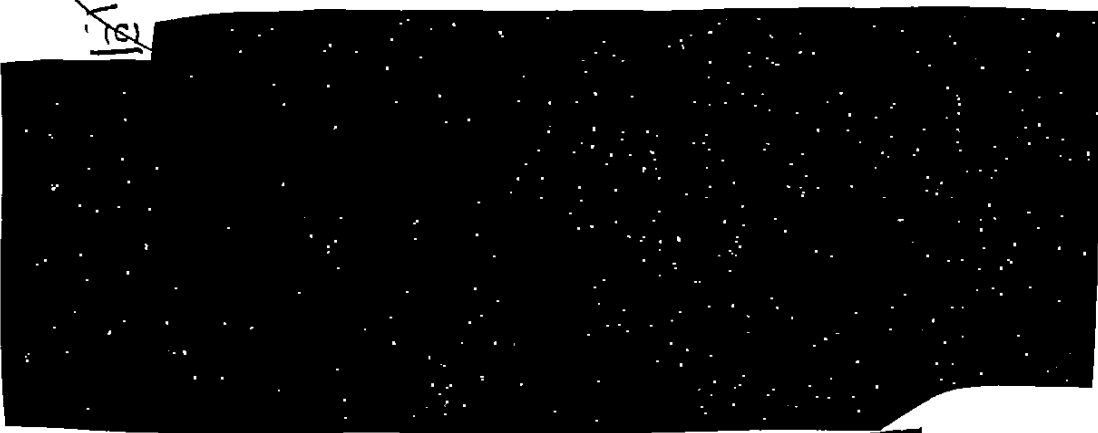
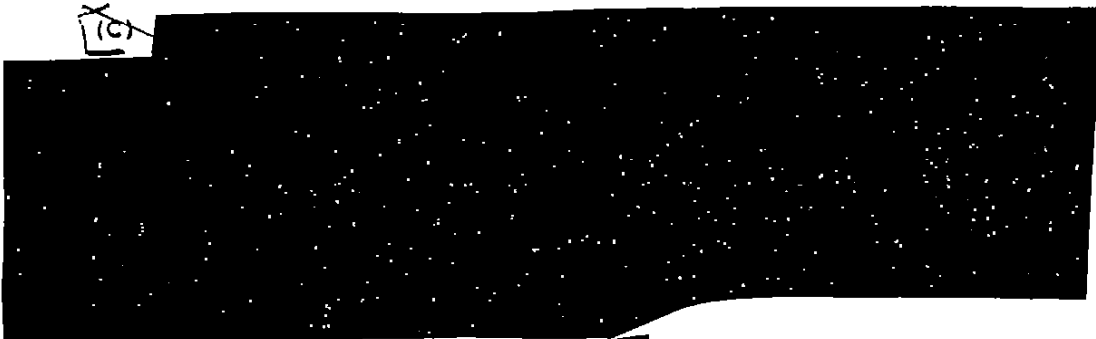
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JK ~~(S)~~ "Our situation is well-known to each of you, but I want to highlight a few items which I will classify as parameters for success."

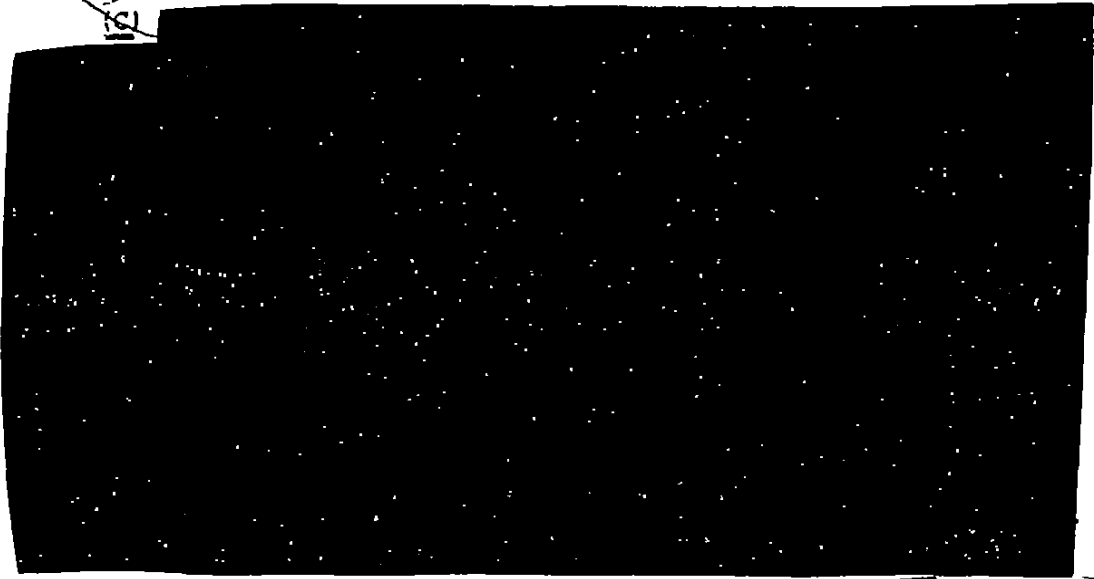
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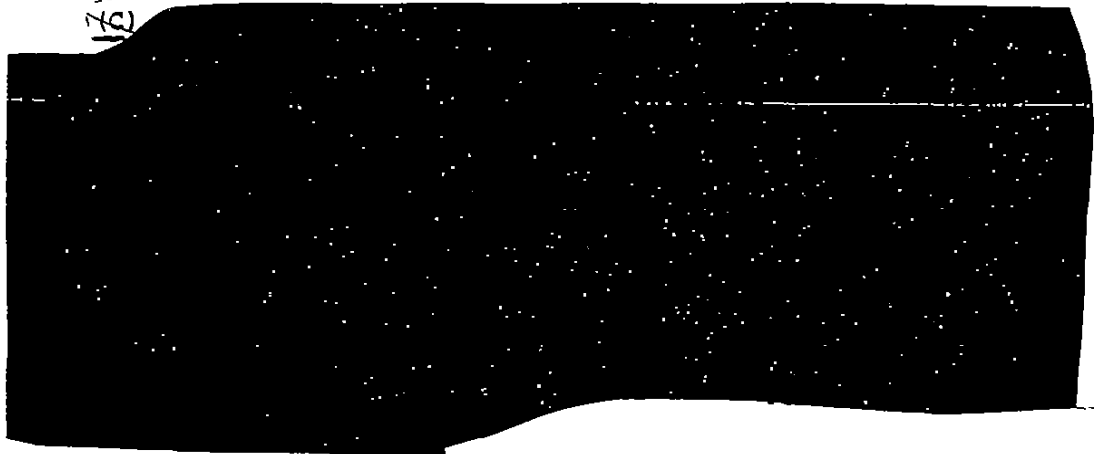
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CONCEPT OF OPERATIONS

ok
(S) "With the above in mind, let me now summarize the guidance which I believe is appropriate to the immediate situation."



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[REDACTED]

~~(c)~~
[REDACTED]

~~(c)~~
[REDACTED]

~~(c)~~
[REDACTED]

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[REDACTED]

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OK
~~(C)~~ "Gentlemen, I expect you to ready your forces, to review your plans, to reconfirm your own concepts for accomplishing the missions you are assigned and to be prepared to return here sometime in the next few weeks to present and discuss the final adjustments you have made to deal with a potential Warsaw Pact attack."

4.2

GENERAL DEFENSE PLAN - CENTRAL REGION

~~(C)~~
[REDACTED]

~~(C)~~
[REDACTED]

~~(C)~~
[REDACTED]

OK ~~(C)~~ "We have discussed our plans many times before, but always in a somewhat remote from real war atmosphere. That remoteness is gone. Our danger is very real and very near."

~~(C)~~
[REDACTED]

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[REDACTED]

OK 9/ ~~(S)~~ "The eight allied corps and Land Forces, Jutland are our ground strength. Now is the time to improve on the readiness and alertness of these forces." ~~(S)~~

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]



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[REDACTED]

- (S) [REDACTED]
- (S) [REDACTED]
- (S) [REDACTED]
- (S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

oic (S) "Review your plans with your subordinates. Emphasize readiness and encourage everyone to recognize our great strength. Be ready to strike throughout the depth of the AFCENT area and fight in a chemical environment, and maintain the cohesion of our battle lines."

4.3 NATO CHEMICAL OPERATIONS

ok (S) Supplementing the guidance provided by the NATO chain of command, the US European Command issues national guidance concerning chemical warfare and the use of chemical munitions by the US forces in Europe. [REDACTED]

[REDACTED]

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[REDACTED]

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[REDACTED]

~~(c)~~
[REDACTED]

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[REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

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• ~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

• ~~(S)~~
• ~~(S)~~
• ~~(S)~~
• ~~(S)~~
• ~~(S)~~
[REDACTED]

ok ~~(S)~~ Given the above direction, commanders of US forces in the field can be far better prepared for operations in a chemical environment than is now the case.

4.4 NATO POLITICAL GUIDANCE

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

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• (S) [REDACTED]

• (S) [REDACTED]

• (S) [REDACTED]

[REDACTED]

(S) [REDACTED]

(U) It is of interest that the Geneva Protocol of 1925 was signed by a patchwork quilt of only some of the nations on both sides of a NATO-Warsaw Pact struggle. It was signed by Belgium, Canada, France, Netherlands, Portugal, the United Kingdom, the United States and Germany. On the other side it was signed by the USSR, Bulgaria, Czechoslovakia and Romania. The Protocol

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stated that it was binding only among states that are party to the Protocol itself. ("The Protocol ceases to be binding as regards states whose armed forces or the armed forces of whose allies fail to support the prohibition laid down in the Protocol.") Since some of the Warsaw Pact members did not sign, and since some of the NATO allies did not sign, some very interesting loopholes are raised with respect to the use of chemical warfare. In addition, the Federal Republic of Germany in 1954 unilaterally obligated itself not to produce nuclear, biological or chemical weapons on its territory. Of course, the U.S. also says that riot control weapons and herbicides are not covered by the Protocol.

(U) The 1972 Biological Warfare Convention, which bans biological agents and toxin agents (regardless of means of production) and munitions (except for defensive research purposes) came into effect in March 1975. All the NATO and Warsaw Pact nations signed it except France and the Federal Republic of Germany, which is now in the process of ratifying it.

The USSR in 1972 and Japan in 1973, produced draft conventions for a ban of chemical agents and munitions in the Conference of the Committee on Disarmament (CCD) in Geneva, but because there was no verification system within it, it was never accepted. In 1974 the U.S. and the USSR agreed to hold bilateral negotiations with a view to developing a joint initiative to be elaborated into a multi-lateral treaty by the CCD. The UK in 1976 tabled a draft convention at the CCD which had a policy for intrusive verification, but which was not acceptable to the USSR. The U.S. and the USSR had bilateral talks in 1977 and again in 1980 but they have been bogged down since. Currently, in the Committee on Disarmament (CD), formerly the CCD, there are multi-national negotiations on chemical warfare arms controls.

OK (S) Chapter 6 of the Study, done by the IMS and the NATO commanders poses the issues very bluntly to the political level

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of NATO. The issues as seen by the military level fall into five groups as follows:

- (S) NATO issues:

- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]

- (S) Issues involving NATO and the US:

- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- (S) [REDACTED]

- (S) Geographical problems:

- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]

- (S) Political control:

- ~~(S)~~ [REDACTED]

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~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

OK ~~(S)~~ This Military Committee memorandum asks some important questions, but there has been no response.

4.5 BLUE AIR ASSESSMENT AND CONCEPT

OK ~~(S)~~ COMAAFCE at a conference with his subordinate air commanders, following his attendance at CINCENT's conference, outlines his general plans for the conduct of air operations.

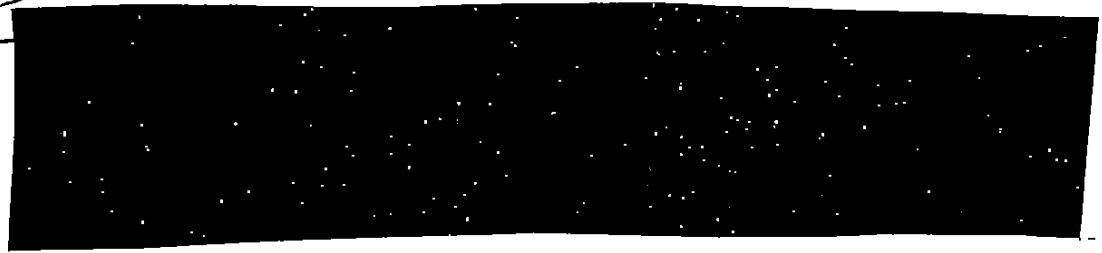
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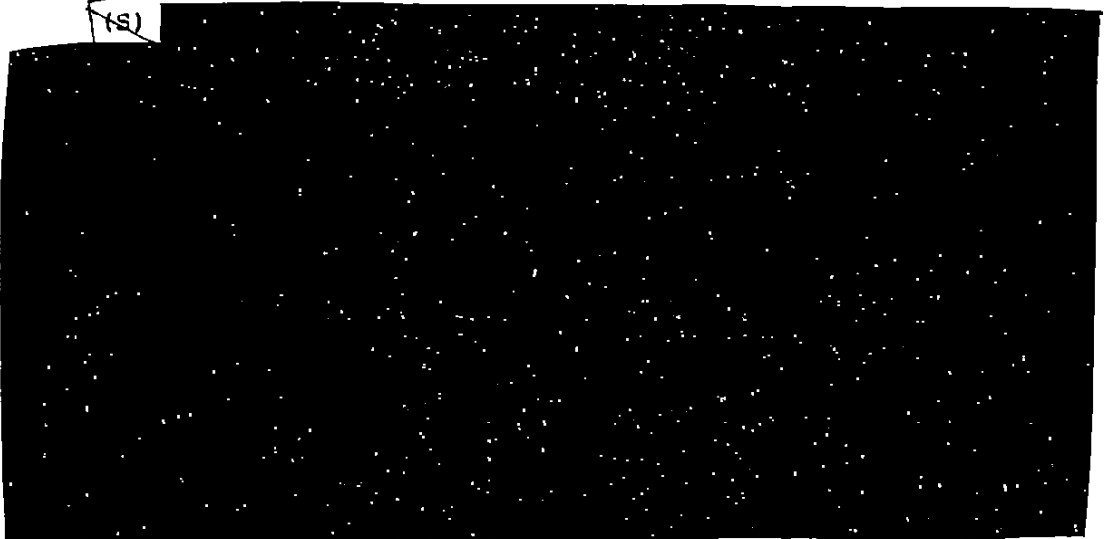
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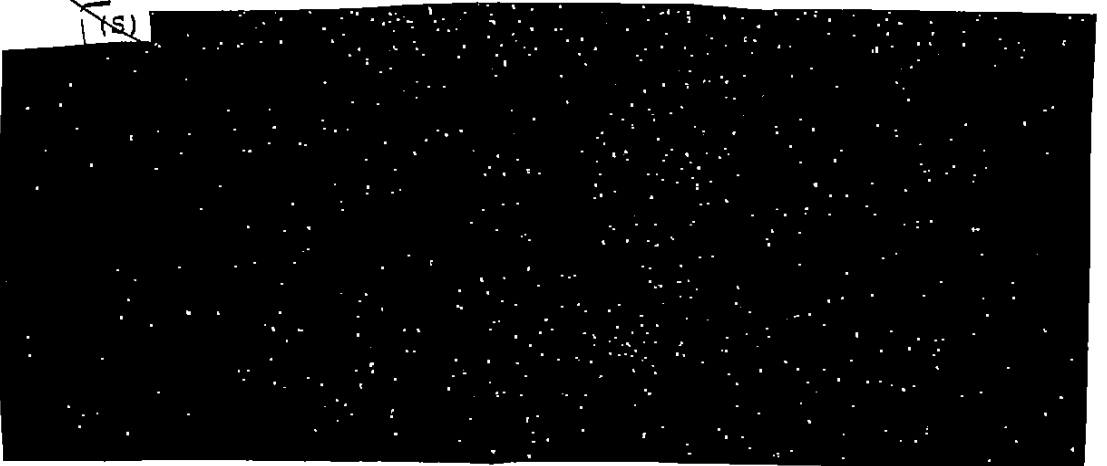
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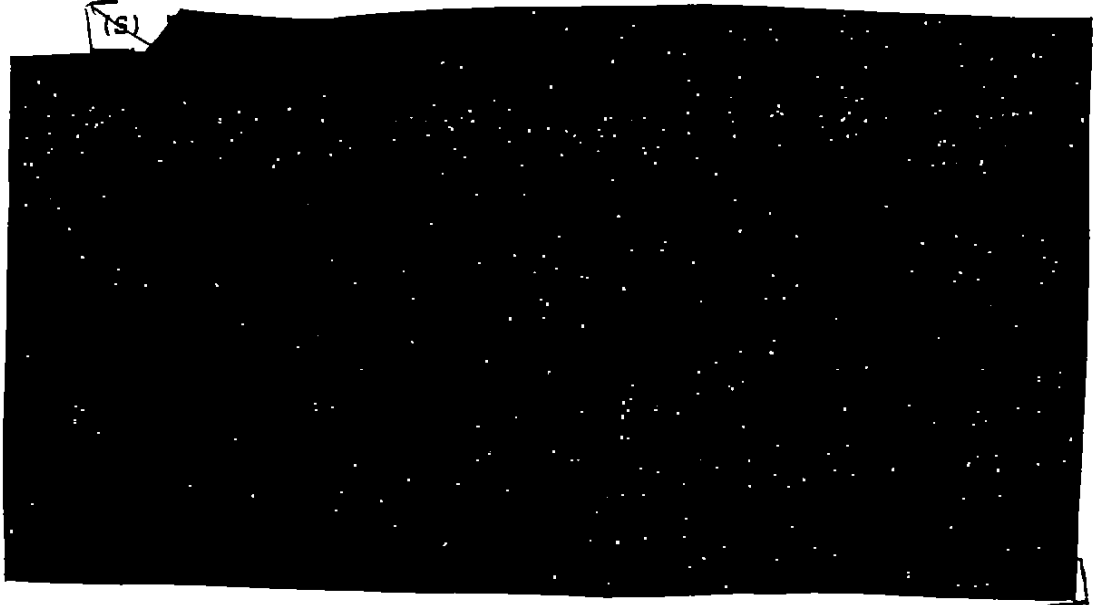
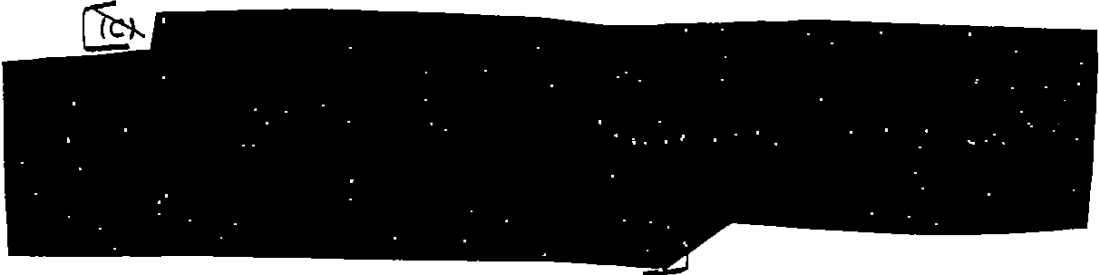
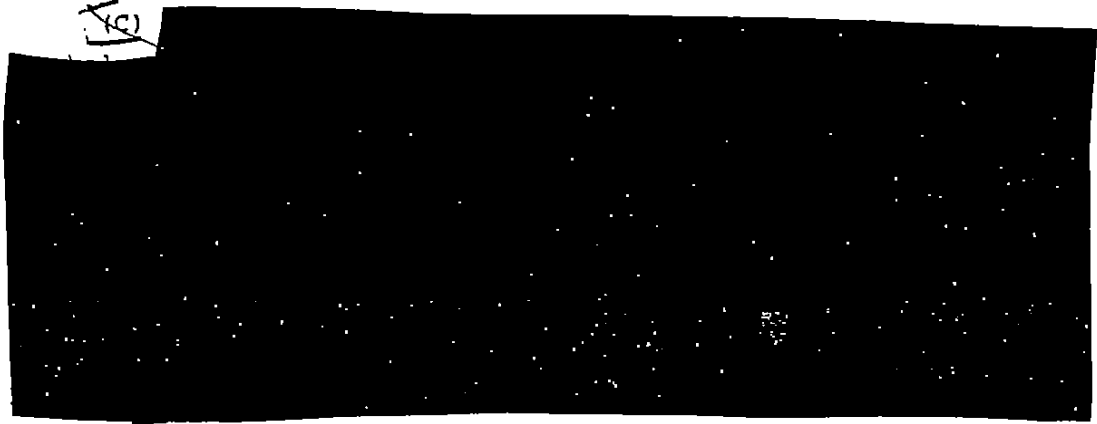


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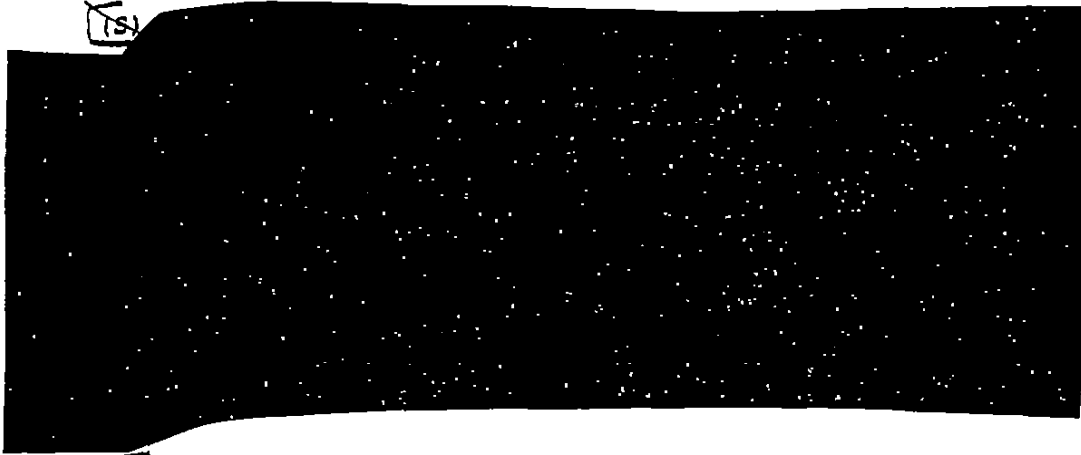
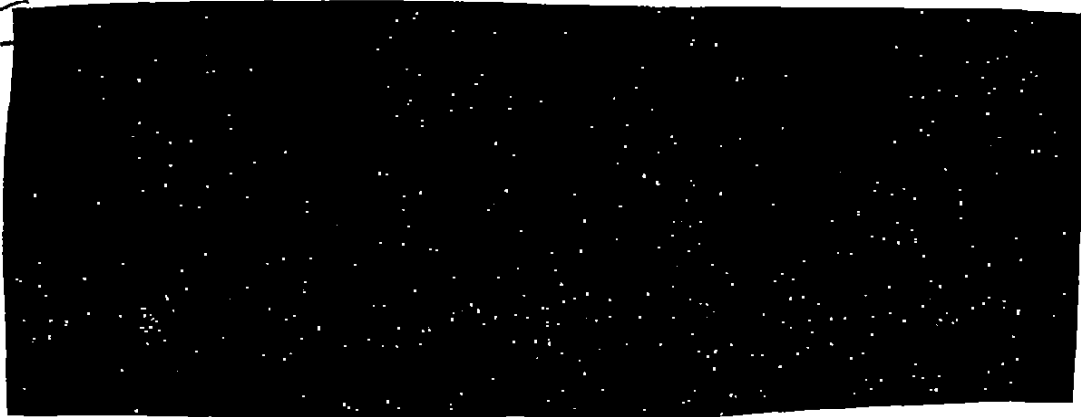
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OK ~~9~~ (S) "Our specific attack plans and targets will be presented by the Director of Combat Operations, Allied Air Forces, Central Europe." (Appendix E) ~~5~~

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4.6

BLUE NAVAL ASSESSMENT AND CONCEPT

OK *[Handwritten signature]*

(S) In late April, 1990, Admiral Kronin, Supreme Allied Commander, Atlantic, called a meeting of his senior commanders at Norfolk, Virginia to discuss the continuing build-up of Warsaw Pact naval units in the Atlantic and elsewhere. Also represented were senior naval commanders from AFSOUTH and NAVEUR, Headquarters, Naples and London respectively who were attending at the request of their own commanders. *[Handwritten initials]*

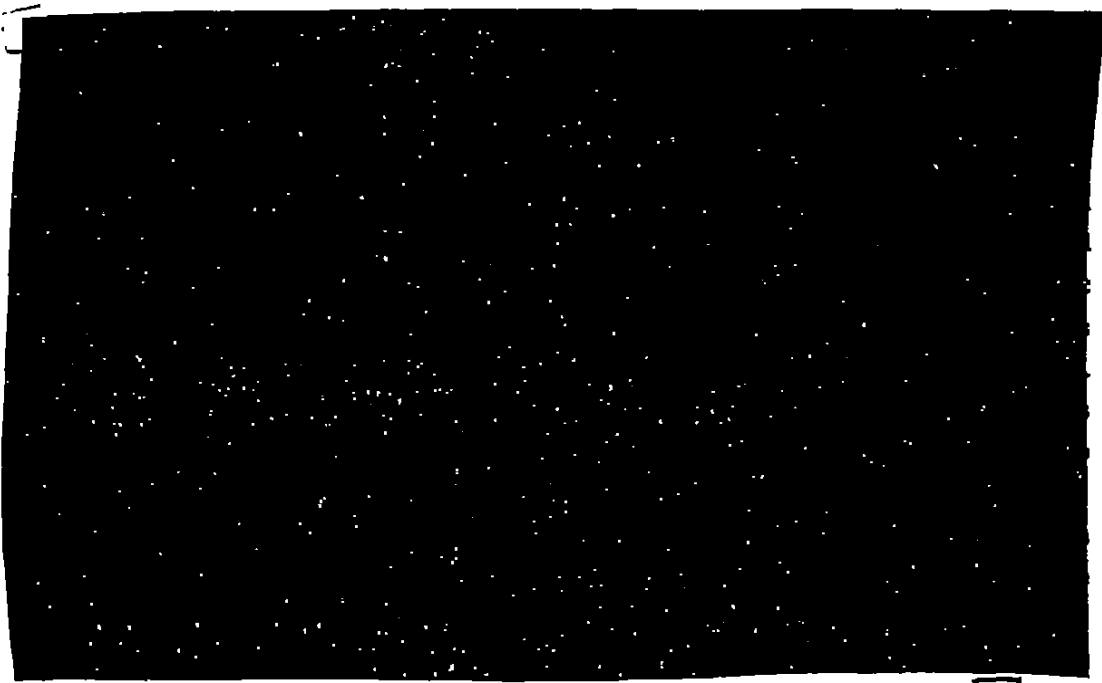
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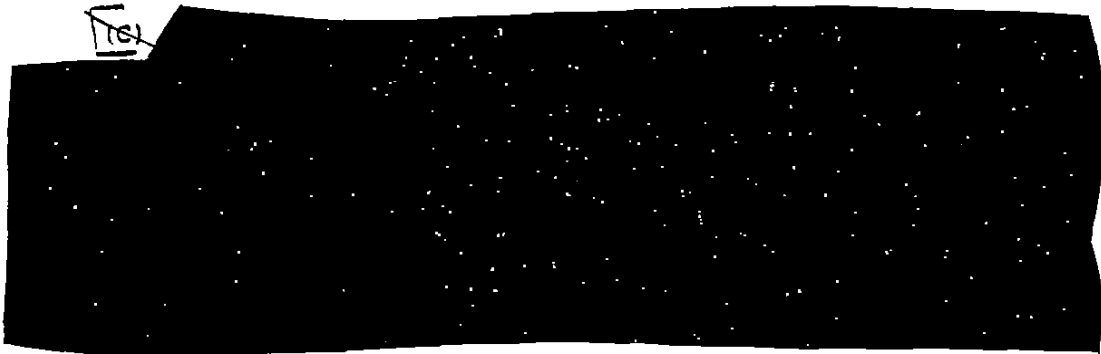
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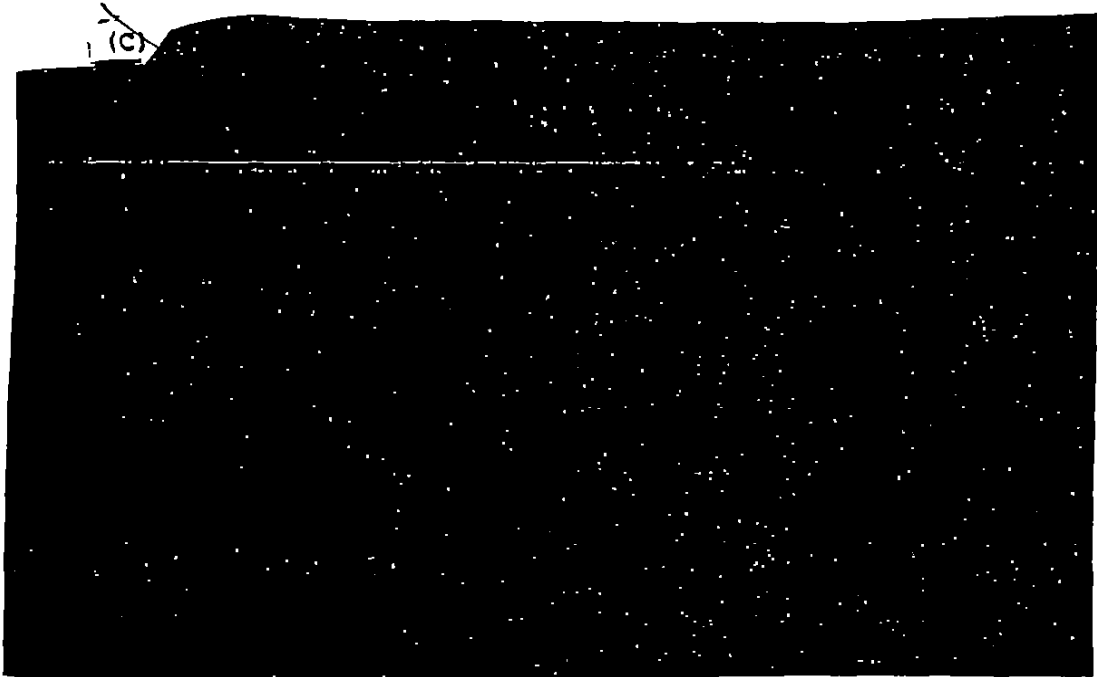
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ok ~~(S)~~ "Let me now describe, in general terms, what our concept of operations will be."

CONCEPT OF OPERATIONS



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~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(C)~~ [REDACTED]

~~(C)~~ [REDACTED]

~~(C)~~ [REDACTED]

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[REDACTED]

~~(S)~~ [REDACTED]

The fog of war will be denser than most of us can imagine. Only by bold and, oftentimes, independent action will we prevail. I know we will be successful no matter what the odds. Let's now hear the order of battle briefs for our areas of responsibility and my staff will describe more fully the disposition of our forces afloat. OK

(U) "As a final note, my staff medical officer will refresh you once again on probable symptoms and effects of various chemical agents and what we can do within our own units to improve existing protective measures against chemical attack.

(U) "Good luck and God speed to you all."

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5.0 THE CHEMICAL ENVIRONMENT

5.1 INTRODUCTION

(U) This chapter presents, in narrative form, a description of the battle environment which will be the consequence of an outbreak of hostilities between the Warsaw Pact and NATO forces if the operational concepts presented in the earlier parts of this study are put into execution. The presentation follows no single theme but is, rather, a collection of general descriptions, incidents which depict happenings, activities of small units or installations, and reports that summarize the situations various commanders find relevant to their continuing combat capabilities.

(U) The battlefield story is presented in detail in three appendices, one (Appendix G) dealing with the ground forces, one (Appendix H) with the air forces, and one (Appendix I) with naval forces. In each it is intended that the reader will be able to "see the battle" as it was perceived by soldiers, sailors or airmen who were experiencing the beginning of another World War. Highlights, the most significant factors, and the common elements of the appendices are summarized in the following paragraphs.

5.2 GENERAL HIGHLIGHTS

(U) "Two major objectives in using chemicals were accepted in all armies. An order from German GHQ on 1 Jul 17 stated them succinctly: "The object of a gas bombardment is to incapacitate or destroy living targets and generally to neutralize the enemy's fighting efficiency." A third objective, closely related to the second and only gradually recognized, was to cause panic and depress morale.

(U) "Harassment and neutralization in some degree inevitably accompanied chemical attacks designed primarily for casualty production, and these were sometimes the major effects. Furthermore, if"

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"conditions were right, significant psychological effects evidenced by group panic or individual demoralization might also result and sometimes predominate."

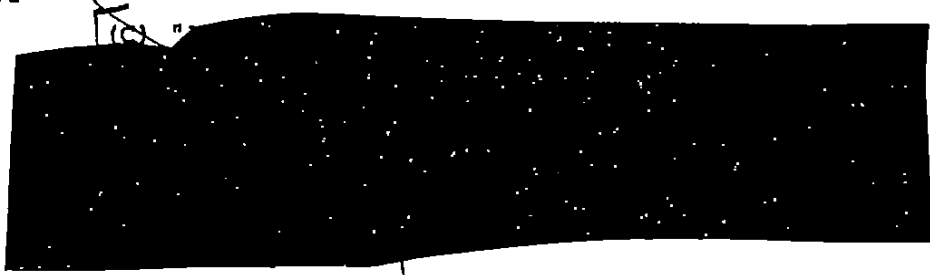
"Effectiveness of Chemical Weapons in World War I", DTIC Technical Report, November 1959.

OK

(S) With these words the DTIC Technical Report, "Effectiveness of Chemical Weapons in World War I", in November 1959 summed up the aims associated with the employment of chemical agents in war.



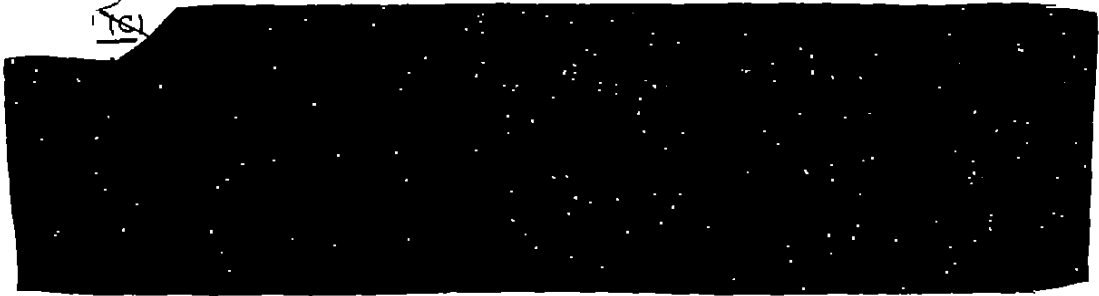
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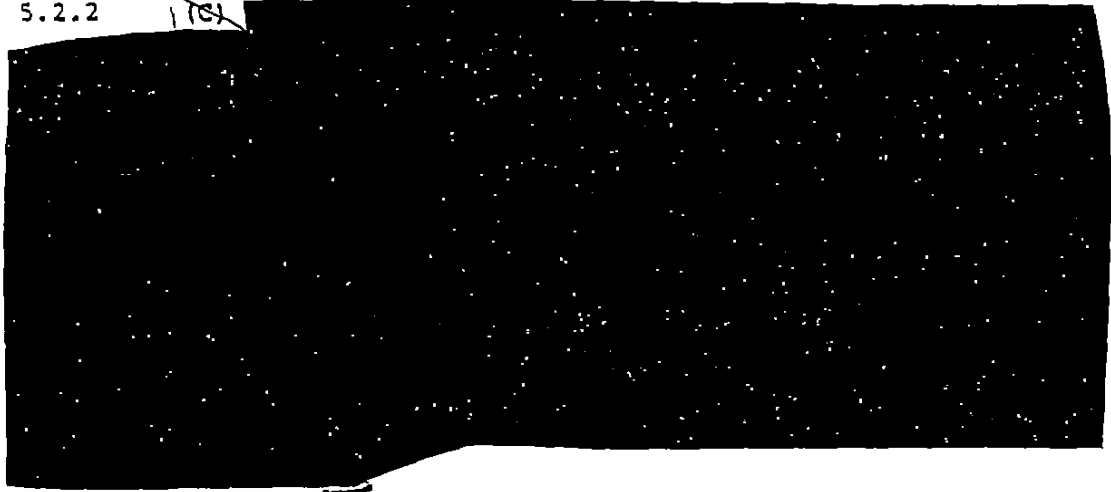
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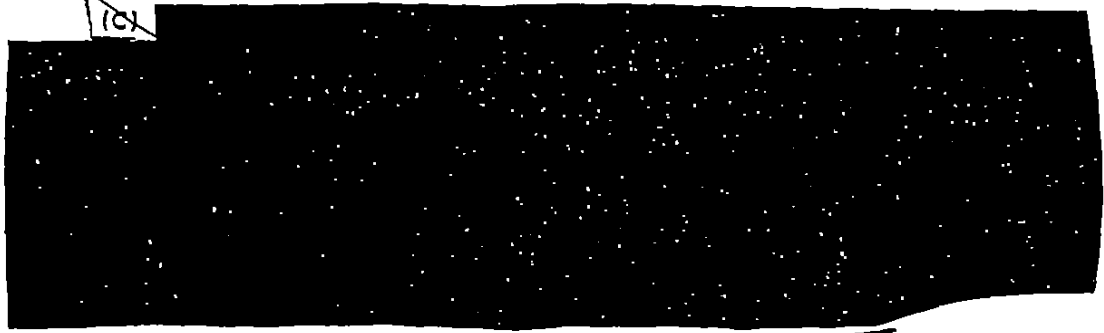


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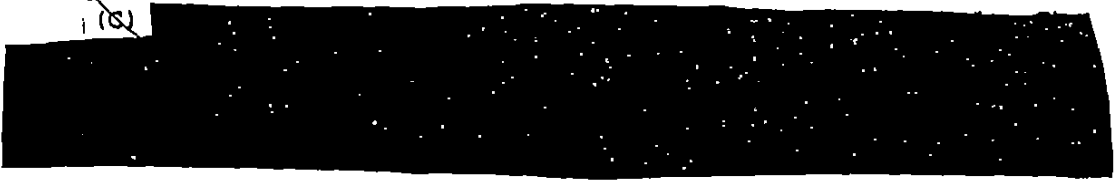
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~~(S)~~



~~(S)~~



5-3
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5.2.3

~~(C)~~

[REDACTED]

[REDACTED]

~~(C)~~

[REDACTED]

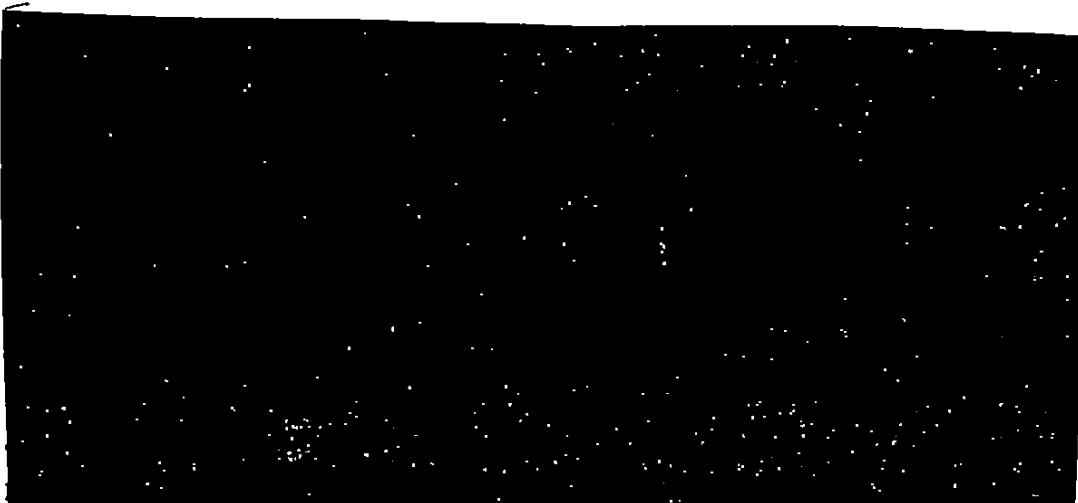
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[REDACTED]

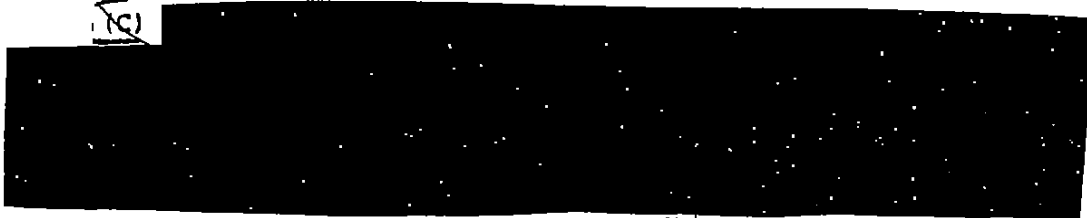
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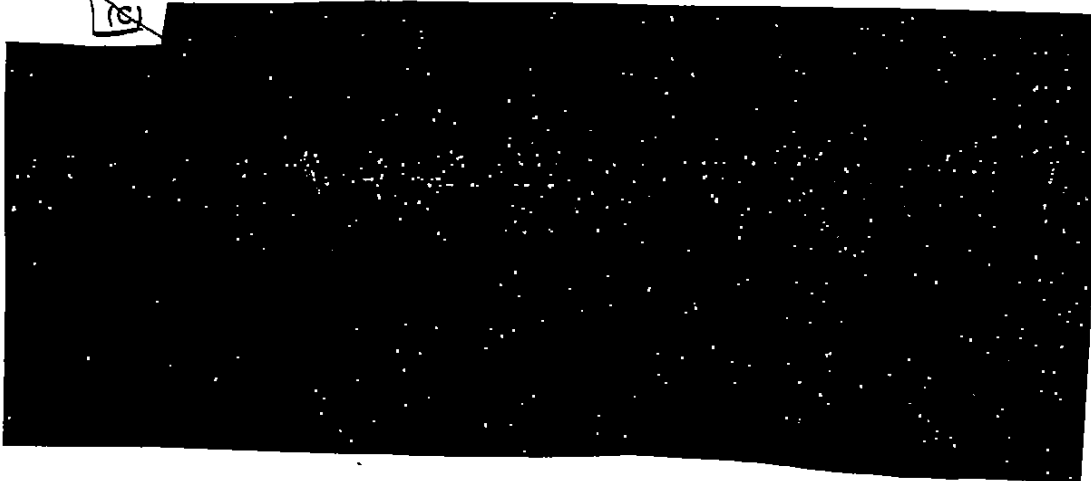
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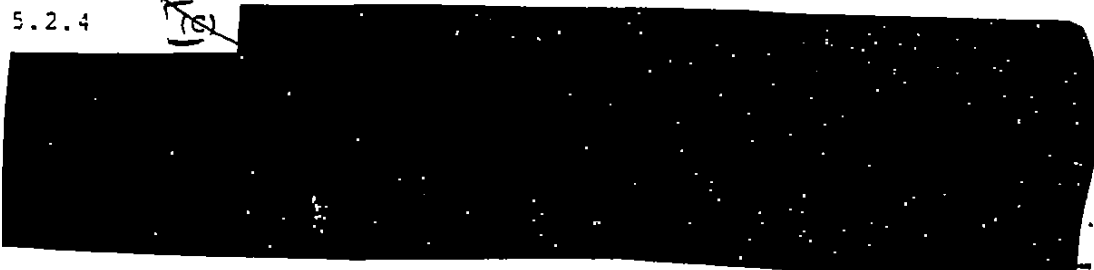


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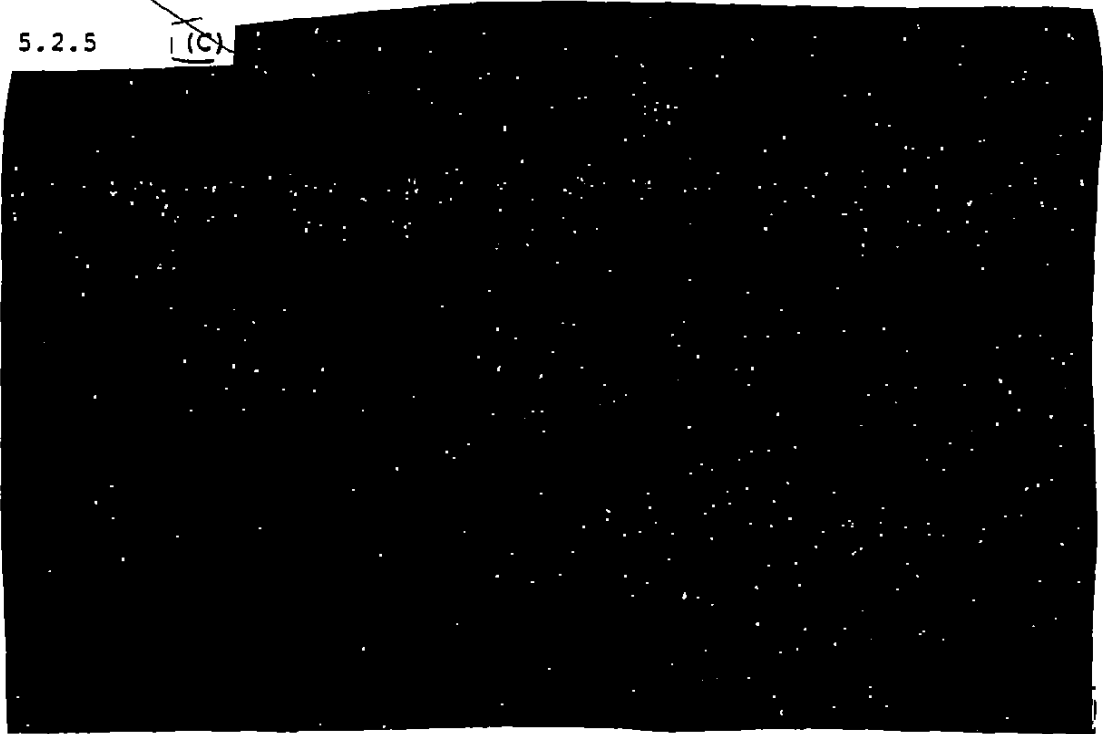
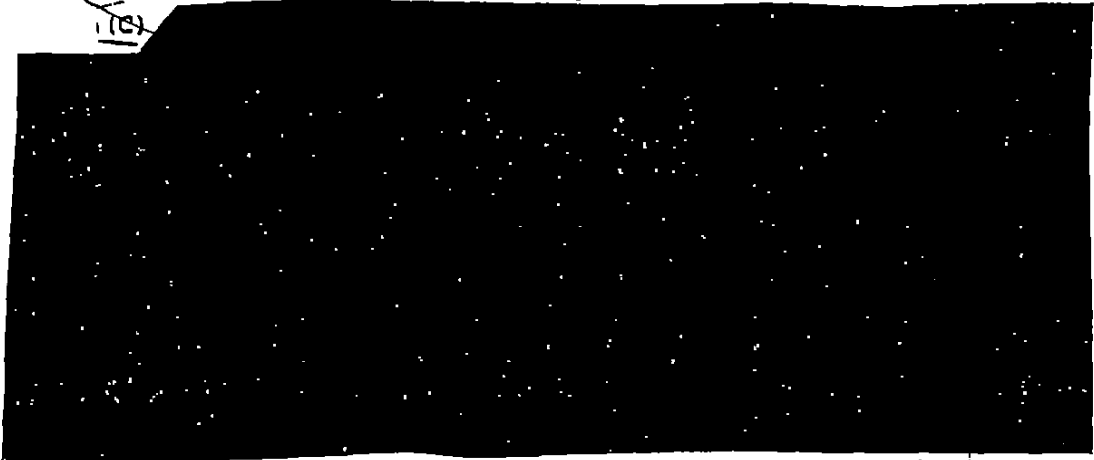


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~~(S)~~



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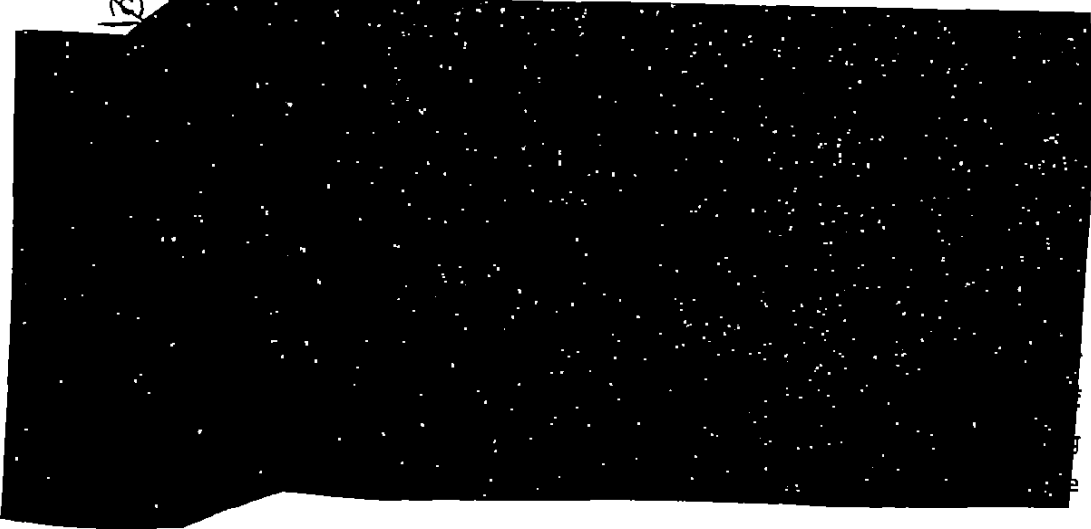


5-6

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5-6

~~CONFIDENTIAL~~



5-7
~~CONFIDENTIAL~~

5-7
~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

• ~~(C)~~ [REDACTED]

• ~~(C)~~ [REDACTED]

• ~~(C)~~ [REDACTED]

• ~~(C)~~ [REDACTED]


• ~~(C)~~ [REDACTED]

JK • ~~(C)~~ Small unit leadership is an unmeasured but essential counter-balance to this asymmetry, but it cannot by itself restore a comparable combat effectiveness of NATO forces to that which will be enjoyed by the Warsaw Pact forces in the conditions envisioned.

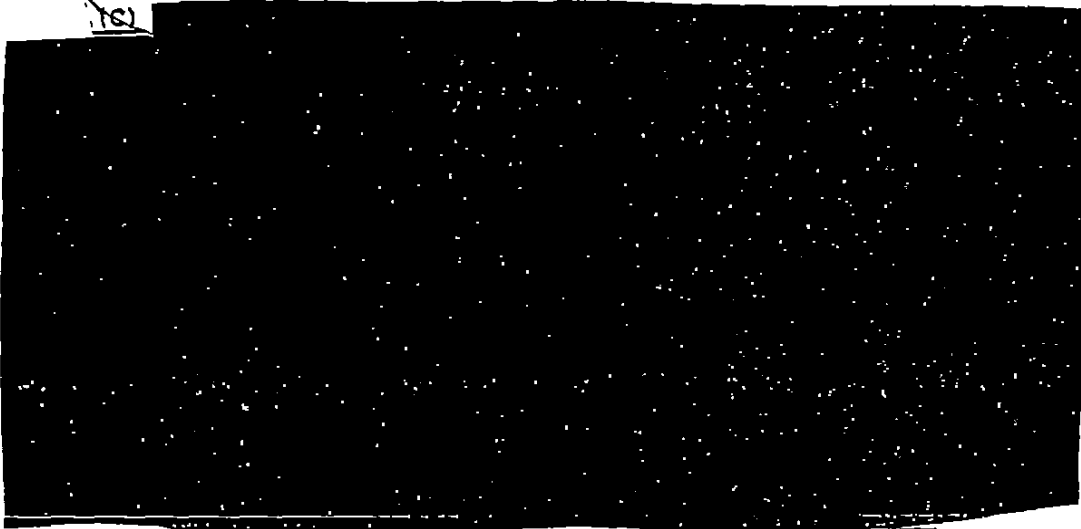
~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

6.0 *ok* AUTHORS' APPRAISAL AND CONCLUSIONS

6.1 *1/2* This study presents the views of a group of senior retired officers of all of the armed services on the nature of a 1990 chemical battlefield. 

