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EXECUTIVE SUMMARY: A POLITICAL- ECONOMIC GAME EXPLORING SOVIET PLAN FORMULATION DURING POSTATTACK RECOVERY

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Final

December 1978

Technical Note
SSC-TN-4886-2

By: M. Mark Earle, Jr.
Holland Hunter
Herbert S. Levine
Charles H. Movit

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Prepared for:

Defense Advanced Research Projects Agency
1400 Wilson Boulevard
Arlington, Virginia 22209

Contract MDA903-76-C-0244

ARPA Order No. 3210/2

SRI Project 4986

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Richard B. Foster, Director
Strategic Studies Center**

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DISCLAIMER

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either express or implied, of the Defense Advanced Research Projects Agency or the United States Government.

CONTRACTUAL NOTE

This Technical Note is in partial fulfillment of Task Order 1 under Contract MDA 903-76-C-0244.

FOREWORD

This technical note presents an executive summary of the results of a political-economic game held at SRI International on 8-9 June 1978, under a contract from the Defense Advanced Research Projects Agency. The objective of the game was to explore the characteristics that could be expected in Soviet plan formulation for postattack economic recovery. The players who filled the roles of Soviet decisionmakers made contributions to the process of game design, either informally or via preparation of background papers (published separately and listed in this executive summary), regarding their conceptions of the key factors of decisionmaking in their individual areas of expertise. The setting and decisionmaking framework were provided to the players in a briefing book of game documentation, also published separately as an informal note.

The authors of this technical note would like to express their appreciation for the invaluable assistance of Gerald Sullivan and Sarah Gaston in the preparation, conduct, and reporting for the political-economic game.

Richard B. Foster
Senior Director
Strategic Studies Center

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I INTRODUCTION

A great fund of knowledge has been built up in recent years concerning the process of Soviet economic planning in peacetime. The role of decision-making bodies and the institutional relationships of administrative organs in the Party and State apparatus of the USSR are generally well known, along with the system of budgetary priorities that shape the economic planning and management process. Much less is known about and, indeed, little attention has been devoted to the question of how the Soviet economic planning process and the many institutions involved would function in wartime, and more importantly, how they would operate in the aftermath of general nuclear war, to manage and direct Soviet national recovery.

A wide realm of concerns--political, military and economic--both internal and external in their origin, will influence the decisionmaking context and the substantive choices of Soviet leaders directing the recovery of their nation. As a result, the task of projecting Soviet decisionmaking behavior and economic recovery is a complex problem which eludes many traditional research techniques.

II OBJECTIVE

Using the format of a mock session of the Soviet Council of Defense, the objective was to examine potential Soviet post-war goal formulation and plan implementation processes, as well as to identify factors that might complicate or prolong reorganization and recovery.

III THE RECOVERY PROCESS AND CONCEPT OF THE GAME

A. The Recovery Process

SRI International has conducted considerable research on the relationship of pre-war and post-war economic processes and on techniques used to view the recovery from a "total system" viewpoint. The major components of the recovery process are shown in Figure 1. An econometric model (SOVMOD) developed to explore peacetime performance and potential was modified to examine possible intersectoral problems during recovery. The idea of conducting the game resulted in part from the need to improve our ability to develop appropriate assumptions regarding policy guidelines and performance targets used in the examination of alternative economic recovery scenarios.

