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TARGETING THE SOVIET ARMY ALONG THE SINO-SOVIET BORDER [redacted]

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This report studies targeting the Soviet Army along the Sino-Soviet border as a deterrence option. It addresses the feasibility of targeting both fixed and moving target elements under various conditions. It is shown how historical and geographic peculiarities of the region make Soviet forces along the border a valuable, yet comparatively cost-effective target, using current weapons systems and surveillance means.

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[redacted] EXECUTIVE SUMMARY

It is the purpose of this paper to report on a series of investigations to define aspects of targeting the Soviet armed forces located in Eastern Europe and on the eastern border facing China and in Mongolia. The objectives were directed at providing the answers in the following areas:

- Identify and describe the targets in space and time
- Determine the resources necessary to provide information for targeting
- Ascertain general force sizes and uncertainties
- Demonstrate compatibility with current U.S. forces and planning
- Identify R&D initiatives.

A. GENERAL

The strategic offensive forces of the United States are central to the deterrence of war and are the foundation of our military strength. Deterrent features are derived, in part, from the perception that losses to any would-be attacker would far outweigh any possible gain. Both this perception and war fighting capabilities are, in a sense, measured by the character of the losses sustained.

The strategic balance is also seen in these terms, and in the dynamics of developmental activities. First, on the Soviet side, there is the momentum of the Soviet strategic programs in both quality, diversity and numbers of systems. New high throwweight missiles are being introduced, several with MIRV warheads. New SSBNs and SLBMs are being introduced. Since the early 1970s, the Soviets have placed increasing stress on civil defense to protect and preserve their population in time of strategic war. This is complemented by a growing and more physically dispersed industrial base

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On our side the dynamics have led us to consider flexible response alternatives for the deployment and employment of strategic forces. Modernization has focused on force efficiency, responsiveness and survivability. New targeting initiatives in the form of limited and regional nuclear options have also led to a lesser distinction between strategic and theater or tactical nuclear forces.

Currently, a credible stratigic nuclear deterrence is considered to basically depend on the ability of US forces to be militarily effective. The conditions for such deterrence are viewed as: 1) survivability, attack assessment, and command, control and communications; 2) the ability to inflict an unacceptable level of damage on the Soviet Union even in the event of a Soviet first strike; 3) flexibility of execution options to include reserve forces, and; 4) the maintenance of preception of essential equivalence.*

This study addresses new initiatives related to the third and fourth considerations cited. It recommends for consideration the employment of strategic and theater based forces in holding at risk the Soviet Army in forward and border based conditions as well as those in reserve in the Soviet Union.

1. Current Deterrent Targeting

The context of thinking flexibly about strategic forces and their deterrent functions must recognize certain characteristics of the potential enemy and the high leverage vulnerabilities inherent within his military and economic fabric. In the past these considerations have identified his strategic retaliatory forces, certain major elements of his industrial economic base (e.g., oil production facilities, steel production facilities, etc.) and concentrations of urban population. Recent focus has been to seek out key industrial target sets or critical military bases (e.g.,

*Harold Brown Department of Defense Annual Report, Fiscal Year 1979 (Washington, Government Printing Office, 2 February 1978) pp. 42-60

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major naval ports). This has been modified by considerations not only of denial and punishment but also post-attack recovery.

The major new Soviet military buildup in strategic forces has caused concern on the part of U.S. planners that the Soviets over time could achieve a disarming strike and emerge from the exchange with a clear military superiority. New targeting initiatives might provide a way to discourage such a calculation and deny them such an objective or create significant doubt that such an advantage could be achieved.

One possibility for consideration might be to target Soviet ground forces. In such a situation, the U.S. force assets could be applied to stalemate Soviet ground forces deployed in forward and border areas and their reserves in the USSR. This would prevent their extension of control to other potentially undamaged areas of the contiguous land mass and weaken their control of satellite areas.

2. Why Consider Targeting the Soviet Army?

The Soviets are a land power, having contiguous borders with hostile countries. What is today the Soviet Union has been a land occupied by many invading forces (including those of the United States). Since the time that attempts to establish a central government were initiated, ground combat forces have been the means to protect Mother Russia. Viewed over a ten century period, conditions today are potentially at their worst. The Soviets are outnumbered by their traditional and newly acquired enemies by at least ten to one.

Considering only World War II, it is understandable that the Soviets maintain a large standing army and reserves which is constantly improving its ability to conduct offensive operations (as have Soviet armies in the past). This is backed up by governmental organizations of a quasi military nature (such as the Civil Defense, Border Guards, Transportation Organization, etc.). All of this is

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regarded as necessary for governmental functioning and reflects their perceptions of the problems of a continental nation.

As a result of the key role that such organizations play within the Soviet Union, a major strategic option that emerges is to hold at risk the army and certain other organizations. Such options are viewed as strategic in nature since they would involve potential targets throughout the Soviet Union as well as forward based and border based units. A Soviet perception of the impact of the loss of their army could be created by a simple review of their history. As a common sense check, one could reexamine the views held in the U.S. concerning our need for a large standing army. We enjoy the ocean-provided isolation of our "island" nation and we perceive our military needs, strengths and vulnerabilities accordingly.

The problem, then, is to define the methods, means and employments that would make targeting the Soviet Army a viable, efficient, and enforceable option within the context of U.S. strategic and theater forces.

B. EASTERN EUROPE

The Soviet forces in Eastern Europe make up a special target for a number of reasons.

- In the event of planned Soviet aggression against the West there is considerable doubt that the people of Eastern Europe could be relied upon to wholeheartedly support the Soviet effort.
- Therefore the Soviets will probably utilize their troops in that area initially to insure their line of communications back to the Soviet Union.
- Similarly, employment of nuclear weapons by the U.S. must be on a different basis than that used in the USSR and in

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Western Europe. For these reasons the Eastern Europe problem discussed in Chapter Two has been handled completely independent of the remaining Soviet forces located within the Soviet Union.

C. SINO-SOVIET BORDER

Chapter three contains the detailed results of analysis and investigation of the following questions as they pertain to the Sino-Soviet Border forces.

- What is the target structure in time space and quantity?
- Can the enemy react in a manner which defeats our objectives, i.e., is the attack offense enforceable?
- What is the impact if the postulated target set is destroyed?
- Are there sufficient resources to accomplish the mission?
- What are the impacts on other US forces and programs and resources if the mission is undertaken?

These forces along the volatile border make up a distinct target set like the Eastern European forces. Throughout history the Russians have felt the pressure of invading forces along their vulnerable eastern and southern approaches and, as a result have a deep-seated fear and distrust of the Chinese which has remained a part of the psychological make-up of the Soviet leaders even today. The geographical and historical considerations which define and constrain the problem are examined at length in Appendices I and II. Because the principal effort of intelligence over the years since World War II has been centered on the threat against NATO there are certain limitations to our intelligence on the Soviet Union in the Far East. These problems are dealt with in detail in Annex A.

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D. CONCLUSIONS AND RECOMMENDATIONS

It is the judgement of the authors that both Eastern Europe and Sino-Soviet attacks are viable alternative deterrent options. Both attacks can be accomplished while holding sufficient forces in reserve to accomplish a countervalue attack as a last resort. However, in terms of cost-effectiveness the Sino-Soviet attack shows the best results. Chapter four contains the detailed recommendations for such attacks.

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[redacted] PREFACE

This report has been prepared for DDR&E to examine alternatives or options for the current targeting policy. In response to this, The BDM Corporation under contract for DDR&E, has developed the following study which shows the feasibility of targeting and destroying at least 60% of the Soviet ground forces in Eastern Europe and along the Sino-Soviet border. This is a deterrence option available to US strategic planners in the event of impending or actual Soviet aggression against NATO nations.

The latter scenario, the main thrust of this report, shows how the destruction of tremendous military forces in the sparsely populated Sino-Soviet Border area would make these long-contested territories vulnerable to a traditionally hostile enemy and could fatally upset the Soviet balance of power in Asia. The drawdowns and estimated weapons outlays for numerous scenarios are given for this alternative deterrence posture. The feasibility of implementing a simple, yet workable targeting procedure is presented, which in contrast to scenarios for other parts of the Soviet empire, is very cost-effective.

The authors of this report on targeting the Soviet Army along the Sino-Soviet border would like to acknowledge the support and assistance of many persons. The following persons have been particularly helpful. Lt. Col. A. MacLaren, Military assistant to the Undersecretary of Defense, Strategic and Space Systems, Research and Engineering, (USDR&E) has provided guidance and assistance as well as listened to many impassioned briefings. Dr. L. Tordello, Gen. USAF (Ret.) W. W. Momyer and Mr. C. Jundt by providing input and reading the text have leavened the final product. Mr. S. Jamorski and Ms. T. Grove of the Defense Mapping Agency Technical Center provided much of the basic cartographic data required in the study. Lt. M. Gilbert

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CHAPTER 1

[redacted] INTRODUCTION

1.1 Although military technolc y is capable of targeting the entire globe with pi t accuracy, . litary policy tends to be limited to a Eurocentric ception of gl al strategic balance. For many reasons Europe a poor battlef ld. The destruction of fixed countervalue indu fal targets doe, not inhibit the mobility of invading ground forc . Yet targeting hose ground forces, on the densely populated E opean Continent uld involve greater civilian than military sualties. Furth more, the nation-states of Eastern Europe cont n populations who re, for the most part, hostile to the yoke of viet barbarism, ut at the same time are forced to accept the st tus quo. In many ays, they have still yet to recover mentally or hysically from th last war. Opposing these nations are the even mo densely popular nations of Western Europe who would find just as objecti ble to see their nations as the theater in which deological hosti ties of foreign superpowers were enacted. Th se nations are b inning to ask aloud whether the annihilation of major portion of their population and economy is worth the containment of Soviel hegemony.

1.2 On the other hand, there is o way to ignore the fact that the buildup and mode nization of Sov forces in Eastern Europe has been continuing steadily. Sovie pronouncements declaring the ability of the state and its po lations to withstand the effects of a nuclear ho ocaust only dim ish the Soviet perception of nuclear deterren as offered by c rrent United States policy.

1.3 What are the t litary options f the United States strategic planners to resist e impending Sovi threat to the West? This report suggests a viable option, by onsidering the

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targeting of the large concentrations of Soviet forces along the Chinese border.

1.4 The Sino-Soviet borderlands, particularly the more easternly Soviet-Manchurian zone, have historically been a focal point in the Eurasian Military activity. The last major clash there was between the Soviet and Japanese Kwantung Army in the closing days of the Pacific war. The Soviet press continues to laud their victory as the ideal model for further military activity in the area. Force levels have more than quadrupled since these days, but they occupy the same positions as they did then. Using both historical and current data sources, this report shows how the Soviet army can be effectively and efficiently targeted and destroyed in Asia, severely upsetting the balance of power between the Asian communist superpowers. A large portion of Soviet real estate, larger than the United States, might then fall into the hands of Chinese, the traditional enemy of Russia, were the Soviets to extend their military aggression into Western Europe.

1.5 This report deals with the theoretical feasibility of targeting Soviet ground forces (Chapter 2), and the practical factors of geographic peculiarities, historical precedence, available weapons systems, and troop configurations in various scenarios which result in drawdowns and actual weapons laydowns (Chapter 3). The appendices that follow give an indepth look at the historic and geographic factors in targeting the Soviet Army in Asia, as well as the role of KGB border troops, and the vulnerable transportation links with the West.

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CHAPTER 2

[redacted] EXTENDING DETERRENCE AND DEFENSE CONCEPTS TO SOVIET PROJECTION FORCES IN EASTERN EUROPE [redacted]

2.1 [redacted] EXPLANATION/FOREWORD

The following paper, entitled EXTENDING DETERRENCE AND DEFENSE CONCEPTS TO SOVIET PROJECTION FORCES [redacted] has been incorporated into this study on Targeting the Soviet forces along the Sino Soviet border for several reasons:

- It sets down the theoretical groundwork to show the feasibility of targeting ground forces of the enemy. There are many today who scoff at counterforce scenarios, and particularly at scenarios indended against the actual forces (as opposed to just their facilities), as a viable alternative to countervalue assured targets with pre-assigned vulnerability numbers and exposed civilian populations. They argue that ground forces are amoebic and scattered and cannot be destroyed in time and space as effectively as known industrial and political sites. However, as this paper shows, destroying ground forces not only reduces civilian casualties, it points out the cost-effectiveness in weapons outlay and the immediate, direct debilitating effects on Soviet aggression. It shows clear-cut targeting methodologies to destroy enemy forces in the field.
- Furthermore, like most papers dealing with Soviet forces, it is western oriented, intended for the Central European or possibly Soviet theater. As a result, targeting ground operations before and during battle are addressed in this European context. But there are many differences in targeting the Soviet forces in Asia which shows considerably higher leverage: namely more fragile targets and little redundancy. The following paper shall therefore assist in the comparison of the two theaters by outlining those target concerns peculiar to Europe.

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2.2 [redacted] INTRODUCTION [redacted]

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2.3 [redacted] SOVIET POLITICAL AND MILITARY OBJECTIVES

2.3.1 Soviet Political Objectives. This paper takes as a point of departure that the Soviet Union sees itself locked in a battle with the "non-socialist" world and the Peoples' Republic of China. Its leadership believes that military power is a central tool for influencing what is described as the "correlation of forces" in the world in a manner favorable to Soviet interests. I' is the Soviet view that the correlation of forces is moving in a direction favorable to the USSR and it is this that accounts for the West's acceptance of detente and under this political position long espoused by Soviet policy.

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2.3.1.1 This paper makes no prediction concerning the likelihood of the initiation of hostilities by the USSR in pursuance of its perceived policy interests. It assumes that the USSR would prefer to avoid a direct military confrontation with the United States but that in pursuing its interests it recognizes that such a confrontation could occur. Accordingly it is marshalling a massive military capability built around projection land combat forces organized for complementary combat along with naval and strategic rocket forces. Such a capability, in the Soviet view, would

- -- accelerate the correlation of world forces in a direction favorable to the USSR
- -- increasingly be available for extension of Soviet power to distant areas (where direct confrontation with central U.S. power seems less likely),
- -- support Soviet efforts in Europe to intimidate the West, extracting political concessions, while maintaining control over its East European satellites,
- -- satisfy itself that its border with China remains secure and, if circumstances require, permit projection of Soviet power against China and finally,
- -- permit the foregoing while stalemating U.S. military power and in the last analysis if that power is actively brought to bear, defeating it in direct ho les.

2.3.2 Soviet Military Objectives. Soviet military objectives are classically offensive in nature. Soviet military planners identify objectives in space and time in territory outside of Soviet Union. If one takes Central Europe as an example, there is an extensive body of Soviet literature describing typical high-speed campaigns through Germany and the Low countries and extending into France. Soviet doctrine, force structure and the deployment of its forces are in consonance with this offensive strategy. A detailed

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examination of the quality and quantity of material and the size of forces and as well as their employment and training reinforces very strongly these initial considerations. One is led to conclude that while there is a capacity to defend, the Soviets currently have their doctrine, (the best type of defense) deployment and training much more oriented towards offensive action than towards defensive.

2.3.3 Nature of Projection Forces. Soviet projection forces are defined as those which have the mission to engage enemy forces and occupy enemy territory. These are principally land combat forces; their related frontal air support. Strategic Rocket Forces, Long Range Air Forces and those components of the Soviet Navy whose missions relate to war at sea are not considered.

2.3.4 Organization of Projection Forces. Land combat forces are organized along the lines of those developed during World War II. The major organization is called a Front. It is composed of armies which are in turn composed of divisions. In addition, the Front Commander has extensive assets under his control independent of his armies. He typically controls an artillery division and substantial logistics, engineering, electronic warfare, reconnaissance, missiles, and air assets. Army commanders have similar assets. Divisions are the basic fighting components of the Soviet Army. There are currently three kinds of divisions, the vast majority of them being motorized rifle or tank divisions. There are a few airborne divisions.

2.3.5 Employment of Soviet Projection Forces. The offensive strategy developed by the Soviets to meet the military objectives assumes the achievement of forcing desired rates of advance along multiple axes of advance. Soviet success norms for densities and superiority ratios of men and material require local massing and the echelonment of forces within and between fronts. If one takes Central Europe as an example, there are three echelons of Fronts.

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The first echelon is forward based in East Germany and Czechoslovakia, the second in Poland, and the third in the Western military districts.

2.3.5.1 Campaigns initiated by elements of a first echelon front are to be sustained by reinforcement and the exploitation forces drawn from second and third echelon Fronts. The Soviet operational concept considers a force deployed in depth which will be employed in a manner so as to sustain the maximum momentum. Since the Soviet Union has land borders which are for the most part lacking in natural obstacles with all of the countries in the Central Region, there is little to naturally impede the flow of second and third echelon forces in support of the activities initiated by first echelon.

2.3.5.2 Soviet doctrine employs second and third echelon forces to make up for what in the eyes of Western analysts are certain shortfalls in staying power. It is often pointed out that Soviet divisions have a very high tooth-to-tail ratio and, therefore, will probably be unable to sustain themselves in a long campaign. (Soviet doctrine on the other hand does not envision a long campaign but rather considers the echeloning concept to make up for losses and to exploit successes.) The military planning of the Soviets considers short, intense campaigns as the goal and any extension arising from attrition or lack of initial success will be overcome using echeloning concepts.

2.3.5.3 Finally, Soviet projection forces are also occupation forces in the Eastern block countries. Soviet forces are distributed in a forward based manner but also provide for an extension of Soviet authority (examples, 1953 in Germany, 1956 in Hungary and 1968 in Czechoslovakia)

2.4 [redacted] CANDIDATE DETERRENCE AND DEFENSE CONCEPTS WHICH DEAL WITH PROJECTION FORCES [redacted]

2.4.1 [redacted] <u>Deterrence and Defense Concepts.</u> [redacted] Soviet employment of projection forces is based upon concepts of echelonment in depth

[redacted]

[redacted]

coupled to an offensive strategy. (Effective deterrence should force changes in doctrine and the employment and deployment of echeloned components of projection forces. It should result in throughput limitations on their operations in second and third echelon forces.)

2.4.2[redacted] Soviet Perception of the Impact of Nuclear Weapons on First Echelon Operations An examination of history allows one to see the Soviet risk assessment in the employment of their ground forces in first echelon forces. Table 1 displays historically the width and depth of combat Fronts, Armies and Divisions Post World War II, the early 60's and the 70's. The doctrinal Front here considered consists of three Armies and each Army has four divisions.

2.4.2.1 [redacted]

2.4.2.2 [redacted]

[redacted]

Table 1. Dimensions in kilometers for Soviet fronts, armies and divisions

	FRONT		ARMY		DIVISION	
	Width	Depth	Width	Depth	Width	Depth
Post World War II	[redacted]					
Mid 1960's						
Mid 1970's						

Table 2. Personnel and average densities #/km

	FRONT		ARMY		DIVISION	
	#	Density	#	Density	#	Density
Post World War II	80,000	20	23,000	115	5,000	500
Mid 1960's	150,000	2	44,000	6	8,500	10
Mid 1970's	230,000	6	63,000	8	12,000	20

[redacted]

Figure [redacted] Map of military districts and location of division units and headquarters: USSR [redacted]

[redacted]

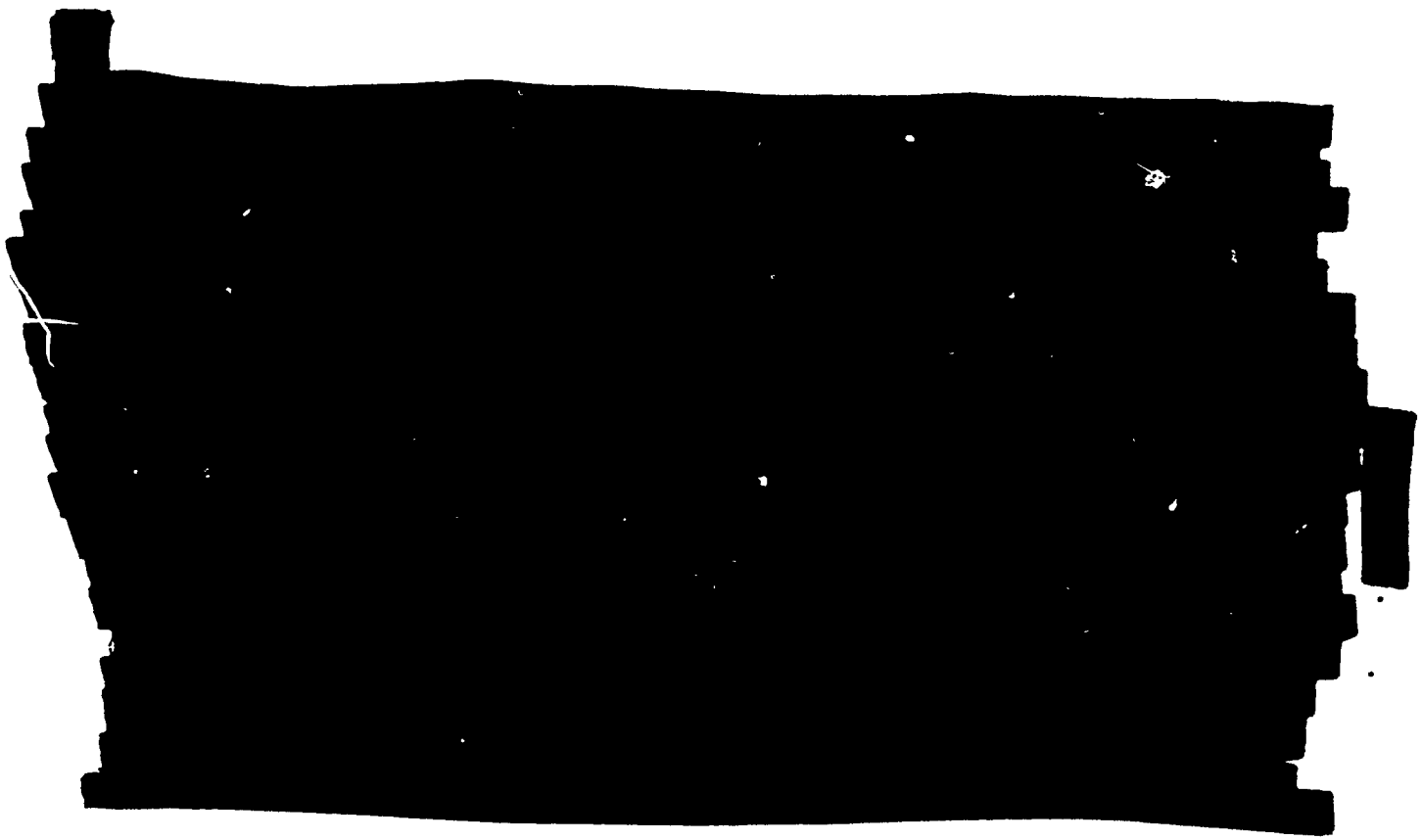


Figure 2[redacted] Map of Far East military district and location of division units and headquarters[redacted]

[redacted]

[redacted]

2.4.3 [redacted] Extending Deterrence in Depth. The concept of extending deterrence and defense to projection forces is one of attempting to achieve the same impact on second and third echelon forces as has been achieved on the first echelon. This would slow their employment and make it much more difficult for the Soviets to exploit success and more importantly reinforce when significant attrition had occurred.

2.4.3.1 [redacted]

2.4.3.2 [redacted]

[redacted]

[redacted]

2.5 [redacted] TECHNICAL CONSIDERATIONS [redacted]

2.5.1 [redacted] Approach. It is helpful but not necessarily complete to assess deterrence and defense concepts to a target structure. For this reason, the examples which are quantified deal with damage to the elements of the projection force. While there are other measures (for example, one might consider delay and its effects on relative troop densities) Soviet military perceptions are more easily understood on the subject of the operational impact of damage to forces. In addition, other measures can only be quantified through detailed scenario analysis.

2.5.1.1 On the other hand, simple targeting calculations tend to avoid the reality of scenarios. To overcome this situation, targeting considerations are laid against a spectrum of Soviet survivability alternatives which are derived from states of the projection forces. The analysis is then somewhat scenario independent in the sense that scenarios are treated through combinations of cases considered.

2.5.2 [redacted] Soviet Damage Perceptions. Soviet World War II experience and their current literature are quite extensive and consistent regarding the operational impact of damage. They cite three damage thresholds or levels and the operational effect on forces. Harrassment (approximately 10% damage to men and material) impedes an on-going operation but does not stop it. Neutralization (30% damage) blunts and disrupts an on-going operation. Damage at this level can be overcome but it requires time and the exercise of control. Small units (platoons and companies) can be reorganized and made available for operations in an hour or two. Larger units may take days to reach reasonable levels of combat capability. Annihilation (60% damage) is so serious that no residual combat capability remains. Units sustaining such damage must be withdrawn for reconstitution and repair. The time out of action is dependent upon the state of reserves and rear services.

[redacted]

[redacted]

2.5.3 [redacted] Constitution and Deployment of the Soviet Army. In addressing technical consideration, Soviet Army forces are employed for examples*. Figures 1 and 2 describe their peacetime locations. Today, there are fourteen Fronts having a variable number of divisions distributed in Central Europe and along the southern and Chinese borders.

2.5.3.1 About two-thirds of the divisions are motorized rifle, or in Western terms, mechanized infantry. Most of the remainder are tank divisions; the remaining few are airborne divisions. The artillery divisions shown are those which are attached to the Front. Motor rifle, tank, airborne, and artillery divisions number 185. Army and Front forces contribute an additional 40 division equivalents.

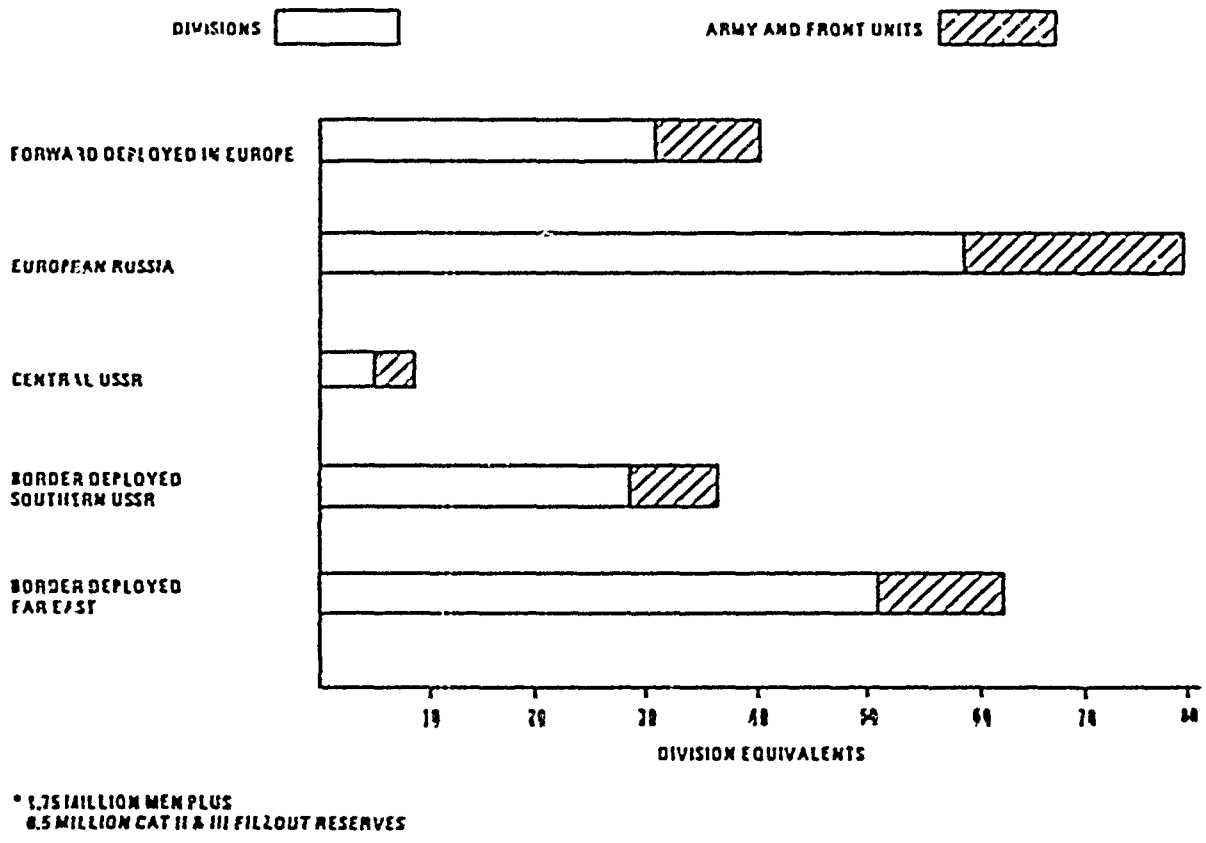
2.5.3.2 In describing the Soviet Army, one must take into account the fact that all units are not in the same state of readiness. Figures 3, 4 and 5 describe the locations and categories of divisions, Army, and Front units.

2.5.3.3 Category 1 divisions are essentially fully manned and ready to fight. Category 2 divisions are approximately half manned and must be brought up to full manning, possibly further trained, and deployed for combat. Category 3 divisions are about 25 percent manned. These also must be filled out and possibly further trained before being put into combat. There are disagreements in the Western analysis community concerning the capabilities of Category 2 and 3 divisions, if they require further training and their level of combat effectiveness. The approach considered here describes these as targets and avoids other questions.

2.5.3.4 Nearly 60% of the Soviet division elements are either forward deployed in Europe or in European Russia. An additional 25%

*Similar analyses apply with even greater simplicity to frontal air forces excluding air defense. These will not be discussed in this paper.

[redacted]



* 1.75 MILLION MEN PLUS
0.5 MILLION CAT II & III FILLOUT RESERVES

Figure 3. Simplified view of current deployment, status and transit requirements

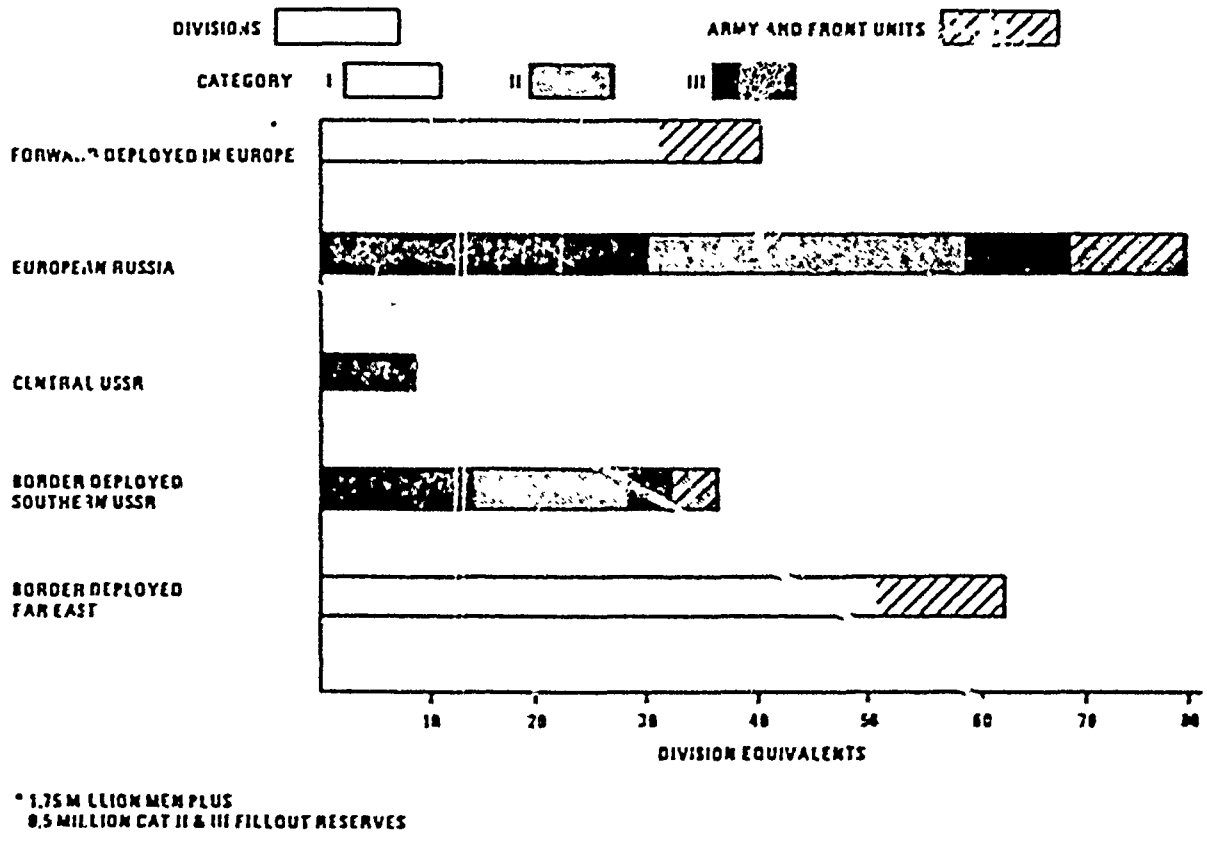
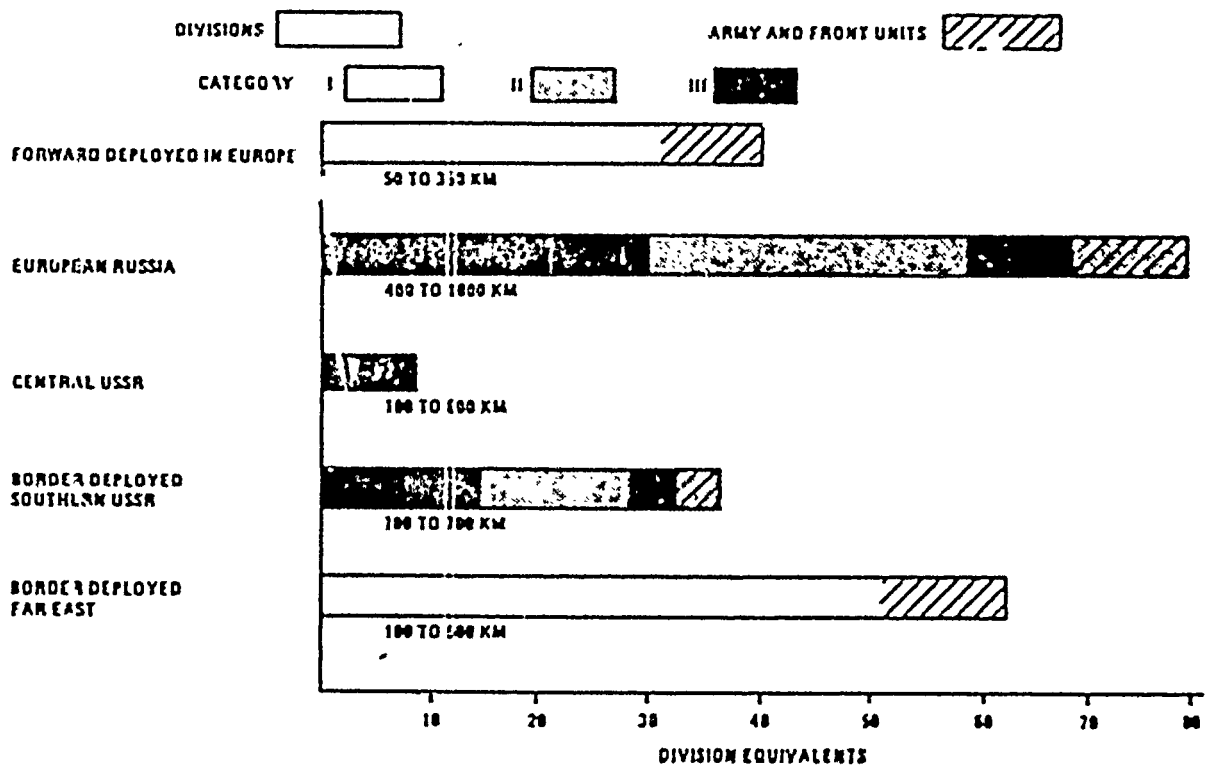


Figure 4. Simplified view of current deployment, status and transit requirements



* 1.75 MILLION MEN PLUS
0.6 MILLION CAT II & III FILLOUT RESERVES

Figure 5. Simplified view of current deployment, status and transit requirements

[redacted]

are deployed on the border facing China. The smallest segment (15%) covers the central USSR and the southern border. There are also forces derived from the Warsaw Pact countries. They are similar in constitution to Soviet forces and are about 30% as numerous which they will not be formally treated their existence modifies requirements 30% upward.