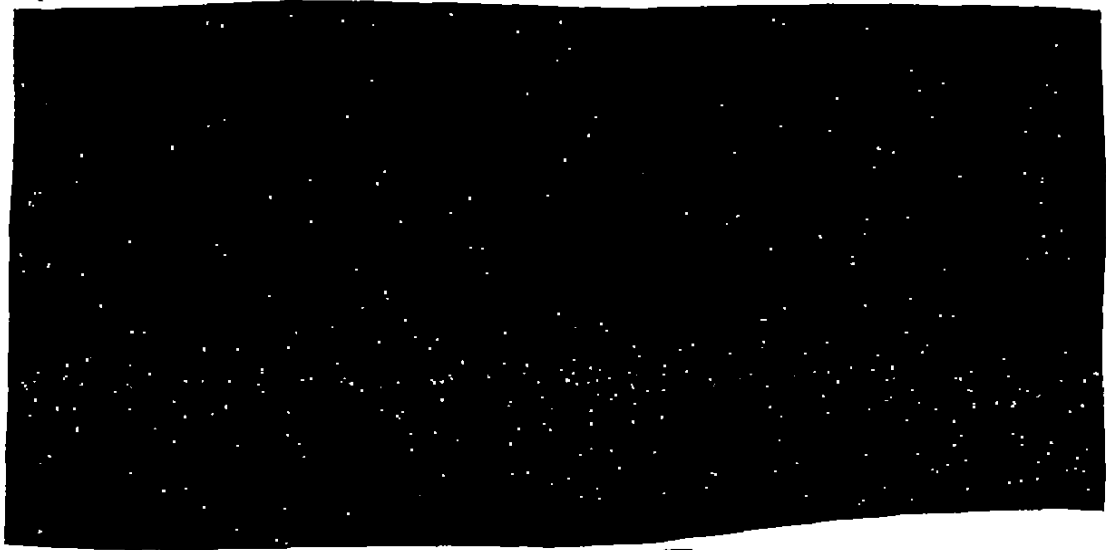


1/2 

1/2 

1/2 

6-1
~~CONFIDENTIAL~~



6.2 ~~(S)~~ Additional conclusions, based on observations expressed and the issues identified in the body of the study, are summarized in the following paragraphs.



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121 [REDACTED]

121 [REDACTED]

121 [REDACTED]

121 [REDACTED]

121 [REDACTED]

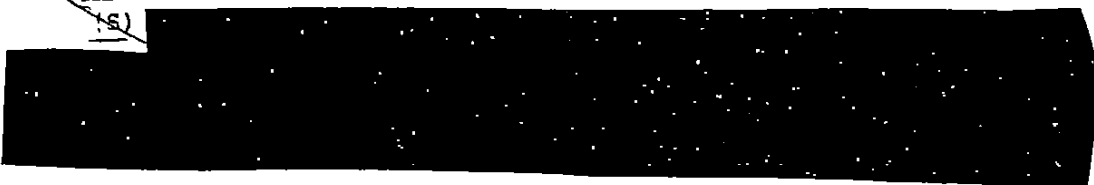
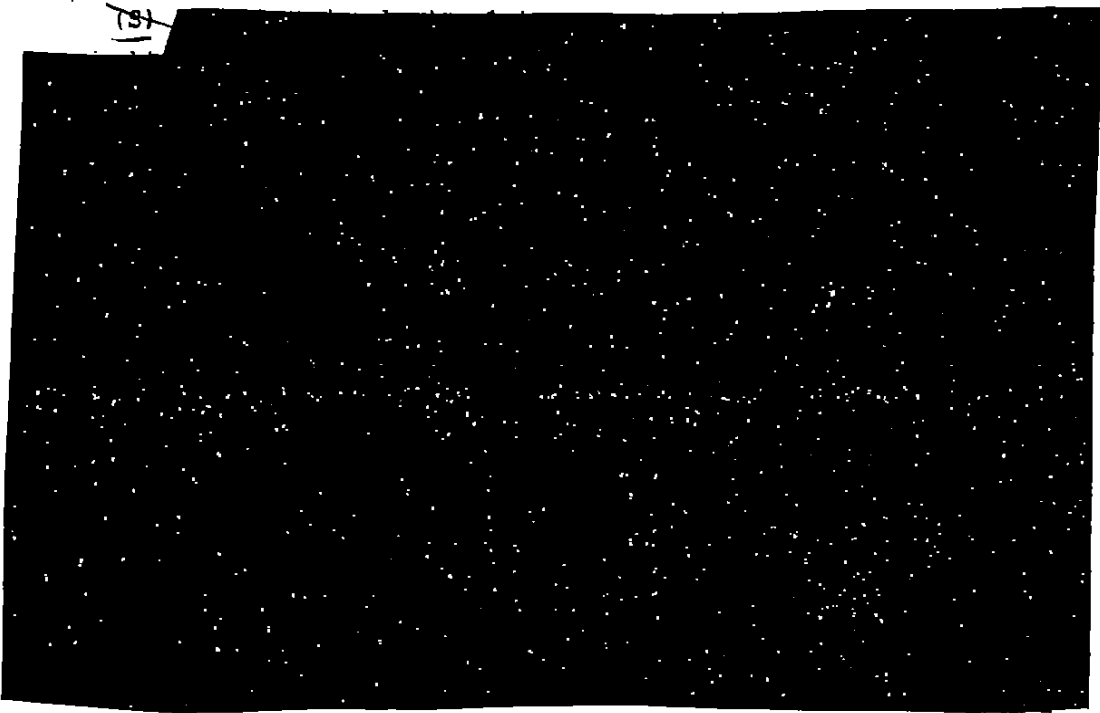
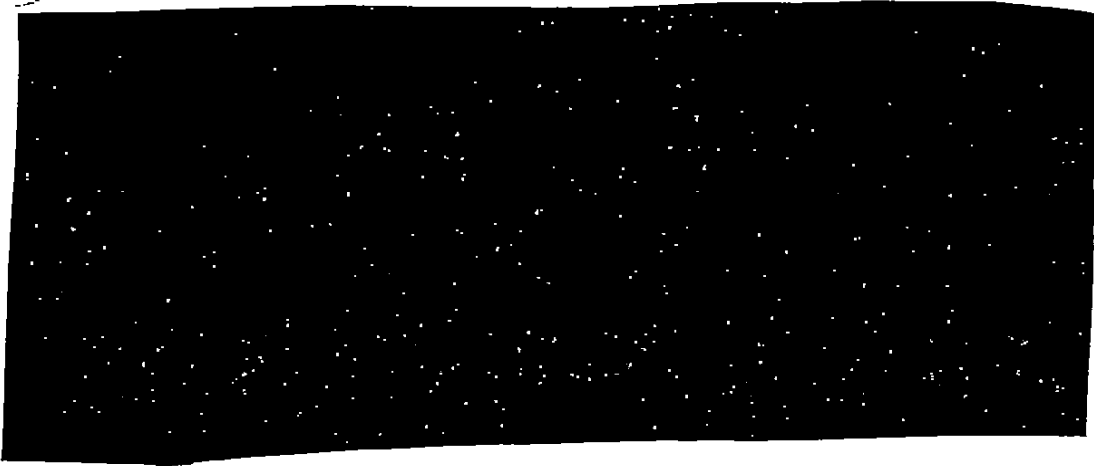
121 [REDACTED]

6-3

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6-3

~~SECRET~~



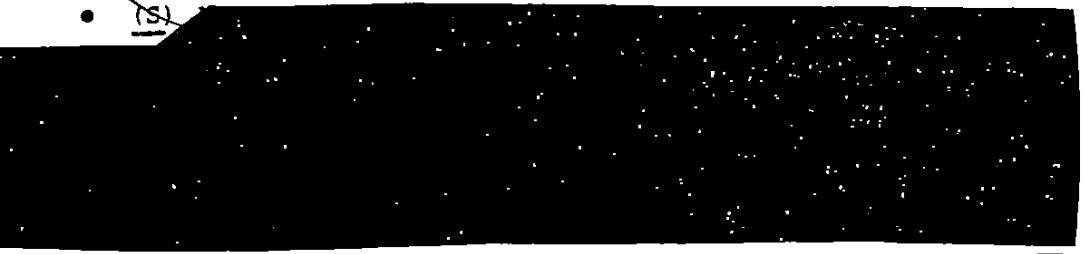
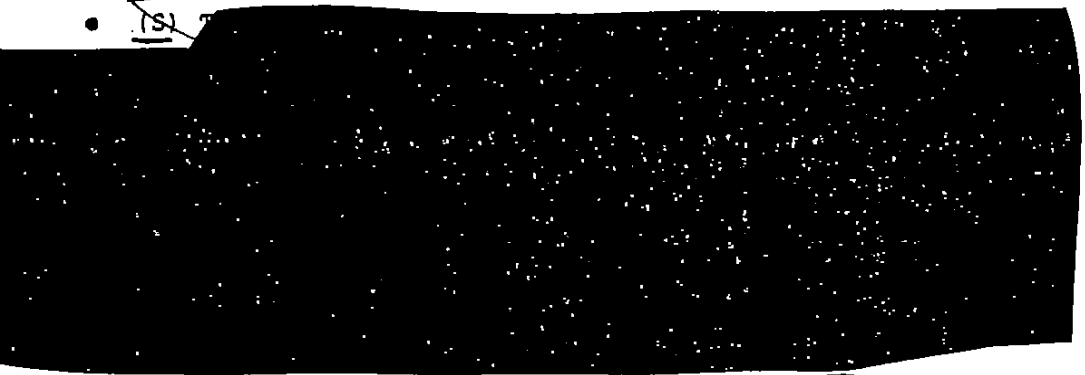
6-4
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6-4

~~SECRET~~



6.3



6-5

~~SECRET~~

~~SECRET~~

~~SECRET~~



6-6
~~SECRET~~

6-6

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APPENDIX A

WESTERN TVD CONCEPTS AND PLANS

Section A.1	WESTERN TVD CHEMICAL PLAN	A-2
Section A.2	OPERATIONAL PLAN - CENTRAL FRONT	A-5
Section A.3	CONCEPT OF OPERATIONS - 1st GUARDS TANK ARMY	A-18

A-1

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A-1

CONFIDENTIAL

APPENDIX A
WESTERN TVD CONCEPTS AND PLANS

OK
(S) The details and specific plans made by the Western TVD commander-in-chief, the staff, and those of the subordinate commanders of the Central Front are provided in this portion of the report. Section 1 furnishes the detailed guidance expressed at the TVD level for the employment of chemical warfare by all supporting forces. It is the only detailed TVD plan presented although others specifying guidance for TVD controlled resources would also be published and provided to the Front commanders.

A.1 WESTERN TVD CHEMICAL PLAN

(S) [REDACTED]

- *(S)* [REDACTED]
- *(S)* [REDACTED]
- *(S)* [REDACTED]
- *(S)* [REDACTED]
- *(S)* [REDACTED]
- *(S)* [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

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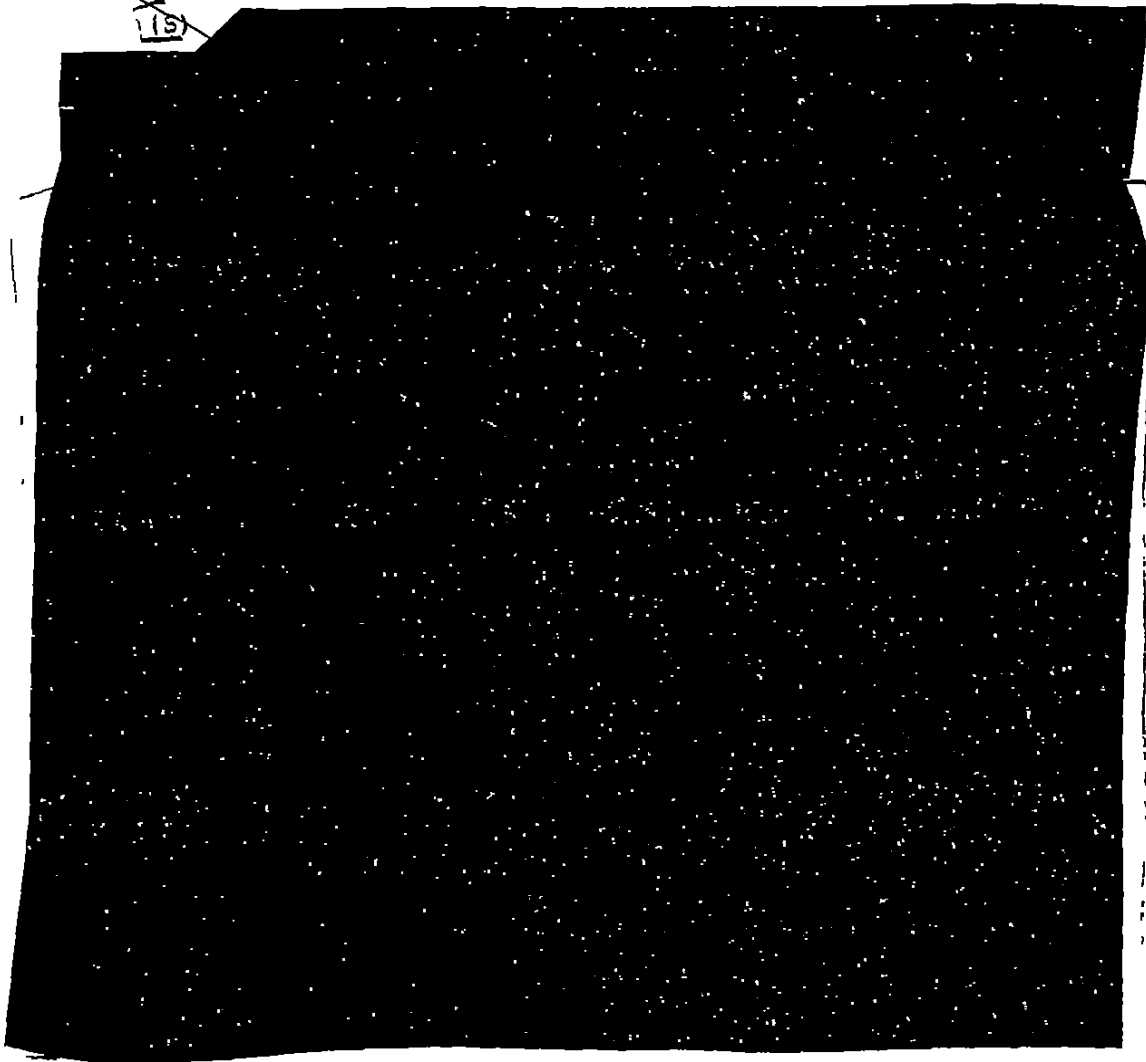
OK

(E) "In essence the chemical attack plan can be characterized as follows:

- ~~(C)~~ [REDACTED]
- ~~(C)~~ [REDACTED]
- ~~(C)~~ [REDACTED]
- ~~(C)~~ [REDACTED]
- ~~(C)~~ [REDACTED]

~~CONFIDENTIAL~~

~~SECRET~~



~~SECRET~~

FIGURE A-1 (U) ALLOCATION OF CHEMICAL MUNITIONS TO DELIVERY SYSTEMS

A-4

~~SECRET~~

NOTE:

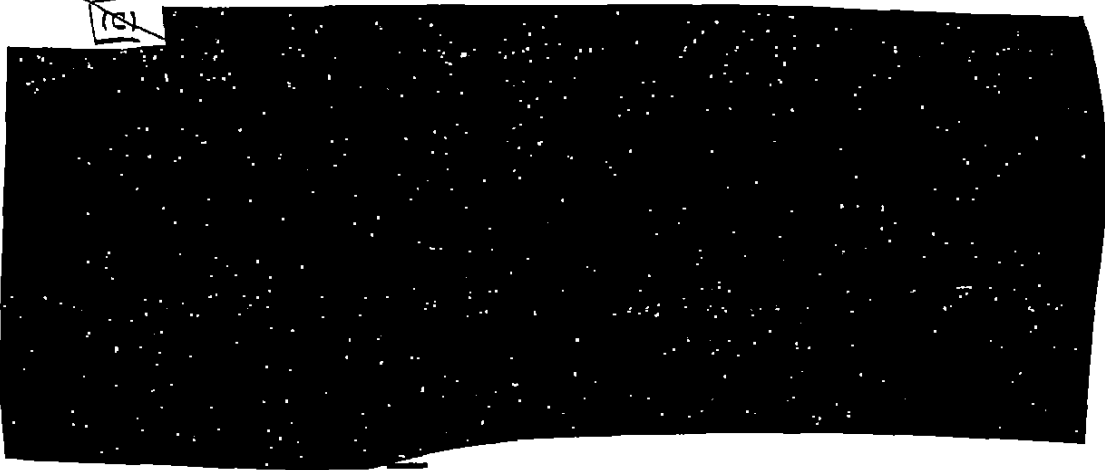
~~(S)~~



A.2

OPERATIONAL PLAN - CENTRAL FRONT

~~(S)~~



~~(S)~~



~~(S)~~



[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

(C) [REDACTED]

(C) The selection of chemical agents* and delivery means to strike desired targets was based upon the effect desired on each target and weapons system capabilities and availability.

(C) The following factors governed the selection of delivery means:

[REDACTED]

* (C) Agents are coded as follows:

P - Persistent	Bd (Suffix) - Blood
SP - Semi-persistent	Br (Suffix) - Blister
NP - Non-persistent	T (Suffix) - Toxin
N (suffix) - Nerve	Vx - Long-term persistent nerve
TGD - Short-term persistent nerve (thickened GD)	

~~CONFIDENTIAL~~

~~(S)~~ [REDACTED]

OK ~~(C)~~ The following general considerations influenced agent selection at all levels of command, TVD and below:

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

A-8

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

A-8
~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

TARGET

DELIVERY MEANS

AGENT

• ~~(C)~~ [REDACTED]

Rationale:

~~(C)~~ [REDACTED]

~~(C)~~ [REDACTED]

• ~~(C)~~ [REDACTED]

Rationale:

~~(C)~~ [REDACTED]

A-9

~~CONFIDENTIAL~~

A-9

~~CONFIDENTIAL~~

[REDACTED]

• ~~(S)~~ [REDACTED]

Rationale:

~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

Rationale:

~~(S)~~ [REDACTED]

A-10

~~CONFIDENTIAL~~

A-10

~~CONFIDENTIAL~~

[REDACTED]

• ~~(S)~~ [REDACTED]

Rationale:

~~(S)~~
[REDACTED]

• ~~(C)~~ [REDACTED]

Rationale:

~~(C)~~ [REDACTED]

A-11

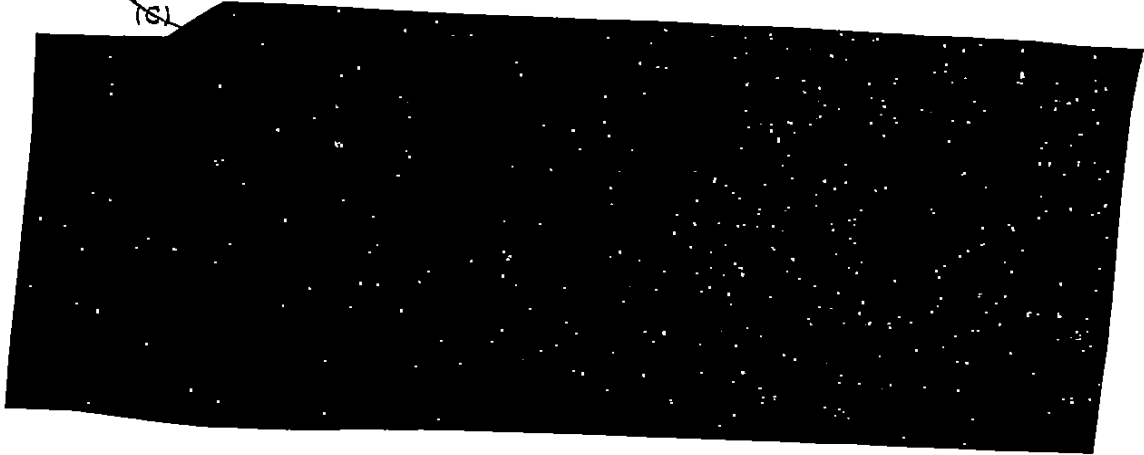
~~CONFIDENTIAL~~

A-11

~~CONFIDENTIAL~~



Rationale:



A-12
~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

• ~~(S)~~ [REDACTED]

Rationale:

~~(C)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

Rationale:

~~(C)~~ [REDACTED]

• ~~(C)~~ [REDACTED]

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

Rationale:

~~(c)~~ [REDACTED]

~~(c)~~ [REDACTED]

~~(c)~~ [REDACTED]

Rationale:

~~(c)~~ [REDACTED]

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A-15
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A-15

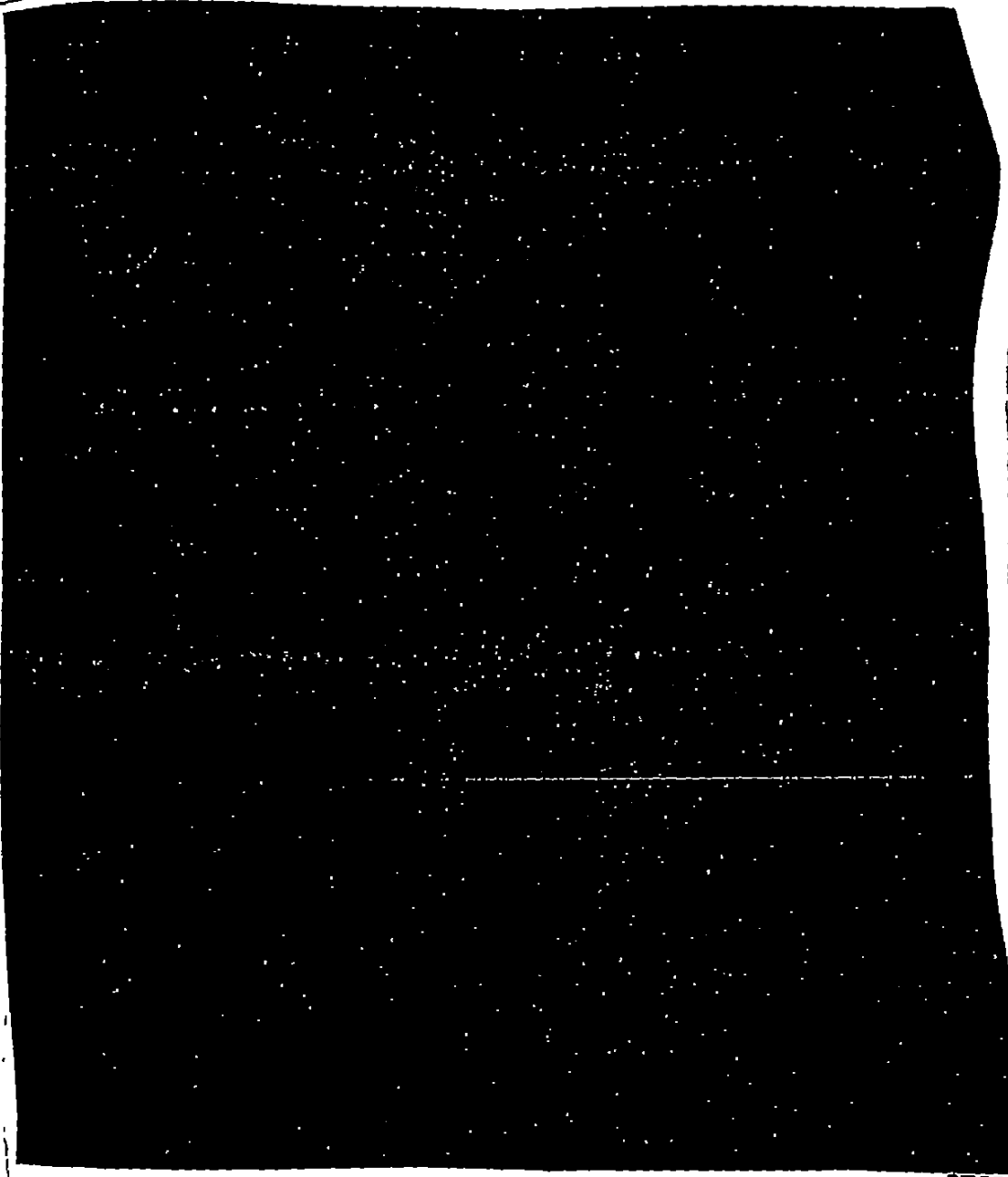


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OK
X(S)

Figure A-2 summarizes the H+16 planned chemical attack:

~~SECRET~~



(Vx) ~~SECRET~~

FIGURE A-2 (U) CHEMICAL ATTACK PLAN

A-16

FIGURE A-2 (U) CHEMICAL ATTACK PLAN

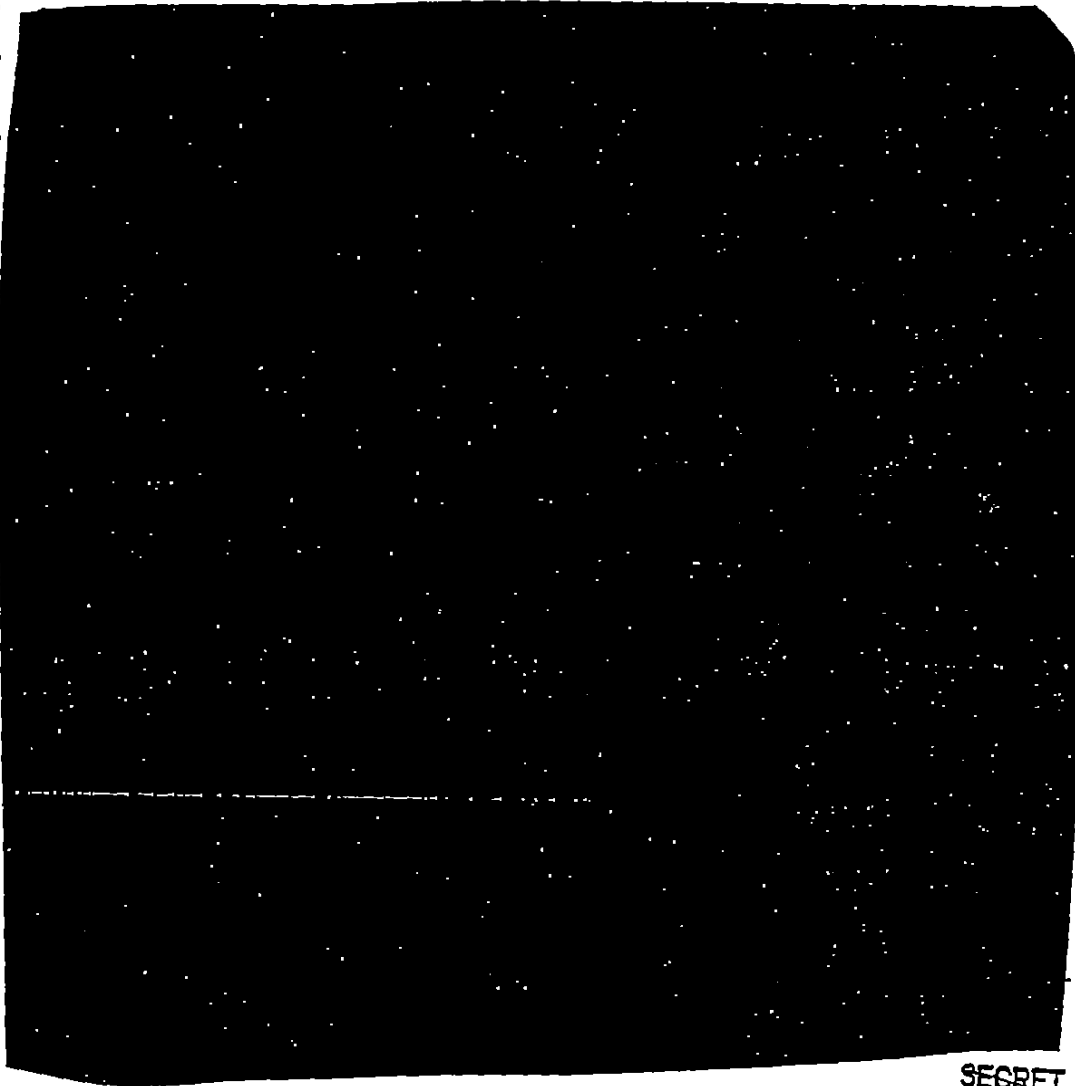
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OK

SECRET

~~(S)~~ Figure A-3 indicates the number of weapons required daily by priority of target and frequency to D+5.

~~SECRET~~



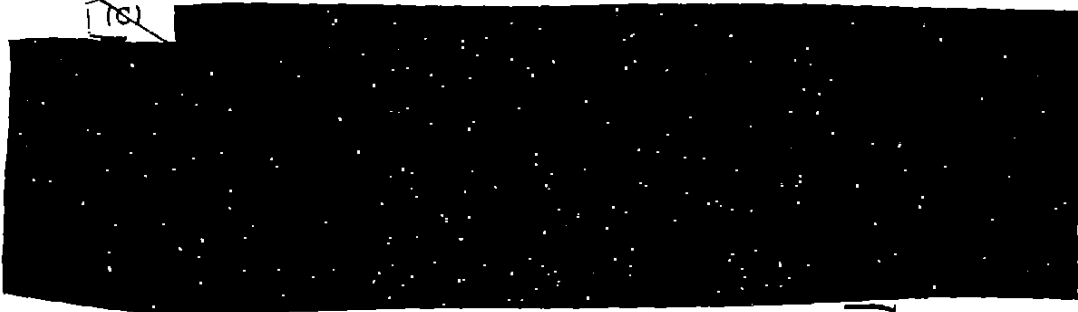
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FIGURE A-3 (U) WEAPON REQUIREMENTS BY TARGET CATEGORY

~~CONFIDENTIAL~~

A.3 CONCEPT OF OPERATIONS - 1st GUARDS TANK ARMY

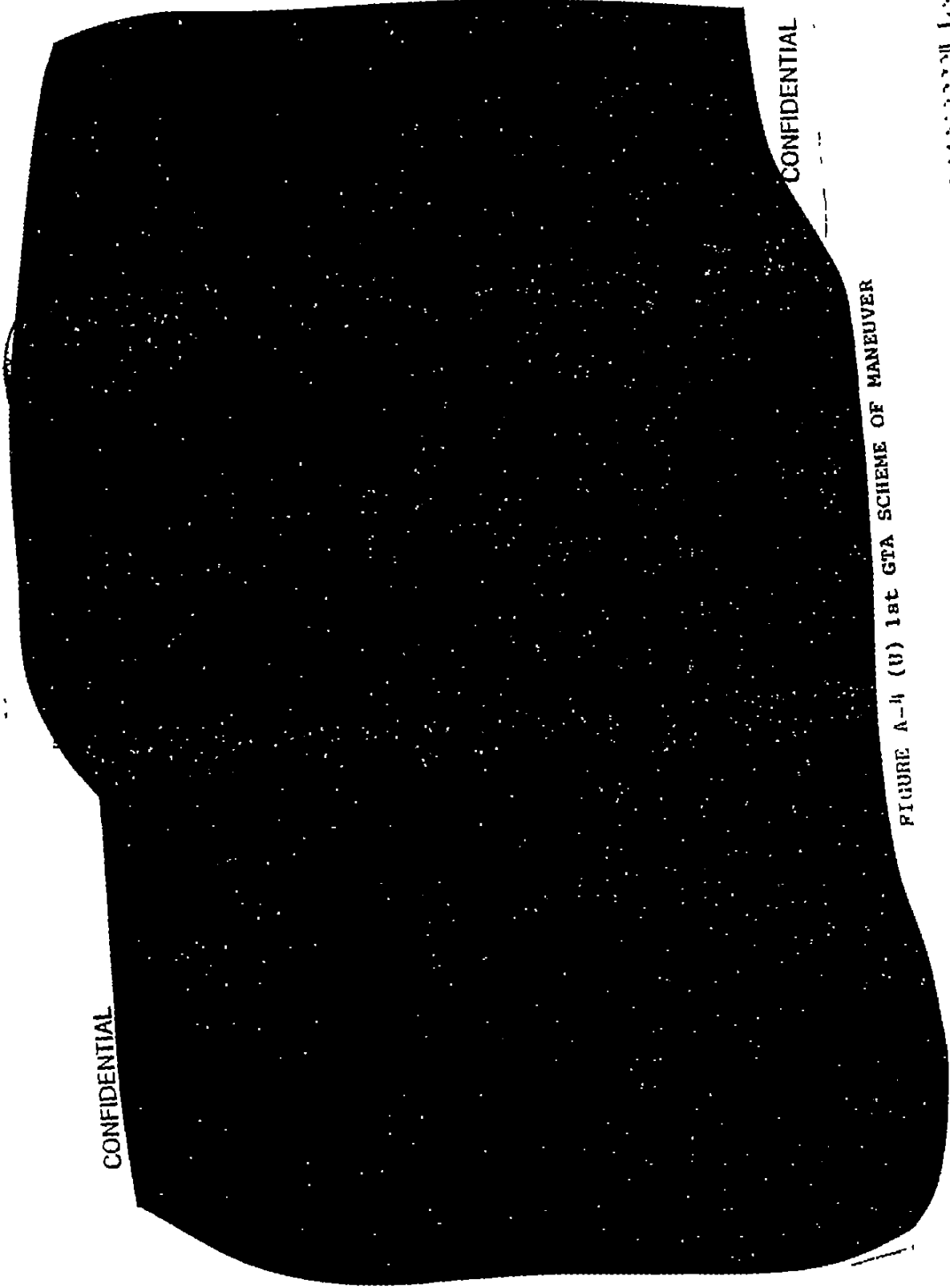
A.3.1 MANEUVER



A-18
~~CONFIDENTIAL~~

CONFIDENTIAL

CONFIDENTIAL



CONFIDENTIAL

FIGURE A-4 (U) 1st GTA SCHEME OF MANEUVER

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CONFIDENTIAL

~~CONFIDENTIAL~~

~~(c)~~ [Redacted]

~~(c)~~ [Redacted]

~~(c)~~ [Redacted]

~~(c)~~ [Redacted]

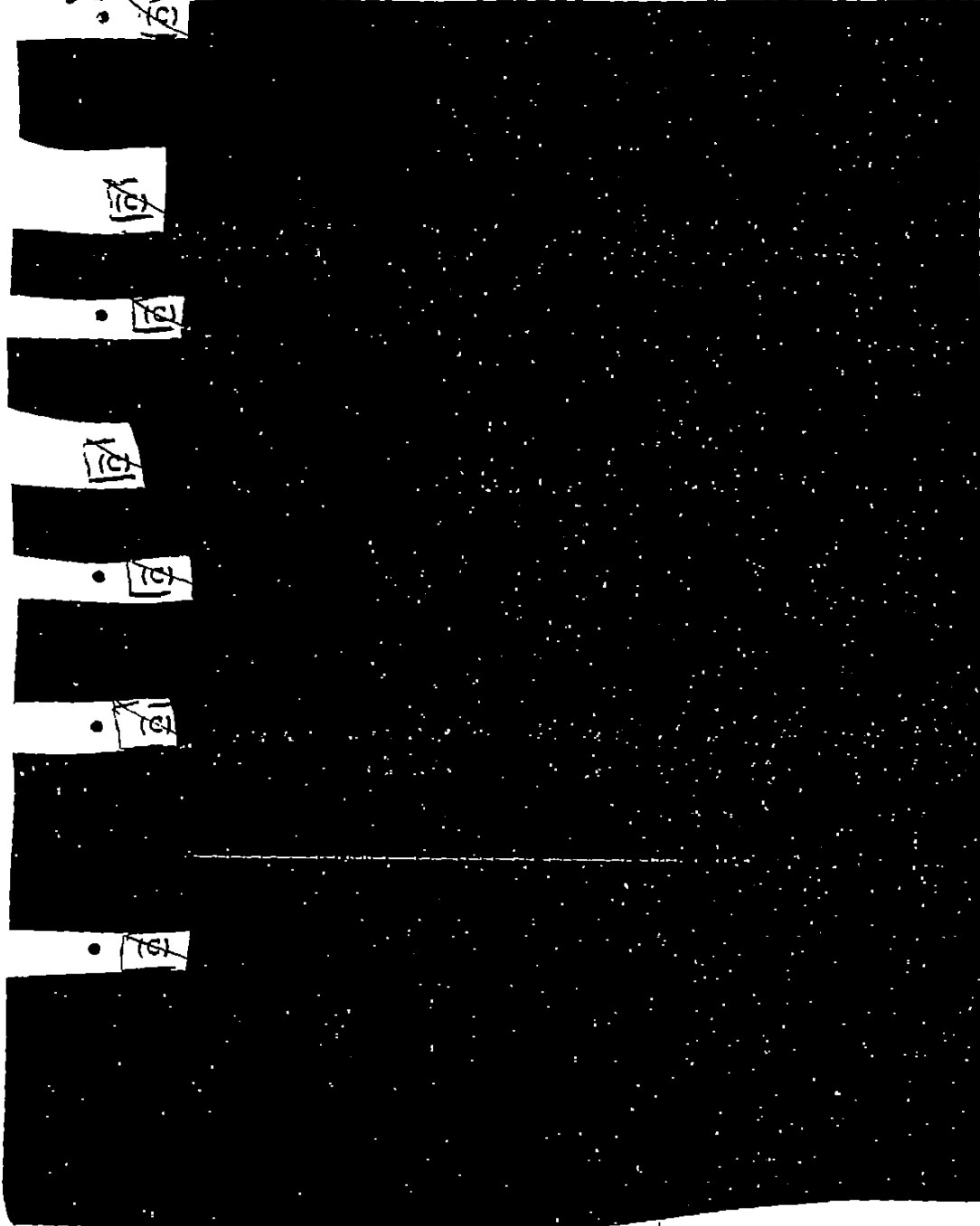
~~(c)~~ [Redacted]

~~CONFIDENTIAL~~

CONFIDENTIAL

OK

~~(S)~~ The period H to H+16 hours will be used: ✓



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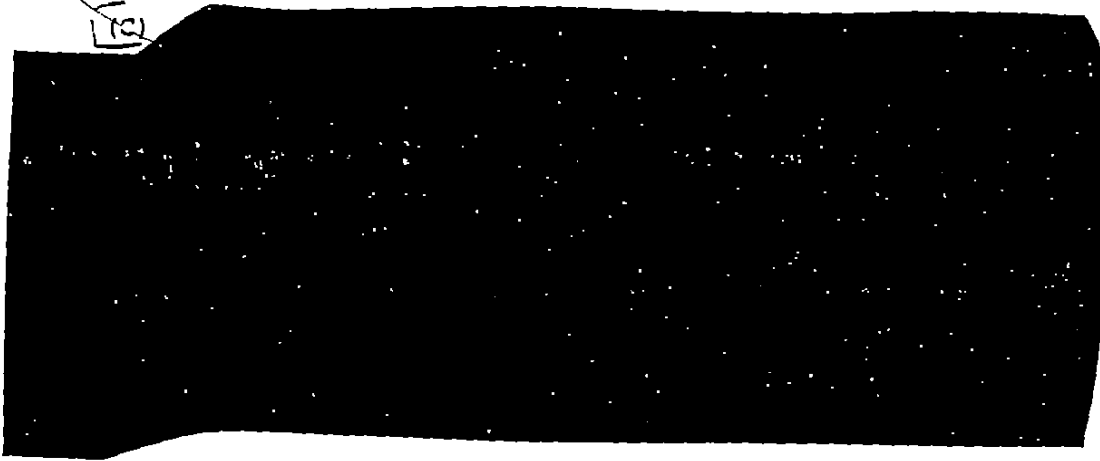
A.3.2

ORGANIZATION FOR COMBAT

First Echelon



Operation Maneuver Group (OMG)



Second Echelon



CONFIDENTIAL

Reserve

~~(S)~~ [REDACTED]

Phasing

~~(C)~~ [REDACTED]

~~(S)~~ [REDACTED]

A.3.3 CHEMICAL FIRE SUPPORT PLAN

General

OK

~~(C)~~ The chemical plan of the 1st GTA is designed to: ~~(S)~~

• ~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

~~(C)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

• ~~(S)~~ [REDACTED]

• ~~(C)~~ [REDACTED]

~~SECRET~~

- ~~(S)~~
- ~~(C)~~
- ~~(S)~~

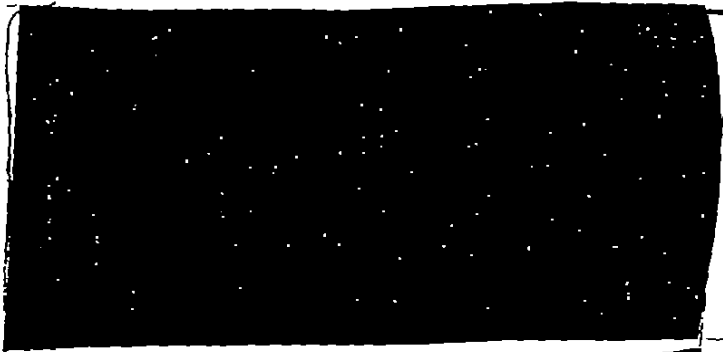


~~(C)~~ Representative Target List

ok ~~(S)~~ Table A-6 (next page) illustrates the types of specific targets, responsibilities for coverage and desired agent(s) to be used.

ok ~~(S)~~ For the 1st GTA the amount of chemical munitions allocated for daily strikes are as follows: (Figure A-5)

~~SECRET~~



NOTE:



~~SECRET~~

FIGURE A-5 (U) DAILY ALLOCATION OF CHEMICAL MUNITIONS

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~~SECRET~~

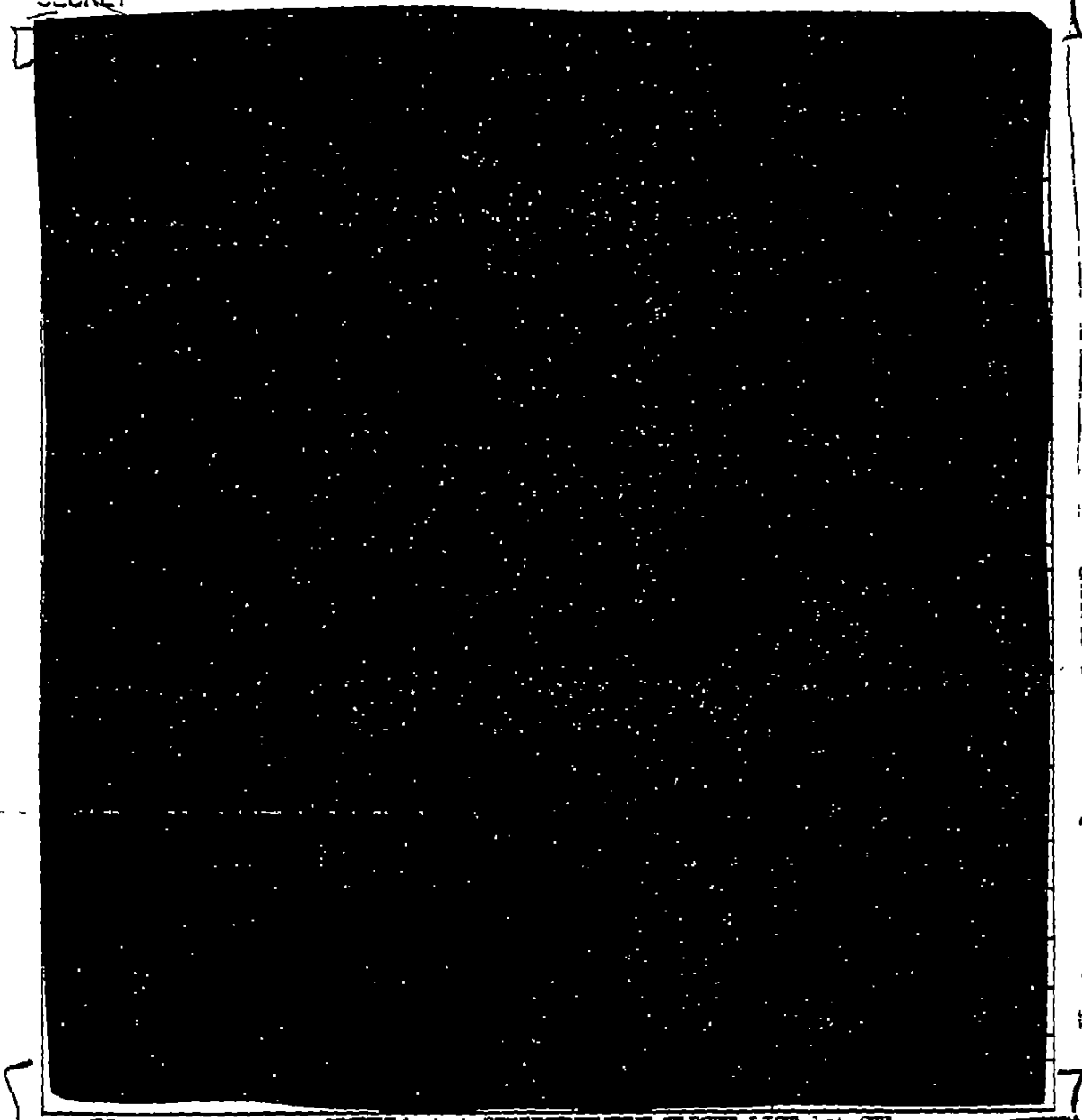


FIGURE A-6 (U) REPRESENTATIVE TARGET LIST 1st GIA

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A-25

~~SECRET~~

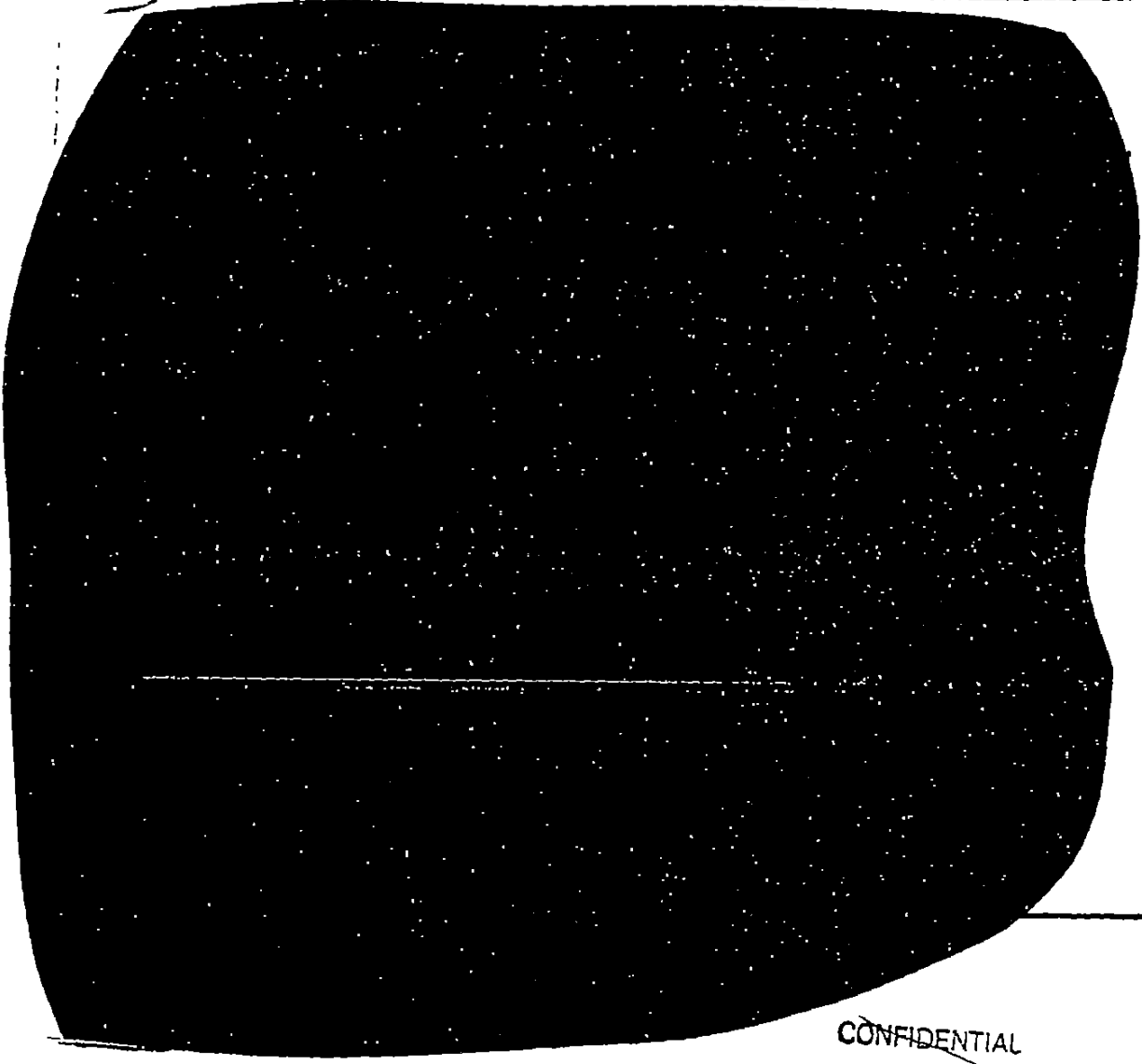
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~~CONFIDENTIAL~~

ok

~~(S)~~ Figure A-7 below graphically portrays in part what the Army commander hopes to achieve with the chemical attack at H+16 hours:

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56

~~CONFIDENTIAL~~

FIGURE A-7 (U) OBJECTIVES OF CHEMICAL ATTACK

~~CONFIDENTIAL~~

A-26

~~CONFIDENTIAL~~

• ~~(S)~~
[Redacted]

• ~~(S)~~
[Redacted]

•• ~~(S)~~
[Redacted]

•• ~~(S)~~
[Redacted]

•• ~~(S)~~
[Redacted]