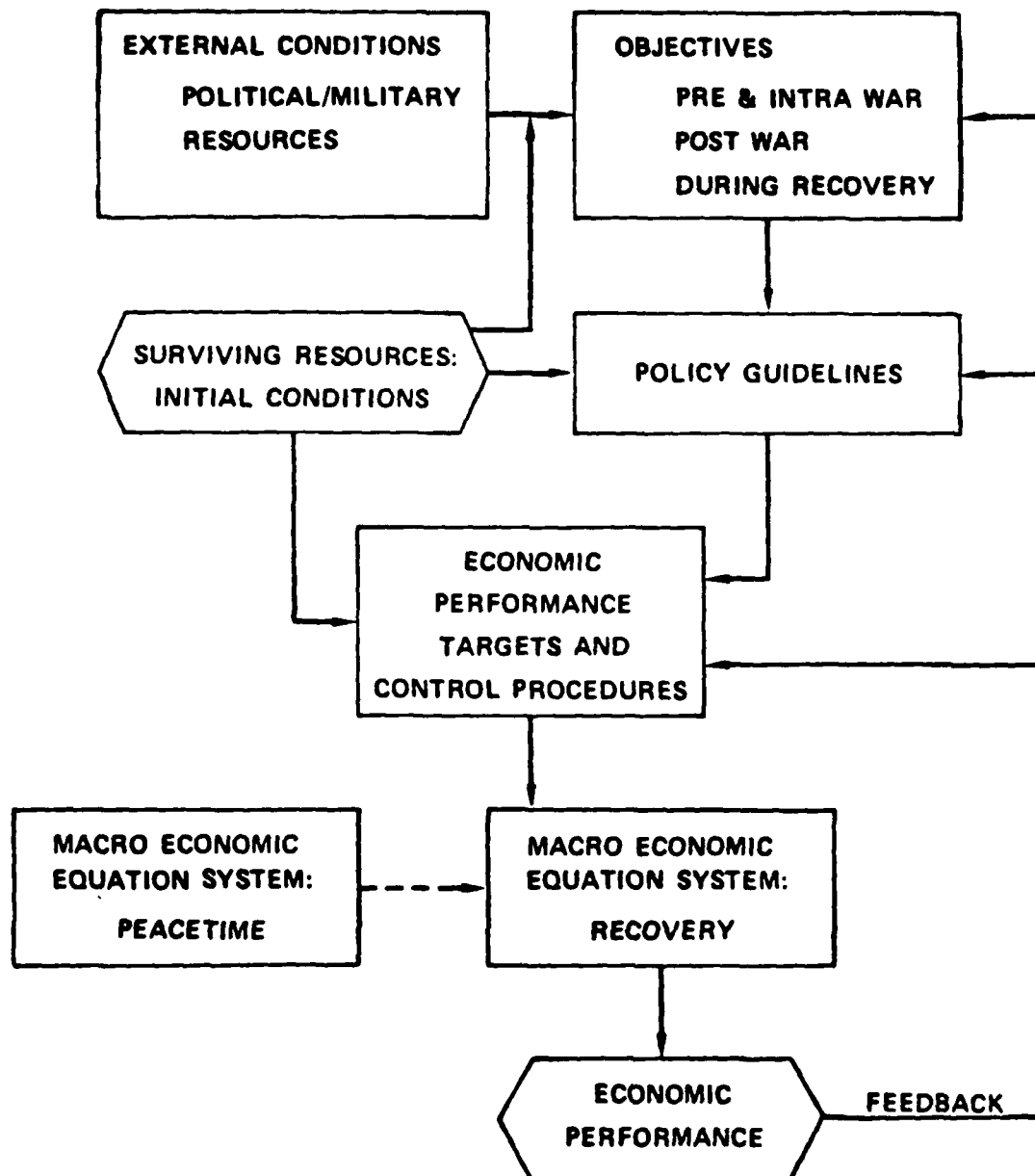
B. Concept of the Game

The game is a simulated session of the Council of Defense meeting to review alternative recovery plans in light of political, military and economic conditions at the end of a war. The meeting takes place three months following the termination of hostilities during which initial surveys of damage have been completed and measures implemented to ensure the control of the military by the Party. In the case examined, approximately 25 percent of capital stock has been destroyed and 15 percent of total population lost as a result of nuclear exchange.

The assumed overall national objective is to restore the Soviet Union to its pre-war form. The game format could also be used to explore alternative sets of initial conditions and national objectives. Previous SRI research identified determining features of recovery environments; they are: degree of Party control, degree of economic centralization, initial conditions in terms of military balances (who, if anyone, won?), perceived

Figure 1

RECOVERY PROCESS



degree of external hostilities, and status of external economic relations. Three general cases have been developed. In the first instance, the Party remains in control and the economic system retains the majority of its pre-war characteristics. In the second, the military becomes the leadership and the economic system is slightly less centralized. For the third case, there is a more regionally dispersed political structure and a resultant shift in resource priorities from the center to the regions. Most recovery analysts use as their baseline case, restoration of the Soviet Union to its pre-war form and thus that case is used for examination here.