2.5.4 [redacted] States of the Soviet Ground Forces. Soviet first echelon Fronts are composed of Category 1 forces forward deployed in Pact countries or along the Chinese border. Those in more rearward Pact countries and in the Soviet Union are mostly category 2 and 3 forces in second and third echelon Fronts. In the context of this example, all divisions will be considered. Figure 6 describes the states in which divisions would be found at various times. They are mobilization, transit, echeloning, and contact. The preferred locale or transit means is shown in the base case.

2.5.4.1 Forces whether first, second, or third echelon start in peace time kasernes in the mobilization state. If they are in first echelon, they would transit to combat with their organize transportation. More deeply deployed forces in first, second, and third echelon would transit from kasernes and/or training locations by road or rail to combat zones. They would then echelon forward by road into combat using organic tactical vehicles. Transiting and echeloning typically involve movement from one assembly or concentration area to another. Forces in these locations are highly compressed. Densities are approximately $1000/km^2$.

2.5.4.2 Transit and echeloning movement activities also produce high densitites. They are, however, better considered in terms of linear densities and total lengths. A typical 50 car train has a length of about a kilometer and produces a linear density of 250 people per kilometer. Typical march columns produce similar densities.

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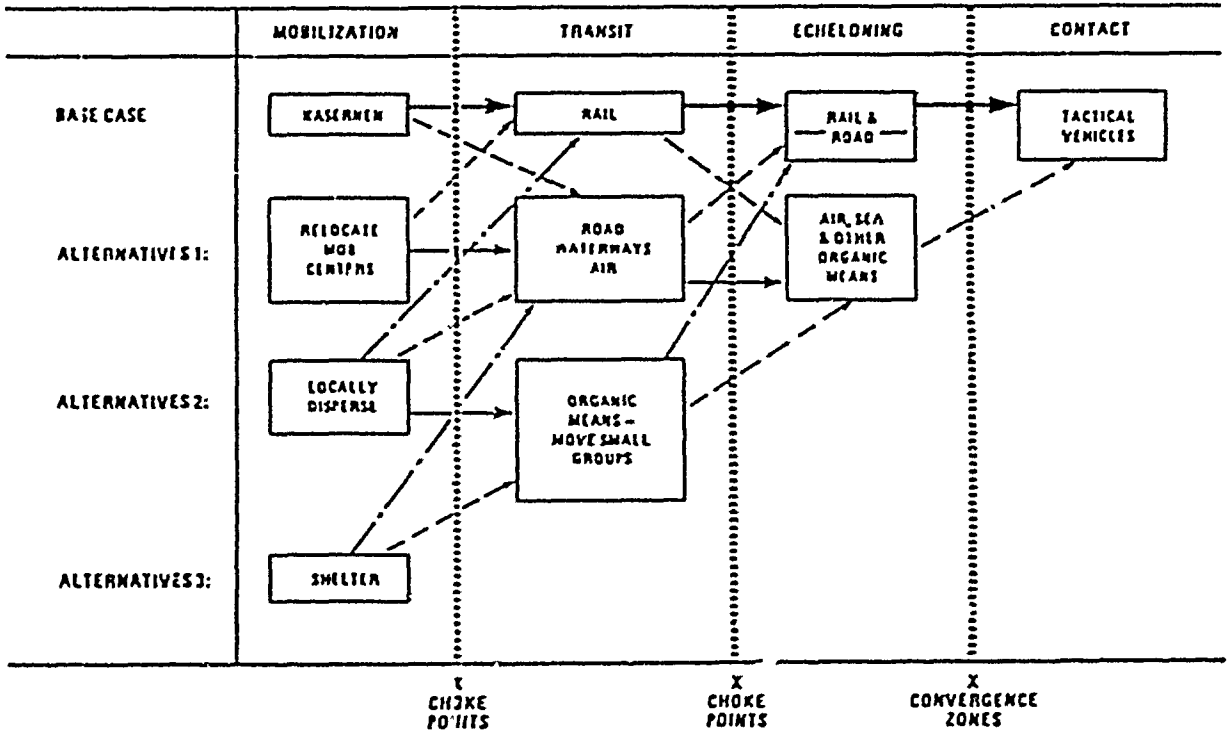

Figure 6. State transition alternatives

[redacted]

2.5.4.3 [redacted] The depth of movement is dependent upon the peacetime location of the division elements and the combat locale. The distance might be as short as 100 kilometers in some cases and 1,000 kilometers in others. For operations at various frontiers, examples of distances are shown in Figure 5 above the bars portraying division gross totals by region.

2.5.5 [redacted] Representing the Soviet Army As A Target System. At any time in a given scenario, Soviet Army forces are distributed in the states described. The exact distribution depends upon the circumstances and the "snapshot times" considered. Substantial portions of the force are, however, in kaserne, training, and assembly areas or in local collection points awaiting or undergoing transit. The densities in these areas are higher by one to two orders of magnitude than they are in first echelon combat forces.

2.5.5.1 [redacted] For purposes of simple sizing calculations, let us assume that divisions and their elements can be described as target systems which will be generalized into several classes of area targets. This is consistent with Soviet procedures.

2.5.5.2 [redacted]

2.5.5.3 [redacted]

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second and third echelon in more exploiting and reserve positions, they must be closer and be less dispersed.

2.6 [redacted] SOVIET SURVIVABILITY ALTERNATIVE [redacted]

2.6.1 [redacted] Introduction. The generalized throughput problem which the Soviet face is portrayed in Figure 7. Their alternatives for survivability are shown as excursions in Figure 7. Each of the significant cases will be discussed in detail.

2.6.2 [redacted] Kasernes, Training or Dispersion Areas. The Soviets have a number of alternatives to lessen the impact of having their projection forces held at risk. These are shown as alternatives 1, 2, and 3 in Figure 7. The Soviets could relocate from kasernes to mobilization centers, they could locally disperse or build shelters for their forces. Alternatives 1 and 2 would definitely slow the rate at which mobilization would be carried out and would impede the general flow into combat. Alternative 3 is one which would deny the use of forces in combat zones since one cannot be sheltered and at the same time on its way to a combat zone.

2.6.3 [redacted] The Transit Case. For the transit case, rail could be augumented with road, waterway and air or organic means of movement. In all cases movement is slowed substantially. Where organic means are employed tracked vehicle and even some wheeled vehicles would experience severe attrition which attend movements of 1000 km. Since the Soviet division tail is modest in size repair and refurbishment would slow the movement progress.

2.6.3.1 Choke-Points and Convergent Zones Related to Transit and Echeloning. As one transitions from deep locations in the Soviet Union through the PACT countries and into combat zones there are natural choke-points in transportations systems and convergent zones as combat areas are entered. Figure 7 attempts to show some of the generic problems. There are transloading zones at which gauge changes occur in entering and leaving the Soviet Union. There

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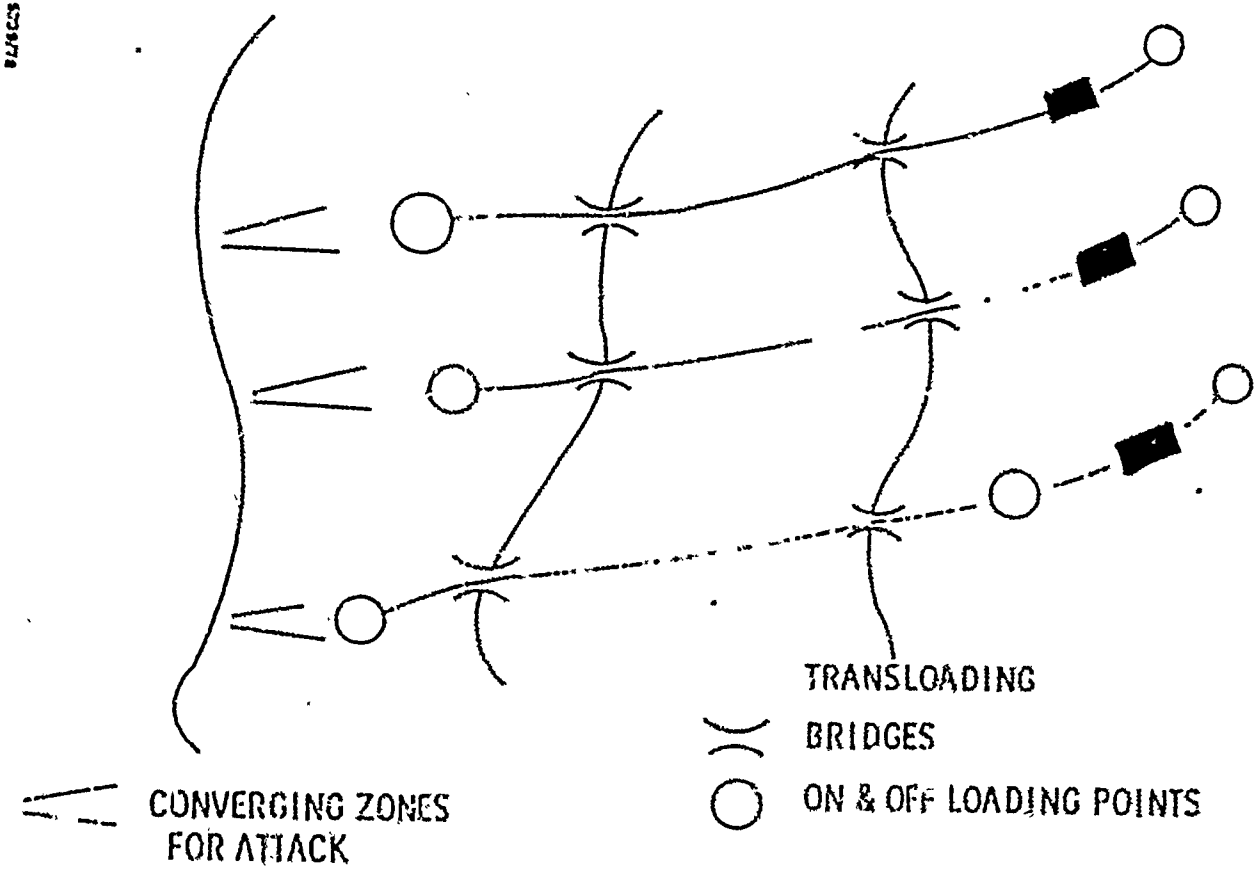

Figure 7. Choke points and converging zones

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are also river lines and on-and-off loading points in transitioning through both the Soviet and PACT countries into the convergent zones. Attacks against these fixed target systems bridges, railroad yards, tunnels, etc would enhance the concentration of forces being moved forward and make them more lucrative targets.

2.6.4 [redacted] The Generalized Dispersion Case. For all the situations previously discussed, the Soviets could disperse their forces as they do on the battlefield. Under these circumstances, regiments and/or battalions could disperse into separated assembly areas.

2.6.4.1 [redacted]

2.6.4.2 [redacted]

[redacted]

[redacted]

Figure [redacted] Large numbers of weapons are required to destroy a division's wheeled vehicles [redacted]

Figure 9[redacted] Time: one half hour - assumed division configuration and direction of travel[redacted]

Figure 10 [redacted] Time: one half hour - assumed division configuration and direction of travel [redacted]

Table 4 [redacted] Sizing calculation summary [redacted]

[redacted]

[redacted]

2.6.4.4 [redacted] It is necessary in some cases to take advantage of time dependent targeting. This will not be the case for every division, but it will apply to the fraction which is dispersed.

2.6.5 [redacted] Localization Considerations. Figure 12 describes localization consideration applicable to the various target characterizations. It seems that all of these are modest with respect to nominal requirements for surveillance in the forward area. It is also seen that for forces echeloning in at distances beyond a few hundred kilometers they are succeptible to attacks at choke-point, convergent zones and in assembly and training areas. Residence time are substantial in virtually all of these. Figure 13 addresses the problem of localization, targeting and forces size at risk. Localization is derived from a combination of real and near real-time information merged with an historical data base. Knowing what the Soviets do with their forces and transportation system in peacetime will aid in interpreting the changes that occur during crisis, transition and in case of hostilities.

2.6.5.1 Three remaining "boxes" Figure 13 represent the optimization (a minimization) of the force required to damage various fractions of the projection force. In addition other information such as time criticalities confidence, collateral damage for various alternatives, etc. can be developed using existing tools, information and techniques currently employed to support decision making.

2.6.5.2 Other Considerations. While the issue of collateral damage was not analyzed in detail, an initial examination tends to show that collateral damage will be high when attacking forces in their peacetime location because they are essentially co-located with population. The combination of accuracy and yields available

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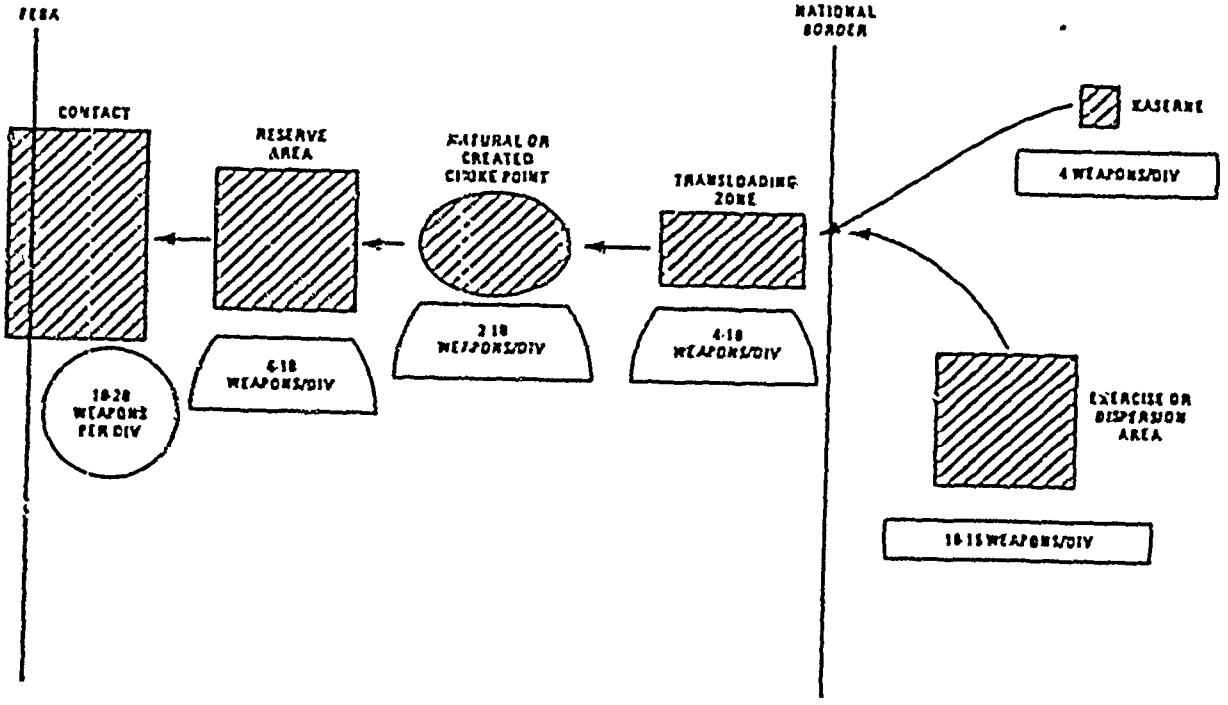

Figure 11. Weapons requirements

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TARGET SYSTEM	ALLOWABLE LOCALIZATION ERRORS
FIXED SITES	0.5 Km
CHOKE POINTS	0.5 Km
DISPERSED DIVISIONS	5 Km
DISPERSED REGIMENTS	1 - 2 Km
TRANSIT FORMATIONS	ROUTE & COLUMN LENGTH
ECHELONING FORMATIONS	ROUTE & COLUMN LENGTH
COMBAT FORMATIONS	0.1 - 0.5 Km

Figure 12. Surveillance requirements

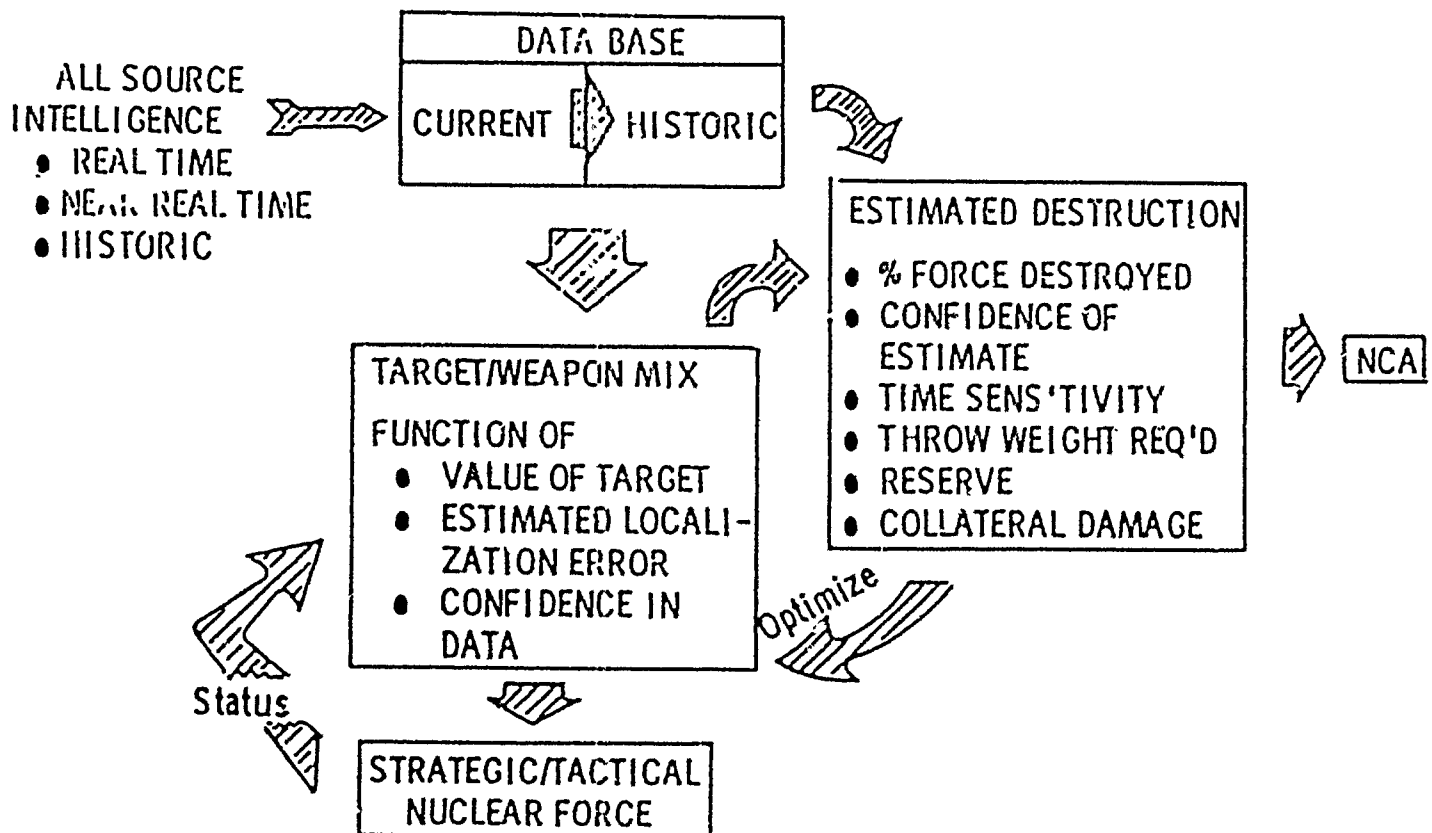

Figure 13. Implementation process for time and space dependent target structure

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today enforce this. When forces transition using rail transportation through choke-points the collateral damage will be high. In convergent zones that relate to combat and in the combat zones themselves the collateral damage will not be as extensive. Noncombatants do not stay out in the open but tend to shelter themselves or get out of those zones.

2.6.5.3 Division, regimental and battalion dispersion areas of necessity are low populations density zones. Here collateral damage will be at a minimum.

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CHAPTER 3

[redacted] TARGETING SOVIET GROUND FORCES ALONG THE SINO-SOVIET BORDER [redacted]

3.1 [redacted] INTRODUCTION

3.1.1 Description of Strategic Objectives. How could the current Soviet-Chinese hostilities over borders, minorities and ideological heresies assist the American policy of mutual deterrence in stemming global nuclear war? This chapter attempts to show how the Soviet forces East of the Urals can be targeted to provide an effective option to deter Soviet aggression in Western Europe, thereby replacing our current ineffectiveness in dealing with the mounting Soviet military threat. Compatibility with current United States' forces and planning, and the integration of the Soviet Eastern scenario with theater forces will be addressed.

3.1.2 The Utility of the Study. Were the US and NATO forces to become involved in a conflict in Western Europe with Warsaw Pact nations, the current retaliatory options available to the president are quite limited within the European Theater. Traditional deterrence strategy, which has been directed towards the mass destruction of countervalue, and to a lesser degree counterforce targets in the European USSR and the Warsaw Pact nations, would, through escalation of hostilities, not only annihilate vast numbers of the civilian population, but the retaliatory strike would decimate more than half of the population of North American as well. But what should the US do if the USSR launched an invasion of Western Europe? Should the president risk Western civilization for the sake of preventing Communist conquest of allied territory? Yet at the same time the Soviets are continuing to hone their R&D capabilities

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by drawing upon Western expertise in some cases. They are strengthening their Ballistic Missile Defense System (BMD) (with its implications of preparing for sustained nuclear conflict); and are stepping up paramilitary and civil defense training of the civilian population. Thus, a much needed alternative to the weakening current defense policy of deterrence, could be the targeting of Soviet East Siberian and Far Eastern Forces.

3.1.2.1 Only 15 million people live in the area east of Lake Baykal, over an area larger than that of the United States. The Soviets see the threat as obvious and the Soviet Union maintains an army of greater than half a million men near the Chinese border. However, in the neighboring Chinese provinces there currently resides a population of over 36.5 million people. The reasons for the animosities between the two nations have already been profusely enumerated in the media after every new incident so they need not be elaborated upon in this study. The Soviet imperialist tendencies since the war have also been well documented, as has China's population time bomb growing at the rate of one Czechoslovakia per year, coupled with her resentment over unequal territorial treaties going back several centuries. These political and demographic animosities are compounded with a mixture of mutual xenophobia, ideological self-righteousness, personal animosity and a good deal of down-home racism. Yet in spite of the potential for armed conflict, there remains a hostile status quo, arising out of the attempts by each to satisfy themselves that their borders remain secure, and if circumstances require, permit the projection of power into the other's territory. As in the European context, the Soviet Eastern forces maintain an offensive military and political posture while operating in a largely defensive manner. On the other hand, Chinese behavior has remained consistently defensive. The Soviets, for instance, maintain motorized rifle divisions (the equivalent of US mechanized

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divisions) in the area while the Chinese maintain primarily infantry divisions. The Soviets have persistently built up rail and vehicular routes into the border areas, while the Chinese have systematically dismantled rail lines built in the area by the Japanese. Although Soviet weapon systems are largely defensive in the Far East and Central Asia, their overall offensive ballistic capabilities are larger than Chinese counterparts. And although the Soviets maintain they can wage a quick lightning thrust into China, the Chinese retaliate in their ideological pronouncements that they can defeat the aggressor with protracted guerrilla war at the village and town level, and thereby wear down the enemy's forces. With over 80 percent of the population being rural, the effects of surgical strikes are minimized in China, but in the Soviet Far East in areas near the borders the reverse is true.

3.1.2.2 The Soviets maintain a qualitative superiority in mobility, nuclear and conventional fire support, tactical air support, air and ballistic defense capability, and logistic support and supply procedures. The Chinese have the quantitative advantage of manpower in proximity to the borders and the strategic vulnerability of Soviet logistics. Thus it is with these thoughts in mind that targeting the Soviet Army in the East, and thereby upsetting the balance of power, shows potential as a deterrence option.

3.2 [redacted] LOCATION AND DISTRIBUTION OF FORCES IN SOVIET ASIA [redacted]

3.2.1 [redacted]

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3.2.1.6 [redacted]

gence.

3.2.1.7 [redacted] Contrary to common belief in the West, men with disciplinary problems are not sent to the vast wastes of Siberia as punishment. Rather, each military district throughout the USSR and its satellite has its punishment unit, located usually in the most isolated part of the district. Hence the caliber of solider is not inferior in Asia. Because leave is limited to ten days for the two year term for all forces, his whereabouts are unknown to relatives and he is almost continually restricted to base even when off duty, it does not matter a great deal to the recruit where he is stationed.

3.2.1.8 [redacted] There are considerable missile and air and air defense forces along the borders. Besides ground forces, nuclear SS-12 (Scaleboard) missles are currently being deployed around Vladivostok, Khabarovsk and China. There are about 200 IRBMs, mostly SS-4 with 1 MT warheads along the Transiberian railway, and an equal number of SS-9 ICBMs with 25 MT warheads. Other units of the 1600 strong ICBM force could also be reprogrammed for use against China. There are some 2500 warheads for tactical ground or air delivery immediately available.

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partial inventory of men and materiels now currently known to exist in the eastern military districts, showing the great fighting capacity being amassed against a traditional enemy. This sizable force, if destroyed, would leave an enormous gap in Soviet defenses, and should therefore be considered as a deterrence option.

3.2.2 [redacted] Soviet Concerns Along Her Borders with China

Geographical and historical considerations are very revealing and go far toward explaining why the divisions are where they are now and whither they might go in an alert situation. The presence of Mongolia, divides the borders of not only China and the USSR physically, but also psychologically in a geo-political sense. The Soviets and the Chinese treat their border areas differently and there are abundant historical reasons to substantiate the current order of battle configurations outlined in the previous section. In targeting the Soviet forces in Asia, these factors should be considered in determining possible sites and estimating the expenditure needed to effectively destroy these forces.

3.2.2.1 [redacted] The Western China Border Area. This area comprises Sinkiang and Hansu Provinces on the Chinese side; and the Central Asian Republics of Tadzhiksitan, Kirgizia, and Kazakhstan which collectively form the Central Asian Military District, plus Mongolia west of Ulaan Baatar on the Soviet side. (See Figure 14)

The Pamir and the Altai mountains form much of the boundary; only the Dzungarian Gates could be considered suitable for large scale military operations. Distance from population centers makes this area an unlikely major invasion route. It is of lesser military or demographic importance because of its remoteness, and although both nations have been rapidly trying to exploit its economic potential, in terms of strategic or tactical value, it would most likely serve only as a fuse to detonate the historically more important and densely populated areas of the eastern half of China. Minority

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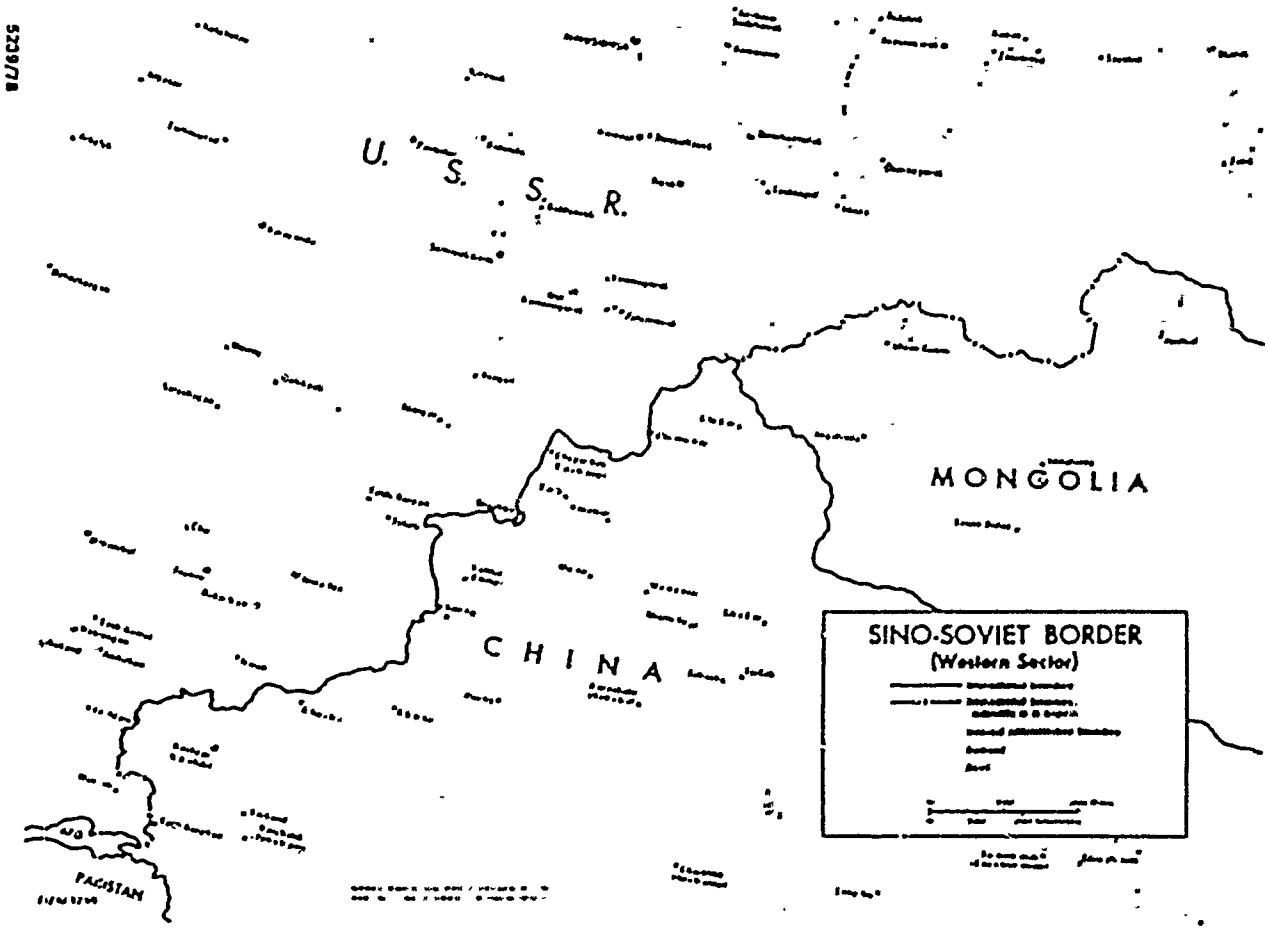

Figure 14. Map of West China border area

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problems in the Western border area could be exacerbated through increased political invectives to the extent of either side making limited attempts at territorial gains through conventional means. This in turn could escalate into a massive invasion by either of the two nations. But in this latter scenario it is most likely that the heaviest military axis would shift to those areas east of Ulaan Baatar and Lake Baykal, where both sides have been preparing to fight for several centuries. However, both China and the USSR use the sparsely populated areas of the west for nuclear test facilities and there has been speculation about a so-called "surgical strike against Lop-Nor" (the name of a lake applied to the Chinese nuclear test facilities).

3.2.2.2 (U) From a geographical standpoint, such a strike is not the sort of operation to gladen a Napoleon's heart: approximately a thousand kilometers of desert and mountain terrain would have to be crossed each way. Certainly this is not the sort of operation the Kremlin would order during a period of heightened tension with the West. On the defensive the Soviets in this area have real problems. The military and population centers of Frunze and Alma Ata are only 300 and 600 kilometers respectively from the Chinese border, but neither of these cities are sensible strategic targets for Chinese forces. Only latent hostility explains the serious incidents that take place on this border area. The fact that the population on both sides of the border are the same ethnically explains part of the sensitivity of the USSR to Chinese probes in the area. But were war to break out, both sides would most likely consider it wiser to utilize the well-stocked military larder to the East or the Manchurian border. Having recently clashed there, not only are they more familiar with the enemy terrain, they have also spent the last four decades preparing for conflict along that border.

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3.2 2.3 In the event of an initial Soviet offensive, the supply route from Western Russia to the westernmost Chinese border would be considerably shorter than moving the front to Manchuria, but those supplies and forces would have to be hauled through 4500 miles of politically and geographically hostile terrain with little strategic advantage across the borders.

3.2.2.4 The possibility of a Soviet offensive into China through the west would also be impeded by the lack of fresh water, food, and fuel supply, creating an extended logistics supply route while enroute to the Chinese heartland. Furthermore, there are very few connecting roads (although like in Mongolia, using portions of the steppe would prove superior to the few weather-damaged paved roads) and no linking rail communications, (unlike the three possible routes available in the western border area).

3.2.2.5 The Soviets, during their brief war with Japan in August 1945, learned the lesson of over-extending their advances, however rapid, outside the limits of their logistics support which proceeded at a slower pace over the similar terrain of inner Mongolia. There are, as a result, various long range and missile support systems against the Chinese, but significantly fewer forces in the western border area .

3.2.2.6 Any Soviet territorial designs limited to this area of Sinkiang Province, would result in very slim pickings agriculturally and industrially. Since they already possess the better lands west of the Tien Shan Range and the Hindu Kush, further expansion into the Dzhungarian Valley north of the Tienshan and the Takla Makan Desert of the Kashgar Valley south of the Tienshan would be economically only nominally beneficial. Adding more Asian minorities to the Soviet population in the process of taking the territories, uniting large numbers of Kazakhs, Kirgiz and Tadzhik peoples, increases the insecurities of the already slowly diminishing majority

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of Great Russians in the Soviet State. However, given the correct political circumstances, Soviet greed for land may exceed racial reservations and the political incorporation of these people, like the Mongolians and the Central Asian minorities, will just serve to extend the colonial paternalism of the Great Russian leadership.

3.2.2.7 Targeting the strategically distant Western border, which is more valuable for its countervalue targets because of greater Soviet economic investments in Central Asia and West Siberia, would not have the same immediately crippling impact of destroying the predominantly military targets in the East. Yet in terms of absolute numbers, this is the only area where the Soviets maintain a superiority (45%) in absolute numbers of troops in opposing military districts along the 4600 KM border. But those numbers still remain considerably less than those amassed in the eastern border areas. The reason for this superiority is obvious, however. Because the majority of the population remains predominately Asian and non-Slavic in the Central Asian Military district, the presence of superior Soviet forces has internal security significance. Soviet Asians generally serve along side their Slavic brothers within the military, and the divisions in Central Asia consist primarily of the indigenous populations. Slavic soldiers occupy most officer and leadership positions, however, and instruction and drilling is in Russian.