A-27
~~CONFIDENTIAL~~



~~CONFIDENTIAL~~



A-28
~~CONFIDENTIAL~~

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APPENDIX B

RED AIR CONCEPTS AND PLANS

B.1	RED AIR CONCEPTS AND PLANS	B-2
B.2	TARGET LIST	B-6
B.3	SUMMARY OF SOVIET AIR OPERATION	B-9



~~SECRET~~

APPENDIX B

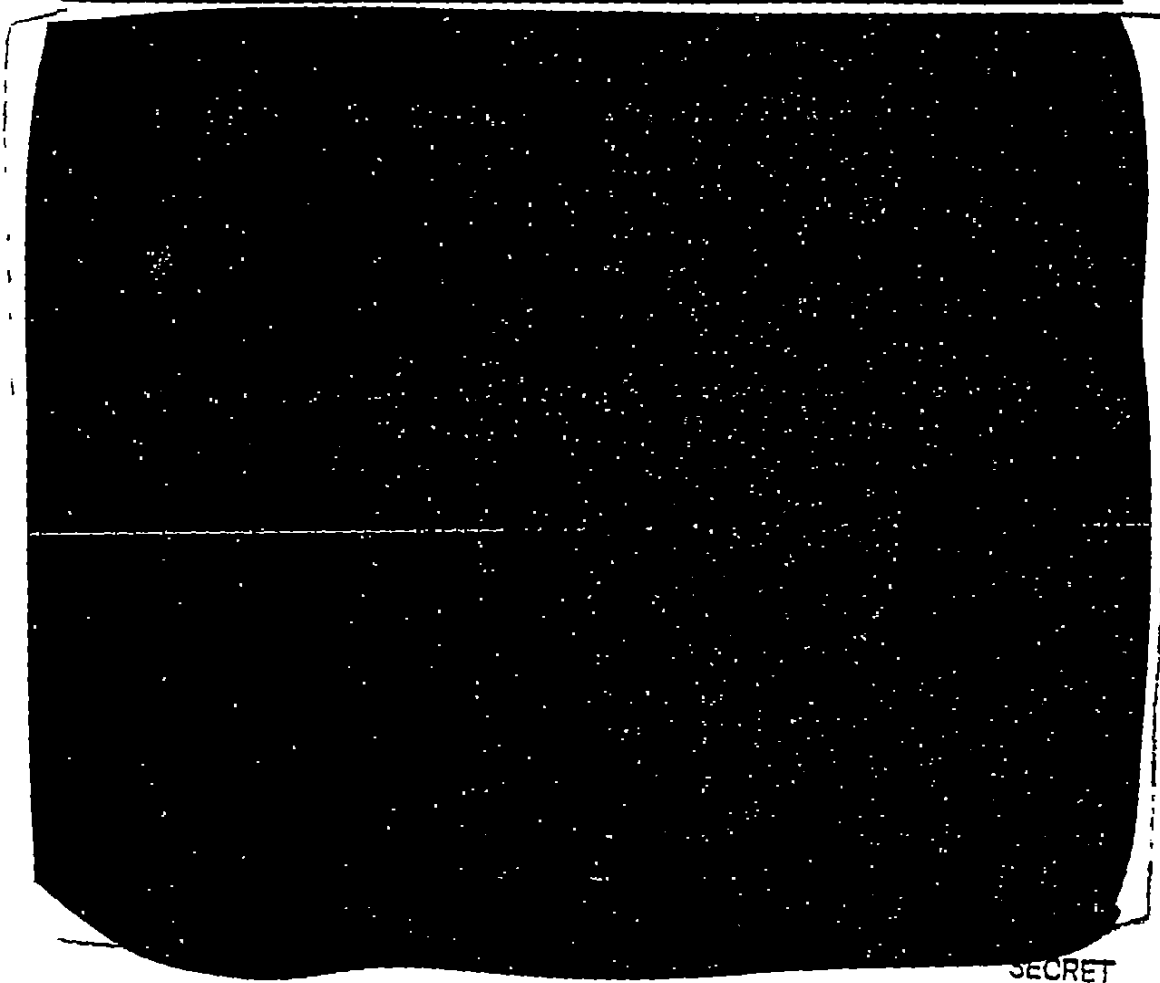
B.1

RED AIR CONCEPTS AND PLANS



OK 15T Here is the sequence of the attack:

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SECRET

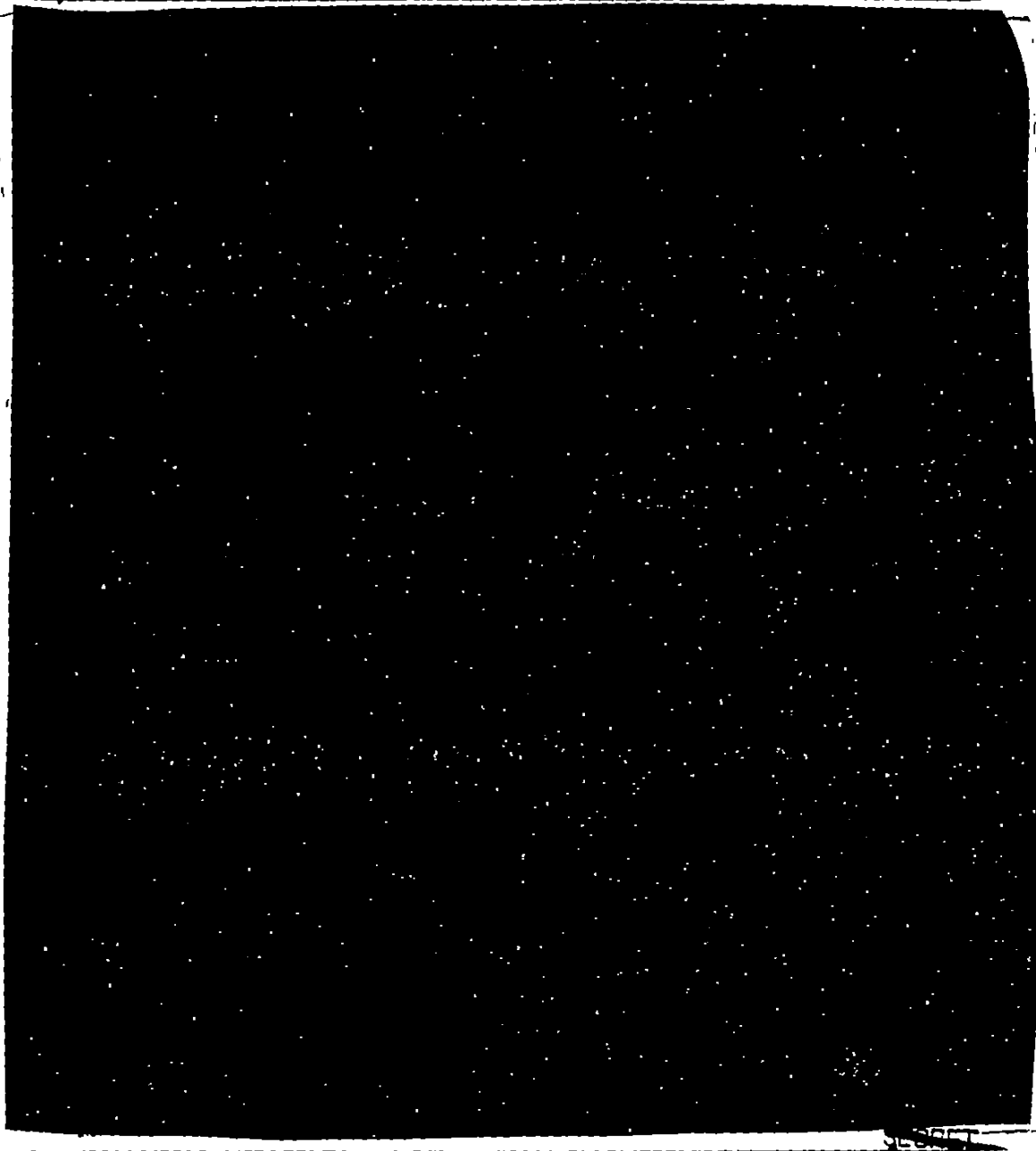
B-2

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~~SECRET~~



B-3

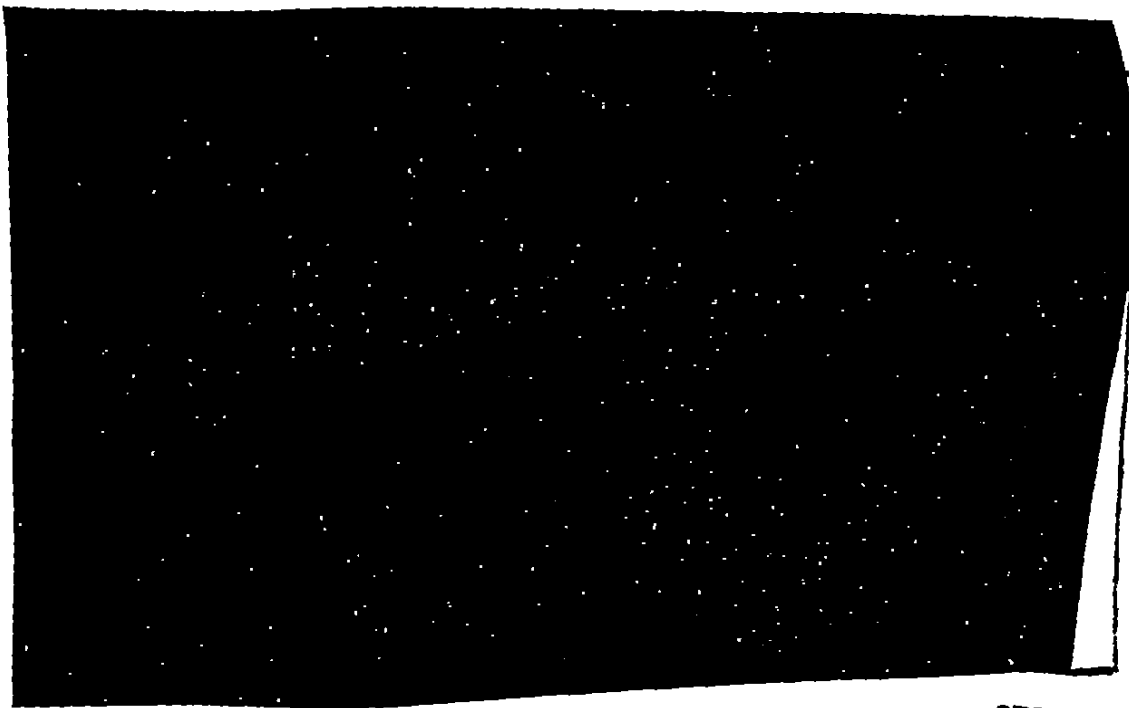
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B-4

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ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE

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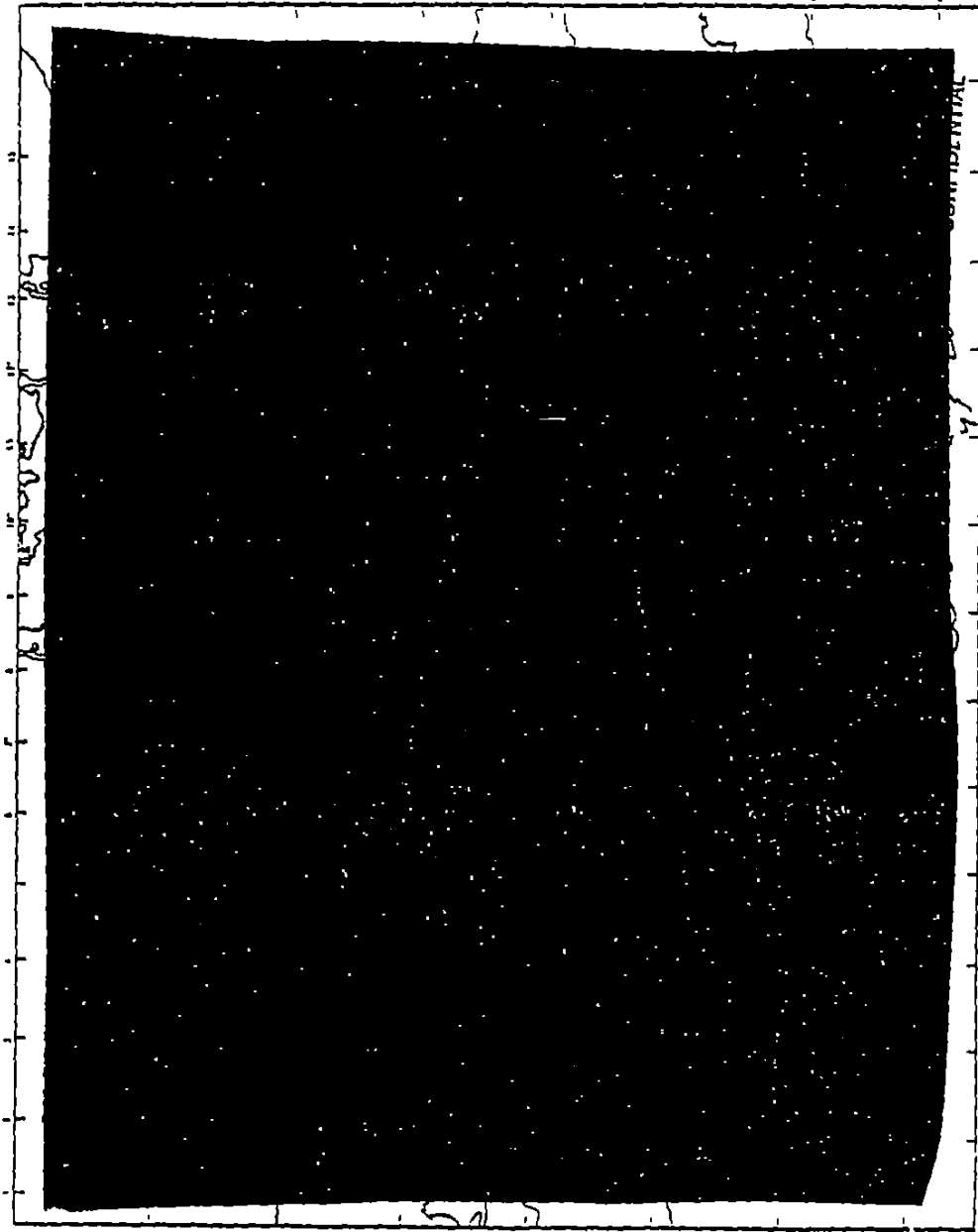


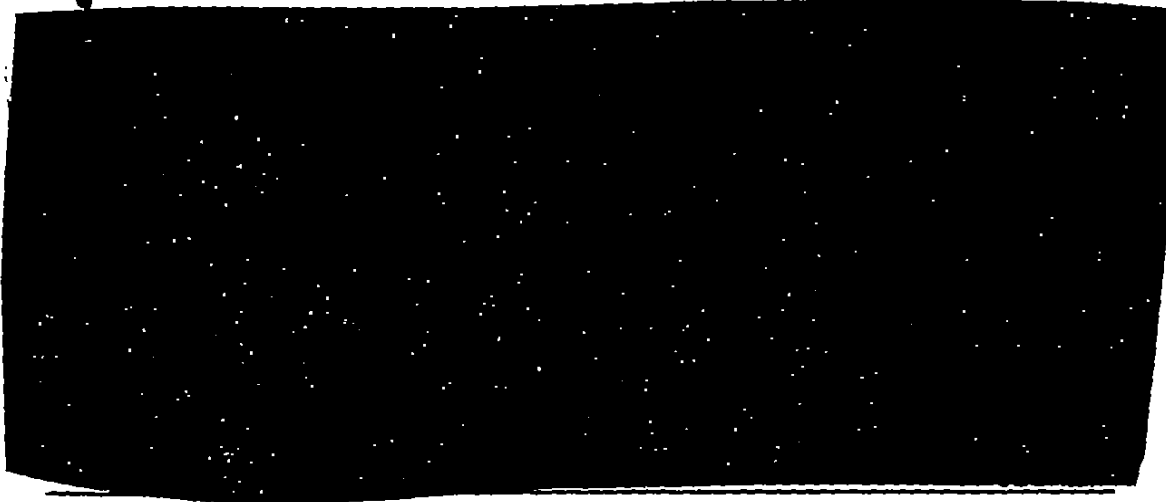
FIGURE B-1 (U) AIR ATTACK CORRIDORS

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~~SECRET~~



~~(S)~~



~~(S)~~



~~(S)~~



B-6

~~SECRET~~

~~SECRET~~

JK
B.2 (S) Red air staff planners have established the following target list and resource allocations for this plan.

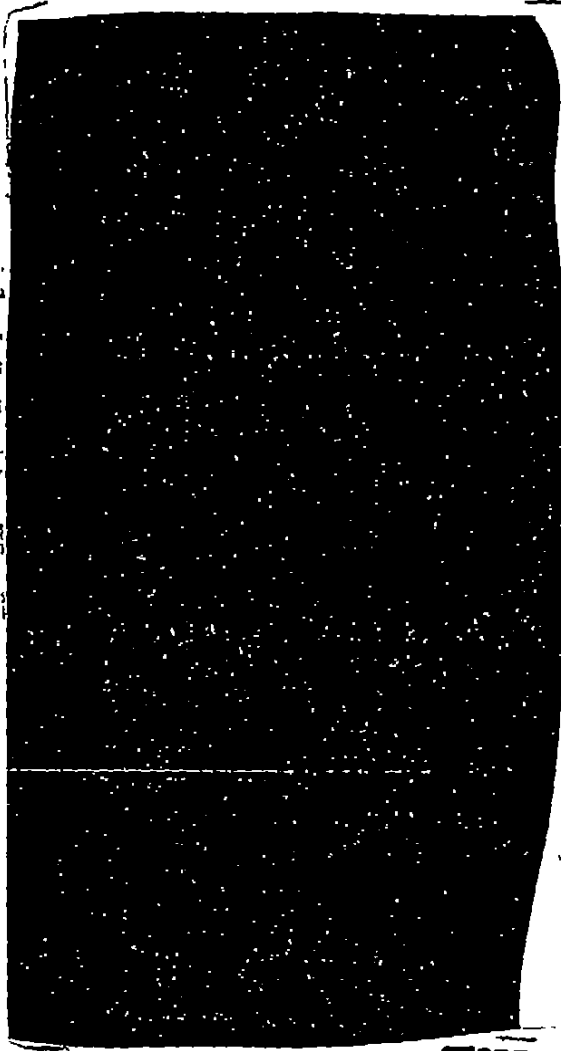
~~SECRET~~

~~(S)~~ TARGET LIST

Northern Corridor:

North Central Corridor:

Central Corridor:



~~SECRET~~

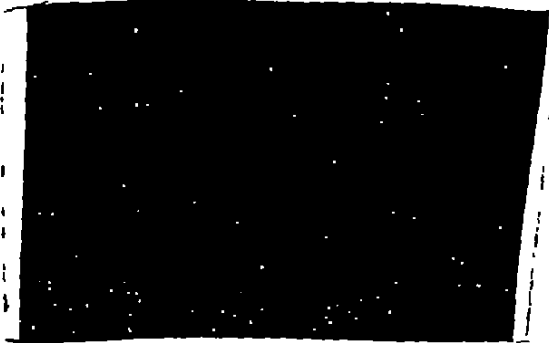
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~~SECRET~~

~~SECRET~~

TARGET LIST (continued):

Southern Corridor:



(N = nuclear)

Note:

1.



2.

(S) United Kingdom:



(S) Southern Region:

(S)



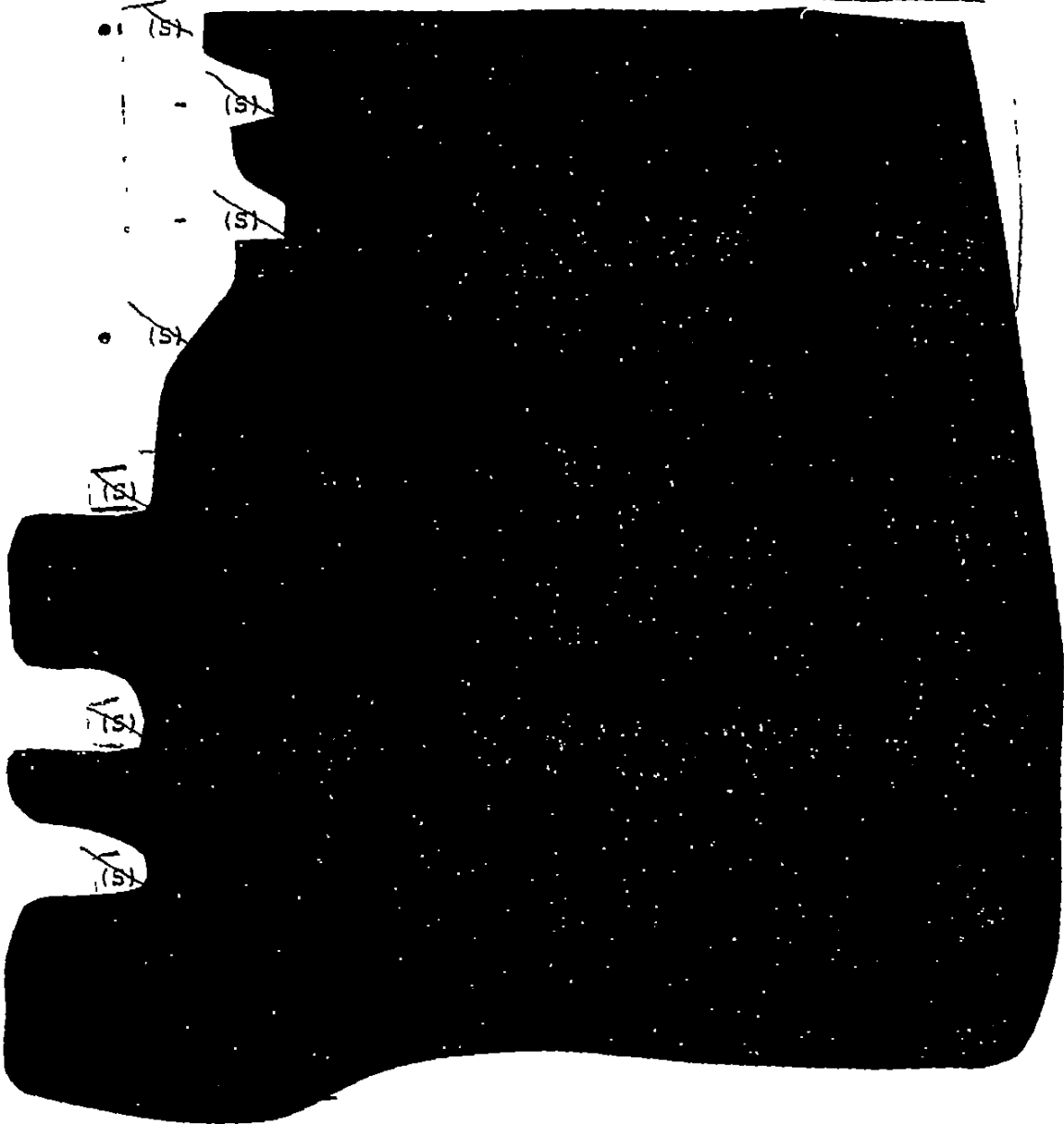
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B-8

~~SECRET~~

~~SECRET~~

(S) A typical strike package for each main operating base consists of the following resources:



B-9

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~~SECRET~~

~~SECRET~~

5.3

SUMMARY OF SOVIET AIR OPERATION

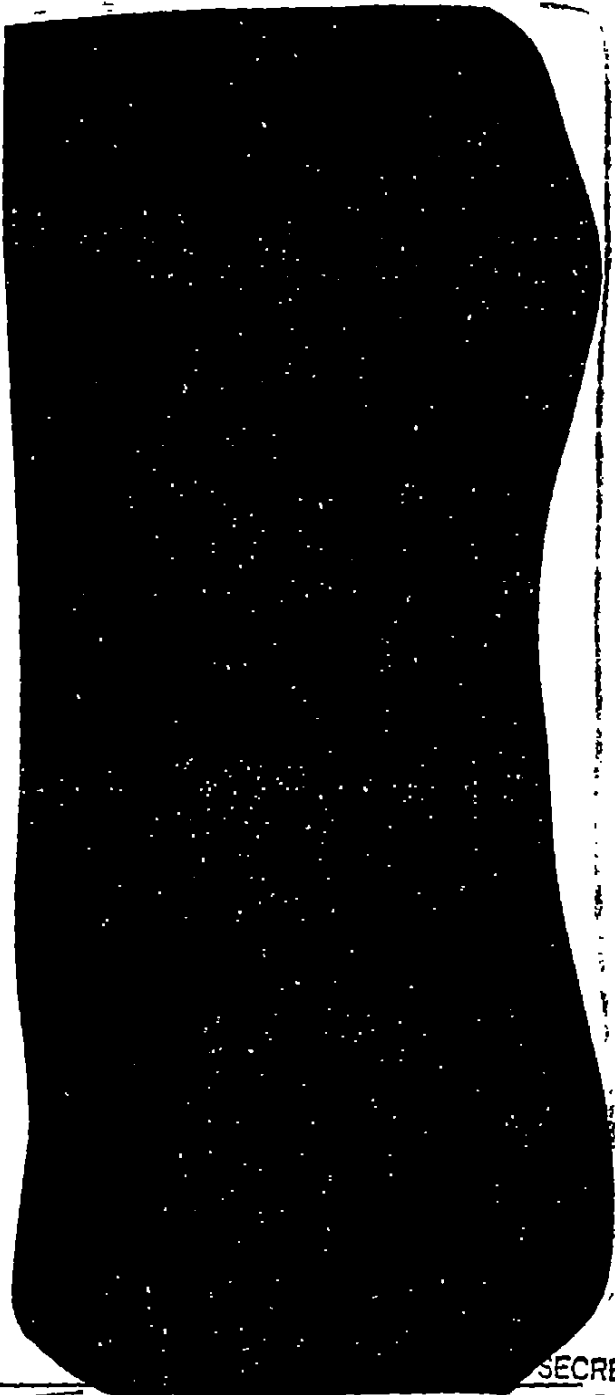
First Attack

Objectives

Operational Concepts

Attack Details - 1st Strike

Support Details - 1st Strike



~~SECRET~~

NOTE: Summary limited to resources in support of Western TVD.

B-10

NOTE: Summary limited to resources in support of Western TVD.

~~SECRET~~

SECRET

APPENDIX C

RED NAVAL CONCEPTS AND PLANS

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

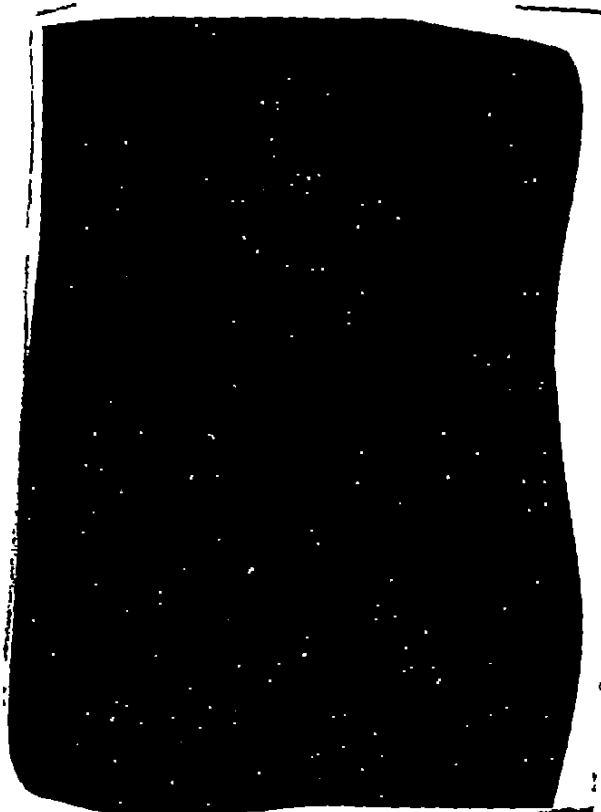
~~(S)~~ Naval staff planners have established the following target list and resource allocation for this plan: (Figure C-1)

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

TARGET LIST

Forces Afloat



~~CONFIDENTIAL~~

FIGURE C-1 (U) RESOURCES TO ATTACK SPECIFIC TARGETS

~~CONFIDENTIAL~~

C-2

C-2

~~CONFIDENTIAL~~

~~(S)~~



~~(S)~~



~~(S)~~



JKG ~~(S)~~ This document provides detailed plans for the D-day operations of the naval forces of the Warsaw Pact. A target list showing methods of delivery, the weapons and agents to be employed and the anticipated effects to be achieved by each strike are provided in the table following. (Figure C-2) ~~(S)~~

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~~SECRET~~

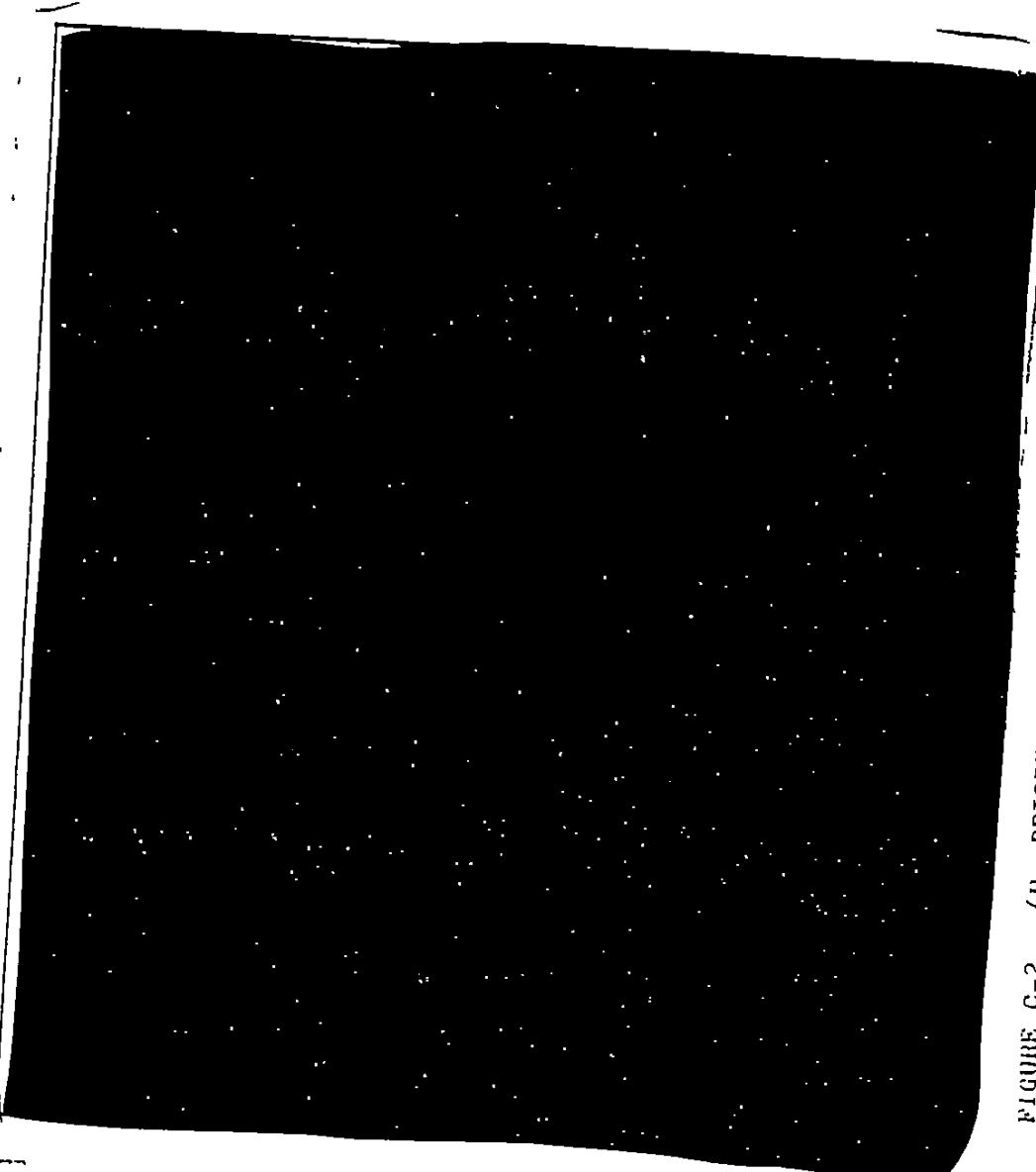


FIGURE C-2 (U), PRIORITIZED D-DAY STRIKE SCHEDULE

~~SECRET~~

~~SECRET~~

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APPENDIX D

BLUE CONCEPTS AND PLANS, GROUND FORCES

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D.2	GENERAL DEFENSE PLAN - V CORPS	D-3
D.3	CONCEPT FOR CHEMICAL DEFENSE	D-4
D.4	CONCEPT FOR CHEMICAL OFFENSIVE	D-5

D-1

UNCLASSIFIED

D-1

~~SECRET~~

APPENDIX D

D.1 BLUE CONCEPTS AND PLANS, GROUND FORCES

ok ~~(S)~~ The enclosed map (Figure D-1) shows the ground force deployment in the Central Region.

ok ~~(S)~~ The Commander of the Central Army Group, COMCENTAG, gathered his principal subordinates shortly after he had attended the CINCENT meeting. He had distributed copies of the SACEUR and CINCENT conference notes to all of these commanders and had copies of the USCINCEUR guidance on chemical actions distributed to his U.S. subordinates. His comments at his conference included the following: ~~(S)~~

ok ~~(S)~~ "Gentlemen, you are now all very familiar with the concepts and plans of SACEUR and CINCENT. It is evident that our sector will be the scene of a desperate battle if the Warsaw Pact forces attack NATO." ~~(S)~~

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~SECRET~~

[REDACTED]

(S)

[REDACTED]

OK (S) "Then, we must defend our main battle position with vigor and cohesion.

(S)

[REDACTED]

OK (S) "I wish to make a special point of the chemical warfare threat we face and point out that SACEUR and CINCENT have emphasized this possibility. I urge you to be ready to fight on a contaminated battlefield. Your troops must be warned of this danger. Training must highlight the way to fight in a chemical agent environment. You must install confidence in your forces in their chemical defensive equipment and avoid panic."

(U) "I am now ready to discuss your plans in detail."

D.2 GENERAL DEFENSE PLAN - V CORPS

OK (S) Within V U.S. Corps the General Defense Plan (GDP) is reviewed and updated and the corps commanders concept of defense is issued:

(S)

[REDACTED]

D-3

~~SECRET~~

~~SECRET~~

[REDACTED]

• ~~(S)~~

[REDACTED]

• ~~(S)~~

[REDACTED]

D.3

CONCEPT FOR CHEMICAL DEFENSE

• ~~(S)~~

[REDACTED]

• ~~(S)~~

[REDACTED]

• ~~(S)~~

[REDACTED]

D-4
~~SECRET~~

D-4

SECRET

~~SECRET~~

D.4

CONCEPT FOR CHEMICAL OFFENSIVE

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

D-5

~~SECRET~~

D-5



SECRET

~~(S)~~ [REDACTED]

- (S) Priority of fires will be:

- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]
- ~~(S)~~ [REDACTED]

OK ~~(S)~~ Persistent and non-persistent agents may be used on any target that does not endanger friendly troops.

D-6

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D-6

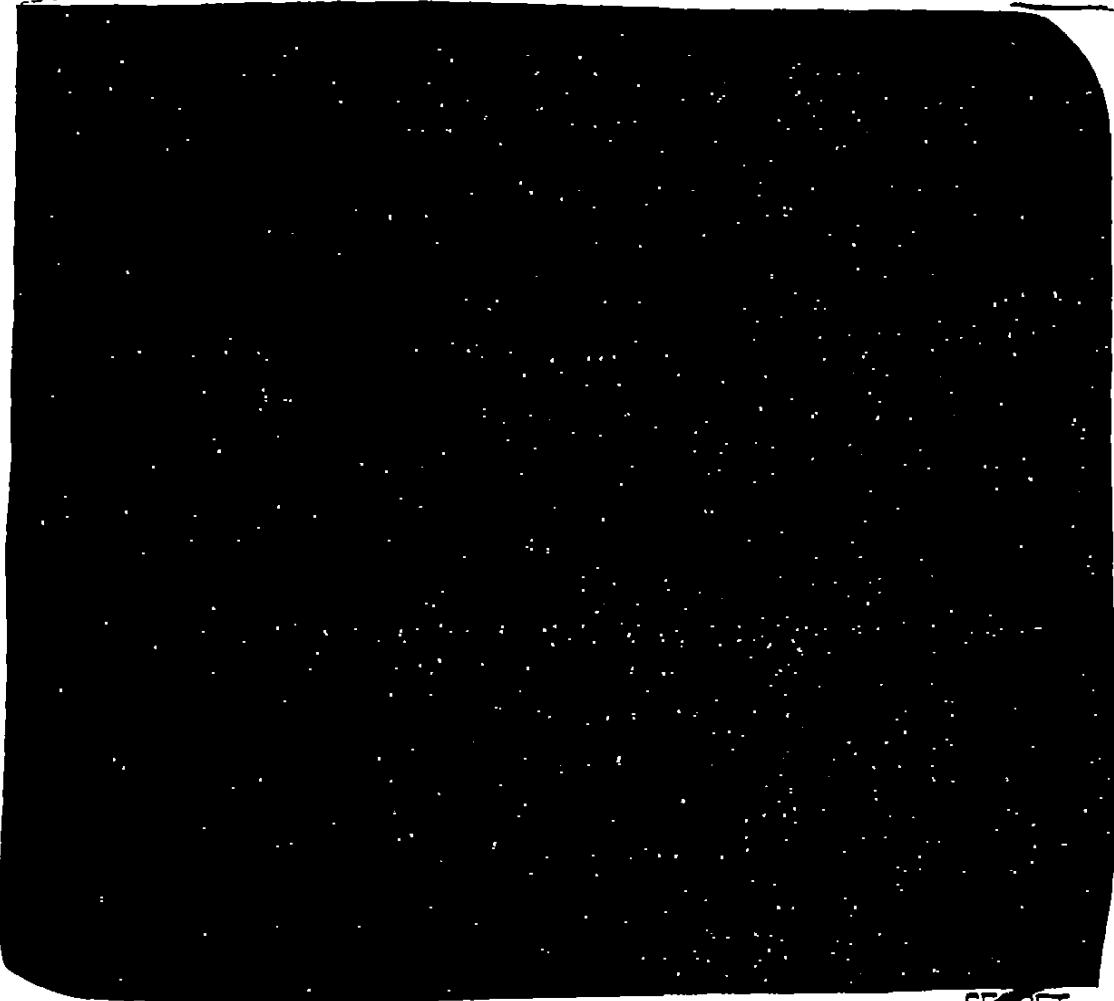
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NOTE:

(S)



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D-7

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D-7



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FIGURE D-1 (U) CINCENT GROUND POSTURE

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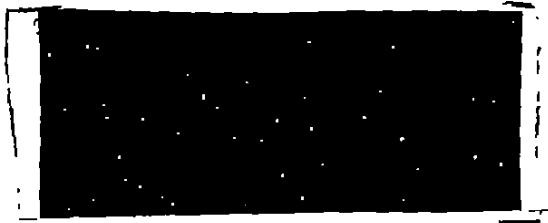
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APPENDIX E

BLUE ATTACK PLAN
AS PRESENTED BY THE DIRECTOR OF COMBAT OPERATIONS,
ALLIED AIR FORCES, CENTRAL EUROPE

(U) "Gentlemen, I draw your attention to this chart which shows how the total available aircraft will be employed.

OK
[Signature]
~~(S)~~ FORCES ASSIGNED H-HOUR 0415, 13 May 1990 *[Signature]*

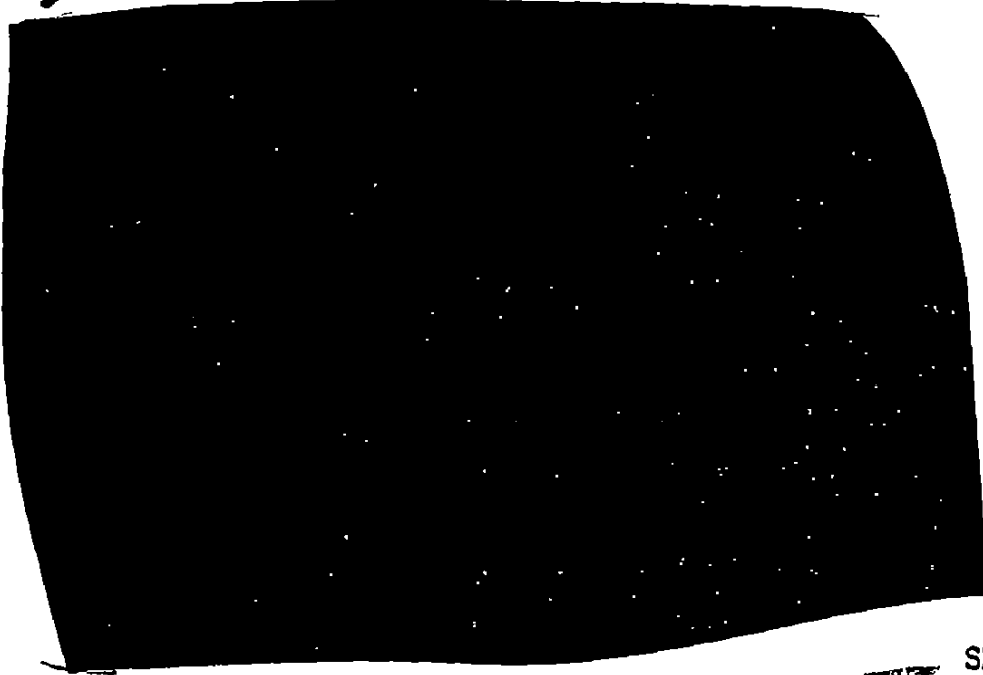


(U) "The next chart is a more specific breakdown by type of aircraft, alert status, and the numbers to be committed to specific missions."

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(U) "These are our targets by location and the type of aircraft at that location and the number of aircraft and type we will use in our strikes against those targets."

E-2

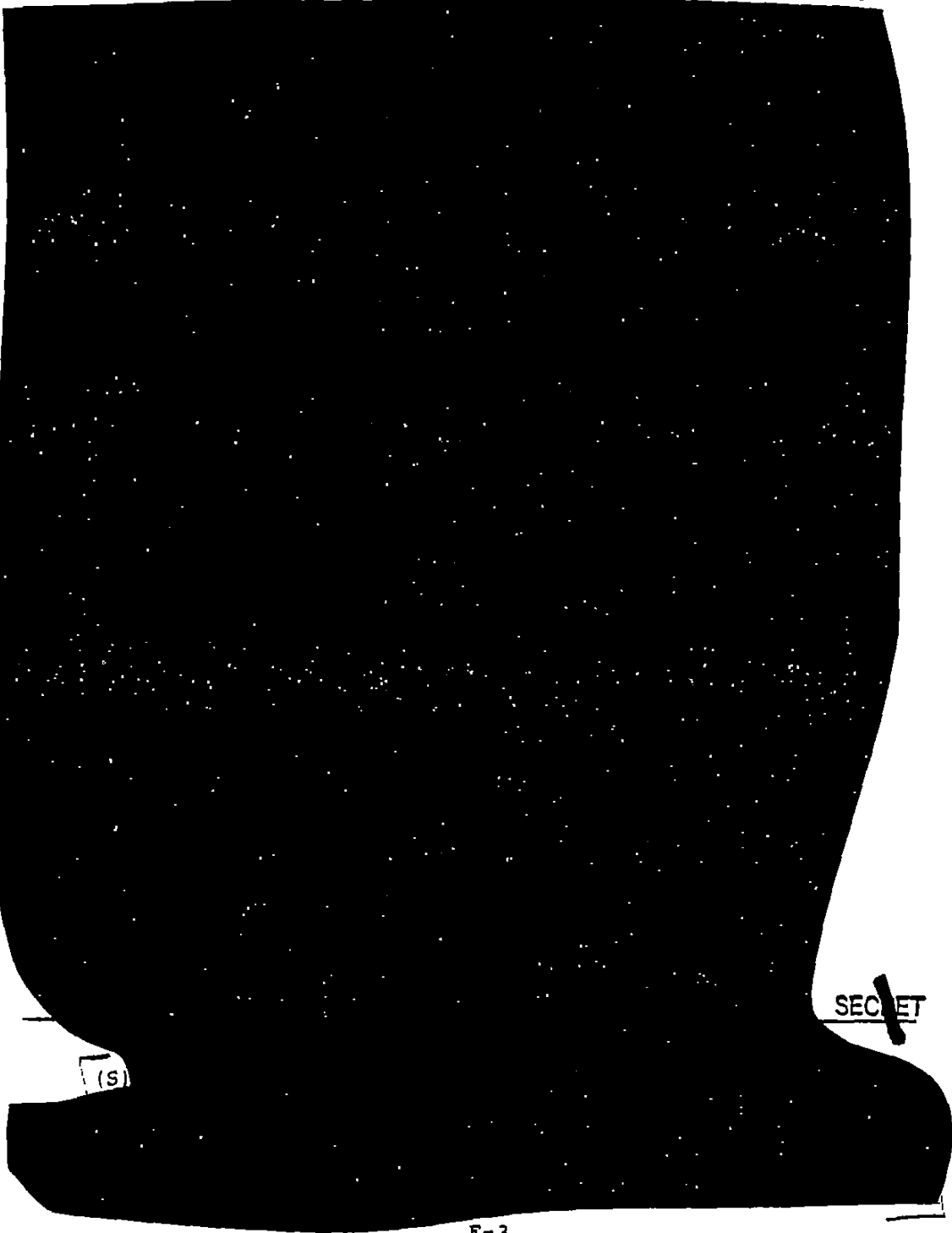
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TARGETS



(S)

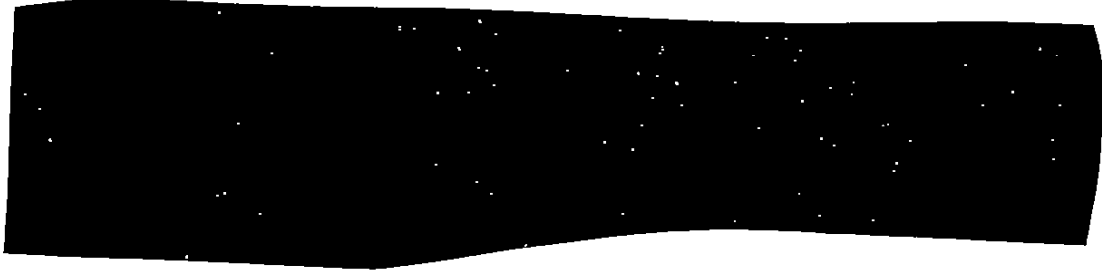
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E-4

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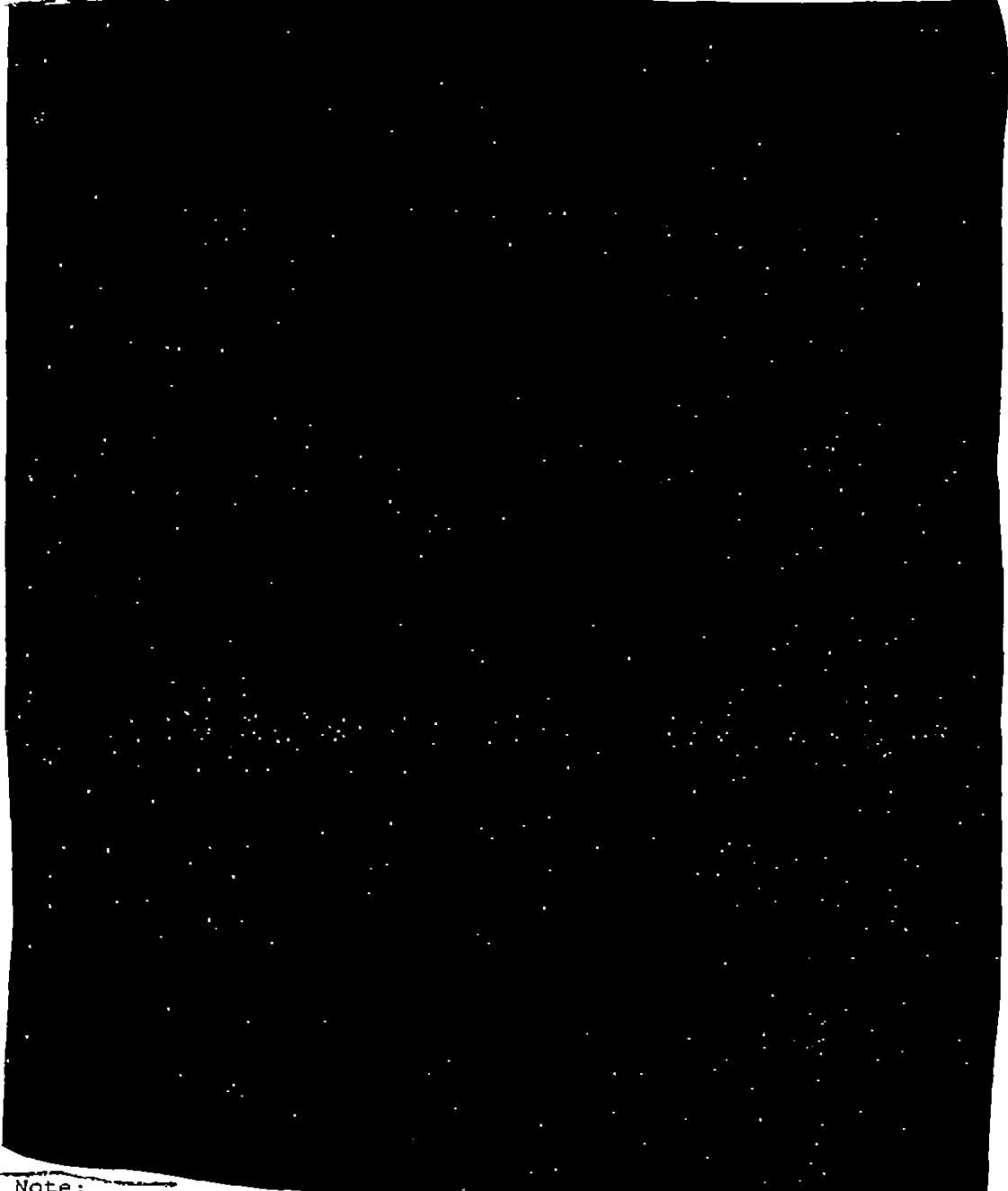
E-4



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SUMMARY OF BLUE STRIKE EFFORT
H-HOUR - H+
(150 A/C on Nuclear Withhold)

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Note:

1. % applied for battle damage - 25% AG Ground Loss -
10-25% 10% AA
2. Strike #2, 3 & 4 directed against same target list based on results of recce.

E-5

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~~(S)~~ SUMMARY

~~(S)~~

~~(S)~~

~~(S)~~

~~(S)~~

Note:

(U) This is representative of attack planning. If extension of these attacks is required for modeling, apply attrition, and reinforcements, and reiterate attacks.

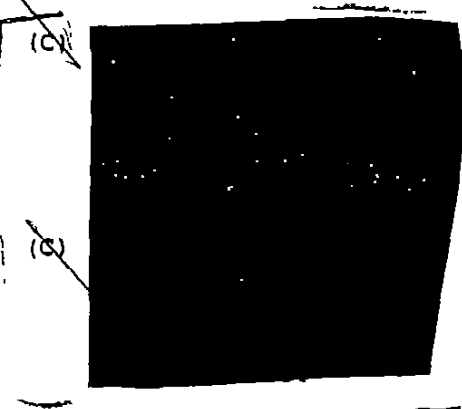
E-6

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APPENDIX F
BLUE NAVAL OPERATIONS



(U) Although it is recognized that during the first few days of a conflict with the Warsaw Pact countries it will be necessary to concentrate heavily on fleet air defense, including the protection of support bases such as Rota, Sigonella, Keflavik and Souda Bay, it is, nevertheless, imperative that unit commanders take the offensive as soon as possible and gain complete control of the seas and the airspace above.