As the result of an effective civil defense program, the labor force is still, essentially, distributed outside urban areas but under reasonable control of civil defense and military personnel. No major food or other shortage problems related to population control are apparent at the beginning of the Council's session. The atmosphere is somber, reflecting the serious conditions following the war but not one dominated by tensions of an imminent collapse of the system or new military crisis.

Two contingency plans prepared before the hostilities are to be discussed at the Council of Defense session. In the first, priorities are stronger in their defense orientation and short-term perspective. In the second, priorities are more balanced and have a longer-term perspective. Participants at the meeting review policy issues and performance targets pertaining to the adoption or amendment of one of the two plans. Selected problems, thought to have a major bearing on plan formulation and implementation, are raised. Special "situations" are used to interrupt the meeting and force immediate discussion of a particular problem and how it might influence the formulation of the plan.

Soviet specialists were chosen to play the role of key individuals assumed to be members of the Council of Defense in a post-war situation. The number was less than is thought to represent the full Council; the desire was to have a highly interactive exchange among participants. Table 1 indicates the role assigned to each individual and the persons who constituted the game control group.

Table 1
Game Participants

A. The Players

Council of Defense

L. I. Brezhnev, Chairman

H. Levine, University
of Pennsylvania and
SRI International

A. N. Kosygin, Chairman, Council of
Ministers, Politburo (Head of
economic bureaucracy)

E. Hewett, University
of Texas

L. V. Smirnov, Chairman, Military
Industrial Commission

V. Treml, Duke University

M. A. Suslov, Politburo, Secretariat

R. Foster, SRI International

Y. V. Andropov, Chairman, KGB, Politburo

J. Hough, Duke University

D. F. Ustinov, Minister of Defense,
Politburo

V. Aspaturian, Pennsylvania
State University

A. P. Kirilenko, Politburo, Secretariat

E. Hoffman, SUNY, Albany

B. Control

M. Earle

SRI International

H. Hunter

Haverford College and
SRI International

C. Movit (also, assistant to Brezhnev)

SRI International

J. Cole (also head of Central Statistical
Administration)

SRI International

A number of background papers were prepared by participants to assist in the development of the issues to be explored using the game format. Table 2 lists the subjects and authors as well as the documentation report used by control to conduct the game.

Table 2
Documentation and Background Reports

<u>SRI Designation</u>	<u>Author(s)</u>	<u>Title and Date</u>
SSC-IN-78-6	M. Earle H. Hunter C. Movit	The Interaction of Political/Military and Economic Factors in Soviet Post-attack Recovery Planning: Documentation of a Political/Economic Game (October 1978)
SSC-IN-78-7	M. Deane	Special Administrative Organizations and the Role of the Military in Postattack Recovery (October 1978)
SSC-IN-78-8	J. Hough	The Role of the CPSU in Postattack Recovery (October 1978)
SSC-IN-78-9	E. Hoffman	Decisionmaking in the Communist Party of the Soviet Union (October 1978)
SSC-IN-78-10	P. Marer	The Potential for Soviet-West European Integration During Postattack Recovery (October 1978)
SSC-IN-78-11	V. Aspaturian	The Impact of Postattack Recovery on Soviet Foreign Policy (October 1978)

IV FINDINGS DERIVED FROM THE GAME

A. Overview

The findings and conclusions from the SRI political-economic game, summarized here, should be viewed from a perspective different from that for the usual research results. These findings are not documented by citing previously published materials, but by listening to the interaction of experts, and, given the exploratory nature of this particular game, do not and cannot lead to definitive conclusions. However, the following are observations that can be used to guide our current thinking on goal formulation and implementation, and, as appropriate, tested through further analysis:

- Priorities are the central issue. Soviet goals and purposes lead to ambiguous priority rankings, given the Party's practice of detailing long-term plans only to deviate from them to take advantage of available opportunities. The game did reinforce our view that an underlying economic foundation exists that would channel end-use decisionmaking.
- The political-economic interface is crucial. Public morale will be a major consideration in influencing the Party's behavior. Material incentives will probably be needed to sustain high levels of labor force participation.
- Whatever weight is attached to using past and present Soviet reality as a guide to the future, certain basic traits are identifiable. Soviet authorities have a deep and traditional instinct for restoring past controls, institutions and procedures. Few startling innovations can be expected in a post-attack environment when the strategic outcome is indeterminate, given the Soviets' time-tested system for responding to many postattack recovery problems, reinforced by their previously proven ability to survive.
- Plan implementation will be strongly affected by institutional continuity. Established party decisionmaking channels will be reinforced in large part by preparedness and recovery programs and will provide a high degree of institutional continuity. Competition for power will generally take place within pre-existing organizational structures.