3.2.2.8 The East China border area. The Chinese side of the border comprises all of the inner Mongolian autonomous region and Heilungkiang Province and parts of Kirin Province. The Soviet side consists of the Transbaykal and Maritime Peninsula as well as the Mongolian satrapy (see Figure 15). The most plausible targeting scenario would involve these areas. The Soviet Far Eastern Peninsula and the Amur River basin are economically enticing and aside from the military personnel stationed in the area, the population is

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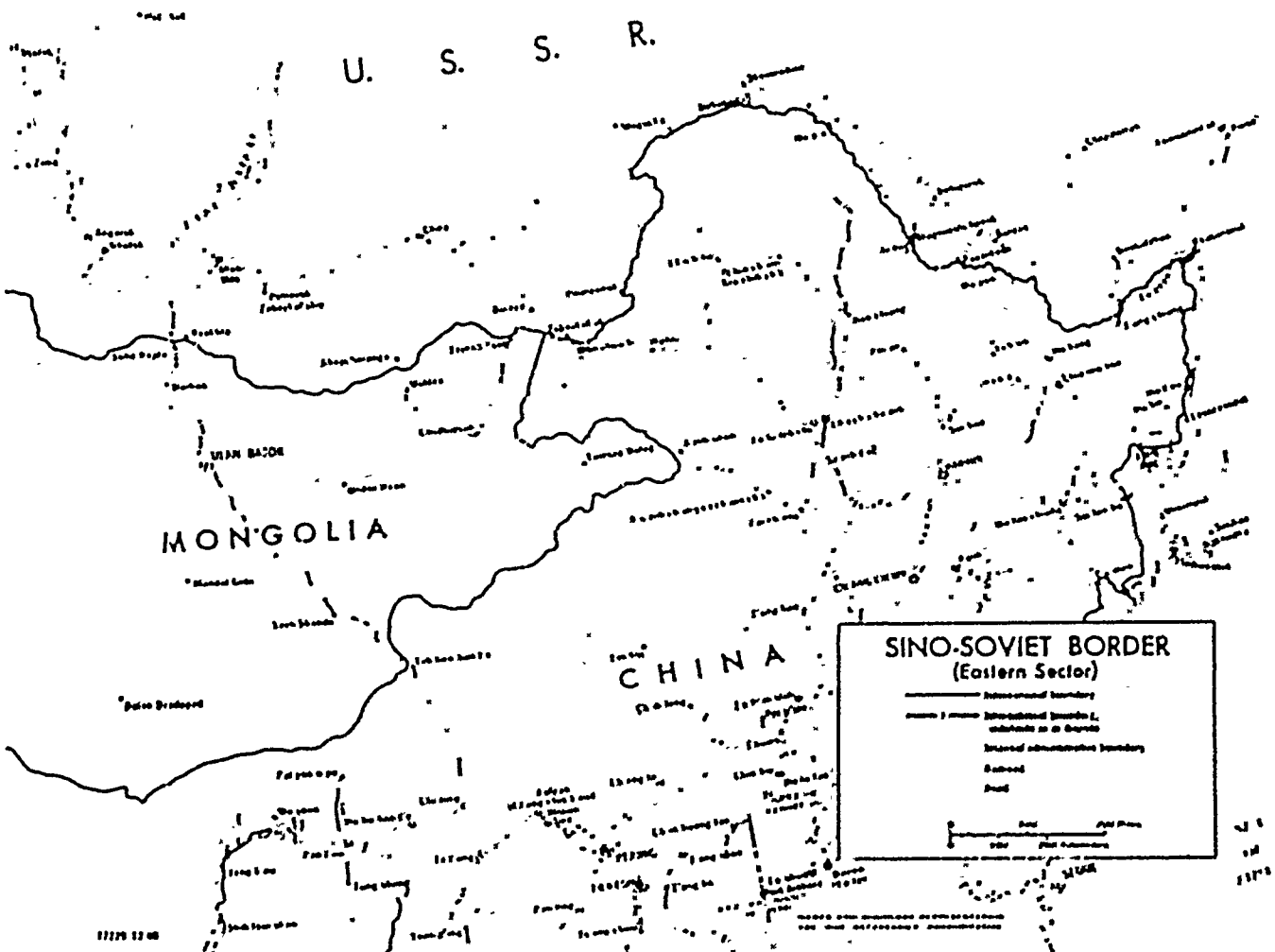

Figure 15. Map of East China border area

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considerably smaller than in the Central Asian border area. Not only does the area have decent arable land, but there are also deposits of gold, lead, zinc, coal, and, on Sakhalin Island, oil. It is impossible to imagine that the Chinese would remain static behind their borders were the Soviet military presence in East Baykal and the Far East eliminated.

3.2.2.9 A further way to add credence to the use of the Eastern area as a deterrence target, is to consider the emphasis that both Asia and Russia have placed on ruling the Mongol-Manchurian periphery over the centuries. Chinese, Mongolian, Japanese and Russian leaders have viewed the Manchurian-Mongolian steppes as a "geographical pivot of history", as the father of geopolitical thinking, H. J. MacKinder put it. It is from this location that the Mongol hordes, the Japanese Kwantung Army and the Russian army from Tsaris days to the present have expended men and resources in untold numbers to obtain, maintain and defend this largely arid grassland, broken by intermittent swamps, winds and cold. It is precisely this area against which the Chinese defensively built their two massive defensive walls, the Great Wall and the wall 600 km north of Choibalsan, Genghis Khan's ancient capital.

3.2.2.10 After seeing the Soviet revolution and Civil War as an Asian threat to Western civilization, MacKinder ethnocentrically moved his "heartland" within European reach in 1918, but his theory: "(He) who rules the heartland commands the world island; who rules the world Island rules the world;" is equally applicable to the Mongolia-Manchuria area, at least in Russian and Asian eyes. Harrison Salisbury, in his analysis of a potential war between Russia and China, has written in the same light:

> "Any Soviet thrust eastward and southward will inevitably be made from Mongolia. Any thrust at Chinese Communist strength - just as the thrust at Japan's Kwantung army was - will be made from Mongolian concentration points. The Chinese troops today

[redacted]

[redacted]

stand precisely where the Japanese troops stood thirty years ago. Politics and regimes have changed. Geography has not. Mongolia's relationship to Manchuria to the great industrial complexes founded by the Russians developed by the Japanese and expanded by the Communist Chinese, has not changed."
(- Harrison Salisbury, War Between Russia And China, p. 26)

3.2.2.11 The USSR has used the territory of the Mongolian People's Republic, formerly Outer Mongolia, since the 1920's when they assisted in their "national liberation movement". It has been a launch point for incursions into China since then, and has additionally served as a buffer zone to keep the Chinese at a distance while allowing Soviet troops to start from a position only 560 kilometers from Peking. In understanding the historical significance that the surrounding nations place on this "Asian heartland", one begins to comprehend the massive defense expenditures for such a remote area. The task of precisely targeting the Soviet Army as an effective deterrence option assumes greater significance with the increasing numbers and deadliness of weaponry being placed here.

3.2.2.12 The abiding concern for control of this heartland is the basis for the protracted Soviet-Mongolian friendship. The Soviets have spent much on their alliance with Monglia in terms of winning them over and keeping them within the Soviet orbit; substantially improving their standard of living education and culture; and shielding them from any untoward (read: Chinese) influences in exchange for massive military establishments.

3.2.2.13 Furthermore, Soviet concerns for carving spheres of influence in Manchuria are just as strong. In spite of the exhaustion and sacrifices of the Soviet military and people at the end of the War in Europe, the Soviet leadership still felt a genuine need to rid the Asian mainland, and in particular, Manchuria of any vestiges of Japanese rule, and, if possible, see about replacing it with Soviet rule. This explains the massive, single-handed campaign

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against the Japanese and the little aid given to either Chinese nationalists (with whom they were allied during the war) or communist partisan forces (who received aid only after campaign and to whom they owed ideological obligations, no matter how estranged). Thus immediately after the defeat of the Kwantung army and the obvious impotence of the Chinese Nationalist leadership in this area, the Soviet government estalished the "Northeast China Region", a puppet government led by a Soviet lackey Kao-Kang, which simply replaced the Manchukuo regime it had succeeded. The Soviets immediately reestablished their Tsarist and prewar concessions and control in Sinkiang Province, along the Manchurian Railway, and in Dairen and Port Arthur. At the same time they looted Manchurian industries built or expanded by the Japanese. They clung tenaciously to them until 1954 when Mao Tse Tung publicly insisted that the lands and looted machinery be returned and the concessions rescinded. Slowly and obviously reluctantly, the Soviets backed down.

3.2.2.14 With these few examples in mind, one can more fully appreciate the importance militarily and politically both the Chinese and more importantly, the Soviets place on getting a firm hold over every square centimeter of land in the area. The seemingly absurd skirmishes like the one over Damansky Island and tracts of permafrost, take on strategic meaning when one considers their possession in terms of an "Asian heartland". Thus, targeting these locations to the opponent's advantage is a severe deterrent threat.

3.3 [redacted] <u>TARGETING OBJECTIVES AND WEAPONS AVAILABILITY TO TARGET SOVIET GROUND FORCES IN ASIA</u> [redacted]

3.3.1 [redacted] <u>Targeting Objectives</u>. The Soviets have traditionally considered their land forces as the basis of their defensive and offensive military strength in the East. Navy, air, air defense and rocket forces for the most part play a secondary support role in the defense against the ever-impending "Asian hordes", and it is to the

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ground force objectives that a policy of deterrence targeting should be primarily directed. Destroying the torso of Soviet defense would cause all other economic and political appendages to expire in this part of the world. It is to this goal that U.S. ballistic forces should be directed. However, it is not required to destroy all forces to eliminate Soviet recoverability, and leave them exposed to Chinese forces.

3.3.1.1 There are several ways in which the Soviets perceive damage to the nations ground forces. One was shown in the previous section (Chapter II, page 8), where three thresholds or levels of the operational effect on forces: 10% damage = harrassment, 30% damage = neutralization, and 60% damage = annihilation. In the Soviet East, annihilation would equal the destruction of 33 of the estimated 55 divisions stationed there. Our research shows that this figure and higher can be achieved with a moderate weapons outlay in the Soviet East, using the arms resources and facilities currently available .

3.3.1.2 Another Soviet measure of annihilation and defeat of ground forces is to assess proportion of men, artillery and tanks left on both sides after conflict. For example, at the tactical level (i.e., divisions and lower), Soviet sources indicate a 3-5 to 1 enemy superiority in tanks, a 6-8 to 1 in artillery and 4-5 to 1 in men will constitute defeat. At the operational level (i.e., theater and front) there is a general 3:1 ratio for all three categories. With the prospect of an assured 3:1 Chinese superiority in men and arms facing a severely depleted Soviet army as a result of American nuclear attack, it is most likely that the Soviet Union would reconsider any aggressive behavior towards NATO forces in Western and Central Europe. In simple figures, there are currently 55 Soviet (mostly motorized rifle and tank) ground force divisions in the Sino-Soviet border areas, there are an estimated 60, mostly

[redacted]

[redacted]

ordinary Chinese infantry divisions facing these forces. The present gradual escalation of Soviet forces seems to indicate that from the Soviet perspective, this ratio approximates parity. An upset in this balance, however, resulting in a 3:1 Chinese superiority, or roughly a loss of 36 Soviet Divisions, would result in defeat. This correlation of forces can be achieved by utilizing the weapons inventory now available in the U.S. military.

3.3.1.3 [redacted] Both of the above Soviet perceptions of annihilation shall be considered in assessing the types and numbers of target items in Soviet Asia and the weapons required to effectively deter Soviet aggression in Western Europe.

3.3.2 [redacted] Weapon Systems Available to Target Soviet Forces [redacted]

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3.3.2.1 [redacted] Attack could be possible from the Persian Gulf, Indian Ocean, Sea of Japan, and the Pacific Ocean as well as the continental United States. Were intercontinental ballistic missile systems to be employed, their range extends over the Southern borders of the USSR. Given the right political circumstances, the use of the tactical Pershing and Extended Range Lance might also be employed from Hokkaido, Japan and South Korea to damage large portions of the Maritime Peninsula of the USSR.

3.2.3.2 [redacted]

3.2.3.3 [redacted] With the availability of all of these weapon systems in mind, the following section is concerned with the generic application of these systems to the various target configurations encountered in Soviet Asia, and a weapons drawdown for each of these configurations.

3.4 [redacted] TARGET SCENARIOS: DRAWDOWNS IN TIME AND SPACE AND WEAPONS LAYDOWN* [redacted]

3.4.1 [redacted] Introduction: Scenarios and Configurations. As shown earlier, there are substantial forces along the borders and particularly the West border area. Contrary to traditional thinking however, it is not impossible to effectively and efficiently target them. This cannot be done efficiently by attempting to destroy them

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division by division. Rather, the entire force structure must be destroyed collectively and virtually simultaneously as they congregate in various scenarios.

NOTES ON TARGETING PROCEDURES:

To address the targeting tasks, the following essentials have been implemented for the study:

[1] Large scale maps, from the Defense Mapping Agency's Joint Operations Graphic (Ground) series 1501 were used to record and locate key facilities and analyze geographic data. For the historical analysis, a series of formerly "TOP SECRET" but now declassified Japanese intelligence maps compiled by the Kwantung Army in Manchuria, of Soviet configurations along the borders, were used to estimate the location of Soviet forces in the field during a defense alert. They were reprinted for this study and inserted into Appendix A, "Historical Considerations in targeting the Soviet Army in the East." They were originally printed in the Japanese Defense Agency study on the Kwantung Army entitled, Kantogun (see bibliography). Offensive alert positions were determined by using the above materials and a series of maps printed in a Soviet study on the Manchurian campaign entitled, Pobeda na Dal'nem Vostoke (Victory in the Far East) (see bibliography).

[2] Fixed facility identification was done primarily through listings in the 1973 Target Data Inventory, and from open source data available through the holdings in the Library of Congress and other libraries.

[3] Target selection and classification of identified facilities was done through selection of highest troop casualty targets as opposed to those of a countervalue or material damage. Each target item was then assessed according to geographic distribution, so that a minimum number of weapons could be used against a maximum number of targets.

[4] Functional vulnerabilities for most of the known target items have already been assigned in their classified listings and, for the most part, are subject to peak overpressure damage. Other facilities listed within the range of dynamic overpressure are in this study, limited to collateral damage estimates.

[5] For this study, the Primorskiy Kray (Maritime province) has been used as a model target area. It contains over one third of the troop installations outlays for the Soviet forces along the Chinese

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[redacted]

They are best destroyed generally at the regiment level in time and place; taking into consideration all of those places where troops operate and congregate on a day to day basis and more importantly, in special times of alert.. These basically fall into three scenarios:

- Peacetime/Defense dispositions
  - The Soviet Army in Barracks
  - The Soviet Army on alert-defensive
- The Soviet army on wartime alert/offensive dispositions
- The Soviet army on alert - dispersed.

Using a building block method, weapons outlay and number of targets for each type of configuration of forces can be determined separately. These various troop positions, when recombined and amended to adjust for target overlapping for each of the scenarios described above, form basis of analysis in this study. The major configurations discussed in the scenarios consist of the following:

- Barracks
- Headquarters
- Training Areas
- Supply Repair Depots

*NOTES ON TARGETING PROCEDURES (Continued):

border and is headquarters for most of the naval and air forces in the Far East. It contains the heaviest concentration of men and materiel of Soviet forces in the East. It is approximately 64 thousand square kilometers or larger than East Germany (GDR). We have had to limit the actual targeting to this model using the sources available to us at the time. Given access to WSTPS sources a most accurate and current update of the entire forces of the Sino-Soviet border region can be made by utilizing the calculation methodology developed in this paper.

[redacted]

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- Primary Maneuver areas
- Secondary Defense/Reassembly areas
- Attack Assembly areas
- Transition collection choke points
- Bivouaced forces

Figure 17 shows these building blocks listed above as they apply to the three major scenarios. Because of the interchangeable relationship of the configurations, drastic alterations in targeting methodology and weapons laydown are not required to accommodate shifts in Soviet posture in the Far East, Mongolia and Siberia. Furthermore, this system allows greater flexibility since blocks can be added, replaced or deleted to accommodate changes in targeting emphasis and methodologies and in the target area itself. The following sections discuss each of these configurations in the context of the various scenarios. A weapons outlay and a drawdown for each scenario is given.

3.4.2 [redacted]

3.4.2.1 [redacted]

[redacted]

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3.4.2.2 [redacted] It is important to note, that garrison locations are proportionately closer to enemy borders than in the European context. The building of self-contained "voennye gorodki" (military towns), some replete with state farms run by military units, has been a feature of garrisons in the East and Mongolia since the 1930's, when the threat of Japanese advance into Siberia seemed imminent. This alleviates the large scale transitioning of troops in time of alert and emphasizes their immediate importance to Soviet perceptions of the management of the balance of arms along the borders.

3.4.2.3 [redacted] In general, the barracks are mixtures of brick and masonry structures interspersed with wood frame buildings. Vehicle sheds, in general, are wood frame but in older barracks are brick or steel frame. About half the barracks are located in proximity to inhabited areas so that there will probably be extensive civilian casualties. Yet because of their relatively small populations (most under 10,000) consisting mainly of civilian support staff and dependents, the destruction of these inhabited areas would result in considerably fewer purely civilian casualties than in the West. Nearly all towns in this area started out as military installations and were later transformed into towns. As a result, the barracks have a tendency to be located on the highest piece of ground near the river or at railway junctions. In general there is little heavy industry in the area besides that located in the three towns of

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Khabarovsk, Vladivostok and Blagoveshchensk. Many of the smaller inhabited areas are virtually garrison towns and even some of the larger cities like Ussuriysk fit that description as well.

3.4.2.4 [redacted]

3.4.2.5 [redacted]

[redacted]

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[redacted]

3.4.2.10 [redacted] but the picture is not entirely rosy. There are various factors which limit the number of forces stationed in any fixed installation, not the least of which is time-dependency. Targeting the Soviet Army in barracks has optimal efficiency if the attack is a surprise, at night, on a Sunday, or on a national holiday, and especially in winter. Also during the period immediately following the semi-annual induction of recruits, most of the equipment and men can be expected to be at home station most of the time. Since Soviet units can use only small amounts of their equipment in day to day training, much of their war fighting equipment as well as any equipment for second echelon units will remain in the installations and their depots.

3.4.2.11 [redacted] These constraints should not restrict consideration of their target value, however. The fact is, substantial forces remain posted in the barracks to guard vital equipment and supplies and both these men and materiel are vital to fighting capabilities of the forces that may be situated outside of the garrison in training or maneuvers at the time of attack. In response to this, increasing

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the weapons outlay does enhance the chances of achieving the optimum casualties intended in deterrence targeting. Of course, the more targets attacked, the fewer the returns as seen in the drawdown. But combined with the specified timing factors, the anticipated destruction levels can still be attained, in these less-than-optimal unalerted situations with an increased laydown.

3.4.2.12 [redacted]

3.4.3 [redacted] Defense Alert and Maneuver Scenario. In targeting the forces of the Soviet Army located in the Far East, Eastern Siberia and Mongolia one should consider their defensive alert and maneuver dispositions vis á vis the Chinese. They would include forces concentrated in training and maintenance/supply depots as well as in defense alert stations along the borders. Although most forces are located in garrisons for the better part of the time, it is plausible that they would also be in these other configurations in the event of an alert to impending Chinese armed hostilities or maneuvers held in response to mounting political tensions. This section is addressed to this alerted scenario, where substantial numbers would be moved out of barracks and sent to border maneuver, training and other defense areas to prepare for enemy action.

[redacted]

[redacted]

3.4.3.1 [redacted]

3.4.3.2 [redacted] Fixed Troop Installations During Maneuvers and Defense Alert. In the defense plan or maneuver scenario, there will be a transition of forces from their barracks and headquarters to the border area. It would not now seem worth targeting these seemingly vacated fixed troop installations. Yet there are several reasons why these fixed positions should not be forgotten.

3.4.3.2.1 [redacted] The preparation and transition rate from barracks or headquarters in the present cannot be accurately established. This is mainly due to the fact that the category status for each kaserne has not been established as yet. For this reason, substantial forces may still be stationed within the garrisons preparing logistics or other back-up work for the front lines or simply slower in preparing the evacuation.

3.4.3.2.2 [redacted] Furthermore, these garrisons and headquarters, particularly the ones closest to the front, will most likely be filled with reserve or rear echelon forces and remain of logistic-supply value.

[redacted]

[redacted]

Depending upon the intensity of the threat perceived, it is conceivable that not all units stationed in the garrisons be sent to the border maneuver areas. Unless this can be absolutely determined, all installations remain suspect.

3.4.3.2.3[redacted] Hence fixed troop installations and headquarters are still of target value, and as suggested earlier, are a basic component to the building block targeting scenario. Naturally, there would be a moderate to sharp diminuation in the force numbers in this category of troop configuration. It is most likely that the drawdown would not be as steep as shown in the previous section, since the larger division-size garrisons would be first to be mobilized in a major defensive action. On the other hand, if the maneuver or defense alert were performed in response to a perceived minor threat, it is most likely that only local troops would be dispatched to the border to assist the KGB border guards.

3.4.3.3.[redacted] Primary Time Phased Targets: Defense Maneuver and Alert Areas.

The Soviet Army on alert-defensive maneuvers is probably the most complex target and yet the most likely in view of the protracted Soviet hostilities of the last decade. Extensive Soviet defensive positions have been developed over the last fifty years to include concealed concrete bunkers and underground facilities as well as alternate command posts and similar structures. In this posture, the barracks are of dubious value over time since the equipment will have been moved with the first echelon units and may already have been issued to the second echelon. However, total weapon outlays in targeting defense maneuver or alert areas in this part of the world would be less than in the West where forces are more evenly distributed throughout the Soviet Union and Eastern Europe to assure domestic and Bloc internal security, as well as to prepare for possible agression against Western European forces. In the Soviet

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East, known trails and routes to border training and defense alert areas are easily discernable on large scale maps and aerial photographs. These trails are almost without exception connected to the known training and defense maneuver or alert areas used by the Soviets prior to the August 1945 offensive against the Japanese Kwantung Army in Manchuria. (See Appendix A for maps). Built between 1930 and early 1945 these defense areas were observed and well charted by the Japanese who kept a detailed record of the regular Soviet displays of sabre-rattling maneuvers, performed to contain Japanese intentions in Siberia.

3.4.3.3.1 [redacted] This same type of activity along the borders still occurs today against the Chinese. Yet until data on the exact current locations of defense alert areas is made available from JSTPS and other intelligence sources and compared, these wartime locations observed by the Japanese serve sufficiently well as the basis for determining current dispositions.

3.4.3.3.2 [redacted]

[redacted]

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3.4.3.3.8 [redacted] Figure 24 indicates the heaviest concentration of forces along the borders during the defensive years of Soviet-Manchurian relations between 1942 and 1944, when the mass of Red Army fighting power was needed in the European theater. These distributions hold true today but only in larger proportions. Georgraphy and strategic importance dictated dispositions then as now.

3.4.3.3.9 (U). Defense maneuver and alert areas are not the only primary time-phase targets in this complex scenario however. Simultaneously with the primary surface bursts or maneuver areas and air bursts on selected fixed troop installations and headquarters, there are two other troop configurations that might be considered: Training areas and repair/supply depots.

3.4.3.4 [redacted] Primary Time Phased Targets: Training Areas. Training areas have been observed historically in or close to border areas and barracks, located on less desirable real estate, similar to the American experience with Fort Bliss and similar forts in the West. In Soviet Asia, the barracks and border zones are built close to one another due to geographic strictures and Soviet insecurities. Estimates vary as to the amount of time Soviet troops spend in training areas at the regiment, battalion and division level. During the late spring and autumn induction season, larger scale training operations are held. But for the most part, training exercises are held close to home base. Physical exercise is a daily regimen activity of the Soviet soldier done mostly in barracks. A conservative estimate holds that at the division level, troops are outside of the garrison in training over 30% of the time. Yet full division and battalion level training operations occur only several days each per annum, and never is a garrison completely abandoned for training exercises.

3.4.3.4.1 [redacted] The Soviet Army in training is a more difficult target and is obviously more expensive than targeting fixed troop

[redacted]

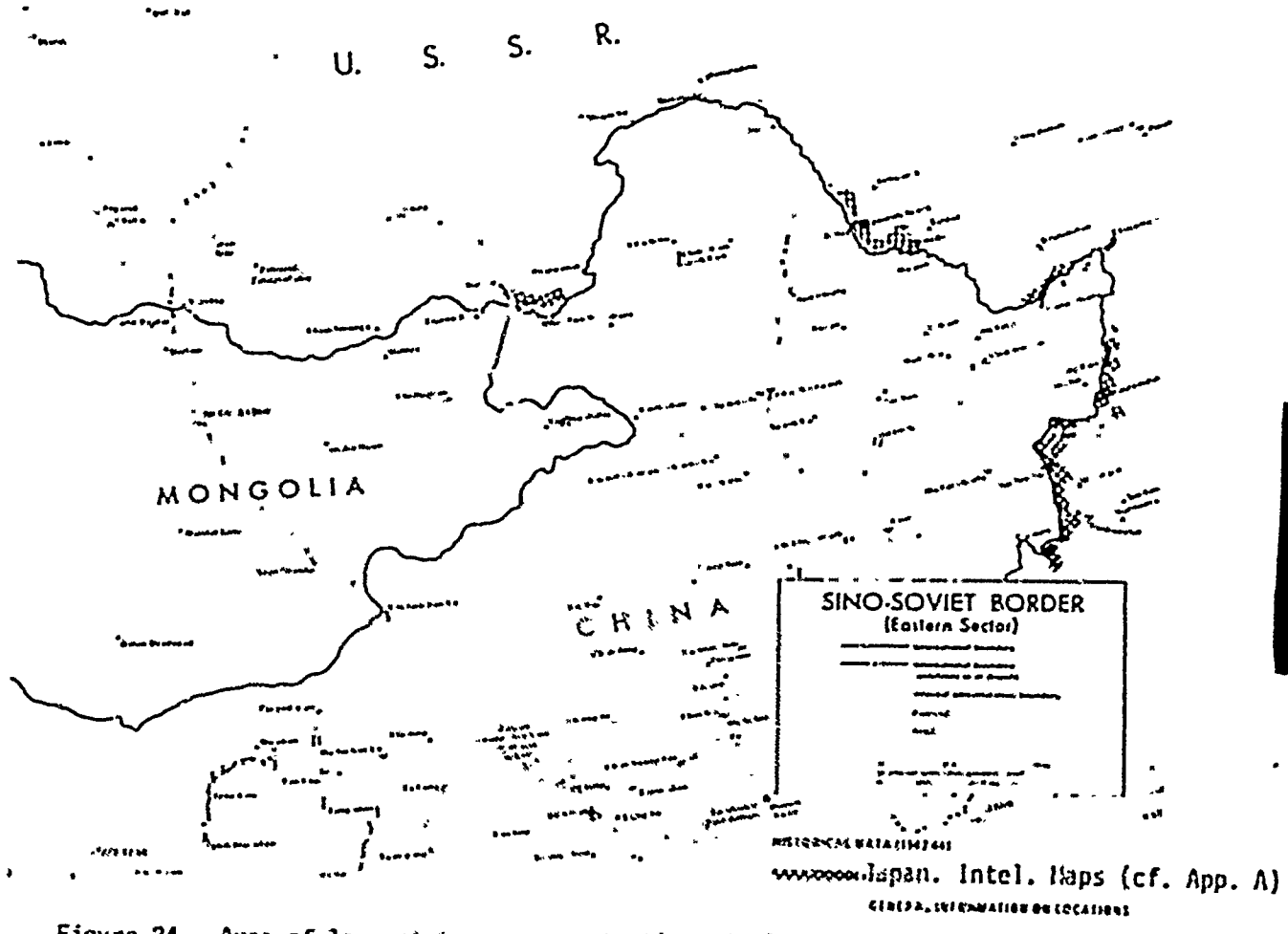


Figure 24. Area of largest troop concentrations during defense alert line up

[redacted]

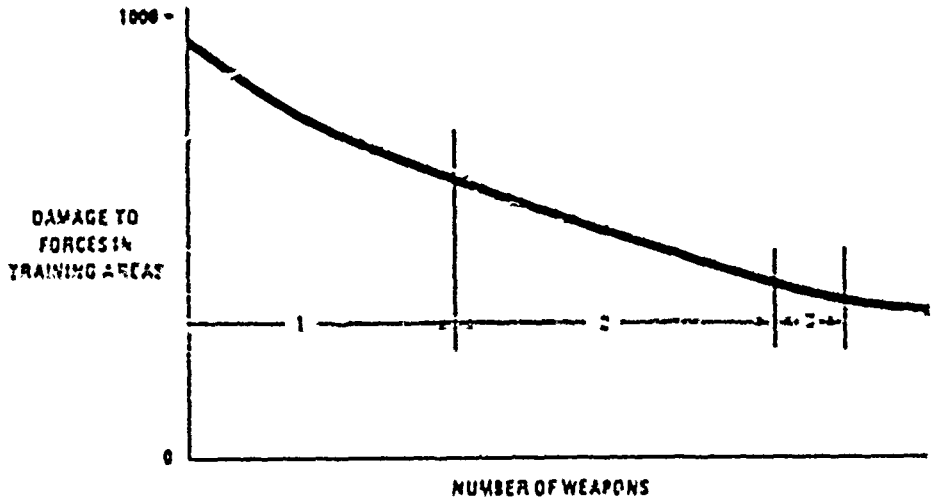
installations. But since training areas are sometimes attached to barracks, they can be simultaneously destroyed. This target has similarly a surprise connotation since in a period of tension, or when the USSR is preparing for a surprise attack, one of the two front line alert postures is far more likely to be chosen as a target site. In addition, units engaged in training must be spotted or identified as being in the training areas and attacked there. Fortunately a great deal is known about Soviet Army training patterns (See Annex I) and, as a result, it is not beyond our technology to locate these units. It is a matter of deciding whether to expend the resources on this area at a time of high tension and demand in other theaters.

3.4.3.4.2 [redacted] When units are known to be in training, they can be attacked with ten to fifteen weapons per division and an assured destruction of 60%. This is a rather high price, but in the target model area where many training areas are attached to barracks, headquarters, depots, and front maneuver areas, the outlay may be somewhat reduced. Based on World War II data, only one or possibly two unattached training areas are known to exist that currently do not serve another function today. A deeper knowledge of force configurations in training is, however, needed to create a more accurate drawdown than shown in Figure 25.

3.4.3.4.3 [redacted]

[redacted]

[redacted]



1 = TRAINING AREAS DESTROYED AS A RESULT OF BEING ATTACHED TO FIXED TROOP INSTALLATIONS OR TARGETED SUPPLY REPAIR DEPOTS.

2 = TRAINING AREAS DESTROYED AS A RESULT OF BEING IN PROXIMITY TO TARGETED BORDER MANEUVERED AREAS.

3 = PLANNING AREAS LOCATED SEPARATELY FROM EITHER FIXED TROOP INSTALLATION OR BORDER MANEUVER AREAS.

Figure 55. [illegible] forces in [illegible]

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[redacted]

[redacted]

3.4.3.6 [redacted]

3.4.3.6.1 [redacted] Although initial disposition will be chaotic and scattered to escape the effects of the blasts, the general patterns will be towards convergence and reassembly over time. Converging forces either unscathed or as yet unaffected by the radiation from the surface bursts will converge behind the lines at loading points, at minor choke points along small rivers, or in town or installations near the buffers seeking transport, shelter or dispensary services. The elimination of these reassembling forces would assure strategic annihilation.

3.4.3.6.2 [redacted]

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3.4.3.10.3 [redacted]

3.4.4 [redacted] Offensive/Wartime Scenario: The Soviet Army on Alert-Poised for Invasion of China. From a military point of view, this is not a very logical Soviet posture, but political conditions might make it necessary for the Soviets to invade the PRC, just as no one expected the invasion of Czechoslovakia by Nazi Germany in 1939, or by the USSR in 1968. Yet, unless specific political circumstances warranted, it is not likely that the Soviets would launch an offensive against the Chinese and at the same time threaten NATO forces in Central Europe, which is the raison d'etre of this alternate deter-[illegible] proposal. Nevertheless, in this offensive scenario, Soviet first echelon troops would be expected to be in assembly areas ready for the attack-from-the march. Depending on the timing, the second echelon troops will be in either assembly areas or in the barracks, fitting out.

3.4.4. [redacted]

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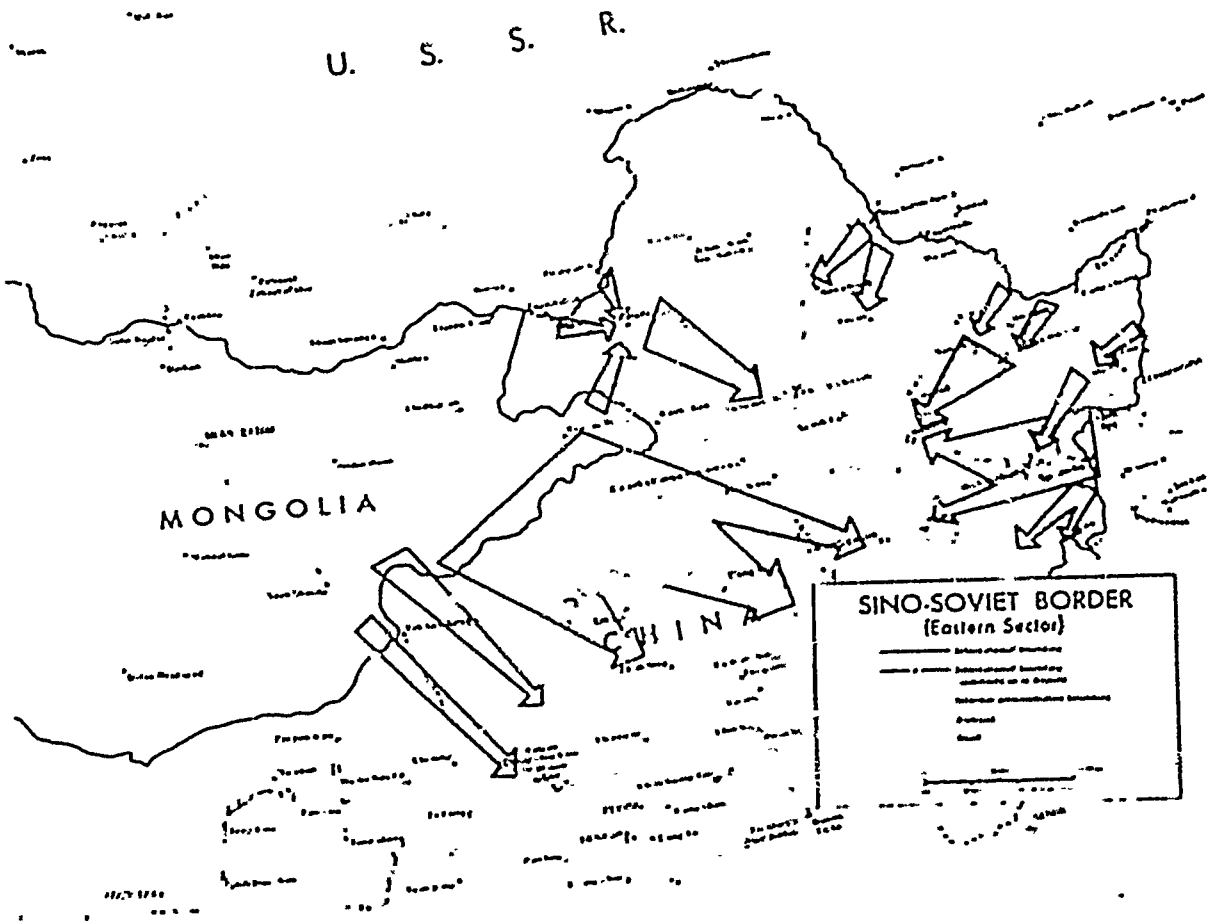

SOURCE: FROM STRATEGY AND ACTUAL BATTLE ADVANCE MAPS SHOWN IN
[illegible]
[illegible] IA. MALINOVSKIY, ED. 2ND RAZRA, 1966]

Figure 29. Soviet force concentrations along the Manchurian border in August 1945

[redacted]

3.4.4.4 [redacted] The following discussion of the various target items for this scenario shows their daterrence possibilities with the range of US weapons capabilities.