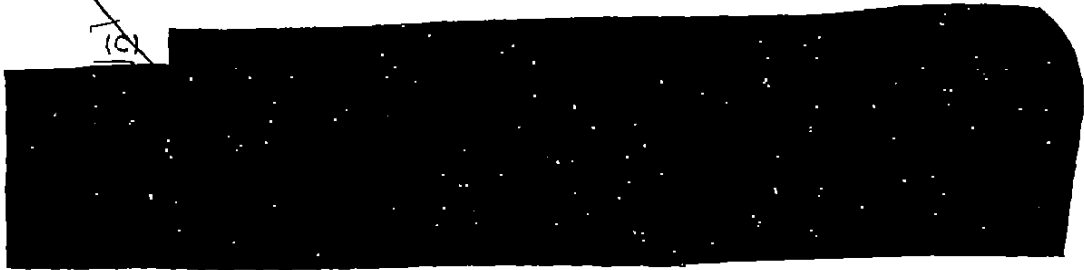
F-1
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F-1
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(U) When hostilities become imminent, NATO major naval forces disposition will be approximately as shown in Figure F-1. Groups may close at commander's discretion. A map showing the general orientation of potential targets with ingress/egress routes, etc. is presented in Figure F-2.

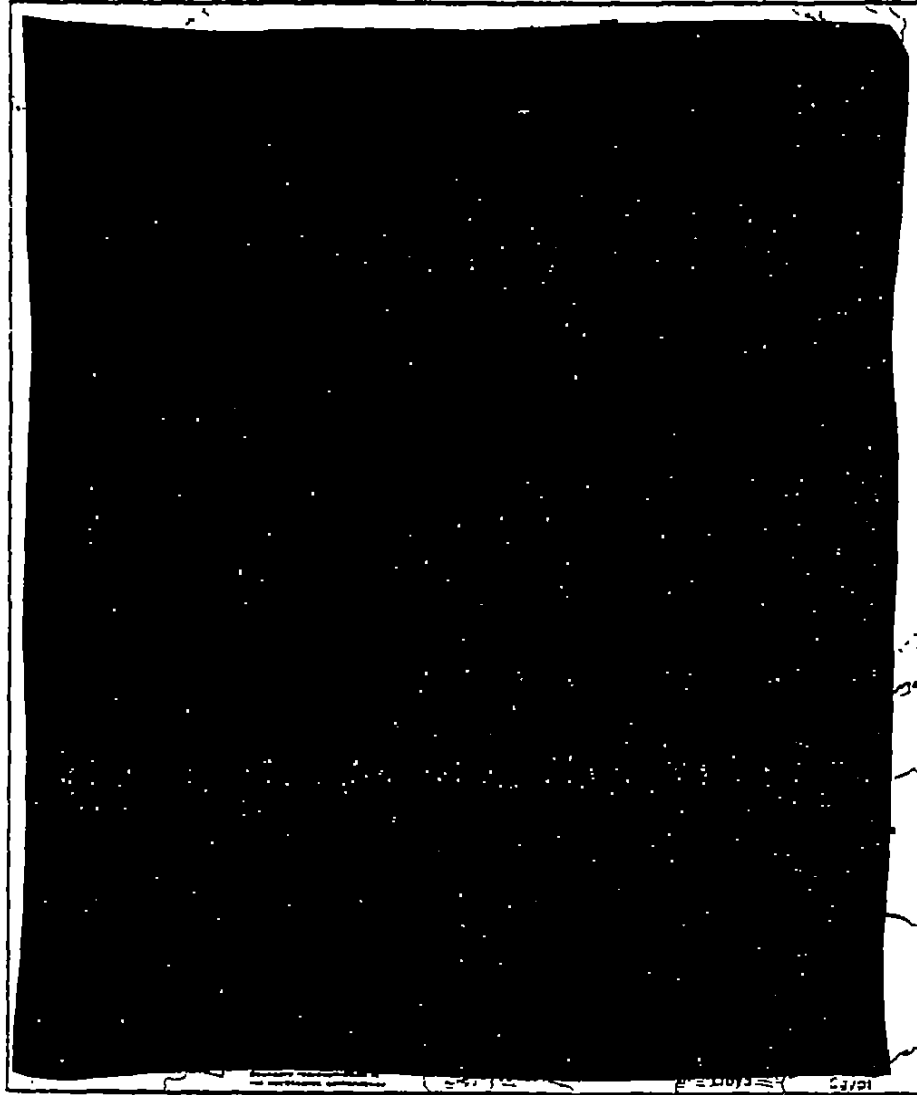


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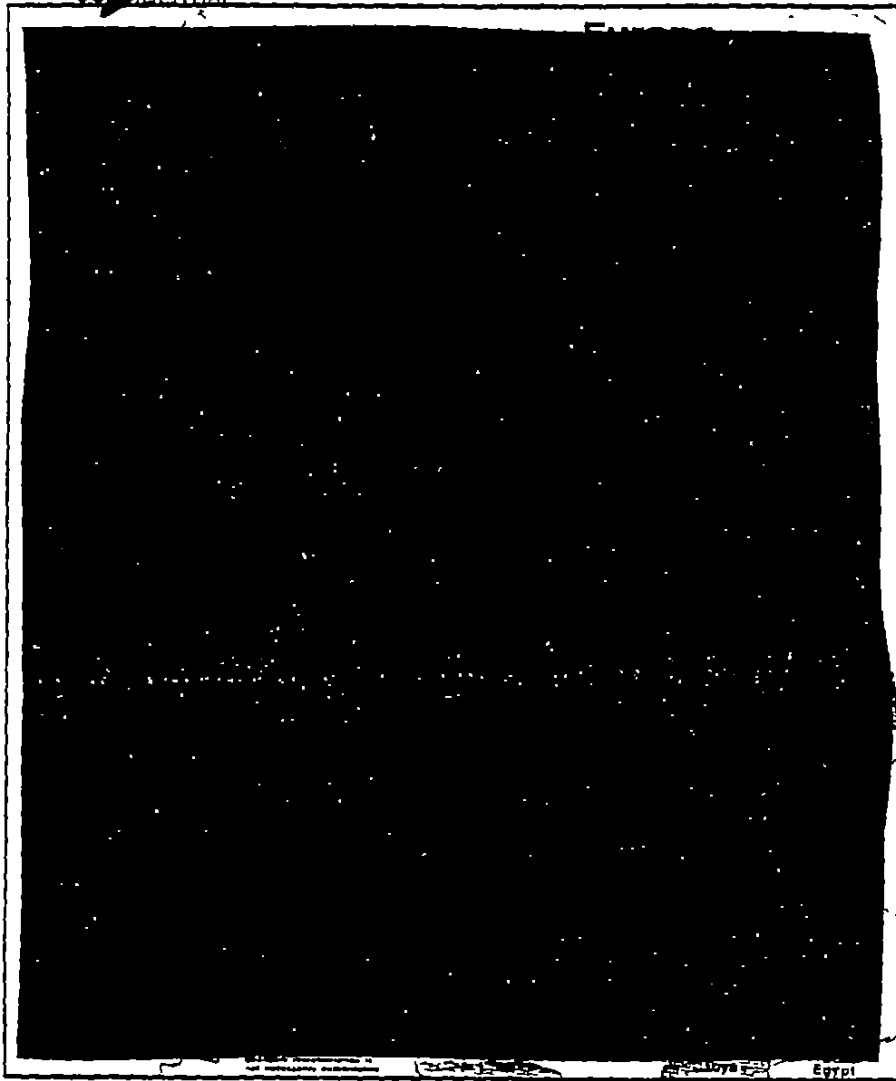


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FIGURE F-1 (U) NAVAL FORCE DISPOSITIONS



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FIGURE F-2 (U) NAVAL AIR CONCEPT

F--

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APPENDIX G

G.0 THE LAND FORCES

(U) This appendix presents a collection of situation reports, anecdotes and vignettes which depict scenes and describe activities which would be occurring on the battlefield among the land forces personnel who found themselves under attack by an enemy who had supplemented his conventional means with chemical agents. The collection was prepared by a number of authors who addressed incidents or situations each thought important to an overall understanding of such a battle. The segments generally accommodate to a time schedule which begins on the day before a Warsaw Pact attack into NATO Europe and continues through the first few days of battle.

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G.1 SITUATION, 12 MAY 1990 (D-1)

Warsaw Pact

(U) Divisions of the first echelon armies are moving into attack positions along the GDR-FRG border. Second echelon armies are occupying assembly areas in Western GDR. Major training areas such as Letzlinger Heide are being used as much as possible to mislead NATO intelligence, and the announcement of normal spring maneuvers had been made at Warsaw Pact Headquarters. Divisions of the second echelon front which had been moving into Poland, ostensibly to preserve order in that country, are now crossing the Oder and Neisse Rivers on multiple routes into the GDR, and Division, Army and Front artillery has been concentrating for several days near the points of initial attack into the FRG. SS-21 and SS-23 missile launching units have occupied concealed firing positions and are observing electronic silence.

NATO

(U) On 7 May (M-day) NATO forces were brought to a state of Simple Alert and the initial movements of forces stationed in the FRG commenced. Deployment was completed on 12 May.

(U) Mobilization of Dutch and Belgian and German forces underway with some moving to their battle locations on the 12th. Reinforcing forces from the U.S. were beginning to arrive at airfields in the FRG and BENELUX countries. Airborne sensor platforms were active over Eastern FRG. Their surveillance confirmed the magnitude of the Warsaw Pact troop concentrations along the border and stimulated the declaration of Reinforced Alert at 1100 hours on 12 May. Observers of the 11th Armored Cavalry Regiment of V U.S. Corps reported East German border units wearing full chemical protective gear in the conduct of

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training exercises. Their reports led the V Corps commander to conclude that a hostile attack would probably include use of chemical weapons. Accordingly, V Corps forces were ordered to assume a Mission Oriented Protective Posture-2 (MOPP-2); that is, troops donned overgarments and carried their respirators, hoods, boots and gloves to assure immediate availability. The reconnaissance elements of the NBC companies were deployed to selected target areas. The covering of ammunition, fuel and food stocks was emphasized and available collective protection shelters were erected, primarily at medical treatment locations. By 12 May most U.S. troops had engaged in training exercises in MOPP-4 (fully protected) using simulated chemical agents. USCINCEUR, because of the reports transmitted from the 11th Armored Cavalry, directed the movement of chemical munitions to ammunition supply points (ASP) in the US corps rear areas.

(U) Division and corps combat service support units had been deployed and were functioning well, although some difficulty was being experienced in lateral and forward movement of units because of road congestion and high absentee rate among the civilian workforce. The problems were even more extreme in the communications zone and at the ports and transportation shipping points.

G.2 SITUATION AND ACTIVITIES, H-HOUR TO 2100 ON 13 MAY

Warsaw Pact

(U) Following an intensive artillery preparation which included thinly laid smoke rounds to simulate chemicals, the first echelon armies of the Northern, Central and Southern Fronts crossed the border and were engaged immediately by the covering forces of the NATO Central Region. By 2000 hours elements of the 1st Guards Tank Army had driven through the Blue covering force positions and crossed the North-South Autobahn, E-70, and were in sight of the Fulda River to the West. Air reconnaissance had

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been very active relocating and confirming targets for the planned chemical strike. Delivery means to be used for this strike were poised and ready well before 2100 hours and troops of the first echelon divisions donned full protective gear which they would remove at 2300 hours unless chemical reconnaissance teams detected the presence of the non-persistent agent in the areas they were to pass through.

(U) Resupply of munitions presented few problems. Prepositioning of stocks prior to hostilities and the losses experienced due to NATO fires did not interfere with plans for the chemical attack. POL pipelines guaranteed adequate stocks to support the attack. Decontamination units with the support forces prepared for both offensive and defensive operations. Movement through contaminated areas was contemplated, so reconnaissance units moved with the advance elements of all columns.

NATO

(U) As the first enemy artillery rounds started to fall on the V Corps covering forces and along the Fulda River, V Corps dressed in MOPP-4 (complete protective gear) fearing that chemicals would be used at the outset of hostilities. The detonation of smoke rounds caused many soldiers to believe that they were under chemical attack and it was not until H+5 that reconnaissance teams established that the smoke was not a toxic vapor and units could return to a MOPP-2 status. Since the 13th of May was quite warm, the hours the NATO troops spent in full protective gear caused a debilitating fatigue and a general degradation of effectiveness. They maneuvered a little sluggishly, they failed to meet their time schedules for planned demolitions, road craters, bridge destruction, etc. By the time they were allowed to remove respirators, hoods, boots and gloves, the momentum of the enemy advance had carried them to the Fulda River before darkness, and allowed the enemy time for deliberate preparations for continuing the attack.

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G.3 SITUATION AND ACTIVITIES, 2100 HOURS 13 MAY TO 15 MAY

WARSAW PACT

(U) Between H and H+16 hours Pact forces advanced all along the front of the NATO Central Region driving in covering forces to a series of restraining lines which coincided with NATO forces general defense positions. Pact forces penetrating into areas where chemical attacks were not planned had no restraining lines and continued their attacks unabated. In the front of the U.S. V Corps the Pact restraining line was the Fulda River. At 2100 hours a massive chemical attack was launched and targeted as described in the Soviet Concept. With some difficulty, the 27th MRD seized crossings over the Fulda River in the defensive zone of the 3rd Armored Division. Once these crossings were established the 11th Guards Tank Division, an operational maneuver group (OMG), passed through the 27th MRD and attacked westward along the axis of Autobahn E-4 toward Alsfeld and Frankfurt. The attacking forces remained in full protective posture until their chemical reconnaissance elements had assured that the non-persistent vapor clouds had disappeared.

NATO - OVERVIEW AND IMPACT OF STRIKE

(U) NATO forces at H+16 were well postured to defend in assigned sectors. Casualties in the covering force battle were moderate and forces at the FLOT had not been attacked. Although there was apprehension, there was general confidence in the weapons available and in the resolve of all units to fight effectively. In the V Corps sector, U.S. forces perceived a minor lull from the time the covering force was withdrawn until the attack on the main battle position was launched.

(U) Although East German forces had been observed training in full chemical warfare ensemble in the days prior to D-day, there had been no use of chemicals during the first day and

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forces in contact were observed to be not wearing their chemical gear. This led to a general feeling that chemical weapons were not going to be used and there was a degree of relaxation by V Corps forces. The U.S. forces continued to wear chemical protective clothing, however, less boots, gloves, hoods and masks, some of which were now misplaced, forgotten, or otherwise lost by a few careless soldiers.

(U) The Soviet chemical attack was massive, well coordinated and executed. With no warning chemical munitions seemed to be exploding everywhere just as darkness fell. Very heavy concentrations of non-persistent nerve and blood gases struck all along the main defensive position and on the artillery and air defense units close behind the FLOT. Concentrations of semi-persistent nerve gas, in some instances intermixed with persistent nerve and blister agents, fell on deeper installations and forces in the corps rear areas. Areas bordering the main avenues of approach were heavily covered with persistent blister chemicals. Some units on the FLOT were attacked with persistent agents.

(U) The result was devastating. Troops everywhere quickly assumed a full chemical defensive posture (MOPP 4) but not in time to prevent significant casualties. Some masks did not fit properly or were improperly worn. As many soldiers suffered convulsions from blood and nerve gas others tried to help them, further reducing their unit's mission capability. Casualties, confusion, the advent of darkness, and the noise of a renewed attack all contributed to the development of hysteria in some units. Some soldiers administered atropine without having been exposed to agents and suffered atropine shock. Others, needing atropine, lacked the nerve to self-administer and both categories added to the casualty list. Company medics were overwhelmed by the sheer number of troops who needed their help. Their intense efforts to give medical aid were hampered by their uncertainty

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about which agents were used and what to do with the casualties. Fragments from the chemical munitions and the accompanying conventional fires wounded many troops and destroyed the effectiveness of many items of protective equipment. The psychological impact was terribly unnerving and a helpless panic engulfed many hard hit units.

(U) The impact on combat effectiveness was varied. Training, discipline and junior leadership (NCOs and junior officers) emerged as key to retaining combat effectiveness. Units, logistics installations and even command posts reacted based on these three factors. Where excellent training, good discipline and strong junior leadership were present a high level of efficiency and effectiveness was retained. Training and discipline were the key to casualty control, but it took immediate, positive leadership to prevent panic. Some tactical units and some installations that were hit lacked this leadership and panic quickly destroyed effectiveness with casualties as high as 20-40%.

(U) Looking at the U.S. 3rd Armored Division sector where training, discipline and junior leadership were equal to the best in NATO, it was estimated that two-thirds (2/3) of the front line forces were subjected to chemical agents, one-third (1/3) of the FA batteries were exposed to some extent, one-fourth (1/4) of the battalion level command posts were exposed, there was varying exposure on two of the brigade CPs and a section of the division CP was heavily exposed. Additionally, a brigade ammunition transfer point (ATP), the division trains area and two HAWK sites in the sector were hit. Reports were confused and delayed. For a period of over six hours, the hours of darkness, confusion was evident at all levels of command, but more pronounced at higher levels because reports were incomplete and, often, garbled. During the night logistic activity was at a standstill. The Soviets had launched a massive ground attack against V Corps (and all along the NATO front) immediately after the massive chemical

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preparation. hopes of an easy breakthrough did not materialize as stubborn resistance continued in most sectors and very effective artillery fire fell on the attacking force. There were soft spots where V Corps forces had suffered significant casualties and panic had eroded combat effectiveness. Deep inroads were made in several places, and the flank units that had held their positions were threatened by enemy forces flowing through the penetrations.

(U) The Fulda River proved to be an effective obstacle and attacking Soviet forces forced crossings of the river under heavy fire. Mines in the river bed, steep banks and well sited defensive anti-tank weapons caused casualties and delay. Most of the night was spent in crossing the river and breaking into the main battle positions.

(U) With daylight command and control began to again become effective among V Corps units. Forward units were ordered back in an attempt to re-establish a cohesive defense and lightly attacked units on the flanks were ordered to move to cover areas that had been penetrated. A new problem became evident; flank units had been heavily saturated with persistent agents and men (in protective ensemble) and equipment were covered with poison. Weapons worked and troops efficiency remained high, but there was no hope of decontamination and the difficulty of detecting and marking the precise area contaminated without extensive and time-consuming reconnaissance forestalled moving units to clean areas. Some troops had difficulty sleeping because of being jolted awake by the resistance of the canister filters to their breathing, and they were already exhausted and complaining about the need to remove their masks. Personnel in protective garb could not take nourishment except water and thin soup from canteens, could not perform bodily functions and began to feel a sense of claustrophobia and, as the day warmed, heat fatigue as well. Some units were incapacitated for 15 to 20 hours before

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they could obtain relief through limited decontamination. Some relief was provided to scattered small units when inflatable collective protective shelters were put up in some farmhouses and barns. Other troops improvised by creating shelters from empty pre-positioned supply containers.

(U) Resistance in many local sectors was so weak and disorganized that deep penetrations occurred. U.S. forces were never able to reestablish a cohesive highly effective combat posture, but neither did they break and run or surrender. They fought with determination but with an obvious lack of an integrated combined arms defense both laterally and in depth due to weaknesses created by the chemicals.

(U) The grim situation in the combat area was also apparent in rear areas - all the way back to major logistical installations west of the Rhine. Rear area troops were even less ready for the chemical attack, and the immediate result was higher casualties and concomitant panic virtually everywhere. The problem was complicated by mixed use of toxins with nerve and blister on POMCUS sites and transient marshalling areas. The bizarre effects of skin burns caused by toxins confused troops who treated themselves against blister agents. Medical support for combat elements could not begin to cope with the situation, but medical support was even less capable in rear areas, and deaths that might have been prevented were prevalent. This created yet another problem; the inadequacy of the graves registration activities. Bodies, in body bags until they ran out, were shipped to the rear and stacked for some undefined later disposition.

(U) Persistent agents struck some major equipment stockage points virtually halting the issue of materiel. The logistical system never recovered fully. Too many casualties occurred in already understaffed units and the long delay in getting back into operation left the entire system far behind the demands of the forward areas.

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(U) After the initial chemical attack at H+16 the enemy use of chemicals was greatly reduced but continued to impact adversely on US combat effectiveness. Nervous troops were quick to mask and stayed in other protective gear at all times. Heat fatigue was ever present. Units struck with persistent agents were forced to stand down until they could be decontaminated. Clearly, the chemical attack had degraded US combat capability drastically, both immediately and over time.

(U) By dawn on D+1 the 1st Guards Tank Army had crossed the Fulda in force and its leading elements had advanced up to 5 km on a broad front. The pressure was particularly heavy in the northern sector of the 3rd AD in the vicinity of the Bad Hersfeld-Reiskirchen Autobahn. Unit personnel had remained in MOPP4 since the initiation of the chemical attack the previous evening and, as the fighting continued during the day on D+1, they began to be overcome by fatigue, heat stress induced by MOPP4 and the losses associated with the continuing sporadic attacks of a non-persistent agent. The relative effectiveness of the 3rd AD defenses was significantly less against fresh Warsaw Pact forces that were committed to the battle through gaps in the defensive sector. A major gap was created near the Autobahn in the sector of three adjacent company teams (tanks and mechanized infantry) which had experienced a large number of vehicle and personnel casualties from conventional and chemical fires; the survivors fought in full MOPP4 for over 18 hours and were gradually worn down physically to a state of pure exhaustion, combat ineffectiveness and disorientation.

(U) D+1 witnessed a continuation of deteriorating combat effectiveness throughout the 3rd AD sector:

- (U) Unreinforced maneuver elements experienced continuing attrition from conventional and non-persistent chemical fires and personnel losses due to heat prostration resulted from MOPP4 conditions.

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• (U) Artillery and other supporting weapons systems were also attrited by conventional and chemical fires and heat prostration took its toll. Some artillery units had to be withdrawn from combat to a relatively quiet and uncontaminated area several kilometers to the rear to decontaminate equipment which had been struck by a persistent chemical agent during the night. Some signal units and elements of several battalion and brigade combat trains were also temporarily out of action while decontaminating their equipment. These "loss" periods could last from 5 or 6 hours to one or two days depending upon the professionalism of unit personnel and the condition of their equipment.

• (U) Almost half of the command posts of battalion task forces and brigades were moved to undergo decontamination, leaving skeleton elements to attempt to exercise some control of subordinate units.

(U) By H+42 the Warsaw Pact attack had penetrated in force along the Autobahn to a point about 20 km east of Reiskirchen. A separate division sized force (OMG) moved through the rupture early on D+1, moved southwest into the 3rd AD division rear and continued attacking and destroying corps artillery units, ammunition supply points and corps reserve units, such as elements of the 4th U.S. Infantry Division (Mechanized), which had arrived from CONUS, drawn equipment from prepositioned storage sites, organized for combat in marshalling areas and moved forward to US V Corps.

(U) By darkness on D+1 the situation in V Corps was critical. The fabric of the defense was at the breaking point. Combat losses in equipment and personnel (about 40%) and the physical exhaustion of those soldiers still fighting and operating due to lack of sleep and heat fatigue combined to overwhelm whole units. The equipment and personnel losses experienced by the V Corps force in the units affected approximated 40%.

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(U) Authority to employ chemical munitions in retaliation was requested by the V Corps commander on D+1. A prepositioned U.S. theater commander's request had been activated automatically when the Soviet chemical strike occurred and verification of chemical use was obtained at EUCOM headquarters.

(U) C-hour to execute the corps chemical attack plan was set for H+42, allowing adequate time for the transmission of release authority and the positioning of the 155mm and 8-inch artillery howitzers which would take part in the strike. It was hoped that this strike, occurring also just after dark, would create the same casualties, confusion and impact among the Warsaw Pact troops as had been experienced the night before by the Americans. But, if nothing else, it was believed it would cause the enemy forces to don full protective gear and would cheer American forces as the advent of an equalizer on what had been until then an unfair battle.

G.4 MANEUVER UNITS AND TERRAIN

(U) The impact of the Russian massive chemical assault by all of his available delivery means was devastating because his target acquisition assets had been professionally employed and his targeting was excellent. (Had employment of his target acquisition means and targeting been less effective, his chemical assault still would have had a major adverse impact on the defenders.) Among the tanks, rifle squads, forward observers of the armor/infantry/artillery units that make up the maneuver teams (companies) and task forces (battalions) along the front lines the sudden presence of colorless, odorless, lethal gases caught many of the troops with their protective masks in carriers and instant casualties resulted when realization followed rather than preceded the ingestion of lethal doses. As the clouds of lethal vapor drifted over adjacent units which had not received

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warning, similar casualties resulted even in well trained units. After survivors had assumed the MOPP 4 posture, fighting-team spirit and effectiveness deteriorated, loss of facial recognition - leaders-to-led and vice versa, reduced discipline and the ability of gunners to effectively "sight" their weapons was degraded by mask eyepiece interference, the loss of peripheral vision, and, with the passage of time, human body physiological "slumping" caused by overheating, the inability to eat and the cumulative effects of psychological stress - a factor about which we know much less than we need. In addition, because we were unable to detect which agent the enemy employed and to know when danger no longer existed, the maneuver elements suffered additional casualties from errant self-propylaxis or the removal of protective equipment before the chemical danger dissipated.

1) In units whose leadership at the squad, tank, platoon level was less than outstanding, soldiers panicked as they witnessed their friends choking, coughing and experiencing the physical effects of chemical poisoning.

2) As the battle continued late into D-1 and through the night into D-2 soldiers were reluctant to remove their protective masks and open their flaps to their overgarments, even when there was no danger. Few were satisfied that anyone really knew when chemical gases were or were not present. By darkness on D-1 the heavier units, except for those few equipped with modified Abrams tanks and Bradley fighting vehicles, had been operating and fighting in full MOPP 4 and were almost non-effective due to casualties from heat and physiological stress and fatigue. In combat support and combat service support units took casualties from conventional and chemical, and are required to support the main effort, their mission capability also eliminated the support by the combat units and degraded their ability to carry on the fight.

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(U) As the weakened and depleted maneuver units were forced to give ground, two other negative factors developed. First, reports of chemically contaminated areas in the rear were received. Exactly where, the delineation of the contamination and the dosage levels were problems with which the maneuver commanders at all levels had to cope; their uncertainty increased troop apprehension. Secondly, the disparity in combat effectiveness between 3rd AD maneuver elements (declining) and the enemy forces they faced grew as Warsaw Pact commanders inserted fresh units to maintain the momentum of their attack and exploit the successes attained. Even when these troops were in equivalent MOPP 4 the time they were required to suffer under this constraint was relatively short and non-impairing.

(U) In summary, a combination of WARFACT concentration, mass employment of chemical weapons by the enemy for all practical purposes made successful defense impossible.

G.5 VIGNETTES

(U) The best insight into and appreciation of the chemical battlefield can be gained by looking in some detail into the various situations where the soldiers fight and otherwise perform their duties. Practical limitations preclude describing but a few of the many hundreds of situations that could and will occur. Seven(7) situations have been selected from across the wide spectrum of probable chemical battlefield scenes as being typically representative of this spectrum. Each of these situations is described in terms that the author believes are realistic for the situation. The first of these vignettes takes place at the line of contact between U.S. forces and Warsaw Pact forces. Each subsequent vignette follows the general discussion to which it applies as the environment from the line of contact to the logistics area deep in the rear of theater operations is

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G.5.1 MANEUVER BATTALION TASK FORCE

(U) Battalion Task Force (TF) 1/32, part of the 3rd Brigade, 3rd Armored Division, arrived in its assigned sector along the Fulda River on M-day. TF 1/32 consisted of 3 tank companies of the 1/32 Armor and a mechanized infantry company from the 1/36 Infantry. The TF was organized into four company teams as follows:

- Team A - A Company (less one platoon) 1/32 Armor, one platoon 1/36 Infantry
- Team B - B Company 1/32 Armor
- Team C - C Company 1/32 Armor
- Team D - D Company 1/36 Inf, one platoon 1/32 Armor

(U) Planned battle positions of the company teams are shown on the 1:50,000 scale map, Figure G-1. The TF combat trains (ammunition, fuel, medical and maintenance vehicles) were dispersed in woods 2-3 kilometers west of Team C. Upon withdrawal, Team A was to use the ford shown and after passage was to execute the mine barrier at the fording site.

(U) After M-day TF 1/32 had been engaged in reconnaissance and tactical training in the general area but was careful not to occupy actual battle positions with combat vehicles. Chemical training had had high priority. A reconnaissance team from the NBC company supporting the 3rd Brigade joined the battalion and assisted in training on chemical detection devices using nerve agent simulators. Upon instructions from the brigade commander the TF had assumed MOPP-1 which the TF commander, in turn, increased to MOPP-4 for brief periods. All members of the TF understood that they would go immediately to MOPP-4 in the event of an air attack or incoming artillery fire without waiting for the chemical alarm.

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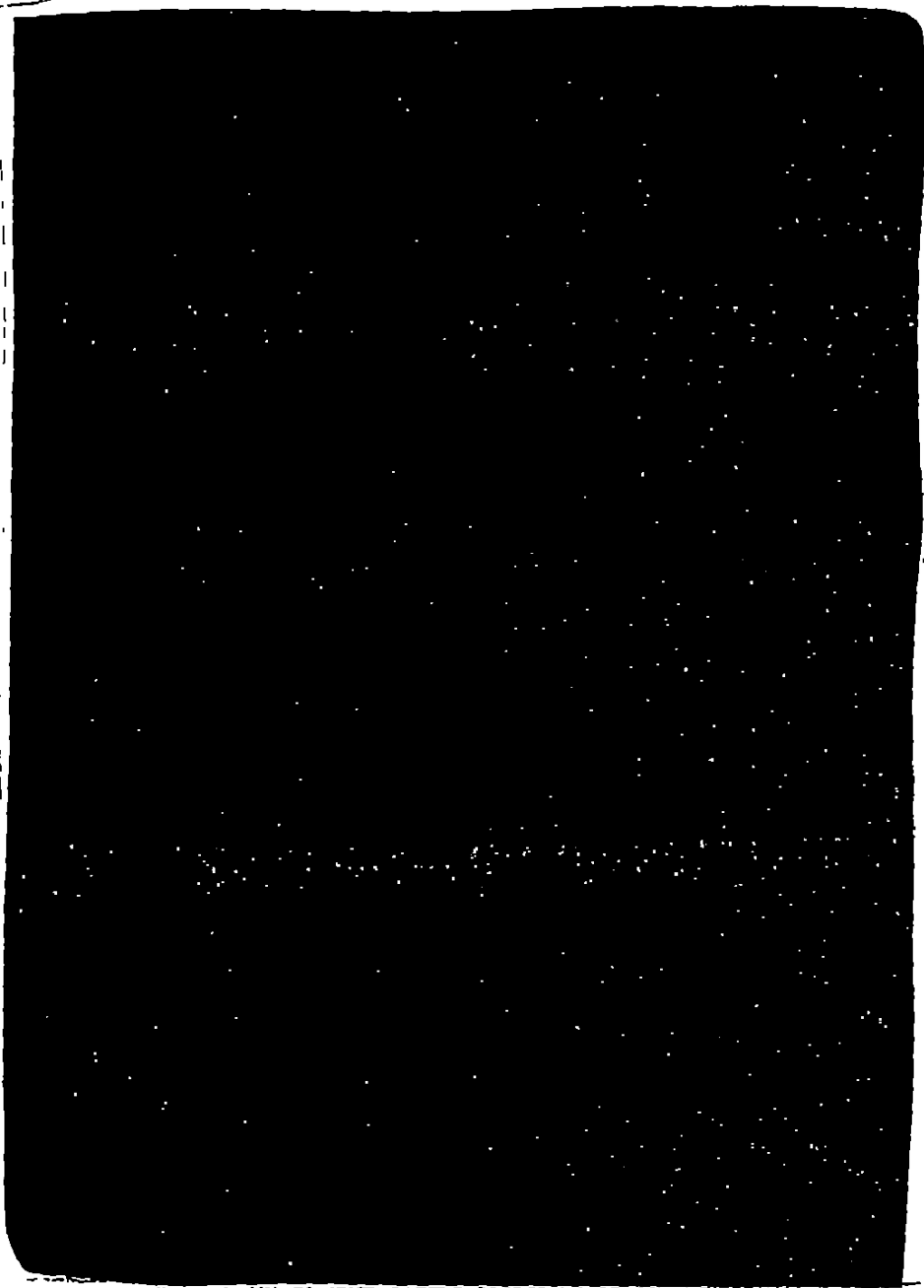


FIGURE G-1 (U) PLANNED BATTLE POSITIONS OF COMPANY TEAMS

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FIGURE G-1 (U) PLANNED BATTLE POSITIONS OF COMPANY TEAMS



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(U) By nightfall of 12 May the engineer battalion constructing the FEBA barrier along the Fulda River in the 3rd Brigade sector had finished its work. Fords had been mined, bridges prepared for demolition and the railroad parallel to the river on the West had been made into an anti-armor obstacle. Team D, the infantry heavy team, had been given the mission of executing the barrier obstacles in the battalion sector and a fire team was assigned to each obstacle as the engineers completed preparation and withdrew. The designated ford, of course, remained the responsibility of Team A.

(U) During the night of 12-13 May, the TF was in its now habitual state of nighttime readiness. Roughly half the command was awake and manning weapons systems, while the other half was asleep nearby. The teams were still not, however, deployed into actual battle positions. At 0415 all hands were awakened by the loud noise of cannon firing and shells impacting to the East. As dawn began to break, several hostile aircraft bombed and strafed along the Fulda River. Concentrations of large caliber, long range artillery impacted in the TF area causing some casualties and vehicle losses where direct hits occurred. In general, however, damage was slight since crews were now buttoned up inside vehicles which were well dispersed. Some of these shells were thought to be chemical since a thin grayish smoke which faded away rapidly arose over the impact area. Readings taken by the NBC reconnaissance team, however, failed to detect a known agent. By 0600 the shelling became less intense and the TF was ordered to occupy battle positions. Occasionally, hostile aircraft appeared overhead but did not attack the TF. As the day wore on, the weather became warmer and the noise of intense fighting to the East appeared to come closer. Since there was no evidence of chemical attack, many individuals, particularly those out of sight of commanders and leaders, took off masks and hoods and opened up their protective clothing for comfort.

(U) The impact of the chemical attack which came at dusk on 13 May was different for each of the company teams of TF 1/32.

• (U) Team A had begun to engage hostile armor moving westward in the vicinity of Langenschwarz at about 1830. By a combination of heavy tank and TOW fire Team A had stopped what appeared to be a motorized rifle battalion as they exited from Langenschwarz and Hechelmannskircher. The mechanized platoon on the team's right flank, however, reported at 1930 a strong force of T80s and BMPS moving northwest toward Team A's

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position from Schlotzau. This force, if it continued, could close the way to the crossing point over the Fulda. The team commander consulted with the TF commander over the radio and was ordered to withdraw across the river. At the same time Team D was directed to execute the FEBA barrier.

(U) During the heavy fighting most of the tankers of Team A had doffed masks, hoods and gloves. They knew well their inability to fight their M60A3 tanks effectively in full protective gear for more than about 15-20 minutes. The accompanying infantry operating mainly on foot had also succumbed to the heat problem and local leaders had them remove masks and hoods since there were no apparent chemical agents being used against them.

(U) Just as the surviving vehicles and crews of Team A were fording the Fulda at the designated point protected by the overwatching fires of the other teams, the whole TF area from the Fulda westward to the edge of the combat training area was blanketed by hundreds of air bursts from incoming rockets. The explosions were muted and a vapor cloud was forming. The team commander sensing a chemical attack fumbled for his atropine ampoule and shouted, "Gas! Gas!" There was no opportunity for the Team A members to redon in time the protective gear they had taken off. Only a few soldiers were able to find their ampoules in the growing darkness and inject themselves with them. These soldiers survived. Most of the rest quickly developed nerve gas symptoms - loss of muscular control, frothing at the mouth, vomiting, diarrhea, twitching, convulsions and after 10-15 minutes - death. Some lingered in agony for another 10 to 20 minutes before dying. Thus, in about 30 minutes Team A was reduced to several panic stricken individuals. The Team Commander, who survived, had the presence of mind to replace the mines in the ford while other survivors attempted to assist those who were dying. Equipment remaining on the East bank of the Fulda was abandoned.

• (U) Team D was spread out over more than 3 kilometers along the Fulda executing the obstacles prepared by the Engineers (blowing up bridges, arming mines, blowing craters) when the chemical attack came. The majority of the soldiers in the team were not under effective control of their leaders. Their morale was low because early that morning many soldiers had reacted to a false gas alarm (initiated by the 1st Sergeant when he saw an exploding smoke shell even though their chemical alarm didn't activate) by using their atropine antidotes. These men had become ill and

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were evacuated to the battalion aid station. It was rumored that some of them had died. This caused a lack of confidence in the atropine ampoule and confusion on whether to rely on their chemical alarms. When the chemical strike came and was signaled by the chemical alarms, therefore, there were substantial numbers of Team D soldiers in full protective gear although they had removed masks and hoods for short periods during the day. These survived the attack. Others were unmasked but refused to use the atropine syringes. The latter, of course, became ineffective within minutes and died. About half the targets for which the team was responsible did not get executed. The Team Commander who had stayed in MOPP-4 was exhausted. He made a feeble attempt to rally his team after the attack but collapsed. Team D "just sort of melted away" as the TF commander later put it.

• (U) Team B was unique. It was equipped with M1E1 Tanks. At M-day 1/32 Armor was in the process of exchanging M60A3s for M1E1s with hybrid overpressure chemical protective systems and 120mm guns. The tank crewmen were delighted with the new tank. They liked having the bigger gun but most of all they were glad they didn't have to wear protective clothing inside their tanks. Moreover, the tank commanders could crack turret hatches without danger for a better look at the battlefield. When the chemical attack came Team B was delivering overwatching fires in support of the withdrawal of Team A. Each tank had several alternate defiladed positions and only one fire mission was conducted in each position. Overpressure systems were on and the chemical attack had no apparent effect on Team B which continued to engage targets cross the Fulda using integrated thermal sights. About a half hour after the strike a driver had to answer a very compelling call of nature. He exited his tank without putting on protective gear, accomplished his task and returned to his tank without incident. In about 5 to 10 minutes, he had difficulty seeing, got dizzy and couldn't drive. Shortly he began convulsing and died. This first indication that the enemy had probably used a non-persistent agent was quickly confirmed by an alert radio message.

• (U) Team C's mission was similar to that of Team B - only Team C was equipped with M60A3s. The tank crews had started the engagements in support of Team A in full protective gear; but, this shortly became intolerable and after 20 minutes all crew members had shed mask, hood and gloves. When the chemical attack came the nerve gas was quickly sucked into the turret air intakes. Within 20 minutes no

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tankers were still alive in Team C. They were so preoccupied by the engagements they were conducting, and the battlefield was smoky anyway, that they were not aware of being under chemical attack until it was too late for atropine to be effective. Some crew members did manage to inject themselves but it was too late.

• (U) Within an hour after the chemical attack Soviet combined arms formations crossed the Fulda through gaps in the barrier which their demolition teams created. They were opposed only by the MIEs of Team B. Team B took a toll of the attackers but after losing some 6 or 7 tanks and with ammunition running low it had to withdraw. TF 1/32 was no longer an effective fighting force.

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G.6 FIELD ARTILLERY

(U) The field artillery weathered the chemical strike better than most other elements of the 3AD. This was a result of having been engaged in the covering force battle and having occupied positions for the main defensive position for only a short time before the chemical attack occurred. The 3AD had severe restrictions on firing from main battle positions until absolutely necessary and many batteries/platoons had not fired and, therefore, had not been located. The batteries/platoons that had fired had not all been located, but most were heavily attacked with semi-persistent agents and several "suspect areas" were subjected to semi-persistent agents resulting in the partial coverage of a few others. The immediate impact on the field artillery was not overwhelming, but it was serious. Soldiers were very tired from the covering force battle and the activities that were part of that action. Many were sleeping with protective equipment strewn haphazardly nearby but not handy.

(U) Word that a massive chemical attack had been launched resulted in a great hustle and bustle to get in a proper posture. Panic was the exception because these troops had already been in battle and the nature of the battery/platoon positions permitted junior leaders to exert positive control and direction. Nevertheless, continuing the battle in protective ensemble for hours on end created serious heat casualties. From the time of the Soviet onslaught, the field artillery was worked and fought at a fever pitch and the effort of handling tons of ammunition proved to be beyond physical capacities. The sustained firing rate dropped to only 25% of that expected. Normally the firing rate is limited by the heating of the cannon tubes, but the tired troops in hot gear could not fire fast enough to overheat the cannons. This condition lasted for many, many hours after the initial attack and resulted in a significant degradation in field artillery performance. Difficulty in seeing with masks on and difficulty of talking through the mask added to this degradation.

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(U) The Soviets were well aware that their chemical strike had not hit a high percentage of the artillery batteries/platoons, and so in the hours that followed, as they were able to locate these positions, they included semi-persistent chemicals to counterbattery fires. This, of course, kept the NATO field artillery personnel in their protective ensemble all the time.

(U) Within 24 hours the field artillery ran into another problem. Ammunition at ATPs and ASPs had been subjected to persistent chemicals and resupply resulted in the forward movement of contaminated ammunition. The paucity of decontamination equipment resulted in the Hobson's choice between sending contaminated ammunition forward or not sending any at all. Receiving contaminated ammunition posed a problem for FA firing units. They had no on-site capability to decontaminate arriving ammunition, yet to unload, store and fire it required troops to be in the full protective ensemble. This became a very serious problem in the hours and days that followed the chemical attack.

(U) In summary, field artillery units suffered from three major problems: chemical casualties, fatigue and heat prostration, and contaminated ammunition. The result was an immediate, continuing and growing loss of effectiveness.

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G 6.1 FIELD ARTILLERY BATTERY

(U) B Battery, 2nd Battalion, 3rd Field Artillery is a self-propelled 155mm armored field artillery battery, a part of the 3rd AD Artillery. It had been involved, without serious incident, in the covering force battle and at around H+16 it occupied its battle site for defense of the main battle position. The battery was operating in the "Division 86" concept of two platoons of 4 guns each. The battery CP with a fire control element was co-located with the 1st platoon and the 2nd platoon had its own fire direction center (FDC). Each platoon was emplaced in an area about 300 meters wide and 100 meters deep with the FDC at the rear and to one side of the platoon position but within the area described. The platoon areas were about 800 meters apart. The battery administrative elements, mess section, maintenance section, ammunition trucks (when not on the road) were located about 500 meters behind the platoon areas. The very widespread platoon positions (used to complicate counterbattery acquisition and reduce vulnerability to counterfire) reduced the ability to man a significant perimeter defense. This led to some psychological uneasiness in the gun crews and FDCs that their security against local guerrilla type attack was not assured.

(U) B Battery was in somewhat better condition than A and C batteries after the covering force battle and was designated to fire all the supporting missions the battalion received, with A and C batteries to be used only in an emergency. This was part of the plan to conceal position areas as long as possible. Fire requests were limited, and the two B Battery platoons fired from time to time, but the battalion did not call on A and C Batteries to fire. So, at H+16, the time of the chemical attack, B Battery's platoons had both been located by Soviet radar and were targeted for attack with semi-persistent nerve gas in massive quantities.

(U) The battery had received notice of the use of chemical agents in rear areas, but the "clean" covering force battle led to a degree of relaxation. Tired soldiers split gun crew shifts so some could sleep, but very close to their guns. Protective suits were worn, but opened up. Masks, gloves and boots were nearby. There was a distinct difference in the two platoons.

(U) The senior of the two platoon sergeants was with the 2nd platoon, the platoon away from battery headquarters. He had over 20 years' service and had

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seen combat in the closing days of the Vietnam War. He was very demanding of soldier performance and a dedicated believer that soldiers must be led, supervised, reprimanded, commended and, above all, required to do all the Army expected of them. Carelessness from fatigue could cause poor performance and even lead to unnecessary casualties, so fatigue was no excuse for not doing it right. He checked on every gun crew as they settled down seeing that at least a minimum protection was achieved in rest areas and that readiness for chemical attack was maintained at a high level.

(U) By contrast, the platoon sergeant with the 1st platoon was far less demanding of his men. He emulated his platoon leader in his love for technical excellence in achieving precision and responsiveness in delivering firepower. He and the platoon leader were splendid in every respect but fundamental troop leading. That was left to the gun crew chiefs and they expected the first sergeant to exercise supervision over soldier care. The result was sloppiness in preparedness for chemical attack. Some protective clothing was removed - for comfort - and masks were near but not instantly ready.

(U) At H+16 the massive nerve gas attack struck the battery. Each platoon area was hit by several MRL attacks, and contamination quickly covered the battery administrative area. Darkness was falling and agent-loaded rockets were exploding everywhere. Instinctively men who were exposed ran for cover. Those in the guns closed the vehicles and those resting nearby tried to flatten themselves as much as possible. In the early confusion no one realized that the attack was with chemical agents, and some would never know.

(U) The experienced 2nd Platoon platoon sergeant took a heavy personal dose, recognized the agent and quickly masked and added the full MOPP 4 gear. He knew he couldn't help others unless he was able to function. But, even as he masked, he was shouting "Gas! Gas!" for all to hear. The platoon leader moved almost as quickly. Together they ran through the position, ignoring the rockets that were still coming in, and they covered the platoon area. The platoon sergeant knew he had inhaled a significant dose and injected himself with atropine. He and the platoon leader recognized that atropine would be needed by many and they determined to see that it was either self-administered or that someone else would do it.

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(U) The discipline, training and leadership paid off. Around 15% of the men were casualties and were collected at a central point with the platoon medic working at a feverish pace. The platoon leader asked the battery operations center for permission to displace but could not get through. On his own initiative he moved the platoon out of the clearly targeted area. The move was slow and inefficient and, in its new location, the platoon was rattled and at perhaps 80% effective strength - but it was combat capable.

(U) The story in the 1st Platoon was not the same. A seemingly small difference in discipline and readiness took a heavy toll and led to panic. The inexperienced platoon sergeant would have reacted well, but he was killed by fragments when the attack started. The platoon leader responded well but simply had too much to do. The battery commander was in the FDC and worked to set that installation in calm order before he could help in the platoon area.

(U) The first sergeant was in the administrative area and part of a high casualty scene not described here.

(U) The 1st Platoon took very heavy casualties. The lack of immediate availability of the masks by quite a few resulted in their powerful, disturbing physical symptoms, such as massive convulsions, that frightened the other soldiers. With chemical alarms sounding, there was a helter-skelter run for cover, close up the howitzer, find your protective gear, use atropine, don't use atropine, help your buddy, forget your buddy and man your station, get ready for more incoming fire and watch out for an attack on the perimeter. Darkness exacerbated every rumor and frustrated the gun chiefs and other junior leaders in their efforts to exercise personal leadership. Under darkness and in MOPP 4 the battery commander was just another person. It took half an hour to calm things down and get the dead and incapacitated moved out of the area. That removed half the combat strength of the platoon.

(U) Almost as soon as a degree of order was restored, the platoon area was struck again with high explosives in a massive attack, and some chemical agents were mixed in with the HE. The platoon and its satellite battery headquarters were not ready, and a new group of casualties, trying to scream through their gas masks, were added to the already heavy toll. (The previous position of the 2nd platoon was also hit, but the platoon had displaced.)

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(U) The battery commander survived and ordered a movement - but not to a new firing position, to a rearward forest. Many were left behind and only two howitzers made the move - with two or three crewmen on board each.

(U) Half of the guns of B Battery, 3/3 FA were completely out of action, the battery command and administrative sections were ineffective or destroyed and the one remaining effective element, the 2nd platoon, was well under strength and in dire need of direction from a senior element. Time would not be kind to this unit with its discipline and fighting spirit. The hours and days to come would see more attacks on its positions and the receipt of chemically contaminated ammunition from the ammo supply points. This was to force very long periods in MOPP 4, something they had not done in training and for which they were ill-prepared. There were no replacements, and the soldiers showed fatigue and the special brand of fear that goes with it. Their capability to deliver effective firepower was at less than 1/3 of the rated ability.

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G.7 AIR DEFENSE ARTILLERY

(U) In the 3rd AD sector air defenses included highly mobile divisional weapons (Sgt. York and Chapparel) and weapons from a supporting air defense brigade both mobile (Patriot) and semi-mobile (Hawk). The Soviet commander had identified Hawk and Patriot as very high priority targets, but recognized that the mobility of Patriot made targeting difficult. The Hawk sites bore the brunt of the chemical attack. Many sites were located during the covering force battle and some of these, in the selected air corridors for the Soviet attack, were attacked with conventional weapons in order to open the air corridors. The Soviets noted the location of other sites and targetted them in the chemical attack plan. The chemical attack consisted of a mixture of semi-persistent nerve and persistent toxin, a combination that proved to be highly effective. The surprise nature of the attack caught the personnel in a state of semi-preparedness that left the same picture of casualties described earlier.

(U) Some sites became inoperative as the surviving personnel struggled to take care of casualties and moved away from their duty stations. In a number of cases panic broke out in launcher crews, radar crews and in the C³ elements. Recovery from this non-operational status was very uneven with some sites restored to a fairly good condition within an hour, but the darkness and the confusion left other sites virtually ineffective through the night and the overall air defense system never regained cohesiveness or the coordinated operational facility required.

(U) The problem caused by mixing toxin agents and nerve agents was not immediately apparent. Neither the sensing devices nor the medical personnel recognized toxin presence at first. "All clear" signals at some sites, when sensors showed that the nerve agents had dissipated, caused many personnel to unmask only

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to fall victim to the still present, undetected toxin. This caused more casualties and a paralyzing fear of the unknown. This put sites that had become operational back out of action, and the message was quickly passed around that the sensors were no good and could not be used. The result was to keep personnel masked even after the toxin had dissipated (there being no volunteers to personally test the atmosphere!). Remaining masked hour after hour, and even day after day, clearly reduced combat efficiency. The degrading effects were not only physical but also mental not only because of the long term confinement in masks but also because of the mental anguish over the rumors about not being protected from toxins.

(U) Every site that had been hit requested permission to displace, but the C³ system was working at a very low level of efficiency and controlled displacements were the exception. Some moved anyway, others stayed in place and operated at low efficiency. The medics were overloaded with sick and dying personnel before the wave of toxin casualties came for help, and treatment for this group was uncertain.

(U) The situation was compounded by the sheer numbers of Soviet aircraft in the attack. Missiles readily available were fired and the demand for more came from the entire Hawk and Patriot belt, the chemical attack had effectively stopped resupply. Soviet air penetration was almost unimpeded for more than two days after the attack.

G.8 COMMAND, CONTROL, COMMUNICATIONS

(U) The massive chemical strike had the immediate effect of virtually paralyzing the systems by which commanders at all echelons receive information of battlefield activities and, having arrived at judgments and decisions, transmit instructions to forces under their control.

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(U) Company, battalion and brigade systems of the maneuver units were generally subjected to non-persistent nerve agents. Their equipment was not contaminated and system effectiveness was proportional to the physical condition of the operators. Since command and control within maneuver brigades is largely exercised by commanders and staff officers and NCOs using FM nets, the protective posture of these individuals, along with their alacrity in caring for themselves, determined how well command and control was maintained after chemical attack. In the tank battalions equipped with Abrams tanks which had overpressure systems, command control was only slightly degraded since most commanders were operating from buttoned-up tanks. Other commanders and staff personnel within brigades not enjoying this protection were in MOPP-2 and, thus, initially unprotected. Because of their training, they promptly administered the proper antidote and donned the remaining articles of protective gear. Command and control returned to an acceptable state in short order, degraded somewhat because of the encumbrance of protective clothing.

(U) As the battle progressed and Soviet forces continued to mingle chemical rounds with HE artillery fires, heat stress and fatigue gradually caused a serious deterioration in command and control. By H+42 many brigade and battalion commanders had virtually lost control of their forces and in other units control was very tenuous.