- Increasing our understanding of war termination is important to improving our assessments of recovery. The game interactions revealed that a wide range of redevelopment priorities could be evaluated in the absence of data previously considered essential, and that details on war termination, in many instances, were of greater importance to economic recovery priorities in postattack decisionmaking than details on the pre-war or crisis phases.
- External resources will contribute to recovery efforts but will not be the critical element in initiating or maintaining a broad-based recovery. Game participants downplayed the importance of Western European capital stock and labor to the initiation and maintenance of Soviet recovery processes, but Eastern Europe was thought to be potentially more important than is generally recognized. The role of politically sympathetic LDCs in raw material substitution is limited by time lags.
- Decisionmaking is an ongoing process. The game confirmed that it is feasible to improve our ability to look at different types of decisions that will be made by Soviet central authorities. What emerged from the game was a much greater concern for the integrity of information flows, the feedback to central decision-making authorities, after recovery was initiated.
- Foreign policy factors affect plan priorities. Although not within the scope of the game, three major foreign policy considerations were noted as significantly influencing plan priorities. The Soviets will give first priority to maintaining control of Eastern Europe; China's stance in a postattack environment will be of vital importance; and, even after a nuclear exchange, military force might be employed in situations where limited actions could make irreversible differences, e.g., seizing the oil fields in Iran.
- Performance factors influence plan implementation. Specific insights were gained in the following areas: food reserve stocks, productivity factors, production of military goods, transportation networks, material flows, the length of the work week, personal consumption levels, and investments in MBMW and other defense related sectors.

B. Priorities are the central issue.

Most of the debate at the mock USSR Council of Defense session centered on short-run versus long-run goals and perspectives. The participants were offered two basic scenarios: one of very rapid

reconstitution of Soviet military power in order to take advantage of various targets of opportunity in the surrounding world, and the other of a more gradual restoration resulting in well-rounded Soviet economic growth, including heavy industry and a high Soviet standard of living as well as military power. The economic planners were pressing for clearcut choices that would direct resources one way or the other.

As the game discussion indicated, Soviet goals and purposes don't lead neatly to specific priority rankings. The Party has always planned to make progress on all fronts simultaneously. Party programs, Five-Year Plans, and annual plans usually demand a great deal more than can be accomplished. Targets set run well beyond the limits of available resources. In actual budget allocations and subsequent economic activity, true priorities become apparent as some projects are denied resources and others get even more than anticipated. The Party has a long tradition of spelling out long-run intentions with great care, but from year to year--even month to month--deviating from long-term plans in order to take advantage of short-run opportunities and to respond when reality is different from plans.

Participants in the game faithfully reflected the propensity to deviate from long-run goals for short-run advantage. Each individual expounded his organization's needs, addressed the long-run possibilities, and noted the short-run opportunities. The debate was inconclusive. The game format did not call for formal votes and the session did not yield clearcut economic choices. There was a good deal of military and political interest in rapidly reconstituting Soviet military power, in order to take advantage of targets of opportunity. But, this was accompanied by an

awareness that basic long-term reconstruction was also necessary, including consumer welfare needs.

The game experience suggests, however, a common economic foundation that will underlie a variety of decisions as to end-use goals, and thus a basic pattern of resource allocations. The search for this pattern should continue; its better understanding would also add perspective to comparisons of radically different strategic outcomes.

Specific observations include:

- The initial planning period following termination of hostilities would more likely be eighteen months than five years. The standard five year and annual plan system might be reinstituted after this initial period.
- When strategic outcomes are indeterminate, participants tended to focus, more than anticipated, on rebuilding military and industrial long-term production capabilities. Indication of any U.S. post-war political will to use strategic force increased emphasis on short-term defense priorities.
- Potential loss or serious erosion of political control and influence in Eastern Europe significantly shifted the focus toward short-run military and foreign policy priorities.
- Success or failure of the first post-war harvest may plan a greater role in meeting near- and mid-term economic objectives than has generally been recognized.