3.4.4.5 [redacted]

3.4.4.5 [redacted] Bivouacked troops will be sheltered in either tents or, most likely, in temporary dug-out shelters called "zemlyanka's", and since the weapon damage effects radius of a 40/50 KT extends far beyond the targeted installation, those bivouacked forces would also be destroyed for the most part. Furthermore, forces quartered in private dwellings, a practice of Soviet forces used during the Second World War in the Far East in the border areas, would also be destroyed because of their proximity to barracks, reserve areas, transition-collection points and assembly areas along the front.

3.4.4.5.2 (U). Rail junctions which serve as major transition and collection points and the major link with western supply routes, are primary target items during a Soviet offensive, and any forces

[redacted]

[redacted]

bivouacked or assigned to these key junctions would subsequently also be destroyed. In the same light, the forces assembled in front assembly areas poised for invasion or on reserve bases would also be primary target items, so additional weapons would not need to be assigned just for bivouaced forces.

3.4.4.5.3 [redacted] It must be noted, however, that the closer to the initial D-day an attack is planned, the greater is the chance of an exponential decline in the number of forces inhabiting the fixed and temporary troop installations, since increasing numbers are sent to the front, are echeloned, and finally dispatched. Thus, like Figures 18, 20, and 21 showing troop capacities in space, there are similar diminishing returns over time during a wartime offensive in targeting all fixed troop installations. Since many of these installations may be used to quarter second echelon and reserve troops, however the curve will not abruptly diminish (see Figure 30).

3.4.4.5.4 [redacted] The final dispatch of troops to the front in August 1945 and the subsequent evacuation of these installations required less than a fortnight. Yet during the several months prior to the invasion of Manchuria, garrisons were swelled several times beyond capacity. Had the Japanese been able to bomb these installations at this time, the Red Army might have desisted in their imperialistic designs in Asia. Once again the same considerations for weapons outlay in targeting fixed troop installations, shown in the first section, should be used in targeting Soviet forces in an offensive alert. Essentially, the same drawdown curve could be used but taking under consideration the geographic shift in concentrations along the West Manchurian border area and Mongolia. For this reason, greater yields and numbers of weapons might be suggested for these areas as far west as Ulann Baatar and Irkutsk and as far north as Bratsk.

[redacted]

[redacted]

3.4.4.6 [redacted] Supply/Repair Depots. Because the echelonment of forces and the preparations for launching an offensive against the enemy would result in the broader distribution of men and materiel assigned to front line logistics and engineering support, the value of targeting fixed repair/supply depots would probably remain static in terms of fixed repair/supply depots would probably remain static in terms of manpower allocation depending upon their geographic location from the border. The wholesale abandonment of these facilities as target items would not be advised because of their proximit to other prime collateral targets such as rail junctions a . their continuing function as rear supply and repair depots for the front. Like fixed troop installations however, their significance would diminish as the intended D-day drew near and more troops were assigned to the front lines. (See Figure 30).

3.4.4.7 [redacted]

3.4.4.8 [redacted]

[redacted]

[redacted]

3.4.4.8.1 [redacted] These rail and vehicle junction points (see Appendix C for more detail) were and still remain:

Transbaykal Military District	Far East Military District
Ulan Ude	Skovorodino
East of Karymskoe	Svobodnyy (vehicle transshipment area)
Borzia	Belogorsk
Kharanor	Zavitinsk
Dunaeva	Bureya Izvestkovyi
Cherryshevsk	Birobidzhan
	Volochaevka Vtoraya
Mongolian Military District	Manzovka
	Ussuriysk
Ulaan Baatar	Uglovoe
Choibalsan	Suchan (Partizansk)

3.4.4.8.2 [redacted] Since the war, many of these junctions and resulting trunk lines have been expanded and laid with multiple track. They have their terminals in border towns, some having recorded populations of less than 10,000 inhabitants, implying their military significance. The rail and vehicular routes for the Maritime Peninsula amply indicate the density of transport facilities for mainly defense purposes in this otherwise sparsely populated area. Like the examples shown in the model area, during an attack on defense alert configurations, the breach of the major rail facilities listed above also reap other target items including possible temporary troop installations, training areas and supply depots.

3.4.4.8.3 [redacted] Unlike targeting peacetime/defense alert areas, the rupture of major transition collection choke points should not be a secondary target, used to trap and destroy retreating forces, but should occur concurrently with targeting fixed troop installations, and repair-supply depots and front line assembly areas. This will

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assure that forces will not be able to immediately recover, regroup or retreat. Likewise, major harbor facilities should also be eliminated to further assure non-recoverability over time. Because an offensive would most likely occur in the late spring or summer, rivers and ocean harbors would be key logistics supply centers for the easternly fronts, particularly if an attack on the rail links were anticipated. This would include the port facilities in Vladivostok, Nakhodka, Khabarovsk and Blagoveshchensk. Fortunately, these cities contain other valuable target items and they will have already been chosen as key target sites.

3.4.4.8 [redacted]

3.4.4.9 (S) [redacted]

[redacted]

[redacted]

[redacted]

3.4.4.10 [redacted] Troops Poised For Invasion - Front Assembly Areas.

Like troops on defense alert, forces would line the borders in anticipation of hostilities, but their numbers, distribution and orientation would differ greatly. It is most likely that a number of fronts would be created from each military district, and forces assigned accordingly as in the Manchurian campaign of 1945, with the greatest concentration of forces being sent to Mongolia and the southern half of the Maritime Peninsula.

3.4.4.10.1 [redacted]

3.4.4.10. [redacted] Although the theater-wide weapons laydown would vary greatly from the defense alert and maneuver scenario, weapons laydown along the border assembly areas themselves would essentially appear the same with only minor variations. Going back to the August 1945 Manchurian campaign, Soviet writers, in their unbounded pride in victory over the Japanese, have documented in detail the positions of most of these forces down to the division and in some cases, regiment level along the borders. Superimposed over the defensive positions recorded by the Japanese several years earlier, the offensive lineup entails not only a greater troop density (since manpower increased twofold), but troops were arranged in heaviest concen-

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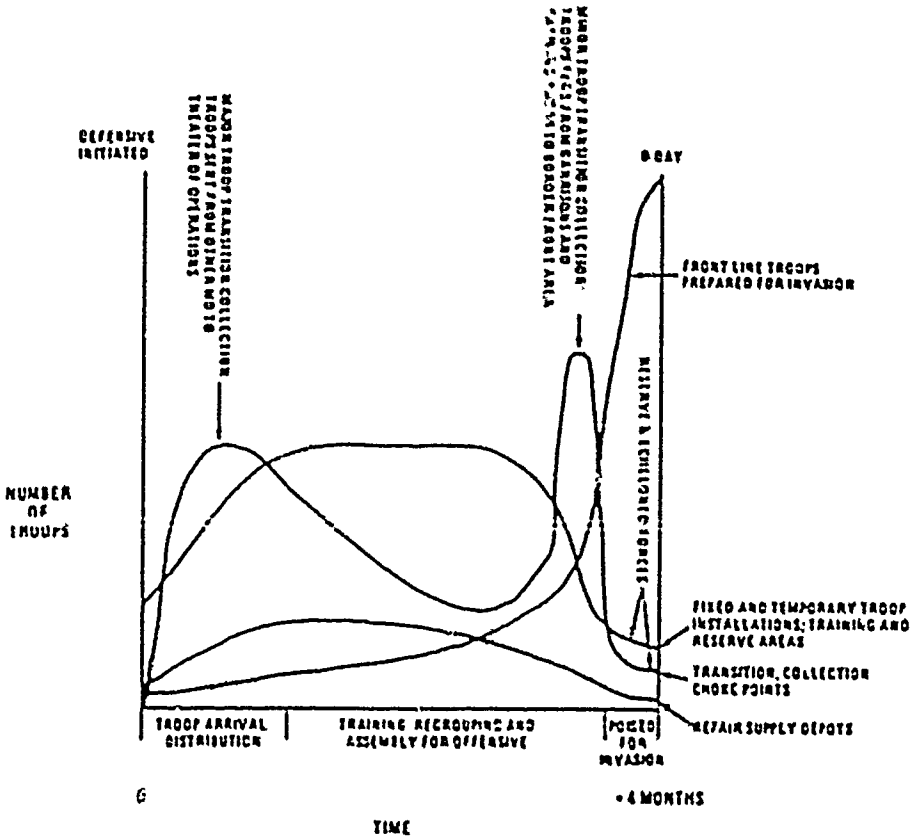

Figure 30. Distribution of forces during an offensive buildup

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trations not in defensive UR's (fortified regions: ukreplennyy rayon) as in 1943, but in valleys, shallow river crossing points, and along vehicular and rail routes that led to the Manchurian heartland. Besides having deeper columns and many tanks, and other armored vehicles, they were assigned considerable engineering and reconnaissance support (see Appendix A for more detail). Because the Japanese were not able to adequately patrol the entire border, these latter support units were operating in Manchuria a week to two weeks before the actual invasion was launched.

3.4.4.10.3 [redacted] Thus, in this scenario, current intelligence is absolutely necessary in assessing weapons laydown. Since forces will be in these positions a week or two before the invasion is launched, timing is of the essence. Fortunately, since most forces will be located in the relatively treeless steppes of the Mongolian plain, detection will be easier with current data collection systems.

3.4.4.10. [redacted]

3.4.4.11 [redacted] T r a i n i n g A r e a s. In peacetime and defense alert, training areas by and large, were located near the border areas or attached to isolated fixed installations out of enemy sight. The latter is true for forces in wartime and in offensive configurations. During the months prior to the offensive against the Japanese Kwantung Army, Soviet forces made very elaborate

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training maneuvers, largely out of sight of Japanese intelligence. They practiced at night for various types of warfare, to quickly acquaint the forces fresh from Central Europe with the types of terrain and new fighting situations (night, swamp, mountain, desert) they would encounter in Manchuria. Because of the haste in preparation and fear of detection, the same would probably be true today only for greater numbers with more sophisticated equipment. Yet as shown in the alert defense scenario, these positions can only be inaccurately postulated and thus require more data before they can be ascertained. For this reason, only those training areas which are attached to installations or depots have been considered.

3.4.4.12 [redacted] Reserves and Echelonment of Forces. Although reserves and the echelonment of forces were organized in preparing for the attack against the remaining Japanese forces in Manchuria in August 1945, at the last moment, formal echelonment was never implemented and most of the reserves were incorporated into the front lines, leaving only a skeleton force behind. There were several reasons for this.

- Because American forces had reached the Japanese main island and had dropped the atomic weapons on Hiroshima and Nagasaki, capitulation seemed imminent and the possibility of the Japanese mounting a counter-offensive in Manchuria was nearly impossible since all forces abroad and at home were needed to defend the home islands.
- Intelligence had shown the Soviet military leaders that Japanese forces in Manchuria had suffered great attrition, and that the "friendly" Manchukuo armies lacked morale and stamina. An all out tidal wave attack on these demoralized forces would therefore have the greatest psychological impact.
- Soviet forces needed the assurance that war would not be

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protracted in the East since most of the forces had been sent directly from the Western theater, and were doubtless bewildered and probably even irascible about being sent over six thousand miles in some cases, to a remote part of the world to fight an enemy they hardly considered over the last seven years. A single, quick, and all-out offensive, therefore, would boost the fighting morale of forces used to looking West for the enemy and still filled with the euphoria of VE-day.

3.4.4.12.1 [redacted] Today, because of the continuing propaganda hate-campaign between the USSR and the PRC; and what seems to the Soviets to be untold hordes of Chinese who could be mustered to attack the vulnerable Socialist Motherland in the Far East, it is doubtful that the Soviets would ignore the use of reserves and echelonment in deploying projection forces against the Chinese. Until the sudden change in strategy in late August 1945, reserves and some rear forces were located along all of the railway junctions and terminal points mentioned previously in rear defense and assembly areas along rail towns in the Maritime Peninsula dangerously close to the Manchurian border, and in secluded valleys away from the borders and out of enemy sight. Many of these reserve and rear echelon positions shown on Soviet maps and reconstructed from Soviet and Japanese writings on the campaign, correspond with military sites listed in current classified documents.

3.4.4.12.2 [redacted]

[redacted]

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3.4.5 [redacted] Alert Dispersed Scenario. The Soviet Army on alert, dispersed is a very difficult target to destroy but easy to neutral-

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Table 15 [redacted] Outlays for offensive alert scenario [redacted]

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ize. Each of the target systems discussed can be conceived within a scenario. This one, however, is very difficult to visualize since the Soviets have never practiced or trained for this posture. In order to disperse effectively - that is to avoid destruction by a small additional number of weapons, the dispersal must be down to battalion level and at such distance from barracks or other expected targets as to substantially minimize casualties. The question arises, where are such areas to be found? Since most of the population and communications centers run closely along the Sino-Soviet border, the border itself has been, for centuries, one of the best communication routes in the Far East. Any dispersal areas must of necessity be deeper within the USSR and hence merely dispersing to such areas puts the principal items defended at risk. Under such a plan the defenses of such cities as Blagoveshchensk, Khabarovsk, Ussuriysk and Vladivostok would have to be at least partially abandoned. A small number of well placed weapons would isolate the few troops left in the defensive positions leaving the border virtually indefensible. The next vital question is how long would the units be in the dispersal positions? An hour or two or even ten or twenty would be supportable but longer periods would not be feasible especially in winter without extensive preparation to include prestocked food and other supplies.

3.4.5.1 [redacted] Prolonged dispersion is highly time-and-geography dependent. In general, dispersed forces would not be able to remain in the open for longer than a week before food and other supplies would become exhausted. The dispersal conditions would only be exacerbated by climatic severities: monsoon rains in late summer, freezing and snow in winter, and spring thaw and rains. Drinking water and firewood supplies are perenially scarce west of Lake Baykal and in most of Mongolia and parts of the Transbaykal. However, it is most likely that not just these but all dispersed forces will

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carry their own water for fear of contamination. Hence logistics obstacles would limit the period and range of dispersion.

3.4.5.2 [redacted] Because most valleys and passes in the East are swamp-laden and access within the mountain ranges outside of the inhabited major river valleys is limited on foot or by vehicle, the number of positions and degree to which forces can disperse in these distant areas is also limited even in optimum climactic conditions in the eastern part of the Soviet-Manchurian border. In the western portion and in Mongolia and most of central Asia, the rolling, exposed expanses of the steppe lands offer little protection against an elongated fallout pattern or against the more severe elements of nature.

3.4.5.3 [redacted] More important would be rehearsals of the reassembly. If the force can be prevented from reoccupying defensive positions for an extended period, it would no longer be an effective defensive force. Because there is no evidence of prestockage or other preparation of dispersal positions and there has been no evidence of rehearsals for such activity, it is considered highly unlikely and self-defeating for all practical purposes.

3.4.5.4 [redacted]. With the Soviet forces dispersed, it is possible to conceive of waves of Chinese infantry and guerilla fighters being dispatched across the borders. To assist in such an advance, a ballistic attack on partially abandoned key fuel and communications facilities and garrisons would effectively neutralize Soviet forces. Regrouping operations would be paralyzed.

3.4.5.5 [redacted]

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CHAPTER 4
[redacted] CONCLUSIONS AND RECOMMENDATIONS [redacted]

4.1 [redacted] CONCLUSIONS [redacted]

4.1.1 [redacted] Introduction.

[redacted]

4.1.2

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4.1.3 [redacted] Credibility of targeting the Soviet Army. As has been discussed above, the Soviet Army would appear to be a far more credible target system than almost any other element of the Soviet society. It is the military and para-military forces which assures political viability and economic vitality in Soviet Society. Under direct control of the Communist Party of the Soviet Union, the military is the omnipresent force to prevent the spread of wide-spread domestic dissidence. Furthermore, in the Eastern regions, the Soviets see the massing of large troops concentrations along the border as the primary means to allay the Chinese from overrunning Soviet Asia.

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[redacted]

4.1.3.1 [redacted]

4.1.3.2 [redacted] Expected attitudes of other powers might have an effect on the credibility of such a deterrent posture. The People's Republic of China, while distrusting the United States, might nevertheless welcome the opportunity to degrade USSR forces on its borders. Chinese territorial claims, ethnic aspirations and the deep-seated fear of the greedy colossus to the North could be expected to enhance their desire to accept such an option with the United States.

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Such acceptance could mean the transit of their airspace with our missiles or even aircraft and the movement of their troops to the border. This would ensure that the Soviet troops on the border could not disperse even if they had been trained of Soviet forces may favorably view an option which would promise to bring an on-going successful invasion to a halt.

4.1.3.3 [redacted] A targeting policy which can be executed without using a significant portion of our strategic weapons, and which would be acceptable by key allies is one which would surely be believable to our potential adversaries.

4.2 [redacted] RECOMMENDATIONS [redacted]

4.2.1 [redacted] Since actual targeting laydowns can only be done by the Joint Strategic Target Planning Staff or the Commanders-in-Chiefs of nuclear forces and supporting intelligence is very closely held, this study has been largely theoretical in nature. For this reason, some of the recommendations made in this study require further examination.

4.2.2 [redacted]

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4.2.3 [redacted] It is assumed that this target system, if approved as a deterrent option, will acquire a sufficiently high priority for reconnaissance and analysis assets, as to greatly improve our specific knowledge of the system. This problem is discussed in greater detail in Annex 2, where other additional recommendations will be found.

4.2.4 [redacted]

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APPENDIX A

[redacted] HISTORICAL CONSIDERATIONS IN TARGETING SOVIET FORCES ALONG THE SINO SOVIET BORDER

A.1 GENERAL. There has been friction between the Russians and their eastern neighbors stretching back into the days of the Scythian incursions (3 B.C.). Because the eastern and southern boundaries of the Russian state have always been vague, an endless traffic of arms and soldiers has existed. The most notable were the Mongol Hordes who subjugated the young Russian state and left a mark that has permanently affected the Soviet attitude toward war, defense, and neighbors--especially oriental neighbors. Of more immediate concern are the incidents against the Japanese on the Sino-Soviet border in the thirties and the Soviet invasion of Manchuria in the closing days of World War II.

A.1.1 When it became evident in September 1931 that Japan intended to control major areas in China that had been Russian spheres of influence for decades or even centuries, the USSR began to react. The movement of military forces to the area resulted in the establishment of the current military districts and a clash at Lake Khasan (near Vladivostok) in 1938 which resulted in a two week skirmish touted by the Soviets as a major victory. In the following year the Japanese forces started to move into Outer Mongola and were repulsed in an engagement at Khalkhin-Gol that lasted from May through August 1939, led by a then already famous, General G. K. Zhukov.

A.1.2 These two engagements were of great help to the Soviets in understanding the problems involved in the invasion of Manchuria planned in late 1945. That campaign in Manchuria has been seen as a model of the postwar blitzkrieg which the USSR is preparing for Western Europe, and indeed for campaigns everywhere. The

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build-up and attack were accomplished with remarkable skill and precision; the Japanese Kwangtung Army still had a lot of fight left in it even after two atomic weapons had convinced the government of Japan that it should surrender unconditionally. From a political point of view it was necessary for the Kwangtung Army to be beaten by the Russians and for its weapons to be handed over to the Communist Chinese forces rather than the Nationalists with whom the Soviet Union was allied. The Soviets had, after all, cranked up for the war in good faith. When they sent their divisions east there was no reason to expect the Kwangtung army to quit. The atom bomb was dropped on Hiroshima the day before the campaign began but after the Soviet Supreme Command had ordered the invasion. The second atom bomb on Nagasaki was dropped at a time when the Japanese were doing some of their fiercest fighting in Manchuria.

A.1.3 The prewar Soviet strength on the Chinese border was about forty rifle and mechanized divisions supported by ten air divisions for a total of about 800,000 men.

A.1.4 By 1944 this strength had been reduced to about 400,000, facing nearly one and a half million Japanese and Manchukuo troops. These forces were built up between May and August to about 83 rifle and tank divisions for a total of about 1.6 million men. During the same period the Japanese were unable to make any sizable shifts of their troops, well aware as they were of the rapidly deteriorating picture strategically.

A.1.5 The success of the Soviet offensive against the Kwangtung Army fit perfectly into the Zhukov strategy model, demonstrated earlier in 1939 in the Khalkhin-gol campaign. According to Soviet sources, the Soviet High Command continued to believe up until the Manchurian invasion that the Japanese were still officially planning an offensive against the Soviets with the code-name "Kantokuen". Either the leadership was being overly cautious about

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Japanese capabilities or was simply not aware that they had officially abandoned their offensive strategy early in 1945. Nonetheless, the delusion continued to serve political goals to justify the massive buildup against the Japanese. Air and other reconnaissance was carried out simultaneously with the creation of an overwhelmingly superior strike force. All of the elements of a surprise offensive were exploited as fully as circumstances permitted by utilizing the following:

(1) Forestalling the main thrust of operations until sufficient superiority could be guaranteed.

(2) Attacking when and where the enemy is least prepared and expects attack, accomplished by concealing all preparations and exercising vigorous security measures.

(3) Using qualitatively and quantitatively superior weaponry without the enemy's knowledge of troop capabilities prior to the offensive. (In 1945 it included introducing new tank models and rocket weapons (Katyusha); in a contemporary setting, it would include nuclear weapons as well as the latest in conventional hardware.)

(4) Exploiting the climate and topography to surprise the enemy in his weakest position.

(5) Having a pliable alternative strategy (or strategies) available to meet last minute exigencies.

(6) Bold attack at detachment and sub-unit level on enemy territories.[1]

A.1.6 During the late 1960's and early 1970's a rash of books appeared in both Japan and the Soviet Union on the Soviet Army's twenty-four day campaign against the Jananese Kwantung (Kanto) Army. The Soviet volumes have been published in the same period as a series of border incidents and verbal hostilities between the

[1] (above materials extracted and adapted from Sovetskaya Voennaya Entsiklopediya Moscow, 1975), Vol. 2, p. 162

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China and the USSR and are particularly rich in their analogies with the contemporary military situation. As one author has bluntly stated:

> Experience in using tank formations and field forces in the conditions of the Far East has shown that in these regions (including the Greater Khingan Mountain Range) it is possible for large numbers of troops to employ modern military technology. (p. 329 Pobeda)

A.1.7 Although they have tended to laud themselves excessively by exaggerating Japanese strengths, the Soviet authors are quite open about many of their failings and openly reflect on solutions to solving the problems in a contemporary setting. The greatest factor, in the Soviet view, which influenced their victory from the very beginning of the campaign was to effectively use all of the elements of surprise - tactical, operational and strategic. It is the basis of their strategy even today, and its consideration as a factor in deterrence targeting should also be considered.

A.2 SURPRISE IN SOVIET WAR FIGHTING. The use of the various types of surprise tactics on the enemy is a key feature in an analysis of Soviet strategy. Although Soviet authors trace it back to Lenin[2] and the Civil war, it became a well established characteristic of Soviet strategy during the Second World War under Marshall Zhukov. He established his successful strategies very early in the Asian heartland at Khalkhin-Gol in June 1939, which he describes in detail in his memoirs.[3]

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[2] cf his "Will the Bolsheviks Maintain Control of the State" Collected Works, 5th Ed., V. 34, p. 335.

[3] The Memoirs of Marshall Zhukov, Delacorte Press, NY 1969, 147-171.

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While rapidly building up a massively superior armies in both men and weapons quantitatively and qualitatively (and in particular, tanks), local forces attempted to hold the line with supplemental air support. Rigorous security measures were simultaneously enforced to ensure tactical surprise, while strategic surprise was ensured by attacking from a direction and at a time least expected. He usually chose the double envelopment as his attack tactic.

A.2.1 The same general techniques were also used in the Manchurian campaign where they were effective more rapidly than in any other Soviet campaign in any other theater in the Second World War. They will not be likely to abandon such a successful method for a new one even given the circumstances of modern technology, but will rather attempt to interject the new into the old.

A.2.2 In the article on surprise, in the new Soviet Military Encyclopedia, the author M. Kiryan has written:

> The most important conditions needed to achieve surprise, now as before, are keeping secret the command plans for the operation (battle), the preparations for fighting in a short time and hiding from the enemy the means of fire, particularly nuclear missiles. (Sovetskaya Voennaya Entsiklopedia v.2,p.163)

From the above quote it would seem that the author was describing the Manchurian campaign, since all of the above conditions were met superbly. Because Soviet leaders have lauded the Manchurian campaign (See Rand Corporation Study: Timely Lessons of History: the Manchurian model for Soviet Strategy (July 1975, the Rand Corporation, Santa Monica, CA) as a perfect example of Soviet strategy and pointed it out as an excellent model for future endeavors in the Far East, it cannot be overlooked.

A 3 ELEMENTS OF STRATEGIC SURPRISE. The entire campaign was a masterful example of a swift strike with an overwhelming

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number of heavy weapons and men à la Zhukov. But more impressive than this is the ability to have struck the enemy at his weakest point. The Japanese placed most of their forces on the Maritime peninsula border thinking that since that area was the most heavily defended by both sides, they would launch their main thrust through that area. Instead, the Soviets sent roughly half their men and materiel from the Transbaykal (Mongolia, Dauria) front. The Japanese were obviously not ignorant of the possibility of the use of this area as the main front since it was here they fought Zhukov in 1939. It was the most geographically logical place of embarcation, in the South over the Mongolian steppe, but they had no idea of the size of the operation that the Soviets were planning against them om that direction. This was partially accomplished by feints and maneuvers held in the Far Eastern Front on the Maritime peninsula, which made this already most closely watched area seem more important it really was.

A.3.1 A further element of strategic surprise in the campaign was timing. The Japanese had placed the offensive starting date in September, and even the Soviets had expected to begin in late August, but since the troops were generally prepared by the seventh they moved the initial assault data to the ninth, thereby surprising both the Japanese and themselves. In a modern context, the importance of both the location and timing of the main attack are somewhat diminished by historical precendents and the current disposition of troops along fixed border positions. However, timing once again could play a major role, since preparations for the attack could occur almost immediately while the transport of men and materiel from the West would perform only a support logistics function. The juxtaposition of Soviet forces today gives in indication of the defensive nature of Soviet dispositions against the Chinese. Were there a massive buildup of forces in the Mongolian and western

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portion of the east border area, one might expect offensive action against the People's Republic. In maps printed by the Japanese in 1943, for example, when the Soviets were in a defensive positions, they occupied hundreds upon thousands of pillboxes along the entire border between the two countries. Equipped with new weaponry they are in these same general locations today. During the offensive, however, in August 1945, they launched an army twice their former size through roughly the same border locations. It took them about four months to prepare for their invasion, the bulk of preparations occuring in the latter two. In targeting these forces, it is absolutely vital that current, almost daily, intelligence be used to plot changes in Soviet configurations in Asia. Because the Japanese High Command and Kwantung Army Headquarters relied on their Intelligence Section's meticulously accurate data compiled between 1941 and 1944 of Soviet defences to predict to the Soviet offensive in mid-1945, it is, in part, the fault of Japanese intelligence for not suspecting an attack from the Mongolian plain.

A.3.3 The success of the Mongolian route will undoubtedly be a factor in its being tried again. The locations of voenniye gorodki or "little military towns" throughout Mongolia and the extension of permanent rail and vehicular routes throughout the area along the Mongolian border correspond to the paths taken by Soviet and Mongolian troops in their assault on the Kwantung Army.

A.3.4 The towns of Irkutsk and Chita, lying North of Mongolia, are on the supply routes for both East Siberia and the Far East of the Soviet Union, and their target value cannot be minimized during an offensive buildup. The combination of topography, climate and precedent make this location in the Asian heartland of crucial value to the Soviet offensive strategy. Fortunately, topography and climate also make this area the most visible to reconnaissance means hence target accuracy is more assured here than in other areas.

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A.4 OPERATIONAL SURPRISE. Because of the relatively flat terrain, the Soviets first used the Transbaykal front to test their newly developed rocket launcher weapons, against which the Japanese were poorly prepared. Their success has been now dwarfed by the proliferation of significantly more sophisticated counterparts in this same area. The appointment of First Deputy Commander of Soviet Strategic Rocket Forces, Vladimir F. Tolubko in 1969 to the position of Commander in Chief in the Far East lends even more credence to the methods of potential strategy to be used against the Chinese enemy.

A.4.1 Another factor of operational surprise is the massing of vastly superior weapons and forces out of sight of the enemy. The equipment of was superior in both quality and quantity. At the time of the campaign the Soviets had over 4500 tanks, 670 of them being the new F34 models; over 1000 armed artillery vehicles, 3900 fighter aircraft. The Japanese had only 1000 tanks, most of them 1930 models, 1800 planes and 5000 pieces of artillery. The eleven (or twelve depending upon the account) divisions of the less than one million men of the Kwantung Army were one-half to one-third in strength of first line divisions. They also had begrudging assistance from recalcitrant Manchukuo and Korean forces. The Soviets had 45 divisions consisting of over 1.7 million men. Soviet concern for massive superiority is reflected today in their in the equipment, manpower and military installations invested in the Soviet Far East and Baykal region.

A.5 ELEMENTS OF TACTICAL SURPRISE. Although the local populations living within a 20 mile radius from the border were either armed for defense, or replaced by NKVD border guards in the

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mid-1930's, during the buildup any residual civilian population was not interfered with so as to not alert Japanese reconnaissance.[4] Up until D-day, military haycutting commands of 15-20 men were sent out in the field to give the appearance that no significant changes were taking place behind the lines.

A.5.1 Furthermore units and even armies were shifted around as a deception technique. The 5th Army was, for example, sent to the border area by unit and formations near Topolevaya on the Turii Rog Front, but by the end of August had entirely regrouped into new positions.

A.5.2 Much attention was given to training the troops to operate at night and to function independently of one another as subunits (podrazdeleniia) in the mountain taiga terrain.

A.5.3 They spent much time on aerial reconnaissance and all officers were given intelligence maps of their area. Radio broadcasts were sent only from areas where the enemy knew there were troop concentrations in the past, otherwise no radio transmitters were issued to forces in new positions.[5] These operations were followed

[4]The local indigenous population, including 150-200 thousand Koreans, were resettled in other areas of the Soviet Union like Central Asia, had already been replaced with semi-military Kolkhoz immigrants and forced labor, many of them being Ukrainians who came out here to escape the terrors of collectivization.

[5]Only slowly did the Soviets perceive that a breach in wireless communications could be important. Their general disdain for Japanese intelligence made them bold about broadcasting even uncoded messages in early years. Only later did they learn that Polish military intelligence experts, the best in the world at that time, were assisting the Japanese. Furthermore Japanese used Korean nationals and White Russian emigres living in China as data collectors and translators (they failed miserably as spies), and effectively exploited open source data from local newspapers and civilian radio broadcasts to identify troops they had sighted earlier in the area. Because of the generally higher terrain on the Chinese border the Kwantung Army exploited their topographical advantage throughout the war, and were thus able to have an accurate idea of Soviet defensive dispositions.

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by subsequent bans on written orders, and officers wearing ranks near front areas. Troops crossed the river quietly by units and sub-units by night and, where possible, simply hid in the dense birch forest under cover until they were joined by the full complement of forces.

A.5.4 The significance of this tactic goes beyond the scope of history. As one Soviet author has written:

> Experience in concealing troop concentrations and deployment in preparing for front and army operations of the Soviet-Japanese war has shown to be of practical interest in developing modern operations. (Pobeda p. 83)

A.5.5 Division strengths were considerably greater than Japanese counterparts each having on the average of one tank brigade, and a self-propelled heavy artillery regiment, with a total of 86 tanks and armed vehicles.

A.5.6 The sparsely populated Soviet Far East and Transbaikal would be no match against a land war of Chinese infantry. Were the Western USSR involved in a conflict in Europe it could ill afford to open up a second front. So the nature of current Soviet weapons in the east reflects only a quick strike of offensive capability; i.e., nuclear ballistic missiles. The current forces and conventional arms in the area however massive seem to be more of a defensive nature designed for limited operations.

A.6 TIME IN PREPARATION. In spite of lauding their accomplishments in the campaign, Soviet authors are often frank to admit their weaknesses. Their greatest weakness was haste in preparation which caused numberous bottlenecks. As one author has stated:

> The regrouping and deployment of troops took more time than was required to carry out these measures in the Western (European) theater. The expanse of territories and the poorly developed and poor quality road systems combined with torrential monsoon rains prior to the advance, and inaccessable areas made deployment exceptionally difficult. Over the course of several months ten

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> new divisions and reinforcements for the ten existing divisions were moved into an area ranging as far back from the front as 70 km in key areas, arranged in three defense strips, one at the front and two at the railway lines. This put a tremendous strain on the rail and road network. Quartering for many troops consisted of dug-out hovels called zemlyankas, and frequent bottlenecks caused shortages of food and other supplies. But the success of the operation required surprise and the quickest possible speed in activity. (Final, p83)

A.6.1 Naturally, not all troops had to huddle in dank "zemlyankas". Permanent facilities for close to ten full divisions were already available early in the 1940's, some of them dating back to Tsarist times. Readily available zaimkas, or migrant farm worker settlements found along the Amur area as well as unused forced labor camps served and can still serve as temporary quartering.

A.6.2 From the logistics problems discovered in the campaign, the Soviet military press, at least, has placed emphasis on clearing up logistic and deployment bottlenecks. One solution has been to place enough men and equipment on the borders to eliminate having to send 126,000 railway cars from the west (over 22-30 trains per day) like in July and August 19[illegible]

A.7 SPEED IN OPERATIONS. Speed was of the essence to the Soviet military leaders. The amazing fact that the entire campaign lasted only 24 days in total (with the main force of the Japanese Kwantung Army destroyed in ten), is overshadowed by the fact that rather than wait for more opportun[illegible] tactics, thousands of Russian lives were needlessly expended[6]. As in [illegible] Transbaykal front, however, advance columns of tanks, dangerously outdistanced POL and other supplies and yet were still ordered to keep up the pace.

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[6] Adam Ulam, Expansion and Coexistence, p.360.

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A.7.1 Speed with resultant waste is still expected today:

> There is no indication in the general philosophy of Soviet military doctrine of plans for a large-scale general land war in which Soviet forces would fight mass battle with the Chinese. The emphasis, as in the doctrine which has marked Soviet military thinking since before World War II, is on a swift overwhelming strike which paralyzes the enemy and reduces him to the state of surrender within days. The 1945 attack on the Kwantung army with its ten-day capitulation provides a classic of contemporary Soviet military thinking.
>
> Given the state of Soviet military technology, the Soviet general staff should be prepared to guarantee the Kremlin that a knock-out of China could be achieved by means of a surprise lightning blow, using nuclear weapons, within a matter of days.[7]

A.8 AUTONOMY AND ADAPTABILITY. Other historical factors of contemporary consideration can also be listed. Even before the declaration of war with Japan, the semi-autonomous Red Banner armies were established along the Transbaykal and Far Eastern areas to guard against the possibility of Japanese aggression. As a result of the distance from Moscow, the lack of direct control continued during the campaign. Generals Zhukov, Vasilevsky, Meretskov and others involved in the general strategy wrote in their memoirs of their successfully convincing Stalin of the necessity of running the show themselves[8] basing their argument on the "objective circumstances" peculiar to the area. On the operational level as well, just prior to the advance, the First Far Eastern Front was able to switch from a supporting attack to a primary offensive thrust zone. Soviet authors attribute to this autonomy in decision making: 1) the "objective circumstances" in the area 2) the availability of sufficient

[7] Salisbury, War Between Russia and China, p.161.

[8] Cf. Zhukov's Memoirs and A. Ulan's Expansion and Coexistence.