(U) At Division and Corps the C³ situation was more serious. The effects of the semi-persistent and blood agents used by the Soviets against the C³ systems at these echelons were much more severe. Some personnel in scattered locations within the division and corps systems were in protective shelters; but the exterior of these shelters and the surrounding area became quickly contaminated and effective C³ was virtually non-existent at main and tactical command posts of the corps and division

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command centers for a period of 20-30 minutes after the first chemical strikes while personnel administered antidotes and donned protective clothing and attempted to assess the damage of the strike. Division and corps commanders, noting the persistence of the agents used in the attack, decided independently to relocate their command centers and, once in an agent-free area, to accomplish partial decontamination. These decisions further delayed resumption of C³ activities and contact between corps and division main centers. The smaller and more mobile tactical command posts did resume functioning to a limited extent on D+1 but it could not be said that the corps and division tactical operations centers were operating effectively. Division and corps commanders issued orders on FM radios or in person or by sending trusted staff officers with messages. Lost was the staff support which synchronized all of the actions of the forces. The intelligence system lost 75% of its effectiveness as sensors and ground stations went out, communications between fire support elements and the all-source analysis centers were lost for more than six hours. Situation reports and analyses were incomplete, late, and were affected by the reduction in available information. Targetting was slow, of poor quality and ineffective quantity. Under the circumstances neither the close-in battle at the FLOT nor attacks on the enemy second echelons could be accomplished effectively or in time. "Deep attack" never occurred in a coordinated or effective manner, thus WARPACT reserves moved on schedule, SS-21 and SS-23 tactical missiles were untouched by counterfire, and there was no Army reinforcement of Air Force attacks on airfields and other supporting installations.

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(U) Beyond the proper functioning of the communications systems supporting command and control, corps and division and, to some extent, brigade commanders found themselves unable to visualize the battlefield. Reconnaissance means were woefully lacking in both quantity and capability and unable to define the extent of areas of contamination. Even where some perception existed reports were very slow in reaching higher headquarters. Commanders became very frustrated not being able to assess the current status of their units nor to maneuver those whose effectiveness might be still adequate for combat.

(U) The joint force capability for attacking second echelon forces, that is, hostile forces not yet engaged in the battle but either moving or ready to move to join the conflict, was a capability just emerging in 1990. The fundamental concept is simple: find and destroy throughout the depth of the battle area. Fielding a system to achieve this capability, however, was only beginning at the time of the 1990 attack. For such a system to operate efficiently, the enemy second echelon forces must be found, their composition identified and their location known with varying accuracy and timeliness requirements for the weapons systems to be employed against them. Furthermore, if tactical aircraft are selected for the attack, then the hostile air defense system must be located and suppressed. If Army missiles are selected then coordination is usually required between Air Force acquisition systems and Army delivery systems.

(U) Putting all this together puts a strain on the Air Force command and control system and on the interface nodes between the Air Force and the Army, especially at the Corps Fire Support Element.

(U) There are plans to add substantial men and equipment to this system and plans to harden many of the intelligence and command and control nodes and add chemical filters to the working spaces, but little of this will be done by 1990.

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(U) The violent chemical attack did extensive damage to the entire structure except for LANCE missile units which were in hiding. But LANCE missiles had only a few conventional warheads and these were only useful if large, soft targets could be accurately located. The chemical attack on NATO air bases sharply reduces sortie generation rates leaving the Air Forces capable of doing little more than fight the counter-air war. Even if that capability had been strong, other parts of the system were damaged so seriously that attack of second echelon forces could rarely be done. Only 50% of the sorties expected for second echelon attack could be flown.

(U) Target intelligence centers to which surveillance aircraft reported were in confusion and disarray. The use of persistent chemicals in the attack of these facilities kept the operating personnel in full protective gear constantly, so their efficiency was poor, perhaps at 60% of normal. Likewise, the centers employed in command and control of aircraft were targeted and many of them hit with persistent chemicals with similar results. The Air Force part of the second echelon attack system was thus reduced to operating at well below its designed capability and overall the second echelon attack capability fell to one third of expectations.

(U) The Air Force-Army interface at the corps fire support element (in all eight NATO corps) fared better at first since these installations were in mobile, field locations. But by D+1 every corps command post had been located and attacked with a mixture of chemical agents. All continued to function, in some cases from lightly manned and equipped alternate sites, in all cases at reduced capability. In some of the better dispersed command posts not all of the operating elements were hit, but air-ground coordination suffered everywhere and was totally ineffective in at least three of the NATO corps.

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(U) Within the Army part of the second echelon attack system the chemical attack was less disruptive, but the capability was so marginal that the surviving system was not effective. The Army was fielding a new target acquisition system that searched for movement far beyond the area of contact, but the Army weapons to strike hard, moving targets were just beginning to arrive in the field by 1990. When a second echelon target was located by an Army surveillance system, the badly damaged joint interface system had to be used to put the target in the hands of a damaged Air Force command and control system which would call on an already over committed tactical Air Force system to launch the attack. And, to complicate the picture, the Air Force system for suppression of air defenses had been badly damaged also.

(U) The Second Echelon attack system was rendered almost ineffective by the massive chemical agent attack. Intelligence processing and command and control were at a low efficiency. Joint interface broke down as all echelons became engrossed with immediate problems. Sorties to strike second echelon targets were at a premium and effective Army missile warheads were not yet in the field. In effect, chemical munitions assured a disruption of the "deep-attack" capabilities while simultaneously reducing requirements for conventional munitions and for accuracy of delivery.

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G.8.1 MAIN COMMAND POST (MCP) 3d ARMORED DIVISION

(U) After moving to the General Defense Plan (GDP) defensive positions on M-day and prior to the beginning of hostilities on D-day the 3d AD Main Command Post (MCP) had displaced at least once every 48 hours. It had occupied its current dispersed locations in and near small villages about 40 kilometers west of the Fulda River during the hours of darkness on D-1. To enhance continuity of operations and to reduce vulnerability of personnel at the main CP, the chief of staff had directed that personnel on the off-duty shift be billeted and fed at a location about 4 kilometers from the MCP. This would provide a staff nucleus to continue operations even if the MCP and its personnel were destroyed.

(U) At the time of the chemical attack at H+16 the MCP, which had been in position about 24 hours, had been located and targeted and had been doused with a combination of persistent, semi-persistent and non-persistent agents. At that time there were about 125 personnel in the immediate vicinity of the MCP in various stages of protection against chemical attack. The situation during and just after the chemical strike is described below by major elements within the MCP, the tactical operations center (TOC), message center, communications center and administrative area - mess, medics, and security. (See Figure G-2)

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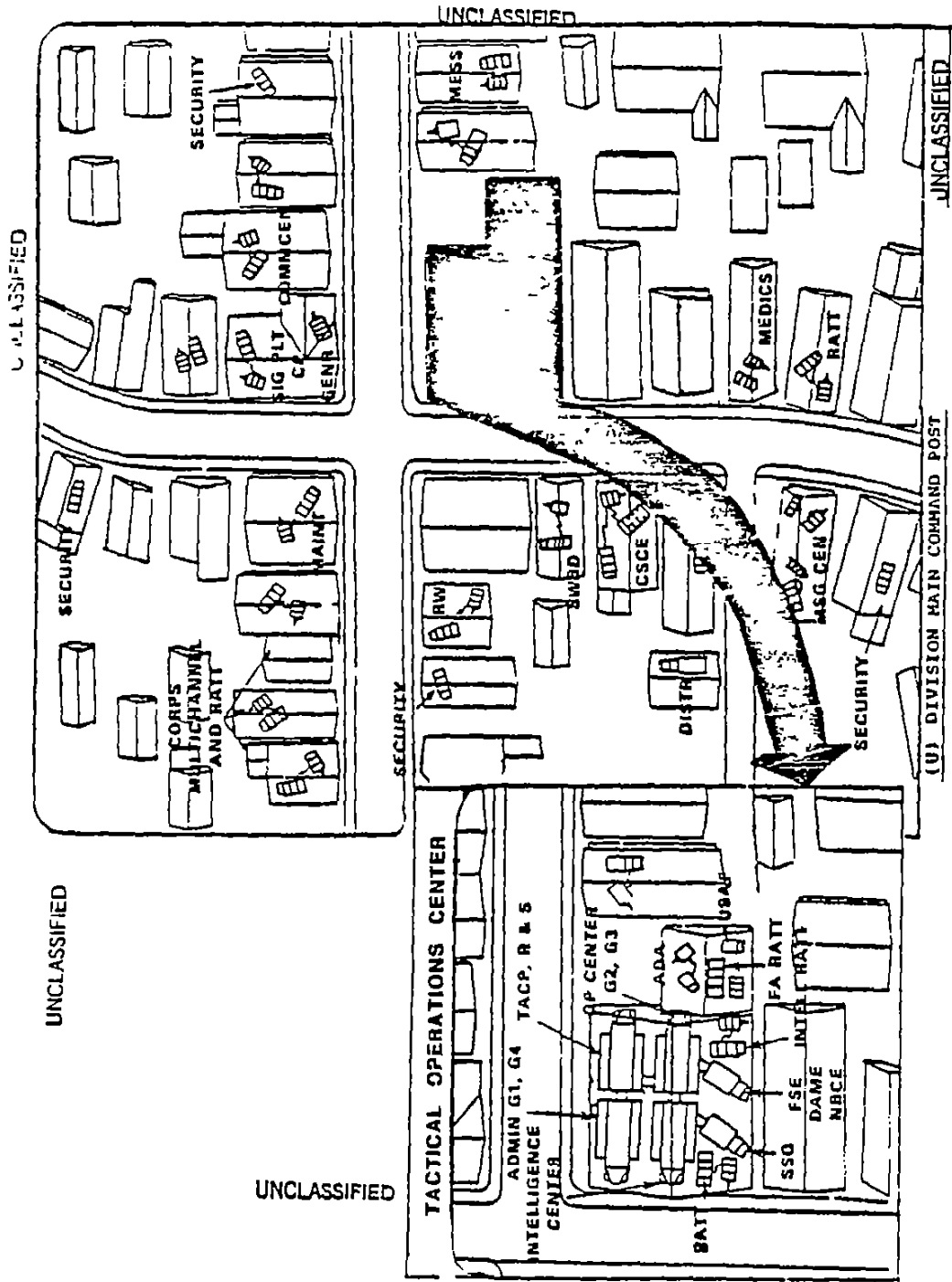


FIGURE G-2 (U) DIVISION MAIN COMMAND POST

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- Tactical Operations Center (TOC)

(U) The tactical operations center, the nerve center of all division operations, except for those functions performed on a limited basis at the division forward tactical command post (CF), contained 4 large expandable vans and 8 to 10 small commo shelters and crucks. By 1990, the production of the hybrid collective overpressure shelter system for use in vehicles, like the expandable vans, was well underway, but the 3d AD had received only 2 such shelters with the remainder due in during the following 18 months. These two hybrid vans were used by the operations center (G2/G3) and the all-source intelligence center. When persistent nerve agent rained on the TOC, the chemical alarms were activated in the Signal PLT CP area. Personnel in the operations center (OP) van and the intelligence vans were totally protected and were warned by a local telephone call from the message center some 5 minutes after the strike. Until the telephone warning they were unaware of the attack since they could see nothing and hear little inside the sealed van. However, other elements within the TOC were not so fortunate. On-duty personnel in the other 2 expandable vans as well as personnel in the 8 to 10 commo shelters bore the full brunt of the chemicals. None was wearing a mask since this interfered with their duties - operating a radio/telephone or monitoring intelligence down-link terminal devices. And none could hear the alarm even if in time because of the shelter construction - lightproof and soundproof. But the ventilation system brought in the deadly odorless and colorless agent and all these personnel were immediately incapacitated. Immediate result - personnel in the OP center and the intelligence center were unharmed but with the operations in the surrounding shelters dead their supporting operations to those 2 vans ceased functioning as support to these 2 vans gradually deteriorated and personnel in these 2 vans were reluctant to step outside and investigate realizing that the probability of subsequent inside contamination was high. Approximately 30 of 50 personnel in the TOC area were casualties.

- Message Center and Switchboard

(U) These functions had been moved inside the small buildings in the village. Although some of the troops were immediate casualties as the first wave of aerosols and vapor clouds arrived the chemical alarm warned others who quickly shouted "Gas!", and donned

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their masks. Those inside were protected from the persistent agents. However, some of those outside wearing masks failed to put on gloves and were contaminated and required immediate medical treatment. Of the approximately 25 personnel working in the company, 6 were immediate casualties (dead or had to be collected and later evacuated medically) and 3 others were treated locally and remained on duty. The message center/switchboard had suffered a blow but it could still operate though at a reduced level of efficiency, particularly since some of those personnel unharmed by chemicals were in various degrees of shock and most would not remove their mask which further lowered their efficiency.

- Division and Corps Communications Center (COM CTR)

(U) The impact on these communications centers was less severe than on the TOC but worse than the fate of the message center. The leaders in the CTRs were alerted by the alarm and immediately shouted "Gas!", donned their masks and gloves and moved to warn and check their personnel. The chemicals had already created casualties among the scattered personnel (those operating in communications shelters, as in the TOC area, could not hear the alarms or warnings). However, because of the quick action of the small unit leaders, several were reached and received injections in time to save their lives although they would require evacuation to medical facilities. Immediate result - 22 casualties among the 40 personnel on duty, shaken morale, jittery and tense troops. Some of the survivors were psychological casualties as they worried about the possibility of potential personal contamination and delayed effects.

- Administrative Area - Mess and Medical

(U) Because non-essential personnel and those not on the duty shift were at off-duty billet site (4 km away) only 10 persons were on duty in these areas. They were on the edge of the CP and received the vapor cloud last. Because they heard the alarm and donned their masks and remained inside, none were casualties.

(U) The net result on the division command post immediately after the chemical attack was about 50% casualties and a great reduction in combat capability. But since the chief of staff had planned ahead and moved the off-duty shift out of danger, considering personnel only he could reconstitute the operational capability within an hour or two. However, the problem

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presented by having a majority of vehicles, vans, shelters and other expensive equipment covered with a persistent chemical agent was a problem of a much larger magnitude. Equipment redundancy within the division headquarters did not exist. It would require several days of surveying, planning, assembling resources in people and equipment, and conducting decontamination activities to restore any semblance of the pre-strike capability. The division commander and his G2 and G3, who were at the tactical CP at the time of the strike and therefore unharmed, would retain a limited command capability. But the staff agency resources at division main - all-source intelligence center and its highly skilled experts, intelligence data links and interfacing equipment, the SIGMA Network with its impressive data storage, manipulation and passage capacity, to name a few - would be greatly degraded or missing entirely during the critical period of the battle - D+1 and the days thereafter. This would be an immeasurable handicap to the commander and together with the cumulative negative effects of the chemical strike throughout the division area, some of which have been described in detail earlier, could prove fatal to the division and perhaps to the defense of Europe.

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G.8.2 THE HIGHER HEADQUARTERS

(U) The dawn of day May 13, 1990, started in a typical fashion at Patch Barracks near Stuttgart. The light was just beginning to make the post visible; there was a typical German ground fog hugging the sidewalks and roads. The little collection of old German barracks, converted to staff function for the military headquarters, seemed almost to be a Bavarian village. In the midst of them but not much higher than the surrounding buildings was the European Command (EUCOM) Command Center - a key link in the United States command and control chain. Suddenly, at about 0415 hours, the calm of the full post was shattered by a series of tremendous explosions. In the smoke and dust enshrouding the post it could be seen that a good half of the command building had crumbled, the console from which all European command activities were run was buried under a mass of rubble and ceased to function. The wave of over-pressure was sufficient to shatter windows for a half mile around the headquarters building and to take down the part of the antenna tower which had been constructed only a decade before.

(U) Within two minutes of the first explosion there came a more muted, duller explosion, not as much damage appeared to accompany this one, but the results were more catastrophic. Unbeknownst to all of the personnel of the EUCOM headquarters and the families who lived at the post, a chemical cloud was now drifting over the Patch Barracks.

(U) In a second floor apartment, Major John Swift awakened at the first blast. Instinct led him to throw on his clothes in order to be of some help if there had been an explosion of a boiler or some other natural catastrophe. It was at that point that he heard the second explosion. The idea of gas crossed his mind, but only briefly. All the officers of the European Command had been fitted for gas masks, but they were locked up in a supply room somewhere. It had been arranged that they would be issued to key personnel in the event that Soviet use of chemical warfare became a possibility. However, there were no masks for Margot, his wife or for their two sons. All died within minutes.

(U) Down at the headquarters of the Stuttgart radio and television network, a telephone call was received. In impeccable German the network was told

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that there had been an explosion of a chemical warfare dump at Patch Barracks and that poison gas was at this moment drifting out over the Autobahn. The caller implored the television network to announce the fact of this explosion in order that traffic might be diverted from the area. At that point the caller hung up. The call was already too late. Fumes had drifted onto the Autobahn where it lay close to the command headquarters and automobiles were beginning to crash as drivers were affected and lost control of their vehicles. Within five minutes, the largest traffic jam ever seen in that area had developed. The dead, the dying and the still oncoming streams of vehicles assured that nothing was going to move on that road for a very long time.

(U) The Deputy Commander in Chief (DCINC) of the European Command does not live at Patch Barracks; he lives downtown near the palace of the Minister President of the state, about twenty minutes from the headquarters. At 4:19, his house was attacked by a small group of armed men equipped with automatic weapons and at least one RPG (Rocket Propelled Grenade). The military police guarding the DCINC's quarters, augmented in recent days because of the increased tension, were able to keep the small band from gaining access to the house, but the attack did prevent his departure for the office until ten o'clock that morning.

(U) Back at EUCOM the gas masks rested largely untouched in the supply room of the headquarters company of the garrison at Patch Barracks. The keys to the supply room were held by Sergeant 1st Class Schmidt. Sergeant Schmidt lived on the compound at Patch Barracks and should have been able to get to the supply room very quickly; unfortunately he had been among the first chemical casualties and had collapsed before getting more than forty feet from his house on the way to his office.

(U) Rescue efforts and an attempt to reconstruct the communications links were both badly hampered by a combination of the destruction from the large Soviet rocket which had hit the building and the persistence of the chemical agent which badly limited any effort to gain access to the area. It is true that a Brigadier General from U.S. Army Europe had been flying in an alternate command plane over the area, but his briefing book did not equip him with adequate information about what to do in the event of a chemical attack.

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(U) A similar scene occurred at NATO headquarters in Brussels, a headquarters which lies part way between the city and the commercial airport. However, the rocket which landed at 4:15 in Brussels was only high explosive. It took down the NATO antenna and severely damaged the NATO headquarters building which had never been hardened against any kind of attack. The damage to the building would have been enough to discourage activity at the headquarters, but Soviet special forces, SPETSNAZ, were also very active. None of the NATO ambassadors lived near the headquarters. All lived in locations that were accessible only through crowded and narrow streets. The Belgian authorities as early as 1978 had reported their belief that detachments of the SPETSNAZ were located in the city of Brussels, hidden among the many unemployed foreign workers. The report was correct; elements of the SPETSNAZ brigade aimed at the Benelux countries had, in fact, been deployed to Brussels many years before and were thoroughly familiar with the area. As each ambassador left his house to try to reach the NATO headquarters and deal with the crisis, each was taken under fire. All but four NATO ambassadors were assassinated before they could reach the building. The result of the two-pronged attack was to render the NATO headquarters almost inoperable during the first critical day of the Soviet and Warsaw Pact attack.

(U) At SHAPE, near the city of Mons, Belgium, the scene was repeated. At 4:15 in the morning there was, as at EUCOM, a blast which destroyed a good portion of the flimsy SHAPE headquarters building. It also knocked down some of the antennae. As in the case of EUCOM, the explosion was accompanied by other concussions which were duller and quieter. Once again, a persistent chemical began to spread over the area. Because of the increased tension during the preceding week, key elements of the SHAPE staff occupied the underground headquarters, known for years as Project 85. Because of the timing of the attack, only one-third of the battle staff was in position in Project 85. There they began to receive messages and handle the problems related with the many tasks awaiting the Supreme Commander, however, as gas was sucked into the ventilation system of Project 85, and one by one the members of the battle staff collapsed at their desks or consoles. Above ground, rescue work and work to restore communications came to a halt or were never initiated. Military personnel from some of the NATO countries had been issued chemical clothing and had it readily available, however, other NATO soldiers had not been issued any defensive clothing and equipment. Therefore, in contrast to EUCOM, some lived and some died.

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(U) As at EUCOM, the SPETSNAZ detachment appeared behind the Supreme Commander's quarters and launched their attack into the back of the compound. Belgian Gendarmes who guard the installation were oriented to prevent a truck bomb from crashing the front gate or to deal with a mass assault of a disgruntled mob, but the rugged hill behind the house had received only secondary attention even though there were a road and open fields on the plain high above and behind the house. Once again, the SPETSNAZ detachment was able to interfere with the schedule of the Supreme Commander. Police reinforcements were readily available and he was able to move from his house to the headquarters within two hours of the attack, although he ran a gauntlet of snipers along the road between his house and headquarters.

(U) The same sort of treatment awaited most of the senior SHAPE officials who lived apart from headquarters. Open attack by small groups of armed men was the rule rather than the exception and, as a result, the senior people of SHAPE were not at work for some time that day. However, the headquarters was functioning and operational, and since many of the messages had been prestocked and prewritten, the work of the headquarters continued and the duty officers overwatched the routine of direction to all SHAPE forces.

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G.9 COMBAT SERVICE SUPPORT

(U) The chemical munitions employed at H+16 and intermittently thereafter on CSS units resulted in 20% casualties among divisions trains. Because of the less efficient alert system performance normally found among CSS troops and because of often conflicting reports, units were in various MOPP configurations. Transportation units moving supplies and forward maintenance teams were often caught without masks and, although not directly located in an impact area, were casualties from drifting non-persistent agents. The 3rd Armored Division Materiel Management Center (MMC) came under persistent agent attack which rendered it non-operative for several days. Adjacent stocks of supplies were contaminated and, although this use of persistent agents was unusual in the Division area, traffic in and out of the location carried agents to uncontaminated areas, resulting in additional casualties for individuals who were wearing masks without their overgarments.

(U) Generally, except for the MMC equipment damage in the Division area CSS units was minimal. Work in all areas, however, was degraded due to wearing of protective clothing. The uncertainty of the kind of agents used and the timing of the attack resulted in confusion and ill-timed moves of units, which left behind supplies and equipment. Transportation units delivering supplies and equipment and using units coming back to obtain supplies had difficulty locating the supply points. Direct supply of repair parts broke down immediately as airfields became contaminated and flight operations ceased or planes were diverted. Obtaining additional protective clothing became a significant problem as the relocation and contamination of division and corps stocks began to impact on units' needs for replacement items. It was well into the second day of the WP offensive before order in the division areas CSS units could be partially restored.

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(U) The results on fixed installations at Corps and in the COMMZ were devastating. Earlier bomb, missile and rocket attacks had damaged supply and maintenance facilities, permitting chemical agents to be more effective as they penetrated more easily into the damaged CSS facilities. Although expedited movement of equipment from the POMCUS sites, such as Mannheim and Karlsruhe had been accomplished, the area was heavily contaminated, and, for a short-term, these facilities were useless for further equipment distribution or storage of incoming supplies.

(U) Giessen, Kaiserslautern, Mainz, Miesau - all the stockage and maintenance installations were affected to some extent by the use of persistent munitions. The communications-electronic repair facility at Pirmasens was a total loss. The clean rooms had been damaged and there was no way to decontaminate the electronic equipment that was under repair. None of these major logistic bases was over 50% effective for a week following the attack. Decontamination was time consuming, equipment was short, and even partial decon had to be done with care to assure that future contamination of agent-free areas would be minimal.

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G.9.1 PREPOSITIONED ORGANIZATIONAL MATERIEL CONFIGURED TO
UNIT SETS (POMCUS SITE)

(U) At a POMCUS site not too far from Karlsruhe, the Major commanding Combat Equipment Company Three (CEC 3) was pleased that all was going well in the frenzied issuing equipment sets from storage warehouses to combat units. When the M Day alerts came, he was fearful that his composite organization of about 250 personnel (1/3 American soldiers and the rest German civilians) would have trouble getting the job done because of civilian worker absenteeism. The whole Combat Equipment Group Europe (CEGE) with its battalions (a company at each of the twenty POMCUS sites) shared the same concern. But the German civilians had shown up and had the same dedication and pride in issuing the equipment as they had in maintaining it in top-notch condition. As the First Sergeant had so often said - even the Putzfrauen in this company want the equipment to be in top shape! However, the civilian workers were apprehensive about their families if a war started, especially when they were issued their chemical protective equipment and were checked out on MOPP procedures.

(U) Almost half of the seventeen warehouses of equipment had been issued to units since M Day. Today, a Tank Company was to be married up with their tanks and other equipment. The swing shift of soldiers and civilians were getting arrangements set for the tank company's arrival at 0830 hours. The Major had gotten up at first light and met his Operations Officer and First Sergeant soon thereafter at the warehouse where the workers were checking out M1E1 tanks for issue. About two warehouses would be emptied by nightfall.

(U) The day shift was due to start at 0800 hours and was all set to take care of the Tank Company. The Shift Office would orient the "tankers" on the procedures, break them down into work crews to fill the dry cell batteries and the 5 gallon fuel cans to start up the tanks and, finally, brief them on traffic flow to the assembly areas.

(U) The Major planned to attend the briefing after he checked out the warehouse preparations. At about 0530 hours, as he and the First Sergeant entered the first warehouse to be cleared, several explosions could be heard nearby. Both thought it might be an ammunition dump not too far from the site. As the First Sergeant raced to the telephone to try to find out what happened, he and the Major were blown down

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the side of the warehouse by an explosion at the far end. Stunned, but not injured, they could see through the smoke that the end of the corrugated building had been blown away and much of the metal roof torn off exposing the tanks and scattering some of the equipment. They suddenly realized that the war had begun. They also heard the whistle of planes and other bombs falling in the vicinity.

(U) The attack came and ended so quickly that it was hard to pin down what happened. Fortunately, there were only a handful of casualties and most destruction was to emptied warehouses. The remainder had been damaged and opened to the weather and no longer capable of being humidity controlled. After the wounded were evacuated, activities centered on getting ready for the Tank Company at 0830 hours. The day shift took over at 0200 hours and most German civilians did report for work but were worried about their families now that the war was on.

(U) At 0900 hours, the Tank Company work crews began prepping the tanks, cranking them up and driving them out of the ends of warehouses. The first group were lined up at the 5,000 gallon fuel tanks waiting to be topped off before moving to the assembly areas. It was an overcast gloomy day. The troops and German civilians had their MOPP gear on or nearby but were not wearing their masks. Suddenly, there was some whining in the sky and several cracking sounds as rainlike clouds descended on the POMCUS site with scattered liquid droplets and splashes of fine brown powder. At first, some thought it was a rain shower but some troops started to have difficulty breathing and seeing. Somebody yelled "Gas" which was rapidly sounded throughout the site. Masks were quickly put on but some began to feel the effects of what appeared to be nerve gas as they started to twitch and go into convulsions while losing control of their bodily functions. Chemical alarms brought out of the briefing shack sounded loudly when brought near some of the colorless liquid but was not affected by the light brownish powder, thought to be a toxic, which had gotten on some of the tank troops hands and faces, and was burning their skin. Some began using their atropine ampoules even though they were not casualties, and succumbed to atropine poisoning. In about 30 minutes, there were heavy casualties throughout the site. It was particularly severe among the German civilians and Combat Equipment Company troops. Some manned tanks had quickly buttoned up, saving the occupants, but not all pressured systems functioned since they hadn't yet been checked out. Much of the

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equipment in the open was splattered with chemicals. The tanks, vehicles, and support equipment in the warehouses were also heavily contaminated through the ruptures blown open earlier. Operations ceased. Some elements stayed inside the warehouses or in their vehicles; others moved out in panic, taking their contamination with them to the assembly areas. However, those in unhit portions of the site were mustered to evacuate casualties and begin decontamination. Tank company troops were in disarray with about 40% casualties, but the remainder were quickly organized to cope with recovery.

(U) The CEC 3 troop casualties were almost 50% while German civilians were even harder hit, reducing severely their ability to continue on with their task of operating the site and performing decontamination operations. The Tank company commander faced the decision of partially deconning and moving out to an uncontaminated area; moving out contaminated; or helping make the site operational again and finish equipping his unit. He decided on the latter. Both commanders advised their headquarters and were told to proceed.

(U) No significant equipment decontamination took place the remainder of the first day and that night except by individuals on themselves. Unfortunately, limited decontamination equipment was available at the site. Therefore, as work began the next day, fire hoses were hooked up to wash down equipment. M13 portable decontamination equipment was available, but there wasn't enough decon solution. The M14 decon system was also put into operation to clean the vehicles. Personnel had to work in full MOPP still in shock from the chemical attack.

(U) Leadership had not evaporated from the military units. Most of the night had been spent determining the extent of the damage, tending to casualties and regaining control. A Relief Team was to be sent to the site by combat Equipment Battalion East Headquarters to assist in recovery, but attacks on other POMCUS sites forestalled prompt help.

(U) As the Major commanding the Karlsruhe site and the Tank Company Commander struggled with their personnel to decontaminate enough equipment for the remaining tankers, orders came down to evacuate personnel from the site to a nearby uncontaminated area and reconstitute the respective units and await reinforcements. The surviving German civilians were

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told to return home and await further instructions.
Only essential security personnel were left to guard
the equipment at the site which ceased to be
operational awaiting decontamination.

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(U) Ammunition storage areas were attacked but with not too much effect. Convoys in for resupply had their loads contaminated, and there were personnel casualties, but the use of fire hoses already in place to washdown loads, to clear paths through contamination allowed the convoys to move ammunition out and forward. One problem which could not be solved was the persistent agent that had penetrated the tires and tarpaulins of the trucks. Even when washed off these trucks would carry agents into other areas that had been free from chemicals until time and weather caused a degradation of the absorbed agents.

(U) The Corps and COMMZ POL storage facilities were not attacked directly with chemical agents - more damage can be done with high explosive munitions. Where bladder farms were near other supply bases the problem of contamination arose but offered little problem to operators properly suited. However, spillage of POL caused accelerated deterioration of protective clothing and frequent changes resulted in an unforeseen strain on the clothing supply system. Persistent agents reacted on the bladders if they were not decontaminated within six hours, and large quantities of fuel began to be lost through leakage. Contaminated POL caused maintenance repair units difficulty as engine and body components were contaminated by the fuel systems.

(U) It was especially difficult to maintain contact with forward maintenance and supply teams and almost impossible to find out where convoys and individual trucks from transportation units were located. It was not surprising that drivers would leave their vehicles or that the units failed to pick up loads not contaminated because of the fear of contamination. For a period of at least two days after the attack NATO forces did not know what had occurred to the transportation network, and the lack of communication prevented putting supplies at proper locations. Some type of simple radio communication was needed for convoys and between teams and their parent units.

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(U) A major problem from the first use of chemicals was the impact on Host Nation Support. US forces rely heavily on Host Nation civilian workers for most of the labor intensive and many of the more skilled functions associated with the combat service support of our forces, and these civilians simply lack the training, preparation or discipline needed to function effectively in a chemical environment. Many civilian workers simply ran away in the early hours of the chemical attack. Many others were casualties - beyond the numbers that would be lost if all were trained military personnel - and Host Nation Support almost ceased in any area in which chemical agents appeared.

(U) Because ground transportation was at a premium, helicopter logistics lift was needed to move critical supplies forward and to retrograde equipment and carry casualties. Operation of forward area arming and refueling points (FARRP) was a problem, and their constant relocation slowed operations as pilots and the CSS system could not keep track of their positions.

(U) Corps ammunition supply points (ASP) were able to survive, but they issued dirty ammunition. They were in full operation, but their storage pads were not covered with any type of tarpaulin, their vehicles were contaminated, and the work areas were contaminated. Because of the necessity to move the ammunition, it was essential that only the minimum decon procedures be attempted and that the convoys and resupply trucks move anyway, counting on weathering to reduce the agent effect before they reached their destinations.

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G.9.2 AMMUNITION SUPPLY POINT (ASP) 3J AT FRIEDBERG

(U) Excerpts from the operations sergeant's log at an ASP notes the following:

- 2130 15 May - 3J hit with several incoming rounds of gas. Casualties heavy. Rain-like contamination from some kind of liquid. All hell broke loose.
- 0300 16 May - Still mass confusion. Lost control of unit drivers; some bugged out with contaminated loads but clean pads starting to load out again. Started decon.
- 0600 16 May - Decon on trucks/pads and forklifts still going on. Slow business - men beat working in gear.
- 0640 16 May - Hit again. Convoys stocked up - need to go someplace and change my suit.

(U) The cryptic comments from an NCO's viewpoint at ASP 3J just gave a glimpse of the problem. This was pieced together about a week later. By then it really didn't matter since the area in which 3J had been located had been overrun by the WP forces. Whether by design or accident the ASP initially was struck by several SS-21 missiles carrying thickened GD. This was not readily apparent at night since detector paper could not be read in the dark. Although the Automatic Chemical Agent alarm had been put out at simple alert and the trucks in for ammunition had some, not all worked in time to prevent casualties; several dozen trucks were inside the storage area when the attack began - some from artillery units and some from division ATP. The drivers were in various stages of protective dress from MOPP 1 to MOPP 4. The same applied to the ammo "humpers". Both the Labor Service and the U.S. personnel had protective equipment but loading the projectiles and pallets with wreckers and cranes in MOPP 4 was difficult. Maneuvering the forklifts and unhooking slings with gloves and masks on in semi-blackout conditions slowed operations up considerably. Besides, there already had been several false alarms where nothing had happened, so the atmosphere was one of relaxed vigilance. After all, their jobs were to move ammunition and quickly. With communication difficult with masks on, with impatient drivers demanding faster loading, and with the recent frantic pace of operations it was not surprising that the ASP operation was not totally prepared when the attack began - and then everything stopped.

(U) It took about six hours to get an estimate of what had happened and to regroup the trucks and the

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workforce and begin operations. Not all of the ASP had been contaminated but time consuming surveillance was required to prove this. Operations started up in clear areas first but, unfortunately, even the clean areas became contaminated since the trucks moved in for loading from contaminated areas. No real decon could be done for contaminated ammunition. The DS2 decontaminating agent took off paint and identifying markings so the ammo pallets and truck beds were sprayed with water to give at least partial decontamination. The area became muddy and vehicles moving around splashing with contaminated water caused concern and slowed down operations. It took a while to get the decon solution and equipment in operation but the Sanator did a great job on the forklifts and cranes. Not much effort was expended until daylight, and even then there was no way the contaminant in the lubricated parts of the ammo equipment could be taken care of by decon solution; it had to weather away.

(U) The ammunition in the igloos was still ready for issue although it was sometimes handled by contaminated equipment and put on contaminated vehicles. Those rounds covered from the splashing GD by tarps were generally uncontaminated, but the time and care to clean off the covering took personnel who were already overworked.

(U) Casualties of drivers and ammunition personnel was about 20%. Failure to don masks in time took the highest toll followed by improper covering. Those not affected had to check the trucks and working areas for casualties - time consuming and difficult from a control standpoint. Unfortunately, some personnel not affected panicked and gave themselves an antidote rendering them practically useless for that day. And, there were delayed casualties after 6 hours, some of which turned out to be psychological. Some vehicles weren't decontaminated until several hours after the first attack so that a residual vapor hazard remained - impacting on a few careless individuals.

(U) Survivors of ASP 3J related that due to shortage of personnel to operate the forklifts/cranes plus the casualties and exhaustion of those remaining that output was about 50% of what it should have been during that two-day period before evacuating. Several additional attacks during that period found them better prepared, but fatigue, some malfunctioning alarms, lack of protective clothing, and operating in only a partially decontaminated environment took its toll on operating effectiveness.

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(U) All support operations were hindered and efficiencies severely degraded. Casualties could not be replaced and the CSS system could not keep up with demand. Personnel working in protective clothing were hampered.

(U) Maintenance activities were almost impossible. Electronic test equipment still functioned and maintenance vans were generally "clean", but there was no way to keep them clean and continue to function. Although in some instances there were crude airlocks at the entrances vans, contaminated equipment contaminated the interiors whenever it was introduced. Suits and masks were needed by all workers and their efficiency deteriorated accordingly.

(U) In some instances the decision had to be made that repair of some fire control, optical devices, and C-E could not be accomplished. Replacement parts were clean but the repairman's gloves were contaminated and immediately contaminated the items being worked on. For this reason only major component replacement could be accomplished and the contamination of the interior of vehicles which previously had been considered clean effectively halted small item repairs. Inadequate decontamination apparatus slowed operations and prevented any NATO intermediate maintenance shops from being more than 25% effective.

(U) The policy of unit decontamination of equipment before retrograde had been in effect, but it was difficult to carry out and impossible to police. Contaminated equipment was evacuated from organizational to intermediate level maintenance facilities and even when it was not contaminated, receiving units feared to accept it as "clean".

(U) Perhaps the greatest difficulty was in evacuation of the wounded and in graves registration. Transportation was at a

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premium to move materiel and personnel forward, and the contamination of remains and the wounded complicated and delayed rearward movement, and thereby further reduced the efficiency of subsequent forward movement. In general units were unprepared for these problems and the situation was not well handled. Units that had practiced the buddy system and had practiced evacuation, from the aid man to the battalion aid station to the clearing station did better. Even then the contamination problem was unsolved. Clean vehicles and helicopters became contaminated. In battle the handling of wounded and the dead was complicated enough without expecting an individual rifleman to decontaminate his friend before evacuating him.

(U) There was no time, or no effort made, to evacuate personal effects with the individual dead. This standard practice was completely overwhelmed by the magnitude of the casualty problem and the constant pressure exerted in the combat arena. The American Army was suddenly faced with a mass casualty problem it had not faced since some of the battles of the Civil War.

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G.9.3 COMBAT SUPPORT HOSPITAL

(U) The chemical attack at H+16 changed drastically medical operations at the 631st Combat Support Hospital located near Wiesbaden. Until then casualties, although many at times, were being processed and treated as they arrived from the division's clearing stations and corps stations. The only problem was enough transport, both ground and air, for evacuation. Some confusion had existed during the early hours of the attack as to whether chemicals had been used by the WP forces. It appeared that periodic use of smoke had produced the false alarms. But, even this action had its effect. It caused some soldiers to wrongly inject themselves with prophylaxis, causing incapacitation. It also produced a series of off-again-on-again alerts that slowed treatment and evacuation efforts (throughout the medical units). Even working in MOPP 1 and 2 was cumbersome and, unfortunately, the original alertness failed to be sustained as time went by and current operations occupied the unit's attention. The 631st CSH was not directly hit during the attack but during the simple and reinforced alerts preparedness actions had been taken. Defensive equipment and personal gear had been issued. Medical Unit Self-Contained Transportable (MUST) and other collective shelters had been erected. They felt they were ready, but the system as a whole couldn't take the influx of casualties.

(U) The first casualties were already enroute back in an ambulance just a few kilometers from the CSH. They were caught in a drifting vapor cloud from a persistent chemical attack on a logistics installation. Although the driver and medic had their masks with them, they weren't being worn. The vehicle alarm functioned, but the delay made them casualties barely able to make the 631st. Throughout the next few days the aerial and ground ambulance personnel took the highest casualties. Their vehicles and aircraft became contaminated and lack of personnel to move casualties caused breakdowns in the evacuation system.

(U) Communications to the divisions was garbled but it was clear that all medical echelons within the division were overwhelmed both from a treatment and evacuation standpoint. The corps medical brigade provided maximum movement from the division clearing stations to the 631st, but it was still inadequate. With some units on the FLOT experiencing 60% chemical casualties during a very short period of time it was necessary to evacuate directly to the CSH, bypassing either the battalion's aid stations or the clearing

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stations. Although the majority of the casualties were from non-persistent agents, some divisions and corps forward units had undergone attack by persistent nerve agents. In the initial confusion that ensued this was not clear and detection was not adequate or not employed.

(U) Thus, ground ambulances drove through contaminated areas back to the 631st. They also brought back casualties that had not been decontaminated at the forward areas. Aerial ambulances, through lack of communications received both contaminated and decontaminated patients. The clearing stations also received both types of casualties and factors of time, personnel and equipment did not permit the required decon or triage to be accomplished.

(U) This mixed array of casualties certainly complicated operations at the 631st. Although chemical casualties from the divisions were initially slow in arriving, the hard-hit rear logistical units were sending casualties by whatever transport they could obtain - much of it was contaminated - bringing to the "clean" CSH the chemical hazard. Little decon of personnel or equipment was accomplished at the originating unit and it was left up to the CSH personnel to do this - if it was to be done at all. They had had neither the personnel nor equipment to undertake this effort plus accomplish their regular tasks. The 631st soon became bogged down in segregating the chemical and non-chemical casualties into the areas previously established for that purpose. But the flow was staggering and working in the appropriate MOPP decontaminating.

(U) The reduction in the availability of aerial and ground ambulances either from lack of personnel resources or contamination seriously affected medical evacuation, increasing lethality among casualties. Help from the civilian communities for transport was not encouraging - they had their own needs. Nor could we expect medical help for they too had casualties to assist and, in fact, the local populace had to be turned away from the 631st.

(U) Personnel shortages began to affect the performance of the 631st. Due to losses of skilled medical personnel in the divisions, the unit had sent personnel forward. In addition, the need to perform expanded triage, decon personnel and equipment and get rid of contaminated gear while working in various MOPP

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slowed medical operations. The problem of unloading casualties without always knowing the extent of contamination demanded that the CSH personnel involved be in a high degree of MOPP at all times. The decon operations created special problems; using DS2 damaged the interiors of the ambulances, especially the helicopters. So partial decon had to be the answer. This was especially true when considering the great need for evacuation means.

(U) The problem did not lessen. After the initial chemical attack, conventional casualties continued to tax an already deficient evacuation system. Additional chemical attacks, especially of the persistent variety, kept the casualty flow heavy. Heat stress among hospital personnel took its toll. Other problems beset the 631st. Keeping the collective shelters contamination free was a problem and at times the efforts failed; diagnosis under individual protective equipment both from a patient and medic standpoint was difficult; the lack of adequate resuscitation gear during evacuation caused added casualties; and, treatment of individuals with both conventional and chemical wounds was often impossible. Several physicians became chemical casualties when contaminated by patients thought chemical-free. This intensified efforts to decontaminate all casualties, adding to the severe medical burden. Shortages began to develop in decon solution, in patient wraps, in protective clothing and MOPP gear and inevitably evacuation assets. The CSH, faced with a shortage of transportation personnel and equipment, did well to operate at 50% effectiveness during the D to D+5 period - but this was better than the even smaller success of the Divisions medical units.

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(U) Although the CSS effort was degraded and erratic until daylight on D+1, decontamination units were contacted and began functioning. The problem was lack of units and equipment. Host nation decon units and equipment added greatly to the capability in Corps rear areas and the COMMZ. Initially partial decon was all that could be accomplished, even at fixed installations as attempts were made to get supplies and equipment ready for use. The DS2 decon solution damaged equipment stocks. The German decon solution, which was superior to U.S., was available and used, but electrical equipment was damaged and when it was sprayed inside engine compartments and turrets it also caused damage.

(U) Collective protection equipment for combat vehicles worked very well, and crews were, for the most part, safe. The modified M1 tanks and Bradleys were in good shape. Even some of the combat service support vehicles had collective protection equipment. More sealed vehicles (vans) or inflatable room liners were needed as shelters for command posts, medical units, maintenance units and more of the combat troops to reduce casualties both from chemical agents and the necessity to work for long periods in full protective gear.

G.10 ARMY AVIATION

(U) Army aviation fared better under the chemical attack than did most of the ground units. Even so, the impact was shocking. Approximately 35% of the fixed aviation bases and about 10% of the expedient unimproved airstrips were struck during the initial chemical assault. The lack of warning meant that 30-40% of the personnel on these bases, both aviators and ground support personnel, were immediate casualties. Aircraft and ground support equipment that had been doused with persistent liquid agent had to be decontaminated and this required much of the subsequent two days to accomplish. In several instances

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decontamination efforts by personnel not properly trained resulted in useless equipment, particularly in communication and navigation items. Aircraft that were airborne and away from bases at the time of the attack had to be diverted to other "clean" bases. Degradation of the operational capability of the fixed wing aircraft because of casualties and contamination was exacerbated by the confusion among surviving personnel attempting to locate, confirm and land on clean airbases, identify surviving personnel and usable equipment from the original base (now-contaminated) and reorganize. Achieving even a degraded aviation unit capability required two to three days and was accomplished in spite of a complete breakdown of the coordination essential to both unit (AVUM) and intermediate (AViM) maintenance.

(U) The rotary wing assets of the divisional aviation battalions and separate corps companies were less adversely affected by the chemical attack because they were either airborne or were operating from dispersed and well-concealed tactical field sites. About 10% of these field sites were discovered, targeted and chemically attacked, and about 20% of the personnel were immediate casualties because of being unmasked or masked with a faulty mask/poor fit. Some helicopters and ground support equipment were contaminated with persistent agents, requiring decontamination. Casualties among flying aircrews, which resulted in crashes and losses of aircraft, were caused as a result of flying through a cloud of poisonous gas or landing in a contaminated area in aircraft (Cobra and AH64 tank killers) which had no installed chemical agent warning devices. Fortunately, only a small percentage of these aircraft were casualties during the initial chemical assault. A general warning notice was broadcast immediately and thereafter aircrews wore masks when flying at low altitudes. Enemy tank engagement actions suffered, however, as the mask/eyepiece - weapons/sight interface problem affected pilots and gunners.

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G.10.1 FORWARD AREA REARMING AND REFUELING POINT (FARRP)

(U) After deploying to their General Defense Plan (GDP) field positions on M-day, the attack helicopter companies of the 503d Aviation Battalion Combat (ABC) established two FARRPs in the rear area of each of the forward brigades. These FARRPs were displaced frequently prior to the outbreak of hostilities on D-day to attempt to hide their locations.

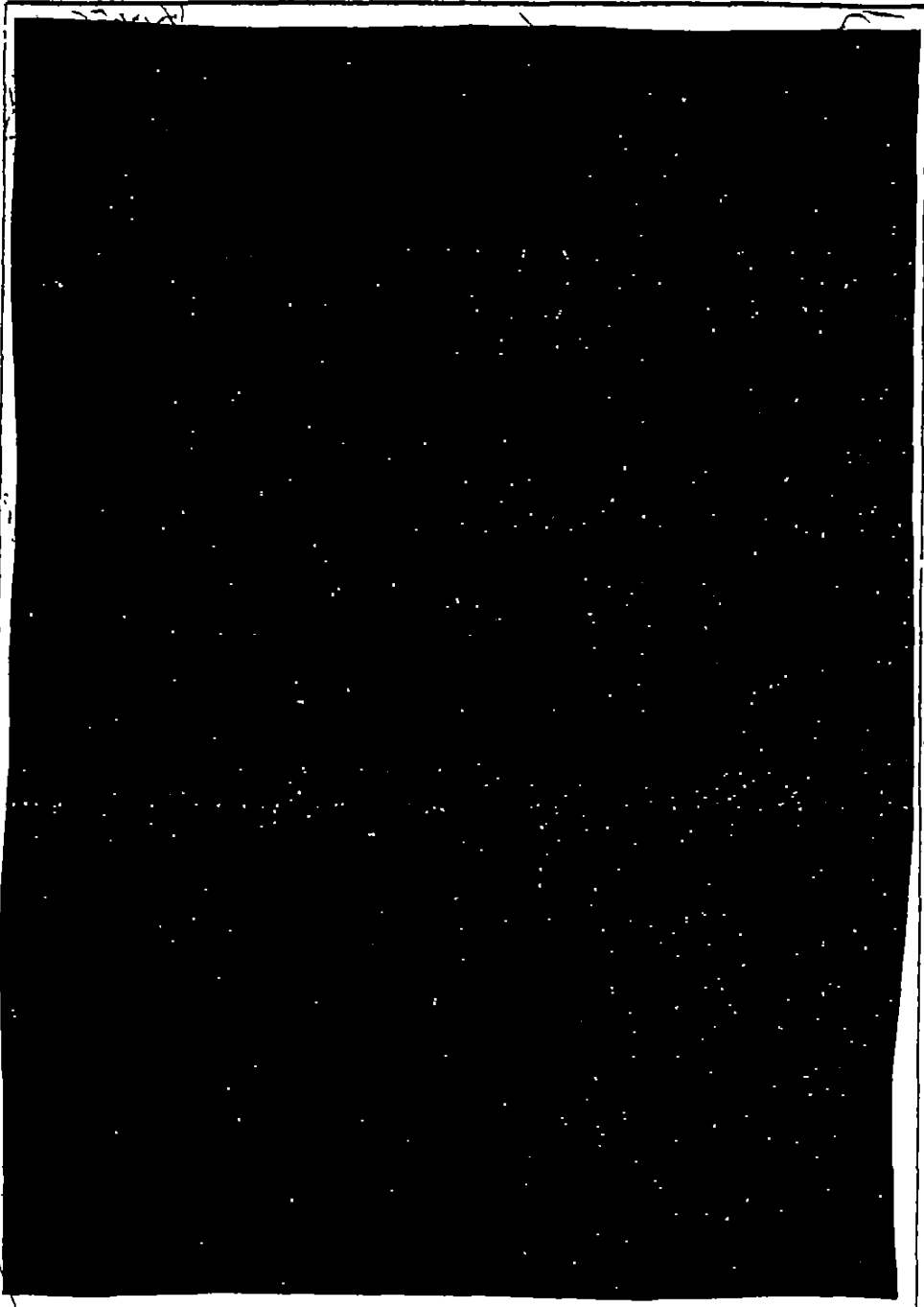
(U) Shortly after the enemy crossed the border on E-day the FARRP located in the southern part of the 1st Brigade sector, established by A Company 503d ABC, displaced to a new location a few kilometers southwest. The other FARRP, also established by A Company, about 15 kilometers to the northeast, and about 25 kilometers west of the Fulda River, had displaced to its current location during the hours of darkness on D-1. At the time of attack it had established eight rearm and refuel points just outside a woodline stretching over a distance of about 400 meters. (See Figure G-3)

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FIGURE G-3 (U) ORGANIZATION OF A FARRP

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(U) With the eruption of fighting at the border on D-day activity all day at the FARRP was very brisk. Helicopters - attack, scout and command and control - were a critical element in the covering force battle. Word that chemicals had been used on Allied airfields in the rear had been passed to the FARRP personnel early that morning by pilots monitoring the air warning net. As a result, everyone at the FARRP checked to be sure their protective clothing was worn and that masks, gloves and boots were immediately available. As the cool morning passed into the warm afternoon the exertion created by servicing the constant stream of helicopters caused many of the FARRP personnel to open their protective suit jackets at the neck.

(U) By H+16 FARRP personnel were becoming very tired and groggy from many hours of hard work handling ammunition and fuel. Because of the constant demands all day for arming and refueling the helicopters, the planned displacement of the FARRP was delayed, tentatively until sometime around 2230 hours. Unfortunately, the heavy helicopter activity near the FARRP location had also tipped the enemy that an installation of some importance existed there.

(U) Consequently, when the enemy launched his chemical attack the FARRP was not spared. When a low flying enemy aircraft released a chemical bomb, the cloud and rain-like spray from the detonation caught many of the 25 or so tired FARRP personnel not wearing their protective masks and gloves. The cloud quickly diffused and covered the area almost instantly. Those men servicing aircraft immediately panicked as they saw others begin to choke, cough and collapse. Of the 5 aircraft that were on the ground at the time none of the crews were masked. Two of the aircraft, whose crews had remained aboard with engines running while refueling, immediately took off; one escaped unharmed but the other crashed on take-off as the pilot went into convulsions. The crews of the other 3 aircraft had dismounted and were mingling among the FARRP personnel and so shared their fate. Over 60% of the personnel died from the chemicals, some immediately, others later because they panicked and failed to inject themselves with their atropine shots or the shots were administered too late or were ineffective. As there were no first aid men or other medical personnel present, no one was confident as to what should be done.