C. The political-economic interface is crucial.

Recovery analysis focuses on the tangible base of economic activity, the physical capital stock and labor force of the economy. In modeling the recovery process, analysts primarily are concerned with the stocks of physical and human capital available when recovery begins, and with their expansion thereafter.

But, as discussion at the session of the mock USSR Council of Defense made clear, public morale will be a major consideration in the recovery process.

The Soviet leadership will be vitally interested in determining the extent to which the society has been disorganized by the nuclear exchange. The question of how much people are willing to work will be very important, along with the associated issue of how rapidly living standards should be restored. Attitudes among non-Great Russian minorities will be anxiously probed. In all these respects, political and psychological factors will bear heavily on narrow economic aspects of the recovery process.

The game deliberations led to three tentative observations in this area:

- The Party would attach the highest priority to maintaining internal control over the whole Soviet population--and in all probability will be able to maintain such control.
- In planning economic recovery, the Party would recognize an upper limit to demands placed on the population, and would make room in the plan for a rising standard of living in order to ensure the loyalty and supply of labor needed for recovery.
- The Party would allocate resources among Soviet regions so that each minority nationality would feel it was getting a fair share. This would influence the pattern of economic recovery.

Specific conclusions are:

- Use of the army for domestic political control would not be a preferable course of action. Concern was raised about loyalty problems if it were so employed, especially because of ethnic frictions.
- Current leadership appears to have taken elaborate precautions to ensure its survival and potential continuity. Yet, whether the pre-war leadership continues or not, the central industrial recovery policy priorities will remain much the same if the strategic outcome is indeterminate, i.e., if neither side can significantly coerce the other.

D. Whatever weight is attached to using past and present Soviet reality as a guide to the future, certain basic traits are identifiable.

While a nuclear exchange would be a new event, never before experienced on so large a scale, Soviet responses inevitably would grow out of past and present Soviet methods of managing national affairs. The most persuasive

basis for anticipating Soviet actions in a postattack environment is an informed appreciation of past and present Soviet control methods. One can debate whether the chaos of 1918-1920 is a relevant historical analogue, or whether the power-reconstituting programs of 1943-1950 are better able to suggest models. Some who stress uncertainties in basing forecasts of future behavior on past behavior point to the different leadership styles of the four Soviet leaders--Lenin, Stalin, Khrushchev, and Brezhnev.

However, one basic trait of Soviet authorities is a deep instinct for restoring past controls, institutions, and procedures. In a tightly controlled society dominated by a central group with long range purposes, the inherent response to any large-scale deflection away from a settled program will be to get back onto the path, to re-establish the controls, procedures and institutions that were operating before the cataclysmic event. This deep-seated instinct is plainly evident in the Soviet record after World War II. There will no doubt be some tendency to start new initiatives as required or suggested by new conditions of the postattack environment, especially at the local level. Even those innovations, however, would be constrained by large national programs that called for rebuilding along past lines.

One further characteristic of the Soviet system reinforces this tendency to return to past methods. The USSR has been mobilized for over fifty years in a sustained drive to catch up with the West, in an integrated long-range campaign to build military and heavy industrial power. Soviet ideology endorses this effort and Soviet economic institutions are structured to this end. The Nazi invasion was a massive blow which interrupted the drive, but the doctrines and mechanisms Moscow had worked out in the 1930s were systematically restored as soon as possible. There is every reason to anticipate that Soviet leaders, and the Soviet people as well, would expect to return to their long-run purposes after a nuclear exchange. The Soviet system in a sense is already a time-tested system for responding to many postattack recovery problems.

Yet, the discussions tended to accept "current reality" rather than post World War I or II as the more important basis for assessing potential

post-war behavior. Nevertheless, the previously proven ability to survive will reinforce certain basic systemic traits. The structure of the economy, the greater independence of the labor force, and the different political relationships between the bureaucracy and the party all reduce the likelihood of a simple repetition of post-World War II behavior after a nuclear exchange.

E. Plan implementation will be strongly affected by institutional continuity.

The Soviet process of determining a set of short- and long-run goals, sized to fit resource availabilities, will be carried out through established Party and government decisionmaking channels--as modified by the impact of a nuclear exchange. Plan implementation in turn will require an extended structure of political, military, and economic organizations. They will have to be reconstituted rapidly to master the disorganization and destruction occasioned by a nuclear exchange. Recovery analysis must give attention to probable Soviet procedures for plan implementation: identifying the decisionmaking bodies, the documentation, the operating institutions, and the time sequence and regional patterns involved.