[redacted]

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reserves crucial to mountain forest terrain fighting, who were given a second echelon status, 3) and several alternative strategies which were practiced beforehand in maneuvers, much to the consternation and confusion of Japanese intelligence.

A.8.1 Even at the unit and subunit level, officers were given considerable autonomy in directing their forces. On all three fronts forces crossed the borders under complete radio silence, and for several days regrouped and positioned themselves around enemy fortifications without communication from their headquarters. This was an essential part of troop training for new arrivals in the Eastern border area. It is most likely a common factor today. From Soviet writings on the campaign, which were mostly written at the zenith of border hostilities, one is led to believe that a high degree of troop autonomy and adaptability is a feature necessary to fighting in the Far East in any period.

A.8.2 On the eve of the initial attack, troops along the Ussuri and Amur rivers were supposed to attack the following evening using blinding search lights on the enemy. Rain hindered these plans, so forward detachments were dispatched in autonomous sniper and reconnaissance units. They opened fire on the surprised Japanese and then resisted enemy fire until tanks and heavy artillery could arrive and relieve them.

A.8.3 There were other examples of adaptability. Inadequate engineering support was the main reason for the initially poor results of the Tenth Mechanized Corps to overcome forested mountains and continuous Japanese fortifications in the borders west of the Maritime peninsula. But quickly adapting to the "objective circumstances" of the front, the corps reorganized and broke down from a single corps with engineering support into engineering brigades and regiments meshing with other tank and artillery vehicle support. Combining with other local armies and one engineering brigade they

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operated as forward trail blazers, facilitating passage for following armies.

A.8.4 These kinds of examples are given to point out the adaptability and low-level decisionmaking practiced by Soviet forces in the Far East, a capability not generally attributed to the Soviet Military. It would seem unlikely that present-day Soviet strategists would abandon the above mentioned features used so effectively and lauded in every Soviet publication on the Kwantung offensive, were they to launch an attack today. A quick overwhelming campaign against the Chinese through the Mongolian-Manchurian route to the Chinese heartland using the newest weaponry available would fit the pattern of past Soviet offensive operations. Both the Chinese and Soviets deliberately overestimating enemy capabilities and massing men and materiel continues along the borders, but it is defensive measure to protect their investment in Asia.

A.9 DISTRIBUTION OF SOVIET FORCES, HISTORICAL VIEW. In the search for historical precedents and because of restrictions in obtaining highly classified material on the location of Soviet forces along the Sino-Soviet border, research for this project utilized a number of Soviet and Japanese sources. Although the reliability and scale for most graphics tended to be exaggerated, a recent two volume set of books on the campaign authored by the Japanese Defense Agency, Defense Interservice Training Institute, Military History Section entitled Kantogun (The Kwantung Army) has reprinted a series of now declassified "Top Secret" maps of Soviet defensive positions along the Manchurian borderlands. These maps list in detail, down to the company level in some cases, the positions of Soviet forces as they were lined up in 1941-1943. Used in conjunction with current topographical maps, these positions were used to estimate current force deployment areas for this study.

[redacted]

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A.9.1 Unfortunately the Japanse Kwantung Army relied on this meticulously detailed data to assess the size of the offensive that was mustered in the latter months of the Pacific War. They were not aware of the greatly changed troop densities along the borders as the Soviet Red Army switched from a defensive to an offensive posture. But as the Soviet troops now stand along the borders today, these Japanese configuration are once agains relevant.

A.9.2 The following maps of Soviet defense positions have been reproduced with the kind permission of Asagumo Shimbunsha Publishers and the editors of the Military History Section of the Japanese Defense Agency. They give the reader a better idea of the scope of historical data on the Manchurian campaign and its current relevance in studying Soviet forces along the present-day Sino-Soviet border.

1. Soviet-Manchurian Border: Positions of armies and KGB border detachments, major airfields and naval ports are shown.

1 a Key to symbols for map no. 1

2. Lower Pos'et-Slavyanka Peninsula.
3. West of Ussuriysk (then Voroshilov) and Lake Khanka to the borders.
4. Iman area north of Lake Khanka, along the Ussuri River.
5. West of Khabaroysk along the Amur River
6. Blagoveshchensk and Amur Border area
7. Dauria - Zabaykalsk border area
8. Key to symbols, abbreviations, and acronyms for maps 2-7.

A.10 SUMMARY. In spite of the death of Mao Tse Tung and subsequent Soviet gestures of restraint and reconciliation, the hostilities between the two nations continue. Renewed talks on settling the cartographic discrepancies on the borders, exchanges of

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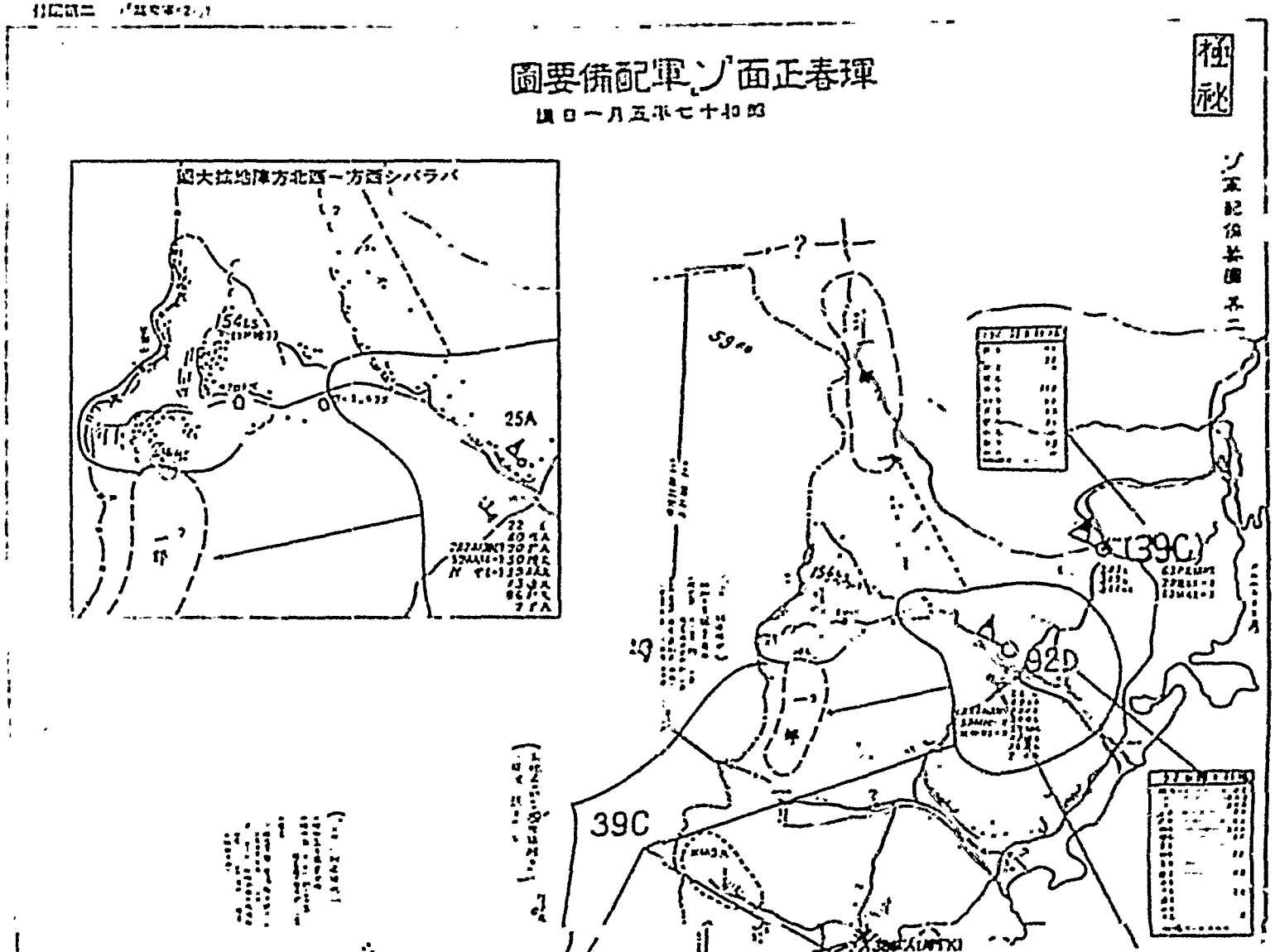

Figure 1-2. Lower Post'et - Slavyanka Fo

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diplomatic and other ranking officials and a toning down of propaganda invectives, all at Soviet instigation, have resulted in failure because of continuing Chinese intrasigence. China's leaders have continued to walk out of or snub Soviet celebrations, continue their anti-Soviet tirades in the daily press, and even talk of buying arms from the West. So the Soviets are forced to retaliate in kind, and their propaganda machines have again renewed their cries of blasphemy and war-mongering against the Chinese. It is unlikely that the death of First Party Secretary Brezhenev like the death of Chairman Mao Tse Tung will alleviate the hostilities between the two nations. The ouster of the "dovish" Podgorny (as far as China is concerned) from the Politburo, and induction of Konstantin V. Rusakov with long experience in Sino-Soviet relations and policy as chief of the CPSU Central Committee Department for Liaison with Communist and Worker' Parties of the Socialist Countries, hint the direction of Soviet policy in future years, with or without Brezhnev.

A.10.1 The deterrence option presented in this paper has been intended for exploiting these years of continuing hostility between the two largest nations in the world. Although it can in no way be assured that the People's Republic of China would assist US post-attack policy by launching an invasion of Eastern Siberia after the general decimation of Soviet Land forces, the threat of such a move may provide a better deterrent threat to Soviet projection forces aimed at Western Europe than current policy.

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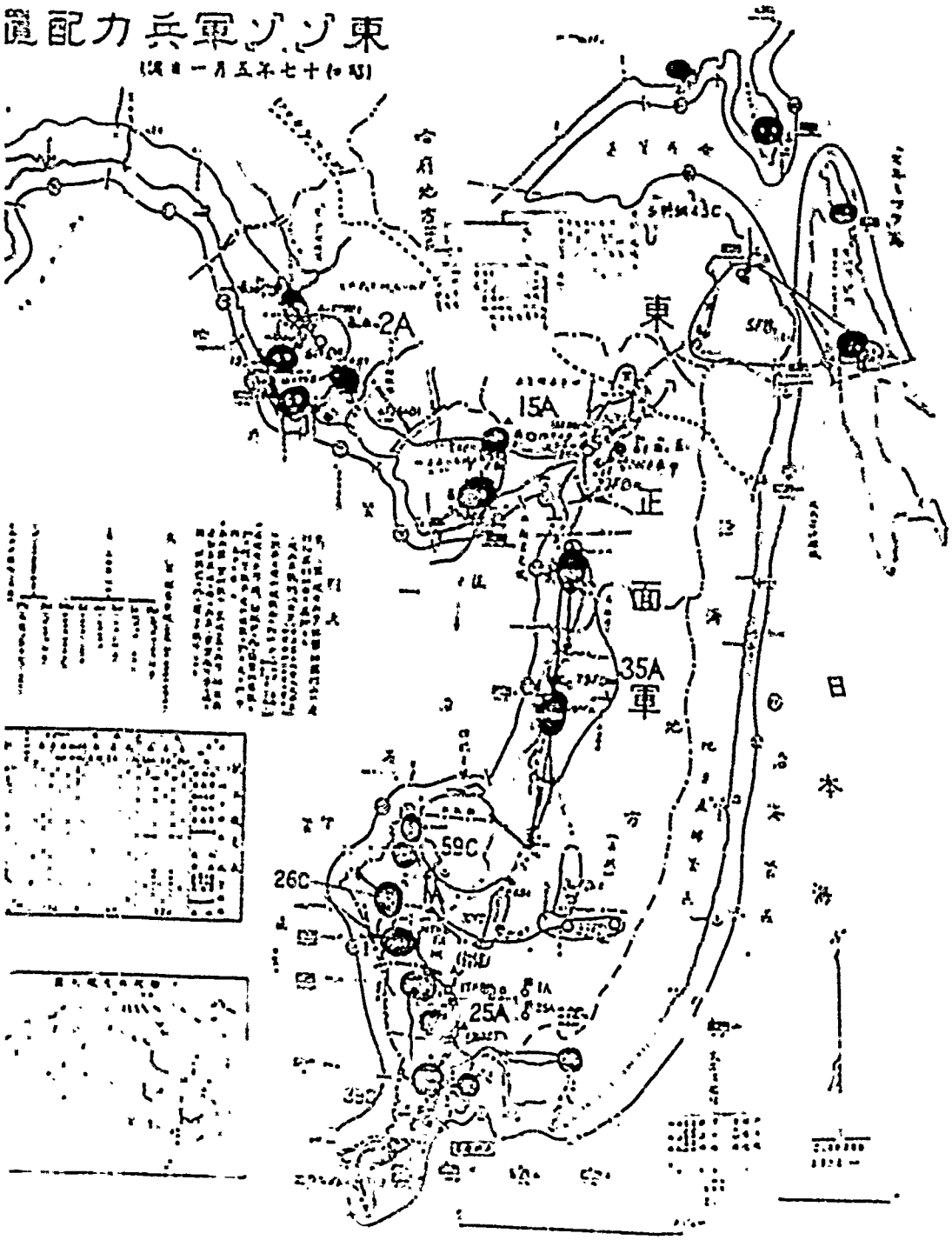

en: positions of major and MGB border detachments, vol forces are show

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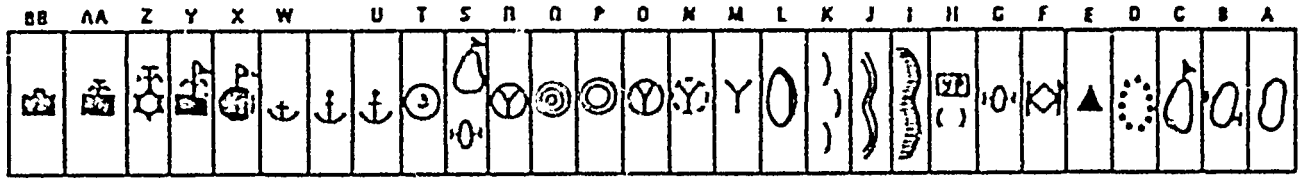

A. RIFLE UNIT
B. MOTORIZED RIFLE UNIT
C. CAVALRY UNIT
D. PROBABLE UNIT LOCATION
E. PLACE SHOWING A RECENTLY ESTABLISHED MILITARY BASE, ON THE BASIS OF INTELLIGENCE REPORTS
F. TANK UNIT
G. ARMORED MOTOR VEHICLE UNIT
H. ESTABLISHED DEFENSE FORTIFIED AREA (UKREPLENNYI RAION)
I. FORMATION LINE (HAVING AN ESTABLISHED DISTRICT GARRISON)
J. FORMATION LINE (NOT HAVING AN ESTABLISHED DISTRICT GARRISON)
K. FIELD OPERATIONS DISTRICT
L. AIR UNIT
M. FIGHTER OR ASSAULT PLANE UNIT
N. SHORT RANGE BOMBING PLANE
O. S-B MEDIUM RANGE BOMBER UNIT
Q. T-B TWO ENGINE BOMBER UNIT
R. MIXED REGIMENT
S. MONGOLIAN ARMY UNIT
T. NATIONAL BORDER GUARDS GARRISON (THE UNIT NUMBER IN CIRCLE)
U. NAVAL BASE
V. NAVAL STATION
W. NAVAL ANCHORAGE
X. NATIONAL GUARD UNIT
Y. NATIONAL GUARD RAILWAY UNIT
Z. NATIONAL RAILWAY BRIGADE
AA. NATIONAL GUARD RAILWAY REGIMENT
BB. NATIONAL GUARD REGIMENT

} DOMESTIC

Figure A-1a. Key symbols for map number 1
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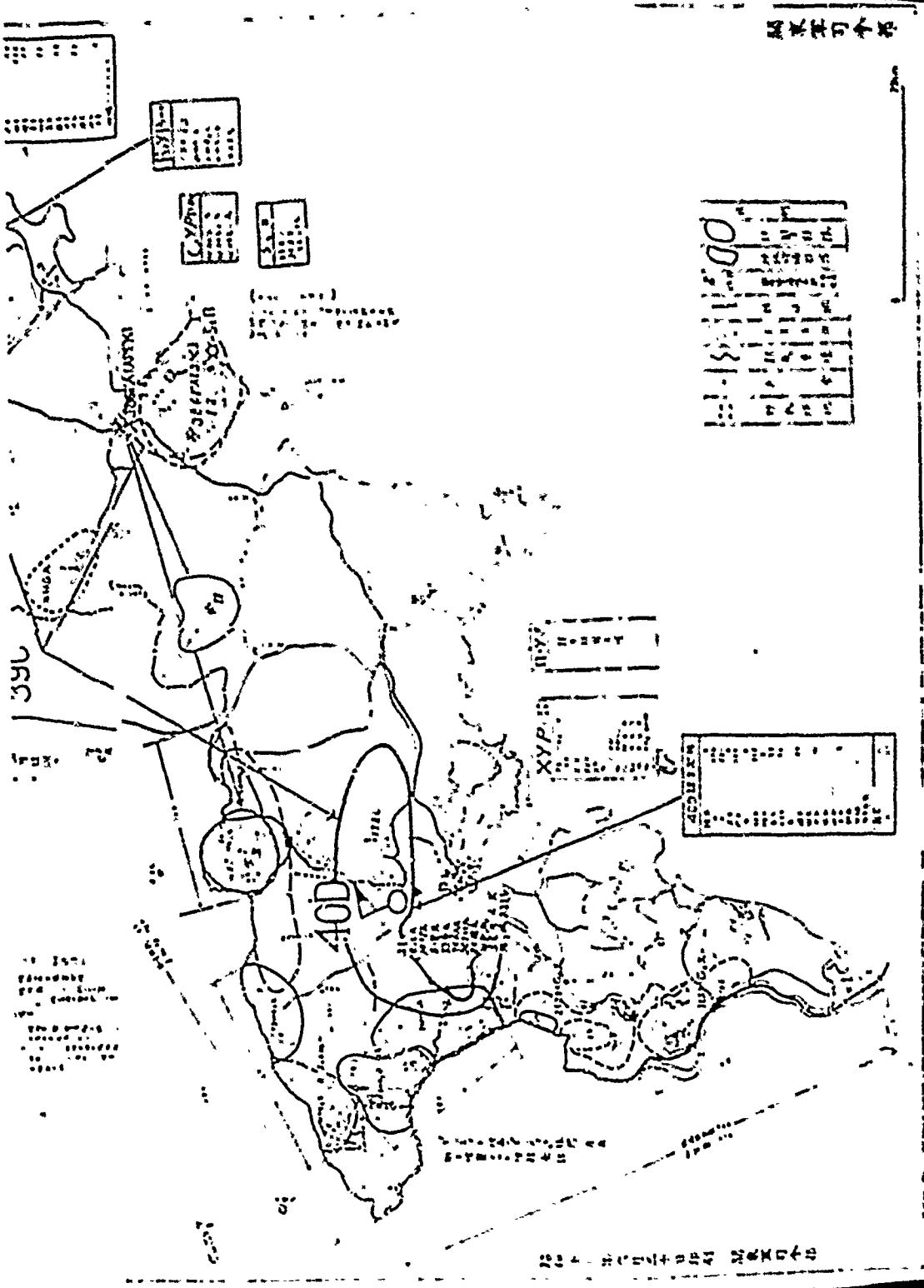

- Slavyanka Peninsula (maritime peninsula)

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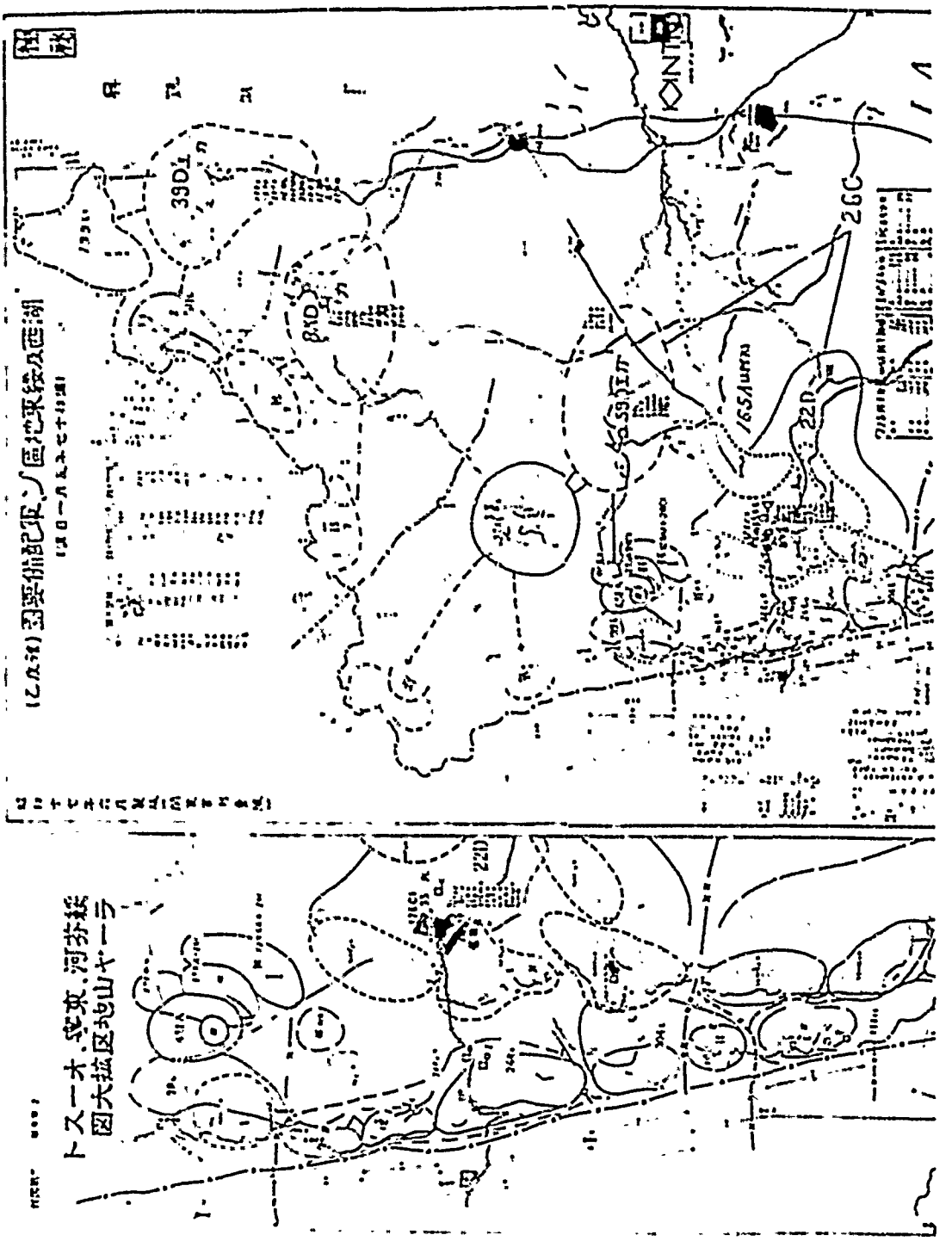

Figure A-3. Area west of Ussuriysk (then
borders. (maritime peninsul

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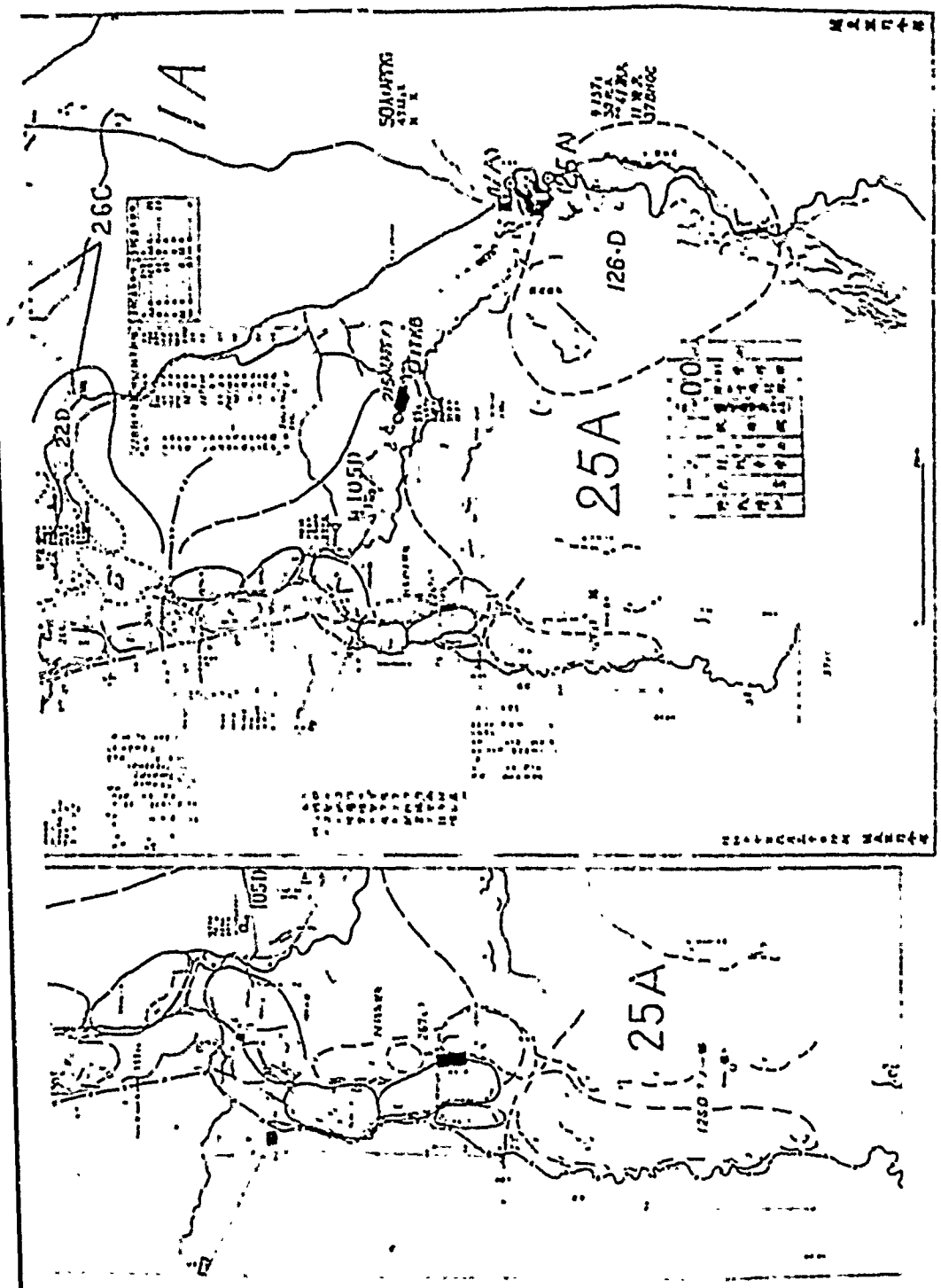

uriysk (then Voroshilov) and Lake Khanka to the
.ime peninsula)

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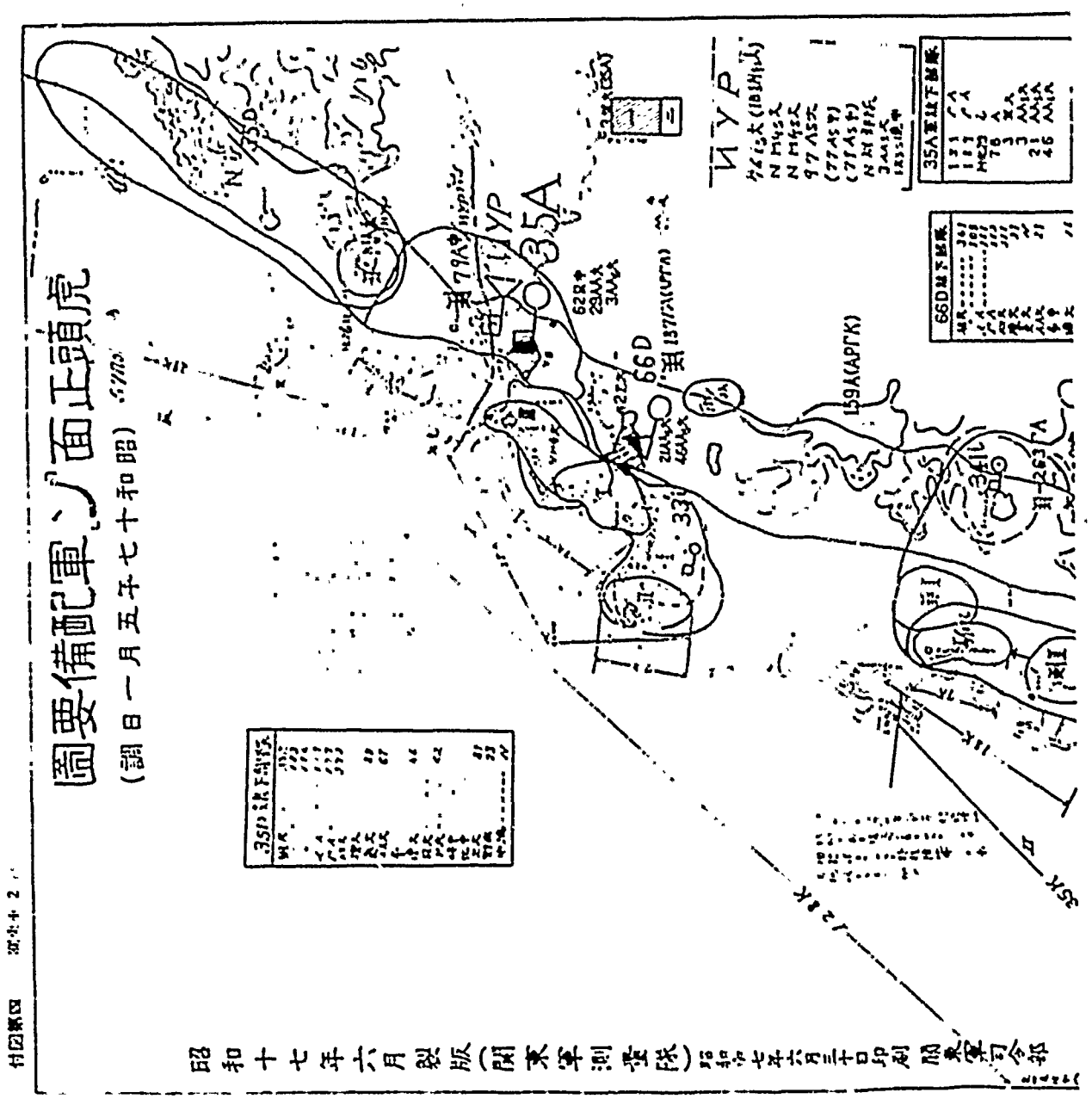

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Figure A-4. Iman area, north of Lake Khanka alon

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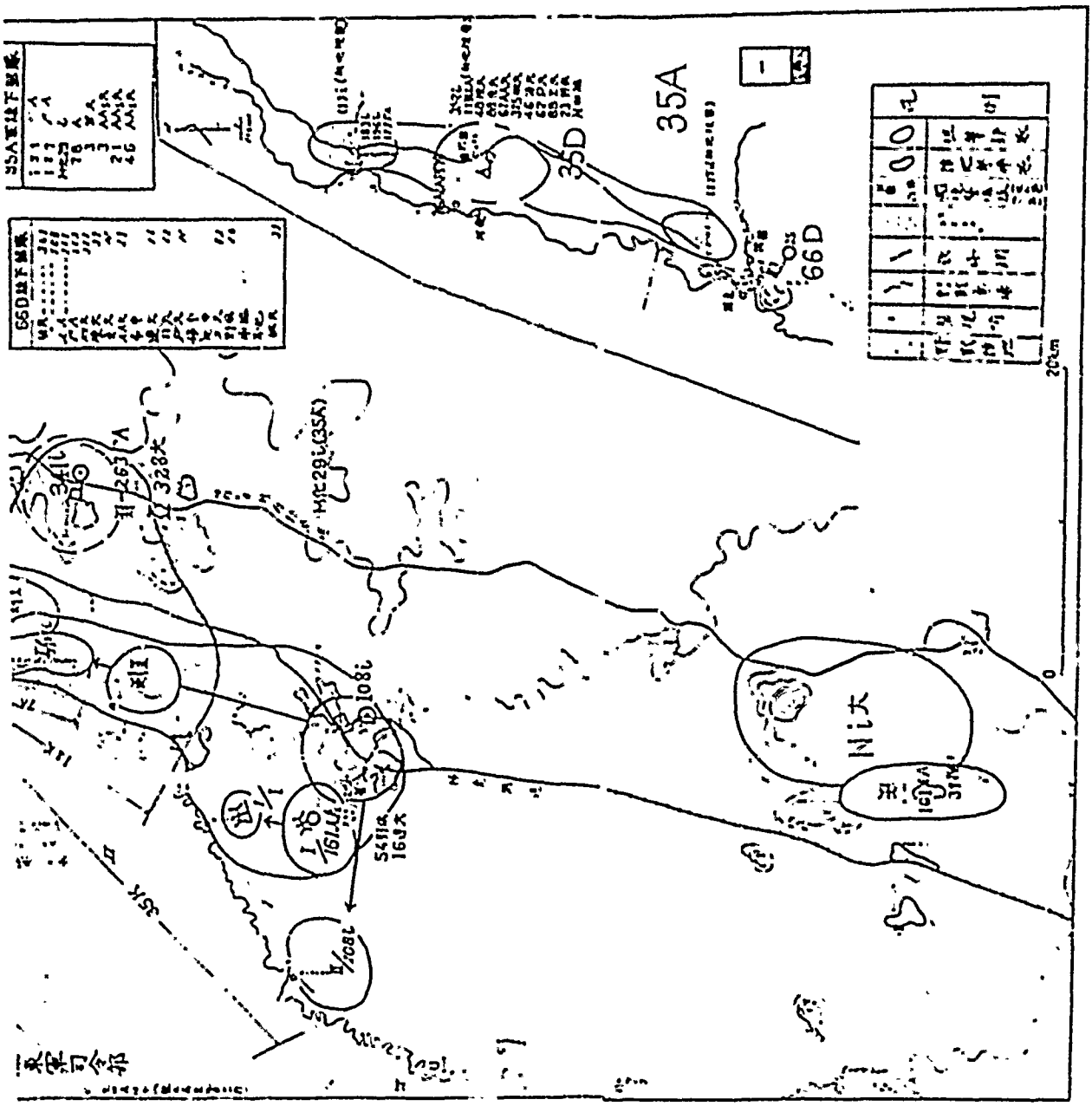

: Khanka along the Ussuri River (maritime peninsula)