(U) With the loss of personnel and the shock present among those remaining, the operation of the FARRP came to a standstill. Even after the chemical

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alarms indicated that danger from contamination no longer existed (apparently the enemy had used a non-persistent agent) personnel were hesitant to unmask. Communications with company headquarters (A Company) was finally established via an on-board radio of one of the helicopters. Because of the cumulative impact of the chemical attack throughout the division area personnel alive and in some shock at the FARRP, received no assistance from their parent aviation battalion, the 503d ABC, until after daylight the following morning.

(U) Due to the loss of personnel, A Company 503d ABC could man only one FARRP in the brigade area for the next few days. The aviation effort, already crippled from normal combat losses and the initial chemical attack, were degraded to a critical stage because of the added flight time and waiting in line for service at the FARRP caused by the 50% loss of rearming and refueling capability. Psychologically the few men that normally operated each FARRP were anxious and fearful of another chemical attack since it had occurred without warning. Realistically future chemical attacks on FARRPs would degrade the already critical FARRP capability to a level of ineffectiveness.

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G.11 A US RETALIATORY CHEMICAL ATTACK

(U) Immediately after the Red chemical attack, and in response to the field commander's requests, the US National Command Authority considered options available to overcome the severe disadvantage under which the NATO forces were now operating. The use of chemicals would force the wearing of protective gear for extended periods of time. Efficiency was already low at airfields, ports and rear areas, and the medical system was clogged with casualties from the chemical agents. But, there was some hope that the one-sided enemy advantage could be overcome without resorting to nuclear weapons by a retaliatory chemical strike. The limited capability was recognized clearly, but defeat or the risk of nuclear escalation were the only other alternatives. For this reason an early decision was reached to launch the best chemical strike possible in the hope of causing the Red forces to discontinue their use of chemicals.

(U) At H+42 (2215 hours of D+1) the 1st GTA OMG, which had passed through the 27th MRD after crossing the Fulda River, was pausing at Alsfeld to refuel and replenish ammunition preparatory to resuming the attack at toward Frankfurt. It had made a complete penetration and its forward elements were no longer in contact with organized V Corps combat forces. The 5th and 6th Guards Tank Divisions had advanced but not as rapidly. Forward elements were crossing the Vogelsberg, the initial objective of the 1st GTA, and were beginning to run into the V Corps intermediate barrier, key portions of which had been put into place during the six days prior to D-day. The intermediate barrier provided a line behind which 3rd Armored and 8th Mechanized Division forces could rally. Sixty percent of the 8-inch and 155mm artillery batteries were intact behind the barrier. By H+42 they had drawn chemical munitions and were prepared to fire the 20-minute

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"chemical pulse" planned in the V Corps Chemical Retaliatory Plan. Non-persistent chemical rounds were fired on the first echelon attacking regiments from the assault line to a depth of two kilometers. Regimental artillery groups, regimental command posts and forward logistics units were included in the target areas. Persistent agent rounds were fired beyond two kilometers to the maximum range of the weapons on all located or suspected second echelon regiments, air defense batteries, division command posts and ammunition and fuel trains.

(U) The effect of the chemical pulse was to delay the attack of the 5th and 6th GTDs. Casualties were high in the first echelon regiments since troops were not in full protective gear, being guilty of the same complacency that had affected the NATO forces the day before. Darkness added to the confusion. Persistent agents contaminated supplies in the rear services areas. Command and control at division level was lost as division command posts were saturated with VX. By dawn, however, the well-trained chemical troops of the division were already engaged in the decontamination of combat vehicles, ammunition and fuel. Chemical reconnaissance parties were determining the extent of the contaminated areas. Command and control was re-established in eight hours and survivors of the attack, now in full protective gear, prepared to continue operations.

(U) The OMG having already passed through the forward defense line was unscathed by the retaliatory attack. It continued advancing toward Frankfurt on schedule. Because of the threat posed by the OMG, the 3rd Armored and 8th Mechanized Divisions could not mount offensive actions to exploit the confusion of the chemical attack on the 5th and 6th GTDs, and the lack of any quantity of chemical munitions prevented the US forces from continuing any more than harassing use of these agents on the forces in contact. The 5th and 6th GTDs and other

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WARPACT forces operated in their protective gear for a few days, but soon learned that if they were beyond artillery range or had bypassed US forces, they had no need to fear any use of chemicals. The chemical "pulse" was of little concern to the high command of the Warsaw Pact.

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(U) SITUATION V CORPS, 16 MAY

NOTE: (U) The author of the following narrative was not part of the Army team and was not familiar with the scenario developed by the Army writers. Therefore, it is inconsistent with the rest of the Army scenario. Nevertheless, he portrays vividly a very possible situation in the V Corps sector and has been retained in the report as another sample of the impact of chemical warfare.

(U) The Soviet (Warsaw Pact) offensive had been underway for three and one-half (3½) days. Major penetrations occurred in the sectors of the Belgian, Dutch and British Corps. Soviet tank and mechanized forces have entered Hamburg, Hannover, and the Ruhr and smaller elements - Operational Maneuver Groups (OMGs) - have penetrated at a number of points along the front. U.S. VII and German II Corps have given ground to a line at Nurnburg.

(U) No nuclear weapons have been employed, and NATO members are split on the issue of nuclear release. The FRG is opposed - Northern Germany has been deeply penetrated and tactical nuclear weapons would fall on the German populace.

(U) Chemical weapons have been concentrated against NATO airfields and port facilities as well as air defense sites and the five elements of the tactical air control system. POMCUS sites and nuclear storage areas have been attacked and re-attacked with persistent chemicals by air and missile delivery systems.

(U) Chemical attacks have been mounted selectively against maneuver and fire support units and against NATO C³I in all areas of main effort, combined with radio electronic combat. The control of NATO forces has been seriously degraded.

Situation in U.S. V Corps

(U) The 4th Mech Division has joined 3rd Armored and 8th Mech. The major enemy thrust has been along the axis of the Autobahn toward Giessen. The front line runs from Alsfeld on the North to the Haune River near Hersfeld to Fulda and is anchored on the south in the high ground of the Hohe Rhon. A brigade sized OMG has slipped through to Schluctern but has been engaged there by a detached brigade of 4th Mech.

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(U) The 5th Guards Tank Army has committed all of its 5 divisions against V Corps.

(U) The 3rd Shock Army is now passing the Thuringer Wald south of Erfurt in the direction of Bad Hersfeld Hunsfeld. Leading elements have reached the old zonal boundary.

(U) The 3rd AD is at 60% fighting strength - 8th ID (Mech) at 70% and 4th ID (Mech) at 60% with one brigade at Schluctern and one brigade recovering from a counterattack vic Schlitz, while the 3rd Brigade has been attached to the 3rd AD. The enemy has used non-persistent chemicals against 3rd AD along the main axis of his attack but has given 8th ID (Mech) a heavy seeding of persistent chemicals in an apparent effort to tie it down in place.

(U) At 0600 hours D+3 the V Corps commander issued the following concept as the basis for corps operations on D+4 and D+5.

(U) "3rd AD reinforced by one brigade of 4th ID (Mech) will hold in sector on a NS line through Zell (10 kms west of Alsfeld). 8th ID (Mech) will hold the line Hunsfeld to Bruckenau. 8th ID Mech will release one brigade of 2 Tank and 1 Mech Bns to 4th ID Mech via Lauterbach by 0700 on D+4. 4th ID Mech with two brigades and the 11th ACR will attack NLT 1200 D+4 on the axis of Lauterbach - Alsfeld and destroy all enemy forces in the vicinity of Alsfeld, blocking the Autobahn and defending the NE. Simultaneously with that attack 3rd AD will attack on order after 1200 hours D+4 simultaneously with 4th ID and will destroy all enemy forces west of Alsfeld. All available attack aircraft and long-range missiles will be targeted against the oncoming 3rd Shock Army to prevent the first echelon divisions of that Army from crossing the line of the Haune River before dark on D+5."

Situation in the V Corps on D+3 and D+4.

(U) Commander V Corps meets with his staff in the TOC VIC Budingon at 2200.

(U) Corp Commander - "I have just returned from 3rd AD. They have a strong brigade astride the Autobahn in the vicinity of Zell about 10 kms west of Alsfeld. Two very much weaker brigades are operating on either flank out to the division boundaries. A 3-battalion brigade of 4th ID is attached and in reserve west of Zell. The Soviet Tank Division which worked around Alsfeld ran out of steam when it reached

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Zell. 3rd AD estimated that this division has lost 50 to 60% of its tanks. Some kind of reconnaissance or OMG element, however, slipped through and is apparently heading for Giessen. 3rd AD has sent the air attack brigade after it - (remnants of an air cav. squadron and one attack helicopter company).

(U) "A second echelon enemy tank division of the 5 GTA is in the vicinity of Alsfeld - is stopped for the moment. A third division, a motorized rifle division, is just west of Bad Hersfeld. It was largely destroyed in the initial battle.

(U) "As you know, another enemy army is headed our way. The first echelon divisions of that army are apparently headed for Bad Hersfeld and Hunsfeld/Schlitz. Leading elements are near the zonal boundary. The remainder of the force is strung out back through the passes in the Thuringer Wald.

(U) "This morning I issued my concept and preliminary orders for the next phase of operations. The heart of that concept is to destroy the enemy force in front of 3rd AD before the new army arrives. We will do that by delaying the 3rd Shock Army east of the Haune until we have destroyed the 5th Guards Tank Army in the vicinity of Alsfeld by counterattack from Lauterbach by the 4th ID(-) and from Zell by 3rd AD. Those attacks must get off no later than 1200 tomorrow. The leading tank divisions of 3rd Shock Army must be held east of the Haune at least until 1200 D+5 - preferably until 1800 D+5. G-2, what can you add to the enemy situation?"

(U) G-2 V Corps - "Sir, the enemy in front of 8 ID consists of a first echelon MRD which is now largely expended. No additional forces have been detected enroute to that sector. A small OMG element penetrated as far as Schluctern but it is now reduced to less than battalion strength.

(U) "The MRD which met the counterattack by 4th ID in the vicinity of Hunsfeld is now stationery - is at less than 50% strength and may be withdrawing. The immediate threat is the tank division in the vicinity of Alsfeld which has not been committed and is at 80% strength. It is expected to attack tonight or tomorrow before noon.

(U) "3rd Shock Army has 3 tank divisions and one MRD. It is the major breakthrough force now within reach of the main battle. Unless the movement of the Army can be delayed by interdiction it will arrive in the main battle area ready for combat with two tank divisions by tomorrow at about 1500 hours. Two more divisions will follow in 24 hours."

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(U) Corp Commander - "Thank you. What coverage do you have of 3rd Shock Army?"

(U) G-2 V Corps - "Coverage of Third Shock Army is provided to us from CENTAG and they receive their input from USAREUR AND USAFE Intelligence centers. The frequency and quality of that intelligence is clearly decreasing. I suspect that they have lost some airborne sensors to enemy action and we understand that most of the higher headquarters have been subjected to a variety of chemical attacks."



(U) "When the artillery covers the deep attack plan I will fill you in on the status of target processing. We are being hurt badly by chemical attack."

(U) V Corps Commander - "We haven't had any substantial chemical attacks in 3rd AD sector but 8 ID and 4th ID have been plastered. What is the pattern of their chemical attacks?"

(U) G-2 V Corps - "The initial chemical attacks were against airfields, nuclear storage sites and air defenses. As you will hear in a moment, these attacks have reduced air support by over 50%. Some of the major air bases are out of action."

(U) "Yesterday the chemical attacks were expanded to cover front line elements and C&I in primary sectors. 8th ID, for example, is up to its ears in persistent chemicals. It can hardly move. This headquarters has been spared up to now, probably because we moved and we have practiced very strict EMCON. We cannot expect to remain immune. 4th ID Hq has been hit as has 3rd AD Hq and DISCOM. 3rd AD Artillery Hq has somehow been spared. You will get a good rundown on this by the G-3, the artillery and the air. The chemical officer has a wrap-up and estimate."

(U) Corps Commander - "All right, G-3, how goes the preparation for tomorrow's counterattack?"

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(U) G-3 - "Not very well, General! We've got some problems; we may be forced to change our schedule, even our basic plan.

(U) "8th ID is trying to assemble 2nd Brigade south of Fulda and pass it south of the Vogelsberg enroute to Lauterbach. The trouble is that the chemical attacks around Fulda have nearly immobilized that Brigade and much of the rest of the division. All personnel are in MOPP-4. The division G-3 tells me that everything takes 3 or 4 times as long to accomplish, if it can be accomplished at all. The Mech battalion designated to join the 2nd Brigade is out of action. One company broke, ran, and is out of contact. The battalion Hq and battalion commander are out of communication with the brigade. The Bn S-3 is operating from a vehicle and is trying to reorganize and get moving. I do not believe that brigade will be in Lauterbach in time for a coordinated attack at noon tomorrow.

(U) "3rd Brigade 4th ID was hit with chemical attack as it disengaged from the counterattack near Hunsfeld. The brigade is out of combat and under control but estimates its effectiveness at less than 40%, except for one tank battalion which is outside the contaminated area which is 70% effective. This battalion is proceeding to the attack position tonight. The remainder of the brigade will try to move tomorrow morning when they sort things out. The brigade commander is pessimistic.

(U) "The 11th ACR is enroute to Lauterbach. It is at 60% effectiveness. The ADC maneuver of 4th ID is at Lauterbach and will organize the attack from units as they arrive.

(U) "My estimate is that he will have a force of 3 battalions plus 2 squadrons of 11th ACR by noon. Other elements will arrive during the rest of the day and through tomorrow night."

(U) Corps Commander - "Tell 4th ID to attack at noon with whatever they have in hand. Time is running against us. I will be in Lauterbach at 0700 and want to meet the commanders of 3rd AD and 4th ID there and the commander or an ADC of 8th ID." Turning to his aide - "Please get commander 8th ID on the horn for me right now."

(U) Commander 8th ID on radio - "Yes, sir - George here."

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(U) Commander V Corps - "I understand that you are under chemical attack. Will you be able to get a brigade to Lauterbach by noon tomorrow?"

(U) Commander 8th ID - "I'll do my best. I will have a Mech battalion underway in one hour and a tank battalion by first light. Beyond that I can't predict at the moment. This chemical attack has really loused things up. Frankly, our people are terrified. Those inside the few group shelters we have don't want to come out and don't want anybody else to come in. When something goes wrong, like a generator failing, nobody wants to move around or fix it. There was some panic when we were first hit. Our people have settled down a little, and I think we can work it out but, boss, everything takes 2 or 3 times as long to accomplish. The trick seems to be to use the detector teams to find safe areas and then move units into those areas for decontamination. That is time consuming. It takes a day to clean up a Mech battalion once we get organized."

(U) Commander V Corps - "O.K., George, I'm counting on you to get one more tank battalion on the way by noon tomorrow. Also, we need a brigade commander and staff ready to go by 1000 hours tomorrow morning in the attack position. Who are you sending?"

(U) CG 8th ID - "Lassiter."

(U) Corps Commander - "Good. Keep us informed."

(U) G-3 V Corps - "Sir, we can bring up CG 4th ID on the Sigma video if you want to talk to him now."

(U) Commander V Corps - "Yes."

(U) CG 4th ID - (Sigma video is displayed side-by-side with data and graphic display) - "Ready to talk, sir."

(U) Commander V Corps - "Pete, you have my concept for operations over the next two days. Can you execute in accordance with that timetable? Give me a quick sitrep."

(U) CG 4th ID - "As you know, I have only one brigade in hand at the moment. The 1st Brigade is mopping up that OMG near Schluctern but needs another day to wrap it up. 3rd Brigade is attached to 3rd AD. 2nd Brigade was caught by a chemical attack as it disengaged from the counterattack at Hunsfeld. By the

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way, that was one fine attack. I believe we destroyed a complete tank regiment. That sector is now quiet.

(U) "One tank battalion escaped the chemical attack and is on the way to Lauterstein(?). You can see on the readiness display it is about 70% effective.

(U) "We are trying to assemble and move a Mech battalion but we've got to decontaminate it first. I don't think we will have it ready until tomorrow afternoon at the earliest.

(U) "The battalion is not in good shape. Note (on the display) that the ITV's are nearly all out of action. They are not chemical proof, as you know.

(U) "The second tank battalion is now assembling in the vicinity of Schlitz. The overpressure system in the M-1's has been a godsend. Where we run into problems is when we rearm and refuel. Crews are reluctant to open up.

(U) "I have sent my ADC - Jones - to Lauterbach. He has a small staff and will take direct command of 4th Division battalions as they arrive. I will meet you there at 0700. I will also take personal command of the brigade of 8th ID and the 11th ACR at Lauterbach and will drive this operation. We will launch at noon with what we have.

(U) "I recommend you authorize me to move the Schluctern Brigade via Wachersbach to Schotten starting at dark tomorrow. I have directed the brigade commander to mop up that OMG by noon tomorrow. That will give us a reserve in position to move wherever we need it.

(U) "The headquarters at Schlitz is not in good shape. I will leave it there to clean up the situation and, depending on progress, will move it with its remaining two battalions to Lauterbach ASAP. In the meantime, Gen. Jones will have operational command of 4th ID units in a brigade sized task force."

(U) Commander V Corps - "Good - do it. See you in the morning."

(U) G-3 V Corps - "We have put together a run-down on our deep attack capability. It will be presented to you in five parts:

- first, the targeting situation by G-2
- second, corps artillery by the FSO
- third, BAI by the ASOC
- fourth, air-ground coordination
- chemical.

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(U) G-2 V Corps - "I mentioned our JSTARS coverage earlier. The main problem at the moment is that the All Source Analysis Center has been hit by a chemical attack. It is in Burgdorf about 5 kms away with the Hq CEWI Battalion. About half the center is in chemical shelters, that is the SIGINT and collection management elements. But, the fusion element is still in S-250 shelters which are not-chemical proof. The terminals are contaminated - or at least the operators think they are - and we have never tried to decontaminate the inside of one of those shelters with the equipment installed.

(U) "We are trying to perform the targeting function here at the TOC but have not really been able to take over. We normally expect to generate more than 100 targets per hour. We are not producing more than 20 at this time.

(U) "This leaves us dependent exclusively on JSTARS and PELS. JSTARS is piped directly into the FSE here in the TOC and PELS directly into the ASOC. We will use PELS info to verify and reinforce MTI data. We have worked out a schedule with the ATOC so that a combination of Army and Air Force JSTARS will give us continuous MTI coverage.

(U) As elements of the 3rd Shock on the northern route cross the old boundary we should have fairly good coverage up to the Haune River. I estimate that ASAS will be back in operation in about 24 hours. As an aside, we have learned that the chemical shelters we do have are having trouble with electrical supplies. Only 400 Hertz generators can handle the load, which means that none of the smaller vehicle generators can be hooked up. Of course, all the big generators are contaminated. When they go down they stay down."

(U) Commander V Corps - "Thank you."

(U) FSO V Corps - "Sir, Gen. Ogive is not here. He is in 8th ID area trying to extricate some GS battalions and move them to support the counterattack tomorrow. He is particularly concerned about the MLRS battalion deployed by battery behind each of the 8th ID brigades. Much of that battalion has been subjected to chemical attack.

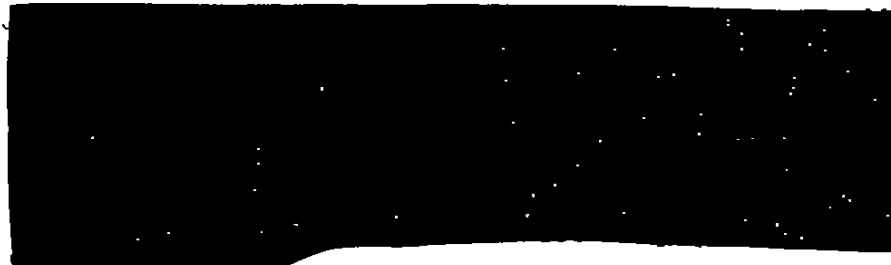
OK (U) "On the display you will see the current positions of the missile and rocket units which can reach beyond the Haune."

G-75

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G-75

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OK (S) "this display shows the missile supply situation."



(U) "Because we will be engaging moving armor we plan to use only TGSM munitions. APAM will be used against enemy air defenses in support of BAI. The ASOC will brief on this.

(U) "Our concept is to cover the targets on the northern route along the Autobahn (Eisenach to Bad Hersfeld) with CSWS and the southern route (Bad Salzungen to Hunsfeld) with BAI.



(U) "If we suffer any further breakdown in communications we should simply give the mission to the Air Force.



G-76
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G-76

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(U) Commar ar V Corps - "Thank you. How about the BAI?"

~~(S)~~

(U) "The situation at the air bases is not good and the Tactical Air Control System has been hit hard. The sortie generation rate for F-16 aircraft has been cut to about 30% of normal because of persistent chemical attacks on all the major bases. Bitburg has been shut down entirely since yesterday at noon.

~~(S)~~

(U) "This will not be an easy mission as we will be flying into the teeth of the air defenses of two armies reinforced by front. However, we understand the importance of the mission. The effectiveness of the ATOC and the tactical air control system is now at less than 50%. Furthermore, Sembach is handling the Kindsbach load while Kindsbach is decontaminated from the last chemical attack. Decontaminating computers and terminals is a new art.

(U) "A-10 close support aircraft will cover the Hunsfeld route out to about 10 kms beyond the FLOT. This part of the operation will be visual - that is without JSTARS.

(U) "As a matter of interest, the strategic airlift of Army reinforcements has been diverted from the main reception airfields to England and from there is being reloaded or rerouted to secondary airfields over here. Some of the alternative airfields are only 3000-foot strips. The rate of delivery is down to 35% of scheduled arrivals. These small airfields have no unloading facilities, most of them lack all weather nav

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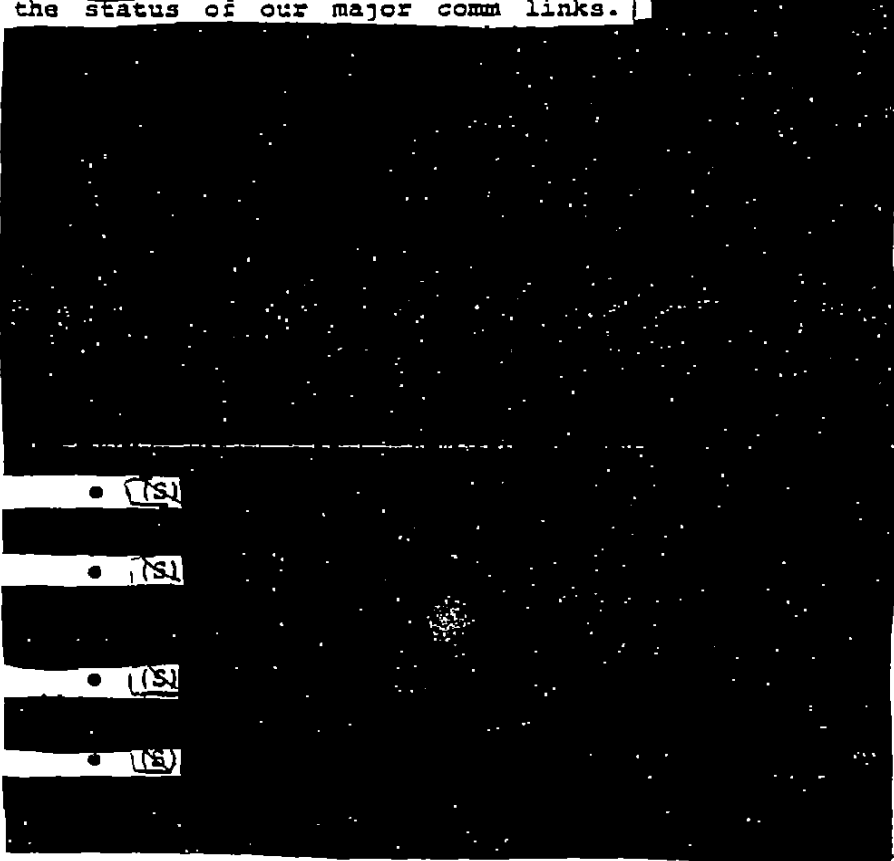
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aids and, of course, the coordination of local transportation, which is mostly host nation support, is chaotic. Most of this problem has been caused by chemical attack. The Air Force is simply unable to handle the decontamination load. Just when they have made some progress another missile load of chemicals come in and the whole process is repeated before people will go back to work. It's a mess."

(U) G-3 V Corps - "Thank you. Sir, we would normally select BAI targets at the FSE under your priorities but the communications picture is so bad that we have resorted to a rather gross division of labor between the artillery and the Air Force - one taking the northern route - CSWS - and the other the southern route. The Corps Signal Officer will give you a status report and forecast."

OK ✓ (S) C&E Officer V Corps - "Sir, the display shows the status of our major comm links."



G-78

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Highest priority support for I&W is being provided by special UMSTEAD equipment direct to corps levels and division.

(U) G-3 V Corps - "Sir, I think we can summarize by saying that the counterattack tomorrow can be launched at about 60% of desired strength.

(U) "The Interdiction attack on 3rd Shock will not be able to keep the first echelon divisions east of the Haune after first light on D+5. In other words, we can delay them for 18 hours instead of 24 to 36.

(U) "This means the destruction of 5th Guards Tank Army must be accomplished tomorrow and tomorrow night.

(U) "To increase the effectiveness of our operations and increase the prospects of success, I recommend we throw all of our EW assets at the tank division in Alsfeld starting ASAP. If we can paralyze that division for a few hours by shutting down its C² it should be faced in the wrong direction and unable to respond to the counterattack. The EW officer will move out on that mission with your approval."

(U) Commander V Corps - "Good. O.K. What else?"

(U) G-3 V Corps - "Suggest you get some sleep, sir. We'll give you an update at 0530 while you have breakfast here in the TOC. You can get to Laurenbach by helicopter in 30 minutes. We will provide a gunship escort of two Apaches. I will go with you in the C&C chopper with a Sigma terminal and bring the air and artillery reps along."

(U) Commander V Corps - "Thank you. See you at 5:30."

(U) CG, 3D SUPCOM - "General, before you get away for that nap I have to bring you up to date on our logistical situation. First of all, I believe we can meet our obligations in support of your concept for tomorrow's attack. However, certain categories of support are showing thin.

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(U) "Our GS resources at GIESSEN are virtually shut down. The Soviets targeted it very effectively, with both HE and chemical warheads, and we have suffered a corresponding complex littany of damage. We have lost our capability to diagnose and repair printed circuit boards. I should point out that a similar effort has occurred at FIRMASENS. Thus, we have no in-theater capability to repair boards in support of the family of C3I systems. I believe the pipeline will sustain normal operating losses of modules and LRNs for the next several days. On the other hand, with only three of 60 JSTARS systems operating, if all 57 down systems are functionally down, we will not be able to restock them with the available cards and modules.

(U) "We can jury-rig a capability to rebuild engines and transmissions by combining resources of our remaining maintenance companies, but at less than 1/3 of our previous rate. We have lost both facility to physical destruction and personnel to the casualty route. We are further degraded because our facilities are all contaminated with a persistent chemical. I estimate that, over-all, we are operating at 20-25 percent of efficiency - the troops are tired and suffering psychologically because they can not perceive an end.

(U) "Class II and IV is workable. We can move with our organic vehicles into distribution points if necessary, but everything we move is contaminated.

(U) "Class III is another story and I am concerned. Our own organic tankers are, so far, operational. However, unless we can resupply by rail or from the 4th Trans Bde, our own distribution points will be dry by day after tomorrow. We have not been able to keep track of FARRP locations, so Class III resupply forward is a problem. HNS of both rail and highway is less than reliable as the psychological impact of the chemical strikes.

(U) "The only Class I that it is feasible to supply is C. Those troops who are not operating in contaminated areas would like A or B, but we have no capability here. Forward movements are zero - no host nation over-the-road. Further, I understand that all perishables out of KAISERSLAUTERN are contaminated.

(U) "With Class V, we are moving forward into ASPs at about a 40 percent of capability rate. The problem is the over-the-road capacity. It is steadily

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dropping as people diminish. The stuff we move is, by and large, contaminated, which affects the drivers' ability, the using units operational mode, and our ability to return full. Our trucks are contaminated. We are, therefore, moving contaminated bodies rearward, but we are now running into a disposition problem. GR has insufficient resources to keep pace, so bodies are, literally, piling up at the collection point."

(U) "On the ASL/PLL side, the ALOC is essential to our fix-forward capability, as a bubble is building in it because APODs have been virtually closed by the enemy's massive strikes. We need to reconstruct the ALOC into Britain and use STOL aircraft to deliver into hasty delivery airfields.

(U) "Bottom line - we can support tomorrow's attack, we are losing our sustaining capability, and restoration of the long-haul road and rail capability is essential.

(U) Surgeon V Corps - "Sir, we're doing the best we can - but we are falling farther and farther behind. In an effort to try to cope with the multi-faceted nature of our casualty problem, we have established two scaled down operating facilities in each MASH. Our triage procedures at clearance stations are separating uncontaminated casualties from contaminated ones. Uncontaminated casualties we are taking to a clean facility. Contaminated casualties are being treated in a dirty facility - since we do not know how to DECON a seriously wounded soldier. Triage is treating the rapid turn-around cases, contaminated or not. The more seriously wounded are being handled as I just described.

(U) "We have a more insidious and growing problem - psychological. The old fashioned "shell-shock" is back with us, but in over-whelming numbers. And we are finding that some uncontaminated, unexposed soldiers are deliberately injecting atropine in order to get a ticket to the rear. Where we are making do with the real casualty problem, we are being overwhelmed by the psychological ones. At the moment I believe the only solution is to run small unit commanders back through the nodes where these soldiers are collecting in the hopes of "leading" some back to duty.

(U) "Our DNBI rate, because of this situation, has doubled, and we are just not staffed to handle this problem. We need those small unit commanders to help us unplug the system."

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(U) "Where we had anticipated sufficiency in hospital beds, we are now finding that our cushion of safety is eroding. We are already at 45% capacity. The chemical casualties are seriously debilitated and require constant early attention.

(U) CMLO - V Corps - "Sir, you are aware of the massive nature of the enemy's chemical attack. Let me concentrate, then, on our defensive posture.

(U) "First of all, we have been struck with every known chemical in the enemy's arsenal - NP, SP and P. We have positively identified their agents, and his offensive pattern was

- NP on forward troops and on C³I nodes;
- SP on Arty and A/D units
- P on CSS resources and on flank approaches to his main attack.

(U) "His 16 hour delay before employing chemicals on troops in contact and on their supporting forces was very effective. He probably achieved a 10-15 percent greater casualty level, particularly among CSS personnel, because of it - they had discounted its use.

(U) "There is a material out there - employed against Arty and AD - that we cannot identify. Symptoms are developing that are similar to what I have read that are associated with "Yellow Rain." But I have no way to validate that statement.

(U) "I have visited our organic medical facilities, and find them trying to cope with the scale of the chemical casualty problem, but not being able to deal with multi-cause casualties. They can handle wounds or gas casualties, but are not prepared to handle a single patient with both problems. They are instituting special triage procedures here, and hoping for the best."

(U) "We cannot hope to keep pace with the decontamination task. Everything is mop and bucket, and just not good. Units are establishing personnel DECON Stations, using SUPCOM Shower Points, but many of the protective suits coming up are contaminated, so we are trying to decontaminate with some loss of protective capability.

(U) "We need to establish controls to run troops through these facilities. It will soon be a critical issue if we do not get troops "re-cycled."

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APPENDIX H

H.0 THE AIR FORCES

(U) This appendix presents descriptions, reports, anecdotes and vignettes which depict scenes and situations and describe the activities occurring at air bases and among the air forces of NATO which have been attacked with chemical munitions, used in support of a massive conventional offensive by enemy forces. The collection was prepared by several authors who addressed situations and incidents each thought important to an overall understanding of such an environment. It begins with a situation report filed by the Commander, Allied Air Forces Central Europe to the Supreme Allied Commander.

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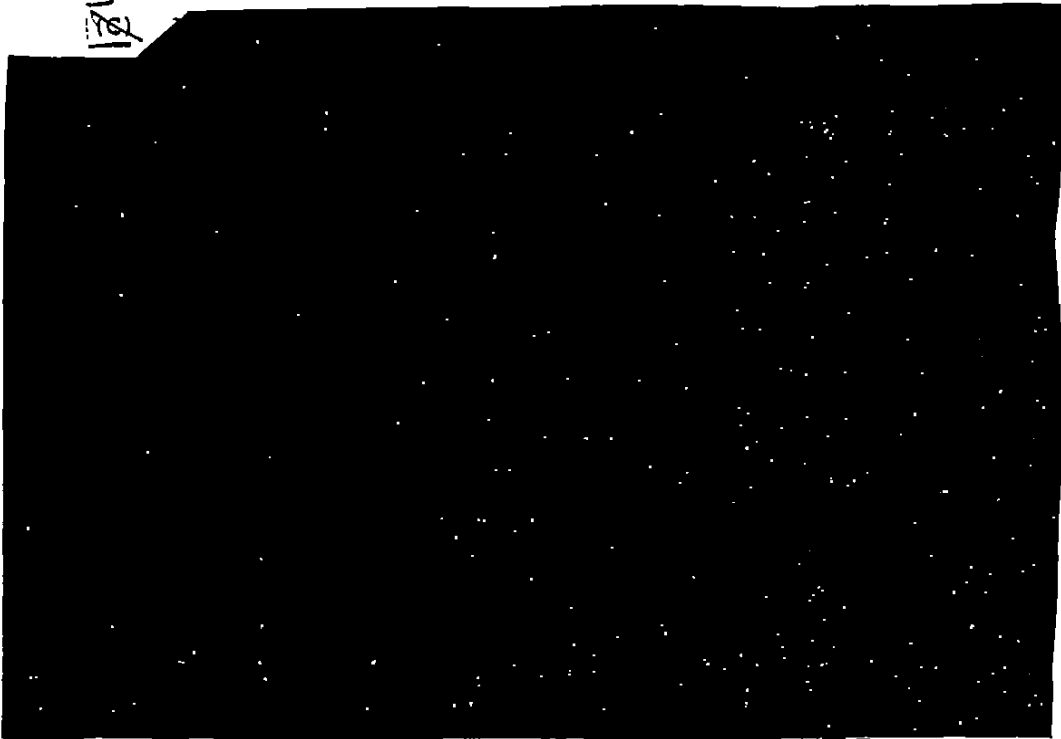
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H.1 BATTLEFIELD ENVIRONMENT

COMAAFCE BRIEFING REPORT TO SACEUR
At H+30 hours, 1015, Monday, 14 May 1990



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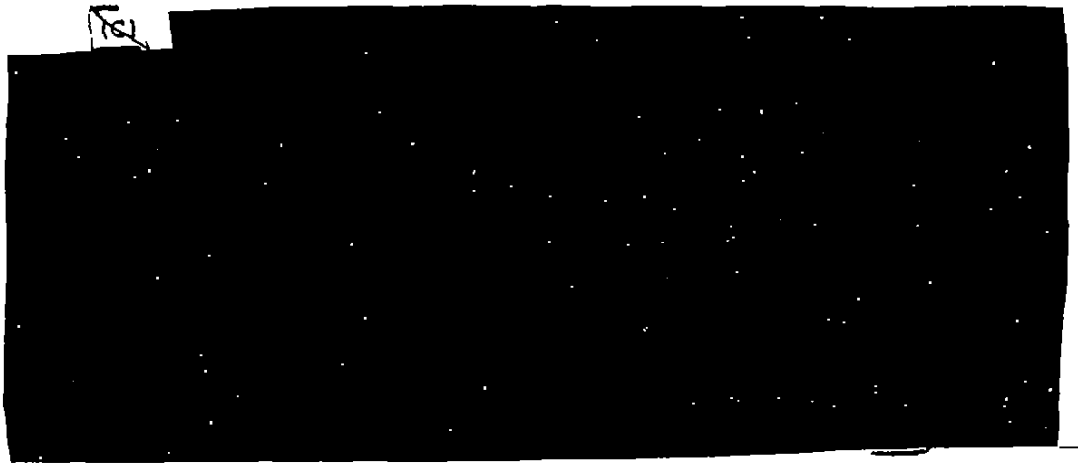
ok ~~(S)~~ (C) We soon reinforced the lessons of our CW training as all unit commanders reported delays in accomplishing every task due to the requirement to operate in CW protective equipment.

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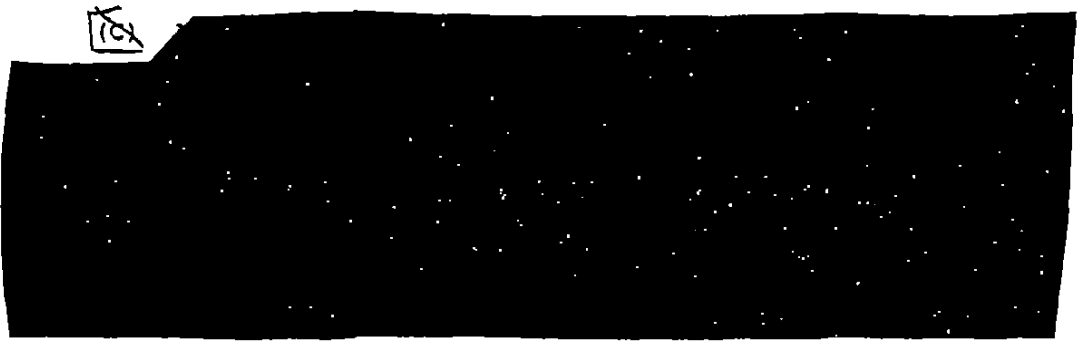
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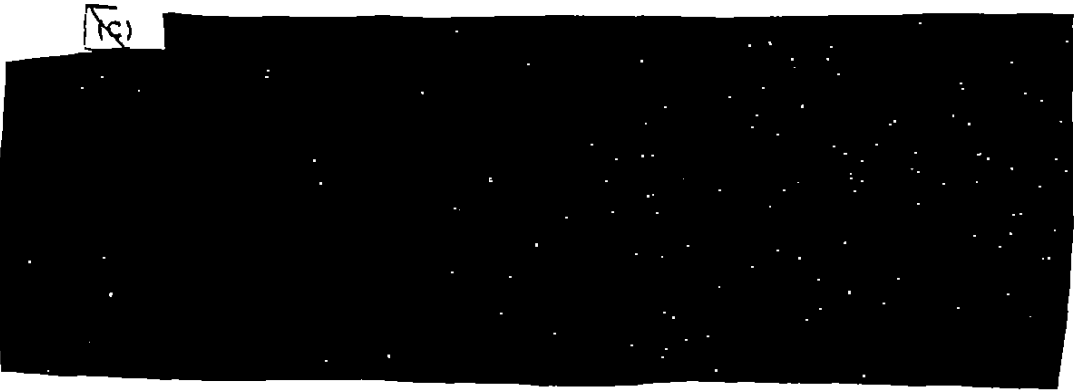
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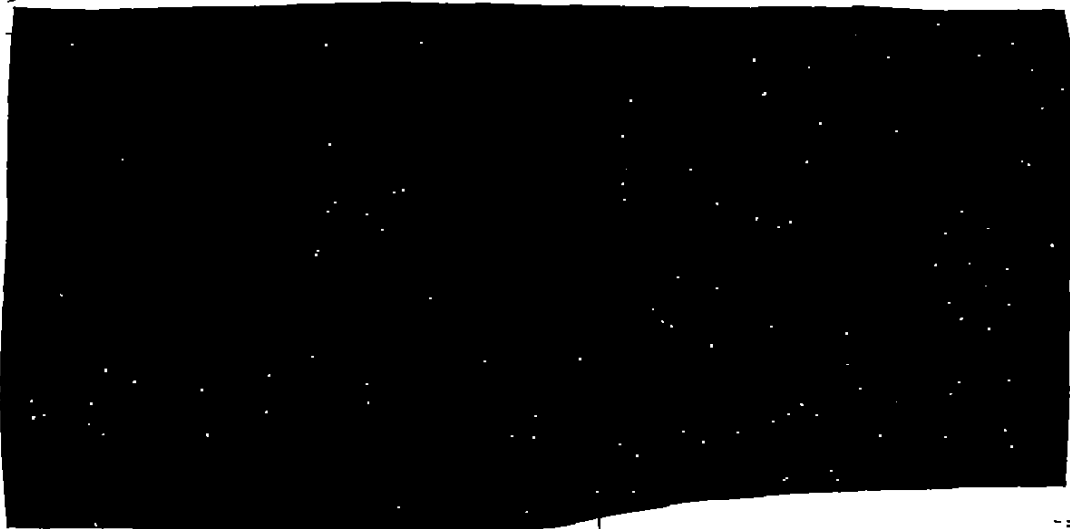
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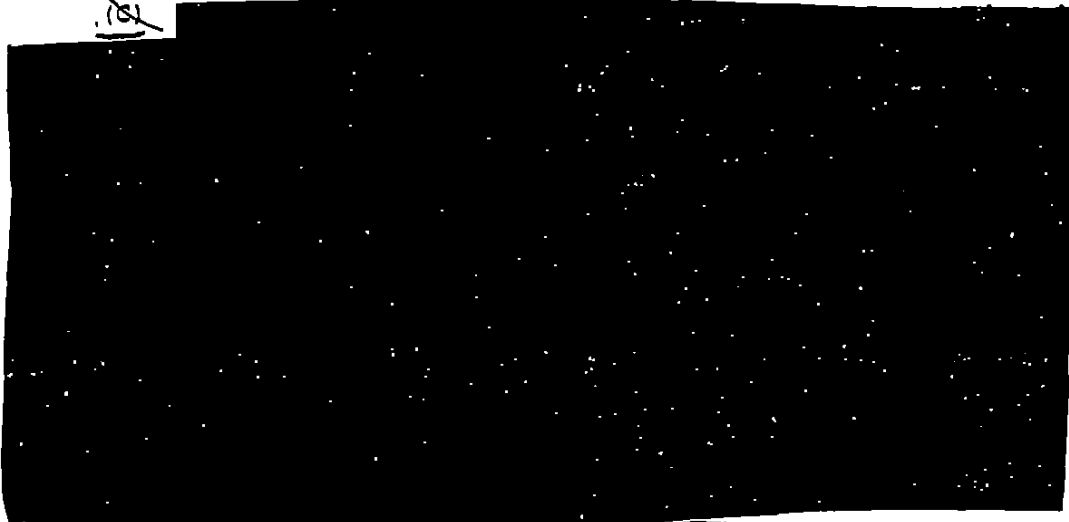
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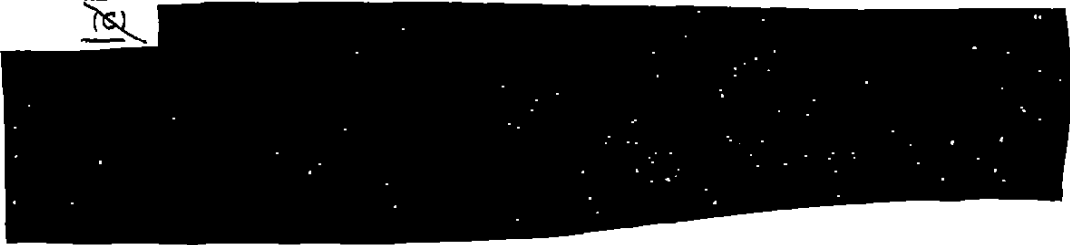
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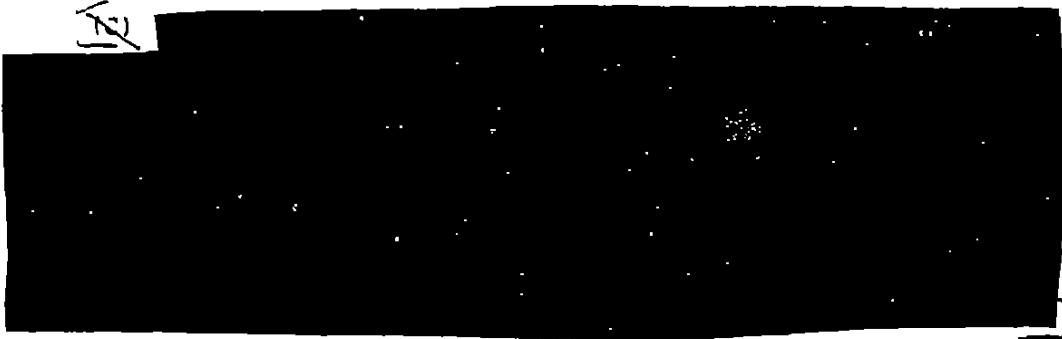


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H.2 VIGNETTES

(U) The best insight into and appreciation of the chemical battlefield can be gained by looking in some detail into the various situations where the airmen fight and otherwise perform their duties. Practical limitations preclude describing but a few of the many hundreds of situations that could and will occur. Situations have been selected from across the wide spectrum of probable chemical scenes as being typically representative of this spectrum. Each of these situations is described in terms that the author believes are realistic for the situation.

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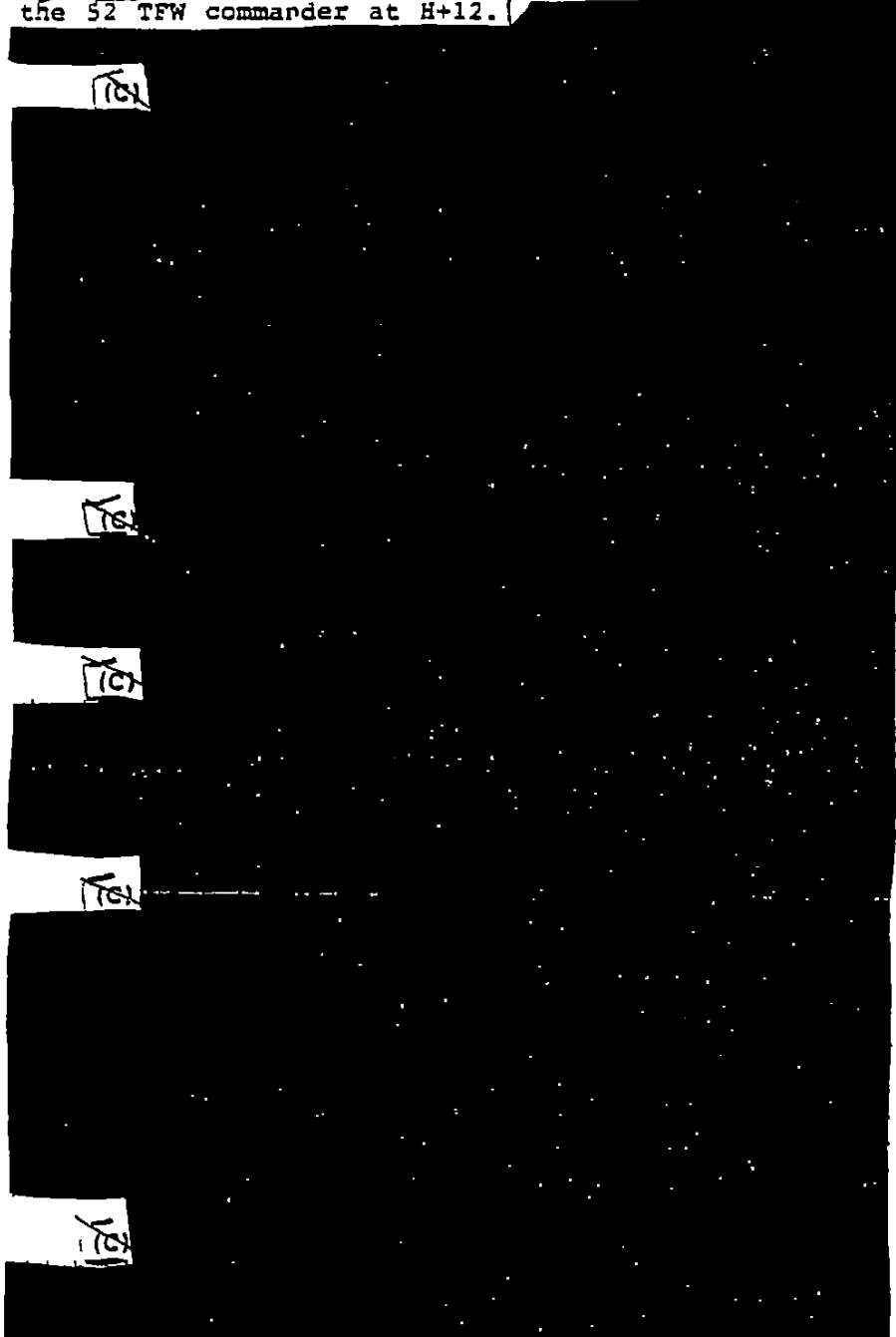
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H.2.1 SPANGDAHLEM

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(C) Spangdahlem Air Base scenario as described by the 52 TFW commander at H+12.



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jk ~~SECRET~~ "Clean-up continues and has diverted an inordinate amount of effort from normal tasks."