Specific observations include:

- Participants defined numerous issues in terms of their pre-war roles and responsibilities even though they were not required by the game's rules to do so. When queried about their rationale, their response tended to indicate that political factions would compete for power within bureaucracies and at all levels of the party but the near-term post-war period would not be a time for innovations in decision processes.
- The new Soviet constitution codifies much of the structural framework needed for institutional continuity including the Council of Defense.

F. Increasing our understanding of war termination is important to improving our assessments of recovery.

The game format called for a limited amount of scenario information to be briefed to participants regarding the pre-war balance of power, crisis evolution, damage resulting from nuclear exchanges and post-war

political factors. Previous workshops and research seminars treating recovery targetting issues clearly established the diversity of views (most strongly held) on these issues and in the interest of focusing on goal formulation and plan implementation considerations only minimal descriptions were provided. What emerged was two-fold: a wide range of redevelopment priorities could be discussed and evaluated in the absence of data previously considered essential, and; the specifics of how the war ended seemed to be of greater importance in many instances to the discussion of recovery than details on the pre-war or crisis phases.

Among the war termination considerations that influenced the discussion of resource allocation priorities were:

- Whether or not the war was truly terminated or had ended more as a stalemate, by a mutually perceived desire not to continue. This factor was one of the key considerations influencing participants' preferences for short-term defense emphasis over a more broadly based recovery plan.
- When global and strategic capabilities of NATO and Warsaw Pact are radically diminished for both sides, the residual power of the Soviet Union compared to that of its proximate neighbors will be critical and decisive.
- The political will of the U.S. and its ability to use military force as an instrument of national policy, if hundreds of strategic weapons survive.
- The ability of the U.S. to reconstitute military capability
- The degree to which Western European political leaders would maintain a strong desire to defend themselves during the immediate post-war period.

G. External resources will contribute to recovery efforts but will not be the critical element in initiating or maintaining a broad-based recovery.

It is probably correct that the Soviets in a strategic conflict would have as an objective the seizure of at least major portions of Western Europe relatively intact. Some hold that this objective is a reflection in large part of the desire by Soviet leaders to use West European resources during

recovery; others perceive the objective more in terms of long-run political considerations. The game participants tended to stress the difficulty of incorporating West European capital stock and labor into Soviet recovery processes and downplayed their importance in the initiation and maintenance of recovery.

The exchanges between the participants indicated four implications for those evaluating recovery problems and scenarios:

- The Soviets would have benefitted from their World War II experience and would not initiate large-scale dismantling of industrial plants. After a reorganization phase, these resources--both capital and labor--would be operated in place. Coercion to achieve acceptable performance goals would be accomplished via the presence of occupation forces.
- Certain stocks would be seized and shipped to the Soviet Union during the immediate post-war period. These would include agricultural products, medical supplies, transportation equipment (trucks especially), and certain communications equipment. To the extent feasible, a flow of these types of products from surviving capital would be initiated.
- Individuals having certain key labor skills would be relocated to the Soviet Union. It is less likely today than post-World War II that major population relocation programs would be undertaken.
- Eastern Europe was thought to play a potentially much greater role in reconstitution and recovery than is generally recognized. Such participation would reinforce political control of Eastern Europe by the Soviets during the transition to more normal conditions. Under conditions in which there was only light damage to Eastern Europe, the existence of pre-war coordination mechanisms would prove particularly valuable. There are structural economic limits to the extent of this integration, however, and the programs would not be pursued to the point of threatening political stability.
- Politically sympathetic LDCs might play an important raw material substitution role during the initial phases of recovery in selected areas but the time delays resulting from procurement, transportation, and internal distribution would favor, in most instances, re-establishment of domestic capability. In a few instances, e.g., Iran and oil, the Soviets might attempt to secure access to needed resources by limited military action.

H. Decisionmaking is an ongoing process.

Review of the discussion at the mock USSR Council of Defense session reveals that three kinds of decisions were being considered:

- decisions about the kind and extent of information required in order to make a decision
- decisions to take specific immediate and short-lived actions
- decisions to launch extended actions with long-term payoffs.