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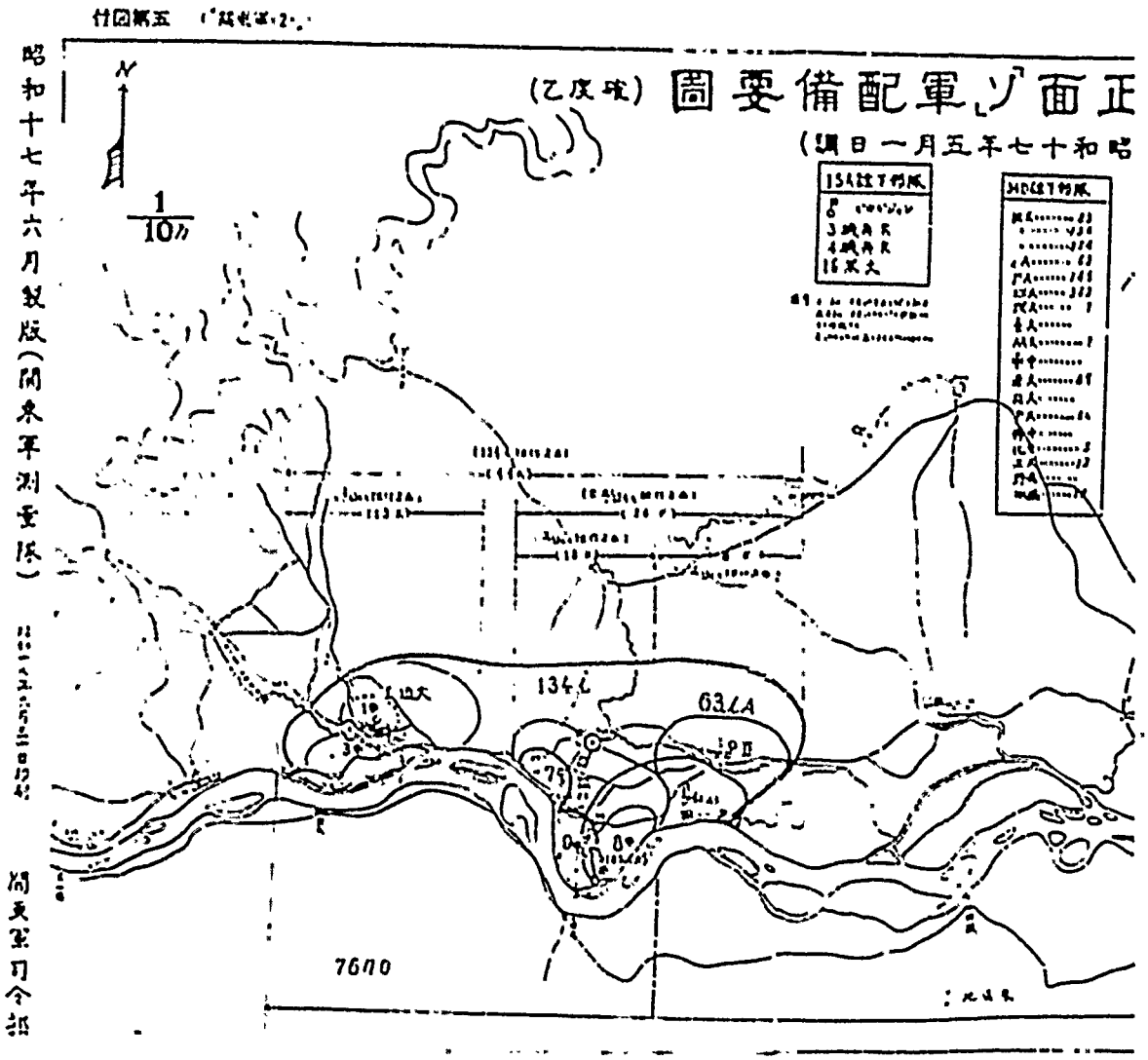

Figure A-5. West of Khabarovs

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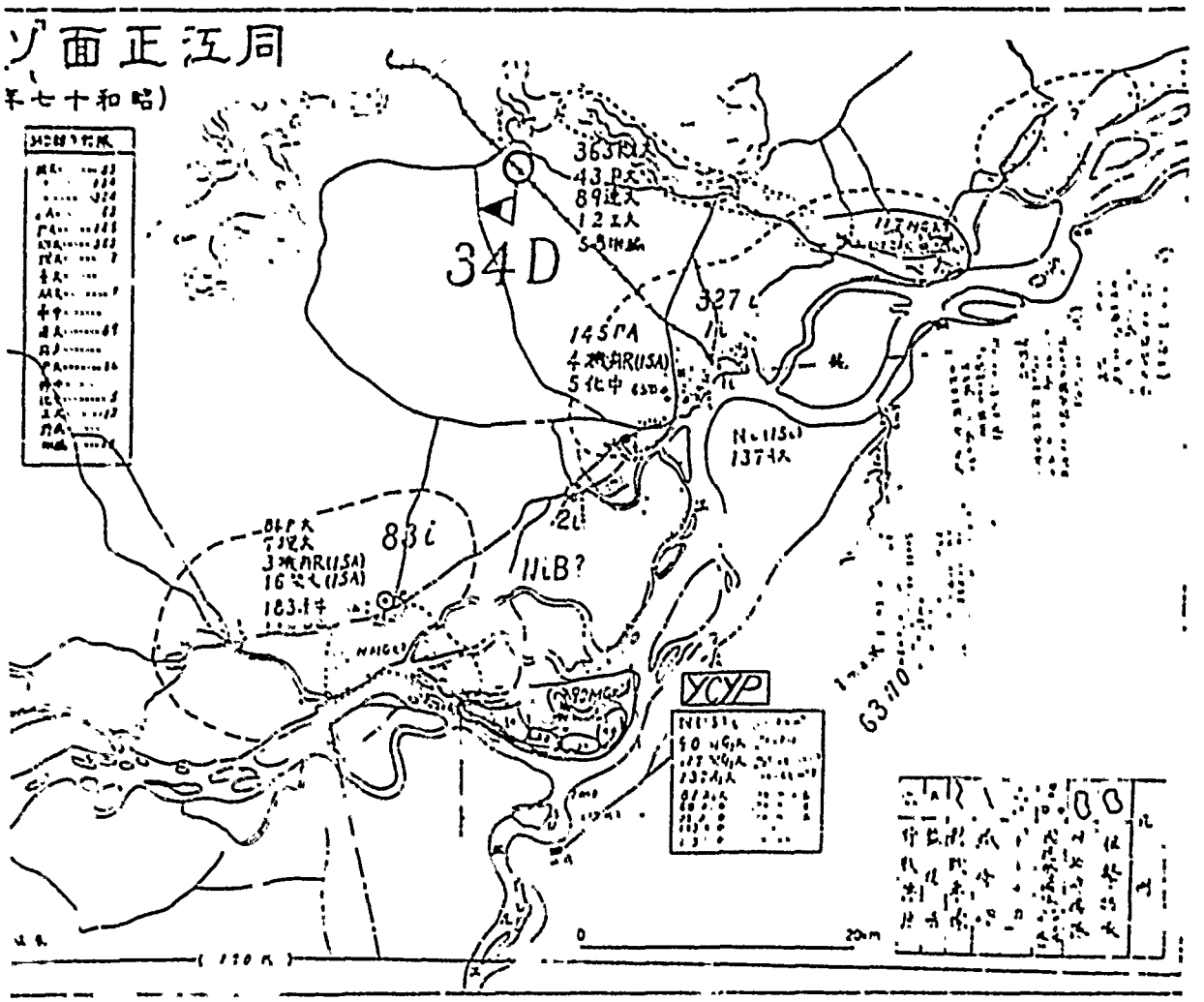

of Khabarovsk, along the Amur River

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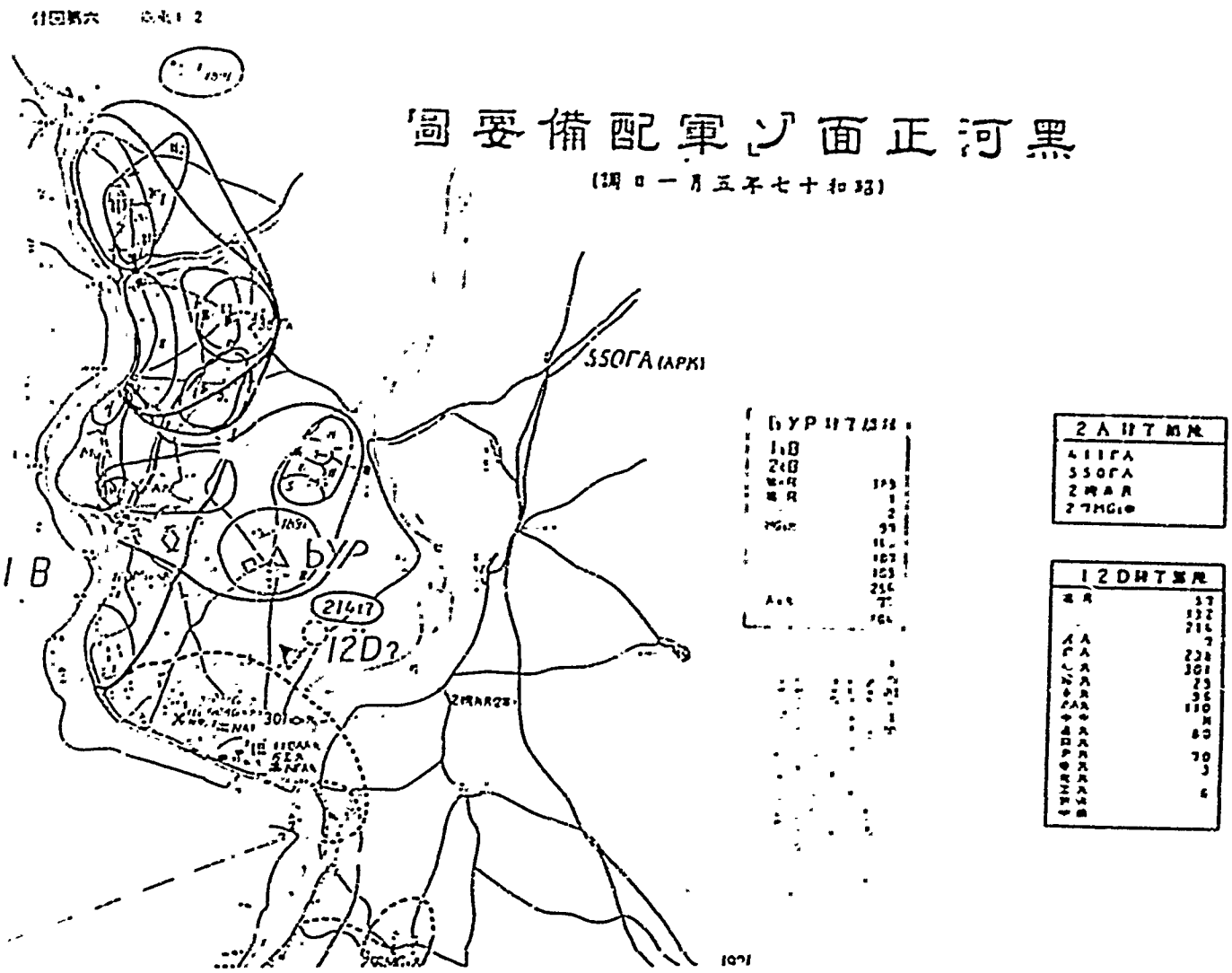

Figure A-6. Blagoveshchensk and t

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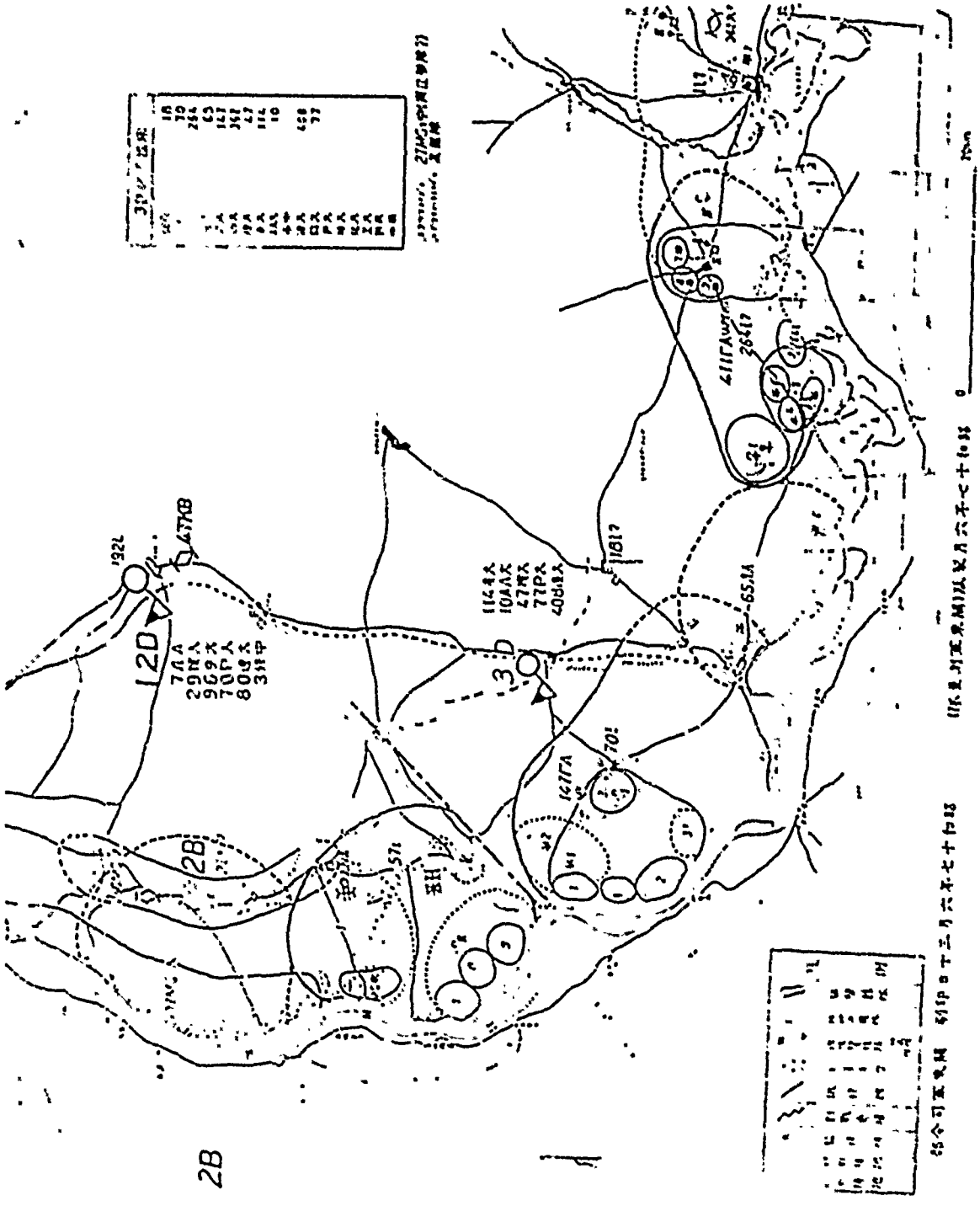

ensk and the Amur River border region

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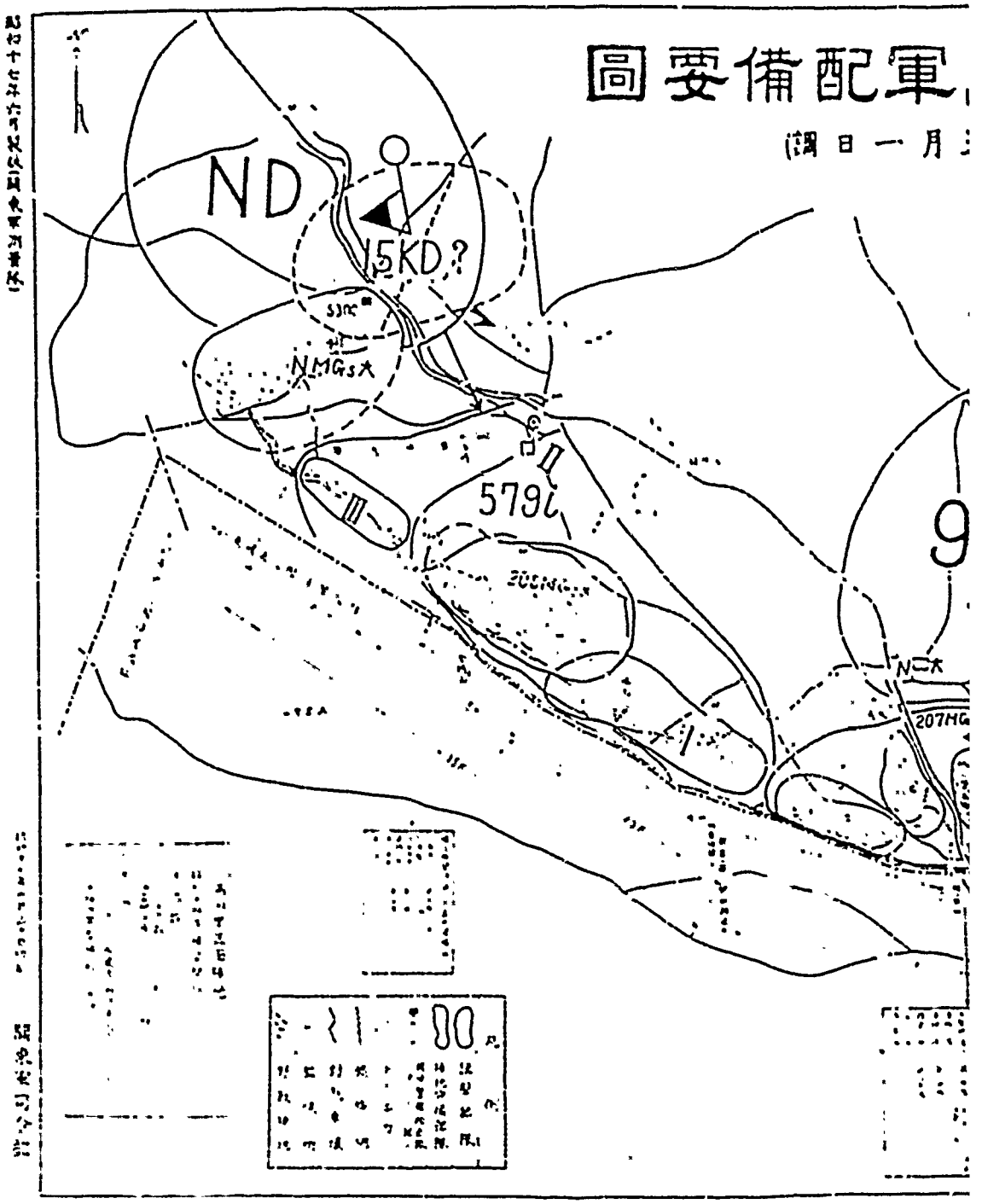

Figure 4-7. Dauria-Zabaykalsk border are

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(昭和十五年七月一日)

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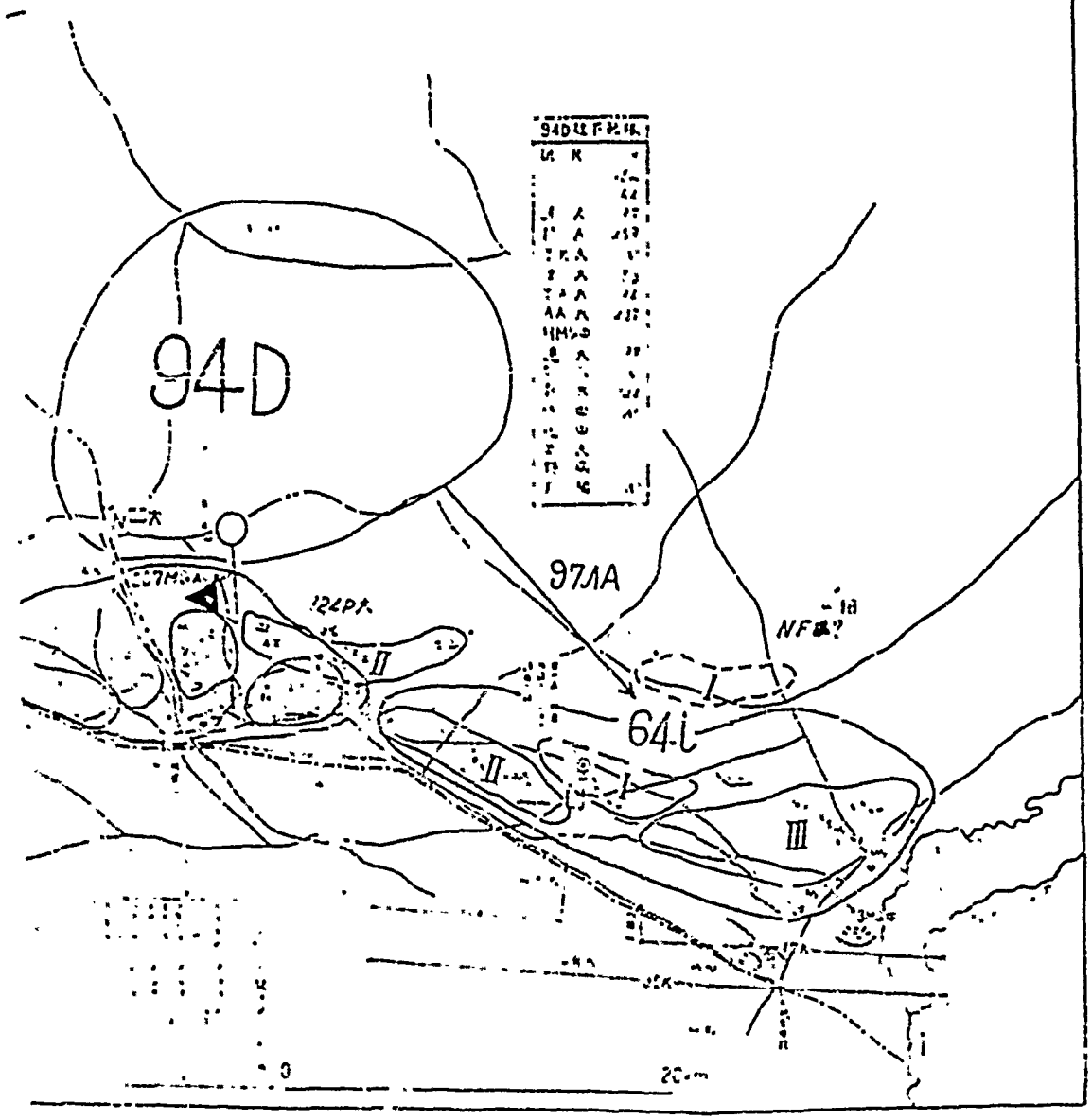

Manchuli area (near Sino-Mongolian border)

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Field Hospital

Mixed Aircraft

Rifle Regiment

Water Vehicle

District Command

Army Headquarters

Division Headquarters
(Staff Officer)

Division Headquarters
(Commander)

Regimental Headquarters
(Staff Officer)

Regimental Headquarters
(Commander)

Fortified Reg on Headquarters

Border Guard Garrison ( )

Regional Borderguard Command Post
( )

Border Guard Platoon

Fortified Region Rail Headquarters

Railway Division

Railway Fortification Brigade

Railway Regiment

Fortress, Fortification

BATTALION

大(大隊)

COMPANY

中(中隊)

PLATOON

小(小隊)

Engineering

Guards

Repair

• Reserve

Motor Transport Vehicle

Combined

Search (Reconnaissance)

Tank

Infantry

Anti-tank

Anti-aircraft

MG Machine Gun

S { • Depot
or,
Plural (more than one)

化 ( )
Mechanized

側 Flank

Formerly, Previously

OTHER LETTERS AND SYMBOLS

Figure A-8. Key to symbols, abbreviations.

Railway Fortification Brigade

Railway Regiment

Fortress, Fortification

Unit (Rifle)

Positioned Defense Troops

Area of Field Operations

Look-out (Reconnaissance) Point

Anti-tank Barrier

Barbed Wire Barrier

Pillbox ([illegible] "Tuchka")

- [illegible] DOT - Permanent
- [illegible] SOT - Concealed
- [illegible] TOT - Decoy

Artillery Staff Headquarters

Artillery Commander Headquarters

Artillery (Heavy)

Artillery (Light)

Artillery (Anti-aircraft)

Zone of Responsibility

Formerly, Previously

OTHER LETTERS AND SYMBOLS

[illegible]
Border guard detachment

nth, number of unit unknown

Minefield

[illegible]
Artillery of the Command Reserve

[illegible]
Artillery of the High Command Reserve

[illegible]
Light Artillery

[illegible]
Mountain Artillery

[illegible]
Army Artillery

[illegible]
Artillery, or(large "A") Army

[illegible]
Amur River Flotilla

[illegible]
Fortified Region, e.g.:

- [illegible]P Bikin Fortified Region
- [illegible]P Iman Fortified Region
- [illegible]P Ussurlysk Fortified Region

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[redacted]PPENDIX B

GEOGRAPHIC CONSIDERATIONS IN TARGETING THE GROUND FORCES IN THE USSR ALONG THE SINO-SOVIET BORDER

8.1 As outlined, the purpose of targeting Soviet forces in general, is directed mainly at counterforce, and more specifically, uniformed human targets. In a volume on Soviet tactics[1] the authors, like nearly all others writing on this theme, point out this strategy as the surest form of winning a war, by paraphrasing Lenin:

> Speaking about the necessity of using various types of military actions, V. I. Lenin emphasized the decisive role of the offensive. He often pointed out that it is only by decisive offensive actions that victory can be achieved and the war won. The main goal of the offensive, Lenin considered, was not to be pushing back the enemy or taking territory but the annihiliation of enemy troops.[2]

It is to this goal, rather than countervalue objectives, that targeting the forces of the Far East should be directed. It is of utmost importance to be able to eliminate troop concentrations located in:

1. Fixed installations (garrisons and barracks) and headquarters (Peacetime).
2. In defensive alert positions.
3. In wartime/offensive positions with a consideration of assembly areas and transit choke points.

There are a number of factors which limit the location of military forces and facilities in the Transbaykal and Far East. Not the least of these is geography. (Cf figs. 1,2,3,4). Rivers, swifter

[1] Ministerstvo Oborony SSSR, Taktika, Voennye Izdatel'stvo, Moscow, 1966, p. 13.

[2] cf V. I. Lenin, Polnye Sobranie Sochinenii, v. 39, p. 240.

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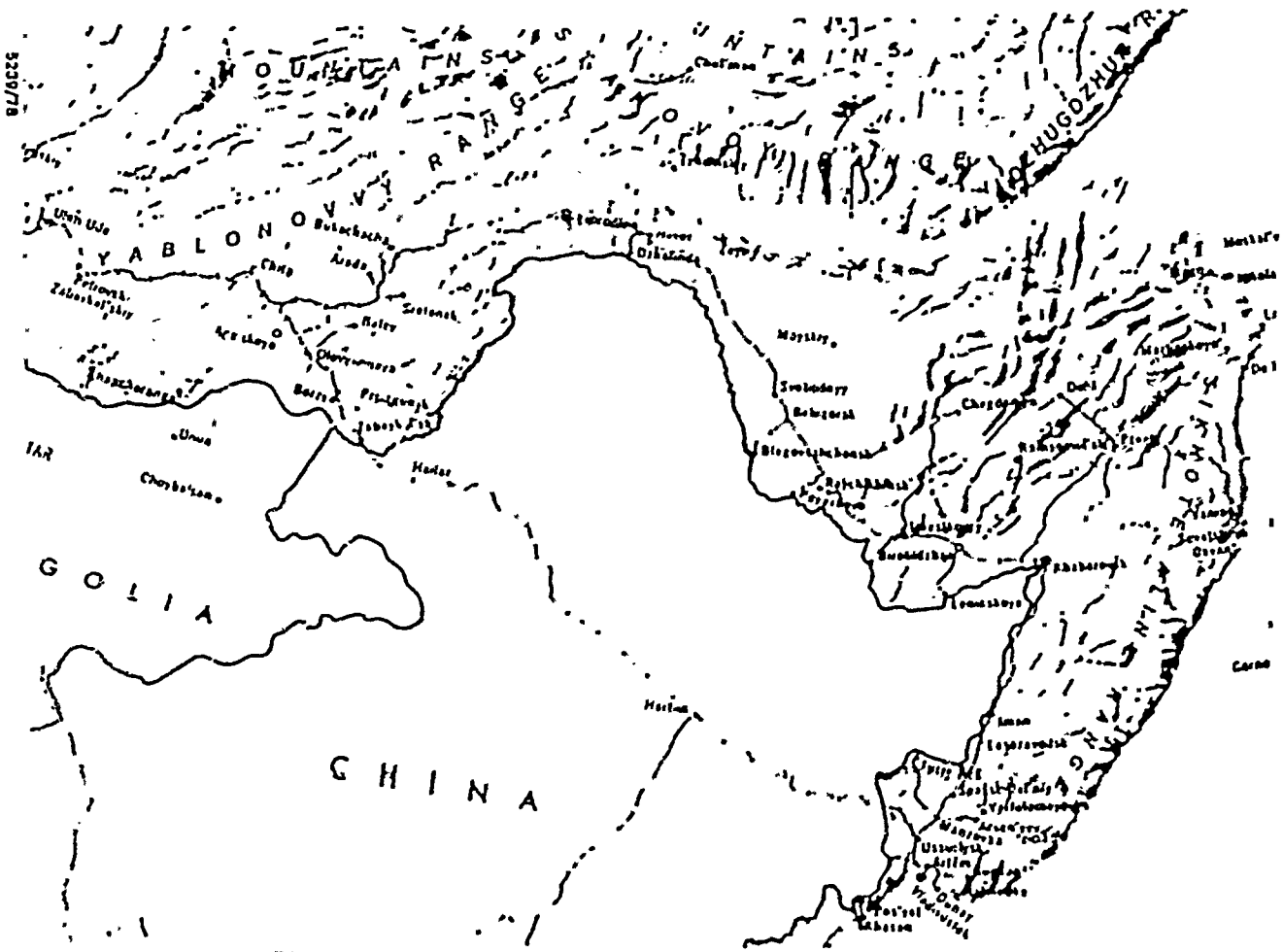

Figure B-1. Relief map of the USSR: east border area

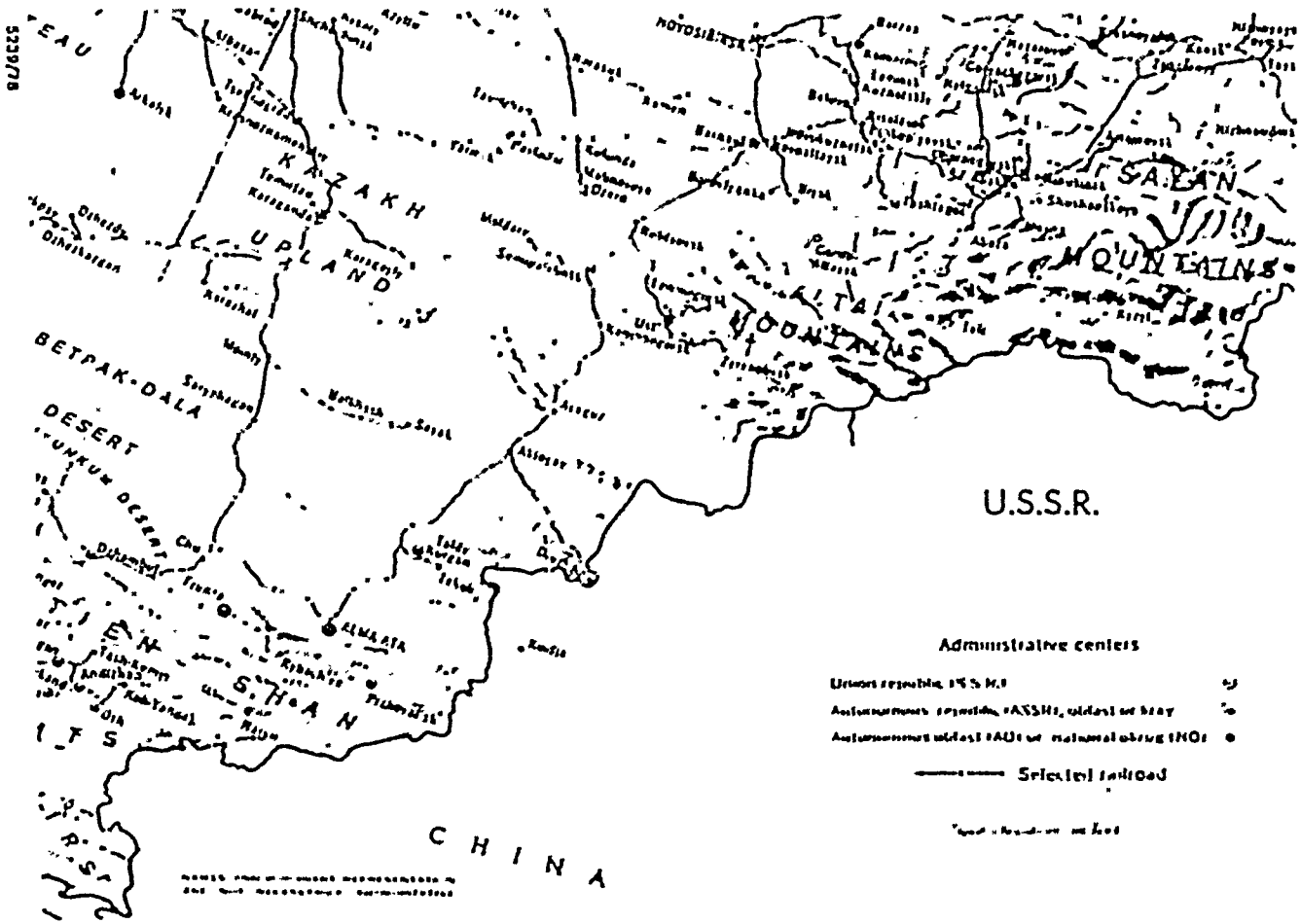

Figure B-2. Relief map of the USSR: west border area

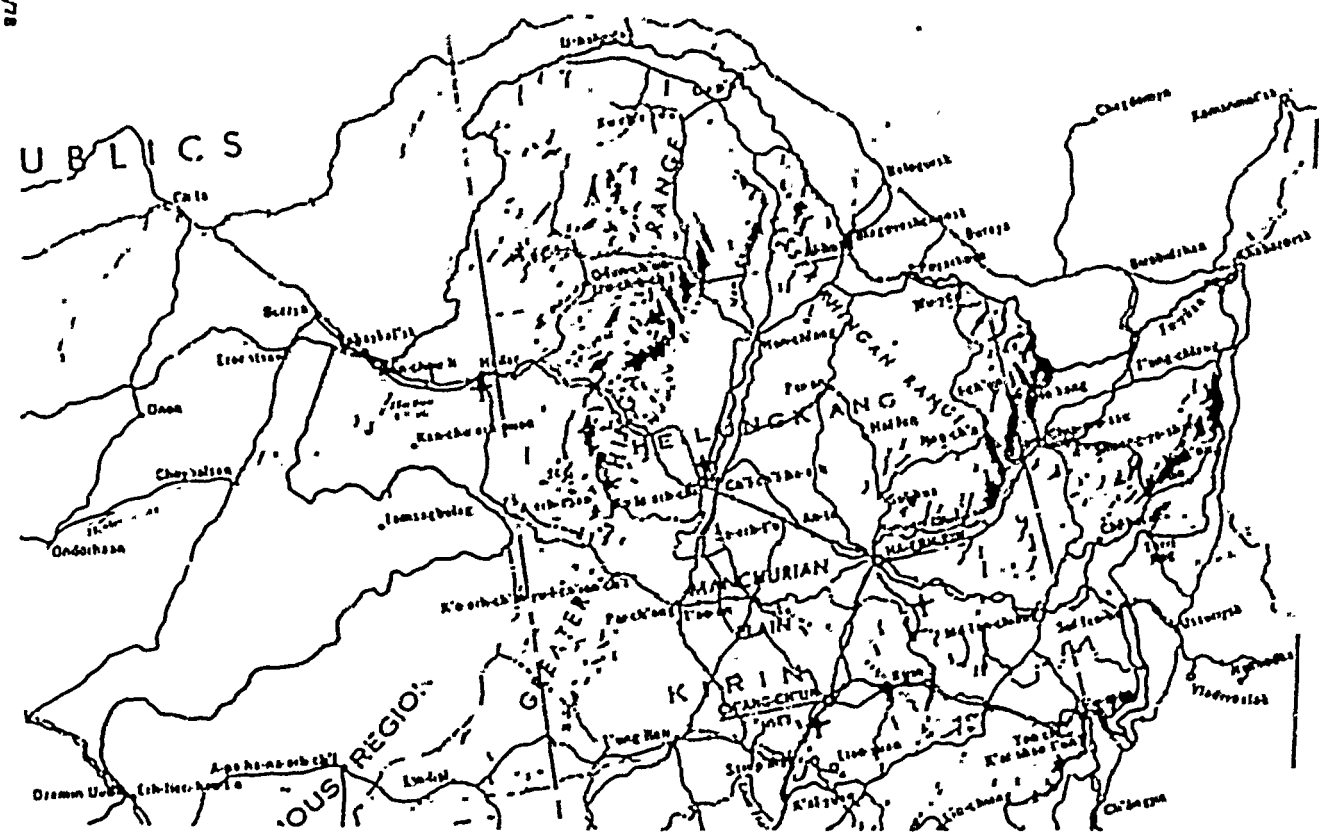

Figure B-3. Relief map of China: east border area

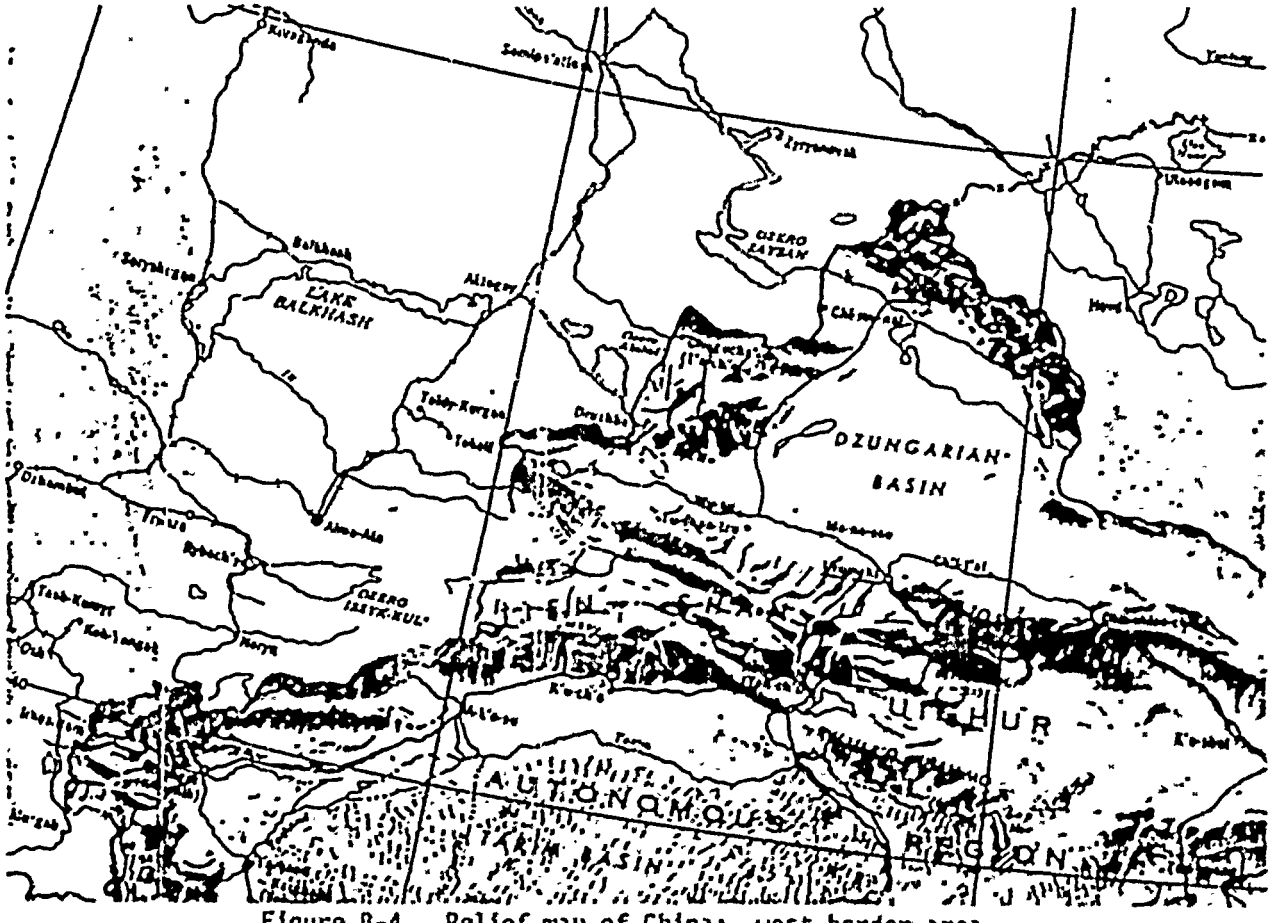

Figure B-4. Relief map of China: west border area

[redacted]