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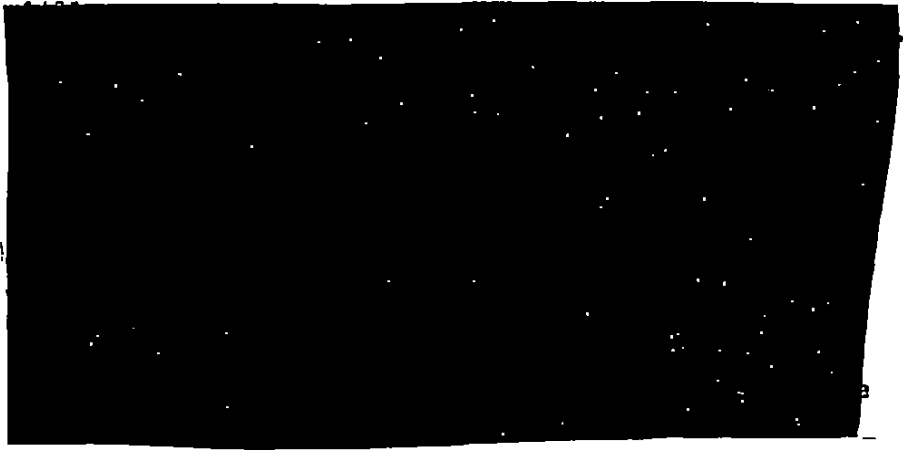
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(U) Recap



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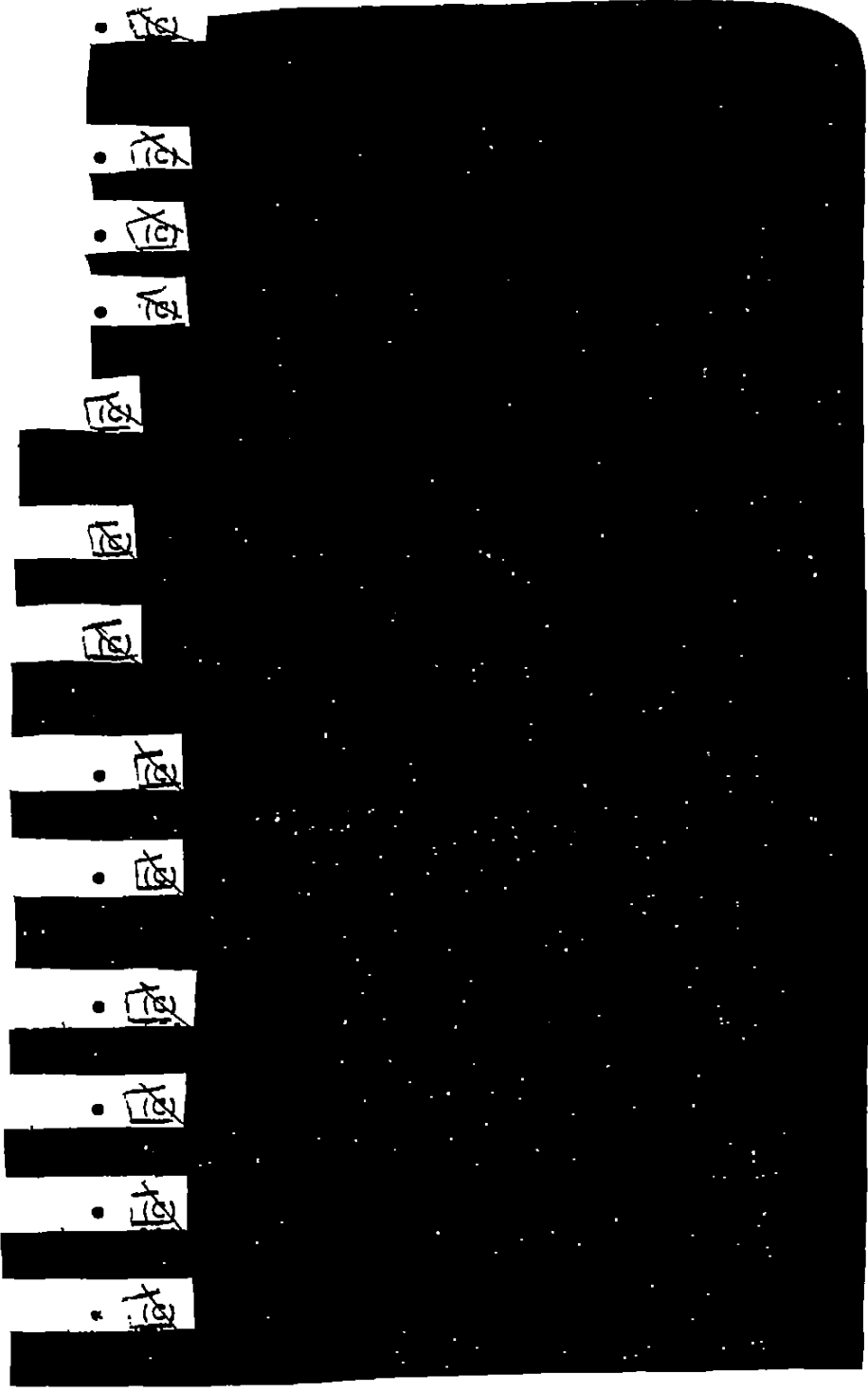
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FIGURE II-1 (U) CHEMICAL COVERAGE EXPECTED ON TYPICAL MOB - 40 BOMBS (250 kg)

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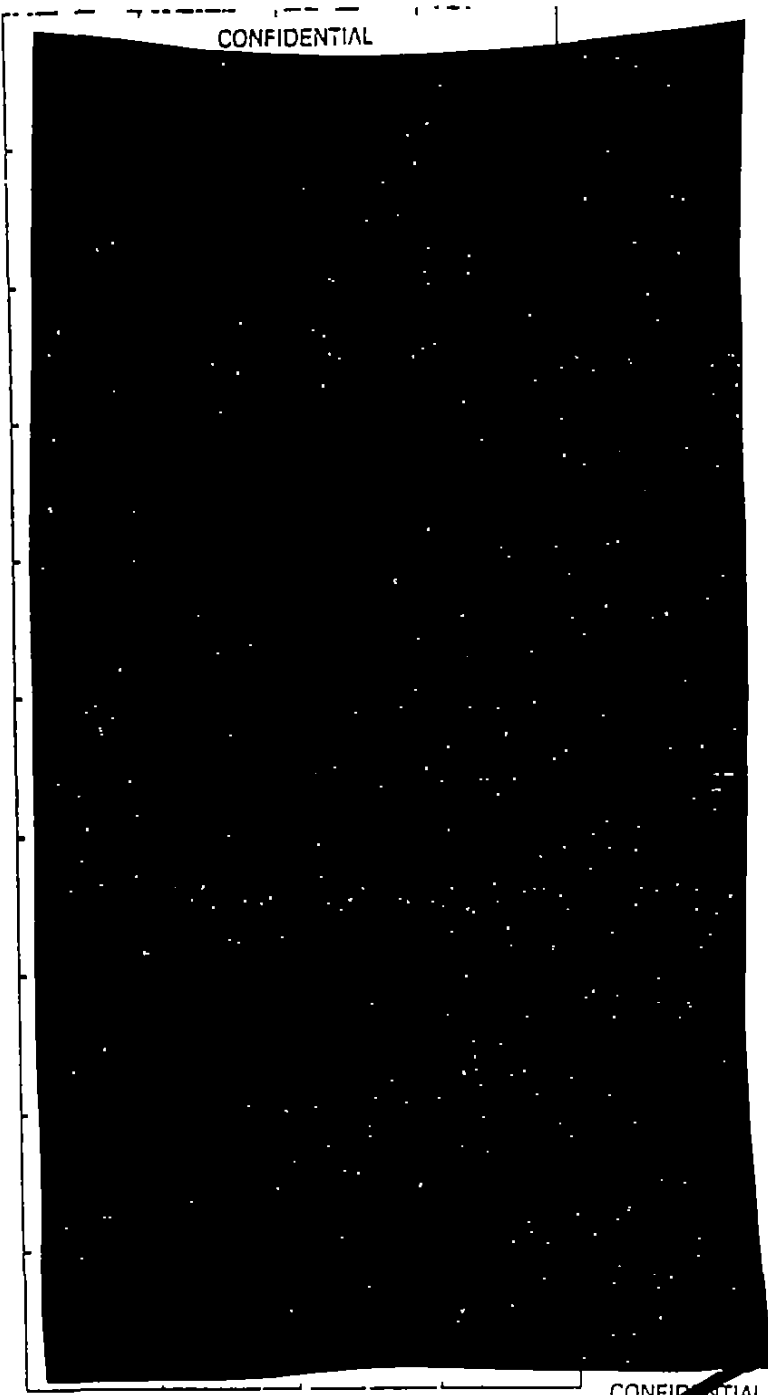


FIGURE H-2 (U) CHEMICAL COVERAGE EXPECTED ON TYPICAL MOB



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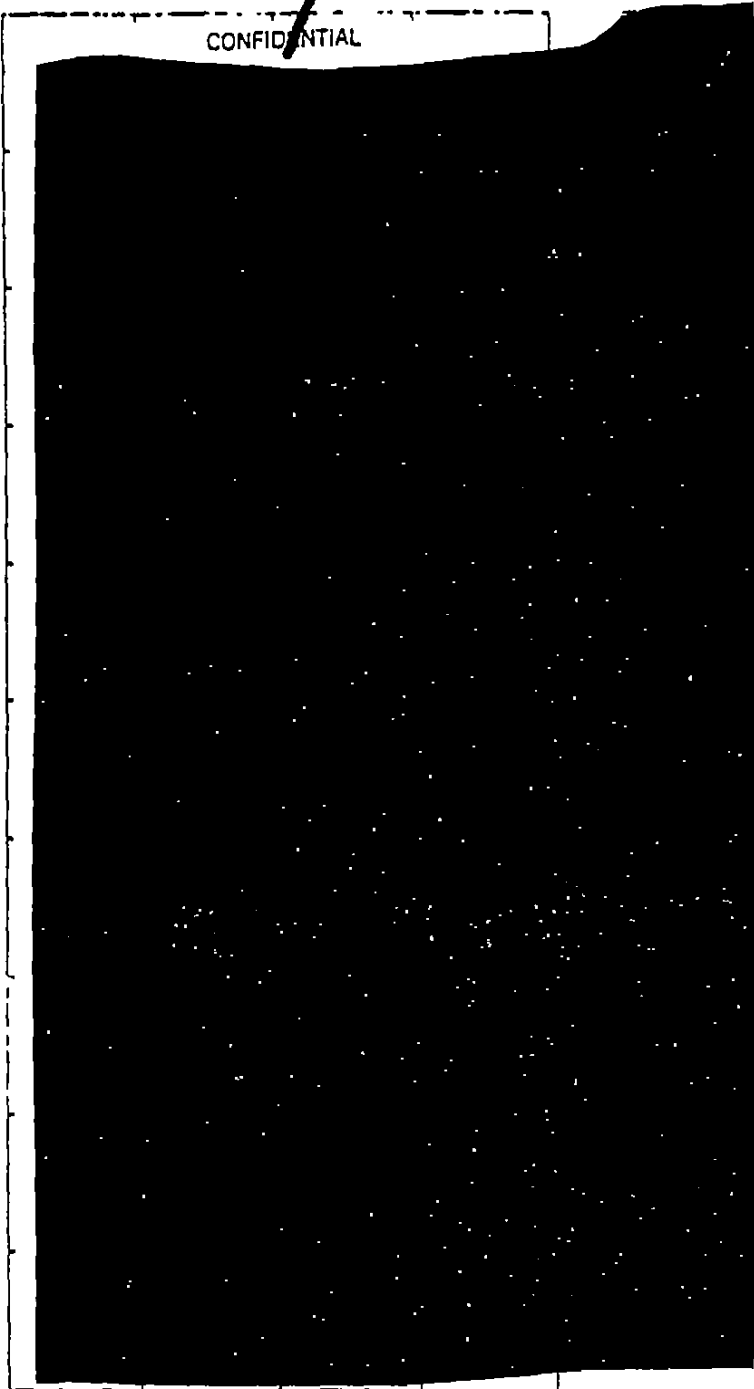


FIGURE H-3 (U) CHEMICAL COVERAGE EXPECTED ON TYPICAL MOB - 3 SS-23 MISSILES

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H.2.3 RHEIN-MAIN VIGNETTE

ok (S) Rhein-Main Air Base scenario as described by
the H35th TAW commander at H+12 hours. [REDACTED]

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(S) [REDACTED]

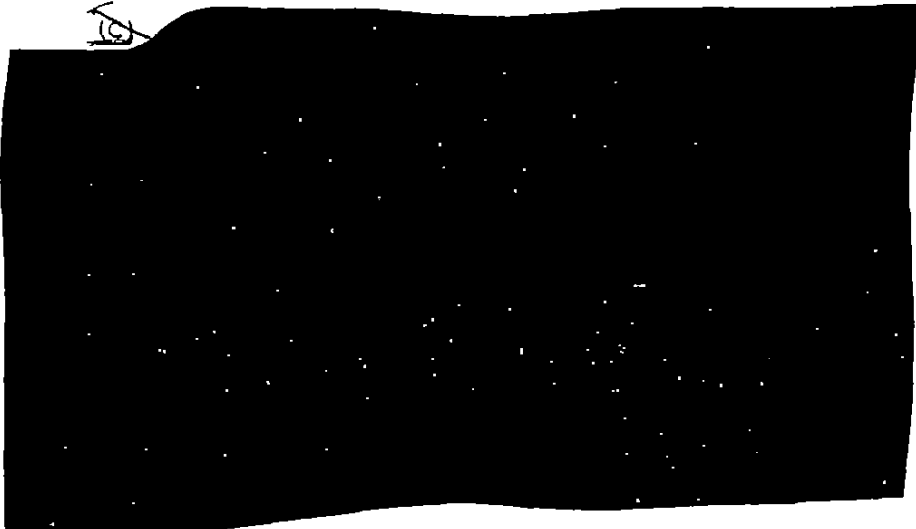
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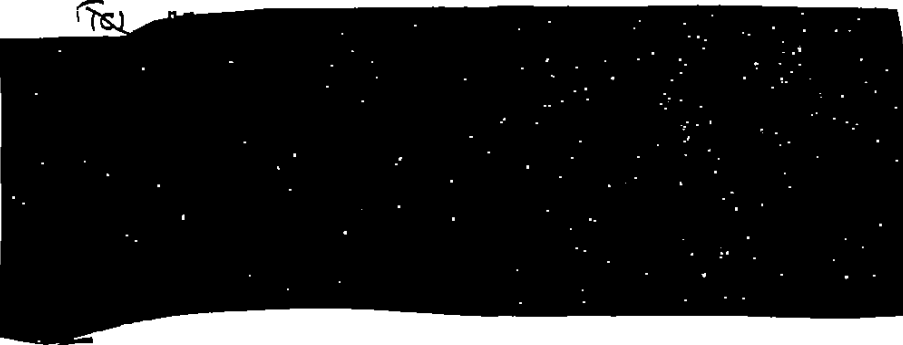
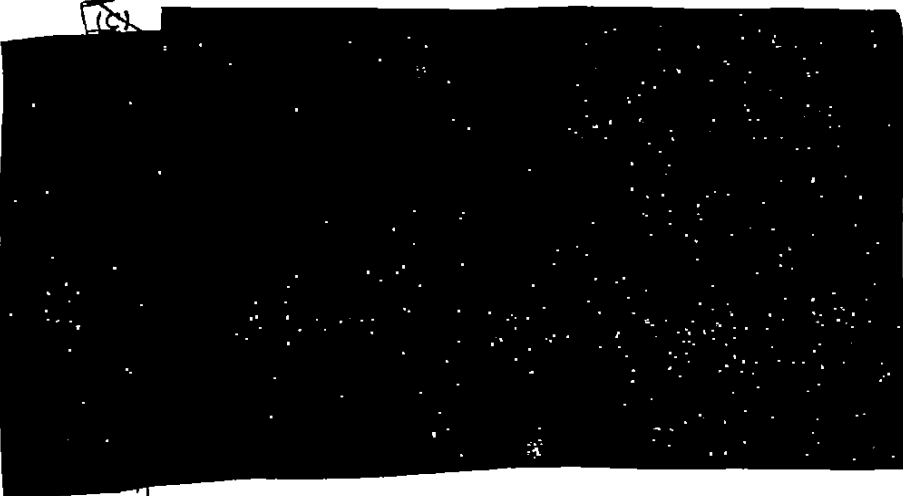
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H.2.4 RED BATTLEFIELD ENVIRONMENT

(U) (Extends from Air Marshal Khutakov's reports and summation of Red status during period from D-day to D+2)

Summation:

(U) "Comrades: I am pleased to report that the air forces of the Soviet Union have executed and continue to execute their assigned missions in an extraordinary manner. The long years of building, planning and training yielded a well-orchestrated and closely coordinated series of attacks on the NATO air bases, nuclear sites, and support facilities. The use of chemical weapons as an integral part of our conventional attacks has created immeasurable disorganization, chaos, and panic within Central Europe and has degraded their combat capability beyond our highest expectations.

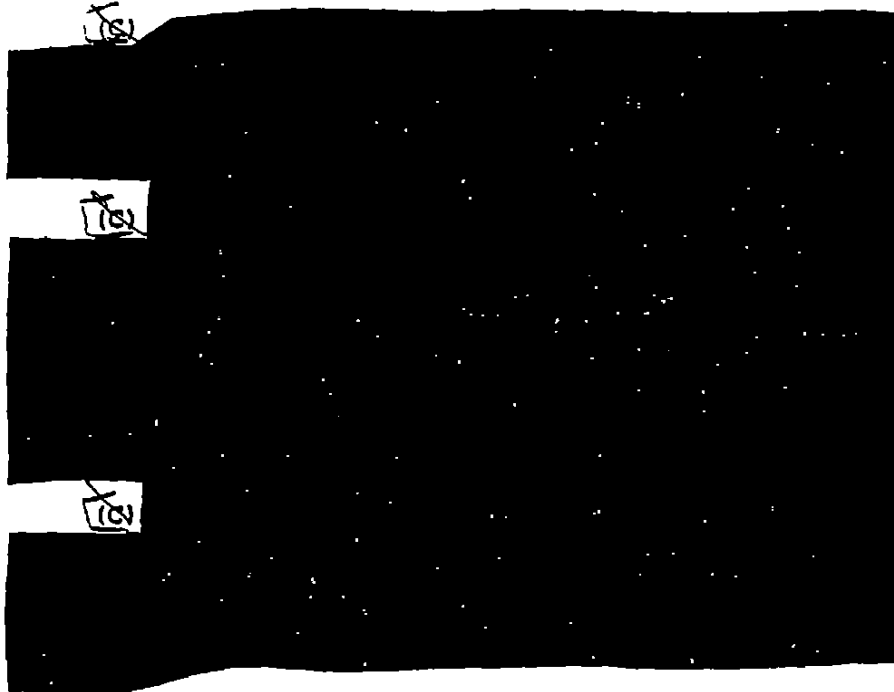


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(U) "We will continue to support our glorious advance across Central Europe, but now believe that it is only a matter of time before Allied forces attrition will give us air superiority over the Central Region battlefield. From that point on, Comrades, our armies will be limited only by the speed of our slowest vehicles. The enemy has obviously maintained a theater nuclear reserve in aircraft and missiles. We are wearing away that capability rapidly and we believe it is paralyzed in any event by the perception of theater and strategic nuclear inferiority. We will soon occupy the bases and the sites from which they could launch their theater nuclear forces. The Allies will have no choice but all-out strategic war or capitulation and we know the U.S. will not support its own annihilation simply to undo what has been inevitable since 1946 - Soviet domination of Europe."

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Extracts from Red Commander's Progressive Reports

(U) H-hour 0415, Sunday, 13 May (first light)

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

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Assessment:

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H. 2. 5 SABOTAGE/INCURSION



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APPENDIX I

I.0 THE NAVAL FORCES

(U) This appendix presents a collection of scenes and situations which describe the activities envisioned as typical at ports, naval bases, and among units of the fleet at sea which have suffered air and missile attacks in which conventional munitions have been supplemented by chemical agents. The collection was prepared by several authors who have depicted incidents and situations as they believe they would occur, each author addressing activities and operational factors he believed important to an understanding of the chemical environment and its impact on naval forces. The segments begin with an assessment made by the Red naval commander expressing his perception of how well his initial strikes achieved his purpose.

I-2

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I.1 BATTLEFIELD ENVIRONMENT

I.1.1 RED COMMANDER'S PERSPECTIVE

(U) The commander of the Warsaw Pact Naval Forces was smiling as he strode into the briefing room to address his senior naval commanders following the preemptive attack on NATO. Reports of that attack had been pouring into his headquarters steadily for the past 48 hours and it had become readily apparent that the damage inflicted on the NATO forces exceeded even the most optimistic projections. Looking around the room at his commanders this morning he sensed that they shared his exhilaration at this moment. Without any delay the commander commenced his remarks.

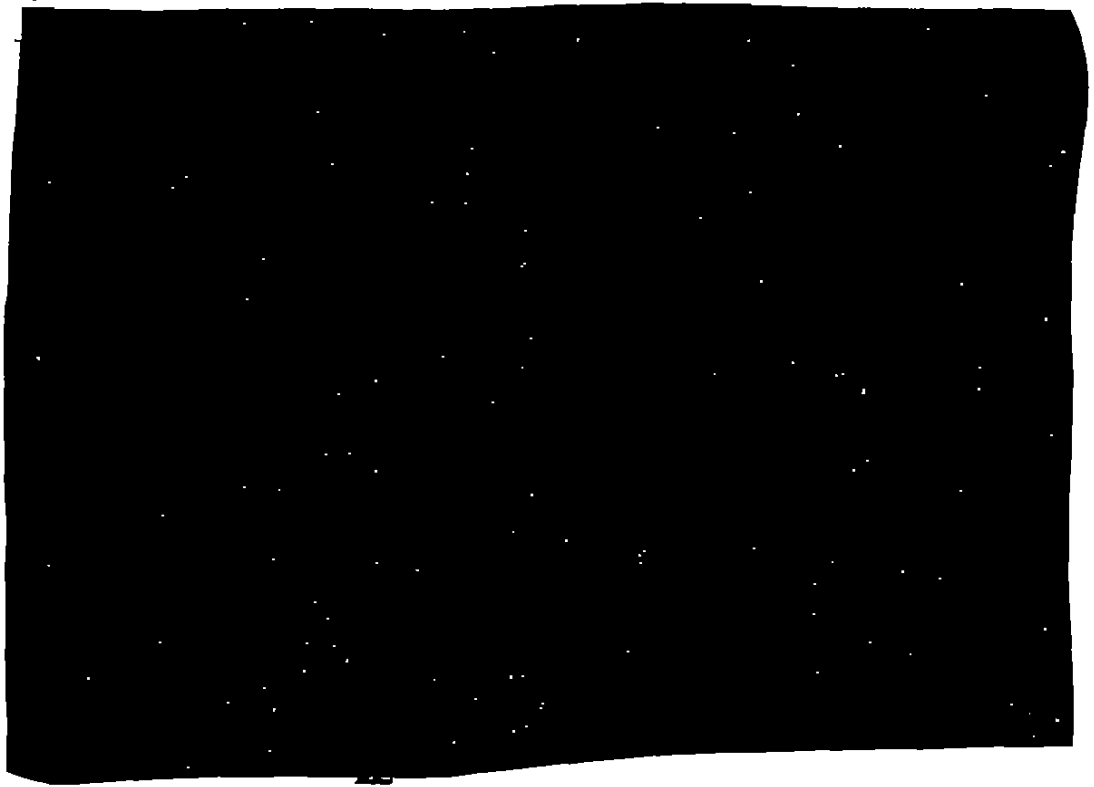
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~~(S)~~ "Comrades, as most of you must be aware, I am appearing before you this morning to relay the compliments of the Kremlin for the tremendous success of our initial attack on the NATO powers. Clearly, the stage has been set for an overwhelming victory."

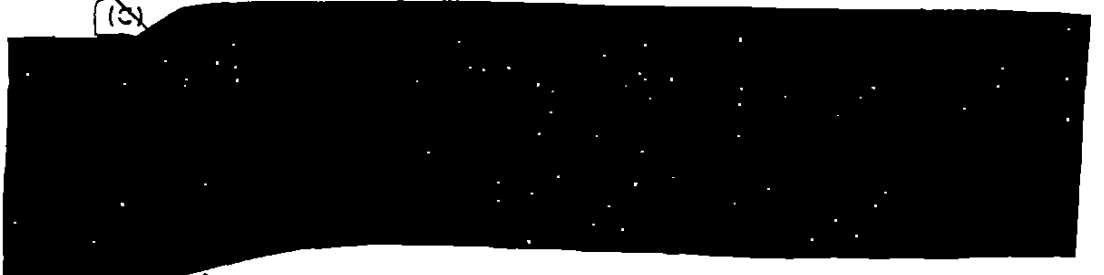
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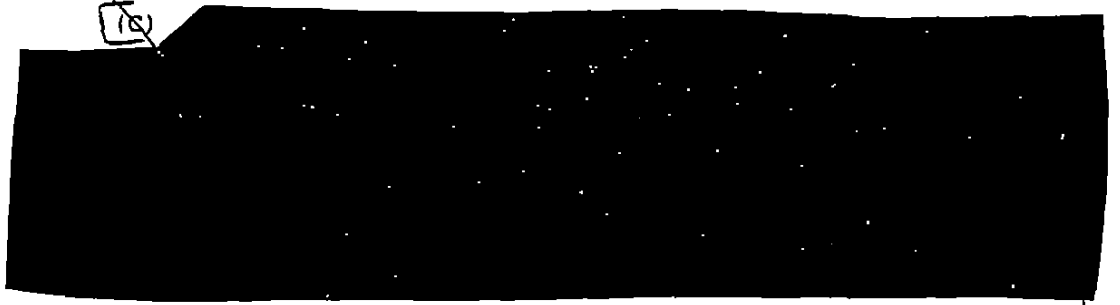
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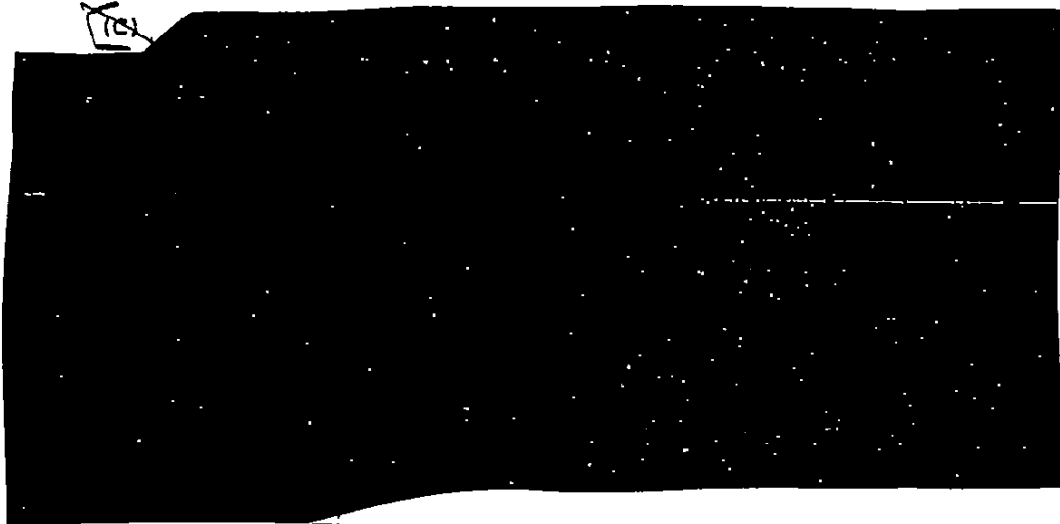
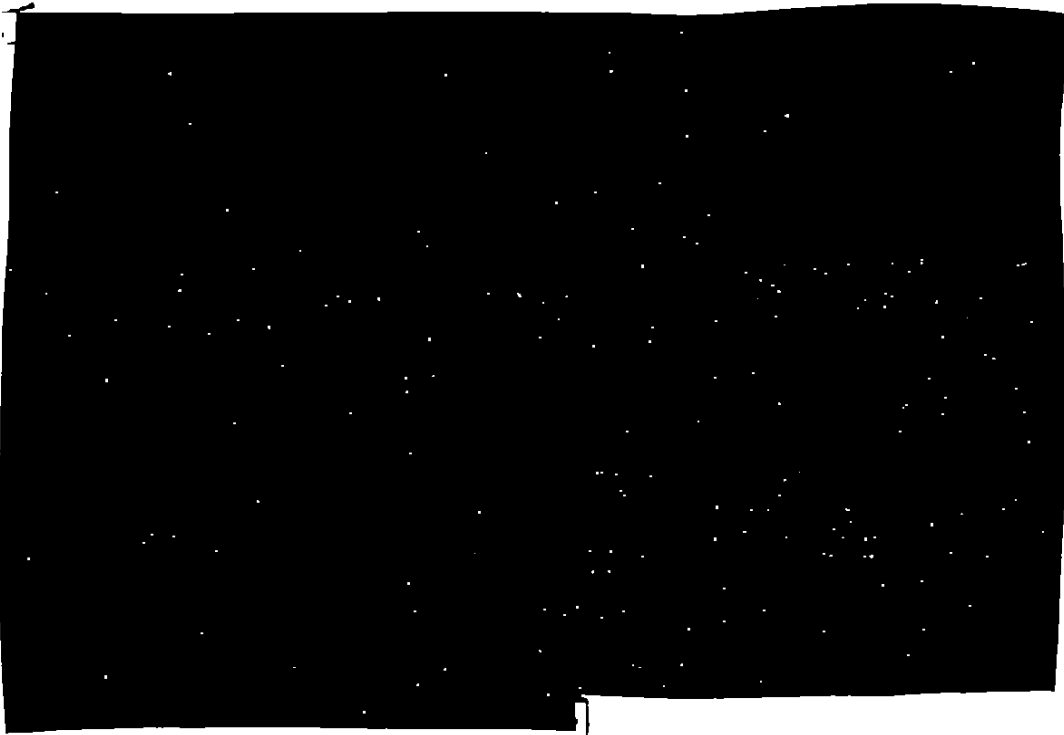
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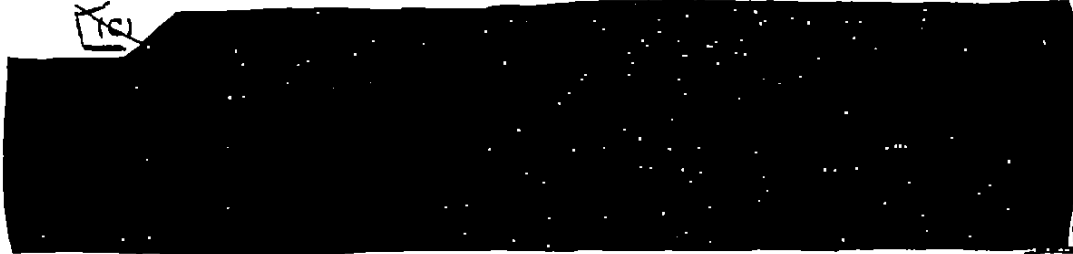
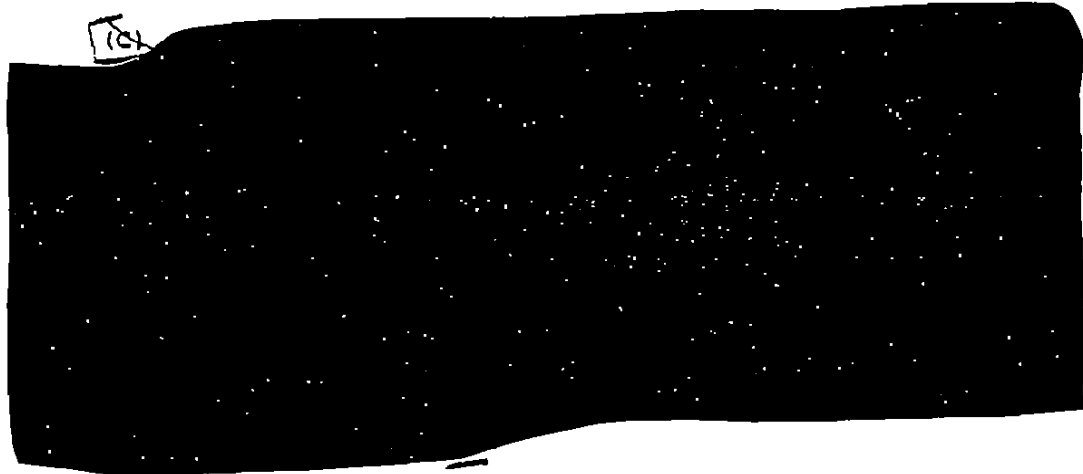
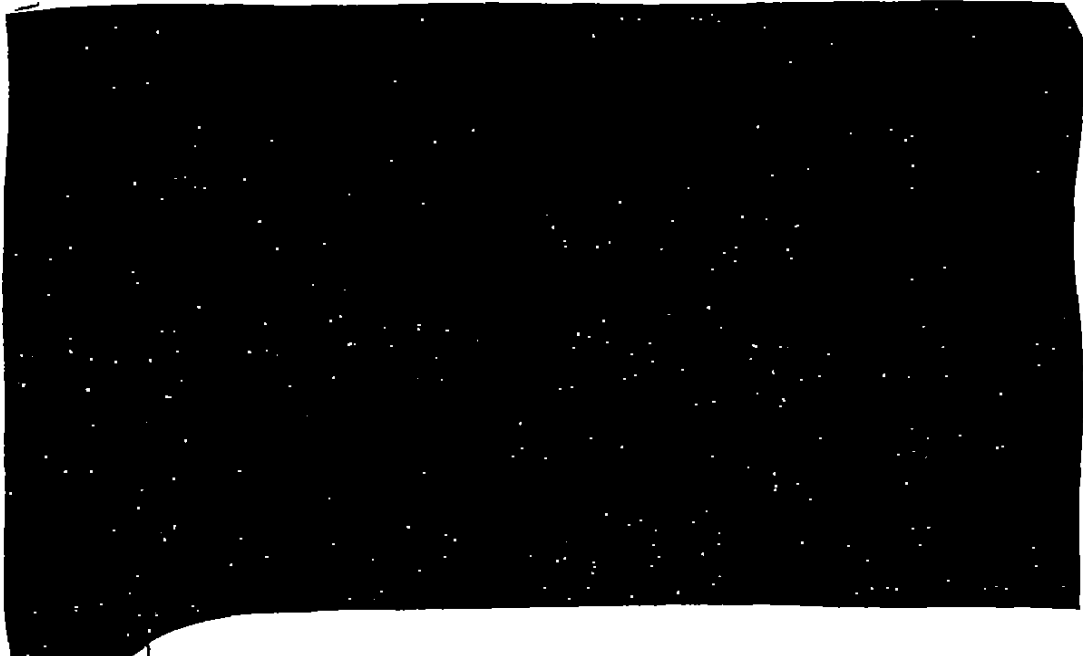


file ~~(S)~~ "Looking now to the Mediterranean, I find the si ua
particularly satisfying. As I have just said, the Battle G. ps

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[REDACTED]

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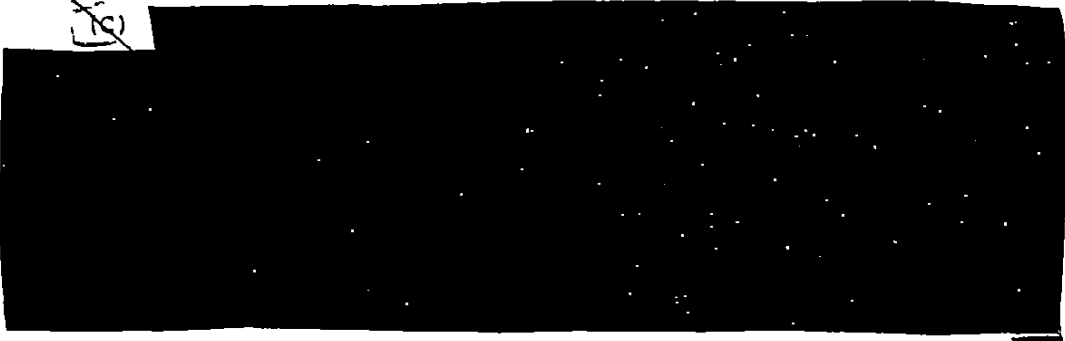
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[REDACTED]

(U) "In closing, gentlemen, I want to commend you all. The Kremlin is ecstatic over our success to date. Everything is on schedule. I am confident that victory will be achieved."

I.1.2 BLUE COMMANDER'S PERSPECTIVE

(U) Admiral Kronin had not slept for over 56 hours and he was beginning to feel the effect. As he picked up a pen from the table before him he noticed that his hand was shaking uncontrollably. At the same time his eyelids felt like lead weights and he almost let them close. Then, visibly irritated by the lapse of alertness, he arose abruptly and began to pace the room. His aide opened the door in front of the office and motioned that his commanders were all assembled. Kronin strode briskly into the briefing room. Shaking his head again sharply as he felt a drowsiness wave creep over him, he began to speak.

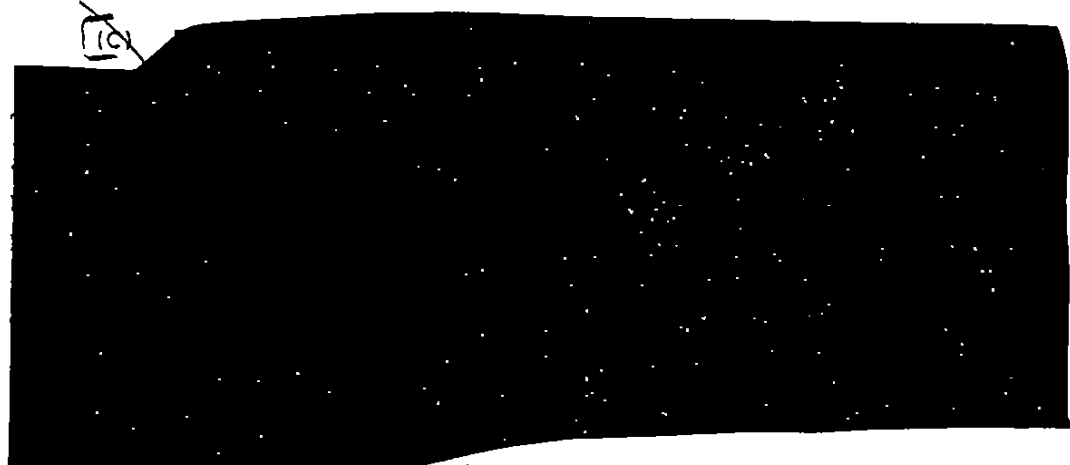
ok [initials] "Gentlemen, when I addressed you here only a little over two weeks ago, I had no conception of the events that have occurred the past 72 hours. It is an understatement to say that we are at war."

[REDACTED]

ok [initials] "I will begin, then, this morning with a report on the status of the seaports of entry to the European continent and include the United Kingdom also since they were struck on D-day as well."

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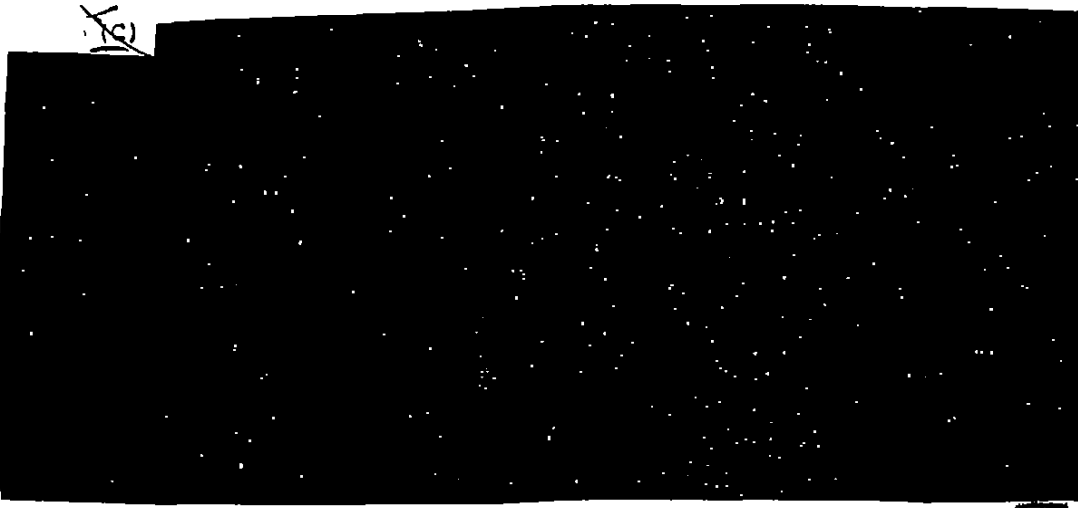
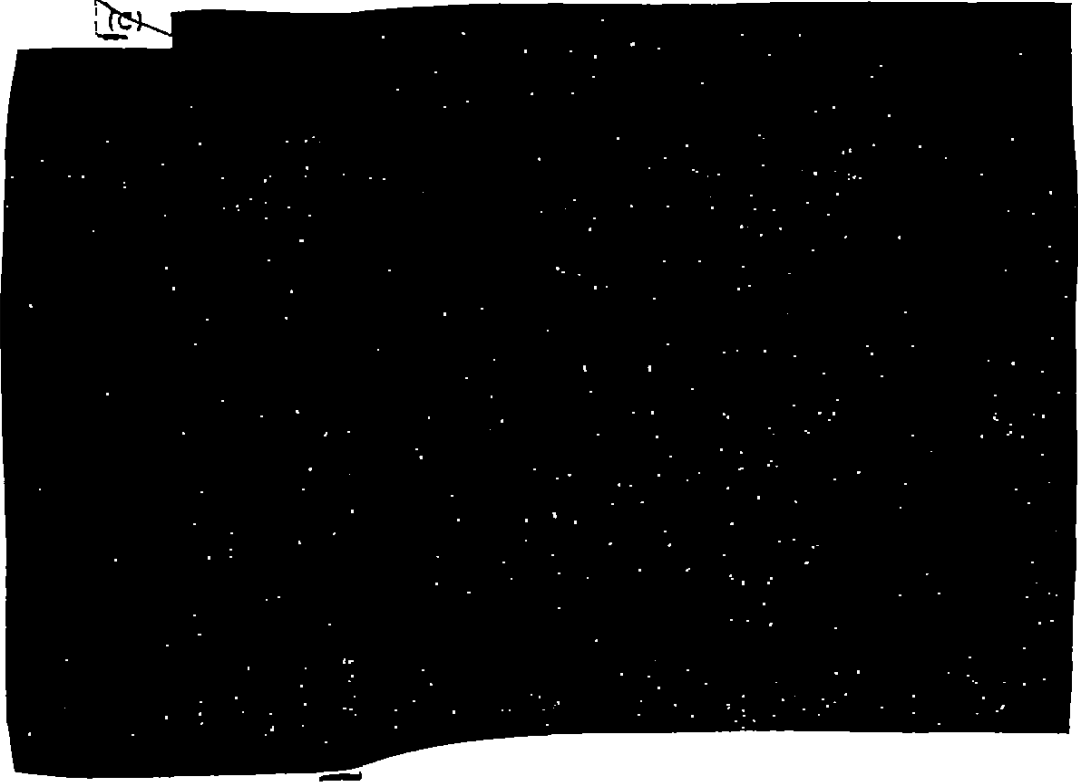
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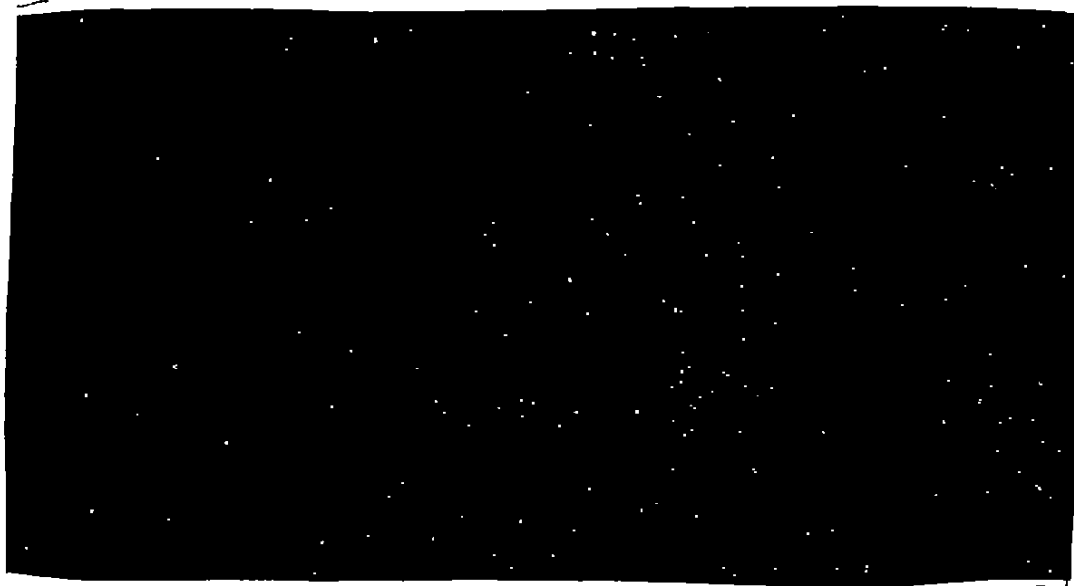
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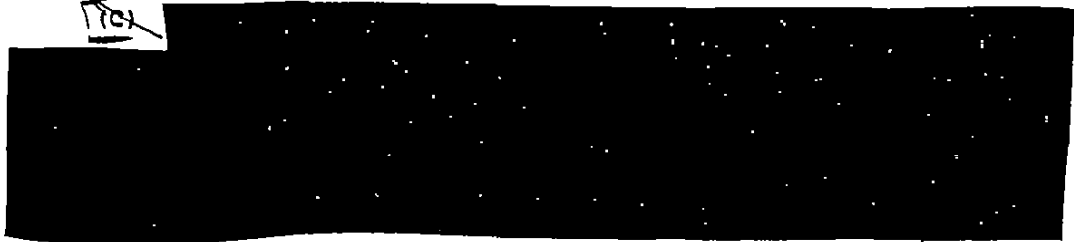
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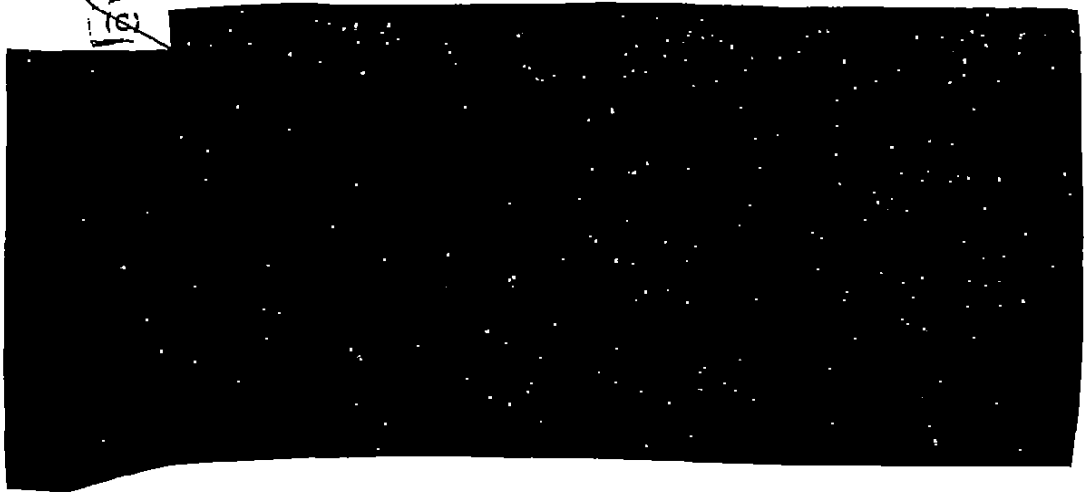
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~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]


~~(S)~~ [REDACTED]

OK ~~(S)~~ "Gentlemen, you will receive a detailed briefing on each of the areas I have touched on this morning. I'm afraid I cannot be optimistic." [REDACTED]

I-13
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I-13

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 We are weighing our options in regard to positioning of the battle groups. I will keep you informed. *ok*

(U) "Gentlemen, thank you for coming. We will expedite the rest of the briefing so you can return to your commands. God bless you all."

I.2 VIGNETTES

(U) The best insight into and appreciation of the chemical battlefield can be gained by looking in some detail into the various situations where the sailors and airmen fight and otherwise perform their duties. Practical limitations preclude describing but a few of the many hundreds of situations that could and will occur. Situations have been selected from across the wide spectrum of probable chemical engagements at sea or ashore as being typically representative of this spectrum. Each of these situations is described in terms that the author believes are realistic for the situation.

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1.2.1 WARSAW PACT ATTACK ON NORWEGIAN SEA
BATTLE GROUP (2 CV's)

(U) Cdr. Don Simons moved quickly down the passageway of U.S.S. Nimitz and entered the CIC spaces. He had been awakened by a messenger about 0300 with the news that the latest flight of Backfire bombers returning to their bases in the North had taken an abrupt vector toward Iceland. This was a marked deviation from the routine flight patterns the Soviet bombers had been flying for the past 7 to 10 days of the OKEAN-90 exercise. Cdr. Simons now received a second report that a large flight of bombers had been detected approaching the Battle Group from the northeast along the flight path used in the exercise before but in numbers far exceeding those experienced to date.

(U) Simons was still digesting the latest report when the General Quarters alarm began echoing throughout the ship. Clearly, these latest Soviet bomber movements posed a serious threat to both Iceland and the Battle Group. Up to now, the Battle Group had been taking advantage of the large movements of both the Soviet air and sea forces participating in the exercise to gain invaluable training in how to counter such movements as well as collecting the normal intelligence that can always be gained during such evolutions.

(U) The Nimitz shuddered from the near simultaneous firing of the four catapults in the flight deck as four F-14's were hurled into the still-dark, pre-dawn skies. Other pilots and squadron/ship maintenance and deck handling crews were thundering down the passageways toward the ready rooms or their flight and hangar deck stations to prepare or man the aircraft to meet whatever was to ensue.

(U) A report over the loudspeaker indicated that Air Force F-16's from Keflavik had been launched to meet the Soviet bombers approaching the island from the south. The report also stated that a number of the incoming bombers from the North had split off and were taking a heading toward Iceland. Almost immediately there came another report that the bombers had launched missiles, and the hangar and maintenance facilities on Iceland were receiving numerous hits and that warhead explosions on the runways were making the launching of additional F-16's and augmenting F-14's extremely difficult.

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

~~(S)~~ [REDACTED]

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~~(S)~~ [REDACTED]

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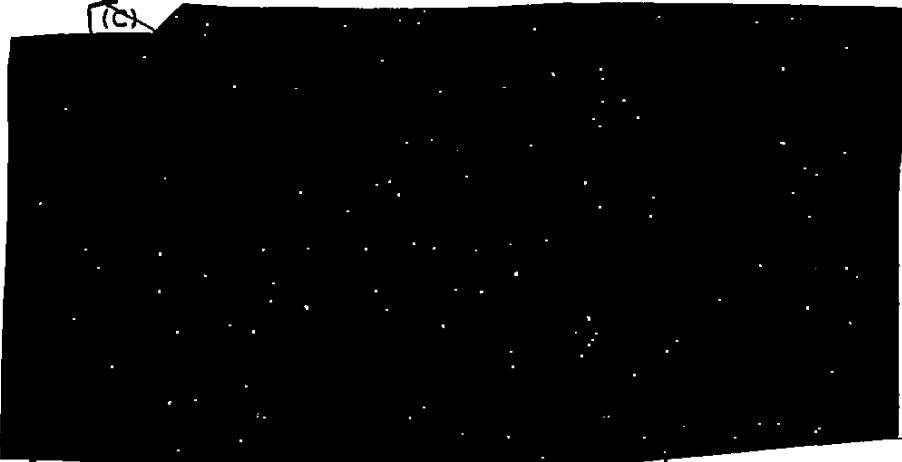
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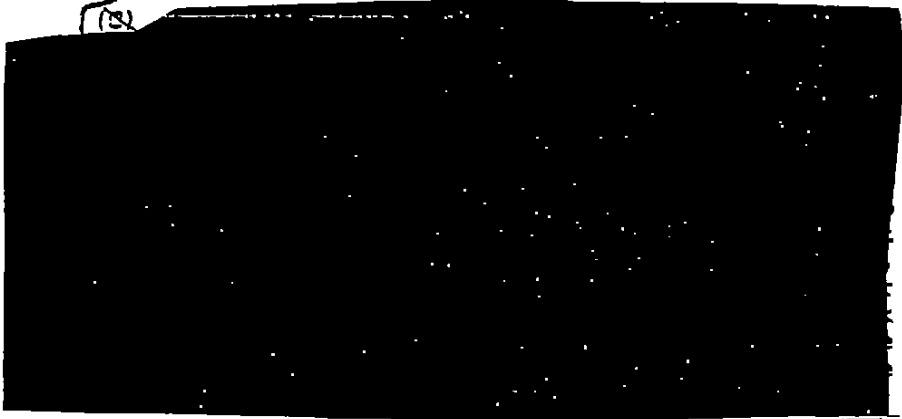
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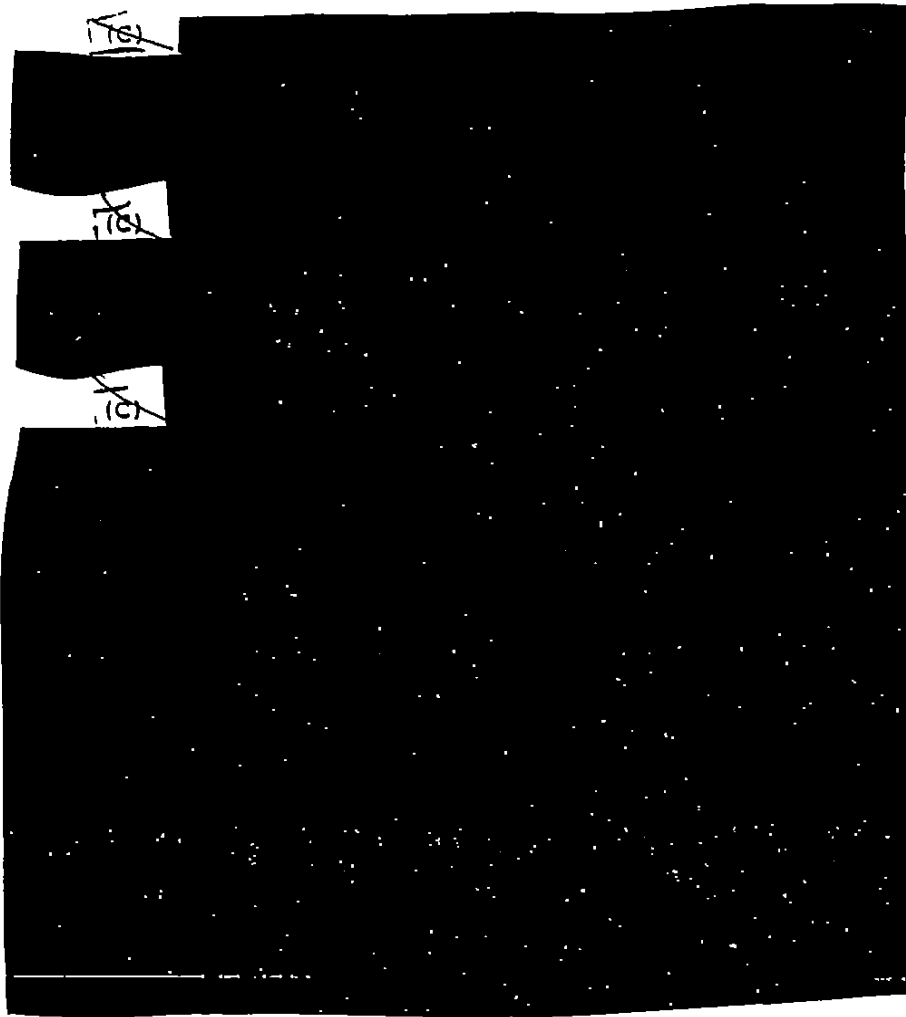
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OK ^(TS) The captain was on the loudspeaker now informing the entire crew of what the ship had just experienced, the damage that had been inflicted, and what the future might have in store. Cdr. Simons, like many others, kept recalling the captain's words. *re*



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OK ~~(S)~~ Suddenly the General Quarters alarm was sounding again throughout the ship. As Simons broke into a run to return to his station, he noticed a member of the deck repair party, already in protective clothing, fumbling awkwardly with a final portion of deck plating which he was attempting to lower into place. His body was slumping from fatigue.