In the postattack environment addressed--three months after the end of active war--emergency steps would have been taken and damage surveys would have been made, but Council members might well feel that further information would be required before some additional large decisions could be made. On other matters initial decisions could be obvious even with only incomplete evidence available. Further experience in gaming and modeling should help clarify the distinctions and the kinds of decisions that fall into these two groups.

A Council of Defense session could be expected to produce a number of operational decisions covering immediate actions over the successive few weeks and months. These decisions would all be designed to meet immediate problems, or to take advantage of current opportunities, subject to revision on the basis of evolving circumstances. Their detailed content is the hardest to anticipate, since it would depend so heavily on perceived circumstances at the time.

A third set of decisions would be long range, involving the commitment of resources to projects requiring from two to eight years for completion. The Soviet record shows many such projects, involving substantial capital and other resources, that were launched in times of grave shortages, illustrating the Party's capacity for stern tenacity under stress. But even these decisions display an elasticity in scale of commitment--the first year's allocation may be large or modest, and institutional infighting over degrees of commitment is fierce even in normal times.

In actual Soviet practice, therefore, central decisionmakers in some cases decide (1) to defer decisions until more information becomes available; (2) to allocate resources once-and-for-all to short-run projects; or (3) to make initial commitments to long-run projects. It follows that postattack recovery analysis should make use of these distinctions in anticipating Soviet recovery policies. For example, which decisions of the third kind would be invariant under a considerable variety of short-run circumstances? One would expect decisions to start the rebuilding of strategic military capabilities and to launch the reconstruction of basic heavy industrial facilities. Among short-run projects one would expect to see the full restoration of C³ facilities.

Two observations emerged from the interpretation of deliberations of the participants about recovery issues as they related to the decision process:

- The importance of the mobilization plan in setting in motion trans-war and immediate post-war economic processes. Many of the decisions would be bounded by contingency plans developed before the war. Other issues would not need deliberation and decision since their treatment in the contingency plan would be adequate at the initiation of recovery.
- Previous analyses of recovery have stressed the need for accurate damage assessments as the basis for setting goals and implementing plans. What emerged from the game was a much greater concern for the integrity of information flows, the feedback to central decisionmaking authorities, after recovery was initiated. The view held by most game participants was one of an evolutionary decision process that would be significantly impaired if correct information were unavailable. The players stressed the evolutionary process of decisions based on accurate information derived from immediate, current assessments.

I. Foreign policy factors affect plan priorities.

The discussion of foreign policy objectives was not within the scope of the political-economic game. Nevertheless certain observations emerged (again, not always universally held) that would be useful to economic recovery analysts considering plan priorities.

- The Soviet Union can be expected to give first priority to maintaining Eastern Europe, within its sphere of control, as the indispensable defense glacis against Western Europe and Germany.
- In the case examined in the game, China was not an active belligerent. Under such a situation, China's capability and political will loomed as the second most important factor influencing the formulation of USSR foreign policy.
- The Soviet Union would seek to shorten its defense perimeter, whether it be via expansion (preferable) or contraction (only if absolutely necessary). Military force might be used in situations where limited actions could make, on a very high probability basis, irreversible differences, e.g., seizing the oil fields in Iraq or Iran. Previous recovery analyses have not addressed potential resource savings from the deliberate contraction from certain territories to improve a short-term defense configuration and strengthen priority resource flows.

J. Game deliberations provided insights on certain performance factors influencing plan implementation.

Discussions during the game provided insight on certain performance factors that would influence plan implementation, among them:

- Food reserve stocks would lower initial estimates of requisite production targets.
- Productivity factors need to be slightly degraded because of disease and residual radiation problems.
- Quantity of production of military goods seems to be favored over sophistication. This increases the potential to use adapted production capability and to substitute labor for capital.
- Initial reestablishment of transportation networks is immediately feasible. Gradual restoration of prewar capacity would require several years.
- An improved understanding of recovery rests on our ability to increase our insights into problems of material flows. Previous cost relationships will be ignored for critical product areas but not for all products central to a broad-based economic recovery.