and wider than in Europe, form natural borders along with mountain rainges, swamps, thick forests, bone-dry deserts and the endless taiga with permafrost, which not only limit border crossing points, but also inhibit transport and growth domestically. The generally poor soils with erratic and insufficient rainfall and poor farming methods make this area only one third self-sufficient in foodstuffs. The mountains which cover more than two thirds of the area prevent maritime climates from marine inland, making winters colder and drier than in isolating the European part of the USSR, further limiting settlement and civilian and military populations alike. Furthermore, wind patterns confine themselves to the Soviet Union both in summer and winter; an important factor in assessing fallout patterns.

B.1.2 It is mainly due to geography too, that the 32 line divisions and five artillery divisions are currently snuggle up to the Manchurian border. During the August 1945 campaign, this same geography inhibited the formation of secondary and tertiary and rear support echelons in many areas of the three wartime fronts. Furthermore, in the Far East in particular, the tooth to tail ratio is limited by geography: the larger front size (or military district in peacetime), over 750 km, and geographic barriers between major force locations inhibit interaction over traditional communications lines as well as in the broad tactical deployment of tanks and artillery.

B.1.3 The following sections discuss specific geographic features peculiar to the Soviet East which facilitate or hinder targeting Soviet forces in this area. Soviet sources, in describing the August 1945 Manchurian campaign, would have one believe that if it were not for the superhuman abilities of the Red Army, the offensive could never have been undertaken, due to the harsh geographic

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conditions. To an extent, they are correct. In 1932, during military maneuvers of a simulated attack on Khabarovsk, in one day, the Japanese lost over one hundred horses and several vital pieces of heavy artillery in trying to cross the sedge-tufted swamps of Northeastern Manchurian. After several days, they turned around, declaring the area a natural defense zone. When the Japanese came on the defensive around they made the fatal error of anticipating that the main thrust of the Soviet offensive would have to pass through the Maritime Peninsula because the Greater Khingan mountains, they assumed, would not accommodate the tanks of an invading army. In both cases, the Soviets proved them wrong. In the first case, they went around and through the swamps and in the second, they delivered half their forces over the southern route through the outer Mongolian steppes and the other half through engineered passes through the range.

B.1.4 Although the combined overextension of columns caused fuel and water shortages in the desert and steppe areas and speed was hampered by the mountains, the supposed impassibility of the terrain won a rapid ten day victory for the Soviets through tactical and strategic surprise by attacking the Japanese in the most weakly defended area in Western Manchuria. As the Soviets have also shown in their domestic, economic policies, they place an abounding faith in the ability of man to harness a harsh environment to his will in spite of seemingly overwhelming odds. In their view, it was sheer force of will that won them victory. This is largely true, but generally the odds were not as dismal as anticipated.

B.1.5 Using Japanese defense supply routes, the smooth hardpack steppe of the Mongolian plain, and a great deal of forward reconnaissance scouting, they were able to make rapid headway in their advance. In the present day, these factors have considerably improved for the Soviet invader. Not only have the Chinese improved

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accessibility into these formerly remote regions near the borders, by building and improving roads and mountain passes once intended only for two-wheeled carts, they have also drained many of their fertile swamps for both agriculture and defense and have bridged rivers and valleys. Many geographic obstacles peculiar to the area still exist and are therefore valuable in target analysis. they limit the number of routes an assault force can effectively utilize and, therefore, decrease the weapons needed for targeting. A number of them shall be discussed below.

8.2 Rivers. The Argun, Amur and Ussuri Rivers form the largest natural border between any two nations. When the Amur, largest of the rivers, slows down in its lower reaches, it becomes braided, picking up the waters of the Sungari from the Chinese side. The combination of the two rivers and the low, swampy area in between the Amur and Ussuri is a formidable barrier to movement, and the Chinese have carefully maintained it as such. They have allowed no channel improvements to the Amur or Sungari and have abandoned all the airfields and dismantled all railways which could have served to improve commerce and military access with the USSR. Because the eastern border is largely natural, river crossings present real difficulties as they did in 1945, requiring unusually large expenditures of men and materiel for just this task. There are no bridges over the rivers. Averaging in width from 200 to 1000 kilometers the Argun, Amur, Ussuri and Chinese Sungari flow relatively swiftly (about 1.6-2.4 meters per second). They tend to flood during monsoon season (August) and spring thaw and are generally characterized by steep, rocky shores. Although they freeze over in winter, they freeze unevenly with large jagged protuberances due to choked ice flows which make forcings dodgey. The water level is lowest in winter and the shorelines are steep and unstable particularly for heavy, armed vehicles without engineering support (see Figure B-5).

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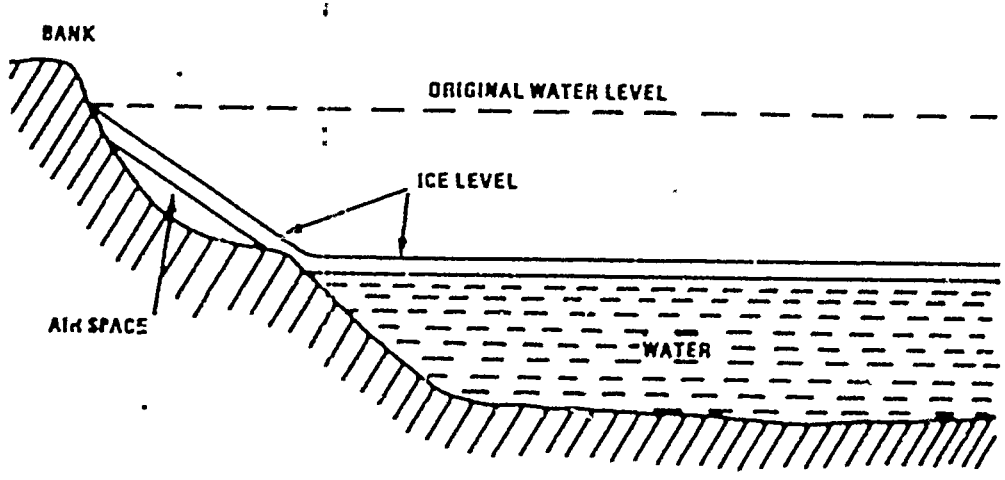

Figure B-5. Ice formation on the Amur River

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The swift current causes cracks in the ice and although the average thickness of the ice is about one meter during the mid-winter freeze, it is not evenly frozen. The more shallow tributaries freeze solid, however, and do not pose a great threat to mobility. Thus frozen or liquid, these large rivers require superior crossing equipment to carry the heavy weapons and materiel of war. During the Manchurian campaign with its emphasis on speed for example, the 15th Army used a 330 KM long area for the crossing of the Amur in space of several days. Since the Soviets do not consider that river forcings should impede the advance of any offensive,[3] they require a higher density of crossing points than the West. Although postwar analyses of the Manchurian campaign play down the initial river crossings held mainly from August 1 to 9th at night, it was a monumental undertaking and will continue to be considered so. It is assumed that they would currently have stocks of heavy amphibious ferries like the GSP, tactical floating bridging; the TPP heavy pontoon bridge; the heavy folding pontoon bridge PMP (used only in areas with a slower current); or a girder floating bridge PPS. Because of the current, a fleet of readily available powerboats either transportable or part of the existing river fleet to hold the bridge in place would be necessary. A vast fleet of trucks to haul all of this equipment would be necessary as well, to transport all of this equipment to the shorelines and a complementary number of powerboats, perhaps like the BMT-T, carried on trucks or BMK-90 used with TPP bridging equipment, dispatchable from local naval facilities. Any stores of bridging, truck depots and river flotilla facilities would be valuable secondary targeting material in the event of a conjectured Soviet offensive on China. As can be seen on the Manchurian offensive map (Figure 29, main text), river crossings were kept to a

[3]For further techniques and concepts of river forcings consult: (U) Soviet and Warsaw Pact River Crossings: Doctrine and Capabilities, NDI-1150-13-77).

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minimum during the brief war with the Japanese. It is most probable that they will attempt to do the same in any new invasion. The fact that the Chinese forces are far superior at the Mongolian border, the dry route to the Chinese heartland is a further indicator of this.

B.3 Taiga and Vegetation Zones. In the strict sense of the word, taiga is simply a coniferous forest, consisting usually of larches, pines, firs and spruces. Over 75% of Eastern Siberia and 49% of the Far East economic region are forested, the densest vegetation occurring southward. The southernly vegetation is characterized, however, by dense growth, including deciduous trees such as birches and maples; in more northern areas, by sparse, usually larch forests. (See photos B-6). Taiga is generally swampy in summer due to poor drainage caused by permafrost, spring and monsoon flooding and centuries of accumulated acidic coniferous needles. Peat bogs are often found in taiga areas. Most valleys and even the slightest depression will range from soggy undergrowth to untrafficable swamp.

B.3.1 The armies which crossed the Amur and Ussuri in 1945 were forced to employ considerable engineering forces to make headway both to the borders into Manchuria because of this damp footing. For example, armies dispatched from Chita; marching across the taiga of the Borshchevochnyy and Nerchinskiy ranges, were forced to build corduroy roads almost the entire length of their 250-300 km trek to the border. This work was continued upon crossing the Amur as far as the Manchurian Plain. In this way, many border areas uninhabited until the war were built up by Soviet invading army. These roads are being improved and maintained even now. Many of the side roads in troop assembly areas are, probably, still being used for maneuvers.

B.3.2 The Japanese considered the taiga impassable for heavy artillery and armed vehicles and often built their fortifica-

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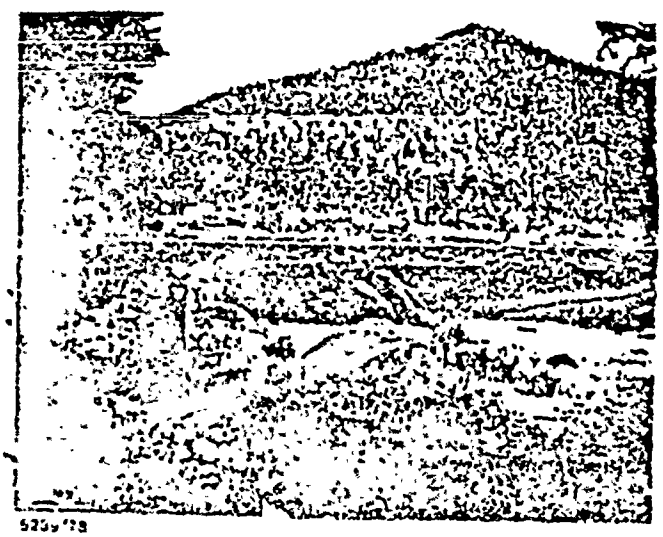

Figure 8-6. Views of T

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Views of Taiga terrain

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tions inland away from the omnipresent dampness. Because the Soviets, using a meeting engagement, fired no preparatory artillery rounds, marched through these areas undetected and won a high degree of tactical surprise against the unsuspecting enemy.

B.3.3 In the densest taiga of the Soviet East along the southern Maritime Peninsula, tanks and armed personnel carriers had to be refitted for lumberjacking operations as well as to fight against the highest concentration of Japanese forces in the campaign area. There. forests, although called taiga, consist mainly of broadleaf trees birches, oaks and other hardwoods; stretch far into China, and are actually the northernmost result of the Far Eastern monsoon climate. Because of the relative lack of rainfall during the greater part of the year and the shallow root system due to permafrost which extends into much of the border region, the taiga and, more specifically, these monsoon forests are relatively dry and are very susceptible to forest fires and incendiary bombing. In the area west of Lake Khanka for example in 1939, a vicious forest fire raged for several months, destroying ammunition depots and fortifications, and threatened to spread over onto Japanese occupied Manchukuo. In a nuclear environment, the weapons effects could have a greater range here because of secondary incendiary action.

B.3.4 On the other hand, because birches and other broadleafed trees in this area make particularly excellent cover, concealed maneuvers and mobilization can take place out of enemy range of vision. Thus it was in the Maritime Peninsula that General Meretskov effectively disguised the real size of his armies by concealing them in birch groves by operating troop movements only at night and by organizing a number of false troop movements to appear larger than reality, and thereby baffle Japanese attempts at estimating the size of the enemy. Even in this age of improved reconnaissance means, force strengths, particularly during a rapid offensive buildup against an unsuspecting Chinese enemy could be concealed.

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B.4 Swamps. Swamps, bogs and marshes outside the vast stretches of damp taiga, prevail over roughly one fourth of the border area. They are caused mainly by rivers settling in mountain valleys with poor subsoil drainage and by permafrost. In many areas near the borders, ox-bow swamps have formed along the meandering Ussuri and parts of the Amur.

B.4.1 Unlike the abundant vegetation found in marshland in warmer areas, the predominant vegetation in these wet areas consists of sedge tufts, a type of clump grass which grows in a pillar-like shape, mostly submerged or topped with occasional tufts of less than meter-high greyish grass.

B.4.2 Although the Japanese made a valiant attempt to drain the swamps north of Lake Khanka for economic and strategic reasons, other political concerns prevented the completion of the project and by 1945, the swamp had filled up again. For the same reasons, however, the Soviets and the Chinese have succeeded in draining vast areas east of Lake Khanka and in areas west of Khabarovsk.

B.4.3 In the event of a military advance over this area, even amphibious swamp vehicles would find the area rough going; yet, they could be supplemented with metal road-laying equipment in dryer areas. Even over winter ice cover, the protruding sedge tufts would prevent a quick, smooth crossing and engineering support would still be necessary.

B.4.4 Although it is not impossible to traverse this area with modern equipment, the obstacles would still require a greater expense of time and effort than their immediate tactical value would warrant. The Soviets maintain border troops along the largely uninhabited northeast border wedge because of the vital target of Khabarovsk at its apex. For the Chinese, this area is still largely unsettled and only one road of obvious military importance links this area with the Manchurian heartland.

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B.4.5 It is precisely the combination of swampy valleys and steep mountains that force the Transsiberian railway so closely to the Chinese border and the area agriculturally impoverished. Yet the presence of so many aqueous obstacles limits the number of border assembly and crossing points for offensive and defensive forces evident on the basis of recent history.

B.4.5 From the following diagram (Figure B-7) of a portion of the generally swampy shoreline along the Ussuri River, located south of Iman and north of Lesozavodsk, where the forces of the 66th Motorized Rifle Division were assembled, one can see the dampness of the terrain. From the ground or the air, much of this terrain appears as a grassy plain, and it is only through careful and abundant forward reconnaissance and engineering that standard infantry, artillery, or tank forces can be assured safe passage. With such obstacles, it becomes evident why the Soviets launched their main forces through the arid lands of the Mongolian steppes, and would most likely repeat the maneuver there again. Such geographic obstacles are also one of the major reasons which inhibit the further projection of Soviet and Chinese forces over each others' borders.

B.5 Mountains. Thought to be the greatest barrier against a mass invasion by heavy armed vehicles, the Soviet Hannibals, due to thorough forward reconnaissance, engineering columns and skill, rapidly scaled the Greater Khingan range and the steep trails of part of the Far East area, which resulted in considerable operational surprise to the Japanese who, after a short, fruitless maneuver in the area in the mid-1930's, decided the area was impassable for a heavy, armed assault.

B.5.1 Basically like a less densely forested stretch of the Appalachians, the mountains in Manchuria consist mainly of sandstone, worn down slate, granite, basalt, gneiss and other effusive and

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1. Very Swampy
2. Moderately Swampy
3. Generally Swampy
4. Damp Area

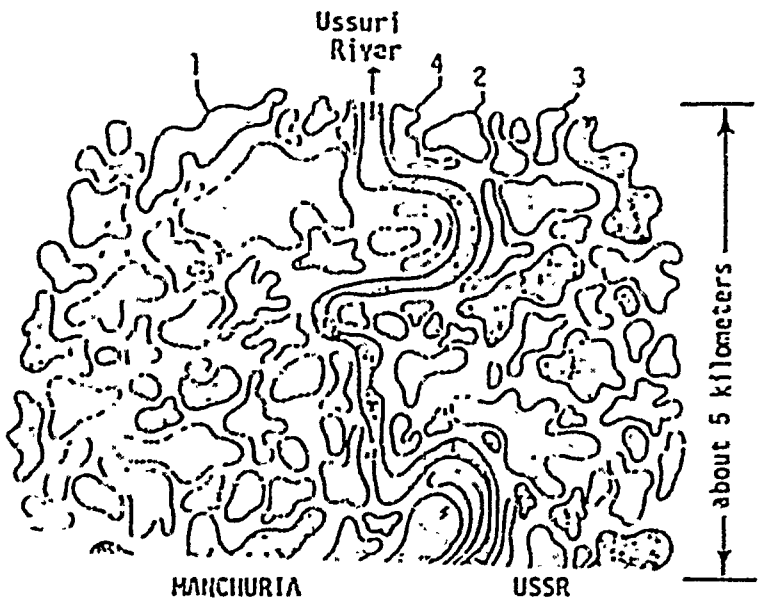

Figure B-7. Swamp map for the Ussuri River region

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layered rock, being covered with small trunked hardwoods (birches) and conifers and low, thick brush. Soviet writers on mountain warfare generally consider the mountains of the border areas and in China as low (800-1000m) and accessible to both infantry and armor. However, in the USSR, the mountains further inland away from the border rivers are classified as medium (1000-2000m) to high (2000m and higher) and present real military obstacles (see relief map). With the experience of 1945 behind them, Soviet military assault teams would have no difficulty in scaling the mountains once again today. For purposes of targeting the Soviet Army east of Lake Baykal, however, the number of passes that heavy armed vehicles may use in their advance is limited. Training areas and troop installations have been located within proximity of these mountain advance routes. Like the rivers, the mountains also serve to limit the main thrust of Soviet forces entering Manchuria in 1945. Although the exploits of the 36th Army and part of the 39th Army in crossing the Greater Khingan were the most daring, the most successful and rapid advances were made further south along the Mongol-Manchurian Plain. This latter route, closer to Peking, will again more likely be chosen for the main armed thrust into China, were an offensive ever launched in the future.

B.5.2 A knowledge of the mountain ranges within the Soviet territory is necessary from the standpoint of wind and climate as well as their isolating vulnerability. The rugged precipices of the Sikhote-Alin range have forced Tsarist and Soviet engineers to build and maintain portions of the Vladivostok line of the Transsiberian Railway as few as 4 km away from the Chinese border. The range is also responsible for preventing the more temperate maritime climate from prevailing during the winter in the border areas; and influencing wind and precipitation patterns which are major considerations in nuclear strategy. Areas of air stagnation and updrafts,

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and the effects of nuclear fallout, particularly as they would affect China, must also be understood in more than a cursory manner.

B.5.3 As in conventional warfare, differences in elevation between the check point and the target may be more significant than the difference in horizontal distance in determining height of burst, which combined with atmospheric pressure and temperature, complicates firing procedures. For the most part, these complications will only be encountered in limited parts of the west border area since the relatively wide river valleys and rolling steppe form the greater portion of the terrain in which Soviet troops would assemble and are garrisoned. Exceptions would be the southern half of the Maritime Peninsula below Lake Khanka and portions of the Amur Oblast (western portion of the far east military district). Even in these areas, forces would assemble on the one side of the mountains while on defense or offense alert, so the burst would still have optimal effect. There are few cases where troops assembled along the border would be shielded by the mountain in a nuclear attack. Thus it can be seen that the mountains generally assist the targeting scenario against Soviet forces in Asia.

B.6 Steppe. The arid steppe along the Mongolian-Manchurian Plain is, on the other hand, an ideal highway into the Chinese heartland. From the photographs on the following page, (Figure B-8) one can see why this sun-baked earth poured over never-ending rolling hills has been the traditional highway for Eurasian military ventures - beginning with the Golden Horde of Genghis Khan. Much of this steppe reverts into sandy desert (e.g., the Gobi) and water and fuel shortages were legion among the Soviet Army forces operating against the Chinese. Even the firewood for campfires had to be logistically supplied. Since the war, the Soviets have built roads (which when exposed to extremes in temperature and severe dryness, tend to crack and fall apart, leaving the steppelands on

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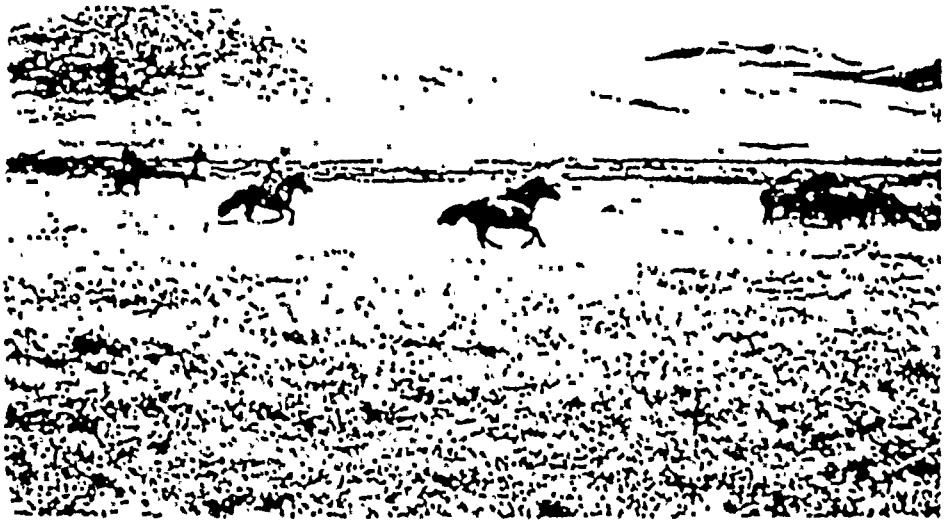

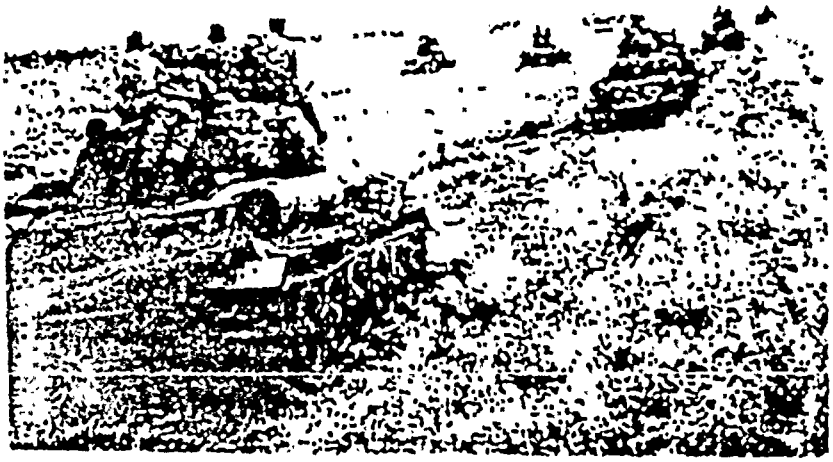

Figure B-8. Views of Mongolian Steppelands

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either side as superior vehicular routes) and rail spurs into these remote areas along the Sino-Mongolian border and have built self-contained "voennye gorodki" (military towns) with pre-positioned equipment to compensate for the logistic difficulties in the event of future conflict in this part of the world.

8.7 Soils. Due to the deciduous forest and the more humid climate and the prevalance of large swampy tracts, humus soils are found in the Sikhote-Alin valleys and Ussuri River basin. Otherwise, greyish-brown, windblown loess deposits which extend far into Manchuria must share space with the less developed and acidic podzol soils which require much liming to make them productive. Areas of taigra soils are worthless for agriculture, in spite of the fact that the permafrost (Figure B-11) in those regions does prevent soil percolation and leaching, common in other areas east of the Urals.

8.7.1 Although the potential for more intensive agriculture exists as seen by Chinese efforts on the opposite shorelines, the combination of too little and poorly timed precipitation, plus a short vegetative period make the area east of Lake Baykal only one third self-sufficient for foodstuffs. Only the hardiest varieties of spring wheat can be sown during the short vegetative period of 90 plus days, even though higher yield winter varieties which require warmer climates would benefit more from the precipitation pattern. Hence, East Siberia produces only 3.4% of the wheat sown in the Soviet Union and the Far East only .6%, even though 2.6% and 2.0% (1975 figures) of the civilian population resides here respectively. Legumes (peas, mainly), sugar beets, potatoes, some livestock and hardier fruits (such as apples) are grown in inadequate quantities.

8.7.2 In spite of emphasis on the current five year plan to build grains storage facilities to accommodate fluctuations in grain production, food supplies are crucially dependent on the double tracks of the Transsiberian railway and harbor facilities.

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B.8 Climate and meteorological activity. Precipitation increases as one moves eastward from Lake Baykal with a low of 400-700 mm in the Transbaykal and high of over 800 in the Maritime regions. Generally speaking however, except for the shore area of the maritime and southern Sakhalin, rainfall is sparse in comparison to Western Russia.

B.8.1 In wintertime, the predominating Siberian high pressure mass centered south of Lake Baykal, which prevents the intrusion of warmer maritime air even along the coast, makes winters very cold, calm and dry with temperature inversions frequent. This dryness continues into early spring, which makes irrigation imperative for agriculture.

B.8.2 In late summer and early autumn, when crops need less moisture to ripen and harvest, the rains are heaviest. In the interior regions and valleys, stagnant air causes a rapid heating of surface temperature causing miserably humid conditions and a proliferation of seasonal insect pests, mainly mosquitoes, for which the Soviet troops were not prepared in August of 1945. The intrusion of warm Maritime air in late summer creates short monsoon activity in the Ussuri and Amur River areas, and sometimes reaching as far as Lake Baykal. The monsoon winds meeting easterly winds causes dry, cyclonic storms over much of Mongolia between April and October. On the coasts, however, cold ocean current flowing south meets warmer [illegible] creating thick, persistent San Francisco-type fogs. They are a slight hinderance to shipping, but make an effective natural camouflage for military operations in these areas, and precipitation might affect nuclear weapo[illegible] effects.

B.8.3 Nuclear attack on the Far East and Transbaykal would be most advantageous between November and April when the dry, anticyclonic Siber[illegible]n high pressure cell hovers over the Asian heartland area wafting cool dry air in a generally northerly direction toward Moscow and in the east toward Vladivostok.

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B.8.4 Noting the storm track maps (Figures B-9. B-10), fallout would least affect the Chinese mainland during these months although concern for Japan might favor the moister May-October wind patterns with monsoon storm tracts pushing air from the maritime coast into the Amur River Basin and eventually Mongolia. But the adverse winds blowing into China might argue against nuclear exchange during this season. Naturally, a more comprehensive study of local meteorological conditions based on local press and broadcast weather forecasts or satellite photography would be necessary in assessing the effects of nuclear conflict in this part of the world.

B.8.5 Seasonal temperatures, as mentioned previously, would restrict and in some cases prohibit prolonged outdoor exposure. Although further south than Moscow or New York, temperatures are much more severe due to cold ocean currents and the Sikhote Alin Mountain barriers. Figures B-11, B-12 and B-13 give a general description of the temperature ranges in Soviet Asia.

B.8.6 Since current air intelligence is vital to accurately be target Soviet Forces in Asia, consideration must be made of visibility.

B.8.7 The air is clearest in wintertime and at 3000 meters, is calm with generally northwesterly winds, which at the 5000 meter level, blow generally at the rate of 50 meters per second.

B.8.8 Figure B-14 graphically expresses those features which most influence reconnaissance operations (mostly mean precipitation, mean cloudiness and percentage of specified visibilities in the morning) as they have been observed by Soviet meteorological stations along the Sino-Soviet border.