OK ~~(S)~~ "My God," he thought, "it will only be a matter of time."

I-19

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1.2.2 WARSAW PACT ATTACK ON NAVAL BASE AT
SIGONELLA, SICILY

(U) Petty Officer Barnes was restless. He had risen from his bed in Barracks Seven almost an hour ago and wandered down to the lounge. It was now 3:30 a.m.. The events the past four days had convinced him that there was to be a war. Although most of the talk had been about Soviet troops massing on the Central Front in Europe, Barnes was well aware of the increased Warsaw Pact naval activity in the Mediterranean.

(U) Suddenly the phone in the lounge rang. "Immediate recall." The Master-at-Arms rushed to roust men from their bunks. Barnes took off at a run to catch the station bus which was making one of its early morning rounds of the barracks. He worked at operations as an air controller, and he was a damn good one too.

(U) Suddenly the air raid siren began to sound. Barnes had never heard it before except during the daily short test at 12:00 noon each day. Now it continued wailing for at least five minutes.

(U) Cars, buses and men were scurrying everywhere. As his bus screeched up to operations, Barnes ran for the ladder leading up to the tower. Just as he reached the top landing the building seemed to jump under his feet. He was flung against the wall. "My God, that was an explosion and close by!" He managed to get back on his feet and moved into the control room. It was a shambles - the window glass had been shattered by the force of the explosion and glass was everywhere. Johnson, his counterpart on watch, was standing at the console, microphone in hand, with his face and arms covered with blood from multiple cuts from flying glass splinters. He seemed not to even notice as he continued to pass on taxi and take-off instructions to aircraft that were beginning to appear all over the field.

(U) Another explosion split the night air at the MAC terminal across the field and still another at the Fleet support hangar just a few hundred yards away. A P-3C about to take the runway for take-off suddenly just disappeared as it received a direct hit from what could only be a supersonic missile.

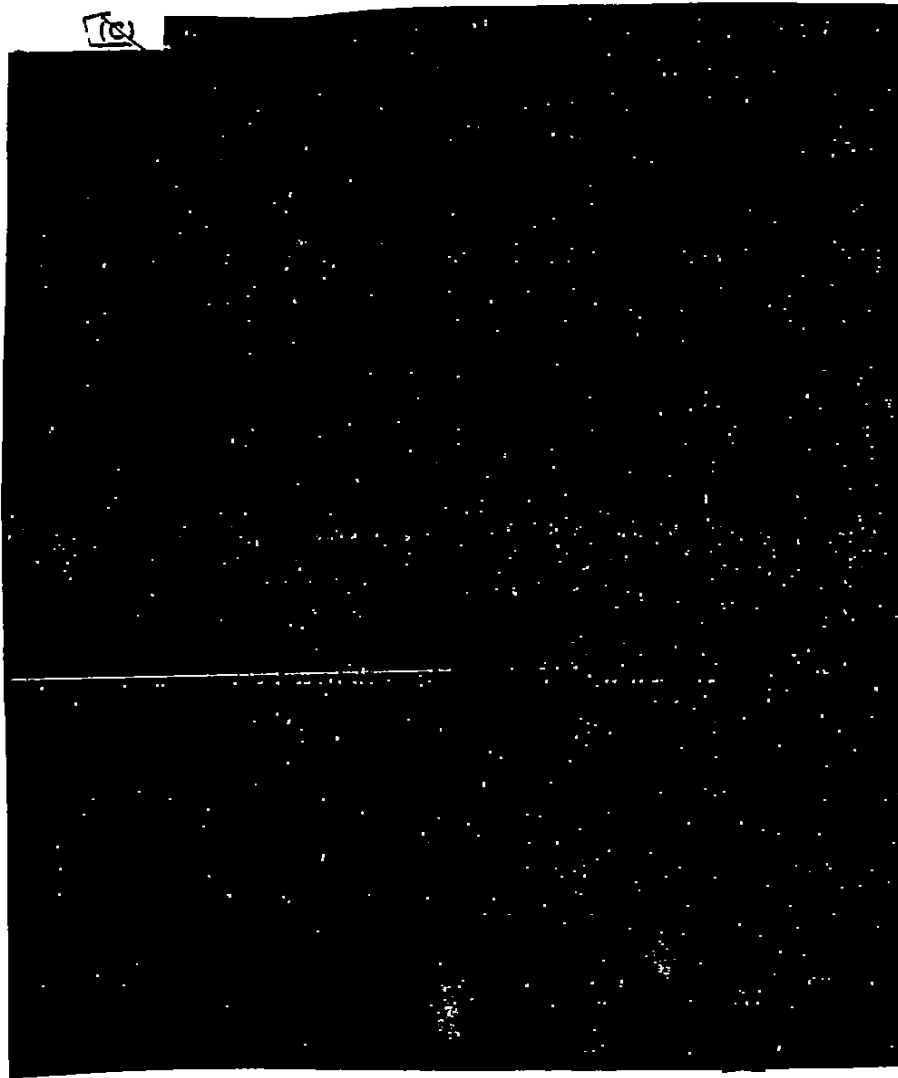
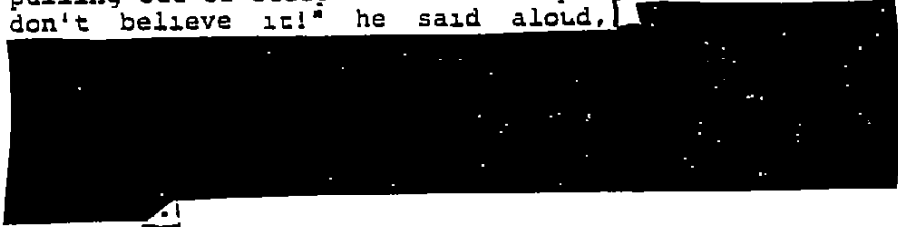
ok ~~(U)~~ Barnes knew the general location of the nuclear storage site and as his gaze moved there he was aghast at the sight. The entire area seemed to erupt with smoke and flames.

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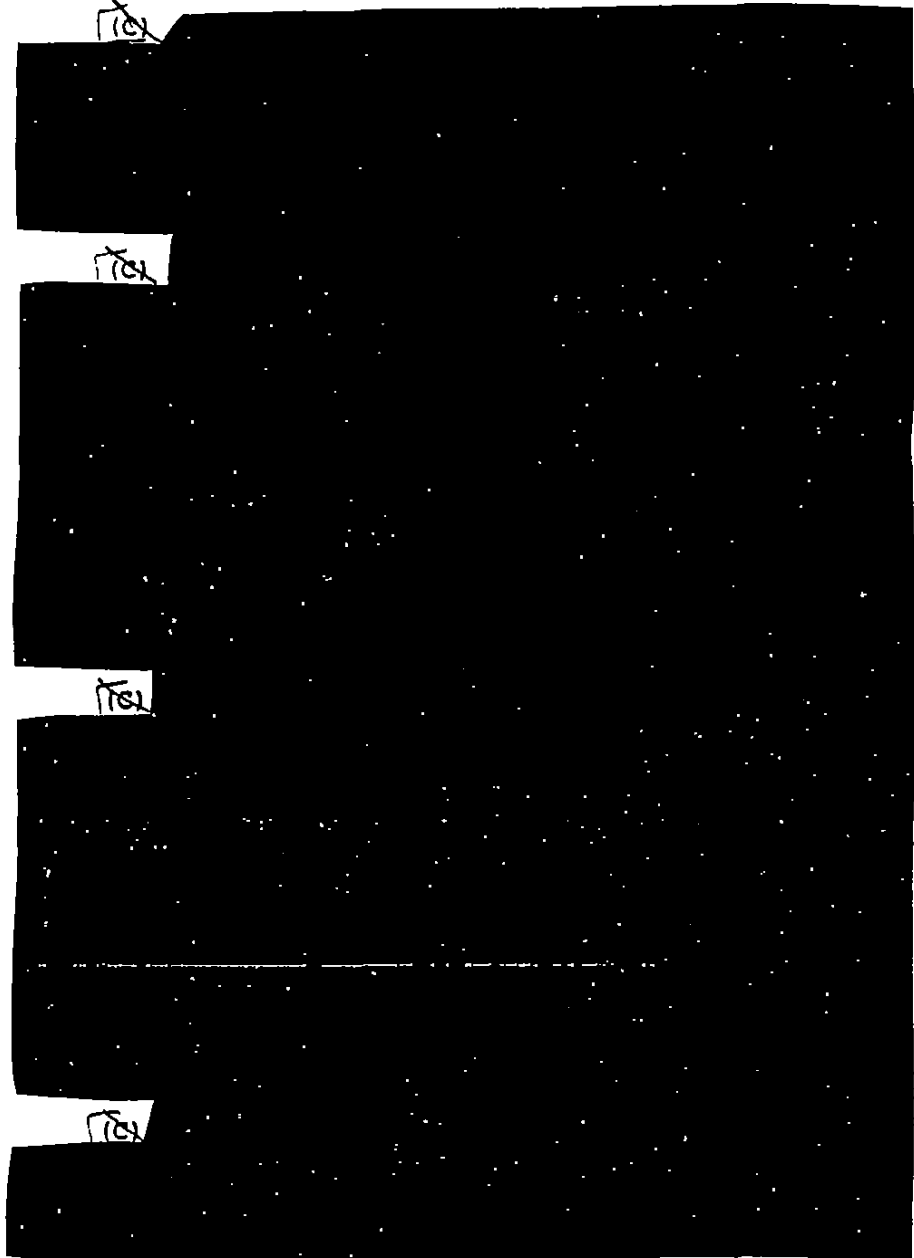
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(S) Now he noticed several strange aircraft pulling out of steep dives directly over the field. "I don't believe it!" he said aloud,



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ok ~~(S)~~ The air raid siren had been sounding at least once a day as some indications were received through the badly damaged communications network that another attack might be imminent.

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(U) It was to be D-day all over again.

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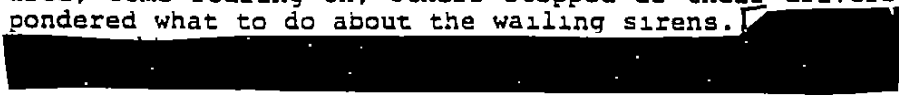
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I.2.3

WARSAW PACT ATTACK ON ROTTERDAM PORT

(U) In Rotterdam, Captain Peter Dykstra of the Royal Netherlands Navy was awakened at 4:00 a.m. by the sound of air raid sirens as he slept soundly in his room at the Navy visiting officers' quarters. It was the sound he and millions of other Europeans had been awaiting with dread for the past ten days - ever since the NATO nations had begun to mobilize in response to the increasing evidence of Warsaw Pact preparations for war. Stumbling out of bed and hastily donning his uniform, Dykstra raced out to his aging Volkswagen and drove as fast as he dared toward his new office at the harbor, glancing frequently at the brightening sky.

(U) Only a week before, Dykstra had suddenly been ordered from his post in the Navy staff to take over as military commander of the port and take charge of port operations for off-loading the NATO ships soon to be arriving with military supplies and equipment from the UK and North America. When the Netherlands government had agreed to join the other NATO nations in mobilizing, the decision had triggered the contingency plan to place port operations under military control and prepare for the massive sealift effort now beginning. His military staff was small, less than 15; he relied principally on the staff of the civilian port authority and on the force of more than ten thousand trained stevedores who operated the cranes, forklifts, tugs, switch engines and other equipment. These skilled people - nearly 15% now females - would soon be working long overtime hours as the flow of ships increased. They would be hard pushed to support the massive round-the-clock unloading effort they were now beginning. To expand the work force some apprentices and previously employed stevedores were being recruited, but the prospects were poor for a major increase in the next few critical weeks. This worried Dykstra, but it was not only the adequacy of the force which concerned him. He also wondered to himself: "Will they stay on the job in case of air and missile attacks, or in case of bad news from the front if the war starts and goes badly?"

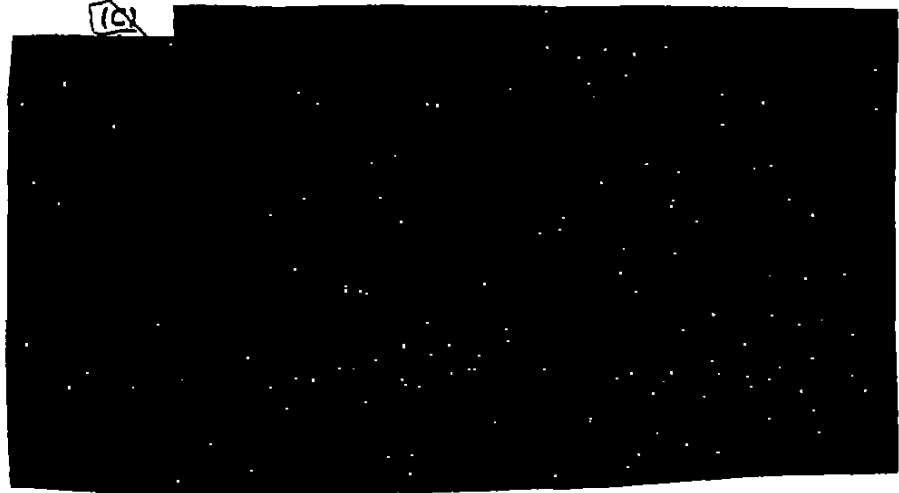
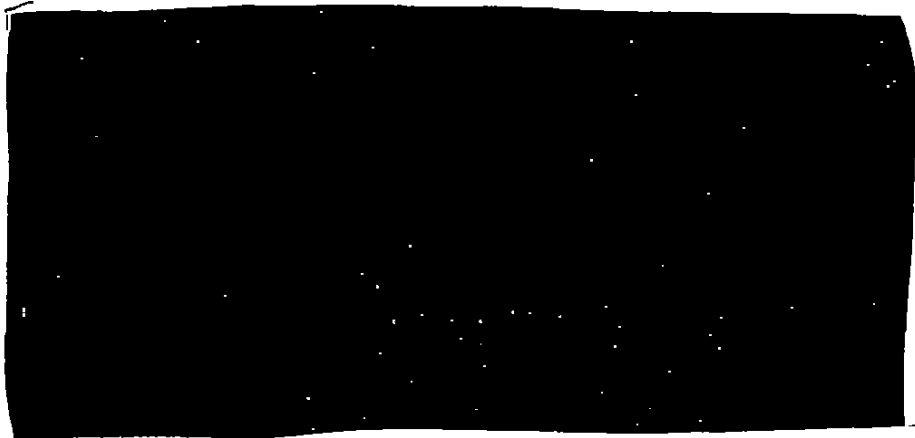
ok ~~(S)~~ But such practical problems were not on his mind now as he raced his Volkswagen toward the port, through streets nearly deserted save for the occasional truck loaded with British equipment departing the dock area, some roaring on, others stopped as their drivers pondered what to do about the wailing sirens. 

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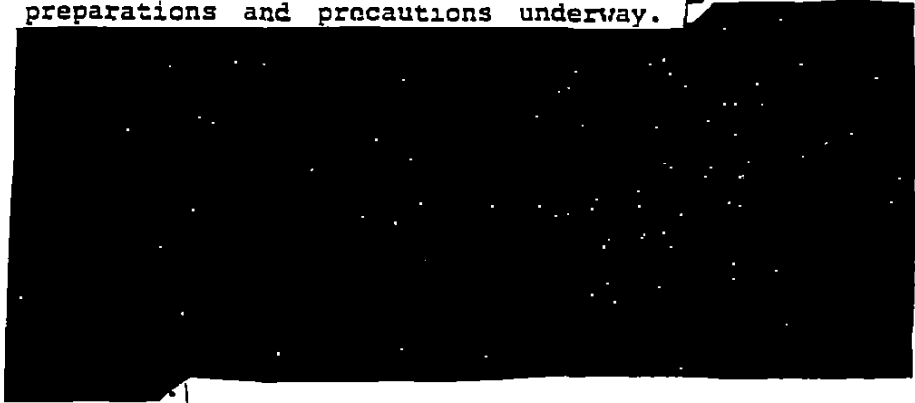
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ok ~~(C)~~ As other members of his staff began arriving, Dykstra gave orders to some to make quick visits to several locations and report back to him on preparations and precautions underway.



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ok

(C) As he slammed the door of his car and started back toward the building with his duffel bag in hand, Dykstra felt the ground shake with several shortly-spaced explosions. He hit the ground as a detonation occurred only a couple of hundred meters away. Looking up he expected to see aircraft, but the sky was dark. Then, the realization hit him -

[REDACTED]

(C) [REDACTED]

(C) [REDACTED]

(C) [REDACTED]

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ok

~~(S)~~ Most of the port employees and other people in the port did not realize what had happened until the word was spread, by phone and frantic shouts. A substantial number of people, especially those with previous military training, reacted quickly and sought shelter as best they could inside the shops and warehouses. Quite a few raced to their cars in the various parking lots and attempted to get away from the

[REDACTED]

~~(S)~~
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[REDACTED]

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ok ~~X~~ Dykstra felt an icy chill settle over him.
What could be the hope for the future?

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I.2.4

BLUE ATTACK ON SOVIET NAVAL BASE

(S) [REDACTED]

(S) [REDACTED]

(S) [REDACTED]

OK (S) In his Norfolk headquarters Admiral Perry J. Kronin, "P.J." to his friends, was in his operations center at 0515, receiving the latest information on enemy activity and reviewing force dispositions. It had been a hectic 29 hours, but Kronin had managed to sleep for a couple of hours on the bunk placed in his

I-29

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[REDACTED]

(C)

[REDACTED]

(C)

[REDACTED]

(C)

[REDACTED]

ok (C) "What about going after one of his big naval bases, P.J.?"

(C)

[REDACTED]

(C)

[REDACTED]

ok (C) "Jake, they're not scheduled to leave for another two weeks, but I'll consider what options we have and let you know. It may be too hard to do with ACLANT resources."

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~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

~~(S)~~

[REDACTED]

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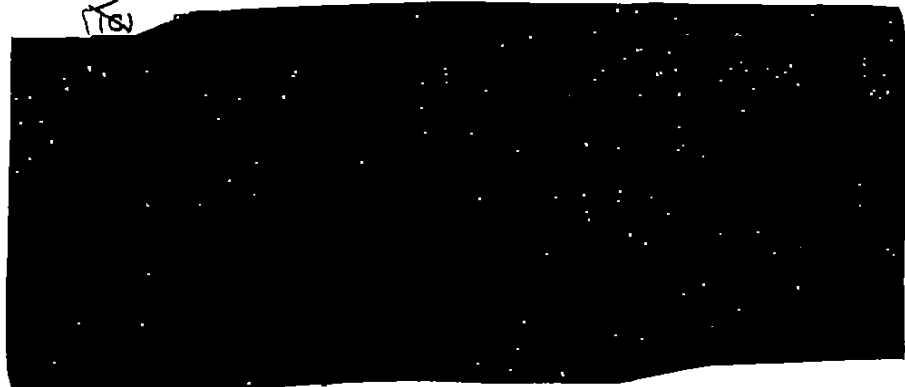
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ok at Prestwick, so he made sure that they all went to bed by 2000 that evening *el*

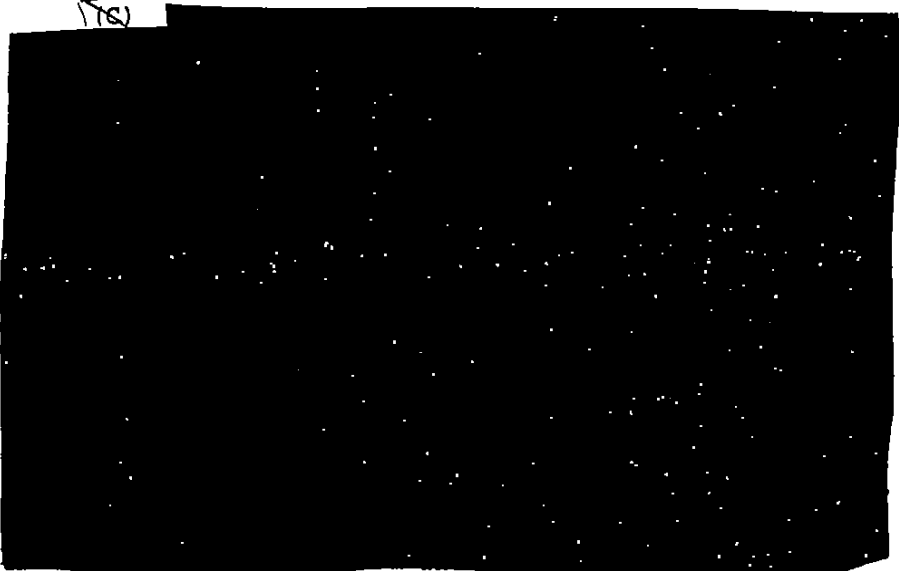
ok ~~9/10~~ At 0510 the next morning, while eating breakfast, Waleski received an urgent summons to the base operations center, where a secure phone call from CINCEASTLANT headquarters in London was waiting. *el*

[REDACTED]

el [REDACTED]

el [REDACTED]

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[REDACTED]

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(S) [REDACTED]

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(S) [REDACTED]

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CONFIDENTIAL - SECURITY INFORMATION

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~~(C)~~ [REDACTED]

~~(C)~~ [REDACTED]

I.2.5 "THINKING THE UNTHINKABLE"

C.K. [initials] The author of the following vignette was not a member of the Navy team and was not familiar with the general scenario of operations or the limitations of this study. Nevertheless, he presents a thought provoking addition which is believed to be germane to the conclusions which have been drawn.

(U) "Action, Reaction, or Inaction - that is the choice. We must decide today.

(U) The Secretary of the Navy glanced sharply around the table and leaned back in his chair. He was living up to his reputation as a go-getter. No, for him the political pussy-footing and compromise; he required the relevant issues to be exposed unequivocally, possible courses of action stated objectively, and a clear decision reached. He was a breath of fresh air.

(U) It was May 1990. The issue before the meeting was Chemical Warfare and how to combat it.

(U) "Intelligence update." called the Secretary.

(U) The Director of Naval Intelligence looked up from his file. "Not much to add to the written reports, Mr. Secretary." he said, "We know the Soviets have for years been devoting considerable effort to Chemical Warfare (CW) development and research. Recently, as gleaned from a defector, we acquired substantial corroboration of our assessment that they are experimenting with what may be a three-fold system a. distinct from our own binary work. As yet we have no feel for the nature of its effects and, hence, the"

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"feasibility of countermeasures, but we have good grounds for supposing that it is primarily intended as an incapacitant rather than as a killer. We have no knowledge of its persistence or decay rate. That really summarizes what we think we know of their capability."

(U) "Anything on their intentions?"

(U) "Yes. Earlier this month a new factor became apparent. Special Intelligence indicates that the output from several of the main chemical facilities west of the Urals has recently been switched from Agriculture Centers to Naval Arsenals. Furthermore, a number of the major units of the Northern Fleet are currently spending unusually prolonged periods in their home ports and have been observed to offload their SS-N-23 missiles. Our conclusion is that a significant number of the surface-to-surface missiles are being modified to take a CW warhead in place of a conventional one."

(U) The Secretary of the Navy turned to the Assistant Secretary for Research Engineering and Systems. "Can you quantify the problem for us?" he asked.

(U) "Affirmative, Mr. Secretary. There are four principal aspects to be considered and from them stem a whole range of lesser factors."

(U) "First, the need for a sensor to indicate the presence of the toxic agent. That could be technologically difficult if the agent is tasteless, odorless, colorless and vaporized - but not impossible. There would be no warning."

(U) "Second, the requirement to provide effective protection for personnel individually. In the absence of knowing the specific chemistry of the agent it should be assumed that whole-body protection would be needed, in a form permitting as far as possible normal movement, sight and breathing. In the case of prolonged use the requirements for eating, drinking and personal waste disposal would be difficult extras, as would the avoidance of heat exhaustion and the reduction to a workable minimum of the general cumbersomeness of the protective clothing. Impaired vision due to condensation inside the respirator, together with external speech and audibility, present further, though not unsolvable, problems. Without greatly improved design compared with known existing equipment, the incidence of fatigue will be sharply increased and the level of efficiency over a period reduced."

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(U) "Third, in addition to personal measures, selected areas of all ships will need to be pressurized to form a 'citadel', entry to which will require an effective airlock and associated decontamination arrangements."

(U) "Finally, it will reduce contamination levels if some form of pre-wetting spray or drenching system is fitted to reduce the adhesion of the agent to external surfaces."

(U) "What are the main practical problems to all this, Chief of Naval Material?" asked the Chairman.

(U) "It can all be done, Mr. Secretary. Indeed, major units in service today are already equipped with citadel and pre-wetting arrangements. Protective clothing and respirators also exist but in bulky, cumbersome form; in my judgment they will need further research, redesign and a crash production program if we are to take this business seriously. The same goes for developing a sensor. Although initial reactive measures can be taken automatically at 'first bang', detection and dose-measuring instruments will be needed for subsequent definition of contaminated people and areas and their treatment. I cannot comment on the adequacy of our existing kit without knowing in more detail what we are up against."

(U) "With respect, Mr. Secretary," interjected the Vice Chief of Naval Operations, "I think we are in danger of losing our sense of proportion. We have heard from the Assistant Secretary a great deal about the problems confronting us; but we have heard nothing at all about the difficulties facing the potential enemy. How is he to deliver this stuff onto a selected target, many miles distant, in the gales and other vagaries of the weather in the North Atlantic? Any why should he elect to use CW, which never could sink a ship, when a single hit with a conventional warhead could send the target to the bottom? Furthermore, there are effective countermeasures to CW after impact. There are none against a normal warhead other than to destroy the delivery vehicle before it strikes. Before we divert our limited resources with such countermeasures, or cut deeper into our already inadequate operational training for our men, let us be quite sure that we really need to do these things. Maybe the Russians are simply trying to take our eye off the real ball."

(U) "That's all very fine," countered the Chief of Naval Personnel. "I have a good deal of sympathy with the Vice Chief's views. But, the plain fact remains that we are confronted by a new and"

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"discernible threat. We may not like it, or the things we might have to do to counter it, but we owe it to our people to equip them with the necessary antidote and train them in its use. Anything short of that would be irresponsible - and would be seen to be so."

(U) "Chief of Naval Operations?" asked the Secretary, turning to face the Uniform Head of the Navy.

(U) "Mr. Secretary, I concede that we face a dilemma. Its main ingredients have already been lucidly expounded and I won't enlarge on what has been said. But, there are two further considerations which have not yet been addressed and which I believe to be relevant. During World War II the Germans held huge stocks of CW, including the deadly Nerve gas. They never use them. Why? I submit they judged that sooner or later such use would rebound to their disadvantage. Incidentally, the line of demarcation between chemical warfare (which is generally regarded as nasty but, if limited to incapacitants, acceptable) and biological warfare (which is universally rejected as atrocious) is as fine as it is arbitrary. I am therefore prompted to ask where is the consistency, where is the logic, for supposing that the Russians will behave in diametrically the opposite way? In my view they won't. The other thing is this. We're short of manpower now; today we are over two thousand men short at the Petty Officer level, the lynchpin of the Service. If you dress our people up like Father Christmas, have them eating through a sanitized plastic tube and compelled to resort to space-shuttle gymnastics for urination and excretion, for days on end - I tell you straight they will opt out en masse and you'll be forced to reintroduce the draft. What administration is going to survive that?"

(U) The Secretary of the Navy pondered deeply; then he summed up.

(U) "The issues are finely balanced," he pronounced. "I do not consider that the evidence available to us is sufficient to warrant major adjustment to the naval program, further loading of the shipyards, and a massive personnel training schedule. We are in the business of deterrence, hopefully not warfighting, and should trim our sails accordingly - as I judge the Soviets are doing with this latest CW device. We already have effective defensive countermeasures to a very considerable extent. If the need arises to modify or amplify them this should not be too difficult or take too long. I share the view

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already expressed that while the Soviets may threaten to use this weapon, if indeed it is practicable at sea, they will not do so because of its damaging effect on world opinion. Therefore, my decision is that we will not

(U) "Mr. Secretary," came a deep growl from the far end of the table. It was Ike Gridd, Supreme Allied Commander, Atlantic, in the late-'70s and in his time revered as a seagoing commander for his wide experience, sound sense and high leadership. Since his retirement he had been brought back as a consultant and it was in this capacity that the ex-Navy Boxing Champion entered the ring now.

(U) "Forgive me for interrupting, sir," went on the bass drawl, "but while you giants have been talking I've been thinking. And, with the greatest respect to your deliberations I reckon you've got it wrong. You don't want to do what needs to be done because you don't like it - it's nasty, expensive and plain inconvenient. That's what war is, all those things, and never yet has it turned out as expected. But, there are mighty few guys around now in high places with war experience. I've been through it all and for what it is worth I give it to you as my opinion that if we ever get into a showdown with the Russians we shall have to fight with what we've got at the start. And one final thing. Don't fool yourselves that the goddamned Ruskies give a bloody dime for world opinion; they don't know the meaning of humanity and 'deterrence' doesn't exist in their language. They lost 20 million people in World War II; they lost another 20 million in the subsequent Stalin purges. If you wait until they pull the trigger on this new horror-comic you will be too late to react."

(U) The ensuing silence was almost painful. Some studied their papers, other shifted uneasily in their chairs, nobody spoke.

(U) The Secretary closed his briefing file and leaned forward. "Thank you, Admiral," he said, "I'm sure we're all grateful for your intervention. That's why we asked you along. But, the politico-economic imperatives are such that we cannot embark on a major new program at this time. We will continue to monitor intelligence closely. We will alert commands to the potential new threat. And, if it develops further, we will divert appropriate scientific effort towards additional countermeasures."

(U) "Gentlemen, the meeting is closed."

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(U) As they picked up their papers and left the room the consultant was heard to murmur, "God-damned ostriches - just like 1941."

* * * * *

(U) Moscow. The strategic Planning Committee of the Politburo was nearing the end of an unusually prolonged and critical session. The main issues had been resolved: the spread of communism and Soviet influence generally had not proceeded as quickly or as extensively as planned; there had been setbacks and frustrations - in the Middle East, in Lebanon, in the South Atlantic and South America, in the Caribbean; Europe was basically stable despite the huge effort put into the Trades Union and CND; some new initiative was becoming urgent. The Politburo had selected Diego Garcia, a small but strategically important island complex in the heart of the Indian Ocean, as the scene for that initiative. Owned by the British, disputed by the few ejected inhabitants, leased to the USA, it lay outside the NATO area and none of those inward-looking European members would lift a finger for it. True the British might, but even they were unlikely to do much owing to their commitment in the Falkland Islands and their continuing adherence to their maritime-emasculating defense review of 1981 (known locally as Gorshkov's Triumph). That left the USA and where better or more timely than the Indian Ocean to bruise the claws of the eagle? India would go through the motions of making a fuss but a firm tweak on her arms supplies would quickly bring her to heel. And so, it was settled. Now it remained only to decide on the timing and the more detailed concept of operations.

(U) The Chairman spoke. "Politically we need to mount the operation as soon as practicable," he said. "At the same time we should take the opportunity of furthering our new policy of 'war without fighting'."

(U) "Chief Scientist," he went on, "remind the Committee of the main parameters of EUPHOBILAX, our CW breakthrough, and give us a clear statement on its availability for use on a sustained basis."

(U) "Comrade Chairman," began the Professor of Chemistry, "bulk supplies of Euphobilax are available now. Considerable quantities have already been distributed to the Naval Armament Depots. Tactical outloading into operational missiles is nearly complete. Proving trials have been outstandingly successful. The main limiting factor on timing is the

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tight security at every stage of deployment but by the end of June all units designated in your previous directive will have been equipped."

(U) "This novel agent," went on the Professor, "is a derivative of the nerve group but modified to localize the symptoms and exercise more selective control of the side effects; apart from those suffering from chronic respiratory complaints like asthma, or heart condition, the results are unpleasant and incapacitating but not lethal. Recovery time depends on the dose received and the degree of after-care. The chemical is extremely difficult to detect and its neutralization is complex. Its persistence is comparatively short.

(U) "As to its effects," the Chemist continued, "they are threefold. At first a feeling of complete euphoria is experienced: the most squalid of slums becomes a lovely place, your bitterest enemy becomes lovable, life is great fun and a wonderful party; rational thinking ceases and intended actions become blurred and philanthropic - as after half a bottle of vodka. This is followed by a period of temporary near-blindness, simply a loss of optical definition so that everything appears hazy and diffuse; there is no sharp onset and no physical discomfort as with tear gas, rather it is a form of optical euphoria. From what I have said you will realize that the chemical attacks muscular control - first of the outer brain cells, then of the eyes, and finally the rest of the body, especially intestinally. This last stage results in complete loss of control of the bladder and the bowel, and in time will lead to a more general lethargy (but not complete paralysis) of the limbs."

(U) In the course of the next few hours the outline operational plan took shape. "D" Day was fixed as 15 August when all the decadent West would be on holiday and off their guard and the monsoon would be blowing predictably. The carrier force would be neutralized by submarine-launched missiles without warning. The political take-over would then be announced to the world and concurrently a 200-nautical-mile Exclusion Zone established around the island, entry into which would result in neutralization through incapacitation. A tit-for-tat retaliation was not thought likely since it was virtually certain that the West did not possess such a capability; their possible resort to nuclear weapons would clearly be an idle bluff and could be ignored. The USSR would again be seen to be leading the world

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(U) The clock struck midnight and the meeting dispersed.

* * * * *

(U) At 0600 on 15 August Brigadier General James G. Brantlin, United States Marine Corps, Island Commander, Diego Garcia, set out from his quarters on his customary early morning jog. He was a big man, inclined to stoutness, and the more sedentary life of higher command contrasted with his field experience in Vietnam. The sun was not yet up and such coolness as the island enjoyed during the hours of darkness was still clinging to the night. Yet he was already sweating as he cleared the Bachelor Officers' Quarters area and headed up the road towards the Communications Center.

(U) The Eastern skyline was lightening fast as he neared the Center and he was struck more forcibly than ever by the beauty of the tropical dawn. Slowly, inexorably the blood-red orb levered itself up from the horizon and it was another day. "Life is good," thought Brantlin, "and this little old island is as fine a command as I could wish for. Maybe I'll break my routine and have breakfast with the Communicators." He reached the COMCEN.

(U) "Hi, General - good morning, sir, it's a nice day," sang out the Duty Officer. "Sort of day for a party, eh General? Care to join us for breakfast, sir? It's the Colonel's birthday."

(U) "Thanks Lieutenant, your offer is accepted." replied the General and entered the building

(U) It was a merry meal. The chatter got louder and more boisterous, and by the time it ended the atmosphere was positively uproarious and of the many unlikely years spun all were very funny.

(U) "Hal hal Hal" roared the General, slapping his sides and bent double with mirth, "I'd best be getting back to change and be off to the office or you boys will be the death of me. Tee! Hee! Hee! That one about the Chinese girl was really rich. Tell you what, why don't you come back to my bungalow at midday for a bite of lunch? O.K.? It's fixed then. Have a nice day." And off he went.

(U) The morning passed, much as other mornings. Little remarkable seemed to occur. Indeed, not much of anything seemed to happen, no complaints, no petulant signals from the Task Force Commander or Washington, not even the usual problem from the British Resident Naval Officer who was also Justice of the Peace and the

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overall law-enforcement official. True the mid-morning break seemed rather noisier than usual, quite a lot of singing and shouting from the EM Club. "Some other guy celebrating his birthday," mused the General and dismissed it from his mind.

(U) The lunch party was a great success. From the outset it went with an impetus seldom experienced in the routine life of Diego Garcia. The conversation was witty, varied and unceasing. The atmosphere was exuberant. Afterwards the General poured coffee. He didn't do it very well, missed the cup and splashed it all over the table. In clutching another cup his neighbor slipped and knocked the whole table over. "Where have you got to, George?" called out the General, peering around to find the Colonel. "Right here beside you, General." replied the latter from the other end of the room. But, this didn't quite make sense, and he no longer seemed able to pick out the fellow's feature: anyway. Indeed, everything had become rather blurred and woolly. Maybe it was the heat or that second gin and tonic or perhaps he'd been overdoing things lately.

(U) "Boys," he said as steadily as he could contrive, "I guess we'd all better be getting back to our work. Thank you for your company."

(U) The party broke up - literally, it seemed, for two more small tables and a chair were knocked over and somebody fell down the stairs.

(U) The General slumped on the sofa. He didn't feel like working. He didn't feel like doing anything. He didn't feel too well.

(U) At 0200 the next morning the Soviet landing force went ashore unopposed.

* * * * *

(U) The Joint Chiefs of Staff met in their room in the Pentagon in emergency session. Exceptionally, the Secretary of Defense himself was in attendance.

(U) "I can't make it out." the Secretary was saying, "We haven't had a peep out of Diego Garcia for the past 24 hours, we have been unable to get through to them and now we have this takeover declaration from the Russians. Ordinarily I would regard it was a poor bluff, but since it's been pushed out worldwide and against the background of apparent shut-down on the island I wonder if there's not something to it. I

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reckon we should instruct the Commander, Seventh Fleet to investigate and report."

(U) After minimal discussion this was agreed and action initiated.

(U) "Rules of Engagement?" queried the Chief of Naval Operations.

(U) The Secretary of Defense intervened. "Not so easy." he said, "Of course, the normal rules of self-defense apply but there's little more we can authorize unless the Russians actually do something."

(U) "How much more do they have to do beyond taking over our Indian Ocean Forward Operating Base?" snapped the CNO.

(U) The Defense Secretary looked uncomfortable but held to his point. "They have not yet committed a hostile act," he replied, "and we must not be seen to be the first to do so."

(U) "So what, we order the Seventh Fleet with their hands tied behind their backs?" queried the CNO acidly.

(U) "Admiral, I've stated the position; that's it." came the reply.

* * * * *

(U) The Seventh Fleet Commander was a highly intelligent, clear-thinking man as well as being a shrewd tactician. On receipt of his directive to "investigate and report" he summoned his Chief of Staff, Flag Captain and Operations Officer.

(U) "I don't like it." he said. "These Russian bastards are onto something or they wouldn't dare behave like this. We've sure got the rough end of the stick this time. We can fly reconnaissance missions from the Carrier and penetrate the Exclusion Zone from the air but sooner or later we've got to send in surface units and probe the situation on the ground."

(U) "What bugs me," he went on, "is all this guff about incapacitants; is it real or is it crap? We had that alerting signal back in the spring and now the Russians themselves are pulling the same line. We may or may not have exactly the right antidote but at least we've got our respirators, our protective clothing, our citadels and our pre-wetting. Flag Captain, am I right?"

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(U) The Carrier Captain looked uncomfortable. "Admiral, in theory you're spot on; in practice you're wide of the mark. For a citadel to be effective you need to pressurize it to at least 3 p.s.i.; at our recent overhaul the tests revealed only 1½ p.s.i. - the shipyard wanted two months and a half a million dollars extra to rectify it; my flightdeck was badly eroded, needed complete re-treatment and could be done within cost and within time. I took the only realistic decision open to me. The pre-wetting should be O.K. As to the gas masks and the special clothing, well, you know as well as I what a couple of hours' worth of that lot does to efficiency. And, I reckon what I've said is just about typical of the whole Fleet."

(U) "All right." The Fleet Commander turned to his Chief of Staff. "Tell CTG 77.1 to assume the First Degree of Nuclear Biological and Chemical Defense Readiness, pre-wetting to be switched on, particular attention to be paid to citadel integrity, anti-gas respirators to be worn - from 2100 tonight. He will enter the Zone from the Southwest at that time and approach downwind so that anything they fling at us will blow back in their own faces. And, signal Washington of my intentions."

(U) By midday two KIROVs and two SLAVAs with attendant escorts were in distant marking positions on either flank of the force. This was heavy metal for the task and demonstrated a potential to confront of some magnitude.

(U) The Exclusion Zone limit was crossed according to plan at 2100. Shortly afterwards a signal from the Soviet Commander was received on International Distress Frequency:

(U) "Unless you clear the Exclusion Zone declared by my country forthwith and keep clear, your force will be subjected to severe incapacitating contamination for which you will carry full responsibility."

(U) The signal was not acknowledged. The Force steamed on into the night. Washington was informed.

(U) It was the last communication from CTG 77.1.

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GLOSSARY

AA - Anti-aircraft
AAFCE - Allied Air Forces, Central Europe
ABC - aviation battalion (combat)
acft - aircraft
A/C - aircraft
ACLANT - Allied Commander, Atlantic
ACR - armored cavalry regiment
ADA - air defense artillery
ADC - assistant division commander
AEW - airborne early warning
AFATADS - Advanced Field Artillery Tactical Data Systems
AFCENT - Allied Forces, Central Europe
AFNORTH - Allied Forces, Northern Europe
AFSOUTH - Allied Forces, Southern Europe
AG - adjutant general
AH - attack helicopter
ALOC - air line of communications
AMSAA - Army Materiel Systems Analysis Activity
APAM - anti-personnel air munition
APOD - aerial port of debarkation
arty - artillery
ASAC - All-Source Analysis Center
ASAS - All-Source Analysis System
ASL - authorized stockage list
ASOC - air surveillance operations center
ASP - ammunition supply point
ASW - anti-submarine warfare
ATAF - Allied Tactical Air Force
ATOC - air tactical operations center
ATP - ammunition transfer point
AVIM - aviation intermediate maintenance
AUM - aviation unit maintenance
AWACS - airborne warning and control system
BAI - battlefield air interdiction
Bd - blood (a type of chemical agent)
Bde - brigade
BENELUX - The countries of Luxemburg-Belgium-The Netherlands
BI - battlefield interdiction
BMP - a Soviet military personnel carrier/fighting vehicle
Bn - battalion
Br - blister (a type of chemical agent)
Btry - battery
C² - command and control
C³ - command, control and communications
CAS - close air support
cav - cavalry
CBU - cluster bomb unit
Cdr - commander
CEC - combat equipment company
CEGE - combat equipment group, Europe
CENTAG - Central Army Group

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CEP - circular error probable
 CEWI - combat electronic warfare and intelligence
 CIC - combat information center
 CINCEASTLANT - Commander-in-Chief, Eastern Atlantic
 CINCENT - Commander-in-Chief, Central Europe
 CINCLANTFLT - Commander-in-Chief, Atlantic Fleet
 CINCNORTH - Commander-in-Chief, Northern Europe
 CINCPAC - Commander-in-Chief, Pacific
 CINCSOUTH - Commander-in-Chief, Southern Europe
 CMLO - chemical officer
 CND - Chief of Naval Development
 CNO - Chief of Naval Operations
 COB - combined operating base, ie. US and allies
 COM - command or communications, depending on context
 COM CTR - communications center
 COMAAAFCE - Commander, Allied Air Forces Central Europe
 COMCEN - command center
 COMCENTAG - Commander, Central Army Group
 comm - communications
 commo - communications
 COMMZ - communications zone
 CONUS - continental United States
 COSCOM - corps support command
 CP - command post
 CRC - control and reporting center
 CSH - combat support hospital
 CSS - combat service support
 CSWS - corps support weapon system
 CTR - center
 Ctrs - centers
 CW - chemical warfare
 DCA - Defense Communications Agency
 DCINC - deputy commander-in-chief
 Defcon - defense condition
 DISCOM - division support command
 DNBI - disease and non-battle injury
 DOD - Department of Defense
 DPC - data processing and control
 DS - direct support
 DS2 - A decontaminant
 DTIC - division tactical intelligence center
 ECM - electronic counter-measures
 EM - enlisted men
 ENCOM - engineering command
 EMCON - emission control
 EUCOM - European Command
 EW - electronic warfare
 FA - field artillery
 FARRP - forward area rearming and refueling point
 FB - firing battery
 FDC - fire direction center
 FEBA - forward edge of the battle area
 FLOT - forward line of troops
 FOL - forward operating location

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FRG - Federal Republic of Germany
 FSE - fire support element
 FSO - fire support officer
 GCA - ground control approach
 GD - A nerve agent
 GDP - general defense plan
 GDR - German Democratic Republic
 GHQ - general headquarters
 GIUK - Greenland-Iceland-United Kingdom
 GLCM - ground launched cruise missile
 GR - graves registration
 Grp - group
 GS - general support
 GSF - general support forces
 GSFG - Group of Soviet Forces, Germany
 GTA - guards tank army
 GTD - guards tank division
 Hdqtrs - headquarters
 HE - high explosives
 HF - high frequency
 HL - chemical mixture of mustard and lewisite
 HNS - host nation support
 HQ - headquarters
 IMS - International Military Staff
 Inf - infantry
 ITV - improved tow vehicle
 JCS - Joint Chiefs of Staff
 JSTARS - joint surveillance and target acquisition radar system

LRN - Lantain
 MAC - Military Airlift Command
 MC - medical corps
 MCP - main command post
 Mech - mechanized
 MHE - materials handling equipment
 MI - military intelligence
 MLR - main line of resistance
 MLRS - multiple launch rocket system
 MMC - maintenance management center
 MOB - main operating base
 MOD - Ministry of Defense
 MOPP - mission oriented protective posture
 MRD - mechanized rifle division
 MRL - medium range launcher
 MSC - major subordinate command
 MTI - moving target indicator
 MUST - medical unit self-contained transportable
 NATO - North Atlantic Treaty Organization
 nav - navigation
 NAVEUR - US Navy, Europe
 NBC - nuclear biological chemical
 NCO - non-commissioned officer
 NLT - not later than

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NP - on-persistent (a classification of chemical agent)
 NPBd - non-persistent blood (a type of chemical agent)
 NPblood - non-persistent blood
 NPN - non-persistent nerve (a type of chemical agent)
 NS - north/south
 Nuc - nuclear (as in Tac Nuc - tactical nuclear)
 Nuke - nuclear
 OCA - Office, Comptroller of the Army
 OKEAN - Soviet naval exercise code-name
 OMG - operational maneuver group
 OP - operations
 opcon - operational control
 OPNS - operations
 OSD - Office of the Secretary of Defense
 P (prefix) - persistent (a type of chemical agent)
 PBlister - persistent blister (a type of chemical agent)
 PBr - persistent blister
 PELS - Position Establishing Locator System
 PLL - prescribed load list
 PLT - platoon
 PN - persistent nerve (a type of chemical agent)
 POL - petroleum, oils, and lubricants
 POMCUS - pre-positioned materiel configured in unit sets
 PSC - principal subordinate commander
 PZ - primary zone
 RF - radio frequency
 Rkt - rocket
 RPG - rocket propelled grenade
 SAC - Strategic Air Command
 SACEUR - Supreme Allied Commander, Europe
 SACLANT - Supreme Allied Commander, Atlantic
 SEAD - suppression of enemy air defense
 SHAPE - Supreme Headquarters, Allied Powers, Europe
 SHORAD - short range air defense
 SIGINT - signal intelligence
 SIOP - Single Integrated Operations Plan
 sitrep - situation report
 SP - semi-persistent (a classification of chemical agent)
 SPETSNAZ - Soviet Special Forces
 SPN - semi-persistent nerve (a type of chemical agent)
 SPT - semi-persistent toxin (a type of chemical toxin)
 SSN - submarine, nuclear-powered
 Stg - stage
 STOL - short take-off and landing
 SUPCOM - support command
 TAC - Tactical Air Command
 Tac - tactical
 TACC - tactical air control center
 TACS - tactical air control system
 TF - task force
 TFW - tactical fighter wing
 TGD - thickened GD (persistent nerve gas)
 TGSM - terminally guided submunition

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TOC - tactical operations center
TR - theater reserves
Tricothecene - "Yellow Rain", a chemical toxin
TVD - Soviet headquarters for strategic direction,
superior to front
TWX - telegram
UMSTEAD - new signal equipment, identified by brand name
USAF - United States Air Force
USAFE - United States Air Forces, Europe
USAREUR - United States Army, Europe
USCINCEUR - United States Commander-in-Chief, Europe
VR - visual reconnaissance
VX - long-term persistent nerve (a chemical agent)
Vx - long-term persistent nerve
WARFACT - Warsaw Pact
WP - Warsaw Pact

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Commander 1st Armored Division US Army Europe and Seventh Army APO NY 09326	1
Commander 2nd Infantry Division APO SF 96224	1
Commander 25th Infantry Division APO SF 96857	1

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Commander I Corps Fort Lewis, WA 98433	1
Commander III Corps Fort Hood, TX 76544	1
Commander V Corps, USAREUR APO NY 09079	1
Commander VII Corps, USAREUR APO NY 09107	1
Commander IX Corps APO SF 96343	1
Commander XVIII Airborne Corps Fort Bragg, NC 28307	1

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Chief of Naval Operations Department of the Navy Room 4C476, The Pentagon Washington, DC 20350	14
Chief of Navy Material Department of the Navy Washington, DC 20360	4
Commander in Chief U. S. Atlantic Fleet Norfolk, VA 23511	2
Commander in Chief U. S. Pacific Fleet Pearl Harbor, HI 96860	2
Commander in Chief U. S. Naval Forces Europe FPO New York 09510	5
Commander Second Fleet FPO New York 09501	2

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Commander Seventh Fleet FPO San Francisco 96601	4
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XO 1
LG 1
IN 1

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Hickam AFB APO SF 96853

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XO 1
IN 1
LG 1
DE 1

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1

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Langley AFB, VA 23665

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OE

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1
1
1

HQ SAC
Offutt AFB, NE 68113

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XP
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IN
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1
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HQ AFRES/DOH
Robins AFB, GA 31098

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AU/XPR 1
Maxwell AFB, AL 36112

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AD/Y00 1
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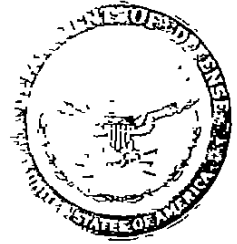
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