- A sixty to sixty-five hour week is probably the upper limit for sustained labor force participation. Surges can be effected for shorter periods. Material incentives for key workers are likely to be important to meeting early recovery objectives as many game participants questioned the ability of a nuclear war vs. a prolonged World War II land war to generate patriotic responses in the labor force.
- Personal consumption can be set at lower levels than initially thought in the near- to mid-term period. Stocks would play a significant role during the immediate period and the ability of family units to contribute via small plot gardens represents a significant addition to minimum subsistence requirements. Central authorities would need to maintain certain regional stocks for emergency distribution even after the survival and reorganization phases.
- Investments in MBMW and other defense related sectors have practical upper limits. Current development of pre-war contingency plans would tend to contribute to realistic target setting; a more rational allocation of investment resources than was observed in some areas post-World War II can reasonably be expected.

V OBSERVATIONS ON THE GAME AS AN ANALYTICAL TOOL

Reflecting on the organization and conduct of the game surfaces both areas needing further analysis and suggestions to improve future games.

A. Areas suggested by the conduct of the game for further analysis.

Certain issues raised during the conduct of the game appear to be of some importance in furthering our understanding of recovery phenomena. Four are worthy of special note:

- Role of Eastern Europe in Soviet Recovery. The game discussions indicated that Soviet leaders may view East European resources as necessary contributions to many important recovery programs. Current versus post-war integration schemes should be compared and an effort made to increase our understanding of the implications for political stability for varying NATO/Warsaw Pact conflicts and related levels of damage.
- Transition of the labor force from mobilized, trans-war and immediate post-war configurations to near- to mid-term recovery locations and practices. Transition plans to move the labor force from mobilized into trans-war phases are generally documented in Soviet civil defense literature. What remains to be explained, however, are the procedures for and factors bearing on the transformation from sheltered and evacuated configurations to more normal patterns of employment and housing as they relate to redevelopment priorities.
- Interface of regional and national development objectives. The objectives set by those in the economic and ethnic regions of the USSR in recovery may differ significantly from goals defined by the center for the nation as a whole. The extent of this difference would be dependent on the distribution of damage, the profile of surviving capabilities, the degree of self-sufficiency both pre- and postattack, and perceptions of local populations of the overall internal and external political and economic situations. While regional aspirations running directly counter to centrally determined high priority objectives would certainly be suppressed, as feasible, they most likely would have to be accounted for in the plan formulation and implementation process. The degree of potential conflict among these sets of objectives and possible impact on resource allocation and goal achievement should be examined.

- Industrial priorities during mobilization and trans-war as they would relate to immediate (up to eighteen months) production. Dedication of production facilities and resources to war-supporting roles and the institution of emergency planning and priorities during mobilization and trans-war are likely to have an impact on the period following the cessation of hostilities. This is particularly true in light of difficulties in information gathering and communications that could be expected in the latter period--i.e., the periphery must rely on the last instructions received from the center as well as pre-existing contingency plans. The degree to which the conditions established in the preceding stage might affect reorganization and immediate production efforts should be carefully considered.

B. The game approach has utility and can be made more effective.

The game format was a useful way to gain some insights into aspects of Soviet behavior important to the analysis of economic recovery, insights that do not lend themselves readily to more traditional research techniques. Certain suggestions can be made to improve the effectiveness of future games:

- a series of games could be formulated, each exploring major sets of issues in recovery and the results integrated into a more complete picture of the political, economic and military factors that influence goal formulation and plan implementation;
- the need exists to adequately account for the trauma that nuclear war would carry for the decisionmakers;
- more concrete representations of a decisionmaking setting (charts, slides, maps, etc.) which cannot adequately be assimilated from tabulated data, would reinforce the role-playing by participants;
- greater detail on the results of the nuclear exchange in terms of profile and level of surviving resources would facilitate discussion of recovery priorities but data should not result in the deliberations becoming scenario dependent;
- an alternative game format could provide insights into shifting priorities. Each session could represent successive 6-month meetings of the Council with feedback provided by Control as a result of earlier Council decisions. This technique was not employed in this game, given its focus on initial recovery goals and priorities;
- in some cases, the players should be forced to conclude discussions with a more clearly agreed upon consensus decision than was encouraged by Control in this particular game. If this is stressed too much, however, the debate process might inhibit the more open exploration of rationales that gave insights into differing views of behavior and decision criteria.