B.8.9 Expressed in real figures, the following Tables B-15, B-16, collected over a period of 7 to 10 years, show how ceiling (i.e. 5 8 or more cloud cover) will affect aerial data collection:

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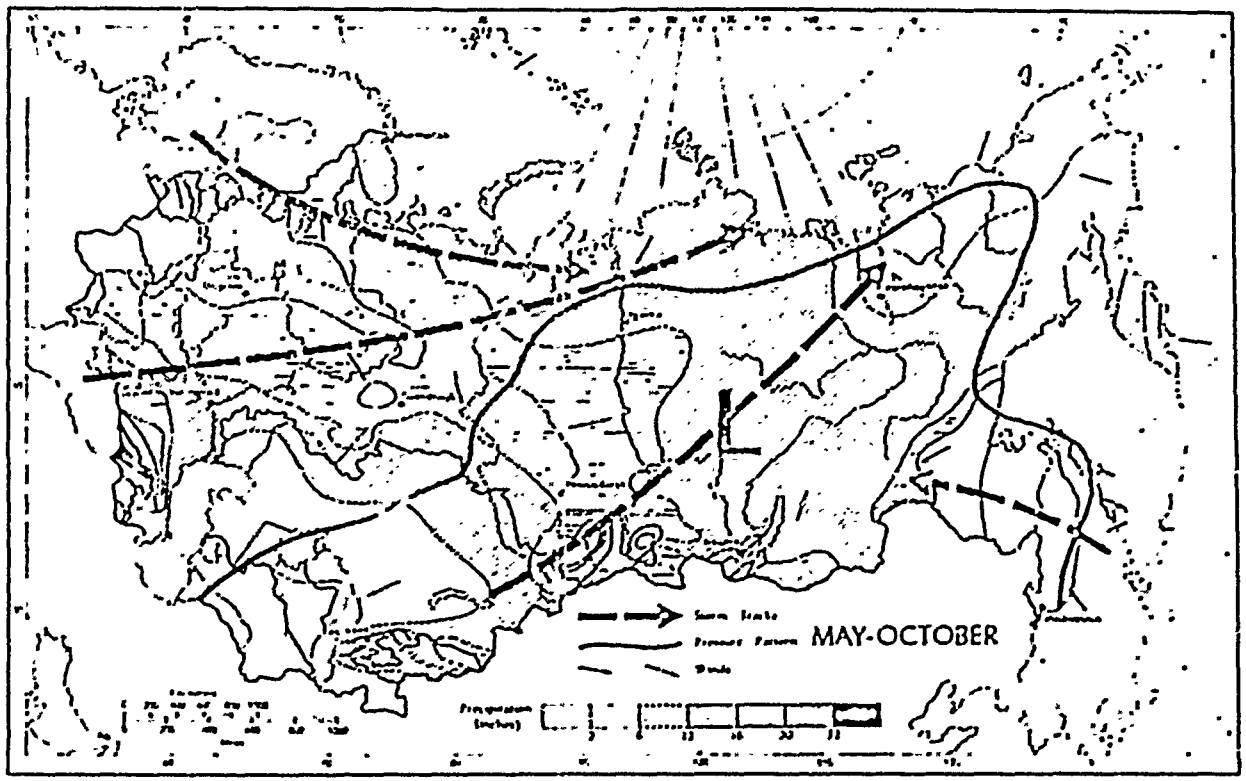

Figure B-9. Storm tracks and precipitation in the USSR: May-October

Reference: Lydolph, Geography of the USSR, page 15

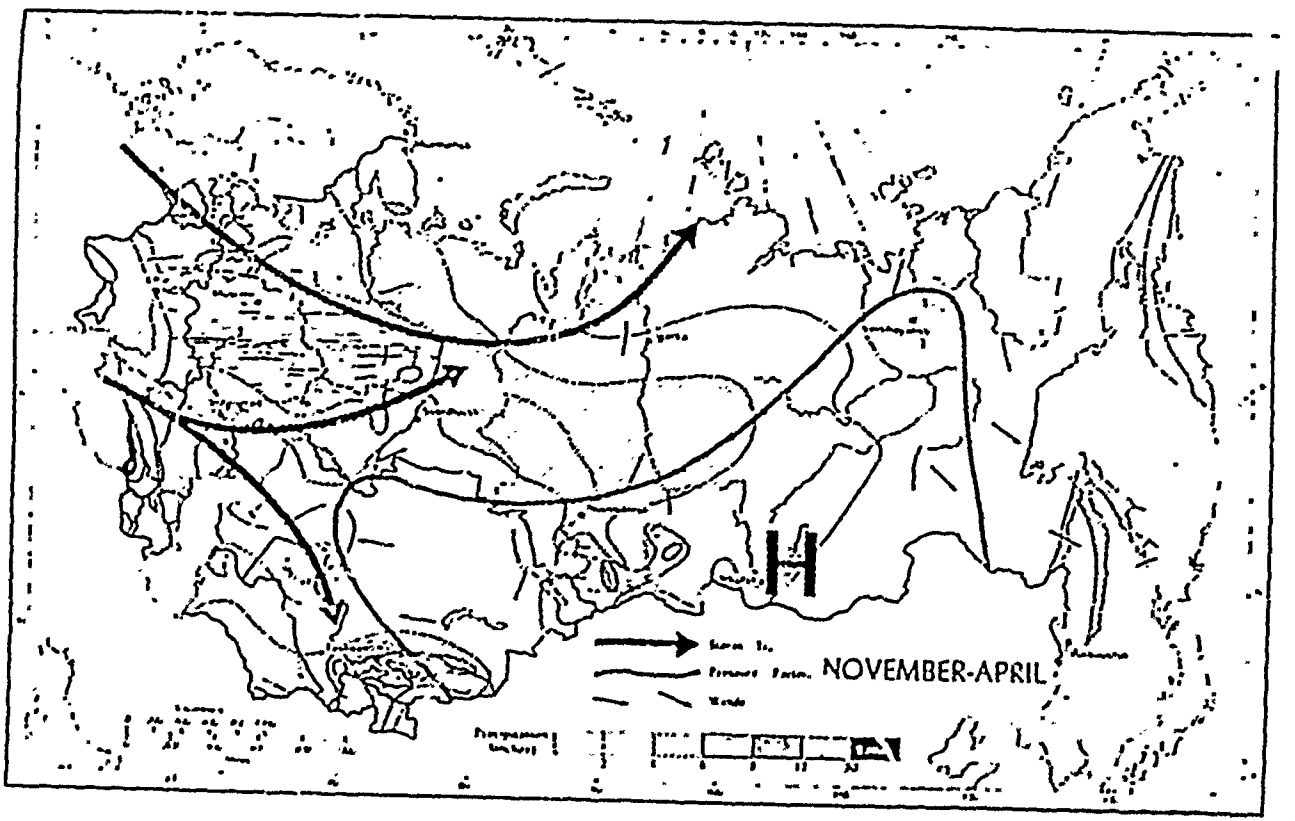

Figure B-10. Storm tracks and precipitation in the USSR: November-April

Reference: Lydolph, Geography of the USSR, page 18

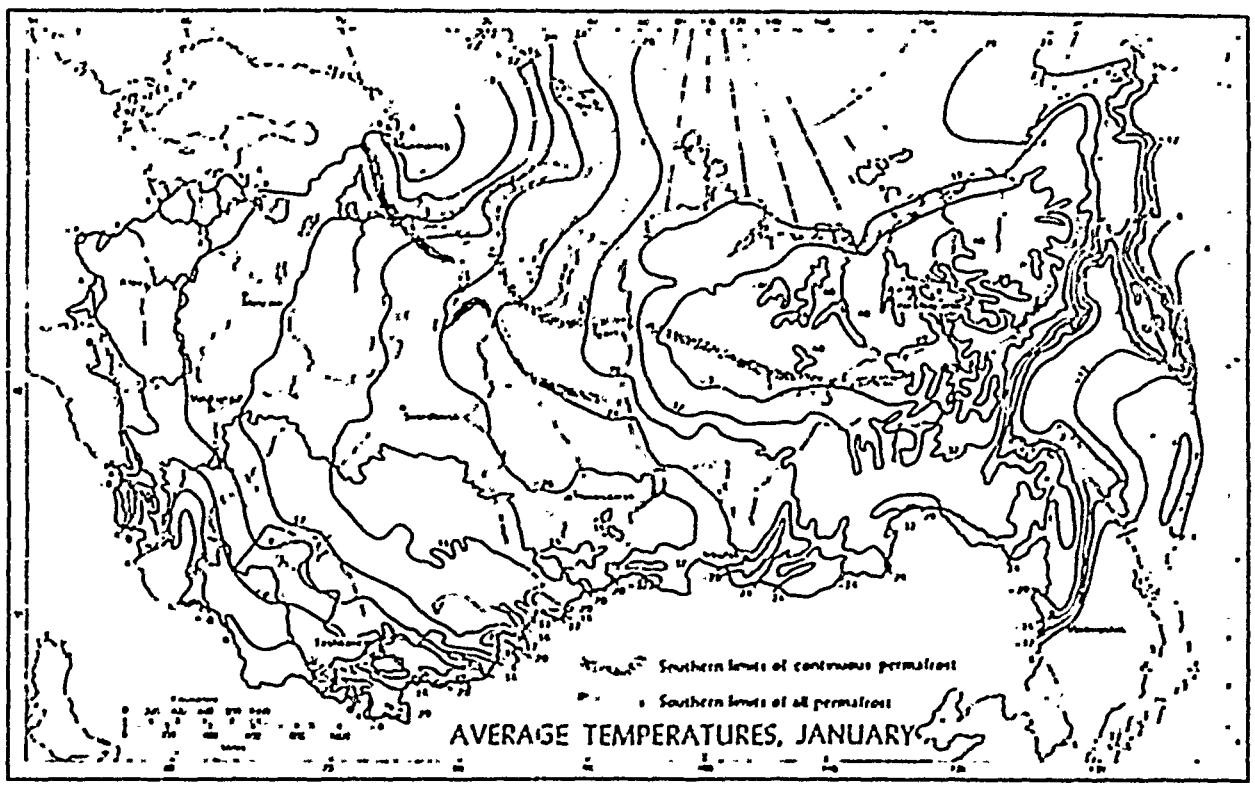

Figure B-11. Average temperatures, USSR, January

Reference: Lyiolph, Geography of the USSR, page 19

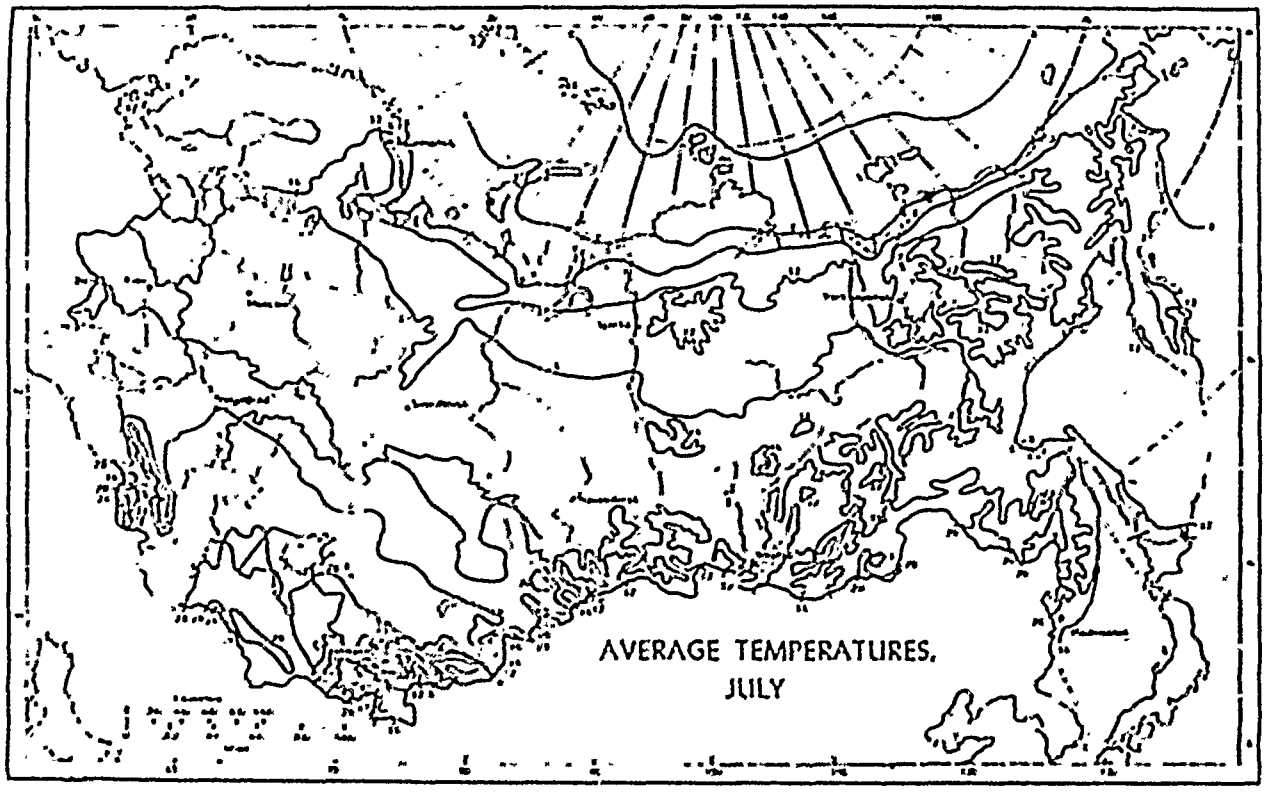

Figure B-12. Average temperatures, USSR, July

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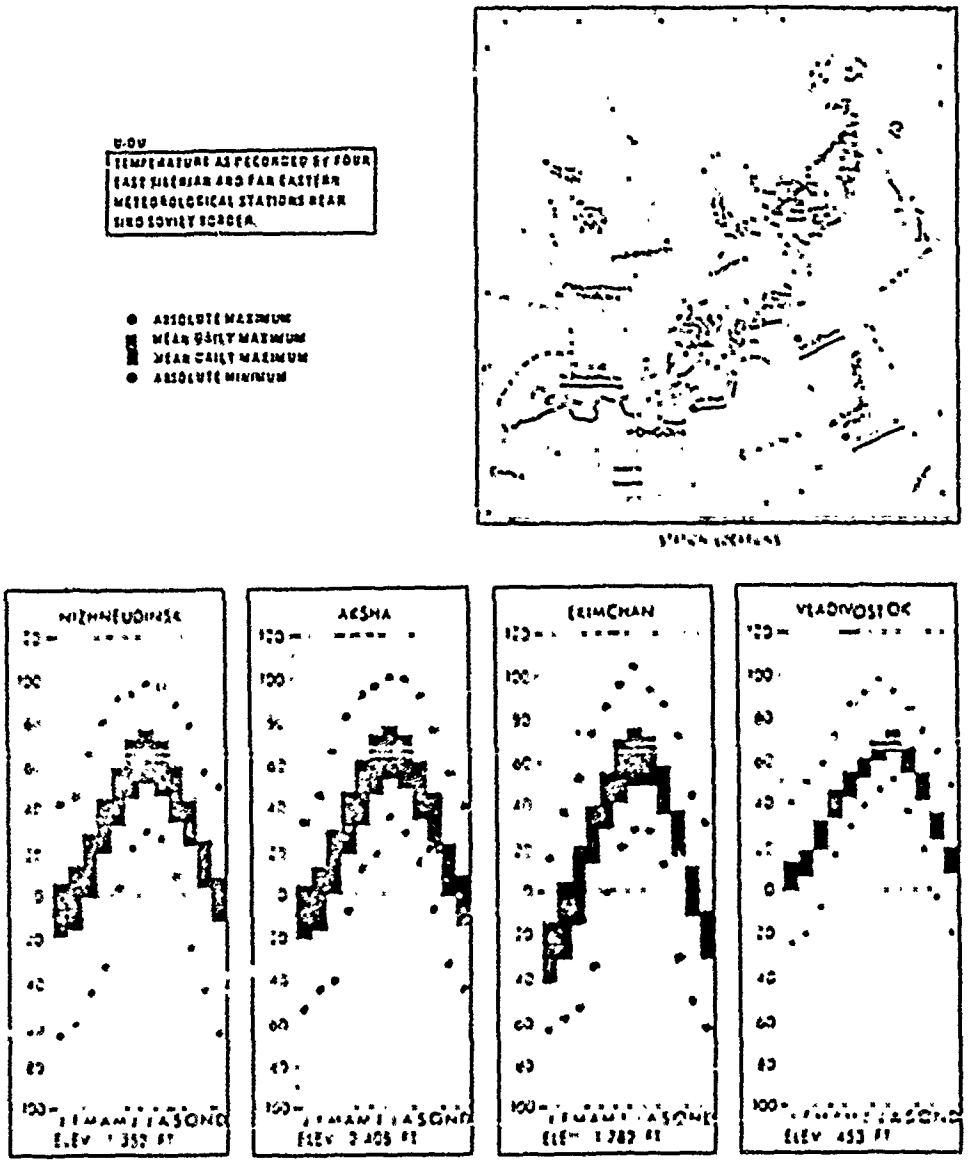

Figure B-13. Temperatures near the Sino-Soviet borders

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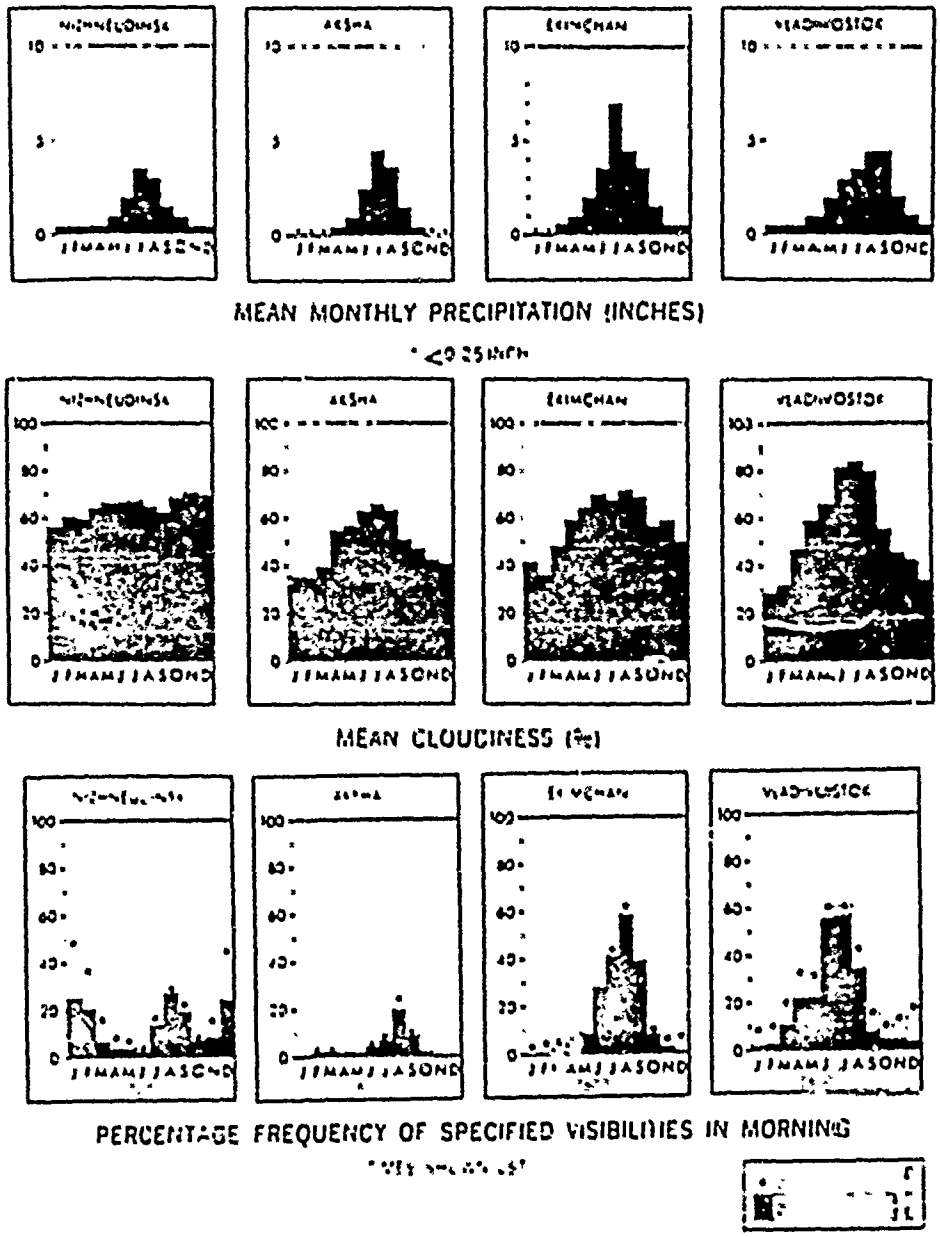

Figure B-14. Chart of precipitation, cloudiness and morning visibilities for four meteorological stations along the Sino-Soviet border

[redacted]

	HOUR	J	F	M	A	M	J	J	A	S	O	N	D	
Nizhneudinsk	1000	4	3	7	13	14	13	14	17	21	16	14	6	12
	1600	1	3	4	9	7	9	9	8	11	16	13	6	8
ARSHA	0800	1	1	3	5	7	14	20	28	20	7	2	1	9
	1400	1	1	3	5	6	9	14	12	10	9	3	1	6
Ekimchan	0900	<.5	<.5	1	9	14	15	25	41	46	20	11	1	15
	1500	1	<.5	2	6	9	7	8	11	15	11	5	1	6
Vladivostok	0900	7	8	19	31	31	67	71	66	40	87	21	14	34
	1500	7	7	17	25	28	51	52	46	32	22	21	11	27

Figure B-15. Percentage frequency of ceiling 1005 meters in morning and afternoon

	HOUR	Combin-ation*	J	F	M	A	M	J	J	A	S	O	N	D	
Nizhneudinsk	1000	A	71	73	89	98	98	99	98	97	96	94	88	67	89
		B	19	15	5	1	1	<0.5	1	2	2	3	9	23	7
	1600	A	81	93	97	99	98	100	98	99	100	97	93	75	94
		B	3	3	1	<0.5	1	0	1	1	0	2	1	14	3
Aksha	0800	A	100	98	97	98	98	96	92	80	90	98	99	100	96
		B	0	<0.5	1	1	1	3	7	17	9	2	1	0	4
	1400	A	[illegible]	99	98	98	99	99	99	98	99	99	99	98	99
		B	<0.5	<0.5	1	2	0	1	0	<0.5	1	1	1	1	1
Ekimchan	0900	A	99	97	97	94	96	97	90	72	73	90	93	100	91
		B	0	<0.5	2	2	2	1	6	22	23	7	2	0	6
	1500	A	99	99	98	95	99	99	98	97	99	95	96	98	98
		B	0	<0.5	1	2	<0.5	0	<0.5	2	6	2	1	1	1
Vladivostok	0900	A	96	94	85	75	71	39	38	49	74	86	88	90	74
		B	3	3	13	23	27	59	59	47	21	13	10	8	24
	1500	A	94	96	91	80	83	56	59	69	85	92	88	94	82
		B	3	3	8	19	15	89	40	28	12	5	11	4	16

* A = Ceiling 305m or greater and visibility 4 km or greater

B = Ceiling 198 m and/or visibility 2 km

Figure B-16. Percentage frequency of visibilities at various times and ceilings

[redacted]

APPENDIX C

[redacted] TRANSPORT CONSIDERATIONS IN TARGETING SOVIET FORCES ALONG THE SINO-SOVIET BORDER [redacted]

C.1 [redacted] The railroad has traditionally been considered the most valuable counterforce and countervalue target in the Far East. The Soviets, more than anyone else are well aware of this and have compensated for it by pre-supplying troop installations and in some cases have built accompanying vehicular routes next to rail lines. Nevertheless, double tracks of the Trans-Siberian carry (in a mostly western direction) between China and Vladivostok 7-15 million tons of freight yearly, and between Irkutsk and China over fifteen million tons. Although the Far East alone exports 7 million tons of freight through all means of transport, it has to import 17 million in order to sustain itself, including oil and coal. East Siberia alone has a net import of 25 million tons of freight per annum. The Trans-Siberian normally requires two weeks for non-critical items to arrive from Moscow.

C.1.1 [redacted] Soviet supply capabilities along the Trans-Siberian rail line have been astounding. Until recent decades the rail route had been a single track steam locomotive operation and the Soviet merchant fleet was not available. In spite of these handicaps, between May and August 1945, forty divisions with all their supplies and equipment were moved from the European theater to the Far East to positions along the Manchurian border. Speed was enhanced because forces in the west were not demobilized after VE day, but sent intact to the east. But today the situation is even better. For the most part the rails are now electrified and are entirely double tracked. Spurs have been expanded directly to the border regions, and are terminated at permanent supply depots.

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C.1.2 [redacted]

C.1.3 [redacted] With the advent of the more northernly Baykal-Amur Mainline (BAM) sometime in the mid 1980's the share of freight flowing westward can be distributed less densely. It will run north of Lake Baykal and proceed some 350-425 kilometers from the border connecting with the currently existing line running from Komsomolskna Amure to Sovetskaya Gavan. Considering Chinese missile capabilities at present the new line will lend greater strategic security to the area. As the situation now stands, the Trans-Siberian and its numerous spurs is still a tempting target in Soviet Asia.

C.1.4 [redacted]

[redacted]

[redacted]

Figure C-1 [redacted] Transsiberian railway resupply capabilities [redacted]

[redacted]

Figure C-2 [redacted] Rail routes and junctions in the Far East Military District [redacted]

Figure C-3 Rail routes and junctions in the Transbaykal Military District

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Figure C-4 [redacted] Highly vulnerable target sites along the Transsiberian railway [redacted]

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C.1.8 [redacted] Because these sites are in very remote portions of the USSR they would not involve anything but slight casualties. This would also slow down repair capabilities to weeks or even months.

C.1.9 [redacted]

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Figure C-5 [redacted] Major river and port facilities along the Sino-Soviet border [redacted]

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C.2.2 [redacted] The Soviets have been systematically improving their vehicular roads in the East, particularly those which link up with and follow the Trans-Siberian railway. Considering the fleet of freight carrying vehicles (trucks) in the Far East attached to the military and civilian enterprises alternate supply routes might be worked out, and may be already be undertaken in practice maneuvers (a point of further study). Roads along the immediate border areas are being made into multi-lane all weather routes, and are paved or smooth surfaced depending upon the topography. (In the steppe areas of Mongolia, for example, dirt roads have proven to be superior to paved roads which quickly show the extremes in climate.) The fact that all roads are not paved is only a consideration during the brief rainy season in the Monsoon areas. The Soviets did manage to launch their attack on Manchuria in the midst of this season, however, on roads which were vastly inferior to presently existing facilities. Soviet truckers ply these roads even today for rapid freight transport. A whole system of changing drivers and way-stations has been set up in remote areas. As in conventional warfare, the interdiction of roads linking primary target facilities might also be undertaken for maximum paralysis.

C.3 [redacted]

[redacted]

[redacted]

C.3.1 [redacted] In modern conditions, the Soviets have, for the most part maintained these same air fields, which rank in importance with offensive missiles as vital wartime counterforce targets. In the Ussuri River area they are still grouped near the narrow flat corridor with the Trans-Siberian railway and major road links with Vladivostok and Nakhodka and are particularly vulnerable. The tactical bomber airfields in Sysoevka were originally built in 1937 in a highly mountainous area, as well as other subsequent inland airfields, built later around 1944 to receive ferried aircraft from the United States. But because of the hardness of air facilities, and the very small number of troop transport aircraft, aircraft themselves have not been considered in the laydown. Only the air force troop facilities which are quite soft have been targeted.

C.3.2 [redacted]

[redacted]

[redacted]

APPENDIX D

[redacted]ORDER GUARDS [redacted]

D.1 [redacted]

D.2 [redacted] During the Manchurian campaign in August 1945, the NKVD border troops fought in the initial assault, leading the Red Army through the taiga and fortifications of China. Originally intended solely for defense, they assisted in forward reconnaissance and attack because of their long familiarity with the region and Japanese dispositions. In the 1930's and 1940's they were under control of the NKVD which was part of Ministry for Internal Affairs (MVD). Today they are part of the KGB of the MVD. Even then they were divided into detachments, komandatura (regional control units), and zaposts (platoons). Their exact locations were fastidiously documented on intelligence maps of the Japanese Kwantung Army (see Appendix A).

D.3 [redacted]

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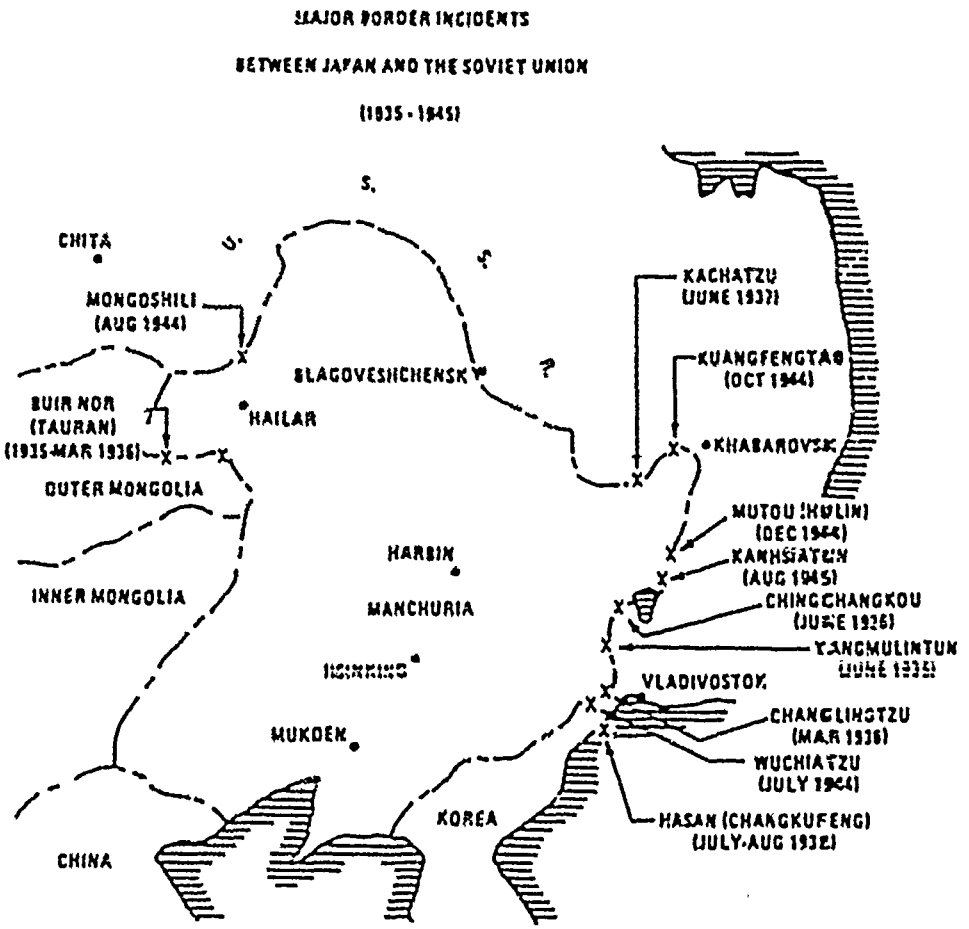

Figure D-1. Major border incidents between Japan and the Soviet Union (1935-1945)

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Figure D-2 [redacted] Strengths of border guard detachments in Soviet Asia [redacted]

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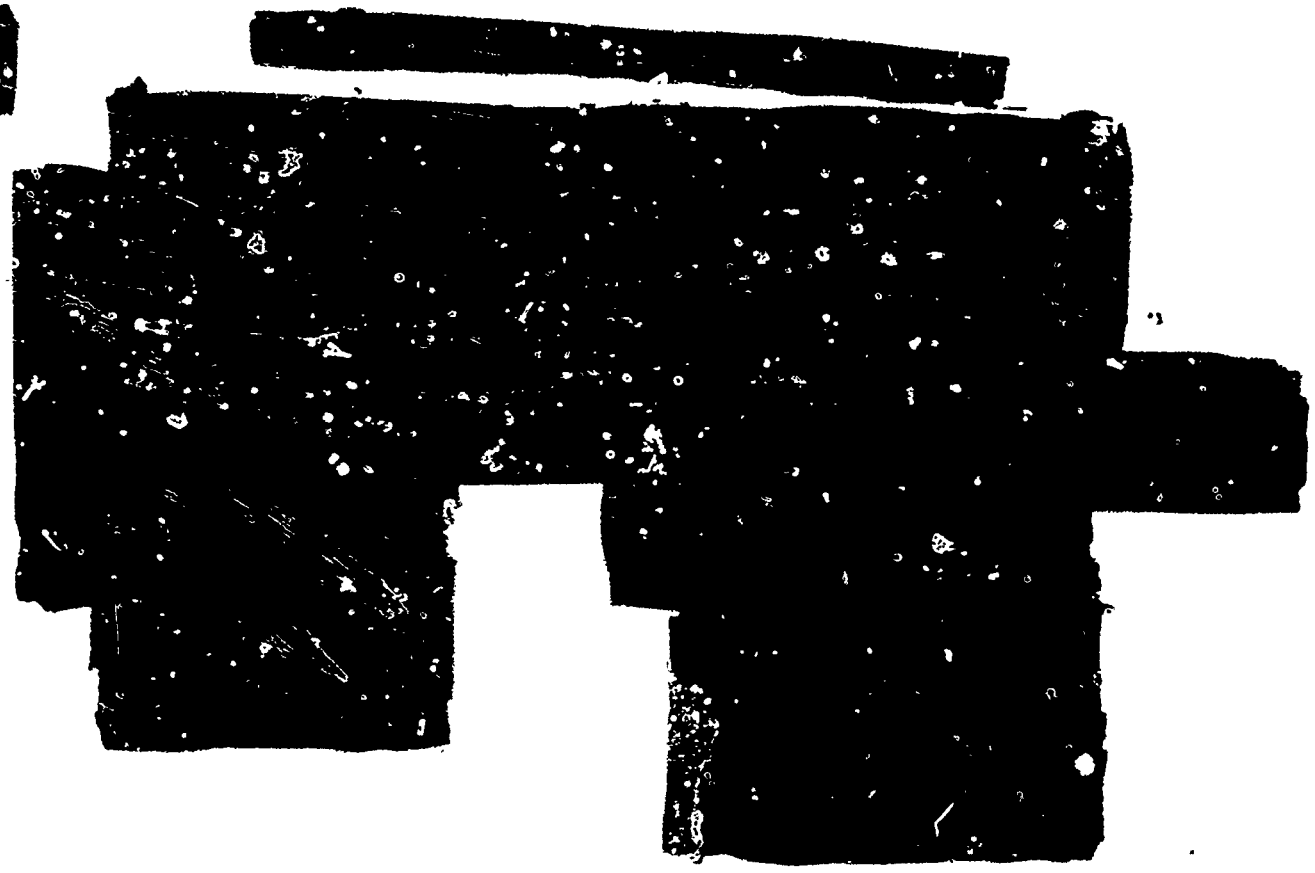

Figure D-3 Identified border guard detachments in Soviet Asia

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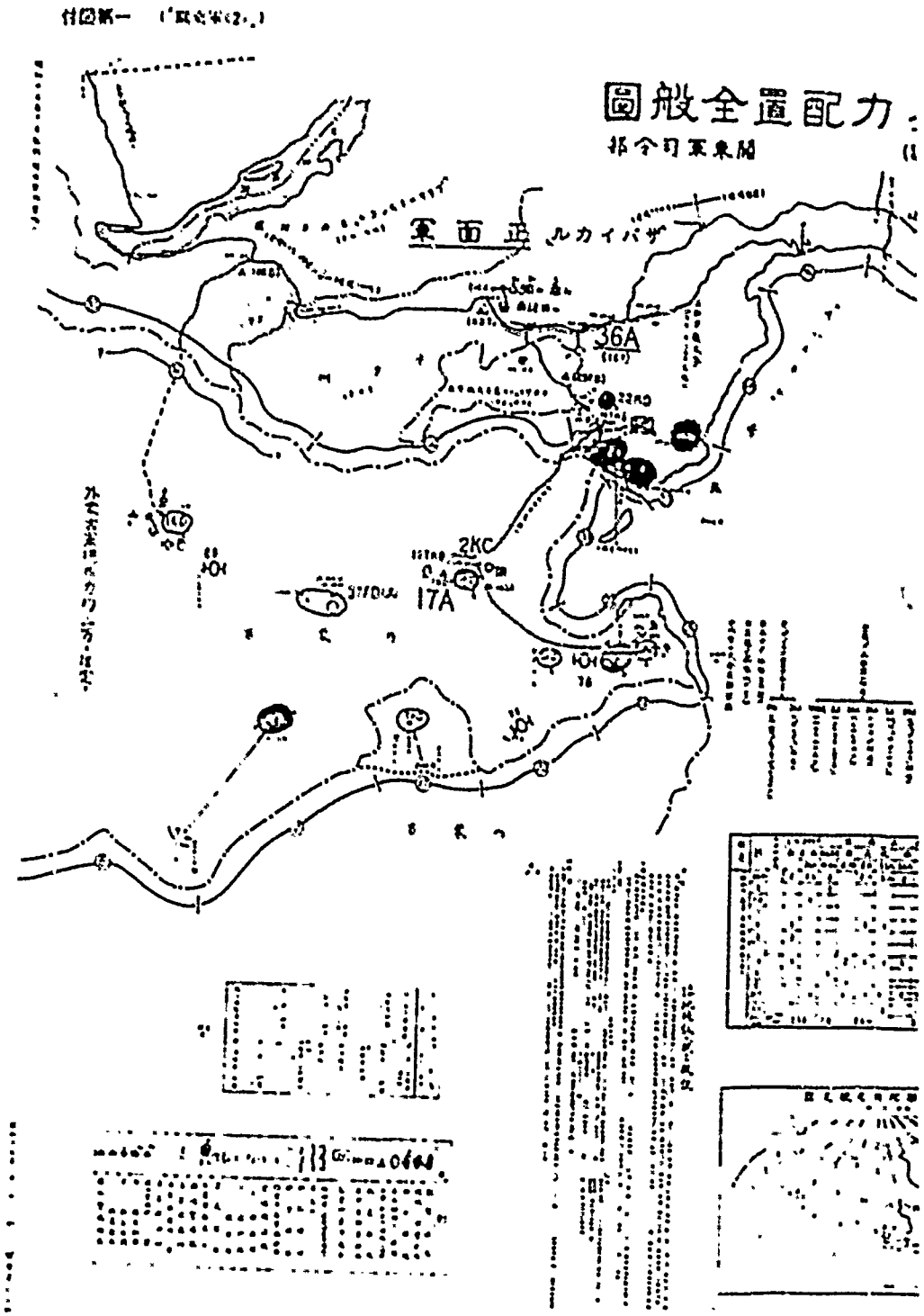

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Figure A-1. Soviet-Manchurian border: positions
major airfields and naval ports are